

## List of Suggested Reviewers or Reviewers Not To Include (optional)

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### **SUGGESTED REVIEWERS:**

Betsi Grabe <mgrabe@indiana.edu>, Indiana University  
Bradley Gorham <bwgorham@syr.edu>, Syracuse University  
Brian Weeks <beweeks@gmail.com>, University of Michigan  
Bruce Bimber <bimber@polsci.ucsb.edu>, UC-Santa Barbara  
Daniel Kreiss <dkreiss@email.unc.edu>, University of North Carolina  
Deen Freelon <freelon@email.unc.edu>, University of North Carolina  
Ellen Wartella <ellen-wartella@northwestern.edu>  
Jeff Niederdeppe <jdn56@cornell.edu>, Cornell University  
Jennifer Stromer-Galley <jstromer@syr.edu>, Syracuse University  
Robin L. Nabi <nabi@comm.ucsb.edu>, UC-Santa Barbara  
Scott Althaus <salthaus@uiuc.edu>, University of Illinois  
Shyam Sundar Sethuraman <sss12@psu.edu>  
Stuart Soroka <snsoroka@ucla.edu>  
Vish Viswanath <vish\_viswanath@dfci.harvard.edu>  
Xiaoli Nan <nan@umd.edu>

### **REVIEWERS NOT TO INCLUDE:**

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The following information regarding collaborators and other affiliations (COA) must be separately provided for each individual identified as senior project personnel. The COA information must be provided through use of this COA template.

Please complete this template (e.g., Excel, Google Sheets, LibreOffice), save as .xlsx or .xls, and upload directly as a Fastlane Collaborators and Other Affiliations single copy doc. Do not upload .pdf.

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There are five separate categories of information which correspond to the five tables in the COA template:

**COA template Table 1:**

List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

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- The individual's Ph.D. advisors; and
- All of the individual's Ph.D. thesis advisees.

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**COA template Table 5:**

List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.

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- Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.

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**Table 1:** List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

1	Your Name:	Your Organizational Affiliation(s), last 12 r	Last Active Date
	Wagner, Michael W.	University of Wisconsin-Madison	

**Table 2:** List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.

*to disambiguate common names*

2	Name:	Type of Relationship	Optional (email, Department)	Last Active
	Graves, Lucas	collaborator and co-publisher	School of Journalism and Mass Communication, UW-Madison	12/1/21

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T: All of the individual's Ph.D. thesis advisees.

*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
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G:	Carmines, Edward G.	Indiana University	carmines@indiana.edu
T:	Foley, Jordan	Washington State University	
T:	Perryman, Mallory	Virginia Commonwealth University	
T:	Duncan, Megan	Virginia Tech University	
T:	Davis, Catasha	Paranthetic	
T:	Tsang, Stephanie	Hong Kong Baptist University	
T:	Gruszczynski, Mike	Indiana University	
T:	Friesen, Amanda	Indiana University-Purdue University-Indianapolis	
T:	Li, Jianing	University of South Florida	
T:	Hughes, Ceri	Cardiff University	

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4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Tay, Swee Kiat	University of Wisconsin-Madison		
A:	Dumdum, Omar	University of Wisconsin-Madison		
A:	Friedland, Lewis A.	University of Wisconsin-Madison		
A:	Shah, Dhavan V.	University of Wisconsin-Madison		
A:	Dempsey, Sadie	University of Wisconsin-Madison		
A:	Cramer, Katherine J.	University of Wisconsin-Madison		
A:	Suk, Jiyoung	University of Connecticut		
A:	Lukito, Josephine	University of Texas		
A:	Wells, Chris	Boston University		
A:	Perryman, Mallory	Virginia Commonwealth University		
A:	Dunca, Megan	Virginia Tech University		
A:	Mirer, Michael	University of Wisconsin-Milwaukee		
A:	Theiss-Morse, Elizabeth	University of Nebraska-Lincoln		
A:	Friesen, Amanda	Indiana University-Purdue University-Indianapolis		
A:	Carmines, Edward G.	Indiana University		
A:	Ensley, Michael J.	Kent State University		
A:	Cho, Jaehe	University of California-Davis		
A:	McLeod, Douglas	University of Wisconsin-Madison		
A:	Rojas, Hernando	University of Wisconsin-Madison		
A:	Gabay, Itay	none		
A:	Alvarez, German	University of Texas		
A:	Edgerly, Stephanie	Northwestern University		
A:	Bode, Leticia	Georgetown University		
A:	Franklin, Charles	Marquette University	Law School	
A:	Pevehouse, Jon	University of Wisconsin-Madison	Political Science	
C:	Gustafson, David H.	University of Wisconsin-Madison	Department of Industrial & Systems Engineering	
C:	Westergaard, Ryan	University of Wisconsin-Madison	Department of Medicine	
C:	Mares, Marie-Louise	University of Wisconsin-Madison	Department of Communication Arts	
C:	Edwards, Dorothy	University of Wisconsin-Madison	Department of Kinesiology	
C:	Rohe, Karl	University of Wisconsin-Madison	Statistics	
C:	Sethares, William	University of Wisconsin-Madison	Engineering	

C:	Culver, Kathleen	University of Wisconsin-Madison	Journalism and Mass Communication	
C:	DeChoudhury, Munmun	Georgia Institute of Technology	College of Computing	
C:	Kumar, Srijan	Georgia Institute of Technology	College of Computing	
C:	Jones, Malia	University of Wisconsin-Madison	UW Applied Population Lab	
C:	Vraga, Emily	University of Minnesota	Hubbard School of Communication	

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<b>5</b>	<b>Name:</b>	<b>Organizational Affiliation</b>	<b>Journal/Collection</b>	<b>Last Active</b>
B:	Lawrence, Regina	University of Oregon	Political Communication	current
B:	Schmierbach, Michael	Penn State University	Mass Communication and Society	current
B:	Holbert, Lance	Temple University	Journal of Communication	current
B:	Vaccari, Cristian	Loughborough University	International Journal of Press/Politics	current
E:	Borah, Porismita	University of Wisconsin-Madison	International Journal of Public Opinion Research	current
B:	Plutzer, Eric	Penn State University	Public Opinion Quarterly	current
B:	Holbrook, Allyson		Public Opinion Quarterly	current

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If there are more than 10 individuals designated as senior project personnel on the proposal, or if there are print preview issues, each completed template must be saved as a .txt file [select the Text (Tab Delimited) option] rather than as an .xlsx or .xls file. This format will still enable preservation of searchable text and avoid delays in processing and review of the proposal. Please note that some information requested in prior versions of the PAPPG is no longer requested. **THIS IS PURPOSEFUL AND WE NO LONGER REQUIRE THIS INFORMATION TO BE REPORTED.** Certain relationships will be reported in other sections (i.e., the names of postdoctoral scholar sponsors should not be reported, however if the individual collaborated on research with their postdoctoral scholar sponsor, then they would be reported as a collaborator). The information in the tables is not required to be sorted, alphabetically or otherwise.

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	De Choudhury, Munmun	Georgia Institute of Technology	10/31/2020

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T: All of the individual’s Ph.D. thesis advisees.

*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G:	Sundaram, Hari	UIUC	Computer Science

T:	Chancellor, Stevie	University of Minnesota	Computer Science
T:	Saha, Koustuv	Microsoft Research	FATE
T:	Ernala, Sindhu Kiranmai	Facebook Core Data Science	
T:	Yoo, Dong Whi	Georgia Institute of Technology	Interactive Computing
T:	Das Swain, Vedant	Georgia Institute of Technology	Interactive Computing
T:	Kim, Seunghyun	Georgia Institute of Technology	Interactive Computing
T:	Moore, Jasmine	Georgia Institute of Technology	Interactive Computing
T:	Pendse, Sachin	Georgia Institute of Technology	Interactive Computing

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4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
C:	Abowd, Gregory	Georgia Institute of Technology	Interactive Computing	3/22/2020
C:	Aledavood, Talayeh	Aalto University	Computer Science	1/1/20
A:	Andalibi, Nazanin	University of Michigan	School of Information	8/15/2018
C:	Baumer, Eric	Lehigh University	Department of CS	3/20/2020
A:	Birnbaum, Michael	Northwell Health	Psychiatry	3/10/2020
A:	boyd, danah	Microsoft Research		3/2/2017
A:	Bruckman, Amy	Georgia Institute of Technology	Interactive Computing	3/10/2020
A:	Bulik, Cynthia	UNC Chapel Hill	Medical School	12/31/2019
A:	Caine, Eric	University of Rochester	Medical School	2/15/20
C:	Campbell, Andrew	Dartmouth College	Department of CS	12/31/2019
A:	Chau, Polo	Georgia Institute of Technology	Computational Science & Engineering	12/31/2019
A:	Choi, Daejin	Incheon National University	Computer Science	8/1/19
A:	Cecchi, Guillermo	IBM		12/31/2019
C:	Chawla, Nitesh	University of Notre Dame	Department of CS	12/31/2019
C:	Chellappan, Sriram	University of South Florida	Department of CS	12/31/2019
C:	Choudhury, Tanzeem	Cornell	Information Science	12/31/2019
A:	Coppersmith, Glen	Qntfy		12/31/2019
A:	Counts, Scott	Microsoft Research		12/31/2019
A:	Czerwinski, Mary	Microsoft Research		12/31/2019
A:	De, Sushovan	Google		12/31/2019
A:	de Barbaro, Kaya	UT Austin	Psychology	12/31/2019
C:	Dey, Anind	University of Washington	iSchool	12/31/2019
A:	Diakopoulos, Nick	Northwestern University	School of Communication	12/31/2019
C:	D'Mello, Sidney	CU Boulder	Department of CS	12/31/2019
A:	Dredze, Mark	Johns Hopkins	Department of CS	12/31/2019
A:	Eekhout, Wouter	Leiden University	Department of CS	12/31/2019
C:	Eisenstein, Jacob	Georgia Institute of Technology	Interactive Computing	12/31/2019
C:	ElSherief, Mai	University of California, San Diego	Computer Science	11/1/19
A:	Essa, Irfan	Georgia Institute of Technology	Interactive Computing	12/31/2019
A:	Estrin, Deborah	Cornell Tech	Information Science	8/31/20
A:	Fiesler, Casey	University of Colorado	Information Science	12/31/2019
A:	Forte, Andrea	Drexel University	Information Science	12/31/2019
A:	Gamon, Michael	Microsoft Research		12/31/2019
A:	Gilbert, Eric	University of Michigan	School of Information	12/31/2019



A:	Grudin, Jonathan	Microsoft Research		12/31/2019
A:	Haimson, Oliver	University of Michigan	School of Information	12/31/2019
A:	Hayes, Gillian	University of California, Irvine	Information Science	4/13/2018
A:	Horvitz, Eric	Microsoft Research		7/24/2017
A:	Kalantidis, Yannis	Facebook		12/31/2019
C:	Kane, John	Northwell Health	Psychiatry	12/31/2019
A:	Kelliher, Aisling	Virginia Tech	Department of CS	12/31/2019
A:	Kiciman, Emre	Microsoft Research		12/31/2019
C:	Kiplin, Adam	Johns Hopkins	Psychology	12/31/2019
A:	Kumar, Neha	Georgia Institute of Technology	School of Interactive Computing	3/22/20
C:	Kumar, Santosh	University of Memphis	Department of CS	12/31/2019
A:	Kumaraguru, Ponnurangam	IIIT Delhi	Department of CS	12/31/2019
A:	Le Dantec, Chris	Georgia Institute of Technology	Interactive Computing	10/15/20
A:	Lin, Yu-Ru	University of Pittsburgh	Information Science	12/31/2019
A:	Logar, Tomaz	United Nations Global Pulse		12/31/2019
C:	Mark, Gloria	University of California, Irvine	Information Science	12/31/2019
A:	Massimi, Michael	Facebook		12/31/2019
A:	Mitra, Tanushree	Virginia Tech	Department of CS	12/31/2019
A:	Mohr, David	Northwestern University	Medical School	12/31/2019
A:	Monroy-Hernandez, Andres	Snap Research		12/31/2019
A:	Morris, Merrie	Microsoft Research		12/31/2019
A:	Muchlinski, David	Georgia Institute of Technology	Interactional Affairs	7/1/20
A:	Nielsen, Rene	United Nations Global Pulse		12/31/2019
C:	Nitzburg, George	Northwell Health	Psychiatry	12/31/2019
C:	Pennebaker, Jamie	University of Texas	Psychology	12/31/2019
C:	Pinto, Melissa	University of California, Irvine	Nursing	12/31/2019
A:	Ploetz, Thomas	Georgia Institute of Technology	School of Interactive Computing	3/22/20
A:	Robles-Granda, Pablo	University of Notre Dame	Computer Science	10/15/20
A:	Roseway, Asta	Microsoft Research		12/31/2019
A:	Shamma, David Ayman	FXPAL		12/31/2019
A:	Sharma, Amit	Microsoft Research		3/20/20
A:	Silenzio, Vincent	Rutgers University	School of Public Health	2/15/20
C:	Striegel, Aaron	University of Notre Dame	Department of CS	12/31/2019
A:	Sunmer, Steven	Centers for Disease Control and Prevention		12/31/2019
A:	Tamersoy, Acar	Symantec Research		12/31/2019
A:	Tay, Louis	Purdue University	Department of Psychological Sciences	1/31/21
A:	Teevan, Jaime	Microsoft Research		12/31/2019
C:	Torous, John	Harvard University	Medical School	12/31/2019
A:	Van Meter, Anna	Northwell Health	Zucker Hillside Hospital	9/30/20
A:	Weber, Ingmar	Qatar Computing Research Institute		12/31/2019
A:	White, Ryen	Microsoft Research		12/31/2019
C:	Wilcox, Lauren	Georgia Institute of Technology	Interactive Computing	12/31/2019
C:	Wisniewski, Pamela	University of Central Florida	Department of CS	12/31/2019
A:	Yang, Diyi	Georgia Institute of Technology	Interactive Computing	7/7/20
A:	Young, Sean	UCLA	Medical School	12/31/2019
A:	Zerwas, Stephanie	UNC Chapel Hill	Medical School	12/31/2019

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5	Name:	Organizational Affiliation	Journal/Collection	Last Active
E:	Hogan, Bernie	Oxford Internet Institute	ICWSM PC Co-Chair	12/31/17

E:	Keegan, Brian	CU Boulder	ICWSM Workshop Co-Chair	12/31/17
E:	Oh, Alice	KAIST	ICWSM PC Co-Chair	12/31/17
E:	Pfeffer, Jurgen	Technical University of Munich	ICWSM Workshop Co-Chair	12/31/17
E:	Tong, Hanghang	Arizona State University	ACM TKDD Special Issue	12/31/17
E:	Wang, Fei	Cornell Medicine	ACM TKDD Special Issue	12/31/17
E:	Yom-Tov, Elad	Microsoft Research	AAAI OSSM Symposium	12/31/17
B:	Strohmaier, Markus	GESIS	Springer EPJ Data Science	7/17/18
B:	Ferrara, Emilio	University of Southern California	MDPI Future Internet	7/17/18
E:	Kiciman, Emre	Microsoft Research	AAAI OSSM Symposium	12/31/17
E:	Castillo, Carlos	UPF-Barcelona	The Web Conference "Web and Society" Track	1/10/19
E:	Shamma, David Ayman	FXPAL	HCI Journal Special Issue on HCI+AI	1/15/19
E:	Zhu, Haiyi	University of Minnesota	HCI Journal Special Issue on HCI+AI	1/15/19
E:	Lee, Min Kyung	University of Michigan	HCI Journal Special Issue on HCI+AI	1/15/19

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	Borah, Porismita	Washington State University	

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*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G:	Shah, Dhavan	University of Wisconsin-Madison	dshah@wisc.edu

T:	Wang, Yiran	Utah State University	
T:	Lorenzano, Kyle	University of West Georgia	
T:	Xiao, Xizhu	Qingdao University	
T:	Su, Yan	Washinton State University	
T:	Vishnevskaya, Anastasia	Washinton State University	
T:	Ka Lai Lee, Danielle	Washinton State University	

**Table 4: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:**

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- C: Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.**

*to disambiguate common names*

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Austin, Erica	Washington State University	Edward R. Murrow College of Communication, Center for Media & Health Promotion	
A:	Bumpus, Matthew	Washington State University	Prevention Science	
A:	Cooper, Brittany	Washington State University	Prevention Science	
A:	Ghasemzadeh, Hassan	Washington State University	Computer Science	
A:	Haggerty, Kevin	University of Washington	Prevention Science	
A:	Himmelboim, Itai	University of Geogia	Grady College of Journalism and Mass Communication	
A:	McPherson, Sterling	Washington State University	Elson Floyd College of Medicine	
A:	Shah, Dhavan	University of Wisconsin-Madison	School of Journalism and Mass communication	
A:	Gil de Zúñiga, Homero	University of Salamanca	Department of Political Science	
A:	Bode, Leticia	Georgetown University		
A:	Edgerly, Stephanie	Northwestern University		
A:	Ekdale, Brian	University of Iowa	School of Journalism and Mass Communication	
A:	Fowler, Erika	Wesleyan University		
A:	Hill, Laura	Washington State University	Prevention Science	
A:	Kindig, David	University of Wisconsin-Madison	Population Health Sciences	
A:	Namkoong, Kang	University of Maryland		
A:	Niederdeppe, Jeff	Cornell University		
A:	Robert, Stephanie	University of Wisconsin-Madison	Sandra Rosenbaum School of Social Work	
A:	Thorson, Kjerstin	Michigan State University	College of Communication Arts and Sciences	
A:	Rideout, Travis	Washington State University	Department of Politics and Philosophy	
A:	Shah, Chirag	University of Washington	Information school	
A:	Vraga, Emily	University of Minnesota		
A:				
A:				
A:				
A:				
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**Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.**

**B: Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and**

**E: Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.**

*to disambiguate common names*

5	Name:	Organizational Affiliation	Journal/Collection	Last Active
B:				
E:				

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List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

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1. Note that graduate advisors are no longer required to be reported.
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List names as Last Name, First Name, Middle Initial. Additionally, provide email, organization, and department (optional) to disambiguate common names.

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"Last Active Date" and "Last Active" columns may be left blank for ongoing or current affiliations.

**Table 1:** List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

1	Your Name:	Your Organizational Affiliation(s), last 12 mo	Last Active Date
	Srijan Kumar	Georgia Insitute of Technology	
		Stanford University	7/14/2019

**Table 2:** List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.

*to disambiguate common names*

2	Name:	Type of Relationship	Optional (email, Department)	Last Active
R:				



**Table 3:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.

**G:** The individual's Ph.D. advisors; and  
**T:** All of the individual's Ph.D. thesis advisees.

*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G:	Subrahmanian, V.S.	Dartmouth College	Computer Science
T:	Oh, Sejoon	Georgia Institute of Technology	Computational Science and Engineering
T:	He, Bing	Georgia Institute of Technology	Computational Science and Engineering
T:	Verma, Gaurav	Georgia Institute of Technology	Computational Science and Engineering
T:	Kartik Sharma	Georgia Institute of Technology	Computational Science and Engineering

**Table 4:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

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**C:** Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

*to disambiguate common names*

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Subrahmanian, V.S.	Dartmouth College	Computer Science	1/1/21
A:	Leskovec, Jure	Stanford University	Computer Science	1/1/21
A:	Faloutsos, Christos	Carnegie Mellon University	Computer Science	12/31/19
A:	Jurafsky, Daniel	Stanford University	Computer Science	12/31/18
A:	Hamilton, William L.	McGill University	Computer Science	12/31/18
A:	Spezzano, Francesca	Boise State University	Computer Science	12/31/16
A:	Jurgens, David	University of Michigan	Information Science	12/31/18
A:	McFarland, Daniel	Stanford University	Education	12/31/18
A:	West, Robert	EPFL	Computer Science	12/31/16
A:	Serra, Edoardo	Boise State University	Computer Science	12/31/18
A:	Nayak, Kartik	Duke University	Computer Science	12/31/16
A:	Shi, Elaine	Cornell University	Computer Science	12/31/16
A:	Miller, Andrew	University of Illinois, Urbana-Champaign	ECE	12/31/16
A:	Hooi, Bryan	National University of Singapore	Computer Science	12/31/18
A:	Kumar, Mohit	Flipkart, Inc.		12/31/18
A:	Makhija, Disha	Flipkart, Inc.		12/31/18
A:	Cheng, Justin	Facebook		12/31/17
A:	Goebel, Sebastian	Ludwig-Maximilians-Universität Munich	Computer Science	12/31/17
A:	Zhang, Xikun	Stanford University	Computer Science	12/31/19
A:	Shah, Neil	Snap Inc.		12/31/18
A:	Dumitras, Tudor	University of Maryland	ECE	12/31/18
A:	Li, Shang	University of Maryland	ECE	12/31/18
A:	Eswaran, Dhivya	Carnegie Mellon University	Computer Science	1/1/20
A:	Singla, Ananya	Indian Institute of Technology Roorkee	Computer Science	12/31/18
A:	Roy, Sudip	Indian Institute of Technology Roorkee	Computer Science	12/31/18
A:	Chakrabarti, PP	Indian Institute of Technology Kharagpur	Computer Science	12/31/18




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1	Your Name:	Your Organizational Affiliation(s), last 12 r	Last Active Date
	Yang, Sijia	University of Wisconsin-Madison	

**Table 2:** List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.

*to disambiguate common names*

2	Name:	Type of Relationship	Optional (email, Department)	Last Active

**Table 3:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.

G: The individual's Ph.D. advisors; and

T: All of the individual's Ph.D. thesis advisees.

*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
---	-----------------------	----------------------------	------------------------------

G:	Cappella, Joseph, N.	University of Pennsylvania	joseph.cappella@asc.upenn.edu, Annenberg School for Communication
T:	Li, Jianing	University of South Florida	jli724@wisc.edu

**Table 4: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:**

**A: Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and**

**C: Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.**

*to disambiguate common names*

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Zhang, Jingwen	University of California, Davis	Department of Communication	
A:	Brackbill, Devon	Facebook, Inc.		
A:	Centola, Damon, M.	University of Pennsylvania	Annenberg School for Communication	
A:	Becker, Joshua	University College London	School of Management	
A:	Herbert, Natalie W.	University of Pennsylvania	Annenberg School for Communication	
A:	Tan, Andy	University of Pennsylvania	Annenberg School for Communication	
A:	Hamilton, Kelsey	University of Washington	School of Public Health	
A:	Fischbein, Rebecca	Northeast Ohio Medical University		
A:	Kenne, Deric R.	Kent State University	College of Public Health	
A:	Maloney, Erin	University of Delaware	Department of Communication	
A:	Cappella, Joseph, N.	University of Pennsylvania	Annenberg School for Communication	
A:	Sutton, Jazmyne, A.	SSRS, Inc.		
A:	Kim, Hyun Suk	Seoul National University	Department of Communication	
A:	Kim, Minji	University of California, San Francisco	Center for Tobacco Control Research and Education	
A:	Wang, Xuewei	University of California, Davis	Department of Computer Science	
A:	Shi, Weiyan	University of California, Davis	Department of Computer Science	
A:	Kim, Richard	E.ventures, San Francisco		
A:	Oh, Yoojung	University of California, Davis	Department of Communication	
A:	Yu, Zhou	University of California, Davis	Department of Computer Science	
A:	Dehlendorf, Christine	University of California, San Francisco	Department of Family and Community Medicine	
A:	Fox, Edith	University of California, San Francisco	Department of Family and Community Medicine	
A:	Sharma, Anjana, E.	University of California, San Francisco	Department of Family and Community Medicine	
A:	Ungar, Lyle	University of Pennsylvania	Department of Computer and Information Science	
A:	Morgan, Jennifer	University of Pennsylvania	Annenberg School for Communication	
A:	Qinghua, Yang	Texas Christian University	Bob Schieffer College of Communication	

A:	Hemenway, Brett	University of Pennsylvania	Department of Computer and Information Science	
A:	Herbert, Natalie W.	Stanford University	Woods Institute for the Environment	
A:	Alber, Julia	California Polytechnic State University	Kinesiology and Public Health Department	
A:	Ophir, Yotam	University at Buffalo	Department of Communication	
A:	Chen, Kaiping	University of Wisconsin-Madison	Department of Life Science Communication	
C:	Gustafson, David H.	University of Wisconsin-Madison	Department of Industrial & Systems Engineering	
C:	Westergaard, Ryan	University of Wisconsin-Madison	Department of Medicine	
C:	Mares, Marie-Louise	University of Wisconsin-Madison	Department of Communication Arts	
C:	Edwards, Dorothy	University of Wisconsin-Madison	Department of Kinesiology	
C:	Passmore, Susan	University of Wisconsin-Madison	Callaborative Center for Health Equity	
C:	Garbacz, Andy	University of Wisconsin-Madison	Department of Educational Psychology	
C:	Ehrenthal, Deborah	University of Wisconsin-Madison	UW-Madison Prevention Research Center	
C:	DeChoudhury, Munmun	Geogia Institute of Technology	College of Computing	
C:	Kumar, Srijan	Geogia Institute of Technology	College of Computing	
C:	Jones, Malia	University of Wisconsin-Madison	UW Applied Population Lab	
C:	Bolt, Daniel	University of Wisconsin-Madison	Department of Educational Psychology	
C:	Quanbeck, Andrew	University of Wisconsin-Madison	Department of Family Medicine and Community Health	

**Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.**

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B:				
E:				

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	Vraga, Emily K	University of Minnesota	

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*to disambiguate common names*

2	Name:	Type of Relationship	Optional (email, Department)	Last Active
R:	Alphaman, Alexander	Family		

**Table 3:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.

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**T:** All of the individual's Ph.D. thesis advisees.

*to disambiguate common names*

<b>3</b>	<b>Advisor/Advisee Name:</b>	<b>Organizational Affiliation</b>	<b>Optional (email, Department)</b>
G:	Shah, Dhavan V.	University of Wisconsin-Madison	
G:	McLeod, Douglas M.	University of Wisconsin-Madison	
G:	Cramer, Kathy	University of Wisconsin-Madison	
G:	Rojas, Hernando	University of Wisconsin-Madison	
G:	Van Swol, Lynn	University of Wisconsin-Madison	
T:	Smithson, Anne-Bennett	Sam Houston State University	

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**C:** Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

*to disambiguate common names*

<b>4</b>	<b>Name:</b>	<b>Organizational Affiliation</b>	<b>Optional (email, Department)</b>	<b>Last Active</b>
A:	Suk, Jiyoun	University of Connecticut		1/1/22
A:	Bode, Leticia	Georgetown University		ongoing
A:	Shah, Dhavan V.	University of Wisconsin-Madison		1/1/22
A:	Edgerly, Stephanie	Northwestern University		ongoing
A:	Thorson, Kjerstin	Michigan State University		ongoing
A:	Wells, Christopher	Boston University		1/1/22
A:	Tully, Melissa	University of Iowa		ongoing
A:	Maskl, Adam	Indiana University Southeast		ongoing
A:	Ashley, Seth	Boise State University		ongoing
A:	Craft, Stephanie	University of Illinois Urbana-Champaign		ongoing
A:	Ecker, Ulli	University of Western Australia		1/1/22
A:	Lewandowsky, Stephen	University of Bristol		1/1/22
A:	Cook, John	Monash University		ongoing
A:	Schmid, Philip	University of Erfurt		1/1/22
A:	Fazio, Lisa	Vanderbilt University		1/1/22
A:	Brashier, N.	Harvard University		1/1/22
A:	Kendeou, P.	University of Minnesota		1/1/22
A:	Amazeen, Michelle	Boston University		1/1/22
A:	Guidry, Jeanine	Virginia Commonwealth University		1/1/22
A:	Laestadius, Linnea	University of Wisconsin-Milwaukee		1/1/22
A:	Miller, Carrie	Virginia Commonwealth University		1/1/22
A:	Perrin, Paul	Virginia Commonwealth University		1/1/22
A:	Burton, Candace	University of California-Irvine		1/1/22
A:	Ryan, Mark	Virginia Commonwealth University		1/1/22
A:	Fuemmeler, Bernard	Virginia Commonwealth University		1/1/22
A:	Carlyle, Kellie	Virginia Commonwealth University		1/1/22

A:	Kim, Sojung	George Mason University		ongoing
A:	Jacobsen, Katherine	Richmond University		12/31/20
A:	van der Linden, Sander	University of Cambridge		1/1/21
A:	Chou, Sylvia	National Cancer Institute		3/1/20
A:	Trivedi, Neha	National Cancer Institute		3/1/20
A:	Peterson, Emily	National Cancer Institute		3/1/20
A:	Krakov, Mindy	National Cancer Institute		3/1/20
A:	Coman, Ioana	Texas Tech University		6/1/20
A:	O'Donnell, Nicole	Virginia Commonwealth University		6/1/20
A:	Sreepada, Nihar	Texas Tech University		6/1/20
A:	Occa, Aurora	University of Kentucky		12/31/20
A:	Nan, Xioali	University of Maryland		12/31/20
A:	Ming, Hannah	Virginia Commonwealth University		12/31/20
A:	Qin, Yan	University of Maryland		12/31/20
A:	Singh, Lisa	Georgetown University		12/31/20
A:	Budak, Ceren	Georgetown University		12/31/20
A:	Kawintiranon, Kornraphop	Georgetown University		12/31/20
A:	Padden, Colton	Georgetown University		12/31/20
A:	Smithson, Anne-Bennett	Sam Houston State University		1/1/20
A:	Kotcher, John	George Mason University		12/31/18
A:	Myers, Teresa	George Mason University		12/31/18
A:	Beall, Lindsey	The Scientific Consulting Group		12/31/18
A:	Maibach, Edward	George Mason University		12/31/18
A:	Stefanidis, Anthony	College of William and Mary		12/31/18
A:	Lamprianidis, George	George Mason University		12/31/18
A:	Croitoru, Arie	George Mason University		12/31/18
A:	Crooks, Andrew	University of Buffalo		12/31/18
A:	Delamater, Paul	University of North Carolina		12/31/18
A:	Pfoser, Dieter	George Mason University		12/31/18
A:	Radzikowski, J.	George Mason University		12/31/18
A:	Alvarez, German	University of Texas at Austin		12/31/18
A:	Johnson, Courtney	Meta		12/31/18
A:	Mirer, Michael	University of Wisconsin-Madison		12/31/18
A:	Thorson, Esther	Michigan State University		12/31/18
A:	Stenhouse, Neil	Empower Project		12/31/18
A:	Calleja, Neville	Directorate for Health Information & Research, Ministry for Health , Valetta , MT		12/31/20
A:	AbdAllah, AbdelHalim	WHO Regional Office for Africa , Brazzaville , CG		12/31/20
A:	Abad, Neetu	US Centers for Disease Control and Prevention		12/31/20
A:	Ahmed, Naglaa	WHO Regional Office for Eastern Mediterranean		12/31/20
A:	Albarracin, Dolores	University of Illinois Urbana-Champaign		12/31/20
A:	Altieri, Elena	Department of Communications, World Health Organization , Geneva , CH		12/31/20
A:	Anoko, Julienne	WHO Regional Office for Africa , Dakar , SN		12/31/20
A:	Arcos, Ruben	University Rey Juan Carlos		12/31/20
A:	Azlan, Arina Anis	Universiti Kebangsaan Malaysia		12/31/20
A:	Bayer, Judit	University of Münster		12/31/20
A:	Bechmann, Anja	Aarhus University,		12/31/20

A:	Bezbaruah, Supriya	WHO Regional Office for South East Asia		12/31/20
A:	Briand, Sylvie	Department of Infectious Hazards Management, Emergency Preparedness Division, World Health Organization		12/31/20
A:	Brooks, Ian	University of Illinois at Urbana-Champaign		12/31/20
A:	Bucci, Lucie	Immunize Canada, Canadian Public Health Association		12/31/20
A:	Burzo, Stefano	University of British Columbia		12/31/20
A:	Czerniak, Christine	Department of Infectious Hazards Management, Emergency Preparedness Division, World Health Organization		12/31/20
A:	De Domenico, Manilo	Fondazione Bruno Kessler		12/31/20
A:	Dunn, Adam	The University of Sydney		12/31/20
A:	Espinosa, Laura	European Centre for Disease Prevention and Control , Stockholm , SE		12/31/20
A:	Fancois, Camille	Graphika		12/31/20
A:	Gradon, Kacper	Department of Security and Crime Science, University College London , London , GB		12/31/20
A:	Gruzd, Anatoliy	Ryerson University ,		12/31/20
A:	Gulgun, Beste Sultan	Ministry of Health , Ankara , TR		12/31/20
A:	Haydarov, Rustam	UNICEF Headquarters , New York, NY, US		12/31/20
A:	Hurley, Cherstyn	Immunisation and Countermeasures Department, Public Health England , London , GB		12/31/20
A:	Indra Astuti, Santi	The Faculty of Communication Science, Bandung Islamic University (UNISBA) , Bandung , ID		12/31/20
A:	Ishizumi, Atsuyoshi	US Centers for Disease Control and Prevention		12/31/20
A:	Johnson, Neil	George Washington University ,		12/31/20
A:	Johnson Restrepo, Dylan	George Washington University ,		12/31/20
A:	Kajimoto, Masato	The University of Hong Kong		12/31/20
A:	Koyuncu, Aybuke	US Centers for Disease Control and Prevention , Atlanta, GA, US		12/31/20
A:	Kulkarni, Shibani	US Centers for Disease Control and Prevention , Atlanta, GA, US		12/31/20
A:	Lamichhane, Jaya	Department of Infectious Hazards Management, Emergency Preparedness Division, World Health Organization		12/31/20
A:	Lewis, Rosamund	Emergency Preparedness Division, World Health Organization , Geneva , CH		12/31/20
A:	Mahajan, Avichal	Department of Infectious Hazards Management, Emergency Preparedness Division, World Health Organization		12/31/20
A:	Mandil, Ahmed	WHO Regional Office for Eastern Mediterranean		12/31/20
A:	McAweeney, Erin	Graphika , New York, NY, US		12/31/20
A:	Nguyen, Tim	Department of Infectious Hazards Management, Emergency Preparedness Division, World Health Organization		12/31/20

A:	Nunn, Mark	Independent writer and rapporteur , London , GB		12/31/20
A:	Omer, Saad	Yale Institute for Global Health, Yale University		12/31/20
A:	Pagliair, Claudia	Usher Institute, Edinburgh Medical School, University of Edinburgh		12/31/20
A:	Patel, Palak	US Centers for Disease Control and Prevention		12/31/20
A:	Phuong, Lynette	Department of Infectious Hazards Management, Emergency Preparedness Division, World Health Organization		12/31/20
A:	Prybylski, Dimitri	US Centers for Disease Control and Prevention		12/31/20
A:	Rashidian, Arash	WHO Regional Office for Eastern Mediterranean , Cairo , EG		12/31/20
A:	Rempel, Emily	British Columbia Centre for Disease Control , Vancouver, BC, CA		12/31/20
A:	Rubinelli, Sara	University of Lucerne		12/31/20
A:	Sacco, PierLuigi	Harvard University		12/31/20
A:	Schneider, Anton	Office of Infectious Disease, Global Health Bureau, United States Agency for International Development (USAID), Washington, DC, US		12/31/20
A:	Shu, Kai	Illinois Institute of Technology		12/31/20
A:	Smith, Melanie	Graphika , New York, NY, US		12/31/20
A:	Sufehmi, Harry	Masyarakat Anti Fitnah Indonesia (MAFINDO)		12/31/20
A:	Gangcharoensathien, Viroj	International Health Policy Programme, Ministry of Public Health , Bangkok		12/31/20
A:	Terry, Robert	Science Division, World Health Organization ,		12/31/20
A:	Thacker, Naveen	Deep Children Hospital and Research Centre , Gandhidham , IN		12/31/20
A:	Trewinnard, Tom	Fathm , London , GB		12/31/20
A:	Turner, Shannon	Public Health Association of British Columbia , Victoria, BC, CA		12/31/20
A:	Tworek, Heidi	University of British Columbia		12/31/20
A:	Uakkas, Saad	Mohamed V University in Rabat		12/31/20
A:	Wardle, Claire	First Draft News , New York, NY, US		12/31/20
A:	Wassermanm, Herman	University of Cape Town		12/31/20
A:	Wilhelm, Elisabeth	US Centers for Disease Control and Prevention , Atlanta, GA, US		12/31/20
A:	Wurz, Andrea	European Centre for Disease Prevention and Control , Stockholm , SE		12/31/20
A:	Yau, Brian	Department of Regulation and Prequalification, Access to Medicines and Health Products Division, World Health Organization, Geneva , CH		12/31/20
A:	Zhou, Lei	Public Health Emergency Center, Chinese Center for Disease Control and Prevention , Beijing , CN		12/31/20

A:	Purnat, Tina	Department of Digital Health and Innovation, Science Division, World Health Organization, Geneva , CH		12/31/20
A:	Quadri, Nasreen	University of Minnesota		12/31/21
A:	Thielen, Beth	University of Minnesota		12/31/21
A:	Crichlow, Renee	University of Minnesota		12/31/21
A:	Rheault, Michelle	University of Minnesota		12/31/21
A:	Cohen, Elisia	University of Minnesota		12/31/21
A:	Erayil, Serin Edwin	University of Minnesota		12/31/21
A:	Gulleen, Elizabeth	Fred Hutchinson Cancer Research Center		12/31/21
A:	Braman, Jonathan	University of Minnesota		12/31/21
A:	Krohn, Kristina	University of Minnesota		ongoing
A:	Holford, Dawn			6/1/21
A:	Finn, Adam	University of Bristol		6/1/21
A:	Leask, Julie	University of Sydney		6/1/21
A:	Thompson, Angus			6/1/21
A:	Lombardi, Doug	University of Maryland		6/1/21
A:	Al-Rawi, Ahmed	Simon Fraser University		6/1/21
A:	Anderson, Emma C.			6/1/21
A:	Armaos, Konstantinos	University of Lausanne		6/1/21
A:	Betsch, Cornelia	University of Erfurt		6/1/21
A:	Bruns, Hendrik	European Commission's Joint Research Centre		6/1/21
A:	Gavaruzzi, Teresa	University of Padova		6/1/21
A:	Hahn, Ulrike	Birkbeck, University of London		6/1/21
A:	Herzog, Stefan	Senior Research Scientist at Center for Adaptive Decision Making, Max Planck Institute for Human		6/1/21
A:	Juanchich, Marie	University of Essex		6/1/21
A:	Newman, Eryn	The Australian National University		6/1/21
A:	Pennycook, Gordon	University of Regina		6/1/21
A:	Rapp, David	Northwestern University		6/1/21
A:	Sah, Sunita	Cornell University		6/1/21
A:	Sinatra, Gale	University of Southern California		6/1/21
A:	Tapper, Katy	University of London		6/1/21
A:	Porter, Ethan	George Washington University ,		6/1/21
A:	Reifler, Jason	University of Exeter		6/1/21
A:	Wood, Thomas	Ohio State University		6/1/21
A:	Zaragoza, M.			6/1/21
A:	Seifert, C.	University of Michigan		6/1/21
A:	Swire-Thompson, B.	Northeastern University		6/1/21
C:	Tully, Melissa	University of Iowa		ongoing
C:	Bode, Leticia	Georgetown University		ongoing
C:	Young, Rachel	University of Iowa		ongoing
C:	Komen, Leah	University of East London		ongoing
C:	Lomoywara, David B.	Daystar University		ongoing
C:	Madrid-Morales, Dani	The University of Sheffield		ongoing
C:	Brady, Sonya	University of Minnesota		ongoing
C:	Srivastava, Jaideep	University of Minnesota		ongoing
C:	Huling, Jared	University of Minnesota		ongoing
C:	Kaltenborn, Zachary	University of Minnesota		ongoing
C:	Brown, Calla	University of Minnesota		ongoing
C:	Smith, M. Kumi	University of Minnesota		ongoing

C:				
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**B: Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and  
E: Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.**

*to disambiguate common names*

5	Name:	Organizational Affiliation	Journal/Collection	Last Active
B:	Holbert, Lance	Temple University	Journal of Communication	ongoing
B:	Thompson, Teresa	University of Dayton	Health Communication	ongoing
B:	Hargittai, Eszte	University of Zurich	Journal of Quantitative Description	ongoing
B:	Guess, Andy	Princeton University	Journal of Quantitative Description	ongoing
B:	Munger, Kevin	Pennsylvania State University	Journal of Quantitative Description	ongoing
B:	Ellison, Nicole	University of Michigan	Journal of Computer-Mediated Com	ongoing

The following information regarding collaborators and other affiliations (COA) must be separately provided for each individual identified as senior project personnel. The COA information must be provided through use of this COA template.

Please complete this template (e.g., Excel, Google Sheets, LibreOffice), save as .xlsx or .xls, and upload directly as a Fastlane Collaborators and Other Affiliations single copy doc. Do not upload .pdf.

Please note that some information requested in prior versions of the PAPPG is no longer requested. **THIS IS PURPOSEFUL AND WE NO LONGER REQUIRE THIS INFORMATION TO BE REPORTED.** Certain relationships will be reported in other sections (i.e., the names of postdoctoral scholar sponsors should not be reported, however if the individual collaborated on research with their postdoctoral scholar sponsor, then they would be reported as a collaborator). The information in the tables is not required to be sorted, alphabetically or otherwise.

There are five separate categories of information which correspond to the five tables in the COA template:

**COA template Table 1:**

List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

**COA template Table 2:**

List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

**COA template Table 3:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- The individual's Ph.D. advisors; and
- All of the individual's Ph.D. thesis advisees.

**COA template Table 4:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and
- Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

**COA template Table 5:**

List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.

- Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and
- Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.



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This information is used to manage reviewer selection. See Exhibit II-2 for additional information on potential reviewer conflicts.

1 Note that graduate advisors are no longer required to be reported.

2 Editorial Board does not include Editorial Advisory Board, International Advisory Board, Scientific Editorial Board, or any other subcategory of Editorial Board. It is limited to those individuals who perform editing duties or manage the editing process (i.e., editor in chief).

List names as Last Name, First Name, Middle Initial. Additionally, provide email, organization, and department (optional) Fixed column widths keep this sheet one page wide; if you cut and paste text, set font size at 10pt or smaller, and To insert *n* blank rows, select *n* row numbers to move down, right click, and choose Insert from the menu.

You may fill-down (ctrl-D) to mark a sequence of collaborators, or copy affiliations. Excel has arrows that enable sorting. For "Last Active Date" and "Last Active" columns dates are optional, but will help NSF staff easily determine which information remains relevant for reviewer selection.

"Last Active Date" and "Last Active" columns may be left blank for ongoing or current affiliations.

**Table 1:** List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

1	Your Name:	Your Organizational Affiliation(s), last 12 r	Last Active Date
	Sethares, William A	University of Wisconsin-Madison	current

**Table 2:** List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.

*to disambiguate common names*

2	Name:	Type of Relationship	Optional (email, Department)	Last Active
	Schroeder, Fredrick	collaborator and consultant		current

**Table 3:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.

G: The individual's Ph.D. advisors; and

T: All of the individual's Ph.D. thesis advisees.

*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G:	Johnson, C. Richard, Jr.	Cornell University	crj2@cornell.edu

T:	Sun, Zhongkai	Amazon, Inc.	
T:	Sarma, Prathusha	Apple, Inc	
T:	Mohanty, Rosaleena	University of Lund	
T:	Sangari, Arash	3M	
T:	Wu, Mon Ju	University of Southern Texas	
T:	Arora, Raman	Johns Hopkins	
T:	Wen, Chi-Yu	National Chung Hsing University	
T:	Vural, Cabir	Sakarya University	

**Table 4: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:**

**A: Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and**

**C: Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.**

*to disambiguate common names*

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Wagner, Michael	University of Wisconsin-Madison		
A:	Bucy, Eric	Texas Tech		
A:	Friedland, Lewis A.	University of Wisconsin-Madison		
A:	Shah, Dhavan V.	University of Wisconsin-Madison		
A:	Vitale, Wayne	Gamelan Sekar Jaya		
A:	Cramer, Katherine J.	University of Wisconsin-Madison		
A:	Suk, Jiyoun	University of Connecticut		
A:	Lukito, Josephine	University of Texas		
A:	Wells, Chris	Boston University		
A:	Messier, Paul	Yale University		
A:	Prabhakaran, Vivek	University of Wisconsin-Madison		
A:	Knight, Gavin	University of Wisconsin-Madison		
A:	Meedendorp, Teio	Van Gogh Museum		
A:	Tilberg, Louis	Van Gogh Museum		
A:	Malekpour, Sheida	Ford Motor Co.		
A:	Ingle, Atul	Portland State University		
C:	Johnson, C. Richard	Cornell University		
C:	Margaret Ellis	New York University		
C:	Curtain, John	University of Wisconsin-Madison		
C:	Rohe, Karl	University of Wisconsin-Madison	Statistics	
C:	DeChoudhury, Munmun	Geogia Institute of Technology	College of Computing	
C:	Kumar, Srijan	Geogia Institute of Technology	College of Computing	
C:	Jones, Malia	University of Wisconsin-Madison	UW Applied Population Lab	
C:				

**Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief**

**B: Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and**

**E: Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.**

*to disambiguate common names*

5	Name:	Organizational Affiliation	Journal/Collection	Last Active
B:				
B:				
B:				

B:				
E:				

The following information regarding collaborators and other affiliations (COA) must be separately provided for each individual identified as senior project personnel. The COA information must be provided through use of this COA template.

Please complete this template (e.g., Excel, Google Sheets, LibreOffice), save as .xlsx or .xls, and upload directly as a Fastlane Collaborators and Other Affiliations single copy doc. Do not upload .pdf.

Please note that some information requested in prior versions of the PAPPG is no longer requested. **THIS IS PURPOSEFUL AND WE NO LONGER REQUIRE THIS INFORMATION TO BE REPORTED.** Certain relationships will be reported in other sections (i.e., the names of postdoctoral scholar sponsors should not be reported, however if the individual collaborated on research with their postdoctoral scholar sponsor, then they would be reported as a collaborator). The information in the tables is not required to be sorted, alphabetically or otherwise.

There are five separate categories of information which correspond to the five tables in the COA template:

**COA template Table 1:**

List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

**COA template Table 2:**

List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

**COA template Table 3:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- The individual's Ph.D. advisors; and
- All of the individual's Ph.D. thesis advisees.

**COA template Table 4:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and
- Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

**COA template Table 5:**

List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.

- Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and
- Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.

The template has been developed to be fillable, however, the content and format requirements must not be altered by the user. This template must be saved in .xlsx or .xls format, and directly uploaded into FastLane as a Collaborators and Other Affiliations Single Copy Document. Using the .xlsx or .xls format will enable preservation of searchable text that otherwise would be lost. It is therefore imperative that this document be uploaded in .xlsx or .xls only. Uploading a document in any format other than .xlsx or .xls may delay the timely processing and review of the proposal.

This information is used to manage reviewer selection. See Exhibit II-2 for additional information on potential reviewer conflicts.

1 Note that graduate advisors are no longer required to be reported.

2 Editorial Board does not include Editorial Advisory Board, International Advisory Board, Scientific Editorial Board, or any other subcategory of Editorial Board. It is limited to those individuals who perform editing duties or manage the editing process (i.e., editor in chief).

List names as Last Name, First Name, Middle Initial. Additionally, provide email, organization, and department (optional) Fixed column widths keep this sheet one page wide; if you cut and paste text, set font size at 10pt or smaller, and To insert *n* blank rows, select *n* row numbers to move down, right click, and choose Insert from the menu.

You may fill-down (ctrl-D) to mark a sequence of collaborators, or copy affiliations. Excel has arrows that enable sorting. For "Last Active Date" and "Last Active" columns dates are optional, but will help NSF staff easily determine which information remains relevant for reviewer selection.

"Last Active Date" and "Last Active" columns may be left blank for ongoing or current affiliations.

**Table 1:** List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

1	Your Name:	Your Organizational Affiliation(s), last 12 r	Last Active Date
	Dragut, Eduard	Temple University	5/15/2022

**Table 2:** List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.

*to disambiguate common names*

2	Name:	Type of Relationship	Optional (email, Department)	Last Active

**Table 3:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.

G: The individual's Ph.D. advisors; and

T: All of the individual's Ph.D. thesis advisees.

*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G:	Sistla, Prasad	University of Illinois at Chicago	sistla@uic.edu

G:	Yu, Clement	University of Illinois at Chicago	yu@cs.uic.edu
T:	Aljebreen, Abdullah	Temple University	aaljebreen@temple.edu
T:	Chen, Zhijia	Temple University	zhijia.chen@temple.edu
T:	He, Lihong	IBM Research	lihong.he@temple.edu
T:	Liu, Xiaoqiog	Temple University	xiaoqiong.liu@temple.edu
T:	Shen, Chen	ADP	tuf95925@temple.edu
T:	Schneider, Andrew	Temple University	tue82238@temple.edu
T:	West, Michael	Temple University	michael.west0004@temple.edu
T:	Zhang, Qi	Temple University	qi.zhang@temple.edu

**Table 4: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:**

**A: Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and**

**C: Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.**

*to disambiguate common names*

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Aref, Walid	Purdue University	aref@cs.purdue.edu	
C:	Bertino, Elisa	Purdue University	bertino@purdue.edu	
C:	Caragea, Cornelia	University of Illinois at Chicago	cornelia@uic.edu	
A:	Dong, Luna	Amazon Inc.	lunadong@amazon.com	
A:	Fellbaum, Christiane	Princeton University	fellbaum@princeton.edu	
C:	Guo, Yuhong	Temple University	yuhong@temple.edu	
C:	Latecki, Longin	Temple University	latecki@temple.edu	
A:	Meng, Weiyi	SUNY at Binghamton	meng@binghamton.edu	
A:	Mukherjee, Arjun	University of Houston	arjun@cs.uh.edu	
C:	Obradovic, Zoran	Temple University	zoran.obradovic@temple.edu	
A:	Si, Luo	Purdue University	lsi@purdue.edu	9/15/13
A:	Sistla, Prasad	University of Illinois at Chicago	sistla@uic.edu	11/1/16
C:	Vucetic, Slobodan	Temple University	vucetic@temple.edu	
A:	Wang, Anduo	Temple University	adw@temple.edu	2/15/18
A:	Yu, Clement	University of Illinois at Chicago	yu@cs.uic.edu	9/20/16

**Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.**

**B: Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and**

**E: Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.**

*to disambiguate common names*

5	Name:	Organizational Affiliation	Journal/Collection	Last Active
B:	Bertino, Elisa	Purdue University	WIRES Data Mining and Knowledge D	4/20/2019
B:	Lin, Xuemin	University of New South Wales	TKDE	1/18/21

The following information regarding collaborators and other affiliations (COA) must be separately provided for each individual identified as senior project personnel. The COA information must be provided through use of this COA template.

Please complete this template (e.g., Excel, Google Sheets, LibreOffice), save as .xlsx or .xls, and upload directly as a Fastlane Collaborators and Other Affiliations single copy doc. Do not upload .pdf.

If there are more than 10 individuals designated as senior project personnel on the proposal, or if there are print preview issues, each completed template must be saved as a .txt file [select the Text (Tab Delimited) option] rather than as an .xlsx or .xls file. This format will still enable preservation of searchable text and avoid delays in processing and review of the proposal.

Please note that some information requested in prior versions of the PAPPG is no longer requested. **THIS IS PURPOSEFUL AND WE NO LONGER REQUIRE THIS INFORMATION TO BE REPORTED.** Certain relationships will be reported in other sections (i.e., the names of postdoctoral scholar sponsors should not be reported, however if the individual collaborated on research with their postdoctoral scholar sponsor, then they would be reported as a collaborator). The information in the tables is not required to be sorted, alphabetically or otherwise.

There are five separate categories of information which correspond to the five tables in the COA template:

**COA template Table 1:**

List the individual's last name, first name, middle initial, and organizational affiliation (including considered affiliation) in the last 12 months.

**COA template Table 2:**

List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

**COA template Table 3:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- The individual's Ph.D. advisors; and
- All of the individual's Ph.D. thesis advisees.

**COA template Table 4:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and
- Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

**COA template Table 5:**

List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.

- Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and
- Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.

The template has been developed to be fillable, however, the content and format requirements must not be altered by the user. This template must be saved in .xlsx or .xls format, and directly uploaded into FastLane as a Collaborators and Other Affiliations Single Copy Document. Using the .xlsx or .xls format will enable preservation of searchable text that otherwise would be lost. It is therefore imperative that this document be uploaded in .xlsx or .xls only. Uploading a document in any format other than .xlsx or .xls may delay the timely processing and review of the proposal.

This information is used to manage reviewer selection. See Exhibit II-2 for additional information on potential reviewer conflicts.

1 Note that graduate advisors are no longer required to be reported.

2 Editorial Board does not include Editorial Advisory Board, International Advisory Board, Scientific Editorial Board, or any other subcategory of Editorial Board. It is limited to those individuals who perform editing duties or manage the editing process (i.e., editor in chief).

List names as Last Name, First Name, Middle Initial. Additionally, provide email, organization, and department (optional) Fixed column widths keep this sheet one page wide; if you cut and paste text, set font size at 10pt or smaller, and To insert *n* blank rows, select *n* row numbers to move down, right click, and choose Insert from the menu.

You may fill-down (ctrl-D) to mark a sequence of collaborators, or copy affiliations. Excel has arrows that enable sorting. For "Last Active Date" and "Last Active" columns dates are optional, but will help NSF staff easily determine which information remains relevant for reviewer selection.

"Last Active Date" and "Last Active" columns may be left blank for ongoing or current affiliations.

**Table 1:** List the individual's last name, first name, middle initial, and organizational affiliation (including considered affiliation) in the last 12 months.

1	Your Name:	Your Organizational Affiliation(s), last 12 r	Last Active Date
	Bode, Leticia D	Georgetown University	

**Table 2:** List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.

*to disambiguate common names*

2	Name:	Organizational Affiliation	Optional (email, Department)	Last Active

**Table 3:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.

G: The individual's Ph.D. advisors; and

T: All of the individual's Ph.D. thesis advisees.

*to disambiguate common names*

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G:	Shah, Dhavan V	University of Wisconsin	



	Kim, Young Mie	University of Wisconsin	
	McLeod, Douglas	University of Wisconsin	
	Franklin, Charles	Marquette University	
	Cramer, Katherine	University of Wisconsin	

**Table 4: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:**

**A: Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and**

**C: Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.**

*to disambiguate common names*

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Vraga, Emily K	University of Minnesota		ongoing
A:	Edgerly, Stephanie	Northwestern University		ongoing
A:	Thorson, Kjerstin	Michigan State University		ongoing
A:	Thorson, Esther	Michigan State University		ongoing
A:	Becker, Amy	Loyola University		ongoing
A:	Troller-Renfree, Sonya	Columbia University		ongoing
A:	Jones, Meg	Georgetown University		ongoing
A:	Wells, Christopher	Boston University		ongoing
A:	Cramer, Katherine	University of Wisconsin		2/1/17
A:	Wagner, Michael W.	University of Wisconsin		2/1/17
A:	Alvarez, German	n/a		2/1/17
A:	Friedland, Lewis A.	retired		2/1/17
A:	Shah, Dhavan V.	University of Wisconsin		ongoing
A:	Gabay, Itay	University of Louisville		2/1/17
A:	Franklin, Charles	Marquette University		2/1/17
A:	Smithson, Anne-Bennett	University of Maryland		ongoing
A:	Epstein, Ben	DePaul University		ongoing
A:	Mirer, Michael	University of Wisconsin - Milwaukee		ongoing
A:	Johnson, Courtney N.	Pew Research		11/1/18
A:	Konieczna, Magda	Concordia University		11/1/18
A:	Bard, Mitchell	Iona College		11/1/18
A:	Hildebrandt, Tim	LSE		ongoing
A:	Ng, Jessica	N/A		ongoing
A:	Connolly, Jennifer	University of Miami		ongoing
A:	Tully, Melissa	University of Iowa		ongoing
A:	Suk, Jiyoun	University of Wisconsin		ongoing
A:	Pevehouse, Jon	University of Wisconsin		ongoing
A:	Kim, Sojung	George Mason University		ongoing
A:	Cook, John	Monash University		ongoing
A:	Kawintiranon, Kornraphol	Georgetown University		ongoing
A:	Singh, Lisa	Georgetown University		ongoing
A:	Budak, Ceren	University of Michigan		ongoing
C:	Tully, Melissa	University of Iowa		ongoing
C:	Vraga, Emily K	University of Minnesota		ongoing
C:	Traugott, Mike	University of Michigan		ongoing
C:	Ragunathan, Trivellore	University of Michigan		ongoing
C:	Budak, Ceren	University of Michigan		ongoing

C:	Ladd, Jonathan	Georgetown University		ongoing
C:	Mneimneh, Zeina	N/A		ongoing
C:	Pasek, Josh	University of Michigan		ongoing
C:	Singh, Lisa	Georgetown University		ongoing
C:	Ryan, Rebecca	Georgetown University		ongoing
C:	Suroka, Stuart	UCLA		ongoing
C:	Davis-Kean, Pamela	University of Michigan		ongoing
C:	Lomoywara, David	Daystar University		ongoing
C:	Madrid-Morales, Dani	University of Houston		ongoing
C:	Rachel Young	University of Iowa		ongoing
C:	Komen, Leah	Daystar University		ongoing

**Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief**

**B: Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and**

**E: Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.**

*to disambiguate common names*

5	Name:	Organizational Affiliation	Journal/Collection	Last Active
B:	Papacharissi, Zizi	University of Illinois - Chicago	Social Media and Society	ongoing
B:	Mike Schmierbach	Pennsylvania State University	Mass Communication and Society	ongoing
B:	R Lance Holbert	Temple University	Journal of Communication	ongoing
B:	Regina Lawrence	Oregon	Political Communication	ongoing
B:	Andy Guess, Eszter Hargitta	Princeton, Zurich, Penn State	Journal of Quantitative Description	ongoing
B:	Lauren Copeland, Jason Gai	Baldwin Wallace, Louisville, Oakland	Journal of Information Technology a	ongoing

The following information regarding collaborators and other affiliations (COA) must be separately provided for each individual identified as senior project personnel. The COA information must be provided through use of this COA template.

Please complete this template (e.g., Excel, Google Sheets, LibreOffice), save as .xlsx or .xls, and upload directly as a Fastlane Collaborators and Other Affiliations single copy doc. Do not upload .pdf.

Please note that some information requested in prior versions of the PAPPG is no longer requested. **THIS IS PURPOSEFUL AND WE NO LONGER REQUIRE THIS INFORMATION TO BE REPORTED.** Certain relationships will be reported in other sections (i.e., the names of postdoctoral scholar sponsors should not be reported, however if the individual collaborated on research with their postdoctoral scholar sponsor, then they would be reported as a collaborator). The information in the tables is not required to be sorted, alphabetically or otherwise.

There are five separate categories of information which correspond to the five tables in the COA template:

**COA template Table 1:**

List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

**COA template Table 2:**

List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

**COA template Table 3:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- The individual's Ph.D. advisors; and
- All of the individual's Ph.D. thesis advisees.

**COA template Table 4:**

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

- Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and
- Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

**COA template Table 5:**

List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.

- Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and
- Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 months.

The template has been developed to be fillable, however, the content and format requirements must not be altered by the user. This template must be saved in .xlsx or .xls format, and directly uploaded into FastLane as a Collaborators and Other Affiliations Single Copy Document. Using the .xlsx or .xls format will enable preservation of searchable text that otherwise would be lost. It is therefore imperative that this document be uploaded in .xlsx or .xls only. Uploading a document in any format other than .xlsx or .xls may delay the timely processing and review of the proposal.

This information is used to manage reviewer selection. See Exhibit II-2 for additional information on potential reviewer conflicts.

1 Note that graduate advisors are no longer required to be reported.

2 Editorial Board does not include Editorial Advisory Board, International Advisory Board, Scientific Editorial Board, or any other subcategory of Editorial Board. It is limited to those individuals who perform editing duties or manage the editing process (i.e., editor in chief).

List names as Last Name, First Name, Middle Initial. Additionally, provide email, organization, and department (optional) Fixed column widths keep this sheet one page wide; if you cut and paste text, set font size at 10pt or smaller, and To insert *n* blank rows, select *n* row numbers to move down, right click, and choose Insert from the menu.

You may fill-down (ctrl-D) to mark a sequence of collaborators, or copy affiliations. Excel has arrows that enable sorting. For "Last Active Date" and "Last Active" columns dates are optional, but will help NSF staff easily determine which information remains relevant for reviewer selection.

"Last Active Date" and "Last Active" columns may be left blank for ongoing or current affiliations.

**Table 1:** List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

1	Your Name:	Your Organizational Affiliation(s), las	Last Active Date
	Shah, Dhavan	University of Wisconsin-Madison	

**Table 2:** List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.

R: Additional names for whom some relationship would otherwise preclude their service as a reviewer.  
to disambiguate common names

2	Name:	Type of Relationship	Optional (email, Department)	Last Active

**Table 3:** List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following.

G: The individual's Ph.D. advisors; and  
T: All of the individual's Ph.D. thesis advisees.

to disambiguate common names

3	Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
G:	Wackman, Daniel	University of Minnesota	
T:	Suk, Jiyoun	University of Connecticut	
T:	Hwang, Juwon	Oklahoma State University	
T:	Hills, Ornella	Andrews University	
T:	Zhang, Yini	State University of New York at Buffalo	
T:	Kornfield, Rachel	Northwestern University	
T:	Yang, Jung-Hwan	University of Illinois, Urbana-Champaign	
T:	Moon, Tae-Joon	University of Texas, San Antonio	
T:	Yoo, Woohyun	Incheon National University	
T:	Mclaughlin, Bryan	Texas Tech University	
T:	Wang, Ming	University of Nebraska	
T:	Edgerly, Stephanie	Northwestern University	

T:	Bode, Leticia	Georgetown University
T:	Namkoong, Kang	University of Maryland
T:	Kim, Sojung	George Mason University
T:	Vraga, Emily	University of Minnesota
T:	Bu, Q. Lisa	TED
T:	Thorson, Kjerstin	Michigan State University
T:	Borah, Porismita	Washington State University
T:	Veenstra, Aaron	Florida Atlantic University
T:	Atkinson, Lucy	University of Texas at Austin
T:	Pingree, Ray	Louisiana State University
T:	Scholl, Rosanne	Mozilla/Firefox
T:	Hwang, Hyunseo	Samsung
T:	Gil de Zuniga, Homero	University of Salamanca & Pennsylvania State University
T:	Nah, Seungahn	University of Oregon
T:	Cho, Jaeho	University of California, Davis
T:	Rojas, Hernando	University of Wisconsin-Madison
T:	Keum, Heejo	Sungkyunkwan University
T:	Schmierbach, Michael	Pennsylvania State University

**Table 4: List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:**

- A: **Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and**
- C: **Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.**

*to disambiguate common names*

4	Name:	Organizational Affiliation	Optional (email, Department)	Last Active
A:	Abhishek, Aman	University of Wisconsin-Madison		
A:	Ahn, So Yun	University of Wisconsin-Madison		
A:	Akhtar, Wajih Z	University of Wisconsin-Madison		
A:	Baker, Timothy	University of Wisconsin-Madison		
A:	Borah, Porismita	Washington State University		
A:	Brauer, Markus	University of Wisconsin-Madison		
A:	Brown, Randall	University of Wisconsin-Madison		
A:	Bucy, Erik P.	Texas Tech University		
A:	Burnside, Elizabeth	University of Wisconsin-Madison		
A:	Campbell, Claire Elise	University of Wisconsin-Madison		
A:	Chen, Junhan	University of Maryland		
A:	Chih, Ming-Yuan	University of Kentucky		
A:	Cody, Olivia J.	University of Wisconsin-Madison		
A:	Correa, Teresa	Universidad Diego Portales		
A:	Cramer, Katherine J.	University of Wisconsin-Madison		
A:	Curtin, John J.	University of Wisconsin-Madison		
A:	Dempsey, Sadie	University of Wisconsin-Madison		
A:	Dietz, Sarah	University of Wisconsin-Madison		
A:	Doroshenko, Larissa	Northeastern University		
A:	El-Bassel, Nabila	University of Wisconsin-Madison		
A:	Foley, Jordan M.	Washington State University		
A:	Franklin, Charles	Marquette University		
A:	Friedland, Lewis A.	University of Wisconsin-Madison		
A:	Garino, Natalie	University of Wisconsin-Madison		
A:	Garlough, Christine	University of Wisconsin-Madison		
A:	Ghosh, Shreenita	University of Wisconsin-Madison		
A:	Gill, Emma K	University of Wisconsin-Madison		
A:	Guan, Mengfei	University of Wisconsin-Madison		
A:	Gustafson, David H Sr	University of Wisconsin-Madison		

A:	Gustafson, David H. Jr	University of Wisconsin-Madison		
A:	Han, Jeong Yeob	University of Georgia		
A:	Hawkins, Robert P.	University of Wisconsin-Madison		
A:	Hills, Ornella	University of Wisconsin-Madison		
A:	Hochstatter, Karli R	Columbia University		
A:	Hughes, Ceri	Cardiff University		
A:	Hwang, Juwon	University of Wisconsin-Madison		
A:	Jiang, Xiaoya	University of Wisconsin-Madison		
A:	Johnston, Darcie C	University of Wisconsin-Madison		
A:	Kim Sang, Jung	University of Wisconsin-Madison		
A:	Kim, Eunkyung	University of Wisconsin-Madison		
A:	Kim, Sojung	George Mason University		
A:	Ko, Dami	Northeastern University		
A:	Kornfield, Rachel	Northwestern University		
A:	Krechel, Sarah	University of Wisconsin-Madison		
A:	Landucci, Gina	University of Wisconsin-Madison		
A:	Liebert, Cameron	University of Wisconsin-Madison		
A:	Little, Terry	University of Wisconsin-Madison		
A:	Liu, Yan	Shanghai University		
A:	Lukito, Josephine	University of Texas-Austin		
A:	Mahoney, Jane E.	University of Wisconsin-Madison		
A:	Mares, Marie Louise	University of Wisconsin-Madison		
A:	Maus, Adam	University of Wisconsin-Madison		
A:	McLeod, Douglas	University of Wisconsin-Madison		
A:	McTavish, Fiona	University of Wisconsin-Madison		
A:	Mi, Ranran Zhu	University of Wisconsin-Madison		
A:	Miller, Rebecca	University of Wisconsin-Madison		
A:	Moon, Tae Joon	University of Texas-San Antonio		
A:	Myung, Eunyoung	University of Wisconsin-Madison		
A:	Pe-Romashko, Klaren	University of Wisconsin-Madison		
A:	Pelled, Ayellet	University of Wisconsin-Madison		
A:	Pevehouse, Jon C.	University of Wisconsin-Madison		
A:	Sarma, Prathusha	Apple		
A:	Sethares, William	University of Wisconsin-Madison		
A:	Shaw, Bret R.	University of Wisconsin-Madison		
A:	Su, Min-Hsin	University of Wisconsin-Madison		
A:	Suk, Jiyoun	University of Wisconsin-Madison		
A:	Sun, Zhongkai	Amazon		
A:	Tahk, Alexander	University of Wisconsin-Madison		
A:	Toma, Catalina	University of Wisconsin-Madison		
A:	Tong, Chau	University of Wisconsin-Madison		
A:	Wagner, Michael W.	University of Wisconsin-Madison		
A:	Wells, Chris	Boston University		
A:	Westergaard, Ryan P.	University of Wisconsin-Madison		
A:	Yang, Ellie Fan	University of Wisconsin-Madison		
A:	Yang, JungHwan	University of Illinois-Urbana Champaign		
A:	Yoo, Woohyun	Incheon National University		
A:	Zhang, Yini	University of Wisconsin-Madison		
C:	Baker, Timothy	University of Wisconsin-Madison		
C:	Borah, Porismita	Washington State University		
C:	Brown, Randall T.	University of Wisconsin-Madison		
C:	Burnside, Elizabeth	University of Wisconsin-Madison		
C:	Cavazos-Rehg, Patricia	Washington University in St. Louis		
C:	Cox, Jennifer R.	University of Wisconsin-Madison		
C:	Cramer, Katherine	University of Wisconsin-Madison		

C:	Curtin, John	University of Wisconsin-Madison		
C:	DeChoudhury, Munmun	Geogia Institute of Technology		
C:	DuBenske, Lori	University of Wisconsin-Madison		
C:	Friedland, Lewis	University of Wisconsin-Madison		
C:	Glass, Joe	Kaiser Permanente Washington Health Research Institute		
C:	Gustafson David H.	University of Wisconsin-Madison		
C:	Gustafson, David H.	University of Wisconsin-Madison		
C:	Huang, Qunying	University of Wisconsin-Madison		
C:	Jho, Whasun	Yonsei University		
C:	Johnson, Kimberly	University of South Florida		
C:	Jones, Malia	University of Wisconsin-Madison		
C:	Kornfield, Rachel	Northwestern University		
C:	Kumar, Srijan	Geogia Institute of Technology		
C:	Mahoney, Jane	University of Wisconsin-Madison		
C:	Mares, Marie-Louise	University of Wisconsin-Madison		
C:	Mares, Marie-Louise	University of Wisconsin-Madison		
C:	Quanbeck, Andrew	University of Wisconsin-Madison		
C:	Rohe, Karl	University of Wisconsin-Madison		
C:	Rosser, Sasha	University of Wisconsin-Madison		
C:	Schneider David	University of Wisconsin-Madison		
C:	Schrager, Sarina B.	University of Wisconsin-Madison		
C:	Sethares, William	University of Wisconsin-Madison		
C:	Wagner, Michael	University of Wisconsin-Madison		
C:	Wells Chris	Boston University		
C:	Westergaard, Ryan	University of Wisconsin-Madison		
C:	Yang, Sijia	University of Wisconsin-Madison		

**Table 5: List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-**  
**B: Editorial Board: List name(s) of editor-in-chief and journal in the past 24 months; and**  
**E: Other co-Editors of journal or collections with whom the individual has directly interacted in the last 24 mont**  
*to disambiguate common names*

5	Name:	Organizational Affiliation	Journal/Collection	Last Active
B:	Guess, Andy	Princeton University	Journal of Quantitative Description: Digital Media	
B:	Hargittai, Eszter	University of Zurich	Journal of Quantitative Description: Digital Media	
B:	Munger, Kevin	Pennsylvania State University	Journal of Quantitative Description: Digital Media	
B:	Plothe, Theo	Savannah State University	Journal of Communication Technology	
B:	Wu, Linwan	University of South Carolina	Journal of Communication Technology	
B:	Vincent, Cindy	Salem State University	Journal of Communication Technology	
B:	Cole, Sara	Towson University	Journal of Communication Technology	
B:	Morar, David	George Washington University	Journal of Communication Technology	
B:	Kreiss, Daniel	University of North Carolina	Journalism and Political Communication Unbound - Oxford University Press Series	
B:	Usher, Nikki	University of Illinois	Journalism and Political Communication Unbound - Oxford University Press Series	

B:	Huang, Yi-Hui Christine	City University of Hong Kong	Communication and the Public	
B:	Hong, Yu	Zhejiang University	Communication and the Public	
B:	Brewer, Paul R.	University of Delaware	International Journal of Public Opinion Research	
B:	Xenos, Michael A.	University of Wisconsin	International Journal of Public Opinion Research	
E:	Yariv Tesfadi	University of Haifa	Human Communication	
E:	Sandra Gonzalez-Balio	University of Pennsylvania	International Journal of Press/Politics	





## CERTIFICATION PAGE

### Certification for Authorized Organizational Representative (or Equivalent)

By electronically signing and submitting this proposal, the Authorized Organizational Representative (AOR) is: (1) certifying that statements made herein are true and complete to the best of his/her knowledge; and (2) agreeing to accept the obligation to comply with NSF award terms and conditions if an award is made as a result of this application. Further, the applicant is hereby providing certifications regarding conflict of interest (when applicable), flood hazard insurance (when applicable), responsible conduct of research, and organizational support as set forth in the NSF Proposal & Award Policies & Procedures Guide (PAPPG). Willful provision of false information in this application and its supporting documents or in reports required under an ensuing award is a criminal offense (U. S. Code, Title 18, §1001).

### Certification Regarding Conflict of Interest

The AOR is required to complete certifications stating that the organization has implemented and is enforcing a written policy on conflicts of interest (COI), consistent with the provisions of PAPPG Chapter IXA; and that, to the best of his/her knowledge, all financial disclosures required by the conflict of interest policy were made; and that conflicts of interest, if any, were, or prior to the organizations expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the organizations conflict of interest policy. Conflicts that cannot be satisfactorily managed, reduced or eliminated and research that proceeds without the imposition of conditions or restrictions when a conflict of interest exists, must be disclosed to NSF via use of the Notifications and Requests Module in FastLane.

### Certification Regarding Flood Hazard Insurance

Two sections of the National Flood Insurance Act of 1968 (42 USC §4012a and §4106) bar Federal agencies from giving financial assistance for acquisition or construction purposes in any area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards unless the:

- (1) community in which that area is located participates in the national flood insurance program; and
- (2) building (and any related equipment) is covered by adequate flood insurance.

By electronically signing the Certification Pages, the Authorized Organizational Representative (or equivalent) located in FEMA-designated special flood hazard areas is certifying that adequate flood insurance has been or will be obtained in the following situations:

- (1) for NSF grants for the construction of a building or facility, regardless of the dollar amount of the grant; and
- (2) for other NSF grants when more than \$25,000 has been budgeted in the proposal for repair, alteration or improvement (construction) of a building or facility.

### Certification Regarding Responsible Conduct of Research (RCR)

(This certification is not applicable to conference proposals.)

By electronically signing the Certification Pages, the Authorized Organizational Representative is certifying that, in accordance with the NSF Proposal & Award Policies & Procedures Guide, Chapter IX.B., the institution has a plan in place to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students and postdoctoral researchers who will be supported by NSF to conduct research.

The AOR shall require that the language of this certification be included in any award documents for all subawards at all tiers.

### Certification Regarding Organizational Support

By electronically signing the Certification Pages, the Authorized Organizational Representative (or equivalent) is certifying that there is organizational support for the proposal as required by Section 526 of the America COMPETES Reauthorization Act of 2010. This support extends to the portion of the proposal developed to satisfy the Broader Impacts Review Criterion as well as the Intellectual Merit Review Criterion, and any additional review criteria specified in the solicitation. Organizational support will be made available, as described in the proposal, in order to address the broader impacts and intellectual merit activities to be undertaken.

### Certification Regarding Dual Use Research of Concern

By electronically signing the certification pages, the Authorized Organizational Representative is certifying that the organization will be or is in compliance with all aspects of the United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern.

### Certification Regarding the Meeting Organizer's Written Policy or Code-of-Conduct that Addresses Sexual Harassment, Other Forms of Harassment, and Sexual Assault

(This certification is only applicable to travel proposals)

By electronically signing the Cover Sheet, the AOR is certifying that prior to the proposer's participation in the meeting, the proposer will assure that the meeting organizer has a written policy or code-of-conduct that addresses sexual harassment, other forms of harassment, and sexual assault, and that includes clear and accessible means of reporting violations of the policy or code-of-conduct. The policy or code-of-conduct must address the method for making a complaint as well as how any complaints received during the meeting will be resolved. The proposer is not required to submit the meeting organizer's policy or code-of-conduct for review by NSF.

### Certification Regarding Family Leave Status (or equivalent)

(This certification is only applicable to career-life balance supplemental funding requests)

By electronically signing the certification pages, the Authorized Organizational Representative hereby certifies that the request for a technician (or equivalent) is because the (PI/co-PI/senior personnel/ NSF Graduate Research Fellow/postdoctoral researcher/graduate student) is, or will be, on family leave status (or equivalent) from the organization in accordance with the organization's policies. The Authorized Organizational Representative also affirms that the organization is able to fill the position for which funding is being requested, in an appropriate timeframe.

AUTHORIZED ORGANIZATIONAL REPRESENTATIVE		SIGNATURE	DATE
NAME <b>Teresa M Kidd</b>		<b>Electronic Signature</b>	<b>May 25 2022 1:30PM</b>
TELEPHONE NUMBER	EMAIL ADDRESS <b>tkidd@wisc.edu</b>	FAX NUMBER	

## PROJECT SUMMARY

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### **Overview:**

Democracy and public health in the United States are in crisis. These twin crises are exemplified by two major public problems: 1) vaccine hesitancy related to the COVID-19 pandemic, hindering vaccination and spilling over to other domains (e.g., flu vaccines) and 2) skepticism regarding American election integrity. These crises have resulted in 200,000 excess deaths after COVID-19 vaccines became available due to low uptake rates, especially among Black, Hispanic and Native American people, and concerted attempts to overturn the 2020 United States presidential election, culminating in an attack on the US Capitol. Networks of misinformation production and diffusion on social media platforms are ground zero for the creation, sharing, and uptake of content that spurs election skepticism and vaccine hesitancy. Journalists reported to us in Phase I that while they are trying to tame the misinformation tide, they are overwhelmed by what to check, how to effectively correct misinformation and target misinformation networks, and how to evaluate their interventions. To address these twin crises, we propose Course Correct, our innovative, four-step method to detect, test, verify, and field test a system to counter real-world misinformation flows. We propose to (1) extend our computational work to detect misinformation, using multimodal signal detection of linguistic and visual features surrounding vaccine hesitancy and electoral skepticism, coupled with network analytic methods to pinpoint key misinformation diffusers and consumers; (2) further develop A/B-tested correction strategies against misinformation, such as observational correction, using ad promotion infrastructure and randomized message delivery to optimize efficacy for countering misinformation; (3) disseminate and evaluate the effectiveness of evidence-based corrections using various scalable intervention techniques available through social media platforms by conducting a series of randomized control trials within affected networks, focusing on diffusers, not producers of misinformation and whether our intervention system can reduce misinformation uptake and sharing; and (4) scale Course Correct into local, national, and international newsrooms, guided by our interviews and ongoing collaborations with journalists, as well as tech developers and software engineers.

### **Intellectual Merit:**

The Intellectual Merit of our project springs from the insight that the problems of both vaccine hesitancy and electoral skepticism emerge from a common set of sources: a) declines in the trust that many citizens have in political processes, public institutions, and the news media; b) accumulation of misperceptions where the acceptance of one piece of misinformation often reliably predicts the endorsement of other misinformation; c) an active online group of merchants of doubt, often driven by ideological extremism and empowered by social media recommendation algorithms, and d) growing cadres of micro-influencers within online communities who, often unintentionally, play an outsized role in fueling the spread of misinformation. Despite the rapid development, testing, approval, and delivery of safe, reliable, and effective COVID-19 vaccines, 34.5 percent of Americans are not vaccinated. Despite a clear and transparent result, several recounts, audits, and lawsuits concerning the 2020 presidential election, 40 percent of Americans do not believe the result. Good science and good electoral administration alone are not enough to foster trust in health and political institutions, outcomes, and behaviors. Converging approaches across communication, social platforms, computer science, politics, and journalism are necessary to show which networks and actors spread falsehoods, and which strategies work best for reducing sharing and endorsement behaviors on social media that amplify misinformation.

### **Broader Impacts:**

The Broader Impacts of the project include delivering: 1) Course Correct: an interactive system that enables reporters to detect high-priority misinformation topics and the underlying networks where they flow, perform rapid-response randomized testing of fact-checks, and monitor their real-time performance, 2) the underlying code, survey instruments, and databases of labeled and curated messages to share publicly, 3) evidence-based corrective messages of immediate utility to public health and electoral professionals, 4) training of research personnel and journalists in interdisciplinary topics of global and practical significance, and 5) papers and presentations that will share our findings and conclusions with the academic and broader community.

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## Project Description

### A. Objectives and Significance of the Proposed Activity

Democracy and public health in the United States are in crisis. These twin crises are exemplified by two major public problems: (1) vaccine hesitancy related to the COVID-19 pandemic, hindering COVID-19 vaccination and spilling over to other domains (e.g., flu vaccines) and (2) widespread skepticism about American election integrity, focusing on the 2020 Presidential race and now extending to state and local elections. These crises have resulted in 200,000 excess deaths after COVID-19 vaccines became available due to low uptake rates, especially among Black, Hispanic and Native American people *and* concerted attempts to overturn the 2020 United States presidential election, culminating in an attack on the US Capitol. Networks of misinformation production and diffusion on social media platforms are ground zero for the creation, sharing, and uptake of content that spurs vaccine hesitancy and election skepticism.

Journalists reported to us in Phase I that while they are trying to tame the misinformation tide, they are overwhelmed by what to check, how to effectively correct misinformation, and how to evaluate their interventions. They increasingly recognize that focusing on fact-checking claims from politicians exposes them to claims of partisan bias<sup>1</sup>. Likewise, when social media platforms restrict content or ban accounts, they face critiques concerning prior restraint of speech, which Americans across the ideological spectrum overwhelmingly oppose. As such, a misinformation intervention system that can respond in “real-time” to the free flow of information on social media platforms has the potential to avoid concerns about partisan political bias by: (1) detecting the most visible misinformation threats being shared and endorsed on social media, (2) providing tested correction strategies delivered in content produced by professional journalists, and (3) directing these messages to the online communities most affected by erroneous claims by countering misinformation diffusers that erode trust in information systems.

To meet this challenge and address these twin crises, we propose *Course Correct*, our innovative, four-step approach to detect, test, verify, and field test a system to counter real-world misinformation flows. Our Phase II project has four major aims: (1) extend our use of computational means to detect misinformation, using multimodal signal detection of linguistic and visual features surrounding electoral skepticism and vaccine hesitancy, coupled with network analytic methods to pinpoint key misinformation diffusers and consumers; (2) continue developing A/B-tested correction strategies against misinformation, such as observational correction, using ad promotion infrastructure and randomized message delivery to optimize efficacy for countering misinformation; (3) disseminate and evaluate the effectiveness of evidence-based corrections using various scalable intervention techniques available, such as sponsored content, through social media platforms by conducting a series of small, randomized control trials (RCTs) within affected networks, focusing on diffusers, not producers of misinformation and whether our intervention system can reduce the misinformation uptake and sharing within their social media networks; and (4) scale *Course Correct* into local, national, and international newsrooms, guided by dozens of interviews and ongoing collaborations with journalists, as well as tech developers and entrepreneurs. Rather than focusing on platform restriction and fact-checking partisan political elites, *Course Correct* will help journalists, and ultimately public health and election administration officials, to see what misinformation is circulating on social platforms and to quickly test correction strategies within the online communities most in need of seeing those corrections so that they are exposed to the verifiable truth.

The time is right to pursue this work. Public interest in misinformation correction is high<sup>2</sup>. Journalists recognize misinformation correction as a prestigious and valuable enterprise, with institutional investment growing<sup>3</sup>. A sizable network of news organizations are devoted to combating misinformation, many of which have agreed to join with us in the Phase II grant to develop the Course Correct system. These include international (International Fact-Checking Network - IFCN), national (Snopes), state (Wisconsin Center for Investigative Journalism - WCIJ), and local (The Capital Times) partners. Feedback from these partners will be integrated into the development of our system.

**Innovative Features of the Proposed Project:** Our Phase I work demonstrated the importance of effective detection of actors instrumental in recurrent misinformation amplification within affected networks *and* rapid-cycle A/B testing to optimize corrections in “real time” for network-targeted interventions to be used in concert with “evergreen” (i.e., non-content specific) strategies. Verifying and

scaling up the underlying system are the next steps in Phase II. Continuing our Phase I work on detection and testing, we will also work to verify whether Course Correct reduces misinformation diffusion in affected networks by designing and fielding RCTs in targeted networks to justify investments in sponsored content intervention. With these pieces in place, we will combine the component elements into the unified system for implementation into newsrooms, doing so with attention to journalists and editors demanding workflows and reliance on trusted information tools. Our process is detailed below.

***Network Detection of Misinformation and its Spread:*** To address Aim 1, we will continue our work from Phase I, using multimodal signal detection to develop a curated dataset and machine learning classifiers to discern social media posts related to COVID-19 vaccine hesitancy and adoption of misinformation about election integrity, along with the spreaders and consumers of misinformation.

We have begun creating a corpus of millions of public content on our two topics: posts, images, videos, and URLs shared on popular social media and information platforms, including, but not limited to, Twitter, Reddit, and YouTube. In Phase II, we will consult with our Advisory Board member, Dr. Kate Blackburn at TikTok to explore adding TikTok data collection. The data collection, which has already started, will span from January 2019 to January 2023. We focus our data collection on content about (1) election administration in the U.S. 2020 generally and a secondary focus on the 2022 midterm elections and (2) COVID-19, specifically, vaccine hesitancy. In Phase I, using the respective platforms' Application Programming Interfaces (APIs), we have collected data about COVID-19 vaccine misinformation, including false claims that vaccines cause infertility and COVID-19 was caused by 5G<sup>4</sup>. The data collection will continue to be done via a snowball sampling technique where we begin the collection with seed relevant keywords (identified with expert consultation) and then expand it with their co-occurring terms. With this corpus, we will continue to develop machine learning techniques to accurately detect electoral administration and COVID-19 related content that is directly related to attitudes about the veracity of the elections we target and the effectiveness and safety of the COVID-19 vaccines. Since all posts that contain a certain keyword (e.g., 'COVID-19') may not be related to the topic (many users add popular keywords so their posts get more views), we will develop a two-tier filtering process to identify the relevant posts that support or deny a specific claim. We will take inspiration from our previous works that adopts a similar strategy to create a clean and relevant data corpus<sup>4-5</sup>. We will build supervised machine learning classifiers for this task. The first tier of the classifier will weed out irrelevant posts, while the second tier will categorize posts as pro versus anti posts according to the topic.

***Word embedding and multi-modal models:*** To enable this, our team members will label a set of 2000-3000 posts on each topic and mark their relevance to the topic and their stance (pro or anti). We will use the relevance labels to train a supervised classifier (e.g., SVM, Random Forest classifier or a neural network), which uses text features as inputs and generates relevance class as output. The text features will contain syntactic, semantic, lexical and psycholinguistic categories. We will also use word embedding models (such as BERT and its variants<sup>7</sup>, which will be fine-tuned on the supervised data) to extract tweet features<sup>8-9</sup>— a direction that our Advisory Board member, Dr. Koustuv Saha, has extensively used in his research. Models trained with an ensemble of all these features will be used for both tiers (relevance in the first tier and pro- or anti in the second tier). We will evaluate the performance of the trained machine learning classifiers with precision, recall, area under the ROC curve, false positive rate, and false negative rate with respect to the hand-labeled dataset. The classifier that performs the best will be used to classify the entire corpus. As a proof of concept, in Phase I, we followed this pipeline to conduct classification for one topic of COVID-19 misinformation, specifically on 'vaccines cause infertility' misinformation. The classifier achieved an F-1 score of 0.9848 This shows the effectiveness of the proposed pipeline. This pipeline, however, was focused on text-based misinformation detection only.

In Phase II, we will extend the framework to detect misinformation to a multimodal setting, i.e., integrating images/videos along with the text. When both features are available (as is the case with many social media posts) the image can often disambiguate the text (for example, making it clear whether it is a post about basketball or about guns). In outline, we will develop deep multimodal fusion-based methods that leverage knowledge extraction from visual and linguistic features, as images can often complement text, or vice versa. Specifically, our method will encode the text using a BERT-based feature vector and

encode the image using a convolutional neural network (CNN)-based model, fusing them together for accurate classification. The method will create a feature vector, using representational learning, from text (using for example BERT, InferSent etc.) and a feature vector from the image (using for example a CNN or a suitable layer from an auto-encoder). Then it will combine the two feature vectors. While a simple concatenation can sometimes work, there are a variety of techniques that are both more sophisticated and give better performance, and a body of our recent work has focused on such techniques, ranging from using ensembles to deep neural networks<sup>9-12</sup>. When there is video available, this too may be added into the mix by combining three sets of feature vectors for each message<sup>10</sup>. We developed a proof of concept multimodal model following the above process in our recent research, funded in part by the Phase I grant. Specifically, we developed a multi-modal fusion-based misinformation detector for publicly-available fake news detection<sup>12</sup>. This work found that using images, whenever available, leads to a slight boost in performance of misinformation detection. Using text alone, the detector has an F-1 score of 0.59, which increases to 0.60. In Phase II, we will explore techniques to improve the performance of this model.

*Learning model of misinformation spread:* After identifying multiple examples of misinformation content, we will turn our attention to identifying misinformation spreaders and consumers. Consumers of misinformation often become amplifiers of misinformation themselves, when they engage in retweeting misinformation that they may be exposed to. If one can identify the vulnerable consumers who will spread the misinformation further, appropriate intervention can be directed there. At the same time, it is crucial to identify the key users in the network responsible for spreading misinformation using two factors: (1) the frequency of sharing misinformation, and (2) the reach of their misinformation (including both direct and indirect consumers via reposts). Only focusing on one or the other is insufficient — consider the case where a user shares misinformation frequently, but has no audience to consume the misinformation. As the journalists we interviewed confirmed (see Section E. for more details), spending limited fact-checking resources on such actors is not appropriate. Instead, meeting the requests of the journalists we interviewed, we need a cumulative score quantifying the impact that one misinformation sharer has. This is a function of the two above-mentioned factors. Thus, a node in the network will be of high importance for fact-checker intervention when it is both a frequent sharer and has a large reach. This is consistent with measurement metrics in targeted ad purchasing, which calculate the reach and frequency of placed messages for impact assessment<sup>13-14</sup>.

Accordingly, we will build machine learning models to *predict the real-time probability that a user will retweet a misinformation message after being exposed to it*. This model will use social network structure, information propagation, and content features. To collect the social network structure, we continue to develop an infrastructure to record the social ego-network of misinformation tweeters, retweeters, and consumers. Specifically, this framework will allow collection, at scale, of followers and followees of sets of accounts. In Phase I, we started building this framework and have collected networks of COVID-19 vaccine misinformation spreaders, which resulted in ~3.7M nodes and ~6.5M following edges. This network collection of tweeters and retweeters will also allow us to track the flow of misinformation messages through the social network. We can use the propagation network to extract features, such as the speed and virality of its spread, reach of the message in the user's social neighborhood, along with properties derived from the textual and visual content properties of the misinformation message (e.g., the topical similarity between the misinformation message and the user's interests and beliefs). Based on these features, we can train machine learning models, such as logistic regression, random forest, and deep neural network methods. A vulnerability score will be assigned to every user, which ranges between 0 and 1 --- higher score indicates higher probability of user retweeting the misinformation. One score will be assigned for each misinformation message, since a user's vulnerability to different misinformation content can vary. This vulnerability score probability will be updated in real time as the misinformation message spreads through the network. The score will be directly dependent on the above-mentioned features. For example, a user is more likely to be engaged with and retweet misinformation messages in the topics of her interests; users with a history of sharing and being exposed to misinformation are more likely to be exposed to the target misinformation campaign; more central users in the social network are more likely to come across misinformation. The predictive

algorithm will include all these properties in its prediction engine, which can help identify individual users and online communities that are at-risk for misinformation consumption and spread, to focus and prioritize interventions. Our Advisory Board members, Dr. Tina Eliassi-Rad and Dr. Huan Liu, are renowned for their work in network science and large-scale data analysis, and we will leverage their guidance and feedback about these techniques.

*Bot detection and user attributes:* Since misinformation may be spread by real and bot accounts, it is important to distinguish between them; intervention resources used on bot accounts are meaningless, since bots will not change their behavior. To identify bots, we will leverage BotOrNot<sup>15</sup>, a popular API which provides a probability of an account being a bot<sup>16</sup>. We will build an infrastructure to query the BotOrNot API at scale to get scores for all the accounts in our network. We already have institutional level access to this resource. Our Advisory Board member, Dr. Emilio Ferrara, is a world-expert in bot detection and we will use his advice to build on his prowess. In addition, we will gather individual user's personal and social attributes to quantify vulnerability to misinformation spreading. Personal attributes include their demographics (e.g., self-disclosed gender, state of residence), user attributes (e.g., ideology, area of residency), user's past sharing behavior (e.g., sharing history of posts from low credibility sources), and interest profile of the user (i.e., the topics in which the user would write and share content). Social attributes of the user include its social network properties (e.g., the number of followers, reciprocity of followers in following the user, embeddedness or centrality in the network, clustering coefficient, the followers' historical record of sharing exposure to misinformation etc.). Leveraging a geocoded dataset from the COVID Twitter firehose endpoint (full coverage of ALL posts related to our topics) provided by Twitter to the UW-Madison's MCRC, we will also seek to describe the nature of, and estimate the amount of, the misinformation present in discussions of COVID-19 vaccines.

In our Phase I interviews with journalists, we learned that while they want to understand the networks and actors on social media most responsible for spreading misinformation, they do not have tools that allow accurate, timely assessment of these features to understand what misinformation is flowing in "real time." The detection system portion of Course Correct developed in Phase I delivers on these concerns, which will help journalists make evidence-based decisions on what to fact-check.

**Messages Testing and Sponsored Placement:** To address Aim 2, we will continue our work from Phase I, collaborating with our targeted end-users of journalists and fact-checkers to co-design a range of misinformation correction messages for A/B testing, leveraging the sponsored content infrastructure of social media platforms to target and share our corrective content at specific networks.

Based on common forms and types of misinformation we detect, we will collaborate with our end-users at Snopes, the Wisconsin Center for Investigative Journalism, and the Capital Times in Year 1, adding International Fact-Checking Network signatories in Year 2, to co-design misinformation mitigation messages for use in evidence-based correction strategies. Interventions will be tested for effectiveness while also meeting organizational needs and journalistic norms—an aspect important for the purposes of cultural validity. Then, we will take advantage of existing sponsored content mechanisms available on platforms such as Twitter and deliver the co-designed interventions through randomized n-arm A/B testing to social media users on these platforms. Based on the pilot test we conducted in Phase I, we are confident that rapid-cycle A/B testing can help demonstrate the feasibility and efficacy of various corrective interventions, some content specific and some "evergreen" (i.e., non-content specific), and better understand which messages best reduce the endorsement and sharing of misinformation.

Based on Phase I interviews with journalists and fact-checkers, we learned that many worry that fact-checking, itself, may unintentionally bring attention to misinformation, possibly reinforcing rather than reducing misperceptions. This concern represents a potential barrier to the wide adoption and dissemination of Course Correct, as exemplified by the following quote from one of our local partners: "I've struggled with that as to when you when you need to take it apart and when you just need to ignore it because I do think some of the earnest efforts to debunk things have inadvertently just helped spread the lie. I think we're better off just ignoring that crazy stuff." Although a few early studies on misinformation correction reported evidence that corrections can sometimes backfire in both political<sup>17</sup> and health contexts<sup>18</sup>, several large-scale follow-up studies across numerous experiments<sup>19-20</sup> fail to replicate this

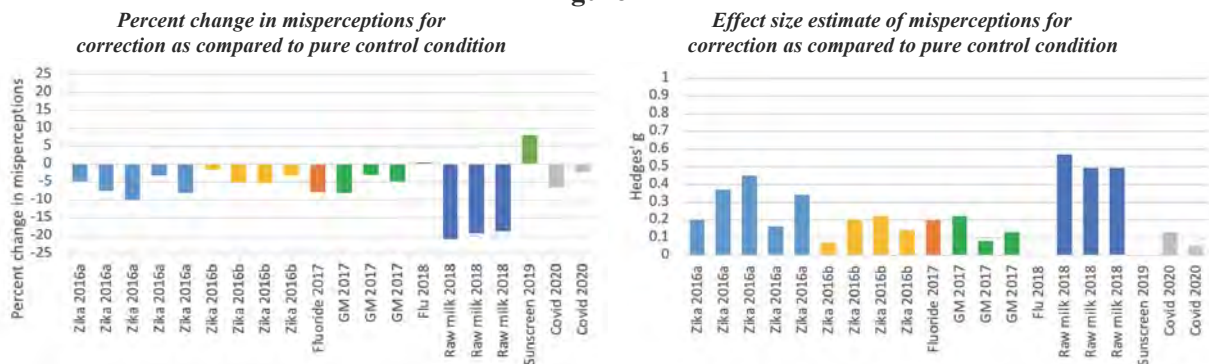


“backfire effect.” The accumulated evidence shows the efficacy of corrections to reduce misconceptions, including several meta-analyses spanning political and public health contexts<sup>21-24</sup> and a multi-country randomized test<sup>25</sup> of corrections debunking COVID-19 misinformation. This even led Nyhan<sup>26</sup>, who originally reported the “backfire effect,” to caution against overgeneralization while urging the research community to shift attention instead to better understand how to improve corrective information.

*Observational correction:* What is needed, then, is an evidence-based strategy that corrects misinformation, can be scaled up for use by journalists, *and* is effective across issue domains as diverse as COVID-19 and electoral administration news. Research on correcting misinformation often focuses on the person espousing or sharing the misinformation. Recall that these strategies are often viewed as biased, with interviewed journalists skeptical of the value of a tool monitoring partisan elites.

What social media allows, however, is the *witnessing* of other people being corrected. This means that correcting someone sharing misinformation on social media can effectively reach hundreds, or even thousands of other people. Because it is the *audience* that experiences this reduction in misperceptions after witnessing a correction, the impact can compound over time and space, creating scalability rarely seen in other misinformation interventions<sup>27</sup>. The pioneers of this work, Phase II Senior Personnel Drs. Leticia Bode and Emily Vraga, call this strategy – witnessing someone else being corrected rather than being corrected yourself – observational correction<sup>28</sup>. Observational correction is a critical component within the suite of tools used to mitigate the harmful effects of online misinformation<sup>29</sup>.

**Figure 1**



Particularly notable, people exposed to others being corrected on social media are likely to lower their own misperceptions. The reduction size varies, but as Figure 1 shows, it shows up consistently across topics as diverse as if raw milk is safe to drink,<sup>30</sup> if Zika virus originated from genetically modified mosquitoes,<sup>31</sup> or if taking a hot bath prevents COVID-19,<sup>32</sup> among others. The figure visualizes the percent change in misperceptions between each correction type and the control condition for a range of these published studies. Using percent change allows us to account for initial levels of misperceptions (i.e., it is easier to shift opinion when people have higher misperceptions) and makes results comparable across different measurement strategies (i.e., 5 versus 7 point scales). By comparing to the control condition, we represent correction as successful *only* when it reduces misperceptions as compared to getting no information on the topic, versus getting both the misinformation and the correction — i.e., a negative score. Across all studies, the average decline in misperceptions is -6.6%.

The literature on misinformation correction documents substantial heterogeneity in effect sizes of varying correction strategies, suggesting that success is highly contingent upon the specific correction strategy employed<sup>1,21-24</sup>. Not all corrective messages are created equal. For example, some commonly adopted strategies by professional fact-checkers, such as the use of a visual “truth-o-meter” to indicate the degree to which a statement is true or false, do not necessarily help improve correction success<sup>33-34</sup>. Such documented variation in the effectiveness of correction messages underscores the need to gather causal evidence to help optimize existing practices in professional fact-checking. Accordingly, we also calculated the mean effect size across all corrections that produce a decline using Hedges’ g, which averaged to  $g=.25$ , representing a consistent small effect (see Figure 1). Notably, observational correction can come from an expert,<sup>28,35-36</sup> from a fact-checker,<sup>37</sup> from another user,<sup>31,38</sup> or from the platform itself<sup>39</sup>.

<sup>40</sup>. It also works on multiple social media platforms, including Facebook,<sup>32</sup> Twitter,<sup>41</sup> Instagram,<sup>42</sup> and video sharing platforms<sup>43</sup>. In addition, the effects of observational correction seem to be largely consistent across the general population, with no major differences in key demographics like gender, age, education, or partisanship. Importantly, the effects are actually concentrated among those that start out most misinformed<sup>28,44</sup> – suggesting observational correction has real impact in changing minds rather than just further convincing the people who are already mostly convinced anyway.

Of course, observational correction is not the only strategy suggested to reduce misinformation spread. Calls for labeling low credibility sources, like NewsGuard does, assert that they make citizens less likely to share misinformation, yet new work in *Science Advances*<sup>45</sup> reveals that news credibility labels have limited effects on news diet and fail to reduce misperceptions. Indeed, news credibility labels only appear to be effective when the news story’s ideological perspective does not match the ideology of the news brand<sup>46</sup>. As such, credibility cues are not enough to reduce misperceptions or increase the news literacy of audiences. Likewise, media literacy, which has been found to be an effective safeguard for liberals, is not as effective for conservatives, especially in the context of COVID-19 misperceptions<sup>47</sup>. In contrast, observational correction represents a more scalable approach to misinformation than credibility labels or media literacy efforts. When asked, people also say that they see this sort of correction take place on social media. Survey data from March 2020, at the beginning of the COVID-19 pandemic, 34% of people indicated having seen someone else corrected in the last week<sup>48</sup>. This number jumped to 51% when limiting the analysis to only those who had seen misinformation on social media in the past week. Additional data collections in 2020 and 2021 suggest that the number of people experiencing observational correction can climb even higher, and these experiences happen across countries, topics, and political parties<sup>49</sup>. As such, witnessing a correction from our journalistic partners would not be an off-putting experience for audiences on social media, supporting scalability.

Finally, it is worth noting that people generally endorse the idea of correcting one another on social media<sup>50</sup>. People say that they like seeing corrections and that people should respond when they see misinformation on social platforms. Moreover, expert organizations who engage in these corrections directly on social media are not seen as less credible for doing so,<sup>28</sup> and in some cases experience a boost in their perceived credibility<sup>35</sup>. Therefore, our industry partners in journalism and fact-checking can engage in such corrections without fear that their reputations will suffer, or that they will be accused of bias, as emerging social norms appear to support observational correction from experts and users alike.

*A/B testing on social platforms:* Of course, just because something is true does not mean it will be accepted. After all, our proposal is animated by the twin crises of vaccine hesitancy despite their demonstrated effectiveness and minimal side effects and electoral skepticism despite numerous recounts, audits, and lawsuits that affirm a free and fair election. In Phase I, it was critical for our team to show end-users and stakeholders that observational correction was effective, could integrate into journalists’ workflows, and would be robust with respect to the mechanism through which it was delivered—most critically, through the sponsored content infrastructure on social platforms.

To help address our targeted end users’ reasonable concerns about potential backfiring effects and demonstrate the value of targeted observational correction, we conducted a series of experiments in Phase I to examine whether observational corrections reduced misperceptions when the corrections were delivered through sponsored social media posts. In Phase II, we will continue to carry out a series of tests to demonstrate how our system can test and visualize the effectiveness of different correction messages in (a) curbing the flow of misinformation and (b) boosting engagement with corrections and high-quality information *in vivo* on social media. Such tests can showcase the capacity of Course Correct to help our end users select the most promising corrections *pre*-publication through rapid-response A/B testing and evaluate the performance of their works during *post*-publication RCTs. To complement digital trace data from social media platforms related to information flow and user engagement, we will also carry out a series of parallel online survey-based experiments to gather additional evidence on misperceptions mitigation, behavioral changes, and mediating psychological mechanisms.

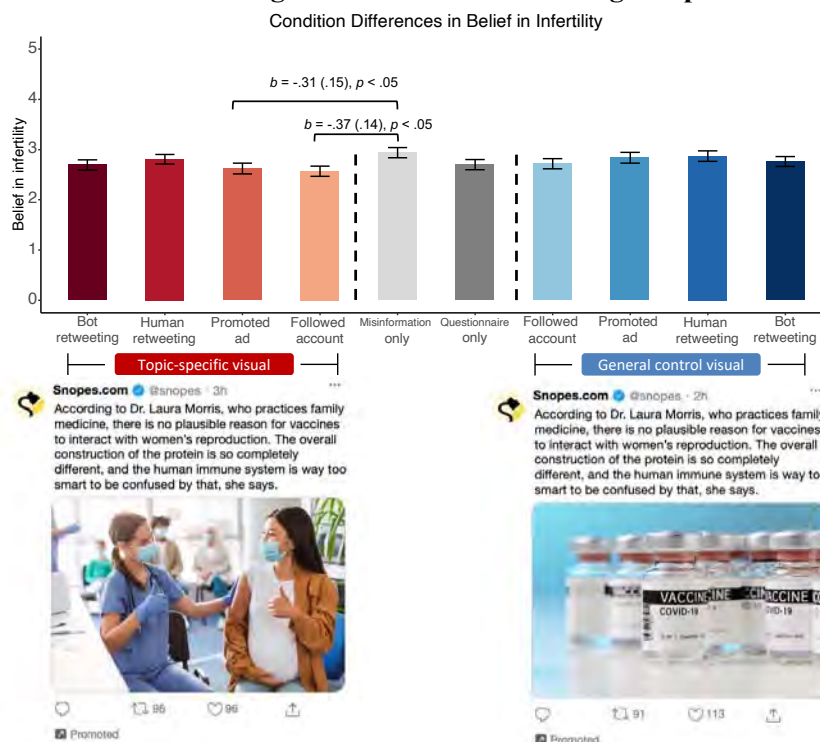
Social media companies routinely employ randomized A/B tests to identify design features that can improve user interface and experiences. Even in the discussion of fact-checking on social media,

much attention has been paid to improving platform designs, such as how the misinformation labels should look like and what are their desirable or unintentional consequences<sup>51</sup>; much less attention and resources have been devoted to helping professional fact-checkers gather the causal evidence they need to pilot test a wide range of alternative correction strategies for a given topic, and doing so in a rapid way. Our Advisory Board member, Dr Natalie (Talia) Stroud, has leveraged social media platforms' A/B testing capability for fact-checking work, and we will be guided by her expertise. Our project will capitalize upon the existing sponsored content infrastructure widely available on social media platforms, and repurpose such systems to enable rapid A/B testing of correction messages.

As a proof of concept, we carried out a pilot test during Phase I, systematically varying the use of visuals (topic-specific vs. general control) in the correction tweet and its message delivery mode (promoted ad vs. bot retweeting, vs. human retweeting vs. followed account) in a between-subject online survey experiment. We recruited an online national sample of 1296 participants and randomly assigned them to one of the experimental conditions. Participants viewed a mock-up Twitter timeline where a tweet making false claims that COVID-19 vaccines would cause infertility was displayed prior to a correction tweet ostensibly posted by a credible fact-checking organization (e.g., Snopes, one of our partners), except for those randomized to the misinformation- or questionnaire-only control conditions. A third masking tweet on a non-COVID topic (e.g., practicing yoga) was also included in the timeline. This mock-up timeline where a correction always followed a misinformation tweet was designed to mimic an instance of observational correction. Participants then reported their belief on to what degree COVID-19 vaccines would lead to infertility on a 5-point Likert scale. Results presented in Figure 2 show that only corrections deploying enhanced topic-specific visuals—and delivered either as a promoted ad or directly by the followed fact-checking organization—reduced participants' misperceptions.

Critically, delivering the enhanced correction post as a “promoted ad” did not undermine their effectiveness in correcting misperceptions, which performed almost as well as those directly posted by followed fact-checking organizations already in one’s network. This finding adds to our confidence that running A/B tests via targeted ad promotion on social media represents a scalable, yet effective approach for testing and delivering correction messages. This pattern also highlights the critical need to conduct randomized A/B tests to help identify the most effective message feature(s).

**Figure 2: Effect of correction messages delivered via A/B testing compared to control conditions**



**Verification through Randomized Trials:** To address Aim 3, we will evaluate the effectiveness of observational correction when directed at scale through sponsored content mechanisms on social media platforms by conducting a series randomized control trials (RCTs), focusing on misinformation diffusers and whether our intervention system can reduce misinformation uptake and sharing within their networks.

These RCTs are designed to test whether Course Correct works — “at scale” in the “real world” — when implemented over a specified period to counter the sharing of misinformation in targeted networks, those containing high-volume information diffusers. Indeed, our interviews with industry experts highlighted the critical need of providing causal evidence related to the value of our major deliverable. AverPoint’s Shouvik Banerjee, an Board of Advisors member, called causal identification through experimentation and random controlled designs the “gold standard” for proof of concept demonstrations for venture capitalists. Such evidence will also reassure news organizations and government agencies that investments in sponsored content to direct journalistic reports into networks in need of observation correction will be effective across a range of contexts and populations.

To these ends, Course Correct will integrate deliverables from the detection phase, particularly classified network roles of targeted online communities (e.g., producers, diffusers, observers) and their members’ real-time *vulnerability score* for misinformation spreading, into our procedures for recruitment into the RCTs. Compared to rapid-response A/B testing, the RCT module (a) gathers longer-term performance signals from both digital traces and survey responses, (b) tests and estimates the performance of correction messages at the level of detected networks rather than merely individual social media users, (c) confirms the effectiveness of targeted journalists’ efforts when structured through Course Correct, and (d) justifies investments to sustain Course Correct beyond the Phase II funding period.

We will first pilot test the RCT module on three distinct misinformation topics and networks to showcase the neutrality of the Course Correct system, for example, targeting misinformation concerning COVID-19 vaccine risks during pregnancy among expectant mothers or falsehoods concerning absentee or early voting among elderly populations. The basic procedures and methods are summarized below. Our pilot tested RCT module will be made available for our partnering news and fact-checking organizations during the implementation and scaling stage, though its main purpose is to verify the system’s effectiveness so that when Course Correct is implemented in everyday journalistic practice more broadly, it can be used with confidence absent formal testing of each topic through a lengthy and expensive RCT.

*RCT procedures:* Based on techniques developed during the detection phase, we will identify accounts that meet our criteria as “misinformation diffusers” for potential recruitment. These accounts should have a high predicted probability for engaging with misinformation and occupy network positions to play an outsized role in misinformation transfer through sharing. Social media platforms such as Twitter allow direct targeting of user handles/IDs for promotional content, including recruitment into clinical trials. Within a given topic/network (e.g., Pregnancy Risk/Expectant Moms or Absentee Voting/Elderly Citizens), misinformation diffusers will be identified and recruited into the study. Those who consent will be randomized into the study to receive promoted content via Course Correct (or not). Observational correction messages will be directed to participants through Twitter’s API for sponsored content, optimized for context (e.g., online community), message features (e.g., use of visual), and information source (e.g., high credibility news outlet). Although we lack behavioral benchmarks, for power calculations we assumed a T-score metric with a mean of 50 (SD = 10) for weekly “shares” and/or “likes.” A difference of 3 or more “shares” or “likes” between study arms was considered a meaningful difference. Power calculations were performed using SAS procedure PROC GLMPOWER (SAS Version 9.4). Results indicated that 282 participants (after attrition) would be needed for 80% power ( $p < .05$ ) to observe a difference score of 3 points between the two study arms at 3 months in each RCT. We did not conduct power calculations on network changes or survey outcomes as these will serve as secondary tests.

We expect that our intervention (Misinformation Mitigation versus No Misinformation Mitigation) will affect online sharing and endorsement behaviors of content deemed misinformation gathered from digital trace data, and misperceptions and behavioral intentions collected from surveys. Our primary outcome centers on sharing misinformation, such as “retweeting” a post, because it contributes directly to the spread of problematic content, whereas our secondary outcomes of

misconceptions reduction and desirable behavioral changes provide additional evidence on impacts from online to offline. We will capture the local ego-network of each relevant user at two different timepoints, once at the beginning and again at the end of the study's three-month observation window. Comparing each user's followings (i.e., other accounts that the user follows) before versus after the study period, we can make two lists per user: (a) a list of new connections that have been made and (b) a list of previous connections that were omitted during the study period. We will repeat the process comparing the followers before versus after the study period. Using these lists, we will be able to identify the key information sources and other user accounts that the user has gotten closer with and those that it has drifted farther from. This information will indicate the long-term changes in the user's networking and information consumption behavior, thus adding another dimension of analysis to our study.

We will limit this network data collection to two timepoints as gathering following and follower networks is a cumbersome and time-consuming process. This approach should be sufficiently sensitive over a three-month period. Among recruited participants, variables will be assessed daily during their three months of participation. Once participants consent and provide demographics and individual-level orientations, all data are collected passively and continuously in time-stamped log files based solely on their online behaviors until the end of the study period. At that point, with an added incentive, we will field a post-treatment survey to measure belief changes, intentions or behaviors, along with mediating psychological mechanisms (e.g., reactance, emotions, information recall, trust). If participants inform us they want to drop out, we will remove them and their data from the study, though given the low participation burden, we expect high retention rates among recruited and consented participants.

A linear mixed model will be used to examine the effects of study arm (Mitigation vs. No Mitigation, a between-subjects factor) on study outcomes as measured by weekly counts of sharing and endorsing behaviors. Additional testing will examine changes in follower and following networks and survey outcomes. A Holm-Bonferroni correction will be used to reduce Type I error as well as the likelihood of familywise error rates. Given the lack of representativeness in the population of Twitter users, particularly regarding participants from rural and low socioeconomic statuses, we will also apply multilevel regression and poststratification<sup>52</sup> to improve the generalizability of our estimated average treatment effects by re-weighting participants to reflect national population-level distributions of key demographics. Furthermore, given that in online networks the presence of interference and spillover effects among social media users often renders the Stable Unit Treatment Value Assumption untenable, we will take advantage of revealed online network structure, exposure mapping, and randomized delivery of message treatments to carry out additional randomization-based inference, using inverse probability weighting implemented in the *interference* package in R<sup>53-54</sup>.

If we conduct an RCT within a specified locality (with F846 CommuniTies), we will first associate geographic location to social media postings before recruiting. We will start by identifying geocoded posts (contain a latitude-longitude pair) falling within a bounding box of a specific area of interest, downloading the appropriate shapefiles of these localities to filter the posts. We will also extract the self-reported location of the authors of posts in our data. We will perform named entity recognition of those location strings to identify cities, states, or country names and use a location database or a reverse geocoding API. Based on prior work by our team and others<sup>55</sup>, we expect about 50% of the posts to be geocode-able based on the combination of these two approaches. This will give us opportunities to examine the value of Course Correct when partnering with local news organizations, expanding the potential pool of end users and journalistic partners.

**Human-Centered Design to Implement Course Correct:** To address Aim 4, we will implement *Course Correct* into local, national, and international newsrooms, guided by dozens of interviews and ongoing collaborations with journalists, as well as tech developers and entrepreneurs. Rather than focusing on platform restriction and fact-checking partisan political elites, *Course Correct* will help journalists, and ultimately public health and election administration officials, to see what misinformation is circulating on social platforms and to quickly test correction strategies within the online communities most in need of seeing those corrections so that they are exposed to the verifiable truth. We will begin scaling up on a case study basis with our local (Capital Times), state (WCJ), and national (Snopes) partners in Year 1. Phase II supports the hiring of a new journalist for

each organization who will be tasked with using the Course Correct tool, working with our team's Journalist Liaison, PI, and as needed, other team members. We will engage in multiple training sessions with the journalists so that they can understand how the digital dashboard works and how to use it. Journalists will choose what to fact check based upon their own, independent determinations of newsworthiness after viewing the network detection elements of the dashboard (including the Impact Score). Then, journalists can choose to work with our team or on their own to develop correction interventions, deployed via the social media platform's advertising system (using the observational correction method to link to fact-checks). Journalists will see which messages perform best in the affected networks before deciding on a final message to deploy more broadly. Our team will study the outcomes of journalist-led vs. collaborative message creation as part of our secondary analyses.

More specifically, relying on the lessons learned in the Phase I Innovation Curriculum about human-centered design, and the interviews we conducted with journalists, tech developers and entrepreneurs, we will build the Course Correct digital dashboard in Phase II. Journalists will receive updates about the flow of misinformation, ranking the size of misinformation networks (Impact Scores) organized by topic. Once the journalists we are working with select a topic to intervene with, they will do the reporting necessary to prepare them to write their story or fact check. Then, they will be exposed to the Course Correct page listing evergreen fact correction tips and given the opportunity to talk with our liaison, who can suggest particular correction styles based upon the individual level features of the misinformation network. Journalists will write their story or different versions of the same story (they can choose to vary the actual story, the social media posts promoting the story, or both). Journalists will develop different corrective messages, and relevant visual features to add to the messages, to test via observational correction. We will work with advisory board members Dr. Natalie (Talia) Stroud and Dr. Dani Brown, both of whom have experience working with journalists on experimental interventions in newsrooms. We will also work with Scott Moore of Tektonic and the Collaboratory, who can help us with user-centered design issues raised by our journalistic partners in Year 1. The messages will then be deployed into the misinformation network via the advertising mechanism on the relevant social media platform. We will test the performance of the messages in terms of the relevant metrics related to the platform. We will begin with Twitter, examining the number of likes and retweets each correction strategy receives, processing them in a manner that is digestible to journalists. The correction that performs the best will then be deployed at a great scale within the misinformation network. Then, we will return to network detection, examining if the misinformation network shrunk in size after the interventions.

During Year 2 in Phase II, we will develop and field Course Correct as a service provided to an expanding set of newsrooms, collegiate journalism programs, and other public information centers as a one-stop shop for journalists and fact-checkers to see what misinformation is circulating on large social platforms and targeted networked communities within and across those platforms, to quickly test different correction strategies, and to have the most effective strategies directed to the online communities most in need of seeing those corrections. This approach can be applied across a range of topics in politics and health. We will identify potential new adopters of Course Correct through the Year 1 workshops we hold for International Fact Checking Network signatories (see Section H.). Additionally, we will engage in detailed market research to help scale up Course Correct. We will purchase MRI-Simmons data that provides rich commercial evidence of hundreds of thousands of U.S. adults, actionable consumer insights, and comprehensive market information that will help us highlight additional potential markets for Course Correct. In addition to helping journalists craft and deploy observational corrections into social media misinformation networks, we will interview collaborating journalists to learn about how they use Course Correct, what they like about it, what suggestions they have to improve it, and the like.

## **B. Convergence Research**

Despite the rapid development, testing, approval, and delivery of safe, reliable, and effective COVID-19 vaccines, 34.5 percent of Americans are not vaccinated. Despite a clear and transparent counting of ballots, several recounts, and dozens of lawsuits all clearly indicating that Joe Biden won the 2020 presidential election, about 40 percent of Americans do not believe the result. It is clear that good science and good electoral administration alone are not enough to foster trust in health and political institutions, outcomes, and behaviors. The problem is one of mass communication, politics, social media technology, and journalism. A convergence of approaches across these and allied fields is necessary to help

researchers and practitioners learn why some people will ignore the verifiable truth, some will willfully spread falsehoods, and others will fail to update their attitudes and behaviors in the face of good evidence. Moreover, a synthetic approach to these problems is required to go beyond learning why the problem persists so that the problem can begin to be fruitfully addressed within the networks where they are most acute; with scientifically based interventions that are assessed and adjusted in real time, in consultation with industry practitioners. Scientific evidence on these questions need to be disseminated to industry practitioners in journalism, as well as public servants in public health and election administration, to increase the likelihood that evidence-based solutions find their way into the information ecology.

Our proposal brings together a team that spans mass communication, political science, computer science, engineering, and professionals in journalistic and social media organizations with the goal of developing an actionable dashboard that centralizes the process of detecting, testing, and correcting misinformation at scale, and then evaluating the impact of the corrections. In Phase I, we started with Twitter and will expand to social media platforms such as Facebook, Reddit, and YouTube in Phase II and beyond. Moreover, we are partnering with local, state, national, and international news organization and fact checking network who will learn, test, and use Course Correct's digital dashboard, providing valuable evidence about how Course Correct's system becomes incorporated into media workflows and how well the four-step system works with respect to helping reduce the flow of misinformation in at-risk social media networks. As such, this research has the potential to institutionalize relationships between academics and industry professionals to focus on pressing social problems.

Indeed, reducing misinformation flows regarding COVID-19 and election integrity would have direct results on improving the quality of life of American families, communities, and businesses by reducing the impact of the pandemic and increasing the health of civil society, respectively. Our proposal specifically addresses the urgent need for tools and techniques that can help citizens effectively prevent, mitigate, and adapt to threats within the information environment. Notably, the partnerships between the academy, social media companies and the news media have been slow to develop, struggling to overcome issues of data access, trust across institutions, and staying power. Our successful collaborative approach, developed in Phase I, has the unique advantage of leveraging cutting-edge research across a variety of disciplines with other team members and collaborators working at the highest levels of major social media companies and some of the premier fact-checking organizations on the planet.

*Convergence Approach:* In Phase II Year 1, we will focus on taking the evidence we built in Phase I (See Section A. above and Section E. below) related to misinformation detection and correction and move our digital dashboard's low fidelity wireframe to a functional use-inspired website for use by our journalistic partners. We will educate our journalistic partners about the detection and correction lessons we learned in our Phase I research as well. Our local news collaborator is The Capital Times newspaper. Our statewide news collaborator is the Wisconsin Center for Investigative Journalism. Our national fact-checking collaborator is Snopes. Our international fact checking collaborator is the International Fact-Checking Network. We will employ the co-design principle to build the core functionalities of our social media misinformation monitoring and correction evaluation system. We will focus on misinformation related to election integrity and COVID-19 vaccine hesitancy as a case study to demonstrate how our proposed system could improve professional factcheckers' capacity in monitoring the trajectory of misinformation spreading on Twitter, identifying high-priority misleading claims and at-risk Twitter users, and evaluating the efficacy of enhanced correction strategies in real time.

In Phase II, we are (1) expanding our collaboration with the IFCN and the broader fact checking community (Year 2) to seek wider adoption beyond our funded collaborating journalist partners (Section H.), (2) test a broader set of misinformation items and correction strategies per each factchecker's unique needs, (3) extend to cover a broader array of social networking platforms such as Facebook, YouTube, and TikTok, (4) use ad purchasing to test bots as an alternative way for intervention delivery, and (5) focus on automating the workflow to ensure that the system is functioning even after project completion.

We will follow the co-design principle and collaboratively select misleading claims on the topics of upcoming 2020 midterm elections and COVID-19 vaccines for children, respectively. We will narrow specific falsehoods for each topic. Next, our research team will provide a list of candidate enhancing

message features to consider based on systematic literature review and our own pilot data (Sections A. & E.) (especially focusing on observational correction via ad purchases and the labeling of fact checks).

In addition to the convergence work on our team (interdisciplinary academics, journalists, social media industry professionals), we are formally partnering with three NSF-CA Phase I teams to further enhance convergence activities by budgeting for each other, engaging data sharing and collaborative analyses across projects, and connecting each other to the civic and industry communities each individual team developed relationships with in Phase I (see Section H. for more details).

### C. Partnerships, Roles and Responsibilities Table

Course Correct includes stakeholders from multiple academic disciplines; local, state, national, and international news organizations; social media industry; other NSF-CA Phase I Track F teams; and web developers. Those leading elements of the Phase II work will organize meeting agendas, engage in regular conversations with collaborators and staff members to keep up with the timeline and milestone deliverables (Section F.), lead the writing of their sections of scholarship and public-facing work, and coordinate with leaders of other project elements. Those in the “assist” category will do work in the ascribed project area, following the direction charted by the element’s leaders. Those with “build” or “facilitate” duties will provide technical expertise to bring Course Correct’s major deliverable – the misinformation digital dashboard–online. The Project Manager will coordinate work across the three major goals of the deliverable and lead graduate student training and convergence activities.

<b>Personnel</b>	<b>Network Detection</b>	<b>Misinformation Intervention</b>	<b>Evaluation</b>	<b>RA Training &amp; Management</b>	<b>Industry Collaboration</b>	<b>Convergence Activities</b>
<b>Project Manager</b>	Coordinate	Coordinate	Coordinate	Lead	Assist	Lead
<b>Wagner (PI)</b>	Assist	Assist	Assist	Lead	Lead	Lead
<b>Yang (co-PI)</b>		Lead	Lead	Assist	Assist	Assist
<b>Kumar (co-PI)</b>	Lead			Assist		Assist
<b>De Choudhury (co-PI)</b>	Lead			Assist	Assist	Assist
<b>Borah (co-PI)</b>		Assist	Assist			Assist
<b>Sethares (SP)</b>	Assist			Assist		Assist
<b>Shah (SP)</b>	Assist	Assist	Assist	Lead		Assist
<b>Bode (SP)</b>		Assist				Assist
<b>Vraga (SP)</b>		Assist				Assist
<b>Harbath (Consultant)</b>					Lead	Assist
<b>Post-Doctoral Researchers</b>	GA-Tech’s Lead	UW-Madison’s Lead		Both Assist		Both Assist



<b>Durat (SP, PI-F846)</b>				Assist	Assist	Lead
<b>Liaison (new Phase II staff)</b>		Assist			Lead	Assist
<b>Web Developer</b>	Build	Build	Build		Assist	
<b>Research Engineer</b>	Build	Assist			Assist	
<b>IFCN, Snopes, WCIJ, Capital Times</b>	Use	Use	Use		Participate	Participate

SP=Senior Personnel

#### **D. Convergence Coordination and Management Plan**

In Phase II, the Course Correct team will continue to meet under the Mass Communication Research Center (MCRC), where the Center for Communication and Civic Renewal (CCCR) is housed at the University of Wisconsin-Madison. The PI and several co-PIs have a decade-long track record of working together in the MCRC (under Shah’s direction) and CCCR (under Wagner’s direction). The CCCR has a weekly meeting with all of the investigators and graduate students and several project specific meetings each week with the staff required for each individual project. During Phase I, the PI led additional weekly hybrid meetings of the NSF-CA Course Correct Team and weekly virtual meetings of the Course Correct Research Assistants from across the participating universities. This process will continue, adding in the Project Manager and Post-doctoral researchers.

In Phase I, the PI, Wagner, ran the meetings. Co-PI Kumar, along with Co-PI de Choudhury, leading conversations about network detection of misinformation developments. Co-PI Yang, along with Co-PI Borah, led conversations about experimental interventions for misinformation correction. Several Research Assistants at Wisconsin, Georgia Tech and Washington State participated in network detection and experimental intervention. Wagner led interviews with end users (journalists), working with one of the Research Assistants. Senior Personnel Shah and a Research Assistant led the interviews of, using the terminology of the NSF-CA Innovation Curriculum, stakeholders and analogous inspiration individuals working for social media platforms and in the world of venture capital entrepreneurship. Shah also provided general management guidance from experience working on a range of large federally-funded grants around technology development, testing, and implementation (with a strong track record of random controlled trial success as Scientific Director of the Center for Health Enhancement System Studies).

This broad structure would continue in Phase II, with the PI (Wagner) and the new Project Manager coordinating an agenda for the large weekly meeting, based upon project timeline needs and the insights of team members. The Project Manager would also be responsible for setting up a more flexible schedule of smaller, subgroup meetings organized by the individual aims of the Phase II proposal. Additionally, the PI and Project Manager will check in on a bi-weekly basis with the Co-PIs, Senior Personnel, graduate research assistants, and industry collaborators at Snopes, the Wisconsin Center for Investigative Journalism, and Capital Times with respect to development of deliverables, project-oriented research, and participation in the innovation curriculum.

The PI, Project Manager and Journalist Liaison will engage in several training sessions with the industry partners during the first half of Year I - teaching journalists about the best practices for fact-checking and observational correction discovered in the work of Phase II Senior Personnel Bode and Vraga, as well as the experimental tests of advertising-supported fact-checking within misinformation networks led by Co-PI’s Yang and Borah in Phase I (see sections A. and B. of this Project Description). This gives the journalists time to learn both the evergreen and more network-specific elements of effective correction of misinformation while other members of the team, including the PI, Co-PIs, Senior

Personnel, Web Developer, Research Engineer, Post-docs, and graduate research assistants to the research and technical work related to building the digital misinformation dashboard deliverable in Year One.

Finally, our diverse and highly accomplished Board of Advisors is deeply integrated with the convergence research being conducted on our team and across Track F more generally. The full BoA will meet with our team twice a year during Phase II (with individual consultations on an as needed basis), giving our team advice about all aspects of our project, including:

- **Broadening Participation** (Percival Matthews, University of Wisconsin-Madison School of Education Associate Dean of Diversity, Equity, and Inclusion)
- **Journalism and Journalistic Interventions** (Talia Stroud, Director of the Center for Media Engagement at the University of Texas; Danielle (Kilgo) Brown, John & Elizabeth Bates Cowles Professor of Journalism, Diversity and Equality at the University of Minnesota)
- **Social Media Policy and Ethics** (Cameron Hickey, Algorithmic Transparency Institute; Alex Hanna, former Google Ethical AI and currently at Code for Science and Society; Kate Blackburn, TikTok; Koustuv Saha, Microsoft )
- **News and Social Media Literacy** (Shouvik Banerjee, AverPoint)
- **Computer Science and Engineering** (Tina Eliassi-Rad, Northeastern University, Huan Liu, Emilio Ferrera, University of Southern California)
- **Entrepreneurship and Cross Track Collaboration** (Scott Moore, Tektonic/Colaboratory)

The Board will be chaired by our Phase I partner Katie Harbath, former Public Policy Director at Facebook, current CEO of Anchor Change and Fellow at Bipartisan Policy Center and Integrity Institute. Harbath will continue attending regular Course Correct team meetings as well.

## **E. Phase I Portfolio (Results From Prior NSF Support)**

### **Phase I Curriculum, Meetings, Webinars, and Coaching**

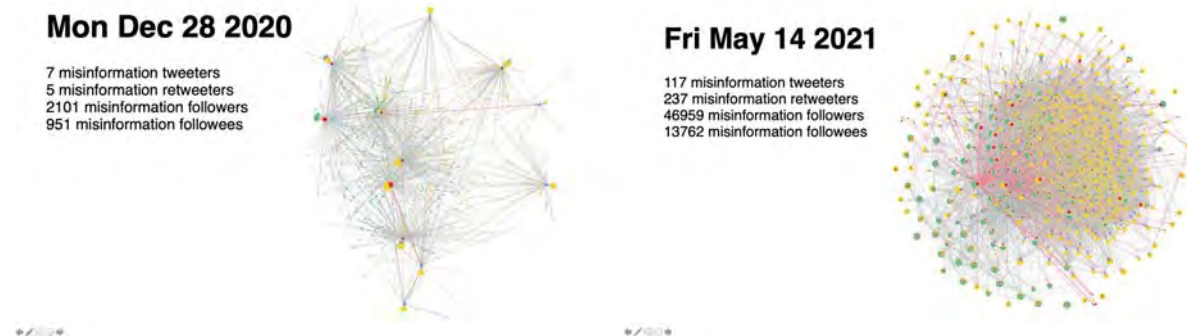
Course Correct core team members attended each of the Phase I NSF-Convergence Accelerator Track F Innovation Curriculum (IC) meetings during the year. While faculty meetings and other university service schedules prevented perfect attendance from any one team member, the PI either attended and participated in each meeting or watched the video of the meeting and reported back to the Co-PIs, Senior Personnel, and graduate students to discuss what was learned. Team members also discussed the lessons from the IC in team meetings, on the team email listserv, and, occasionally, in Slack. Milestones like the first pitch and mid-semester report out were practiced and given rounds of feedback in team meetings before their respective IC sessions. The Collaboration Agreement drafted during IC meetings became a touchstone for team members when adding additional team members in Phase II. The IC also helped structure our “proof of concept” experimental interventions in Phase I, and shape decisions about how to alter our Phase I proposal after interviewing 25 journalists and fact-checkers along with 17 tech developers/entrepreneurs, and 8 government agency staff members (5 federal, 3 state). Many of these professionals had generated human-centered design solutions for various social and policy problems in concert with social media companies and their ethical AI experts. The team also had regular meetings with our NSF-CA provided coach, who gave advice on deliverables, pitching, narrowing the focus of the project aims, and appealing to end users and investors. Finally, we consulted our NSF-CA Program Officer with questions about Phase I, Phase II, and helpful strategies from prior tracks.

### **Lessons Learned in Phase I Interviews and How They Affected the Phase II Work Plan**

*Theme 1: Impact Score with Network Level Features* Our journalist participants expressed a need to quickly assess whether or not a piece of misinformation is worth correcting or not. While our ability to demonstrate to journalists that we can engage in network detection of misinformation on social media was impressive, our interviews with journalists revealed that to be effective, Course Correct would need to provide more information about the impact, size, and reach of misinformation networks we displayed to reporters. Therefore, to integrate Course Correct into their workflow, our tool would have to go beyond network detection – highlighting the changing size and reach of misinformation networks. As Patrick Marley of the Milwaukee Journal Sentinel told us, “if one guy says a thing, how much do we care? He's

just a random dude on the internet. But if 2000 people are claiming X, Y, or Z untrue thing, then that's got some kind of passers by people who see live streams that might well, geez, these people really saying this thing, that sounds serious. So that would make us think that we need to set the record straight.” Wisconsin Center for Investigative Journalism editor Dee Hall agreed, adding, “anything you'd be able to sort of track in real time: what things are resonating with whom? That's the other piece of it is how many people but also there's a profile of who it's affecting.” PolitiFact’s Angie Drobnic Holan agreed, noting it would be “exciting” and “innovative” to be able to provide an impact score of misinformation to journalists.

**Figure 3: Network Detection Maps for False Claims that COVID-19 Vaccines Cause Infertility**



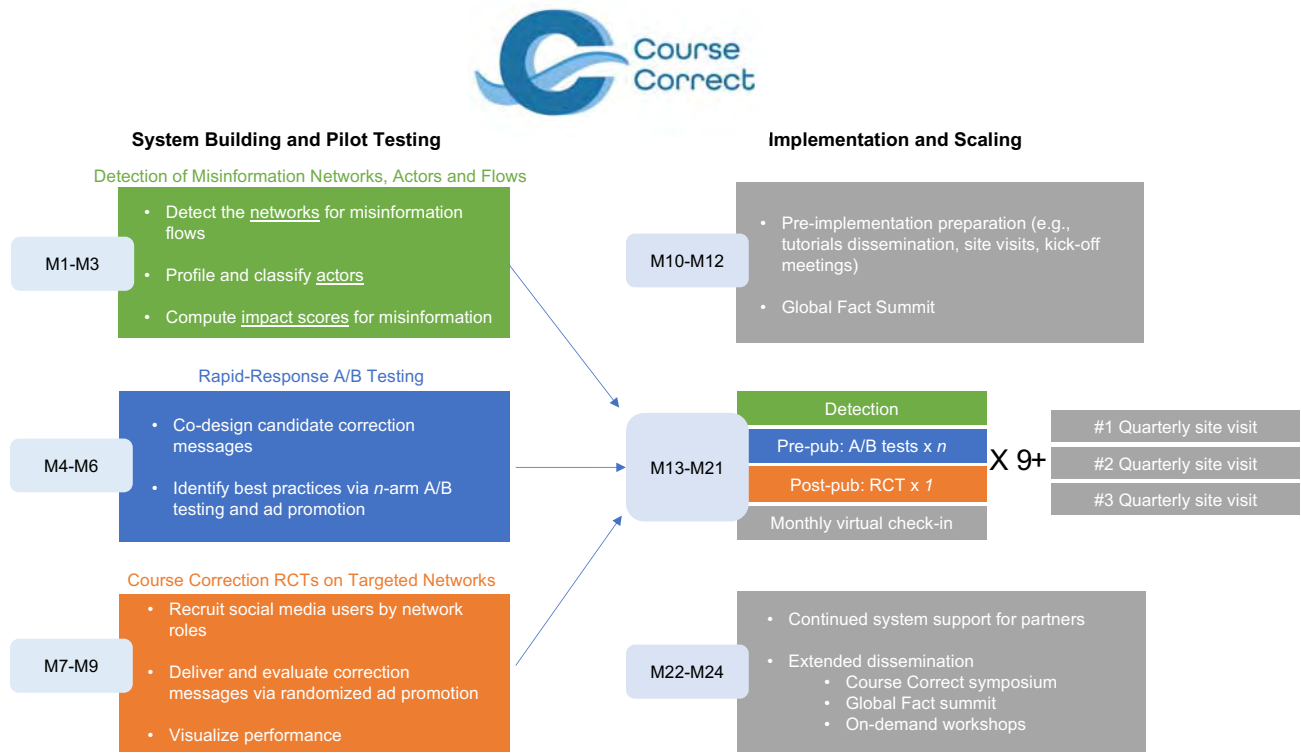
In Figure 3, our network detection system shows how a misinformation network sharing false statements about Covid-19 vaccines causing infertility grows over time - providing a visual representation of the measures of impact that journalists want when evaluating the newsworthiness of fact-checking efforts.

*Theme 2: Focus on Non-Elite Misinformation Networks to Maximize Impact and Reduce Claims of Bias* Journalists reported to us that they already have a solid handle on the potentially false or misleading statements made by political elites. Journalists can find and check those statements without our help. While we originally envisioned Course Correct as focusing on elite statements and the networks that share them, journalists encouraged us to highlight the misinformation shared by well-meaning individuals who were distributing misleading claims on social media, amplifying them into particular online communities. Focusing on networks of misinformation sharing would provide a service journalists cannot do on their own while also reducing the likelihood that an ideological bias could affect the trustworthiness of the misinformation dashboard. Focusing on misinformation shared by individuals would be more likely be seen as non-partisan, according to the journalists we interviewed.

*Theme 3: Course Correct Must Be Quick, But Flexible* Capital Times reporter Jack Kelly told us that he “wants to spend as little time as possible” using the dashboard, given how busy his typical day is. This means providing short updates about trending misinformation and the online communities it affects so that journalists can make quick, evidence-based decisions about what to fact check. It also means that the intervention section of the Course Correct dashboard must be easy to use so that journalists can quickly distill effective correction strategies and decide if they want to test competing messages in the at-risk misinformation networks sharing false statements about important topics. Industry professionals like Shouvik Banerjee of AverPoint and Roseanne Scholl of Mozilla highlighted the importance of training journalists to be able to use Course Correct on their own. These insights affected how we designed the intervention sections of our dashboard (see Section A.) as we provide Best Practices tips for information correction and help journalists select competing messages and images to accompany their fact check. Then, after a short A/B testing phase, Course Correct reveals to journalists which message delivery choice was most effective in the at-risk network, allowing for an evidence-based decision to drive the form of the correction and its distribution into the affected network using sponsored content, funded by Course Correct’s use of the advertising infrastructure on social media platforms. Phase I results revealed the effectiveness of ad-based interventions in social media misinformation networks (Section A).

## F. Timeline of Milestones and Deliverables

Overview of proposed activities and timeline:



## G. Deliverables

Our team’s Phase II work will produce the following deliverables: (1) Course Correct: an interactive system that enables reporters to detect high-priority misinformation topics and the underlying networks where they flow, perform rapid-response randomized testing of fact-checks, and monitor their real-time performance among at-risk online communities, (2) the underlying code, survey instruments, and databases of labeled and curated messages to share publicly, (3) evidence-based corrective messages of immediate utility to public health and electoral professionals, (4) training of research personnel and journalists in interdisciplinary topics of global and practical significance, and (5) papers and conference presentations that will share our findings and conclusions with the academic and broader community.

**Deliverable 1:** We will complete our dashboard that can facilitate professional factcheckers in the following tasks. First, the dashboard will identify and track Twitter users predicted to have high chances of encountering misinformation in the near future—i.e., the monitoring module (Aims 1-2) that would allow factcheckers to observe general discourses produced by these at-risk users. This would allow journalists and information professionals to observe what these users like, retweet, and comment on, as well as which viral posts from low-credibility sources<sup>47</sup> are gaining traction. Second, the dashboard will allow factcheckers to design and select which messages to systematically vary, deliver these messages to targeted at-risk users, implement a randomized evaluation structure via Twitter’s Ads API (Year 1) or automated bots, and finally summarize and visualize collected performance metrics to pave the way towards evidence-based decision making about correction optimization (Aims 3-5).

**Deliverable 2:** Our research team will host the underlying code, interventions, and the underlying data (once in an anonymized and aggregated format consistent with IRB and Twitter’s terms of service to protect individuals from identification) on the MCRC’s website and will share them on GitHub as well. This is further explained in the Data Management Plan.

Deliverable 3: Our research team and our industry partners will together develop and test corrective messages for topics related to vaccine hesitancy and election integrity through a series of RCTs during Year 2. In each RCT, enhanced correction messages deploying effective features (e.g., citing scientific evidence, using visuals, quoting testimonials) identified through rapid-response A/B testing will be systematically compared with standard control messages lacking such features. The set of outcomes we plan to collect fall into the following categories—engagement metrics (number of likes, retweets, comments, replies, and quotes) related to both the targeted misinformation and corrections, machine-coded discourses about the misinformation topic, and accompanying survey data. These vetted corrective messages can be of immediate utility to help the fact-checking community address emerging misinformation of significant public interest.

Deliverable 4: The PI, CO-Is and Senior Personnel will train the postdoctoral researchers (see Postdoctoral Mentoring Plan) and the graduate research assistants on the technical aspects of the convergence work related to network detection, intervention, and evaluation - increasing the number of scholars who are situated to do convergence research. Additionally, the Course Correct team will train the collaborating journalists (Snopes, Wisconsin Center for Investigative Journalism, Capital Times) to use the Course Correct tool, teaching fundamental elements of experimental design and randomized control trials. This will be done virtually and in person in Year 1 and Year 2. Virtual workshops will be held for members of the International Fact Checking Network.

Deliverable 5: The research team has an exemplary track record of publication, with more than 60,000 citations and a combined h-index of 344 according to Google Scholar. In the past four years, the MCRC and CCCR have hosted numerous international conferences of top scholars in allied fields, sharing resources, developing collaborative partnerships and workshopping research plans and analyses to maximize the scholarly and public-facing influence of the team’s research. The CCCR is already resourced to continue these conferences through Phase II.

Our team has a very strong track record of meeting timelines and deadlines across a wide array of externally funded projects totaling more than \$65 million. We have vetted our timeline with key members of our Board of Advisors, web developer, programmer, NSF-CA coach, and journalistic partners as well.

## **H. Track Alignment**

Course Correct’s central goal is to scale up an interactive dashboard that enables journalists to identify prominent social media networks that are sharing misinformation, perform rapid-response randomized testing of fact-checking messages, and monitor their real-time performance among at-risk online communities for issues of public health concerning COVID-19 and trust in democratic election administration. This matches the “overarching goal of Track F” to “develop prototype(s) of novel research platforms forming integrated collection(s) of tools, techniques, and educational materials and programs to support increased citizen trust in public information of all sorts (health, climate, news, etc.), through more effectively preventing, mitigating, and adapting to critical threats in our communications systems.” Our deliverables are relevant for Track F teams working on issues related to fact-checking, media literacy, harassment of experts, journalistic education, information quality, and their collective efforts to improve public health, foster civic engagement, and connecting otherwise disparate groups.

Our major goal is to reduce sharing of misinformation on social media and enhance trust in communication systems so that prosocial and participatory behavior becomes more likely in the arenas of public health and democratic engagement, respectively. Finally, our work will foster education and training workshops, conferences, and materials to create a better equipped army of journalists, fact-checkers, and information workers, and a more informed citizenry. We will begin testing the scalability of journalist training by conducting workshops for the student journalism majors in the UW-Madison SJMC. We will invite recent graduates of the program and student journalists at Course Correct-affiliated universities to attend the Year 1 and Year 2 workshops virtually so that the next generation of journalists can become familiar with Course Correct and its value in journalists’ daily workflow.

To directly promote track integration, Course Correct has enthusiastically participated in Cross Team Shares during NSF-CA Innovation Curriculum meetings and has consistently led discussions of

other Track F teams outside of the regular NSF-CA curriculum throughout Phase I. For example, Course Correct proposed and convened a Conference Plenary (with live presentations in the central conference hall along with a livestream) called “Combating Threats to Trust and Accuracy in Communication Networks Around the Globe” at the 2022 International Communication Association Conference that included four Track F teams and several other teams from around the world. The planning for this convening led to a partnership between Course Correct and a team led by Professor Sebastián Valenzuela at Pontificia Universidad Católica de Chile to help bring Course Correct’s network detection system and observational correction interventions to lower and middle income Spanish speaking countries throughout Central and South America.

Notably, both the International Communication Association convening our team put together and the Cross Team Shares that were a part of the NSF-CA Innovation Curriculum provided the pathway for Course Correct to enter into a formal partnership with the CommuniTies team (F846, Eduard Dragut, PI) where we are subcontracting with each other (~\$100,000 each) in our Phase II budgets. Course Correct’s network detection and intervention techniques will be paired with the Spanish language and hyperlocal capabilities pioneered by CommuniTies to expand the reach of each of our deliverables to more end users. This is important as Latino-targeted corrections are more effective at reducing misinformation in Latino communities (Velez, Porter, & Wood, forthcoming). Providing further evidence of our commitment to coordination, the University of Wisconsin-Madison faculty in Course Correct brought Prof. Holbert (F846, CommuniTies Co-PI) to our campus in the spring of 2022 for a presentation and conversations about our track-aligned work.

Additionally, Course Correct is partnering with Track F team Expert Voices Together (F448, Rebekah Tromble, PI). EVT will provide Course Correct their database that stores social media and network information related to the harassment of journalists and other experts on social media. Course Correct will help EVT understand the shape and flow of the networks of harassment, seeking to detect key sources of online harassment, networks they flow through, and strategies to reduce the flow of these attacks. EVT will make available to Course Correct EVT’s suite of tools related to helping journalists navigate online harassment. As Course Correct funds local, state, and national-level news organizations piloting our primary deliverable in Phase II, the potential for online harassment is non-trivial. EVT’s innovative work will provide Course Correct-funded journalists and newsrooms additional assistance should online harassment become an issue in their work. Course Correct’s PI, Prof. Wagner, attended a conference led by EVT’s PI, Prof. Tromble in the spring of 2022, presenting on the public-facing nature of their track-aligned work and engaging in a series of breakout sessions focusing on the linkages between the two team’s deliverables.

Finally, Course Correct is partnering with the Track F team CO:CAST (Srinivasan Parthasarathy, PI). CO:CAST’s ability to trace misinformation flows, and the feedback provided by CO:CAST’s public health and crisis responder end users, will help us improve the generalizability of our fact checking solutions. We see opportunities to collaborate on technical issues (multi-modal signal detection, network, and content analysis) as well. Our dynamic and time-sensitive misinformation network detection system is well-placed to help CO:CAST’s end-users make decisions during a crisis.

Additionally, we have entered into an agreement with the International Fact-Checking Network (IFCN) to introduce Course Correct to the more than 135 IFCN signatories across the globe. In Year 1, Course Correct will give a series of small, virtual workshops to IFCN signatories based upon the time zone they live and work in. Building off of the NSF-CA Innovation Curriculum we followed in Phase I, Course Correct will also interview the IFCN members to learn about how Course Correct’s features might need to be adapted for international audiences, as well as with U.S. audiences that serve diverse audiences in different regions around the country. Moreover, these sessions will be a chance for our formal Phase I partners (see section D.) to engage with the IFCN as well. Building connections with the IFCN will also be of value to the other Track F teams with whom we continue to informally share resources and ideas.

In Year 2, Course Correct will be featured at the Global Fact 10 conference. There, the full dashboard (the primary deliverable) will be live demonstrated, building upon the lessons we learn at the 2022 Expo and during the Year 1 virtual presentations to IFCN signatories. The Global Fact conference

provides Course Correct a chance to show a captive audience of engaged end users and stakeholders from around the globe what our dashboard can do. The presentation will include testimonials from the news organizations we fund in Phase II as well.

More generally, our research team is poised to continue our role as a Track F convener as we catalyze innovative partnerships across computer science, computational social science, engineering, field experimentation, journalism, civic engagement, social media, algorithmic transparency, and public health communication.

## **I. Intellectual Property Management Plan (Submitted in Supplementary Documents per NSF-CA Track F: Program Director)**

### **J. Broader Impacts & Broadening Participation Plan**

Broader Impacts of the proposed project are poised to be realized through: (1) Course Correct's industry collaborations that yield interventions to reduce misinformation flow and help to improve public outcomes related to vaccine hesitancy and acceptance of legitimate election results, (2) research that will advance scientific knowledge, (3) broadening participation of women and minorities in social scientific research and fact-checking journalism, (4) building partnerships between the academy, social media companies, journalistic outlets, and tech developers (5) improving education in journalism, media literacy, public health, and political science, and (6) training the next generation of computational social scientists.

The Project Aims (Section A.) demonstrate the scientific merit of our work and the many ways it will advance scientific knowledge. Due in part to the interdisciplinary nature of the work, the potential for real-world interventions in critical public health and civic problems is real, and the innovative methods we are developing will have applications far beyond vaccine and election misinformation.

Second, and regarding the outcomes themselves, we will be able to test the efficacy of various corrective messages and delivery systems so that fact-checkers can optimize their corrective efforts to find those that are most effective with the targeted populations. By leveraging innovations in computer science, engineering and computational social science in a mass communication framework, this project can have lasting effects on how fact-checking journalism is conducted, how people interpret and act upon public health information, and how people determine who is worthy of democratic legitimacy.

Third, our project has the potential to increase the participation of women and minorities in convergence research and in fact-checking journalism. The MCRC and CCCR are diverse research centers in terms of gender, racial and ethnic backgrounds, country of origin, and intellectual perspectives. The selection of these research problems, which presently have asymmetric outcomes in terms of political partisanship, region, community type, race, and gender is likely to excite future researchers from diverse backgrounds as they will be able to see themselves in the research and the potential to improve conditions within affected communities. The MCRC and CCCR teams have won Best Paper Awards from our major associations (ICA, AEJMC, and NCA) for the last four years for work developing computational methods and advanced predictive modeling techniques (2019, 2020, 2021), along with work on rural individuals living in news deserts (2021) and the framing of the Black Lives Matter movement (2022).

Fourth, the project's focus to connect scholars, social media industry leaders and journalism innovators will upend one-way message flow from researchers to social media companies and journalists, opening this dynamic to mutual learning. Rather than scholars pointing out problems and proposing solutions that do not fit the institutional and cultural mores of industry, our project sought and received direct input from industry about the kind of needs social media companies and journalists have with respect to providing clear, accurate, transparent information that is, in turn, trusted by the audience, and the challenges of building technology solutions from tech developers and entrepreneurs. The 50 interviews we have already conducted in Phase I with these professionals will be augmented in Phase II by sending team members to visit journalists for onsite training with Course Correct and by bringing them to campus to evaluate the dashboard's utility so that we can adjust it to fit industry needs while still providing the benefit of carefully-developed interventions with evidence of success. This gives the project a better chance of long term success by increasing buy-in at the industry level. Research already shows

that journalists find fact-checking to be prestigious and valuable, what is missing are tools that allow more types of journalists serving different audiences to be able to engage in effective fact-checking.

Finally, the broader impact of the project will extend to journalism education, media literacy, and democratic behaviors. By conducting tutorials and workshops, we will train computational social scientists, journalists, fact checkers, and other information professionals to use the Course Correct tool. One reason we are especially well-positioned to achieve these goals is due to the public-facing work our team engages in on a regular basis. In the past two years, we have published multiple scientifically grounded public-facing articles in outlets like the *Washington Post*, *TechStream*, and *Social Science Research Network*, which have led to interviews to wide-ranging news coverage in national outlets like the *New York Times*, *Wall Street Journal* and international programming on the BBC. Additionally, the research team gives dozens of public talks each year, connecting scientific research to community problems and issues – indeed, the PI is a winner of a university-wide public outreach award and edits the Forum section of *Political Communication*, which connects scholars to industry practitioners on topics such as innovations in graduate education and priorities for social media companies. Research team members already have hosted workshops during Phase I for a variety of groups that would benefit from the knowledge gained in this project, including: the PEOPLE program, McNair Scholars, Upward Bound, the Association of Health Care Journalists, the League of Women Voters, the International Media Education Summit, and Wisconsin Department of Health Services. Indeed, applications from underrepresented minorities increased by 30 percent to the SJMC’s grad program (PI Wagner is Director of Graduate Studies), admitted underrepresented minorities increased by 35 percent and acceptances from the students to our program increased 400 percent from 2020 to 2022.

Co-PI’s at Georgia Tech are equally committed to supporting the NSF goals of broadening participation in computing. For many years, Georgia Tech has graduated the highest number of African American engineers, and there are several specific programs in place to further foster opportunities for African Americans and other underrepresented minorities in computing and engineering. The Focus Program at Georgia Tech is one of the nation’s premier programs for raising awareness of graduate education. It is designed to attract the best and brightest underrepresented minority students and encourage them to pursue graduate degrees at Georgia Tech. The program sponsors a campus visit for undergraduate students from underrepresented groups who are interested in pursuing graduate school.

As part of this proposal, we will host a COSMOS project special event during the Focus Program recruiting event hosted by the Constellations Center for Equity in Computing, the umbrella research center for Georgia Tech collaborators on this proposal. Since 2017, Constellations has been on a mission to expand access to computer science education to underserved communities. A member of the NSF-funded FLIP Alliance (Diversifying Future Leadership in the Professoriate), Constellations believes inclusion and innovation are crucial to the success of the tech industry. This effort aims to increase underrepresented minorities in higher academic ranks. While a lot of the effort of Constellations is in improving the pipeline of underrepresented minorities into computing programs at Georgia Tech, we will focus in this project on further nurturing the diversity present in Georgia Tech College of Computing’s current undergraduate and graduate programs. For example, our Human-Centered Computing PhD and MS Human-Computer Interaction programs already have a substantial number of women, and we will work to involve them more directly in our graduate student recruitment efforts.

Our Board of Advisors (see Section H.) is an extremely diverse group in terms of professional focus, racial and ethnic background, gender identity, region, and mix of academic and private sector experience. Our Board of Advisors will help advise our team to recruit diverse staff, create welcoming environments for graduate research assistants, staff, and team members (who themselves reflect a wide array of racial and ethnic backgrounds, professional expertise, and substantive interests). Our team’s Collaboration Agreement, created during the NSF-CA Innovation Curriculum guides our work in this area as well.

**K. Public Executive Summary (Submitted in Supplementary Documents per NSF-CA Track F: Program Director)**



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NAME: Michael W. Wagner

POSITION TITLE &amp; INSTITUTION: Professor, University of Wisconsin Madison

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
University of Nebraska	Lincoln, NE	Broadcasting/Journalism	BJourn.	1988
Indiana University	Bloomington, IN	Political Science	Ph.D.	2006

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2019-	Professor, School of Journalism and Mass Communication, UW-Madison
2017-	Faculty Advisory Board, Tommy G. Thompson Center on Public Leadership, UW-Madison
2016-	Founding Editor, "Forum" review section of Political Communication
2015-	Senior Fellow, Mass Communication Research Center, UW-Madison
2015-	Faculty Affiliate, Elections Research Center at UW-Madison
2012-	Faculty Associate, Center for Communication and Democracy, UW-Madison
2015-2019	Associate Professor, School of Journalism and Mass Communication, UW-Madison
2015-	Affiliated Faculty, La Follette School of Public Affairs, UW-Madison
2012-	Affiliated Faculty, Department of Political Science, UW-Madison
2012-2015	Assistant Professor, School of Journalism and Mass Communication, UW-Madison
2007-2015	Assistant Professor, Department of Political Science University of Nebraska-Lincoln
2006-2007	Assistant Professor, Department of Political Science and International Relations, U of Delaware

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

- a) Jiang, Xiaoya, Min-Hsin Su, Juwon Hwang, Dhavan V. Shah, and Michael W. Wagner Forthcoming. Ideology and COVID-19 Vaccination Intention: Perceptual Mediators and Communication Moderators. *Journal of Health Communication*.
- b) Li, Jianing, Jordan Foley, Omar Dum Dum, and Michael W. Wagner. 2021. "The Power of a Genre: Political News Presented as Fact-Checking Increases Accurate Belief Updating and Hostile Media Perceptions," *Mass Communication and Society*. DOI: 10.1080/15205436.2021.1924382
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- e) Foley, Jordan and Michael W. Wagner. "How Media Consumption Patterns Fuel Conspiratorial Thinking," *Brookings Institution's TechStream*, May 26, 2020.

### **Other Significant Products, Whether or Not Related to the Proposed Project**

- a) Friedland, Lewis A., Dhavan V. Shah, Michael W. Wagner, Chris Wells, Katherine J. Cramer, and Jon C.W. Pevehouse 2022. *Battleground: Asymmetric Communication Ecologies and the Erosion of Civil Society in Wisconsin*. Cambridge University Press, Elements in Politics and Communication Series.
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- e) Mycoff, Jason D., Michael W. Wagner, and David C. Wilson. 2009. "The Empirical Effect of Voter ID Laws on Turnout: Present or Absent?" *PS: Political Science and Politics*, 42 (1): 121-26.

### **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f\(i\)\(d\)](#))**

- a) Fact-Checking Publisher of The Observatory, a fact-checking news site covering Wisconsin and U.S. national politics.
- b) Co-Chair: The Information Ecology and Trustworthy Information at CommUnity Shares Conference, 2022
- c) Advising and Training: Dissertation advisor for 10 completed PhDs, with 8 students placed in faculty positions. Also served as committee member for 39 completed doctoral dissertations across five departments.
- d) Multiple Civic Engagement and Voter Turnout Training Sessions for various organizations including the U.S. State Department.
- e) Field Service: Service as editor and co-editor on various journals including *Political Communication*.

NAME: Porismita Borah

POSITION TITLE &amp; INSTITUTION: Associate Professor, Washington State University

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
Iowa State University	Ames, IA	Communications	MS	2005
University of Wisconsin	Madison, WI	Mass Communication	PhD	2010

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2018-19	Senior Research Fellow, University of Vienna, Austria
2017-	Associate Professor, Edward R. Murrow College of Communication, Washington State University, Pullman, WA
2012-2017	Assistant Professor, Edward R. Murrow College of Communication, Washington State University, Pullman, WA
2010-2012	Assistant Professor, Communication, Maryville University, St. Louis, MO
2006-2010	Research and Teaching Assistant, School of Journalism and Mass Communication, University of Wisconsin-Madison
2003-2005	Research Assistant, Greenlee School of Journalism, Iowa State University, Ames, IA



**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

1. Su, Y., Borah, P. Xiao, X. (2022). Understanding the “Infodemic”: Social media news use, homogeneous online discussion, self-perceived media literacy, and misperceptions about COVID-19. *Online Information Review*. <https://doi.org/10.1108/OIR-06-2021-0305>
2. Borah, P., Austin, E., & Su, Y. (2022). Injecting disinfectants to kill the virus: The role of literacy, information gathering sources, credibility perceptions, and political ideology on misinformation perceptions about COVID-19. *Mass Communication and Society*. <https://doi.org/10.1080/15205436.2022.2045324>
3. Borah, P., Su, Y., Xiao, X., & Lee, D.(2022). Incidental news exposure and COVID-19 misperceptions: A moderated-mediation model. *Computers in Human Behavior*. 129 (2). <https://doi.org/10.1016/j.chb.2021.107173>
4. Borah, P. (2022). Message framing and COVID-19 vaccination intention: Moderating roles of partisan media use and pre-attitudes about vaccination. *Current Psychology*. 10.1007/s12144-022-02851-3
5. Borah, P., Xiao, X., & Lee, D.(2022). Narrative messages, information seeking and COVID-19 vaccine intention: The moderating role of perceived behavioral control. *American Journal of Health Promotion*. <https://doi.org/10.1177/08901171221075019>

### **Other Significant Products, Whether or Not Related to the Proposed Project**

1. Huber, B., Borah, P., & Gil de Zúñiga, H. (2021). Taking corrective action when exposed to fake news: The role of fake news literacy. *Journal of Media Literacy Education*. <https://digitalcommons.uri.edu/jmle-preprints/23>
2. Borah, P., Hwang, J., & Hsu, Y. (2021). COVID-19 vaccination attitudes and intention: Message framing and the moderating role of perceived vaccine benefits. *Journal of Health Communication*, 36 (12), 1-11. <https://doi.org/10.1080/10810730.2021.1966687>
3. Borah, P., Irom, B., & Hsu, L. (2021). "It infuriates me": Examining young adults' reactions to and recommendations to fight misinformation about COVID-19. *Journal of Youth Studies*. <https://doi.org/10.1080/13676261.2021.1965108>
4. Xiao, X. Borah, P., & Su, Y. (2021). The dangers of blind trust: Examining the interplay among social media news use, misinformation identification, and trust on conspiracy beliefs. *Public Understanding of Science*. <https://doi.org/10.1177/0963662521998025>
5. Xiao, X., Lee, D., Wong, R. & Borah, P. (2021). The impact of theory in HPV vaccination promotion research: A meta-analysis and systematic review. *American Journal of Health Promotion*. <https://doi.org/10.1177/08901171211012524>

### **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f.\(i\)\(d\)](#))**

1. Learning to identify misinformation on social media platforms and strategies to build media and digital literacy skills. Smith Teaching and Learning Grant, Washington State University, Principal Investigator, 2021-2022. Dr Borah received the grant to teach an undergraduate course on misinformation and building digital literacy skills.
2. Multidisciplinary undergraduate research training in wearable computing. NSF, Co-Investigator, 2019-2022. Dr. Borah is part of the multidisciplinary REU grant from NSF.
3. Dr. Borah was selected to be the Editor-In-Chief for *International Journal of Public Opinion Research*, 2021-2024.
4. Dr. Borah serves in the editorial boards of multiple Communication journals including *Communication Research*, one of the high impact factor journals in Communication.
5. Dr. Borah serves as an ad-hoc reviewer for 49 journals from Communication, Political Science, Health Sciences and the Social Sciences, including some of the top journals of the field.

NAME: DeChoudhury, Munmun

POSITION TITLE &amp; INSTITUTION: Associate Professor (with tenure), Georgia Institute of Technology

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
National Institute of Technology	Bhopal	Computer Science and Engineering	BOTH	2005
Arizona State University	Tempe, AZ	Computer Science	PHD	2011
Rutgers University	New Brunswick, NJ	Research Fellow	Fellow	2011-2011
Microsoft Research	Redmond, WA	Postdoctoral Researcher	Postdoctoral Fellow	2013-2013

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2020 - present	Associate Professor (with tenure), Georgia Institute of Technology, School of Interactive Computing, Atlanta, GA
2014 - 2020	Assistant Professor, Georgia Institute of Technology, School of Interactive Computing, Atlanta, GA

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

1. Birnbaum ML, Ernala SK, Rizvi AF, De Choudhury M, Kane JM. A Collaborative Approach to Identifying Social Media Markers of Schizophrenia by Employing Machine Learning and Clinical Appraisals. *J Med Internet Res*. 2017 Aug 14;19(8):e289. PubMed Central PMCID: PMC5575421.
2. Saha K, Yousuf A, Hickman L, Gupta P, Tay L, De Choudhury M. A Social Media Study on Demographic Differences in Perceived Job Satisfaction. *Proceedings of the ACM on Human- Computer Interaction - CSCW*. 2021 February 02.
3. Choi D, Sumner SA, Holland KM, Draper J, Murphy S, Bowen DA, Zwald M, Wang J, Law R, Taylor J, Konjeti C, De Choudhury M. Development of a Machine Learning Model Using Multiple, Heterogeneous Data Sources to Estimate Weekly US Suicide Fatalities. *JAMA Netw Open*. 2020 Dec 1;3(12):e2030932. PubMed Central PMCID: PMC7758810.
4. Ernala SK, Birnbaum M, Candan K, Rizvi A, Sterling WA, Kane JM, De Choudhury M. Methodological Gaps in Predicting Mental Health States from Social Media: Triangulating Diagnostic Signals. *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. 2019 May.
5. Chancellor S, Baumer E, De Choudhury M. Who is the "Human" in Human-Centered Machine Learning: The Case of Predicting Mental Health from Social Media. *Proceedings of the ACM on Human-Computer Interaction-CSCW*. 2019 November 09.

### **Other Significant Products, Whether or Not Related to the Proposed Project**

1. Chancellor S, De Choudhury M. Methods in predictive techniques for mental health status on social media: a critical review. NPJ Digit Med. 2020;3:43. PubMed Central PMCID: PMC7093465.
2. Saha K, Bayraktaroglu A, Campbell A, Chawla N, De Choudhury M, , Striegel A, Yoo D. Social media as a passive sensor in longitudinal studies of human behavior and wellbeing. CHI EA '19: Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems. 2019 May 01.
3. De Choudhury M, Sharma S, Logar T, Eekhout W, Nielsen RC. Gender and Cross-Cultural Differences in Social Media Disclosures of Mental Illness. Proc. CSCW 2017: 20th ACM Conference on Computer Supported Cooperative Work and Social Computing. 2017 November 01.
4. De Choudhury M, Gamon M, Counts S, Horvitz E. Predicting Depression via Social Media. Proceedings of the 7th International AAAI Conference on Weblogs and Social Media. 2013 July.
5. Lee EE, Torous J, De Choudhury M, Depp CA, Graham SA, Kim HC, Paulus MP, Krystal JH, Jeste DV. Artificial Intelligence for Mental Health Care: Clinical Applications, Barriers, Facilitators, and Artificial Wisdom. Biol Psychiatry Cogn Neurosci Neuroimaging. 2021 Sep;6(9):856-864. PubMed Central PMCID: PMC8349367.

### **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f.\(i\)\(d\)](#))**

1. Developed innovations in Teaching and Training such as through recognition as a 2015-16 GT Center for the Enhancement of Teaching & Learning 1969 Teaching Fellow
2. Served as a keynote speaker at a number of workshops, invited meetings/symposiums and conferences, such as Intl. Conference on Computational Social Science (IC2S2) 2020.
3. Gave invited panels and talks at multiples places disseminating research findings, such as National Academies Workshop on Big Data, Causal Analysis, and Aging, 2019.
4. Served or currently serving as Internal Journal of Human-Computer Interaction, Editorial Board Member for Springer EPJ Data Science, Springer Human Computer Interaction Series.

NAME: Kumar, Srijan

POSITION TITLE &amp; INSTITUTION: Assistant Professor, Georgia Institute of Technology

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
Indian Institute of Technology	Kharagpur, West Bengal	Computer Science	BS	2013
University of Maryland	College Park, Maryland	Computer Science	MS	2016
University of Maryland	College Park, Maryland	Computer Science	PHD	2017
Stanford University	Standford, CA	Postdoctoral training in the Computer Science department	Postdoctoral Fellow	2017-2019

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2020 - present	Assistant Professor, Georgia Institute of Technology, Atlanta, GA
2019 - 2019	Researcher, Google , Mountain View, CA

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

1. Niverthi M, Verma G, Kumar S. Characterizing, Detecting, and Predicting Online Ban Evasion. Proceedings of The Web Conference. 2022.
2. He B, Ahamad M, Kumar S. PETGEN: Personalized Text Generation Attack on Deep Sequence Embedding-based Classification Models. Proceedings of the 27th ACM SIGKDD international conference on knowledge discovery and data mining. 2021.
3. Micallef N, Sandoval-Castaneda M, Cohen A, Ahamad M, Kumar S, Memon N. Cross-Platform Multimodal Misinformation: Taxonomy, Characteristics and Detection for Textual Posts and Videos. Proceedings of the International AAAI Conference on Web and Social Media. 2022.
4. Micallef N, He B, Kumar S, Ahamad M, Memon N. The Role of the Crowd in Countering Misinformation: A Case Study of the COVID-19 Infodemic. 2020 IEEE International Conference on Big Data (Big Data). 2020.
5. Verma G, Mujumdar R, Wang J, De Choudhury M, Kumar S. Overcoming Language Disparity in Online Content Classification with Multimodal Learning. Proceedings of the International AAAI Conference on Web and Social Media. 2022.

## **Other Significant Products, Whether or Not Related to the Proposed Project**

1. He B, Ziems C, Soni S, Ramakrishnan N, Yang D, Kumar S. Racism is a Virus: Anti-Asian Hate and Counterspeech in Social Media during the COVID-19 Crisis. Proceedings of the 2021 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining. 2021.
2. Kumar S, Hooi B, Makhija D, Kumar M, Faloutsos C, Subrahmanian V. REV2: Fraudulent user prediction in rating platforms. Proceedings of the Eleventh ACM International Conference on Web Search and Data Mining - WSDM '18; 2018; Marina Del Rey, CA, USA. New York, New York, USA: ACM Press; c2018. Available from: <http://dl.acm.org/citation.cfm?doid=3159652.3159729> DOI: 10.1145/3159652.3159729
3. Kumar S, Hamilton W, Leskovec J, Jurafsky D. Community Interaction and Conflict on the Web. Proceedings of the 2018 World Wide Web Conference on World Wide Web - WWW '18. the 2018 World Wide Web Conference; ; Lyon, France. New York, New York, USA: ACM Press; c2018. Available from: <http://dl.acm.org/citation.cfm?doid=3178876.3186141> DOI: 10.1145/3178876.3186141
4. Kumar Srijan, Cheng Justin, Leskovec Jure, Subrahmanian VS. An Army of Me: Sockpuppets in Online Discussion Communities. Proceedings of the 26th International Conference on World Wide Web; 2017; c2017.
5. Kumar S, Zhang X, Leskovec J. Predicting Dynamic Embedding Trajectory in Temporal Interaction Networks. Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining. KDD '19: The 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining; 04 0 19; Anchorage AK USA. New York, NY, USA: ACM; c2019. Available from: <https://dl.acm.org/doi/10.1145/3292500.3330895> DOI: 10.1145/3292500.3330895

## **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f.\(i\)\(d\)](#))**

1. Selected as a CRA/CCC Computing Innovation Fellows Mentor 2021-2023.
2. So far mentored two high school students, six undergraduate students, eleven masters students, four PhD students, and one postdoctoral scholar at Georgia Institute of Technology.
3. Developed the curriculum of graduate-level courses on "Data Science for Social Networks" and "Web Search and Text Mining" at Georgia Institute of Technology
4. Co-taught tutorials on social media analysis and machine learning at ACM SIGKDD 2017, WWW 2017, and ASONAM 2016, all of which were well-attended.
5. Released several datasets (see <http://claws.cc.gatech.edu/data.html>) to enable further research on social media, misinformation, hate speech, and fraud detection.



NAME: Yang, Sijia

POSITION TITLE &amp; INSTITUTION: Assistant Professor, University of Wisconsin-Madison

**A. PROFESSIONAL PREPARATION** - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
University of Pennsylvania	Philadelphia, Pennsylvania	Communication	PHD	2019

**B. APPOINTMENTS** - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))

From - To	Position Title, Organization and Location
2019 - present	Assistant Professor in Journalism and Mass Communication, University of Wisconsin-Madison, Madison, WI

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

1. Yang S, Maloney EK, Tan ASL, Cappella JN. When Visual Cues Activate Moral Foundations: Unintended Effects of Visual Portrayals of Vaping within Electronic Cigarette Video Advertisements. *Hum Commun Res.* 2018 Jul;44(3):223-246. PubMed Central PMCID: PMC6037301.
2. Kim H, Yang S, Kim M, Hemenway B, Ungar L, Cappella J. An experimental study of recommendation algorithms for tailored health communication. *Computational Communication Research.* 2019; 1(1):103-129. Available from: <https://www.ingentaconnect.com/content/aup/ccr/2019/00000001/00000001/art00005;jsessionid=ba4oge8t9u3f6.live-03>
3. Duan Z, Li J, Lukito J, Yang K, Chen F, Shah D, Yang S. Algorithmic agents in the hybrid media system: Social bots, selective amplification and partisan news about COVID-19. *Human Communication Research.* Forthcoming. DOI: 10.1093/hcr/hqac012
4. Yang S, Shen L, Li J, Ran T, Okada T, Borah P. Applying the Hornik & Woolf approach to identify high-priority COVID-19 misinformation for vaccine promotion. *International Communication Association Annual Conference; 2022 May; Paris, France.*
5. Li J, Tao R, Shen L, Yang S. Hope over fear: The effectiveness of hope appeal enhancements to debunk COVID-19 misinformation amid heightened threat. *International Communication Association Annual Conference; 2021 May; Virtual.*

### **Other Significant Products, Whether or Not Related to the Proposed Project**

1. Dehlendorf C, Fox E, Sharma AE, Zhang J, Yang S, Centola D. Birth Control Connect: A randomized trial of an online group to disseminate contraceptive information. *Contraception*. 2020 Jun;101(6):376-383. PubMed Central PMCID: PMC7234911.
2. Sutton JA, Yang S, Cappella JN. Perceived effectiveness of objective features of pictorial warning messages. *Tob Control*. 2019 Aug;28(e1):e24-e30. PubMed PMID: 30361323.
3. Zhang J, Brackbill D, Yang S, Centola D. Efficacy and causal mechanism of an online social media intervention to increase physical activity: Results of a randomized controlled trial. *Prev Med Rep*. 2015;2:651-7. PubMed Central PMCID: PMC4721409.
4. Yang S, Tan AS.L., Hamilton K, Fischbein R, Kenne DR.. Cognitive roadblock not gateway: Effects of visual vaping cues on young adults' harm perceptions. *Tobacco Regulatory Science*. 2018; 4(2):88-103. Available from: <https://www.ingentaconnect.com/content/trsg/trs/2018/00000004/00000002/art00008>
5. Shen L, Li J, Tao R, Matthew M, Okada T, Borah P, Yang S. Diverging roles of COVID-19 misperceptions in predicting vaccination intentions: Implications for communication campaigns. American Public Health Association Annual Conference; 2021 October; Virtual.

### **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f.\(i\)\(d\)](#))**

1. Innovations in Teaching and Training (2019—present): Developed a graduate seminar on “Computational Approaches to Communication Research” at the University of Wisconsin-Madison.
2. Journal Reviewers for Human Communication Research 2019- present.
3. Co-chair and co-organizer for a panel titled "Persuasive Messaging to Curb the COVID-19 Pandemic and Infodemic: Questions and Lessons from Around the Globe" (International Communication Association, 2021).
4. Community Outreach: Collaborating with the Wisconsin Primary Care Association to promote COVID-19 vaccine confidence in the state of WI and particularly among rural communities (2021).
5. Serving on the UW-Madison team to help the Wisconsin state government develop communications strategies to address the COVID-19 crisis (2020).

NAME: Leticia Bode

POSITION TITLE & INSTITUTION: Provost's Distinguished Associate Professor, Georgetown University

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
University of Wisconsin	Madison, WI	Political Science	PhD	2012
University of Wisconsin	Madison, WI	Political Science	MA	2006
Trinity University	San Antonio, TX	Political Science; Spanish	BA	2005

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2019-present	Provost's Distinguished Associate Professor, Georgetown University, Washington DC
2018-present	Associate Professor, Georgetown University, Washington DC
2012-2018	Assistant Professor, Georgetown University, Washington DC

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

“See Something, Say Something: Correction of Global Health Misinformation on Social Media.” 2018. *Health Communication*, 33(9): 1131-1140. (Leticia Bode and Emily K. Vraga).  
<http://dx.doi.org/10.1080/10410236.2017.1331312>

“Using Expert Sources to Correct Health Misinformation in Social Media.” 2017. *Science Communication*, 39(5), 621-645. (Emily K. Vraga and Leticia Bode). <http://journals.sagepub.com/eprint/QVyrvhe89b3HeGmwMSY9/full>

“In related news, that was wrong: The correction of misinformation through related stories functionality in social media.” 2015. *Journal of Communication* 65(4), 619-638. (Leticia Bode, Emily K Vraga).  
<http://onlinelibrary.wiley.com/doi/10.1111/jcom.12166/abstract;jsessionid=C504C2BB7562D236E910034748B85225.f04t01>

Vraga, E. K., & Bode, L. (2018). I do not believe you: How providing a source corrects health misperceptions across social media platforms. *Information, Communication & Society*, 21(10), 1337-1353.

Vraga, E. K., & Bode, L. (2020). Defining misinformation and understanding its bounded nature: Using expertise and evidence for describing misinformation. *Political Communication*, 37(1), 136-144.

### **Other Significant Products, Whether or Not Related to the Proposed Project**

“Political news in the News Feed: Learning politics from social media.” 2016. *Mass Communication & Society* 19 (1), 24-28. <http://www.tandfonline.com/doi/full/10.1080/15205436.2015.1045149> 2016 Walter Lippman Award (best article in Political Communication)

Words that Matter: How the News and Social Media Shaped the 2016 Presidential Campaign. 2020. Leticia Bode, Ceren Budak, Jonathan M Ladd, Frank Newport, Josh Pasek, Lisa O. Singh, Stuart N. Soroka, and Michael W. Traugott. Brookings Institution Press. <https://www.brookings.edu/book/words-that-matter/>

“A New Space for Political Behavior: Political Social Networking and its Democratic Consequences.” 2014. *Journal of Computer-Mediated Communication* 19(3), 414-429. (Leticia Bode, Emily Vraga, Porismita Borah, and Dhavan Shah). <http://onlinelibrary.wiley.com/doi/10.1111/jcc4.12048/abstract>.

### **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f.\(i\)\(d\)](#))**

Cited in Surgeon General's Advisory on Confronting Health Misinformation  
<https://www.hhs.gov/sites/default/files/surgeon-general-misinformation-advisory.pdf>

Research used by Facebook to change how they show fact checks to users  
<https://medium.com/designatmeta/designing-against-misinformation-e5846b3aa1e2>

## NSF BIOGRAPHICAL SKETCH

NAME: Dragut, Eduard

ORCID: 0000-0002-3103-054X

POSITION TITLE & INSTITUTION: Associate Professor, Temple University

### (a) PROFESSIONAL PREPARATION -(see PAPPG Chapter II.C.2.f.(a))

INSTITUTION	LOCATION	MAJOR / AREA OF STUDY	DEGREE (if applicable)	YEAR YYYY
Bucharest University	Bucharest , Bucharest	Computer Science	BS	1994
University of Iowa	Iowa City, Iowa	Computer Science	MS	2003
University of Illinois at Chicago	Chicago, Illinois	Computer Science	PHD	2010

### (b) APPOINTMENTS -(see PAPPG Chapter II.C.2.f.(b))

2019 - present Associate Professor, Temple University

2013 - 2019 Assistant Professor, Temple University

2010 - 2013 Post Doctorate, Purdue University

### (c) PRODUCTS -(see PAPPG Chapter II.C.2.f.(c))

#### Products Most Closely Related to the Proposed Project

1. Zhang S, He L, Dragut E, Vucetic S. How to Invest my Time: Lessons from Human-in-the-Loop Entity Extraction. ACM SIGKDD Conference on Knowledge Discovery and Data Mining. 2019 July; :2305--2313. Available from: <https://doi.org/10.1145/3292500.3330773> DOI: 10.1145/3292500.3330773
2. Dong Y, Dragut E, Meng W. Normalization of Duplicate Records from Multiple Sources. IEEE Trans. Knowl. Data Eng. 2019 April; 31(4):769--782. Available from: <https://doi.org/10.1109/TKDE.2018.2844176> DOI: 10.1109/TKDE.2018.2844176
3. Zhang S, He L, Vucetic S, Dragut E. Regular Expression Guided Entity Mention Mining from Noisy Web Data. Conference on Empirical Methods in Natural Language Processing (EMNLP). 2018 October; :1991--2000. Available from: <https://www.aclweb.org/anthology/D18-1224> DOI: 10.18653/v1/D18-1224
4. Yang F, Dragut E, Mukherjee A. Predicting Personal Opinion on Future Events with Fingerprints. International Conference on Computational Linguistics (COLING). 2020 December 07; :1802--1807. Available from: <https://www.aclweb.org/anthology/2020.coling-main.162/> DOI: 10.18653/v1/2020.coling-main.162
5. He L, Shen C, Mukherjee A, Vucetic S, Dragut E. Cannot Predict Comment Volume of a News Article before (a few) Users Read It. The International AAAI Conference on Web and Social Media (ICWSM). Forthcoming.

#### Other Significant Products, Whether or Not Related to the Proposed Project

1. Yang F, Mukherjee A, Dragut E. Satirical News Detection and Analysis using Attention Mechanism and Linguistic Features. Conference on Empirical Methods in Natural Language

Processing (EMNLP)). 2017; :1979-1989. DOI: 10.18653/v1/D17-1211

2. Yang F, Dragut E, Mukherjee A. Claim Verification under Positive Unlabeled Learning. The international conference series on Advances in Social Network Analysis and Mining (ASONAM). 2020 December 07.
3. He L, Han C, Mukherjee A, Obradovic Z, Dragut E. On the dynamics of user engagement in news comment media. Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery. 2020 January 01; 10(1). Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/widm.1342> DOI: 10.1002/widm.1342
4. Bhowmick S, Dragut E, Meng W. TwiCS: Lightweight Entity Mention Detection in Targeted Twitter Streams. IEEE TKDE. 2021. DOI: 10.1109/TKDE.2021.3088716
5. Hosseinia M, Dragut E, Bumber D, Mukherjee A. On the Usefulness of Personality Traits in Opinion-oriented Tasks. RANLP. 2017. DOI: DOI:10.26615/978-954-452-072-4\_062

**(d) SYNERGISTIC ACTIVITIES -(see PAPPG Chapter II.C.2.f.(d))**

1. Program Committees: SIGMOD'15 - '22, VLDB '20, EMNLP'14 – '22, COLING'14, ACL'13 - 22, AAAI'19 - '21, NAACL'19-'21, WWW'13 - '15, '18 – '22, DASFA'13 - '15, ICDE'12 - '13, CIKM'12.
2. Local Arrangements Chair @ SIGMOD'22; Chair Demo Track @ VLDB'22 Workshop Co-Chair: Workshop Series on Data Science with Human in the Loop ([www.dashworkshops.org](http://www.dashworkshops.org)); SIGMOD PhD Symposium'15, ICDE PhD Symposium'14; Workshop on Quality in Databases (QDB)@VLDB'12.
3. Journal Reviewer: CACM, TKDE, TKDD, TWEB, TSC, TiiS, ISJ, JWS, IJIS.
4. Member of the ACM and IEEE.
5. Admin of Data Science with Human-Computer Cooperation Group in LinkedIn. Its goal is to bring together interdisciplinary researchers to share, exchange, learn, and develop preliminary results, new concepts, principle, and methodologies for understanding and improving human-computer cooperation along data science pipelines.



NAME: William A. Sethares

POSITION TITLE &amp; INSTITUTION: Professor, University of Wisconsin-Madison

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
Brandeis University	Waltham, MA	Mathematics	BA	1978
Cornell University	Ithaca, NY	Electrical Engineering	MS	1982
Cornell University	Ithaca, NY	Electrical Engineering	PhD	1987

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
1988 - present	University of Wisconsin, (Assistant, Associate, then Full) Professor
2016 - present	Nat. Taipei Univ. of Tech., Taipei, Taiwan Honorary Int. Chair Professor
2014 - present	Rijksmuseum, Amsterdam, Research Scientist
2012-2020	Cornell University, Ithaca, NY Visiting Professor
2013	New York University in Abu Dhabi, Visiting Professor
2012	Middle Eastern Technical University, Ankara Turkey, Visiting Professor
2005-2006	CCMIX, Paris, France, , Visiting Professor
2004	NASA Ames Research Center, Mountainview CA, Visiting Professor
2000	Australian National University, Canberra, Australia, Visiting Fellow
1999-2000	Cornell University, Ithaca, NY Visiting Associate Professor
1999	Les Ateliers UPIC, Paris, France, Visiting Fellow
1991	Tech. Inst. of Gdansk, Gdansk, Poland, Visiting Scientist
1986	Australian National University, Canberra, Australia, Visiting Scholar
1978-1981	Raytheon, Inc., Wayland, MA and San Diego, CA Computer Programmer

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

Z. Sun, P. Sarma, Y. Liang , and W. Sethares, "A New View of Multi-Modal Language Analysis: Audio and Video Features as Text 'Styles'," 16th Conference of the European Chapter of the Association for Computational Linguistics EACL-2021, April 2021.

Z. Sun, P. Sarma, W. Sethares, and Y. Liang, "Learning Relationships between Text, Audio, and Video via Deep Canonical Correlation for Multimodal Language Analysis," Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20), New York, NY, Feb. 2020. (20.6% acceptance)

P. Sarma, Y. Liang and W. Sethares, "Shallow Domain Adaptive Embeddings for Sentiment Analysis," 2019 Conference on Empirical Methods in Natural Language Processing, EMNLP-IJCNLP 2019, Hong Kong, Nov. 2019.

Z. Sun, P. Sarma, W. Sethares and E. Bucy, "Multi-modal Sentiment Analysis using Deep Canonical Correlation Analysis," Interspeech 2019, Graz, Austria, Sept. 2019.

Prathusha Sarma, Yingyu Liang and William Sethares, "Domain Adapted Word Embeddings for Improved Sentiment Classification," The 56th Annual Meeting of the Association for Computational Linguistics, ACL 2018, Melbourne, Australia, July 15-20, 2018.

### **Other Significant Products, Whether or Not Related to the Proposed Project**

W. A. Sethares and T. W. Staley, "Periodicity Transforms", IEEE Transactions on Signal Processing, Vol. 47, No. 11, 2953-2964, Nov. 1999.

W. A. Sethares, Tuning Timbre Spectrum Scale, Springer Verlag, Second Edition, 2005.

L. Yao and W. A. Sethares, "Nonlinear parameter estimation via the genetic algorithm" IEEE Trans. on Signal Processing, vol. 42, no. 4, April 1994.

C. R. Johnson, Jr. and W. A. Sethares, Ed. "Counting Vermeer: Using Weave Maps to Study Vermeer's Canvases," RKD Monographs, 2018.

C. R. Johnson, Jr., W. A. Sethares, and A. Klein, "Software Receiver Design: Build Your Own Digital Communications System in Five Easy Steps," Cambridge University Press, September, 2011.

### **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f.\(i\)\(d\)](#))**

Holder of 7 US Patents

Supervised and graduated 21 Ph.D.s and 28 MS students

Worked with co-PIs D. Shah and M. Wagner to help establish UWs Center for Communication and Civic Renewal

Google Scholar page provides more information about publications and impact: [https://scholar.google.com/scholar?hl=en&as\\_sdt=0%2C30&q=sethares%2C+william&btnG=](https://scholar.google.com/scholar?hl=en&as_sdt=0%2C30&q=sethares%2C+william&btnG=)

Wikipedia page provides more information about impact on field: [https://en.wikipedia.org/wiki/William\\_Sethares](https://en.wikipedia.org/wiki/William_Sethares)

NAME: Dhavan Shah

POSITION TITLE &amp; INSTITUTION: Professor, Journalism and Mass Communication, Univ of Wisc-Madison

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
University of Wisconsin-Madison	Madison, WI	Mass Communications	BS	1989
University of Minnesota	Mpls/St. Paul MN	Mass Communications	MA	1995
University of Minnesota	Mpls/St. Paul MN	Mass Communication & Political Psychology	PhD	1995

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2013	Affiliated Faculty, Marketing, University of Wisconsin-Madison
2013	Visiting Professor, Department of Communication, University of Vienna
2012	Scientific Director, Center for Health Enhancement Systems Studies, University of Wisconsin-Madison
2011	Affiliated Faculty, Industrial and Systems Engineering, University of Wisconsin-Madison
2010	Director of the Mass Communication Research Center, University of Wisconsin-Madison
2006	Louis A. & Mary E. Maier-Bascom Professor, Journalism and Mass Communication, University of Wisconsin-Madison
2004	Professor, Journalism and Mass Communication, University of Wisconsin-Madison
2002	Affiliated Faculty, Political Science, University of Wisconsin-Madison
2002	Associate Professor, Journalism and Mass Communication, University of Wisconsin-Madison
1998	Assistant Professor, Journalism and Mass Communication, University of Wisconsin-Madison

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

- a) Shah DV, Cappella J, Neuman WR. Big data, computational social science, and digital media: Possibilities and perils. *The ANNALS of the American Academy of Political and Social Science*. 659:6-13, 2015.
- b) Kornfield, R, Sarma, PK, Shah, DV, McTavish, F, Landucci, G, Pe-Romashko, K, Gustafson, DH, Detecting recovery problems just in time: Application of automated linguistic analysis and supervised machine learning to an online substance abuse forum. *Journal of Medical Internet Research*, 20(6), p.e10136, 2018
- c) Zhang, Y, Shah, D, Foley, J, Abhishek, A, Lukito, J, Suk, J, Kim, SJ, Sun, Z, Pevehouse, J and Garlough, C. Whose lives matter? Mass shootings and social media discourses of sympathy and policy, 2012–2014. *Journal of Computer-Mediated Communication*, 24(4), pp.182-202, 2019
- d) Hochstatter, K. R., Akhtar, W. Z., Dietz, S., Pe-Romashko, K., Gustafson, D. H., Shah, D. V., Krechel, S., Liebert, C., Miller, R., El-Bassel, N. and Westergaard, R. P. Potential influences of the Covid-19 pandemic on drug use and HIV care among people living with HIV and substance use disorders: Experience from a pilot mHealth intervention, *AIDS and Behavior*, 25(2), 354-359. 2021.
- e) Suk, J., Shah, D.V. and McLeod, D.M., 2021. Breaking the “Virtuous Circle”: How Partisan Communication Flows Can Erode Social Trust but Drive Participation. *Human Communication Research*.

## **Other Significant Products, Whether or Not Related to the Proposed Project**

- a) Shah DV, Kwak N, Holbert RL, 'Connecting' and 'disconnecting' with civic life: Patterns of internet use and the production of social capital. *Political Communication* 18 (2):141-62, 2001.
- b) Shah DV, Cho J, Eveland WP Jr, Kwak N. Information and expression in a digital age: Modeling Internet effects on civic participation. *Communication Research* 32(5):531-65, 2005.
- c) Gustafson, D. H., McTavish, F. M., Chih, M. Y., Atwood, A. K., Johnson, R. A., Boyle, M. G., ... & Shah, D. (2014). A smartphone application to support recovery from alcoholism: a randomized clinical trial. *JAMA psychiatry*, 71(5), 566-572.
- d) Shah, DV, McLeod, DM, Rojas, H, Cho, J, Wagner, MW, & Friedland, LA, (2017). Revising the communication mediation model for a new political communication ecology. *Human Communication Research*, 43(4), 491-504, 2017.
- e) Kornfield, R, Toma, CL, Shah, DV, Moon, TJ, & Gustafson, DH, (2017). What do you say before you relapse? How language use in a peer-to-peer online discussion forum predicts risky drinking among those in recovery. *Health Communication*, 1-10., 2017.

## **D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f\(i\)\(d\)](#))**

- a) Computational Workshops: Conducted workshops to introduce computational social science into the curriculum and research programs of communication units in the U.S., Europe, and Asia from 2012 to present.
- b) Computational Course Creation: Created the course "Seminar in Computational Social Science," co-taught with Noshir Contractor (Northwestern) and Joseph Cappella (U. of Pennsylvania) in Spring 2016
- c) Computational Training and Placement: Trained and placed five graduating doctoral advisees into computational social positions at R1 universities (Northwestern University, Oklahoma State University, University at Buffalo, University of Illinois, Urbana-Champaign, University of Connecticut).
- d) Research Methods Training: Developed "Practicum in Communication Research" focusing on the "hidden side" of the research including proposal writing, grant and article submissions, reviewing and responding to reviews, research presentation and data visualization, industry collaboration, and research implementation and dissemination.
- e) Field Service: Editorial board on seventeen journals and book series, numerous international advisory boards, and leadership positions in three associations, AEJMC, ICA, and APSA.

NAME: Vraga, Emily K

POSITION TITLE &amp; INSTITUTION: University of Minnesota

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
University of Wisconsin-Madison		Journalism and Mass Communication	BA	2005
University of Wisconsin-Madison		Journalism and Mass Communication	MA	2008
University of Wisconsin-Madison		Mass Communication	PhD	2011

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2019 - present	Associate Professor, University of Minnesota
2018-2019	Associate Professor, George Mason University
2012-2018	Assistant Professor, George Mason University
2011-2012	Post-Doctoral Instructor, George Washington University

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

Vraga, E. K., & Bode, L. (2021). Addressing COVID-19 misinformation pre-emptively and responsively on social media. *Emerging Infectious Diseases*, 27(2).

Vraga, E. K., Bode, L., & Tully, M. (2020). Creating news literacy messages to enhance expert corrections of misinformation on Twitter. *Communication Research*.

Vraga, E. K., Kim, S. C., Cook, J., & Bode, L. (2020). Testing the effectiveness of correction placement and type on Instagram. *The International Journal of Press/Politics*, 25, 632-652.

Vraga, E. K., & Bode, L. (2020). Correction as a solution for health misinformation on social media. *American Journal of Public Health*, 110(S3), S278-280.

Vraga, E. K., & Tully, M. (2021). News literacy, social media behaviors, and skepticism toward information on social media. *Information, Communication and Society*, 24(2), 150-166.



### **Other Significant Products, Whether or Not Related to the Proposed Project**

Vraga, E. K., & Jacobsen, K. H. (2020). Strategies for effective health communication during the coronavirus pandemic and future emerging infectious disease events. *World Health and Medical Policy*, 12(3), 233-241.

Vraga, E. K., Bode, L., Smithson, A.-B., & Troller-Renfree, S. (2019). Accidentally attentive: Comparing visual, close-ended, and open-ended measures of attention on social media. *Computers in Human Behavior*, 99, 235-244.

Vraga, E. K., Kim, S. C., & Cook, J. (2019). Testing logic-based and humor-based corrections for science, health, and political misinformation on social media. *Journal of Broadcasting and Electronic Media*, 63, 393-414.

### **D. SYNERGISTIC ACTIVITIES - (see PAPPG Chapter II.C.2.f.(i)(d))**

Cited in Surgeon General's Advisory on Confronting Health Misinformation (2021). Available at <https://www.hhs.gov/sites/default/files/surgeon-general-misinformation-advisory.pdf>

Presentation at the Virtual Symposium on Confronting Health Misinformation: Gaps and Opportunities for Health Professions Educators to the Association of American Medical Colleges. (2021). Available at: <https://www.aamc.org/what-we-do/mission-areas/medical-education/curriculum-inventory/establish-your-ci/webinars>

Topic Master for 1st World Health Organization Infodemiology conference (2020). Available at: <https://www.who.int/news-room/events/detail/2020/06/30/default-calendar/1st-who-infodemiology-conference>

Presentation regarding the outcomes of the first World Health Organization Infodemiology conference. (2020). Available at: <https://www.youtube.com/watch?v=NwzHLLhxxCk>

Research used by Facebook to change how they show fact checks to users (2017). Available at: <https://medium.com/designatmeta/designing-against-misinformation-e5846b3aa1e2>

# SUMMARY PROPOSAL BUDGET

YEAR 1

ORGANIZATION <b>University of Wisconsin-Madison</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Michael W Wagner</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1.	<b>Michael W Wagner - PI</b>			2.00	0.00	0.00	<b>33,547</b>
2.	<b>William Sethares - Co-PI</b>			0.50	0.00	0.00	<b>6,525</b>
3.	<b>Dhavan Shah - Senior Personnel</b>			1.50	0.00	0.00	<b>37,709</b>
4.	<b>Sijia Yang - Co-PI</b>			1.50	0.00	0.00	<b>15,034</b>
5.							
6.	( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)			0.00	0.00	0.00	<b>0</b>
7.	( 4 ) TOTAL SENIOR PERSONNEL (1 - 6)			5.50	0.00	0.00	<b>92,815</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	( 1 ) POST DOCTORAL SCHOLARS			6.00	0.00	0.00	<b>35,000</b>
2.	( 3 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)			30.00	0.00	0.00	<b>167,500</b>
3.	( 0 ) GRADUATE STUDENTS						<b>0</b>
4.	( 0 ) UNDERGRADUATE STUDENTS						<b>0</b>
5.	( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						<b>0</b>
6.	( 0 ) OTHER						<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>295,315</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>100,772</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>396,087</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>22,350</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS	\$	<b>0</b>				
2.	TRAVEL		<b>0</b>				
3.	SUBSISTENCE		<b>0</b>				
4.	OTHER		<b>0</b>				
TOTAL NUMBER OF PARTICIPANTS ( 0 )				TOTAL PARTICIPANT COSTS			<b>0</b>
G. OTHER DIRECT COSTS							
1.	MATERIALS AND SUPPLIES						<b>0</b>
2.	PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						<b>0</b>
3.	CONSULTANT SERVICES						<b>189,834</b>
4.	COMPUTER SERVICES						<b>0</b>
5.	SUBAWARDS						<b>912,292</b>
6.	OTHER						<b>284,751</b>
TOTAL OTHER DIRECT COSTS							<b>1,386,877</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>1,805,314</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 55.5000, Base: 1018022)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>565,002</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>2,370,316</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>2,370,316</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b>				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME <b>Michael W Wagner</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

# SUMMARY PROPOSAL BUDGET

YEAR **2**

ORGANIZATION <b>University of Wisconsin-Madison</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Michael W Wagner</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
		CAL	ACAD	SUMR			
1.	<b>Michael W Wagner - PI</b>	2.00	0.00	0.00	<b>33,547</b>		
2.	<b>William Sethares - Co-PI</b>	0.25	0.00	0.00	<b>3,263</b>		
3.	<b>Dhavan Shah - Senior Personnel</b>	1.00	0.00	0.00	<b>25,140</b>		
4.	<b>Sijia Yang - Co-PI</b>	1.50	0.00	0.00	<b>15,034</b>		
5.							
6.	( <b>0</b> ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.00	0.00	0.00	<b>0</b>		
7.	( <b>4</b> ) TOTAL SENIOR PERSONNEL (1 - 6)	4.75	0.00	0.00	<b>76,984</b>		
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	( <b>1</b> ) POST DOCTORAL SCHOLARS	12.00	0.00	0.00	<b>70,000</b>		
2.	( <b>3</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	30.00	0.00	0.00	<b>167,500</b>		
3.	( <b>3</b> ) GRADUATE STUDENTS				<b>63,345</b>		
4.	( <b>0</b> ) UNDERGRADUATE STUDENTS				<b>0</b>		
5.	( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				<b>0</b>		
6.	( <b>0</b> ) OTHER				<b>0</b>		
TOTAL SALARIES AND WAGES (A + B)					<b>377,829</b>		
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					<b>118,775</b>		
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					<b>496,604</b>		
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT					<b>0</b>		
E. TRAVEL					<b>22,350</b>		
1. DOMESTIC (INCL. U.S. POSSESSIONS)							
2. INTERNATIONAL					<b>0</b>		
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS \$ _____				<b>0</b>		
2.	TRAVEL _____				<b>0</b>		
3.	SUBSISTENCE _____				<b>0</b>		
4.	OTHER _____				<b>0</b>		
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> )				TOTAL PARTICIPANT COSTS	<b>0</b>		
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES					<b>0</b>		
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					<b>0</b>		
3. CONSULTANT SERVICES					<b>280,750</b>		
4. COMPUTER SERVICES					<b>0</b>		
5. SUBAWARDS					<b>841,266</b>		
6. OTHER					<b>363,253</b>		
TOTAL OTHER DIRECT COSTS					<b>1,485,269</b>		
H. TOTAL DIRECT COSTS (A THROUGH G)					<b>2,004,223</b>		
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 55.5000, Base: 1126957)</b>							
TOTAL INDIRECT COSTS (F&A)					<b>625,461</b>		
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					<b>2,629,684</b>		
K. FEE					<b>0</b>		
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)					<b>2,629,684</b>		
M. COST SHARING PROPOSED LEVEL \$ <b>0</b>				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME <b>Michael W Wagner</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

# SUMMARY PROPOSAL BUDGET Cumulative

ORGANIZATION <b>University of Wisconsin-Madison</b>				FOR NSF USE ONLY		
				PROPOSAL NO.	DURATION (months)	
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Michael W Wagner</b>				AWARD NO.	Proposed	Granted
					NSF Funded Person-months	
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				CAL	ACAD	SUMR
1. <b>Michael W Wagner - PI</b>				4.00	0.00	0.00
2. <b>William Sethares - Co-PI</b>				0.75	0.00	0.00
3. <b>Dhavan Shah - Senior Personnel</b>				2.50	0.00	0.00
4. <b>Sijia Yang - Co-PI</b>				3.00	0.00	0.00
5.						
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00
7. ( <b>4</b> ) TOTAL SENIOR PERSONNEL (1 - 6)				10.25	0.00	0.00
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)						
1. ( <b>2</b> ) POST DOCTORAL SCHOLARS				18.00	0.00	0.00
2. ( <b>6</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				60.00	0.00	0.00
3. ( <b>3</b> ) GRADUATE STUDENTS						
4. ( <b>0</b> ) UNDERGRADUATE STUDENTS						
5. ( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						
6. ( <b>0</b> ) OTHER						
TOTAL SALARIES AND WAGES (A + B)						
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)						
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)						
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)						
TOTAL EQUIPMENT						
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)						
2. INTERNATIONAL						
F. PARTICIPANT SUPPORT COSTS						
1. STIPENDS \$ _____ <b>0</b>						
2. TRAVEL _____ <b>0</b>						
3. SUBSISTENCE _____ <b>0</b>						
4. OTHER _____ <b>0</b>						
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> ) TOTAL PARTICIPANT COSTS						
G. OTHER DIRECT COSTS						
1. MATERIALS AND SUPPLIES						
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						
3. CONSULTANT SERVICES						
4. COMPUTER SERVICES						
5. SUBAWARDS						
6. OTHER						
TOTAL OTHER DIRECT COSTS						
H. TOTAL DIRECT COSTS (A THROUGH G)						
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)						
TOTAL INDIRECT COSTS (F&A)						
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)						
K. FEE						
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)						
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$						
PI/PI NAME <b>Michael W Wagner</b>				FOR NSF USE ONLY		
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION		
				Date Checked	Date Of Rate Sheet	Initials - ORG

C \*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

## University of Wisconsin- Madison Budget Justification

Over the 24 months of the grant, the investigators seek \$5,000,000 The UW-Madison fiscal year is July 1st – June 30th.

### Senior Personnel:

PI Wagner (\$16,667 monthly salary): The PI is responsible for overall project management including: the convening of team meetings, the hiring of the Project Manager, the training of the graduate student Project Assistants, the collaborations with industry partners, participating the innovation curriculum, and working with each PI on their respective area of expertise. The PI is also an expert on fact-checking and will help to develop the fact-checking interventions central to the Aims of the project. The PI will lead trainings with fact-checkers from around the globe with respect to the use of the dashboard deliverable for the project. The PI will also lead the management of the development of deliverables. PI Wagner has 2 months of effort each year.

Co-PI Yang (\$10,023 monthly salary): Co-I Yang's expertise is related to experimental social media interventions, persuasion, and computational social science. His effort on the project is central to Aims related to the developing of the interventions we will test related to correcting misinformation about the COVID-19 vaccine and the integrity of electoral administration in the United States. He will be centrally involved in the development of the dashboard for the project. Yang will assist in the dashboard deliverable and the underlying code and curated message data that will be made available to other scholars, the fact-checking community and the public at large. Yang will also be a central participant in the innovation curriculum. Co-I Yang has 1.5 months effort each year.

Co-PI Sethares (\$13,051 monthly salary): Co-I Sethares' expertise is in multimodal signal detection and analysis, natural language processing, sentiment analysis, and optimization. His machine learning methods for semi-automated analysis of language usage. By creating word embeddings (called Domain Adaption) that represent different vocabularies, we can explore the meaning behind the ways that the same words are used by different people in different contexts in their social media posts about the COVID-19 vaccines or the integrity of electoral administration. His effort focuses on the network detection project Aims and the dashboard deliverable. Co-I Sethares has 0.5 month of effort in year 1 and .25 month in year 2.

Senior Personnel Shah (\$25,140 monthly salary): Senior personnel Shah has 1.5 months effort in year 1 and 1 month effort in year 2. He will lead the random control trial elements of the research examining the effectiveness of Course Correct when it comes to reducing the flow of misinformation and the continued use by random control trial participants' use of untrustworthy news sites. He will also assist in coordinating the Spanish language work with the Temple NSF-CA Phase I team.

### Other Personnel:

The Project Manager (\$70,000 annual salary; 2 years) would organize the collaboration between the investigators and graduate research assistants across universities, help execute the project's

timeline, participate in the innovation curriculum, manage the bureaucratic elements of the project, and the managing of the graduate student research assistants. The Project Manager will also have expertise in programming and will assist the PI, co-PIs and research assistants in the development of the dashboard tool deliverable of the project.

Website Developer (\$75,000 annual salary; 24 months): The website developer would program and build the Course Correct website, manage the maintenance of the site, assist in UI design, and integrate the backend development with the network detection work provided by the Georgia Tech members of the research team.

Liaison (\$45,000 annual salary; 12 months): This trained journalist would assist collaborating journalists at Snopes, Wisconsin Watch, and the Capital Times as they use the Course Correct tool to identify misinformation to correct and how to correct the misinformation. The Liaison would also assist the PI in multiple presentations in Year 1 to signatories to the International Fact Checking Network (IFCN) and a major presentation to the IFCN's Global Fact conference in Year 2.

One postdoc (\$70,000 annual salary; 18 months): The post-doc would assist in the training and overseeing of the graduate student Project Assistants across the whole grant and help the Co-PI's and Senior Personnel conduct the random control trials associated with the project.

Three project assistants (\$21,115; 50% 9 month appointment). One project assistant will focus on qualitative case study research with our journalist collaborators, assessing the strengths and weaknesses of Course Correct. One project assistant will be tasked with assisting in the intervention designs, implementation, and analysis. One project assistant will be tasked with coordinating the network detection work at UW and at Georgia Tech, and working to develop classifiers used in the network detection research.

### **Fringe Benefits:**

Fringe benefits rates used are actual rates plus a 1% escalation each year.

Faculty/Academic Staff: 35.7%

Postdoc: 22.4%

Graduate students: 19%

### **Travel**

The PI and the co-PIs would each be allotted \$1,490 per trip 3X a year to attend program meetings in Washington D.C. Expenses include flights, hotel, transportation, and per diems.

### **Sub-Agreements**

The NSF requires separate budget justifications for the sub-agreements. There are six sub-agreements:

1. Georgetown – \$89,209

2. Georgia Tech – \$1,351,034
3. Washington State – \$121,133
4. University of Minnesota – \$92,188
5. Temple University – \$99,995

**Consultants:**

<b>Capital Times</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Total</b>
Staff	\$ 40,667.00	\$ 61,000.00	
Travel	\$ 5,000.00	\$ 5,000.00	
<b>Total</b>	<b>\$ 45,667.00</b>	<b>\$ 66,000.00</b>	<b>\$111,667.00</b>

<b>Snopes.com</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Total</b>
Staff	\$ 66,667.00	\$ 100,000.00	
Travel	\$ 5,000.00	\$ 5,000.00	
<b>Total</b>	<b>\$ 71,667.00</b>	<b>\$ 105,000.00</b>	<b>\$ 176,667.00</b>

<b>Wisconsin Watch</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Total</b>
Staff	\$ 59,500.00	\$ 96,750.00	
Travel	\$ 5,000.00	\$ 5,000.00	
<b>Total</b>	<b>\$ 64,500.00</b>	<b>\$ 101,750.00</b>	<b>\$ 166,250.00</b>

Each of these consultants are news media organizations that will use their consulting agreement to hire a journalist to use the Course Correct tool in reporting work for the news organization, allowing our team to study the news organization and journalist’s use of the tool over the duration of the study period. The consulting agreement will also fund travel to the PI’s university, the University of Wisconsin-Madison for an in-depth training session.

Katie Harbath: (\$8,000 per year): Harbath is an internationally recognized leader in social media platform policy. The former Facebook Global Policy Director for elections, Harbath will chair the Board of Advisors meetings and engage in bi-weekly meetings with the PI to discuss platform related issues and opportunities to consider as Course Correct seeks to expand. She will also continue connecting Co-Is and Senior Personnel to relevant contacts in the social media, AI, and algorithmic transparency industries.

**Other Direct Charges**

1. Advisory board: \$72,000 over two years. Advisory board members are compensated for four day long meetings over the course of the two years of the project.
2. Randomized controlled trials: \$225,000 over 2 years. The random controlled trials costs include identifying, recruiting, and compensating participants and paying the survey vendor.

3. Survey costs: \$176,000 over 2 years. We will conduct a panel survey on a national US sample and purchase marketing data from Simmons Market Research Bureau to assist in our market testing and development of the Course Correct product.
4. Promotion: \$35,000 in year 2. We will pay marketing professionals to help us promote Course Correct to end users in the news media for potential adoption of our tool.
5. Convergence Activities: \$50,000 over 2 years. These are at the discretion of the NSF-CA Program Officer(s)
6. Advertising: \$46,504 over two years.

Twitter uses a “bidding” strategy for calculating cost per ad view, so there is no precise estimate for the cost per ad as it would vary by each Twitter user and the content of ad. Based on our previous Twitter campaign promoting ads related to COVID-19 vaccines, the average cost per ad view was approximately \$0.08.

We carried out power analysis using the WebPower package in R. We assumed a small effect size by which each correction message condition would increase the probability of “like”/“retweet” by 5% (assuming effect size  $V = 0.15$  in a one-way ANOVA with count data). Under the assumption that each trial would last for 10 days that our system would promote one message per participant on a daily basis, results indicated that 180 participants in each arm would suffice to achieve 80% power (two-sided  $\alpha = 0.05$ ).

Cost per arm per trial:  $180 \times 10 \text{ exposures} \times \$0.08 = \$144$ ;

The budget includes each partner news organization using our system to conduct two 5-arm trials each month during the 24-month project period.

7. \$7,500 for case study trials for interested members of the IFCN to try after our presentation at Global Fact 10 in Year 2.
8. Tuition Remission: UW Madison’s established tuition remission rate is \$6,000 per semester per graduate student for a total of \$36,000.

## **F&A**

Indirect costs are based on the current, negotiated rate established between the university and the Department of Health and Human Services. The 55.5% indirect cost rate is applicable to Modified Total Direct Costs.



# SUMMARY PROPOSAL BUDGET

YEAR 1

ORGANIZATION <b>Georgetown University</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Leticia W Bode</b>				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1.	<b>Leticia Bode - PI</b>			1.00	0.00	0.00	<b>14,442</b>
2.							
3.							
4.							
5.							
6.	( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)			0.00	0.00	0.00	<b>0</b>
7.	( 1 ) TOTAL SENIOR PERSONNEL (1 - 6)			1.00	0.00	0.00	<b>14,442</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	( 0 ) POST DOCTORAL SCHOLARS			0.00	0.00	0.00	<b>0</b>
2.	( 0 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)			0.00	0.00	0.00	<b>0</b>
3.	( 1 ) GRADUATE STUDENTS						<b>10,400</b>
4.	( 0 ) UNDERGRADUATE STUDENTS						<b>0</b>
5.	( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						<b>0</b>
6.	( 0 ) OTHER						<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>24,842</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>3,379</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>28,221</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>0</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS \$ _____						<b>0</b>
2.	TRAVEL _____						<b>0</b>
3.	SUBSISTENCE _____						<b>0</b>
4.	OTHER _____						<b>0</b>
TOTAL NUMBER OF PARTICIPANTS ( 0 ) TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1.	MATERIALS AND SUPPLIES						<b>0</b>
2.	PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						<b>0</b>
3.	CONSULTANT SERVICES						<b>0</b>
4.	COMPUTER SERVICES						<b>0</b>
5.	SUBAWARDS						<b>0</b>
6.	OTHER						<b>0</b>
TOTAL OTHER DIRECT COSTS							<b>0</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>28,221</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 56.0000, Base: 28221)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>15,804</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>44,025</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>44,025</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$							
PI/PI NAME <b>Leticia W Bode</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

# SUMMARY PROPOSAL BUDGET

YEAR **2**

ORGANIZATION <b>Georgetown University</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Leticia W Bode</b>				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1. <b>Leticia Bode - PI</b>				1.00	0.00	0.00	<b>14,875</b>
2.							
3.							
4.							
5.							
6. ( <b>0</b> ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	<b>0</b>
7. ( <b>1</b> ) TOTAL SENIOR PERSONNEL (1 - 6)				1.00	0.00	0.00	<b>14,875</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( <b>0</b> ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	<b>0</b>
2. ( <b>0</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	<b>0</b>
3. ( <b>1</b> ) GRADUATE STUDENTS							<b>10,608</b>
4. ( <b>0</b> ) UNDERGRADUATE STUDENTS							<b>0</b>
5. ( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							<b>0</b>
6. ( <b>0</b> ) OTHER							<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>25,483</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>3,481</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>28,964</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>0</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____ <b>0</b>							
2. TRAVEL _____ <b>0</b>							
3. SUBSISTENCE _____ <b>0</b>							
4. OTHER _____ <b>0</b>							
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> ) TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							<b>0</b>
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							<b>0</b>
3. CONSULTANT SERVICES							<b>0</b>
4. COMPUTER SERVICES							<b>0</b>
5. SUBAWARDS							<b>0</b>
6. OTHER							<b>0</b>
TOTAL OTHER DIRECT COSTS							<b>0</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>28,964</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 56.0000, Base: 28964)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>16,220</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>45,184</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>45,184</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$							
PI/PI NAME <b>Leticia W Bode</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
				Date Checked	Date Of Rate Sheet	Initials - ORG	

# SUMMARY PROPOSAL BUDGET Cumulative

ORGANIZATION <b>Georgetown University</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Leticia W Bode</b>				AWARD NO.			
				Proposed	Granted		
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1. <b>Leticia Bode - PI</b>				2.00	0.00	0.00	<b>29,317</b>
2.							
3.							
4.							
5.							
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	<b>0</b>
7. ( <b>1</b> ) TOTAL SENIOR PERSONNEL (1 - 6)				2.00	0.00	0.00	<b>29,317</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( <b>0</b> ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	<b>0</b>
2. ( <b>0</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	<b>0</b>
3. ( <b>2</b> ) GRADUATE STUDENTS							<b>21,008</b>
4. ( <b>0</b> ) UNDERGRADUATE STUDENTS							<b>0</b>
5. ( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							<b>0</b>
6. ( <b>0</b> ) OTHER							<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>50,325</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>6,860</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>57,185</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL							
1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>0</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____				<b>0</b>			
2. TRAVEL _____				<b>0</b>			
3. SUBSISTENCE _____				<b>0</b>			
4. OTHER _____				<b>0</b>			
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> )							
TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							<b>0</b>
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							<b>0</b>
3. CONSULTANT SERVICES							<b>0</b>
4. COMPUTER SERVICES							<b>0</b>
5. SUBAWARDS							<b>0</b>
6. OTHER							<b>0</b>
TOTAL OTHER DIRECT COSTS							<b>0</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>57,185</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)							
TOTAL INDIRECT COSTS (F&A)							<b>32,024</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>89,209</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>89,209</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b>				AGREED LEVEL IF DIFFERENT \$			
PI/PI NAME <b>Leticia W Bode</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

C \*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

## **Georgetown University**

### **Budget Justification**

#### **Senior Personnel**

Dr. Leticia Bode, PI, will engage in 1 month of effort per year for the project (11%). Dr. Bode will identify prominent misinformation related to electoral administration and vaccination efforts, design interventions to mitigate the effects of such misinformation, and field experiments to test the effectiveness of various intervention strategies. Dr. Bode will also mentor a graduate student at Georgetown University in developing these tailored messages. Mentoring will include at least bi-monthly meetings to discuss the project. In order to engage in this work, Dr. Bode requests a course release in each of the project's two (2) years. Course releases are calculated at 11% of current salary, plus fringe. Her current, nine-month salary is \$129,981, and the first-year request is for \$14,442 (the current monthly salary). Cost-of-living increases of 3% are built into subsequent years. The total request is \$29,317.

#### **Other Personnel:**

A Master's-level student will be hired for 10 hours a week at the rate of \$20/hour (\$10,400 in Year 1). The student will be responsible for reviewing relevant literature, assisting with the design of experimental stimuli, and facilitating data analysis. The Georgetown Alliance of Graduate Employees mandates a 2% increase in the second year, and the total salary request is \$21,008.

#### **Fringe Benefits:**

The fringe rate for full-time faculty and staff is 23.4%, per Georgetown University's Federally Negotiated Indirect Cost Rate Agreement (NICRA) dated April 20, 2022. In Year 1, the fringe charged to Prof. Bode's salary is \$3,379 and the total fringe is \$6,860. No fringe is charged to student salaries.

#### **Total Direct Costs:**

The total direct costs for this project are \$28,221 in Year 1, and \$57,185 in total.

#### **Indirect Costs:**

The Indirect Cost Rate is 56.0% for this proposal per Georgetown University's rate agreement. IDC is applied to the project's Modified Total Direct Costs (which exclude tuition, equipment over \$5,000, and participant support costs) for the duration of the project period. This rate is in accordance with our NICRA/F&A rate agreement with the Department of Health and Human Services dated April 20, 2022. The IDC charged is \$32,024, and Georgetown University's total grant budget is \$89,209.

# SUMMARY PROPOSAL BUDGET

YEAR 1

ORGANIZATION <b>Georgia Tech Research Corporation</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Srijan Kumar</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
		CAL	ACAD	SUMR			
1.	<b>Srijan Kumar - PI</b>	1.50	0.00	0.00	<b>21,115</b>		
2.	<b>Munmun De Choudhury - Co-PI</b>	1.00	0.00	0.00	<b>15,465</b>		
3.							
4.							
5.							
6.	( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.00	0.00	0.00	<b>0</b>		
7.	( 2 ) TOTAL SENIOR PERSONNEL (1 - 6)	2.50	0.00	0.00	<b>36,580</b>		
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	( 1 ) POST DOCTORAL SCHOLARS	12.00	0.00	0.00	<b>60,000</b>		
2.	( 1 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	12.00	0.00	0.00	<b>90,000</b>		
3.	( 3 ) GRADUATE STUDENTS				<b>78,999</b>		
4.	( 0 ) UNDERGRADUATE STUDENTS				<b>0</b>		
5.	( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				<b>0</b>		
6.	( 0 ) OTHER				<b>0</b>		
TOTAL SALARIES AND WAGES (A + B)					<b>265,579</b>		
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					<b>65,091</b>		
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					<b>330,670</b>		
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
	<b>2 GPU Servers</b>			<b>\$ 50,000</b>			
TOTAL EQUIPMENT					<b>50,000</b>		
E. TRAVEL					<b>13,774</b>		
1. DOMESTIC (INCL. U.S. POSSESSIONS)							
2. INTERNATIONAL					<b>0</b>		
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS \$ _____			<b>0</b>			
2.	TRAVEL _____			<b>0</b>			
3.	SUBSISTENCE _____			<b>0</b>			
4.	OTHER _____			<b>0</b>			
TOTAL NUMBER OF PARTICIPANTS ( 0 )				TOTAL PARTICIPANT COSTS	<b>0</b>		
G. OTHER DIRECT COSTS							
1.	MATERIALS AND SUPPLIES				<b>11,495</b>		
2.	PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				<b>0</b>		
3.	CONSULTANT SERVICES				<b>0</b>		
4.	COMPUTER SERVICES				<b>21,520</b>		
5.	SUBAWARDS				<b>0</b>		
6.	OTHER				<b>52,922</b>		
TOTAL OTHER DIRECT COSTS					<b>85,937</b>		
H. TOTAL DIRECT COSTS (A THROUGH G)					<b>480,381</b>		
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)							
<b>MTDC (Rate: 58.2000, Base: 377459)</b>							
TOTAL INDIRECT COSTS (F&A)					<b>219,681</b>		
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					<b>700,062</b>		
K. FEE					<b>0</b>		
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)					<b>700,062</b>		
M. COST SHARING PROPOSED LEVEL \$ <b>0</b>				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME <b>Srijan Kumar</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

# SUMMARY PROPOSAL BUDGET

YEAR 2

ORGANIZATION <b>Georgia Tech Research Corporation</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Srijan Kumar</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1.	<b>Srijan Kumar - PI</b>			1.50	0.00	0.00	<b>21,748</b>
2.	<b>Munmun De Choudhury - Co-PI</b>			1.00	0.00	0.00	<b>15,929</b>
3.							
4.							
5.							
6.	( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)			0.00	0.00	0.00	<b>0</b>
7.	( 2 ) TOTAL SENIOR PERSONNEL (1 - 6)			2.50	0.00	0.00	<b>37,677</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	( 1 ) POST DOCTORAL SCHOLARS			12.00	0.00	0.00	<b>61,800</b>
2.	( 1 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)			12.00	0.00	0.00	<b>92,700</b>
3.	( 3 ) GRADUATE STUDENTS						<b>81,369</b>
4.	( 0 ) UNDERGRADUATE STUDENTS						<b>0</b>
5.	( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						<b>0</b>
6.	( 0 ) OTHER						<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>273,546</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>67,044</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>340,590</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>13,774</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS	\$	<b>0</b>				
2.	TRAVEL		<b>0</b>				
3.	SUBSISTENCE		<b>0</b>				
4.	OTHER		<b>0</b>				
TOTAL NUMBER OF PARTICIPANTS ( 0 )				TOTAL PARTICIPANT COSTS			<b>0</b>
G. OTHER DIRECT COSTS							
1.	MATERIALS AND SUPPLIES						<b>500</b>
2.	PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						<b>0</b>
3.	CONSULTANT SERVICES						<b>0</b>
4.	COMPUTER SERVICES						<b>22,166</b>
5.	SUBAWARDS						<b>0</b>
6.	OTHER						<b>54,510</b>
TOTAL OTHER DIRECT COSTS							<b>77,176</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>431,540</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 58.2000, Base: 377030)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>219,431</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>650,971</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>650,971</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b>				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME <b>Srijan Kumar</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

# SUMMARY PROPOSAL BUDGET Cumulative

ORGANIZATION <b>Georgia Tech Research Corporation</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Srijan Kumar</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1.	<b>Srijan Kumar - PI</b>			3.00	0.00	0.00	<b>42,863</b>
2.	<b>Munmun De Choudhury - Co-PI</b>			2.00	0.00	0.00	<b>31,394</b>
3.							
4.							
5.							
6.	( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)			0.00	0.00	0.00	<b>0</b>
7.	( <b>2</b> ) TOTAL SENIOR PERSONNEL (1 - 6)			5.00	0.00	0.00	<b>74,257</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	( <b>2</b> ) POST DOCTORAL SCHOLARS			24.00	0.00	0.00	<b>121,800</b>
2.	( <b>2</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)			24.00	0.00	0.00	<b>182,700</b>
3.	( <b>6</b> ) GRADUATE STUDENTS						<b>160,368</b>
4.	( <b>0</b> ) UNDERGRADUATE STUDENTS						<b>0</b>
5.	( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						<b>0</b>
6.	( <b>0</b> ) OTHER						<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>539,125</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>132,135</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>671,260</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
						<b>\$ 50,000</b>	
TOTAL EQUIPMENT							<b>50,000</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>27,548</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS \$ _____						<b>0</b>
2.	TRAVEL _____						<b>0</b>
3.	SUBSISTENCE _____						<b>0</b>
4.	OTHER _____						<b>0</b>
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> )							
TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1.	MATERIALS AND SUPPLIES						<b>11,995</b>
2.	PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						<b>0</b>
3.	CONSULTANT SERVICES						<b>0</b>
4.	COMPUTER SERVICES						<b>43,686</b>
5.	SUBAWARDS						<b>0</b>
6.	OTHER						<b>107,432</b>
TOTAL OTHER DIRECT COSTS							<b>163,113</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>911,921</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)							
TOTAL INDIRECT COSTS (F&A)							<b>439,112</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>1,351,033</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>1,351,033</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b>				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME <b>Srijan Kumar</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

C \*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

## **BUDGET JUSTIFICATION**

Georgia Institute of Technology (Georgia Tech)

### **Senior Personnel**

Srijan Kumar, PhD is the Georgia Tech subaward Principal Investigator (PI) and is budgeted for 1.5 summer months each year. Dr. Kumar's monthly salary is \$13,666.67.

Munmun de Choudhary, PhD is the Georgia Tech subaward co-PI and is budgeted for 1 summer month each year. Dr. de Choudhary's monthly salary is \$15,014.80.

To be determined postdoctoral researcher (Postdoc) and researcher engineer (RE) are budgeted for 12 months each in Years 1 and 2 with a monthly salary of \$5,000 and \$7,500, respectively.

### **Other Personnel**

Graduate Research Assistants (GRAs) have been budgeted for 33 months each year. The GRAs are Master students (12 months each year) and PhD students (21 months each year) at Georgia Tech advised by the PI. They will be hired part-time to work 20 hours per week at a rate of \$1,579 per month (master students) and \$2,750 per month (PhD students).

A 3% salary adjustment is applied to salaries of the PIs and GRAs in Years 1 and 2 and to the salaries of the Postdoc and RE in Year 2.

### **Fringe Benefits**

A fringe rate of 32.6% has been applied to the salaries of the senior personnel. A fringe rate of 5.4% is required for the salaries of the GRAs to cover graduate student health insurance.

### **Equipment**

Two BIZON G7000 G1 – NVIDIA Quadro RTX Tesla Deep learning and Parallel Computing GPU (8 GPUs) Servers will be purchased in Year 1. This GPU server is necessary for the proposed research on machine learning and will be used for developing deep learning algorithms, performing computational analyses, sharing research data, and hosting user-friendly web servers to disseminate developed algorithms and results to the community. After the conclusion of this project, the server will remain active and provide to the community the downloadable access of research data and web services based on the developed algorithms for at least three years.

100TB storage space will be purchased in year 1. This space will be used to store the data that will be collected for the project. The data will contain text, multimedia, and network data.



## **Domestic Travel**

The domestic travel funds requested will help cover a portion of the travel for 4 people to attend 3 meetings in DC each year. The estimates below are based on quotes from Delta.com and gsa.com.

Project meeting– DC (3 days/2 night2)

Airfare = 444

Hotel:  $257 \times 2 = 514$

Meal Per diem:  $57 + 79 + 57 = 190$

Total:  $1,148 \times 3 \text{ meetings} \times 4 \text{ people} = 13,774$

## **Other Direct Costs**

- **Materials and Supplies:** The budget includes funds for general materials and supplies needed to conduct the research that will help cover a portion of the cost toward such items as software, cloud subscription services, computer accessories and hardware for upgrading existing machines, conference registration, and books. Included in Year 1 is a Macbook for 5 people (3 GRAs, 1 Postdoc, and 1 RE). The Macbook will allow them to complete the tasks on the project. Georgia Tech does not provide computing devices for research personnel. These estimates are based on previous purchases.
- **Computer Services:** The College of Computing charges a rate of \$6,123 prorated for effort for full-time Research Faculty, Staff, Research Scientists, and GRAs each year to cover the costs of technical computing services provided to the college's sponsored portfolio. The College of Computing level services are locally administered and provided in addition to the services provided by OIT. The additional services required for College of Computing researchers include: Network Services, Data Center Management, Identity Management, Data Storage, Backups and Recovery, Security, Building Access, Email, Mailing Lists, Printing & Copying, Help Desk, Website Management, Research Computing, Instructional Computing, Administrative Computing & Technology Procurement. The rates for these services are validated annually and adjusted as necessary to ensure that the operation does not recover costs at a level beyond break even per 2 CFR 200 (Uniform Guidance). A 3% escalation is applied each year to cover potential increases in the rate by College of Computing.

- Tuition: A graduate tuition remission cost of \$1,557 is billed to the project each month the GRAs works on the project. A 3% escalation has been applied each year to cover possible increases in tuition by Georgia Tech.

**Indirect Costs**

Georgia Tech charges a Facilities and Administrative (F&A) rate of 58.2% on the Modified Total Direct Costs\*. This rate is negotiated annually with the Office of Naval Research.

\*Modified Total Direct Cost (MTDC), consisting of all salaries and wages, fringe benefits, materials and supplies, services, travel, and up to the first \$25,000 of each subaward (regardless of the period of performance of the subawards under the award). Equipment, capital expenditures, charges for patient care, rental costs, tuition remission, scholarships and fellowships, participant support costs, and the portion of each subaward in excess of \$25,000 shall be excluded from the modified total direct cost base.

# SUMMARY PROPOSAL BUDGET

YEAR 1

ORGANIZATION <b>Temple University</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Edward Dragut</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1.				0.00	0.00	0.00	
2.							
3.							
4.							
5.							
6. ( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	0
7. ( 1 ) TOTAL SENIOR PERSONNEL (1 - 6)				0.00	0.00	0.00	0
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( 0 ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	0
2. ( 0 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	0
3. ( 1 ) GRADUATE STUDENTS							23,200
4. ( 0 ) UNDERGRADUATE STUDENTS							0
5. ( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							0
6. ( 0 ) OTHER							0
TOTAL SALARIES AND WAGES (A + B)							23,200
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							5,290
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							28,490
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							650
2. INTERNATIONAL							0
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____							0
2. TRAVEL _____							0
3. SUBSISTENCE _____							0
4. OTHER _____							0
TOTAL NUMBER OF PARTICIPANTS ( 0 ) TOTAL PARTICIPANT COSTS							0
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							0
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							0
3. CONSULTANT SERVICES							0
4. COMPUTER SERVICES							0
5. SUBAWARDS							0
6. OTHER							3,134
TOTAL OTHER DIRECT COSTS							3,134
H. TOTAL DIRECT COSTS (A THROUGH G)							32,274
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 58.5000, Base: 29140)</b>							
TOTAL INDIRECT COSTS (F&A)							17,047
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							49,321
K. FEE							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							49,321
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PI NAME <b>Edward Dragut</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

# SUMMARY PROPOSAL BUDGET

YEAR **2**

ORGANIZATION <b>Temple University</b>				FOR NSF USE ONLY		
				PROPOSAL NO.	DURATION (months)	
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Edward Dragut</b>				AWARD NO.	Proposed	Granted
				A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)		
	CAL	ACAD	SUMR	Funds Requested By proposer	Funds granted by NSF (if different)	
1.	0.00	0.00	0.00			
2.						
3.						
4.						
5.						
6. ( <b>0</b> ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.00	0.00	0.00		<b>0</b>	
7. ( <b>1</b> ) TOTAL SENIOR PERSONNEL (1 - 6)	0.00	0.00	0.00		<b>0</b>	
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)						
1. ( <b>0</b> ) POST DOCTORAL SCHOLARS	0.00	0.00	0.00		<b>0</b>	
2. ( <b>0</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	0.00	0.00	0.00		<b>0</b>	
3. ( <b>1</b> ) GRADUATE STUDENTS					<b>23,896</b>	
4. ( <b>0</b> ) UNDERGRADUATE STUDENTS					<b>0</b>	
5. ( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)					<b>0</b>	
6. ( <b>0</b> ) OTHER					<b>0</b>	
TOTAL SALARIES AND WAGES (A + B)					<b>23,896</b>	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					<b>5,448</b>	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					<b>29,344</b>	
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)						
TOTAL EQUIPMENT					<b>0</b>	
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)					<b>650</b>	
2. INTERNATIONAL					<b>0</b>	
F. PARTICIPANT SUPPORT COSTS						
1. STIPENDS \$ _____					<b>0</b>	
2. TRAVEL _____					<b>0</b>	
3. SUBSISTENCE _____					<b>0</b>	
4. OTHER _____					<b>0</b>	
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> ) TOTAL PARTICIPANT COSTS					<b>0</b>	
G. OTHER DIRECT COSTS						
1. MATERIALS AND SUPPLIES					<b>0</b>	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					<b>0</b>	
3. CONSULTANT SERVICES					<b>0</b>	
4. COMPUTER SERVICES					<b>0</b>	
5. SUBAWARDS					<b>0</b>	
6. OTHER					<b>3,134</b>	
TOTAL OTHER DIRECT COSTS					<b>3,134</b>	
H. TOTAL DIRECT COSTS (A THROUGH G)					<b>33,128</b>	
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 58.5000, Base: 29994)</b>						
TOTAL INDIRECT COSTS (F&A)					<b>17,546</b>	
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					<b>50,674</b>	
K. FEE					<b>0</b>	
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)					<b>50,674</b>	
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$						
PI/PI NAME <b>Edward Dragut</b>				FOR NSF USE ONLY		
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION		
		Date Checked	Date Of Rate Sheet	Initials - ORG		

# SUMMARY PROPOSAL BUDGET Cumulative

ORGANIZATION <b>Temple University</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Edward Dragut</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1.				0.00	0.00	0.00	
2.							
3.							
4.							
5.							
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	0
7. ( 0 ) TOTAL SENIOR PERSONNEL (1 - 6)				0.00	0.00	0.00	0
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( 0 ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	0
2. ( 0 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	0
3. ( 2 ) GRADUATE STUDENTS							47,096
4. ( 0 ) UNDERGRADUATE STUDENTS							0
5. ( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							0
6. ( 0 ) OTHER							0
TOTAL SALARIES AND WAGES (A + B)							47,096
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							10,738
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							57,834
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL							1,300
1. DOMESTIC (INCL. U.S. POSSESSIONS)							
2. INTERNATIONAL							0
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____				0			
2. TRAVEL _____				0			
3. SUBSISTENCE _____				0			
4. OTHER _____				0			
TOTAL NUMBER OF PARTICIPANTS ( 0 )							
TOTAL PARTICIPANT COSTS							0
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							0
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							0
3. CONSULTANT SERVICES							0
4. COMPUTER SERVICES							0
5. SUBAWARDS							0
6. OTHER							6,268
TOTAL OTHER DIRECT COSTS							6,268
H. TOTAL DIRECT COSTS (A THROUGH G)							65,402
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)							
TOTAL INDIRECT COSTS (F&A)							34,593
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							99,995
K. FEE							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							99,995
M. COST SHARING PROPOSED LEVEL \$				0	AGREED LEVEL IF DIFFERENT \$		
PI/PI NAME <b>Edward Dragut</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

C \*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

## **Budget Narrative**

### **Personnel:**

Graduate Research Assistant (\$23,200 annual salary): 1 graduate research assistant each year, supervised by PI Dragut.

A 3% salary adjustment is applied to year 2.

### **Fringe Benefits:**

Graduate students fringe rate is 22.8% of salary.

### **Travel**

Budget includes domestic travel funds for project personnel to attend collaboration meetings at the University of Wisconsin-Madison.

### **Tuition Remission:**

Tuition costs are \$3,134 each year for the graduate research assistant.

### **F&A**

Indirect costs are based on the current, negotiated rate established between the university and the Department of Health and Human Services. The 58.5% indirect cost rate is applicable to Modified Total Direct Costs.

# SUMMARY PROPOSAL BUDGET

YEAR 1

ORGANIZATION <b>University of Minnesota-Twin Cities</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Emily Vraga</b>				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1. <b>Emily Vraga - PI</b>				1.13	0.00	0.00	<b>15,486</b>
2.							
3.							
4.							
5.							
6. ( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	<b>0</b>
7. ( 1 ) TOTAL SENIOR PERSONNEL (1 - 6)				1.13	0.00	0.00	<b>15,486</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( 0 ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	<b>0</b>
2. ( 0 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	<b>0</b>
3. ( 1 ) GRADUATE STUDENTS							<b>10,004</b>
4. ( 0 ) UNDERGRADUATE STUDENTS							<b>0</b>
5. ( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							<b>0</b>
6. ( 0 ) OTHER							<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>25,490</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>7,549</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>33,039</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>0</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____ <b>0</b>							
2. TRAVEL _____ <b>0</b>							
3. SUBSISTENCE _____ <b>0</b>							
4. OTHER _____ <b>0</b>							
TOTAL NUMBER OF PARTICIPANTS ( 0 ) TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							<b>0</b>
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							<b>0</b>
3. CONSULTANT SERVICES							<b>0</b>
4. COMPUTER SERVICES							<b>0</b>
5. SUBAWARDS							<b>0</b>
6. OTHER							<b>8,295</b>
TOTAL OTHER DIRECT COSTS							<b>8,295</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>41,334</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 55.0000, Base: 33039)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>18,171</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>59,505</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>59,505</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$							
PI/PI NAME <b>Emily Vraga</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
				Date Checked	Date Of Rate Sheet	Initials - ORG	

# SUMMARY PROPOSAL BUDGET

YEAR **2**

ORGANIZATION <b>University of Minnesota-Twin Cities</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Emily Vraga</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1. <b>Emily Vraga - PI</b>				1.13	0.00	0.00	<b>15,795</b>
2.							
3.							
4.							
5.							
6. ( <b>0</b> ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	<b>0</b>
7. ( <b>1</b> ) TOTAL SENIOR PERSONNEL (1 - 6)				1.13	0.00	0.00	<b>15,795</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( <b>0</b> ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	<b>0</b>
2. ( <b>0</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	<b>0</b>
3. ( <b>0</b> ) GRADUATE STUDENTS							<b>0</b>
4. ( <b>0</b> ) UNDERGRADUATE STUDENTS							<b>0</b>
5. ( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							<b>0</b>
6. ( <b>0</b> ) OTHER							<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>15,795</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>5,291</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>21,086</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>0</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____ <b>0</b>							
2. TRAVEL _____ <b>0</b>							
3. SUBSISTENCE _____ <b>0</b>							
4. OTHER _____ <b>0</b>							
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> ) TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							<b>0</b>
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							<b>0</b>
3. CONSULTANT SERVICES							<b>0</b>
4. COMPUTER SERVICES							<b>0</b>
5. SUBAWARDS							<b>0</b>
6. OTHER							<b>0</b>
TOTAL OTHER DIRECT COSTS							<b>0</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>21,086</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 55.0000, Base: 21086)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>11,597</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>32,683</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>32,683</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$							
PI/PI NAME <b>Emily Vraga</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
				Date Checked	Date Of Rate Sheet	Initials - ORG	



# SUMMARY PROPOSAL BUDGET Cumulative

ORGANIZATION <b>University of Minnesota-Twin Cities</b>				FOR NSF USE ONLY		
				PROPOSAL NO.	DURATION (months)	
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Emily Vraga</b>				AWARD NO.	Proposed	Granted
					NSF Funded Person-months	
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				CAL	ACAD	SUMR
1. <b>Emily Vraga - PI</b>				2.26	0.00	0.00
2.						
3.						
4.						
5.						
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00
7. ( <b>1</b> ) TOTAL SENIOR PERSONNEL (1 - 6)				2.26	0.00	0.00
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)						
1. ( <b>0</b> ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00
2. ( <b>0</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00
3. ( <b>1</b> ) GRADUATE STUDENTS						10,004
4. ( <b>0</b> ) UNDERGRADUATE STUDENTS						0
5. ( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						0
6. ( <b>0</b> ) OTHER						0
TOTAL SALARIES AND WAGES (A + B)						41,285
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)						12,840
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)						54,125
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)						
TOTAL EQUIPMENT						0
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)						0
2. INTERNATIONAL						0
F. PARTICIPANT SUPPORT COSTS						
1. STIPENDS \$ _____ <b>0</b>						
2. TRAVEL _____ <b>0</b>						
3. SUBSISTENCE _____ <b>0</b>						
4. OTHER _____ <b>0</b>						
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> ) TOTAL PARTICIPANT COSTS						0
G. OTHER DIRECT COSTS						
1. MATERIALS AND SUPPLIES						0
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						0
3. CONSULTANT SERVICES						0
4. COMPUTER SERVICES						0
5. SUBAWARDS						0
6. OTHER						8,295
TOTAL OTHER DIRECT COSTS						8,295
H. TOTAL DIRECT COSTS (A THROUGH G)						62,420
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)						
TOTAL INDIRECT COSTS (F&A)						29,768
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)						92,188
K. FEE						0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)						92,188
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$						
PI/PI NAME <b>Emily Vraga</b>				FOR NSF USE ONLY		
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION		
				Date Checked	Date Of Rate Sheet	Initials - ORG

C \*ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

## University of Minnesota Budget Justification

### PERSONNEL:

**Principal Investigator**, Emily Vraga. Dr. Vraga will identify prominent misinformation related to electoral administration and vaccination efforts, design interventions to mitigate the effects of such misinformation, and field experiments to test the effectiveness of various intervention strategies. Dr. Vraga will analyze the results from the experimental data and mentor a graduate student at the University of Minnesota in developing these tailored messages and analyzing the results. Mentoring will include at least bi-monthly meetings to discuss the project. Dr. Vraga is requesting one course release per academic year to support this work, equivalent to 1.13 months per year.

**Graduate Research Assistant** will work 25% time (390 hours) over the course of Year 1 academic year to review relevant literature and assist with the design of experimental stimuli.

A 2% salary adjustment is applied to all salaries each year to cover cost of living increases.

### FRINGE BENEFITS:

Fringe benefit rate is 33.5% for faculty and professional research staff. Fringe benefit rate for graduate students is 23.6% plus tuition remission of \$21.27/hour during the academic year.

### INDIRECT COSTS:

The University of Minnesota has a federally negotiated indirect rate of 55% for sponsored projects for research. Indirect costs calculated on Modified Total Direct Costs (MTDC = Total direct costs less graduate tuition remission, equipment, participant costs, and subawards in excess of the first \$25,000). More information can be found <https://research.umn.edu/units/oca/fa-costs/current-fa-rates>

# SUMMARY PROPOSAL BUDGET

YEAR 1

ORGANIZATION <b>Washington State University</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Porismita Borah</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1. <b>Porismita Borah - PI</b>				1.00	0.00	0.00	<b>10,425</b>
2.							
3.							
4.							
5.							
6. ( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	<b>0</b>
7. ( 1 ) TOTAL SENIOR PERSONNEL (1 - 6)				1.00	0.00	0.00	<b>10,425</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( 0 ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	<b>0</b>
2. ( 0 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	<b>0</b>
3. ( 1 ) GRADUATE STUDENTS							<b>15,717</b>
4. ( 0 ) UNDERGRADUATE STUDENTS							<b>0</b>
5. ( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							<b>0</b>
6. ( 0 ) OTHER							<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>26,142</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>4,933</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>31,075</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>0</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____ <b>0</b>							
2. TRAVEL _____ <b>0</b>							
3. SUBSISTENCE _____ <b>0</b>							
4. OTHER _____ <b>0</b>							
TOTAL NUMBER OF PARTICIPANTS ( 0 ) TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							<b>0</b>
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							<b>0</b>
3. CONSULTANT SERVICES							<b>0</b>
4. COMPUTER SERVICES							<b>0</b>
5. SUBAWARDS							<b>0</b>
6. OTHER							<b>11,834</b>
TOTAL OTHER DIRECT COSTS							<b>11,834</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>42,909</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 53.0000, Base: 31075)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>16,470</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>59,379</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>59,379</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$							
PI/PI NAME <b>Porismita Borah</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

# SUMMARY PROPOSAL BUDGET

YEAR 2

ORGANIZATION <b>Washington State University</b>				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Porismita Borah</b>				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PI, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1. <b>Porismita Borah - PI</b>				1.00	0.00	0.00	<b>10,842</b>
2.							
3.							
4.							
5.							
6. ( 0 ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	<b>0</b>
7. ( 1 ) TOTAL SENIOR PERSONNEL (1 - 6)				1.00	0.00	0.00	<b>10,842</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. ( 0 ) POST DOCTORAL SCHOLARS				0.00	0.00	0.00	<b>0</b>
2. ( 0 ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	<b>0</b>
3. ( 1 ) GRADUATE STUDENTS							<b>16,345</b>
4. ( 0 ) UNDERGRADUATE STUDENTS							<b>0</b>
5. ( 0 ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							<b>0</b>
6. ( 0 ) OTHER							<b>0</b>
TOTAL SALARIES AND WAGES (A + B)							<b>27,187</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							<b>5,131</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							<b>32,318</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							<b>0</b>
E. TRAVEL 1. DOMESTIC (INCL. U.S. POSSESSIONS)							<b>0</b>
2. INTERNATIONAL							<b>0</b>
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____ <b>0</b>							
2. TRAVEL _____ <b>0</b>							
3. SUBSISTENCE _____ <b>0</b>							
4. OTHER _____ <b>0</b>							
TOTAL NUMBER OF PARTICIPANTS ( 0 ) TOTAL PARTICIPANT COSTS							<b>0</b>
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							<b>0</b>
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							<b>0</b>
3. CONSULTANT SERVICES							<b>0</b>
4. COMPUTER SERVICES							<b>0</b>
5. SUBAWARDS							<b>0</b>
6. OTHER							<b>12,307</b>
TOTAL OTHER DIRECT COSTS							<b>12,307</b>
H. TOTAL DIRECT COSTS (A THROUGH G)							<b>44,625</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) <b>MTDC (Rate: 53.0000, Base: 32318)</b>							
TOTAL INDIRECT COSTS (F&A)							<b>17,129</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							<b>61,754</b>
K. FEE							<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							<b>61,754</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b> AGREED LEVEL IF DIFFERENT \$							
PI/PI NAME <b>Porismita Borah</b>				FOR NSF USE ONLY			
ORG. REP. NAME* <b>Teresa Kidd</b>				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			



**NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation**

Borah Budget and Budget Justification:

The summer salary for Year 1: \$13,405 for one month

The summer salary for Year 2: \$13,941 for one month

Total summer salary: \$27,347

RA for year 1: \$29,503

RA for year 2: \$30,684

Total salary for RA: \$60,187

Total requested: \$121,132

Budget narrative:

Co-PI Porismita Borah: 2 months summer salary plus benefits: \$27,347 for year 1 and year 2. With the help of the summer salary, I will be able to concentrate on the work required for the project. The first summer will be useful to work on the data collection the second summer hours will be used for data analysis and dissemination of the findings. This will also be the time to help with providing the fact-checking messages to the industry partners.

One Research assistant for 2022-2023 academic year and 2023-2024: \$60,187. This includes salary, benefits and tuition waiver. The RA will help in experimental manipulation design, finding relevant literature, designing the questionnaire, data collection, data cleaning, and analysis.

Facilities & Administrative Costs: \$33,599. This is calculated at Washington State University federally negotiated rate of 53%

Total Request: \$121,132

Note: Washington State University defines a year as being from July 1 to June 30.

\*PI/co-PI/Senior Personnel Name: Leticia Bode

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**\*Required fields**

**Note:** NSF has provided 15 project/proposal and 10 in-kind contribution entries for users to populate. Please leave any unused entries blank.

**Project/Proposal Section:**

Current and Pending Support includes all resources made available to an individual in support of and/or related to all of his/her research efforts, regardless of whether or not they have monetary value.<sup>[1]</sup> Information must be provided about all current and pending support, including this project, for ongoing projects, and for any proposals currently under consideration from whatever source, irrespective of whether such support is provided through the proposing organization or is provided directly to the individual. This includes, for example, Federal, State, local, foreign, public or private foundations, non-profit organizations, industrial or other commercial organizations, or internal funds allocated toward specific projects. Concurrent submission of a proposal to other organizations will not prejudice its review by NSF, if disclosed.<sup>[2]</sup>

<sup>[1]</sup> If the time commitment or dollar value is not readily ascertainable, reasonable estimates should be provided.

<sup>[2]</sup> The Biological Sciences Directorate exception to this policy is delineated in PAPPG Chapter II.D.2.

**Projects/Proposals**

1.\*Project/Proposal Title : Testing the Effect of Corrections and Promotion of Correction on COVID-19 Vaccine Beliefs and Behaviors in the U.S. and Kenya

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: SSRC Mercury Project

\*Primary Place of Performance : Washington DC

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ 400,000

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.00	4.	
2. 2024	1.00	5.	
3.			

\*Overall Objectives : Promote vaccine beliefs and behaviors

\*Statement of Potential Overlap : No anticipated overlap



**Projects/Proposals**

2.\*Project/Proposal Title : Motivating Correction

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: Technology and Humanity Initiative of the McCourt School

\*Primary Place of Performance : Washington DC

Project/Proposal Start Date (MM/YYYY) (if available) : 02/2022

Project/Proposal End Date (MM/YYYY) (if available) : 01/2024

\*Total Award Amount (including Indirect Costs): \$ 66,765

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2022	1.00	4.	
2.		5.	
3.			

\*Overall Objectives : Incentivize correction of misinformation on social media.

\*Statement of Potential Overlap : No anticipated overlap.

**Projects/Proposals**

3.\*Project/Proposal Title : Reducing Exposure to Misinformation and Promoting Pro-Social Behaviors Among Vulnerable Communities

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: Russell Sage Foundation

\*Primary Place of Performance : Washington DC

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ 172,500

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.00	4.	
2.		5.	
3.			

\*Overall Objectives : Promoting pro-social behaviors related to Covid-19 in vulnerable communities

\*Statement of Potential Overlap : No anticipated overlap.

**Projects/Proposals**

4.\*Project/Proposal Title : Creating a chatbot to combat COVID-19 misinformation

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: SSRC Mercury Project

\*Primary Place of Performance : United States, Morocco

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ 1,449,000

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.00	4.	
2.		5.	
3.			

\*Overall Objectives : Building and testing a chatbot to combat Covid-19 misinformation in the United States and Morocco.

\*Statement of Potential Overlap : No anticipated overlap.

**Projects/Proposals**

5.\*Project/Proposal Title : HNDS - Developing methods and tools to support the understanding of the representation and measurement properties of social media data

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: NSF

\*Primary Place of Performance : United States

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ 979,102

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	0.70	4.	
2. 2024	0.70	5.	
3.			

\*Overall Objectives : Develop research portals for analyzing social media data.

\*Statement of Potential Overlap : No anticipated overlap

**Projects/Proposals**

6.\*Project/Proposal Title : NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: National Science Foundation

\*Primary Place of Performance : United States

Project/Proposal Start Date (MM/YYYY) (if available) : 09/2022

Project/Proposal End Date (MM/YYYY) (if available) : 08/2024

\*Total Award Amount (including Indirect Costs): \$ 89,209

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.00	4.	
2. 2024	1.00	5.	
3.			

\*Overall Objectives : The project will deliver a three-step method to identify, test, and correct online misinformation. First, using computational means, to identify posts and accounts circulating and susceptible to misinformation. Second, lab-tested corrections to the most prominent forms of misinforming claims using recommender systems to optimize message efficacy will be produced. And third, the project will disseminate and evaluate the effectiveness of the corrections.

\*Statement of Potential Overlap : No anticipated overlap

**Projects/Proposals**

7.\*Project/Proposal Title : Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: Social Science Research Council

\*Primary Place of Performance : University of Wisconsin-Madison

Project/Proposal Start Date (MM/YYYY) (if available) : 07/2022

Project/Proposal End Date (MM/YYYY) (if available) : 12/2024

\*Total Award Amount (including Indirect Costs): \$ 979,879

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2022	1.00	4.	
2. 2023	1.00	5.	
3. 2024	1.00		

\*Overall Objectives : Our project addresses misinformation concerning Spanish-language COVID-19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

\*Statement of Potential Overlap : This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States. .

PI/co-PI/Senior Personnel: Borah, Porismita

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: How Large-Scale Identification and Intervention Can Empower Professional Fact-Checkers to Improve Democracy and Public Health

Proposal/Award Number (if available): 2137724

Source of Support: National Science Foundation

Primary Place of Performance: Washington State University

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$87,706

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1

Overall Objectives: The project will deliver a three-step method to identify, test, and correct online misinformation. First, using computational means, to identify posts and accounts circulating and susceptible to misinformation. Second, lab-tested corrections to the most prominent forms of misinforming claims using recommender systems to optimize message efficacy will be produced. And third, the project will disseminate and evaluate the effectiveness of the corrections.

Statement of Potential Overlap: Phase 2 is an extension of Phase I

2. Project/Proposal Title: Multidisciplinary undergraduate research training in wearable computing

Proposal/Award Number (if available): 1852163

Source of Support: National Science Foundation

Primary Place of Performance: Washington State University

Project/Proposal Support Start Date (if available): 05/2019

Project/Proposal Support End Date (if available): 04/2023

Total Award Amount (including Indirect Costs): \$273,599

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.01

Overall Objectives: Related to substance use in undergraduate population

Statement of Potential Overlap: N/A

3. Project/Proposal Title: Learning to identify misinformation in social media platforms and strategies to build media and digital literacy skills in lower-level communication courses. Smith Teaching and Learning Grant

Proposal/Award Number (if available):

Source of Support: Washington State University

Primary Place of Performance: Washington State University

Project/Proposal Support Start Date (if available):

Project/Proposal Support End Date (if available):

Total Award Amount (including Indirect Costs): \$5,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.1

Overall Objectives: Teaching grant to develop a course on misinformation

Statement of Potential Overlap: N/A

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### **PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: Washington State University

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024



Total Award Amount (including Indirect Costs): \$121,132

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1

Overall Objectives: Phase 2 is the extension of Phase I

Statement of Potential Overlap: Phase 2 is an extension of Phase I

2. Project/Proposal Title: Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 07/2022

Project/Proposal Support End Date (if available): 12/2024

Total Award Amount (including Indirect Costs): \$979,879

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1

Overall Objectives: Our project examines COVID-19 vaccine related misinformation in Latin America Extends

Statement of Potential Overlap: Extends part of our Phase I research

PI/co-PI/Senior Personnel: DeChoudhury, Munmun

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: How Large-Scale Identification and Intervention Can Empower Professional Fact-Checkers to Improve Democracy and Public Health

Proposal/Award Number (if available):

Source of Support: University of Wisconsin/NSF

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$184,715

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

Year	Person-months per year committed
2022	0.5

Overall Objectives: The project will develop an innovative, three-step method to identify, test, and correct real-world instances of health and political forms of misinformation occurring online.

Statement of Potential Overlap: We are extending the work from Phase 1 in our Phase 2 proposal. We are also expanding the proposed project to six Latin American countries through the full Mercury Project proposal we were invited to submit.

2. Project/Proposal Title: Understanding and Improving the Wellness of the Remote Worker in a Post-Pandemic World

Proposal/Award Number (if available):

Source of Support: Cisco Systems

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 11/2020

Project/Proposal Support End Date (if available): 10/2022

Total Award Amount (including Indirect Costs): \$160,107

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2021	0.5

Overall Objectives: The goal of this research program is: to use automated means of data capture to identify and understand real-world stressors in context for the remote worker and (Aim 1); and to provide individuals with comprehensive information about their workplace stress in the form of an integrated system (a dashboard) so that they can discover insights on how to transform their health (Aim 2).

Statement of Potential Overlap: None

3. Project/Proposal Title: Leveraging Physical and Online Digital Infrastructures to Infer College Students' Social Isolation and its Relationship to Risk of Suicide

Proposal/Award Number (if available): 5R49CE0030720200

Source of Support: Emory Injury Prevention Center

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 08/2020

Project/Proposal Support End Date (if available): 07/2022

Total Award Amount (including Indirect Costs): \$49,870

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2020	0.1
2021	0.1

Overall Objectives: The project will leverage anonymized campus WiFi logs and de-identified Facebook data to automatically and passively assess students' social interactions in the physical world the online world respectively. By employing state of the art and innovative machine learning and forecasting approaches, the team will examine if depleted social interaction, thus measured, predicts students' exacerbated risk in suicidal thoughts and behaviors.

Statement of Potential Overlap: None

4. Project/Proposal Title: Public Expressions of Gratitude to God on Social Media

Proposal/Award Number (if available):

Source of Support: Purdue University/Templeton Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 08/2020

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$114,438

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2021	0.4
2022	0.4

Overall Objectives: This project seeks to assess the variety of ways individuals publicly express gratitude to God. To capture the diversity of public expressions, we utilize text mining methodology on millions of Twitter postings. We also apply these methods to public expressions of interhuman gratitude to identify similarities and differences in such gratitude expressions.

Statement of Potential Overlap: None

5. Project/Proposal Title: Improve helpline efficacy through caller to volunteer matching for cultural competency and other traits

Proposal/Award Number (if available):

Source of Support: Microsoft Corporation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 05/2020

Project/Proposal Support End Date (if available): 04/2027

Total Award Amount (including Indirect Costs): \$100,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2020	0.1
2021	0.1

Overall Objectives: In low-resource Indian contexts, mental health helplines are often the only care available for people in distress. Helpline access is hindered by high wait times or sociocultural misalignment between volunteers and callers. This project plans to develop Artificial Intelligence-based tools using helpline usage data to gain insights towards greater

helpline efficacy.

Statement of Potential Overlap: None

6. Project/Proposal Title: RAPID: Social Media Based Algorithms and Interventions to Tackle the Psychological Impact of the COVID-19 Crises

Proposal/Award Number (if available): 2027689

Source of Support: National Science Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 05/2020

Project/Proposal Support End Date (if available): 04/2022

Total Award Amount (including Indirect Costs): \$199,871

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2021	0.5

Overall Objectives: This project will use artificial intelligence to analyze social media data and model psychological wellbeing, distress, and vulnerability. It will provide tools to help understand community social anxiety in relationship to nearby COVID-19 outbreaks.

Statement of Potential Overlap: None

7. Project/Proposal Title: Leveraging Social Media Data and Machine Learning to Optimize Treatment Paradigms for Youth with Schizophrenia (R01)

Proposal/Award Number (if available): 1R01MH117172-02

Source of Support: National Institutes of Health

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 04/2019

Project/Proposal Support End Date (if available): 02/2023

Total Award Amount (including Indirect Costs): \$2,593,246

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2019	3

<b>Year</b>	<b>Person-months per year committed</b>
2020	3
2021	3
2022	3

Overall Objectives: The project seeks to address these gaps in early psychosis treatment, by leveraging patient-generated and patient-volunteered social media data, and developing and validating machine learning approaches for “digital phenotyping” and relapse prediction. The work is founded on the observation that social media sites have emerged as prominent platforms of emotional and linguistic expression—young adults are among the heaviest users of social media.

Statement of Potential Overlap: None

8. Project/Proposal Title: CHS Small: Tools for Mental Health Reflection: Integrating Social Media with Human-Centered Machine Learning

Proposal/Award Number (if available): 1816403

Source of Support: National Science Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 08/2018

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$284,808

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2019	0.2
2020	0.5
2021	1

Overall Objectives: The proposed project aims to develop machine learning driven mental health reflection tools that would leverage voluntarily shared social media data of eating disorder patients.

Statement of Potential Overlap: None

9. Project/Proposal Title: PFI-RP: Using a Human-Centered Approach to Improve Algorithms for Detecting Adolescent Online Risks

Proposal/Award Number (if available): 1827700

Source of Support: University of Central Florida/National Science Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 08/2018

Project/Proposal Support End Date (if available): 02/2023

Total Award Amount (including Indirect Costs): \$131,391

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2019	0.1
2020	0.5
2021	0.5

Overall Objectives: The project is developing human-centered machine learning algorithms that analyze teen and youth's private social media postings to assess three-prong risk: harassment/cyberbullying, sexual risk, and self-harm.

Statement of Potential Overlap: None

10. Project/Proposal Title: Combating Professional Harassment Online via Participatory Algorithmic and Data-Driven Research

Proposal/Award Number (if available):

Source of Support: Mozilla Corporation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 07/2018

Project/Proposal Support End Date (if available): 01/2025

Total Award Amount (including Indirect Costs): \$45,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2019	0.1
2020	0.1

Overall Objectives: The project will use participatory and human-centered algorithm design techniques to identify instances of harassment in online interactions, and work with stakeholders

(survivors and bystanders) to design technology-mediated interventions.

Statement of Potential Overlap: None

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**PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: The Center for Enhancing Treatment and Utilization for Depression and Emergent Suicidality (ETUDES) in Pediatric Primary Care

Proposal/Award Number (if available):

Source of Support: University of Pittsburgh/NIH

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 12/2022

Project/Proposal Support End Date (if available): 11/2027

Total Award Amount (including Indirect Costs): \$761,166

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	0.3
2024	0.2
2025	0.5
2026	0.5
2027	0.75

Overall Objectives: The project plans to develop machine learning and AI tools to quantify, predict, and intervene the treatment of youth of color, who are at risk of suicidal thoughts and actions.

Statement of Potential Overlap: None

2. Project/Proposal Title: A Pacing and Leading Intervention to Counter COVID-19 Misinformation on Telegram

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 10/2022



Project/Proposal Support End Date (if available): 03/2025

Total Award Amount (including Indirect Costs): \$236,378

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.45
2023	0.45
2024	0.45

Overall Objectives: This project asks 1) How can we employ novel techniques on Telegram to counter mis- and disinformation in the context of the COVID-19 pandemic? 2) What are the possible effects of countering mis- and disinformation on COVID-19 and vaccine-related outcomes? 3) What are the differential effects of countering mis- and disinformation across sociodemographic groups?

Statement of Potential Overlap: None

3. Project/Proposal Title: Social media Outcomes and Spirituality (SOS)

Proposal/Award Number (if available):

Source of Support: Yale University/John Templeton Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 10/2022

Project/Proposal Support End Date (if available): 09/2025

Total Award Amount (including Indirect Costs): \$237,901

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	0.5
2024	0.5
2025	0.5

Overall Objectives: The proposed project will test which components of R/S (e.g. prayer, service attendance) have an effect on health and health-related outcomes (e.g. mental health, stress, sleep activity), using longitudinal social media data and multimodal sensor data (e.g. wearables) of ~1000 US individuals. The work will bring together cutting-edge technology to address a compelling problem in the medical and social scientific arena.

Statement of Potential Overlap: None

4. Project/Proposal Title: Wearable Technology and Social Media to Explore the Causal Impacts of Reduced Mis- and Disinformation Exposure on Stress, Sleep Activity, Mental Health, and COVID-19 and Vaccine-related Outcomes

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 10/2022

Project/Proposal Support End Date (if available): 03/2025

Total Award Amount (including Indirect Costs): \$236,378

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.45
2023	0.45
2024	0.45

Overall Objectives: This project explores 1) How can we employ large-scale, multimodal data from social media and wearable technology to explore mis- and disinformation in the context of the COVID-19 pandemic? 2) What are the possible causal effects of mis- and disinformation on stress, sleep activity, and mental health? 3) What are the differential effects of mis- and disinformation across demographic groups?

Statement of Potential Overlap: None

5. Project/Proposal Title: Gratitude amid Online Conflict: An Interdisciplinary Cross-Cultural Approach to Understanding how Gratitude can increase civility

Proposal/Award Number (if available):

Source of Support: Purdue University/John Templeton Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2025

Total Award Amount (including Indirect Costs): \$539,350

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.9
2023	0.8
2024	0.8

Overall Objectives: This project will adopt an interdisciplinary cross-cultural approach across multiple countries (UK, Australia, USA, South Africa, and India) with different research methodologies to identify and assess how gratitude - and its different forms - can reduce online outrage during online discussions and disagreements

Statement of Potential Overlap: None

6. Project/Proposal Title: NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: University of Wisconsin, Georgia Tech

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$5,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1

Overall Objectives: The project seeks to develop computational tools to combat misinformation by augmenting factchecking capabilities of journalists.

Statement of Potential Overlap: This is Phase II of the already funded NSF Convergence Accelerator Phase I project.

7. Project/Proposal Title: Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: University of Wisconsin, Georgia Tech

Project/Proposal Support Start Date (if available): 07/2022

Project/Proposal Support End Date (if available): 12/2024

Total Award Amount (including Indirect Costs): \$979,879

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.1
2023	0.1
2024	0.1

Overall Objectives: Our project addresses misinformation concerning Spanish-language COVID-19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

Statement of Potential Overlap: This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States.

8. Project/Proposal Title: Quantifying the Causal Impact of Consumption of Online Misinformation on Affect, Well-Being, and Behavioral Intentions

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 06/2022

Project/Proposal Support End Date (if available): 11/2024

Total Award Amount (including Indirect Costs): \$724,300

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1
2023	1

<b>Year</b>	<b>Person-months per year committed</b>
2024	0.5

Overall Objectives: This project will study the causal relationship of consuming online misinformation on exacerbating outcomes relating to offline and online affect, psychological well-being, and health behavioral intentions

Statement of Potential Overlap: None

9. Project/Proposal Title: Information to Insights to Interventions for Pandemics (IIIP): Integrated Intelligence across Systems

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: NCSU, GT, UNC

Project/Proposal Support Start Date (if available): 05/2022

Project/Proposal Support End Date (if available): 10/2023

Total Award Amount (including Indirect Costs): \$1,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1

Overall Objectives: This effort will utilize advanced wearable technologies to gain insight into two major aspects of pandemic management, i.e., i) early onset of symptoms through wearables, and ii) user behavioral tracking. Wearables can help address both of these challenges by tracking early detection of symptoms and uncover unobservable symptoms as well as asymptomatic changes in physiology as well as providing behavior insight into events that drive social distancing and close interaction.

Statement of Potential Overlap: None

PI/co-PI/Senior Personnel: Dragut, Eduard

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: America's Fourth Estate at Risk: A System for Mapping the (Local) Journalism Life Cycle to Rebuild the Nation's News Trust

Proposal/Award Number (if available):

Source of Support: NSF

Primary Place of Performance: Temple University

Project/Proposal Support Start Date (if available): 01/2022

Project/Proposal Support End Date (if available): 12/2022

Total Award Amount (including Indirect Costs): \$750,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

Year	Person-months per year committed
2022	2.6

Overall Objectives: This project undertakes a big data approach to the study of the news life cycle that will provide news organizations with an important tool to begin to re-establish sufficient levels of trust with the American people. A big data approach from computer and data science, driven by agenda-setting theory from the social sciences, will help track the communication life cycle of local news across the Web.

Statement of Potential Overlap: There is no overlap with other projects.

2. Project/Proposal Title: Collaborative Research: III: Medium: Extracting and Linking AI Artifacts

Proposal/Award Number (if available):

Source of Support: NSF

Primary Place of Performance: Temple University

Project/Proposal Support Start Date (if available): 12/2021

Project/Proposal Support End Date (if available): 11/2024

Total Award Amount (including Indirect Costs): \$670,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.25
2023	1
2024	1

Overall Objectives: The goal of this project is to create a framework for linking all salient aspects of an artificial intelligence (AI) workflow, including data, AI models, AI tools, tasks, and training methodology.

Statement of Potential Overlap: There is no overlap with other projects.

3. Project/Proposal Title: FW-HTF-RL: Personalized Virtual Job Assistants to Prepare Individuals with Neurodevelopmental Disabilities for Entry Level IT Jobs

Proposal/Award Number (if available): 2026513

Source of Support: NSF

Primary Place of Performance: Temple University

Project/Proposal Support Start Date (if available): 09/2020

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$2,310,269

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2020	1
2021	1
2022	0.25
2023	0.5
2024	0.5

Overall Objectives: The objective of this project is to gain scientific understanding and to develop technology to support stronger participation of neurodiverse individuals in a future workforce. The outcome of the project will be an artificial intelligence (AI)-enabled software platform that creates a synergy between future workers, employers, and intermediate job coaches in a way that reduces accommodation costs and supervision needs, and increases worker productivity and job satisfaction.

Statement of Potential Overlap: There is no overlap with other projects.

4. Project/Proposal Title: BIGDATA: F: Collaborative Research: Collective Mining of Vertical Social Communities

Proposal/Award Number (if available): 1838145

Source of Support: NSF

Primary Place of Performance: Temple University

Project/Proposal Support Start Date (if available): 09/2018

Project/Proposal Support End Date (if available): 08/2022

Total Award Amount (including Indirect Costs): \$427,912

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2020	1
2021	1
2022	0.25

Overall Objectives: The goals of this project are to enable effective access to vertical social communities coalesced at news reports online, and to mine their comments and debates. This project will provide researchers with tools to collect data from these communities and analyze them.

Statement of Potential Overlap: There is no overlap with other projects.

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**PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: CommuniTies: An Assistive AI Platform for Local Newsrooms to Build Ties with Diverse Communities

Proposal/Award Number (if available):

Source of Support: NSF

Primary Place of Performance: Temple University

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$5,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:



<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1

Overall Objectives: This project undertakes a big data approach to the study of the news life cycle that will provide news organizations with an important tool to begin to re-establish sufficient levels of trust with the American people. A big data approach from computer and data science, driven by agenda-setting theory from the social sciences, will help track the communication life cycle of local news across the Web.

Statement of Potential Overlap: There is no overlap with other projects

2. Project/Proposal Title: Collaborative Research: CSSI Framework: MIDAS: A Medical Imaging and big-Data Analysis

Proposal/Award Number (if available):

Source of Support: NSF

Primary Place of Performance: Temple University

Project/Proposal Support Start Date (if available): 08/2022

Project/Proposal Support End Date (if available): 08/2027

Total Award Amount (including Indirect Costs): \$1,004,322

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1
2025	1
2026	1
2027	1

Overall Objectives: We propose the development of MIDAS, a cyberinfrastructure that integrates standard diagnostic and therapeutic outcomes with 3D hyperspectral imaging (HSI) techniques to provide comprehensive views of biomedical activity.

Statement of Potential Overlap: There is no overlap with other projects.

PI/co-PI/Senior Personnel: Kumar, Srijan

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: Collaborative Research: SaTC: CORE: Medium: An Incident-Response Approach for Empowering Fact-Checkers

Proposal/Award Number (if available): 2154118

Source of Support: National Science Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 05/2022

Project/Proposal Support End Date (if available): 04/2026

Total Award Amount (including Indirect Costs): \$428,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.15
2023	0.15
2024	0.15
2025	0.15

Overall Objectives: This proposal is aimed at mitigating misinformation by helping human fact checkers do their work. Computational methods would be used to make the fact checking process more efficient and more accurate (e.g., by reducing the need for fact checkers to do manual searches

Statement of Potential Overlap: None

2. Project/Proposal Title: FW-HTF-P: Collaborative Research: Artificial Intelligence-Supported Development of Future Organizational Leaders

Proposal/Award Number (if available): 2128873

Source of Support: National Science Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$35,904

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1

Overall Objectives: The main purpose of the proposed effort is to aid future Human resource management (HRM) workers and their influence on the training and development of all leaders. We address challenges by proposing to create a leadership training platform to be used by HRM workers to train the next generation of diverse leaders to adapt to an online setting when leading teams to solve problems, engage in lifelong learning, and promote worker wellbeing.

Statement of Potential Overlap: None

3. Project/Proposal Title: NSF Convergence Accelerator Track F: How Large-Scale Identification and Intervention Can Empower Professional Fact-Checkers to Improve Democracy and Public Health.

Proposal/Award Number (if available): 2137724

Source of Support: University of Wisconsin

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$184,715

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1

Overall Objectives: Address misinformation concerning COVID-19 vaccination & election integrity by 1) using multi-modal signal detection to engage in knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) testing the effects of these message within affected communities.

Statement of Potential Overlap: We are extending the work from Phase 1 in our Phase 2 proposal. We are also expanding the proposed project to six Latin American countries through the full Mercury Project proposal we were invited to submit.

4. Project/Proposal Title: Contextualized daily prediction of lapse risk in opioid use disorder by digital phenotyping

Proposal/Award Number (if available): 0000001580

Source of Support: University of Wisconsin-Madison

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 09/2021

Project/Proposal Support End Date (if available): 06/2022

Total Award Amount (including Indirect Costs): \$19,172

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.25

Overall Objectives: This project aims to use trajectory data of a person (who was at which location at what time) to make accurate predictions. The prediction goals in this work is to develop proof of concept that can use a person's recorded trajectory to predict her health outcomes. If successful, this work can be used for passive sensing to make predictions.

Statement of Potential Overlap: None

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**PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

Proposal/Award Number (if available):

Source of Support: University of Wisconsin- Madison

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 02/2025

Total Award Amount (including Indirect Costs): \$150,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.13

<b>Year</b>	<b>Person-months per year committed</b>
2023	0.13
2024	0.13

Overall Objectives: Address misinformation concerning Spanish-language COVID-19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

Statement of Potential Overlap: This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States.

2. Project/Proposal Title: NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

Proposal/Award Number (if available):

Source of Support: University of Wisconsin- Madison

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$1,311,967

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1.5
2024	1.5

Overall Objectives: Address misinformation concerning COVID-19 vaccination & election integrity by 1) using multi-modal signal detection for knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict roles and likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) directing these messages to affected communities using A/B testing and RCTs.

Statement of Potential Overlap: This extends out Phase 1 work on the Convergence Accelerator as we formally move toward development of Course Correct

3. Project/Proposal Title: Collaborative Research: FW-HTF-R: Innovating the Development of Future Leaders with Artificial Intelligence

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 08/2022

Project/Proposal Support End Date (if available): 07/2026

Total Award Amount (including Indirect Costs): \$586,355

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1
2025	1
2026	1

Overall Objectives: The main purpose of the proposed effort is to aid future leadership coaches in their work to train a diverse pipeline of leaders. We address these three challenges by proposing to create a leadership training platform to be used by coaches to train the next generation of diverse leaders to adapt to an online setting when leading teams to solve problems, engage in lifelong learning, and promote worker wellbeing.

Statement of Potential Overlap: None

4. Project/Proposal Title: Quantifying the Causal Impact of Consumption of Online Misinformation on Affect, Well-Being, and Behavioral Intentions

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: Georgia Institute of Technology

Project/Proposal Support Start Date (if available): 06/2022

Project/Proposal Support End Date (if available): 12/2025

Total Award Amount (including Indirect Costs): \$724,300

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1
2023	1
2024	0.5

Overall Objectives: Misinformation about the COVID-19 pandemic proliferated widely on social media platforms during the course of the health crisis and has had a damaging impact on public health and society. In this proposal, we will study the causal relationship of consuming and believing in online misinformation on exacerbating mental health outcomes. We propose to establish and thereafter quantify the overall impact of this impact on minorities and vulnerable populations, accounting for confounding factors.

Statement of Potential Overlap: None

PI/co-PI/Senior Personnel: Sethares, William A

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: How Large-Scale Identification and Intervention Can empower Professional Fact-Checkers to Improve Democracy and Public Health

Proposal/Award Number (if available): 2137724

Source of Support: National Science Foundation

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$750,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.5

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination and election integrity by 1) using multi-modal signal detection to engage in knowledge driven information extraction about these topics on social media;2) integrating user attributes, message features, and online networks structural properties to predict likely exposure to future misinformation; 3)working with journalists to develop corrective messages at scale; 4) testing the effects of these message within affected communities.

Statement of Potential Overlap: We are extending the work from Phase 1 in our Phase 2 proposal. We ask also expanding the proposed project to six Latin American countries through the full Mercury Project proposal we were invited to submit.

2. Project/Proposal Title: Computational Characterization of Historic Papers via Watermarks, Chain Lines, and Laid Lines

Proposal/Award Number (if available):

Source of Support: Getty Foundation

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available): 06/2021



Project/Proposal Support End Date (if available): 06/2023

Total Award Amount (including Indirect Costs): \$245,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1

Overall Objectives: Objective is to provide software tools for paper conservators and art historians to understand the origin and manufacture of historical paper.

Statement of Potential Overlap: N/A

3. Project/Proposal Title: Center for Communication and Civic Renewal

Proposal/Award Number (if available):

Source of Support: John S. & James L. Knight Foundation

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available): 06/2019

Project/Proposal Support End Date (if available): 06/2023

Total Award Amount (including Indirect Costs): \$900,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.5

Overall Objectives: Study and model contentious political communication ecologies and understand the impact of news, social media, and broader social dynamics on information flows within the media system and public opinion formation. Focus has expanded from the State of Wisconsin, two other battleground states, to the nation, and beyond. Our research uses a mixed methods approach combining in-depth interviews, computational text analysis of news and social media, and modeling of public opinion.

Statement of Potential Overlap: N/A

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**PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$5,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	0.5
2024	0.25

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination and election integrity by 1) using multi-modal signal detection for knowledge driven information extraction about these topics on social media;2) integrating user attributes, message features, and online networks structural properties to predict roles and likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) testing the effects of these message within affected communities

Statement of Potential Overlap: This extends out Phase 1 work on the Convergence Accelerator as we formally move toward development of Course Correct

2. Project/Proposal Title: Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available): 07/2022

Project/Proposal Support End Date (if available): 12/2024

Total Award Amount (including Indirect Costs): \$979,879

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1

Overall Objectives: Our project addresses misinformation concerning Spanish-language COVID-

19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

Statement of Potential Overlap: This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States.

3. Project/Proposal Title: Clinically feasible cortical measures of hearing aid benefit

Proposal/Award Number (if available):

Source of Support: Audioscan

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available):

Project/Proposal Support End Date (if available):

Total Award Amount (including Indirect Costs): \$100,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1
2023	1

Overall Objectives: The objective is to provide a noninvasive way to test the hearing of pre-verbal children and to assess their ability to hear and process sounds in a variety of frequency bands.

Statement of Potential Overlap: N/A

PI/co-PI/Senior Personnel: Shah, Dhavan

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: How Large-Scale Identification and Intervention Can Empower Professional Fact-Checkers to Improve Democracy and Public Health

Proposal/Award Number (if available): 2137724

Source of Support: National Science Foundation

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$750,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.01

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination and election integrity by 1) using multi-modal signal detection to engage in knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) testing the effects of these message within affected communities.

Statement of Potential Overlap: We are extending the work from Phase 1 in our Phase 2 proposal. We are also expanding the proposed project to six Latin American countries through the full Mercury Project proposal we were invited to submit.

2. Project/Proposal Title: Family-focused vs. Drinker-focused Smartphone Interventions to Reduce Drinking-related Consequences of COVID-19

Proposal/Award Number (if available): 1R01AA029804-01

Source of Support: DHHS, PHS, NATIONAL INSTITUTES OF HEALTH

Primary Place of Performance: University of Wisconsin-Madiso

Project/Proposal Support Start Date (if available): 09/2021

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$3,378,554

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.8
2023	0.8
2024	0.8

Overall Objectives: The broad goals of this project are to test whether a family-focused or drinker-focused smartphone intervention is more effective at reducing drinking related consequences of COVID-19. The competing systems will be built on the Addiction-Comprehensive Health Enhancement Support System (A-CHESS) mobile app, a tool developed by researchers in the UW's Center for Health Enhancement System Studies.

Statement of Potential Overlap: N/A

3. Project/Proposal Title: Using Smart Displays to Implement on Evidence-Based eHealth System for Older Adults with Multiple Chronic Conditions

Proposal/Award Number (if available): 1R61HL151870-01A1

Source of Support: DHHS, PHS, NATIONAL INSTITUTES OF HEALTH

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 08/2021

Project/Proposal Support End Date (if available): 07/2022

Total Award Amount (including Indirect Costs): \$777,464

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.4

Overall Objectives: An AHRQ-funded P50 supported the development and testing of ElderTree, and ehealth intervention designed for older adults. ET provides tools, motivation, and support on a laptop platform tell patients manage their health. Yet despite ET's benefits, many patients in the P 50 RCT did not use it extensively. The central question of the proposed research is the weather adapting and delivering ET with smart displays can expand and 16 the use of the system.

Statement of Potential Overlap: N/A

4. Project/Proposal Title: Center for Communication and Civic Renewal

Proposal/Award Number (if available): G-2019-58809

Source of Support: John S. & James L. Knight Foundation

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available): 08/2020

Project/Proposal Support End Date (if available): 07/2024

Total Award Amount (including Indirect Costs): \$1,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1
2023	1
2024	1

Overall Objectives: Study and model contentious political communication ecologies and understand the impact of news, social media, and broader social dynamics on information flows within the media system and public opinion formation. Focus has expanded from the State of Wisconsin, two other battleground states, to the nation, and beyond. Our research uses a mixed methods approach combining in-depth interviews, computational text analysis of news and social media, and modeling of public opinion.

Statement of Potential Overlap: N/A

5. Project/Proposal Title: Contextualized Daily Prediction of Lapse Risk in Opioid Use Disorder by Digital Phenotyping

Proposal/Award Number (if available): R01DA047315-01A1

Source of Support: DHHS, PHS, NATIONAL INSTITUTES OF HEALTH

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 08/2019

Project/Proposal Support End Date (if available): 06/2024

Total Award Amount (including Indirect Costs): \$3,416,728

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
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<b>Year</b>	<b>Person-months per year committed</b>
2022	1.9
2023	1.9
2024	1.9

Overall Objectives: The broad goals of this project are to develop and deliver models to forecast the day-by-day probability of opioid and other drug use among people trying to abstain from drugs while in recovery. This lapse risk prediction model will be generated using the Addiction-Comprehensive Health Enhancement Support System (A-CHESS) mobile app, a tool developed by researchers in the UW’s Center for Health Enhancement System Studies.

Statement of Potential Overlap: N/A

6. Project/Proposal Title: Heart-Related Multiple Chronic Conditions in Primary Care: Behavioral Technology

Proposal/Award Number (if available): 1R01HL134146

Source of Support: DHHS, PHS, NATIONAL INSTITUTES OF HEALTH

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 04/2017

Project/Proposal Support End Date (if available): 03/2022

Total Award Amount (including Indirect Costs): \$4,176,778

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.01

Overall Objectives: An AHRQ-funded P50 supported the development and testing of ElderTree, and ehealth intervention designed for older adults. ET provides tools, motivation, and support on a laptop platform tell patients manage their health. Yet despite ET's benefits, many patients in the P 50 RCT did not use it extensively. The central question of the proposed research is the weather adapting and delivering ET with voice control technology can expand and 16 the use of the system.

Statement of Potential Overlap: N/A

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**PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$5,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1.5
2024	1

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination & election integrity by 1) using multi-modal signal detection for knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict roles & likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) directing these messages to affected communities.

Statement of Potential Overlap: This extends out Phase 1 work on the Convergence Accelerator as we formally move toward development of Course Correct

2. Project/Proposal Title: Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 07/2022

Project/Proposal Support End Date (if available): 12/2024

Total Award Amount (including Indirect Costs): \$979,879

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
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<b>Year</b>	<b>Person-months per year committed</b>
2023	0.75
2024	0.5

Overall Objectives: Our project addresses misinformation concerning Spanish-language COVID-19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

Statement of Potential Overlap: This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States

\*PI/co-PI/Senior Personnel Name: Emily Vraga

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**\*Required fields**

**Note:** NSF has provided 15 project/proposal and 10 in-kind contribution entries for users to populate. Please leave any unused entries blank.

**Project/Proposal Section:**

Current and Pending Support includes all resources made available to an individual in support of and/or related to all of his/her research efforts, regardless of whether or not they have monetary value.<sup>[1]</sup> Information must be provided about all current and pending support, including this project, for ongoing projects, and for any proposals currently under consideration from whatever source, irrespective of whether such support is provided through the proposing organization or is provided directly to the individual. This includes, for example, Federal, State, local, foreign, public or private foundations, non-profit organizations, industrial or other commercial organizations, or internal funds allocated toward specific projects. Concurrent submission of a proposal to other organizations will not prejudice its review by NSF, if disclosed.<sup>[2]</sup>

<sup>[1]</sup> If the time commitment or dollar value is not readily ascertainable, reasonable estimates should be provided.

<sup>[2]</sup> The Biological Sciences Directorate exception to this policy is delineated in PAPPG Chapter II.D.2.

**Projects/Proposals**

1.\*Project/Proposal Title : Testing the Effect of Corrections and Promotion of Correction on COVID-19 Vaccine Beliefs and Behaviors in the U.S. and Kenya

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: SSRC Mercury Project

\*Primary Place of Performance : Minneapolis, MN, USA

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ **\$400,000**

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.00	4.	
2. 2024	1.00	5.	
3.			

\*Overall Objectives : Promoting healthy sharing behaviors around vaccinations via WhatsApp in Kenya and the US.

\*Statement of Potential Overlap : No anticipated overlap.

**Projects/Proposals**

2.\*Project/Proposal Title : Motivating correction

\*Status of Support :  Current   Pending   Submission Planned   Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: Technology and Humanity Initiative of the McCourt School

\*Primary Place of Performance : Minneapolis, MN, USA

Project/Proposal Start Date (MM/YYYY) (if available) : 02/2022

Project/Proposal End Date (MM/YYYY) (if available) : 01/2024

\*Total Award Amount (including Indirect Costs): \$ 66,765

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2022	1.00	4.	
2.		5.	
3.			

\*Overall Objectives : Series of qualitative interviews to identify common barriers to user correction and perform experiments to motivate additional user correction.

\*Statement of Potential Overlap : No anticipated overlap

**Projects/Proposals**

3.\*Project/Proposal Title : Reducing Exposure to Misinformation and Promoting Pro-Social Behaviors Among Vulnerable Communities

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: Russell Sage Foundation

\*Primary Place of Performance : Minneapolis, MN, USA

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ 195,500

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.00	4.	
2.		5.	
3.			

\*Overall Objectives : Identifying common barriers to engaging in pro-social behaviors such as sharing accurate information and correcting misinformation, developing a community training to facilitate better behaviors.

\*Statement of Potential Overlap : No anticipated overlap.

**Projects/Proposals**

4.\*Project/Proposal Title : Leveraging the communication environment and predictive modeling to inform vaccine uptake interventions in MN counties

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: Minnesota Futures grant

\*Primary Place of Performance :

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ 250,000

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	0.87	4.	
2. 2024	0.87	5.	
3.			

\*Overall Objectives : Identify characteristics of communication environment across regions of Minnesota that relate to vaccination rates for HPV and COVID-19.

\*Statement of Potential Overlap : No anticipated overlap.

**Projects/Proposals**

5.\*Project/Proposal Title : Monitoring and Assessing the Impact of COVID Vaccine (Mis)information on Social Media: Integrating Health Communication, Behavior Change Theory, and Machine Learning

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: National Institutes of Health (NIH)

\*Primary Place of Performance :

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

\*Total Award Amount (including Indirect Costs): \$ 249,976

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.20	4.	
2. 2024	1.20	5.	
3.			

\*Overall Objectives : Monitor vaccination questions, concerns, accurate information, and misinformation from social media influencers; explore whether COVID-19 messaging from health organizations is related to shifts in vaccine sentiment.

\*Statement of Potential Overlap : No anticipated overlap.

**Projects/Proposals**

6.\*Project/Proposal Title : NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: National Science Foundation

\*Primary Place of Performance : United States

Project/Proposal Start Date (MM/YYYY) (if available) : 09/2022

Project/Proposal End Date (MM/YYYY) (if available) : 08/2024

\*Total Award Amount (including Indirect Costs): \$ 92,188

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2023	1.13	4.	
2. 2024	1.13	5.	
3.			

\*Overall Objectives : This project will deliver a three-step method to identify, test, and correct online misinformation. First, using computational methods, to identify posts and accounts circulating and susceptible to misinformation. Second, lab-tested corrections to the most prominent forms of misinformation claims using recommender systems to optimize message efficacy will be produced. And third, the project will disseminate and evaluate the effectiveness of corrections.

\*Statement of Potential Overlap : No anticipated overlap.



**Projects/Proposals**

7.\*Project/Proposal Title : Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

\*Status of Support :  Current  Pending  Submission Planned  Transfer of Support

Proposal/Award Number (if available):

\*Source of Support: Social Science Research Council

\*Primary Place of Performance : University of Wisconsin-Madison

Project/Proposal Start Date (MM/YYYY) (if available) : 07/2022

Project/Proposal End Date (MM/YYYY) (if available) : 12/2024

\*Total Award Amount (including Indirect Costs): \$ 979,879

\*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2022	1.00	4.	
2. 2023	1.00	5.	
3. 2024	1.00		

\*Overall Objectives : Our project addresses misinformation concerning Spanish-language COVID-19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

\*Statement of Potential Overlap : This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States. .

PI/co-PI/Senior Personnel: Wagner, Michael

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: How Large-Scale Identification and Intervention Can Empower Professional Fact-Checkers to Improve Democracy and Public Health

Proposal/Award Number (if available): 2137724

Source of Support: National Science Foundation

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$750,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination and election integrity by 1) using multi-modal signal detection to engage in knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) testing the effects of these message within affected communities.

Statement of Potential Overlap: We are extending the work from Phase 1 in our Phase 2 proposal. We are also expanding the proposed project to six Latin American countries through the full Mercury Project proposal we were invited to submit.

2. Project/Proposal Title: Center for Communication and Civic Renewal

Proposal/Award Number (if available): G-2019-58809

Source of Support: John S. & James L. Knight Foundation

Primary Place of Performance: UW Madison

Project/Proposal Support Start Date (if available): 08/2020

Project/Proposal Support End Date (if available): 07/2024

Total Award Amount (including Indirect Costs): \$1,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	2
2023	1
2024	1

Overall Objectives: Study and model contentious political communication ecologies and understand the impact of news, social media, and broader social dynamics on information flows within the media system and public opinion formation. Focus has expanded from the State of Wisconsin, two other battleground states, to the nation, and beyond. Our research uses a mixed methods approach combining in-depth interviews, computational text analysis of news and social media, and modeling of public opinion.

Statement of Potential Overlap: N/A

3. Project/Proposal Title: Reproductive Knowledge, Attitudes, and Behaviors in the Wisconsin Communication Ecology

Proposal/Award Number (if available):

Source of Support: Collaborative for Reproductive Equity

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 06/2020

Project/Proposal Support End Date (if available): 08/2022

Total Award Amount (including Indirect Costs): \$324,075

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.25

Overall Objectives: In light of 1) the calcifying polarization of American politics over the abortion issue, and, increasingly, reproductive health and rights more generally; 2) the public opinion and policy-related outcomes of the framing battle, that have favored anti-abortion groups, over abortion that has been ongoing since the 1970s, and 3) the upcoming challenges to legal abortion in Wisconsin; this project examines public opinion and political behavior related to the abortion issue.

Statement of Potential Overlap: N/A

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**PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$5,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	2
2024	2

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination & election integrity by 1) using multi-modal signal detection for knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict roles & likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) directing these messages to affected communities.

Statement of Potential Overlap: This extends out Phase 1 work on the Convergence Accelerator as we formally move toward development of Course Correct

2. Project/Proposal Title: Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 07/2022

Project/Proposal Support End Date (if available): 12/2024

Total Award Amount (including Indirect Costs): \$979,879

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1
2024	1

Overall Objectives: Our project addresses misinformation concerning Spanish-language COVID-19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

Statement of Potential Overlap: This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States

PI/co-PI/Senior Personnel: Yang, Sijia

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**PROJECT/PROPOSAL CURRENT SUPPORT**

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1. Project/Proposal Title: Community co-design and randomized controlled trial of messages targeting online misinformation for rural Wisconsinites

Proposal/Award Number (if available):

Source of Support: University of Wisconsin-Madison

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 01/2022

Project/Proposal Support End Date (if available): 12/2024

Total Award Amount (including Indirect Costs): \$59,985

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.1
2023	0.1
2024	0.1

Overall Objectives: Our aims are to: 1) Co-design misinformation mitigation messages with key partners in rural Wisconsin; 2) Test pro-health informational messages with rural-living residents of Wisconsin; and 3) Disseminate lessons learned in a practical toolkit for Extension Specialists and other community leaders.

Statement of Potential Overlap: N/A

2. Project/Proposal Title: NSF Convergence Accelerator Track F: How Large-Scale Identification and Intervention Can Empower Professional Fact-Checkers to Improve Democracy and Public Health

Proposal/Award Number (if available): 2137724

Source of Support: National Science Foundation

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 10/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$750,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	1.5

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination and election integrity by 1) using multi-modal signal detection to engage in knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) testing the effects of these message within affected communities.

Statement of Potential Overlap: We are extending the work from Phase 1 in our Phase 2 proposal. We are also expanding the proposed project to six Latin American countries through the full Mercury Project proposal we were invited to submit.

3. Project/Proposal Title: Developing and Testing the Impacts of Cannabis Prevention Messages for At-Risk Young Adults

Proposal/Award Number (if available):

Source of Support: University of Wisconsin-Madison

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 07/2021

Project/Proposal Support End Date (if available): 06/2022

Total Award Amount (including Indirect Costs): \$70,032

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.1

Overall Objectives: To improve knowledge and prevent early and habitual use, cannabis prevention messages (CPMs) are required to facilitate educational communication campaigns and enhance health warning labels on product packages and advertisements. However, little research exists to provide an empirical basis for designing effective CPMs for this age group. We propose a multi-method approach that combines the strengths of online conjoint experiment and neuroimaging to identify effective CPMs.

Statement of Potential Overlap: N/A

4. Project/Proposal Title: Connecting Behavioral Science to COVID-19 Vaccine Demand Network

Proposal/Award Number (if available): U48DP006383-01

Source of Support: DHHS, PHS, CENTERS FOR DISEASE CONTROL

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 05/2021

Project/Proposal Support End Date (if available): 09/2022

Total Award Amount (including Indirect Costs): \$499,999

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2022	0.1

Overall Objectives: We will become engaged with the Connecting Behavioral Science to COVID-19 Vaccine Demand (CBS-CVD) network and working in close collaboration with our community partners we will: (1) use existing and newly collected mixed methods data to determine attitudes, barriers and facilitators to vaccine uptake among rural providers and families with children; (2) co-design interventions components with key stakeholders; and (3) evaluate their impact.

Statement of Potential Overlap: N/A

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### **PROJECT/PROPOSAL PENDING SUPPORT**

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1. Project/Proposal Title: Community co-design and pilot test of public health messages addressing pediatric vaccine hesitancy in rural America

Proposal/Award Number (if available):

Source of Support: Institute for Clinical and Translational Research UW-Madison

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2023

Total Award Amount (including Indirect Costs): \$100,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
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<b>Year</b>	<b>Person-months per year committed</b>
2023	1

Overall Objectives: Our goal is to identify effective messages to address pediatric vaccine hesitancy in rural parents. Aim 1: Using a stakeholder-engaged process, design health promotion messages addressing pediatric vaccine hesitancy in rural Wisconsin. Aim 2: Pilot test messages developed in Aim 1 in a national sample of rural dwelling parents.

Statement of Potential Overlap: N/A

2. Project/Proposal Title: NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation

Proposal/Award Number (if available):

Source of Support: National Science Foundation

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 09/2022

Project/Proposal Support End Date (if available): 08/2024

Total Award Amount (including Indirect Costs): \$5,000,000

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	1.5
2024	1.5

Overall Objectives: Project addresses misinformation concerning COVID-19 vaccination & election integrity by 1) using multi-modal signal detection for knowledge driven information extraction about these topics on social media; 2) integrating user attributes, message features, and online networks structural properties to predict roles & likely exposure to future misinformation; 3) working with journalists to develop corrective messages at scale; 4) directing these messages to affected communities.

Statement of Potential Overlap: This extends out Phase 1 work on the Convergence Accelerator as we formally move toward development of Course Correct

3. Project/Proposal Title: Identification and Intervention of COVID-19 Misinformation in Latin America and the United States

Proposal/Award Number (if available):

Source of Support: Social Science Research Council

Primary Place of Performance: University of Wisconsin-Madison

Project/Proposal Support Start Date (if available): 07/2022

Project/Proposal Support End Date (if available): 12/2024

Total Award Amount (including Indirect Costs): \$979,879

Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project:

<b>Year</b>	<b>Person-months per year committed</b>
2023	0.5
2024	0.5

Overall Objectives: Our project addresses misinformation concerning Spanish-language COVID-19 vaccination in Latin America by 1) using cross-language and multi-modal signal detection for cross-cultural detection on social media; 2) integrating differences across the six test countries to examine the limits of our misinformation detection and correction, and; 3) conducting parallel RCTs in those six countries among misinformation diffusers to test the effectiveness of our misinformation corrections efforts.

Statement of Potential Overlap: This extends aspects of our Phase 1 work on the Convergence Accelerator by extending the detection and intervention work into Spanish-language speaking contexts in Latin America and corresponding ethnic communities in the United States

## **Facilities, Equipment and Other Resources**

### **Facilities: UW-Madison**

Meeting space for the team is provided by the School of Journalism and Mass Communication (SJMC) in the McLeod Roundtable Room (seating 20) and the two MCRC lab spaces (seating 15 each) in Vilas Hall on the campus of UW-Madison. The meeting rooms and lab spaces are equipped with mobile cameras, microphones and large screen monitors to facilitate virtual meetings and/or allow participants who cannot make it in person. The team also has access to the Nafziger Room in the same building for meetings with journalists, focused-group interviewing, and conference hosting (seating up to 60).

### **Equipment: Entire Course Correct Team**

Each member of the research team has the requisite computing equipment and statistical software packages on their work machines to do the analyses, writing, and communication necessary for the project. If additional software is needed, most can be provided through internal sources or funds.

### **Other Resources: UW-Madison**

Data will be retrieved using Twitter's API (we have access to COVID-19 Twitter Endpoint and Twitter Academic Endpoint 2.0 directly from Twitter) or through the social media monitoring platform, Synthesio, which allows a 10% random sampling of historical Twitter data based on keyword queries going back three years, as well as draws of public-facing content from Facebook, Instagram, YouTube, Reddit, Tumblr and other popular platforms. In both cases, the retrieved data takes the form of flat JSON files containing all of the publicly available metadata contained in the posts, including account profile details, the time of creation, whether original, retweeted, or quoted, the presence of digital objects such as hashtags, mentions, and shared links. These data are stored at flat JSON files until conversion into a Hadoop data framework for ease of data management and redundancy while allowing queries that maintain anonymity. Data can be drawn from these data into CSV files for closer analysis, with each attribute as a discrete variable. Networked connections among accounts can also be derived from these data given that full network data available through the Twitter Endpoints and the robust random sample or public facing interactions available from Synthesio.

Our plans for archiving these collected and derived data as well as the research product that these data generate center on our Hadoop server cluster in the Computer Systems Lab (CSL) at the University of Wisconsin-Madison's Computer Science Department. Our custom-built cluster within the CSL contains over 280 TB of storage space for archiving and preserving data with automatic redundancy. Backups of existing archives (e.g., COVID Twitter Endpoint) and custom runs (e.g., posts containing election misinformation claims) can be securely conducted without the need for cloud storage or remote archiving. This system has been in place at the UW since 2012 and was recently expanded with an infrastructure grant that allowed its expansion to allow to secure storage of the vast volume and velocity at which social media containing text, sounds, images, and video can require.

A no cost extension for NSF-CA Phase I funding will be used to help fund three Project Assistants at UW-Madison in the fall of 2022. This is because we are unable to hire additional students at the time we forecast the NSF might inform our team of Phase II funding. That is, if we do earn Phase II funding, the timing of it is likely to come after the period in which we are allowed to hire new PA's for the full fall semester from our department's roster of graduate students. As such, we are committing Phase I resources to the fall semester of 2022 in order to avoid a disruption in work flow should we be funded in Phase II.

The Office of the Vice Chancellor for Research and Graduate Education at the University of Wisconsin-Madison has committed to supporting to our Phase II proposal as well; the commitment would be used

during Phase II and up to three years after Phase II funding ends in order to sustain Course Correct's staff and work, help Course Correct scale up and seek additional resources, and identify new end users for the project, including the maintenance and, if needed, expansion of our data infrastructure. These and other resources from the PI's (Wagner) department will relieve three of his four course teaching load in the 2022-23 academic year and two courses relieved during the 2023-24 academic year.

### **Additional Facilities and Resources: Georgia Tech's College of Computing**

Accredited by the Southern Association of Colleges and Schools (SACS), Georgia Tech offers many nationally recognized, top-ranked programs. Undergraduate and graduate degrees are offered in the Colleges of Architecture, Engineering, Sciences, Computing, Management, and the Ivan Allen College of Liberal Arts. In a world that increasingly turns to technology for solutions, Georgia Tech is using innovative teaching and advanced research to define the technological university of the 21st century. Year after year, Georgia Tech is consistently the only technological university ranked in U.S. News & World Report's listing of America's top ten public universities. In addition, Georgia Tech's College of Engineering is consistently ranked in the nation's top five by U.S. News. In terms of producing African American engineering graduates, Diverse Issues in Higher Education ranks Tech No. 2 at the bachelor's level, No. 1 at the master's level, and No. 3 at the doctoral level.

**The College of Computing** at Georgia Tech is a national leader in the research and creation of real-world computing breakthroughs that drive social and scientific progress. With its graduate program ranked 9th nationally by U.S. News and World Report, the College's unconventional approach to education is pioneering the new era of computing by expanding the horizons of traditional computer science students through interdisciplinary collaboration and a focus on human centered solutions. The College resides in three buildings (CODA, College of Computing Building (CCB), Technology Square Research Building (TSRB), and Klaus Advanced Computing Building (Klaus). Co-PI Dr. Kumar is a faculty in the School of Computational Science and Engineering, located at CODA. Co-PI Dr. De Choudhury is a faculty in the School of Interactive Computing, located in TSRB. TSRB is located in the innovative and pedestrian-friendly Technology Square district of Georgia Tech and is home to the GVU Research Center while CCB is home to the nationally acclaimed RIM Center. TSRB also houses state of the art Conference Facilities that accommodate several of the College's special events, lectures and meetings.

**General Computing Resources** Computing resources available within the College of Computing consist of a variety of computing systems as well as localized clusters of workstations. These systems are readily available for teaching and research and provide a diverse collection of resources for algorithmic exploration. Through the Sony-Toshiba-IBM Center of Competence directed by Bader, the high performance computing lab runs a cluster of IBM QS20 blades with 28 Cell BE processors (the hybrid multicore processor in the Sony PlayStation 3). Each Cell BE processor has a main PowerPC core and 8 synergistic processing elements (SPE's) that are used to accelerate the computation. Recently, the cluster was upgraded to include six IBM QS22 blades that use the version of the Cell chip called PowerXCell 8i that have native double-precision floating point units operating at 100 GF/s. The Cell processor is remarkable in that it is used in the fastest computer in the world (Roadrunner) and – as reported on the Green500 List – is the most power efficient processor in terms of computation per watt. Supported by an NSF CRI award, the HPC Lab sponsors a massively multithreaded supercomputing, the Cray XMT, with 16 ThreadStorm processors. The Cray XMT is similar to the Cray XT supercomputer, but replaces the commodity x86 processors with unique latency tolerant processors that allow for fine-grained parallelism through 128 hardware streams per processor. In partnership with Sun Microsystems, the lab has Sun UltraSPARCT2 blades, with the Niagara 2 processor that employs eight 8-way cores for a total of 64 threads per core, and 32GB per blade. Through an NVIDIA Professor Partnership award, the HPC Lab also provides a state-of-the-art cluster of four GPU-accelerated systems using NVIDIA's high-performance C1060 Tesla cards that offer two native double-precision GPUs per accelerator card. Additional cluster computing resources and disk storage facilities are

available to members of Dr. De Choudhury's Lab and Dr. Kumar's Lab. Dr. Kumar has also received two gifts from NVIDIA – one Quadro RTX 8000 graphics card and an A100 GPU.

**High Performance Computing at Georgia Tech** Georgia Tech offers several other shared high performance computing server equipment which are available for this research, e.g., the PACE cluster. The Partnership for an Advanced Computing Environment (PACE) is a partnership between Georgia Tech faculty and the Office of Information Technology focused on high performance computing (HPC). The program is managed by Georgia Tech's senior leadership and enables PACE to provide infrastructure, software, and dedicated technical services for participating researchers, allowing them to focus their HPC investments primarily on compute nodes and expanded storage. In addition, all GT faculty can request access to the FoRCE Research Computing Environment which is a shared cluster that includes nodes, GPU's, and high-speed scratch storage. The PACE federation implements a multi-tiered data storage strategy. Each user is provided with a small home directory intended to be used for basic login tasks, source code, etc. The next level, project directory storage, is intended for storage of large data sets. All clusters participating in the federation also have access to a high-performance, high-capacity filesystem. The PACE systems leverage the campus site license for RedHat Enterprise Linux and other scientific and engineering applications such as Matlab, Mathematica, Fluent, etc. We also have various applications traditional to HPC environments such as NAMD, MPICH, and PETSc as well as compilers from GNU, Intel and Portland Group. Dr. Kumar and Dr. De Choudhury have leveraged and will continue to leverage this sustainable leading-edge HPC infrastructure with technical support services for accomplishing the big data analysis and modeling needs of the proposed work.

The School of Interactive Computing is also affiliated with several research centers, initiatives and labs including the Institute for Data and High Performance Computing (IDH), the Keeneland project, the FODAVA research initiative, and the specialized High Performance Computing (HPC) Laboratory. Through industrial partnerships, the HPC Lab operates or supports several state-of-the-art parallel computers and technologies, which are readily available for teaching and research and provide a diverse collection of resources for algorithmic exploration:

- Ion Cluster: an 8-node, 64-core, GPU-accelerated Torque/Maui cluster consisting of Appro 1424x Twin-Servers (each with 2-socket, Intel X5550 4-core, 24GB RAM, QDR Infiniband, and 2 NVIDIA C1060 cards).
- Bugs Cluster: a 6-node, 48-core cluster of Dell PowerEdge 1950 and 2950 servers (each with 2-socket, 4-core, Intel E5420 processors, 16GB RAM) configured with Hadoop.
- Convey FPGA servers: The HPC Lab also utilizes two Convey HC-1 hybrid-core servers featuring field Programmable Gate Arrays (FPGAs) coupled with multi-core Intel Xeon processors.
- Topaz Cluster: a 36-node, 288-core cluster of TeamHPC servers (each with 2-socket, 4-core processors).
- Mirasol: a large-memory Intel Server System QSSC-SR4 with four E7-8870 10-core Intel Xeon processors and 256 GiB of RAM, the highest-ranked single-node system on the Graph500 benchmark.
- Keeneland Initial Delivery system: a 120-node, 240 CPU and 360 GPU cluster, composed of HP Proliant SL-390 servers with Intel Westmere 6-core CPUs, NVIDIA 6GB Fermi GPUs, and a Qlogic QDR InfiniBand interconnect.
- Cray Supercomputers: Through multiple projects and collaborations, the HPC Lab has access to massively multithreaded Cray XMT-series supercomputers. The Cray XMT series is similar to the Cray XT series super-computers, but replaces the commodity x86 processors with unique latency tolerant processors that allow for fine-grained parallelism through 128 hardware thread contexts per processor. These processors scale memory bandwidth across multiple terabytes of RAM. The HPC Lab currently uses a Cray XMT located at Pacific Northwest National Laboratory with 128

processors and 1 TB of RAM as well as a next-generation Cray XMT2 at the Swiss National Supercomputing Center with 64 processors and 2 TB of RAM.

- System Biology Center–Myriad Cluster: a 10,000 core Penguin Computing cluster with a 100 TFLOP (teraflop) theoretical maximum performance, ranking within the top 100 supercomputers in the world.

**Networking** Georgia Tech is involved in several initiatives that bring high-speed network services to the Tech campus, the Southeast and beyond that serve as critical infrastructure for the long term (10+ years). Our campus network employs a high performance multi-gigabit backbone, which is migrating to 10GigE links. Our external connections include diverse commodity Internet links (e.g. Qwest) and a 10GigE Internet2 link via SoX. The primary campus Internet gateway routers connect to the Southern Crossroads (which includes Abilene and ESNet), Peachnet, and our ISPs, Qwest and Cogent.

**GVU Center** The College of Computing hosts a number of campus-wide research centers. One of them is the GVV Center. The GVV Center houses a variety of research labs in a multi-facility collection of workplaces. Total GVV lab space comprises more than 8000 square feet. GVV facilities utilize state-of-the-art high-performance servers and graphics workstations from major manufacturers such as Dell, HP, Apple and Sun. The center additionally contains a usability lab that can be used for running controlled experimental sessions. The lab includes a room that has video and audio recording equipment for taping the sessions and a viewing area through which an observer can observe a session via a one-way mirror.

**Institute for People and Technology** Dr. De Choudhury participates in the Institute for People and Technology (IPaT) which supports Georgia Tech and Atlanta area collaborations in health research (among other topics). The Aware Home Research Initiative (AHRI), founded by in 1998, is now part of IPaT. Aware faculty and students have created a unique research facility within the 3 story, 5040 square foot facility that allows them to simulate and evaluate user experiences with off-the-shelf and state-of-the-art technologies. With specific expertise in health and well-being, digital media and entertainment, and sustainability, we are able to apply our research to problems of significant social and economic impact. New technologies show great promise when applied to the home domain. The opportunities are vast, ranging from much-needed assistance for individuals at risk and busy family members who care for them, services to simplify the management of the home and its myriad activities, and new modes of entertainment. Additional living laboratories available through IPaT include Wesley Woods Senior Living Towers, a small suite in the Wesley Woods Center at Emory University used for conducting studies involving older adults and the HomeLab, a 550 home testbed of individuals age 50 and older willing to evaluate aging products in their homes over timeframes ranging from 1 month to 6 or more months.

**Environment at Georgia Tech** Dr. Kumar and Dr. De Choudhury carry teaching loads of one course each per semester at Georgia Tech, which covers nine months of academic salary, leaving ample time for research. They receive administrative and technical support from the School of Interactive Computing, School of Computational Science and Engineering, and the College of Computing. In terms of the general research environment that the School of Interactive Computing and School of Computational Science and Engineering provide, they nurture an open, inclusive, supportive environment made stronger through multiple perspectives and diverse expertise. It is an environment that encourages interdisciplinary research, like the one proposed here, at a level that allows inventing and integrating computational capabilities and their interactions that empower people and machines to affect the world around ‘big’ issues—ranging from health care to national security.

## **DATA MANAGEMENT PLAN**

### **1. Types of data**

The computational, interview, and experimental data generated by the proposed project will be of six kinds: (a) social media harvesting and classification of social media content, accounts, and networks for misinformation monitoring, (b) ongoing interviews and feedback from journalists, factcheckers, and tech professionals concerning systems development, (c) A/B testing of intervention strategies and messages using lab and field experiments, (d) RCTs on misinformation diffusers testing aspects of our misinformation mitigation system, (e) public opinion surveys for market data and field testing, and (f) usability testing data from end-users when the system is deployed. For Year 1 of Phase II, all of our data harvesting and field experimental efforts will be centered on Twitter, focusing our data management plan to proper handling and storage of these data, cross-team-sharing and coordination, aggregated analysis and predictive modeling, and experimental anonymity and consent.

The computational data will be retrieved using Twitter's API (we have access to COVID-19 Twitter Endpoint and Twitter Academic Endpoint 2.0 directly from Twitter) or through the social media monitoring platform, Synthesio, which allows a 10% random sampling of historical Twitter data based on keyword queries going back three years. It also permits draws of public-facing content from Facebook, Instagram, YouTube, Reddit, Tumblr and other popular platforms for subsequent phases of the project. In both cases, the retrieved data takes the form of flat JSON files containing all of the publicly available metadata contained in the posts, including account profile details, the time of creation, whether original, retweeted, or quoted, the presence of digital objects such as hashtags, mentions, and shared links. These data are stored in flat JSON files until conversion into a Hadoop data framework for ease of data management and redundancy while allowing queries that maintain anonymity. Data can be drawn from these data into CSV files for closer analysis, with each attribute as a discrete variable. Networked connections among accounts can also be derived from these data.

These data will be used to create the network detection system (Deliverable 1) available to journalists and fact-checkers.

### **2. Data and Metadata Standards**

We will analyze these data using everything from hashtag clustering, keyword co-occurrence, syntax tagging, unsupervised (e.g., structural topic modeling) and supervised machine learning methods (e.g., support vector machine, neural net models, deep learning, reinforcement learning), word embeddings (e.g., BERT), natural language generation, machine translation, event detection, intelligent semantic search, network mapping, community detection, visual analysis techniques (open-source computer vision libraries, e.g., Open CV, that extract low-level features of images, and supervised machine learning models that extract high-level features of images), as well as qualitative discourse analysis.

Regarding metadata standards, the User (or Actor) metadata contains a variety of attributes including a short biographical description, a home location (freeform text), preferred language, and a website link (optional). Some account metadata never change (e.g. numeric user ID and account created date) and some change over time (e.g., follower and following count). The user's profile description, display name, and profile 'home' attributes are updated to the values at the time of query. These same factors will be true for the data collected in response to our field experiments, with all comparisons made after aggregation. As noted above, all data, including metadata, can be rendered in CSV files.

### **3. Policies for access and sharing and provisions for appropriate protection/privacy**

Once cleared by the internal IRBs at the participating institutions, deidentified, analyzed, and aggregated data will be made available to other interested researchers and industry professionals (all while abiding by Twitter's terms of service), per the guidelines below. These deidentified data will be posted on our

website <https://mrcr.journalism.wisc.edu/> in a password protected method. The data, accessible at no charge, will be updated at least 2 times during year 1 of the project, and more frequently if extended into years 2-5, and be made accessible to researchers covered under the IRB. We will open data to wider use as soon as we publish a paper or produce a project using these data, subject to appropriate data use agreements and policies outlined by the underlying social media platforms.

Notably, we will not derive or infer potentially sensitive characteristics of individual Twitter users such as medical conditions or religious beliefs. Aggregated analysis of characteristics like misinformation, wellbeing, and expressed opinions will not retain any sensitive personal data of individual Twitter users. Although the posts we are collecting are publicly available and therefore do not qualify as 'personal data' in terms of the Data Protection Act 1998 (the DPA) or equivalent HIPAA requirement, we will submit through IRB due to the field experimental aspect of the study, ensuring human protections protocols will be followed. All participating institutions will be covered under this approach.

All additional interview, experimental, RCT, and survey data collected as part of this project will be done so under IRB review of the participating institutions. All retained information will be deidentified and stored in a secure location or dual-authentication HIPAA compliant storage system.

#### **4. Policies and provisions for re-use, re-distribution**

These data, once prepared for analysis and sharing, will be made accessible for re-use and re-distribution to interested researchers. For those inside academic institutions, we will ask them to be added under our IRB before sharing deidentified and aggregated data to overcome any permission restriction. Other social scientists concerned with public health and political governance are the likely consumers of these data and should be familiar with IRB procedures. As long as they abide by IRB and Twitter guidelines, we encourage sharing and data re-use.

In addition, the system we are proposing to create would be accessible to journalists, fact-checkers, and other information professionals to understand whether their misinformation correction efforts are effective, the degree to which they are optimal, and how they might improve their work.

#### **5. Plans for archiving and preservation of access**

Our plans for archiving the collected and derived computational data as well as the research product that these data generate center on our Hadoop server cluster in the Computer Systems Lab (CSL) at the University of Wisconsin-Madison's Computer Science Department. Our custom-built cluster within the CSL contains over 280 TB of storage space for archiving and preserving data with automatic redundancy. Backups of existing archives (e.g., COVID Twitter Endpoint) and custom runs (e.g., posts containing election misinformation claims) can be securely conducted without the need for cloud storage or remote archiving. This system has been in place at the UW since 2012 and was recently expanded with an infrastructure grant that allowed its expansion to allow to secure storage of the vast volume and velocity at which social media containing text, sounds, images, and video can require.



### **Postdoctoral Mentoring Plan**

University resources and commitment are important in our ability to serve underserved populations. Course Correct has a deep commitment to career development for new Ph.Ds as we seek to prepare a topically, culturally and methodologically diverse next generation of interdisciplinary researchers seeking to improve trust and authenticity in communication systems. Our postdoctoral mentoring plan will use immediate and long-term strategies to recruit from multi-disciplinary pools of graduate students.

#### **Wisconsin Plan**

Our team at UW-Madison will provide our postdoctoral researchers with skills necessary to engage in experimental fact-checking and observational correction interventions, randomized control trials in health and political communication research, and technology development and transfer with industry leaders in journalism to test Course Correct. Help postdoctoral researchers understand the factors that influence openness to information correction and a reduction in misinformation sharing. Training revolves around five primary activities: Brown Bag Research Team Meetings, the Preston Colloquium and MCRC Symposium Series, graduate student engagement, and scholar-industry convergence training. Brown Bag Research Team Meetings are used in the Center for Communication and Civic Renewal (PI Wagner, Director) to discuss research work in progress, share emerging research results, update team members on collaborative ventures and foster integrative collaboration between different sub teams within the Center. The Preston Colloquium and MCRC Symposium Series invite leading researchers to present their latest work with greater depth and a sharper focus on the challenges of advancing mass communication research. These talks also introduce our postdoctoral researcher to the vast network of international scholars connected to our program, many of whom are our doctoral alumni. Scholar-industry convergence training will focus on connecting the postdoctoral researcher to the (1) industry partners funded by Phase II work as well as our existing network of postdoctoral researchers at Twitter, Facebook, Mozilla, and Google, among others. and (2) diverse set of scholars and industry practitioners on our Board of Advisors. We will also afford our postdoctoral researcher the chance to lead presentations on project related work to help build career-relevant skills.

#### **Georgia Tech Plan**

**1. Lab/Research Team Orientation** will include in-depth conversations between Co-PI De Choudhury and Co-PI Kumar, and the Postdoctoral Researcher. Mutual expectations will be discussed and agreed upon in advance. Orientation topics will include (a) degree of research independence, (b) interaction with team members, (c) productivity, including scientific publications, (d) work habits and laboratory protocols, and (e) documentation of research methodologies and details for replication. **2. Career Counseling** will be directed at providing the skills, knowledge, and experience needed to excel in his/her/their chosen career path, whether academia, industrial research, or elsewhere. In addition to guidance provided by Co-PIs, the Postdoctoral Researcher will be encouraged to discuss career options with other team members. **3. Publications and Presentations** are expected to result from the work supported by the grant. These will be prepared under the direction of the Co-PIs and in collaboration with other Course Correct researchers, as appropriate. The Postdoc will be encouraged to present their research at various meetings relevant to the focus of their research. **4. Student Mentoring** opportunities will be provided where the postdoc will supervise PhD and masters students. Opportunities to guest lecture in the courses taught by the Co-PIs (e.g., CSE 8803 DSN: Data Science for Social Networks by Co-PI and CS 6474/4803 SC: Social Computing by Co-PI De Choudhury) would also be explored. **5. Technology Transfer** activities will include regular contact with researchers at Course Correct. The Postdoctoral Researcher will be given an opportunity to become familiar with the university-industry relationship including applicable confidentiality requirements and preparation of invention disclosure applications. **6. Success of the Mentoring Plan** will be assessed by monitoring the personal progress of the Postdoctoral Researcher through the use of an Individual Development Plan to track the Postdoctoral Researcher's progress toward his/her career goals after finishing the postdoctoral program.

NAME: Katie Harbath

POSITION TITLE &amp; INSTITUTION:

**A. PROFESSIONAL PREPARATION - (see [PAPPG Chapter II.C.2.f.\(i\)\(a\)](#))**

INSTITUTION	LOCATION	MAJOR/AREA OF STUDY	DEGREE (if applicable)	YEAR (YYYY)
University of Wisconsin	Madison	Journalism and Mass Communication; Political Science	BA	2003

**B. APPOINTMENTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(b\)](#))**

From - To	Position Title, Organization and Location
2021-	Founder and CEO of Anchor Change
2013-2021	Public Policy Director, Facebook
2011-2013	Associate Manager, Policy at Facebook
2009-2011	Chief Digital Strategist, National Republican Senatorial Committee
2008-2009	Director, DCI Digital
2007-2008	Senior Account Manager, DCI Digital
2007-2008	Deputy eCampaign Director, Rudy Giuliani Presidential Committee
2006	Deputy Campaign Manager/Communications Director, Bob Ney for Congress
2005-2006	Deputy Press Secretary, US House of Representatives, Committee on House Administration
2003-2005	Staff, Republican National Committee

**C. PRODUCTS - (see [PAPPG Chapter II.C.2.f.\(i\)\(c\)](#)) Products Most Closely Related to the Proposed Project**

- a) Responsible for Facebook's global elections strategy
- b) Responsible for building and managing a diverse global team that works with governments, elected officials, candidates, and political parties on how to use Facebook, Instagram, and WhatsApp to connect with citizens
- c) Developing company-wide policies related to elections
- d) Working with product teams to develop and implement first of their kind civic engagement and election integrity products for political ads on Facebook
- e) Working with policymakers to shape regulations of elections online

**Other Significant Products, Whether or Not Related to the Proposed Project**

- a) Facebook: Managing team that develops partnerships with civil society groups focusing on elections issues for NDI, IRI, Atlantic Council, Kofi Annan Foundation and Alliance for Democracies
- b) Facebook: In charge of outreach to Republican candidates and elected officials, 2012 election
- c) NRSC: Responsible for the NRSC's internet strategy
- d) Serving as spokesperson with major media outlets

**D. SYNERGISTIC ACTIVITIES - (see [PAPPG Chapter II.C.2.f.\(i\)\(d\)](#))**

- a) Board Member: Center for Journalism Ethics and the University of Wisconsin-Madison
- b) Board Member: Democracy Works
- c) Board Member: national Conference on Citizenship
- d) 2014: Named a member of the Politico 50
- e) 2009 Campaigns and Elections Rising Star

## Intellectual Property Management Plan

The Course Correct team's deliverable contains several elements that are likely to require intellectual property management. These areas include:

- The network detection and misinformation detection work, led by the Co-Investigators at Georgia Tech
- The intervention strategies work, led by the Co-Investigators at University of Wisconsin-Madison
- Trademarks for the Course Correct name, logos, and website

Following our team's Collaboration Agreement developed during the NSF-CA curriculum, we have engaged the IP staff at UW-Madison and Georgia Tech in several preliminary conversations.

In those meetings, UW-Madison's office recommended a series of preliminary steps to begin preparing for more formal IP management in the form of copyrights, patents, and licensing.

To that end, the PI has filled out an Innovation Disclosure form at UW-Madison and has engaged in a set of meetings with legal staff who handle trademark issues. Should our team be awarded a Phase II grant, we will immediately proceed to filing the trademark paperwork and fees for the Course Correct name, logo, and website. We have been advised by our legal staff that the National Science Foundation Convergence Accelerator Expo 2022 provides our team the appropriate venue to show "use in commerce" of our name, logos, and website. The promotional materials we create for the expo will serve as "specimens" to demonstrate to trademark authorities that we have sufficiently established common law rights, which are useful on the pathway to official trademarks. We would register with a federal PTO and, assuming a successful filing, would be protected under the Lanham Act. It appears there are no other relevant entities sharing the Course Correct name in our entrepreneurial space.

### Course Correct Logos



### University Support for IP Management and Planning

Our team is well supported by our respective universities. The Wisconsin Alumni Research Foundation (WARF) is the designated patenting and licensing organization for UW-Madison and is among the oldest and most successful technology transfer offices in the nation. WARF

advances transformative discoveries to the marketplace to benefit humankind across Wisconsin and the world. WARF's decision to patent a technology is a business judgment that aids their mission to support scientific research within the UW–Madison community by providing financial support, actively managing assets, and moving innovations to the marketplace for a financial return and global impact.

WARF's interest is focused generally upon retaining ownership of broad rights for new technologies which they believe will readily find their way into commercial markets in the U.S. and other industrialized countries. Even though many of the disclosures they review consist of significant technological or scientific advancements, they obtain ownership to and file patent applications on only a limited percentage of these technologies. WARF does not require UW inventors to patent through them, though they make it quite attractive to do so. The technologies they pursue are generally those that they believe offer the best opportunities for broad patent protection and relatively accessible licensing, and, therefore, marketing opportunities.

In addition to their core patenting and licensing activities, WARF supports emerging startups through the WARF Ventures program, and supports de-risking technological transfer with programs such as the WARF Accelerator and WARF Therapeutics. WARF has managed several patents with broad worldwide impact.

Through its world-renowned faculty, enterprising student body, and research expertise of the Georgia Tech Research Corporation, Georgia Tech has become a global leader in IP creation as well. The GTRC is expanding on that leadership by creating unique academic curricula, providing IP-centered career guidance and pathways, and fostering a nationally recognized IP ecosystem in Atlanta. The team has already been in conversation with GT's Office of Technology Licensing, which advances commercialization pathways for technology, software and other inventions emerging from Georgia Tech personnel. The team manages invention disclosures, patenting decisions, and technology licensing agreements. The OTL website features an Invention Disclosure tool for campus personnel and a catalog of technologies available for license or collaboration.

## **Next Steps**

Based upon the Course Correct Team's Collaboration Agreement, our team pursues a consensus model of governance. If conflicts arise, everyone on the team is allowed to share their view, without interruption before engaging in a wider discussion. If we find consensus, the conflict is resolved. If not, we have agreed to seek advice from the NSF-CA-assigned coach and our program officer before attempting to seek consensus again. If none would be achieved at that point, we would move to a voting procedure, though that has never happened to date.

The general principles we are following for our Intellectual Property Management Plan include:

- Continued collaboration following the procedures outlined in our team's Collaboration Agreement
- Retention of IP related to network detection at Georgia Tech
- Retention of IP related to misinformation detection at Georgia Tech
- Retention of IP related to misinformation intervention and mitigation at the University of Wisconsin-Madison
- Collaboration with Course Correct as it produces its deliverables and scales up

- Freedom to use the retained IP noted above for additional projects at the discretion of the relevant Co-Is.

As noted above, the Course Correct team has initiated the disclosure procedures that can lead to patents, copyrights, trademarks, and licensing. If the team is awarded a Phase II grant, these procedures will accelerate in cadence, with IP management becoming a regular component of weekly meetings with the Co-Is and Senior Personnel, a twice-yearly discussion with our Board of Advisors and regular, as needed, meetings with our respective IP offices.

# Course Correct: Precision Guidance Against Misinformation



**Michael W. Wagner**  
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**Munmun de Choudhury**  
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**Srijan Kumar**  
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## Overview

Democracy and public health in the United States are in crisis. These twin crises are exemplified by two major public problems: (1) vaccine hesitancy related to the COVID-19 pandemic and (2) widespread skepticism about American election integrity. Journalists are overwhelmed by the volume of misinformation about these issues that is flowing through social media platforms and, as a consequence, are not always sure which misleading claims merit their immediate attention. Course Correct helps journalists tame this misinformation tide, rebuilding trust in civic institutions by mitigating misinformation spread online.

## Description

Course Correct – precision guidance against misinformation – is a flexible and dynamic digital dashboard that helps journalists to (1) identify trending misinformation networks on social media platforms like Twitter, Facebook, and TikTok, (2) strategically correct misinformation within the flow of where it is most prevalent online and (3) test the effectiveness of corrections in real time.

Course Correct uses cutting-edge techniques to help journalists to identify networks of people on social media who are sharing misinformation about critical public issues, like COVID-19 vaccines and the effectiveness of American electoral administration. Once journalists evaluate the size and reach of these misinformation networks detected by the dashboard, they work with Course Correct staff to develop and rapidly test messages that will reduce the flow of misinformation in at-risk social media networks. When Course Correct's rapid-message testing reveals to journalists

which misinformation correction message(s) is working best, Course Correct will seed the affected misinformation network with sponsored social media posts, relying on a technique called observational correction to encourage the sharing of verifiably true information, rather than misinformation. Phase I testing revealed that Course Correct (1) accurately describes misinformation networks on social media and (2) provides effective intervention strategies to reduce the misinformation flow. Finally, Course Correct tests the effectiveness of corrections in real time, giving journalists valuable feedback about whether their misinformation interventions are working.

## Differentiators

Many efforts to curb misinformation focus on fact-checking partisan politicians. Research shows that while these fact checks are occasionally effective, people tend to view these efforts as biased; diminishing public trust in the authenticity of information seeking to correct misinformation. Other efforts seek to build media literacy in the citizenry but research consistently demonstrates that these efforts do not scale up from individuals to the public.

In Phase I of the NSF Convergence Accelerator Program, the Course Correct team conducted a set of experiments that demonstrated the value of observational corrections in reducing individual belief in misinformation. We also showed the sharing these messages via sponsored content performed just as well as non-sponsored messages. This means that our method to correct misinformation will scale up effectively as we leverage social media



platforms' advertising infrastructure to reduce the flow of misinformation.

Our interdisciplinary team of journalists, mass communication researchers, health communication researchers, computer scientists, engineers, political scientists, and social media platform professionals is uniquely suited to help the verifiable truth flow freely across networks of citizens across the political spectrum.

## Road Map

**Month 3:** Complete scalable misinformation detection system, across issues, that provides journalists impact scores for misinformation being shared on social media.

**Month 6:** Complete identification of best practices for misinformation correction; train journalist partners on our digital dashboard.

**Month 9:** Conduct randomized control trials with journalistic partners to demonstrate the causal value of Course Correct to potential partners.

**Month 12:** Introduce Course Correct to the 135 signatories of the International Fact Checking Network and revise our system based upon their feedback.

**Month 18:** Bring additional news organization end users on board after the Global Fact Summit.

## Partnerships

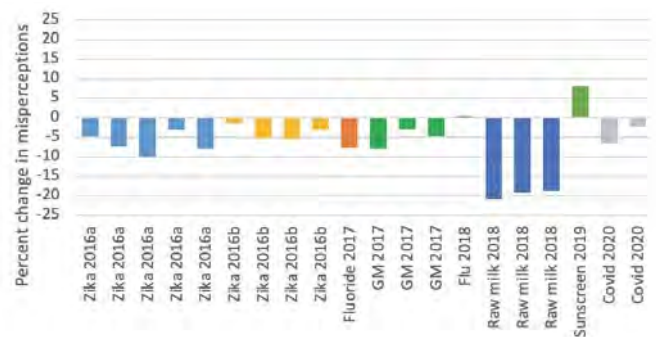
In addition to our team of interdisciplinary researchers and social media partners, Phase II will bring about four formal partnerships with news organizations at the local (*Capital Times*, Madison, WI), state (Wisconsin Center for Investigative Journalism), national (Snopes), and global (International Fact Checking Network (IFCN)) levels. Course Correct will fund a journalist for our local, state, and national partners in Year 1, providing further proof of concept and dynamic improvements to our system based on our partners' feedback. The IFCN has agreed to allow us to present our

major deliverable, the Course Correct digital dashboard, to the Global Fact 10 conference in Year 2 of Phase II. There, we will invite IFCN signatories to join our team.

## Intellectual Property

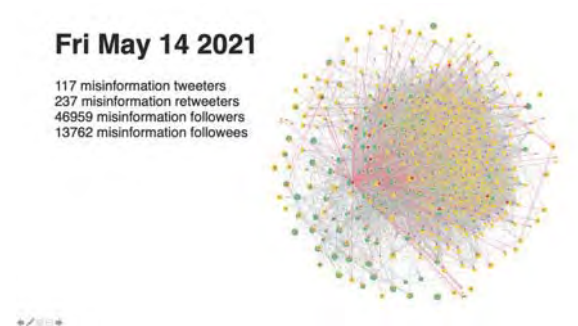
Course Correct is in the process of trademarking our logos and website, pursuing patents and copyright protection for our network detection system and our misinformation intervention process.

## Observational Correction Works



Course Correct's strategy of observational correction reduces misperceptions across multiple types of issues.

## Misinformation Network Maps are Helpful to Journalists



Course Correct identifies creators of misinformation (red), sharers of misinformation (yellow) and the people exposed to the misinformation sharing (green) so journalists can (1) productively choose what to fact check and (2) specifically target at-risk individuals with sponsored content. Journalists we interviewed in Phase I told us that Impact Score figures like this one, for those making false claims that COVID-19 vaccines cause infertility, are extremely useful when it comes to selecting what to fact check.

To: Convergence Accelerator Program Director(s),

By signing below, I acknowledge that I will provide the assistance or collaborate as indicated in the proposal, entitled “NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation” with Michael Wagner as the Principal Investigator (F724). I agree to undertake the tasks assigned to me, as described in the proposal, and I commit to provide or make available the resources described.

Signed:  Print Name: Rebekah Tromble

Date: 5/16/2022      Organization: George Washington University

Code for Science & Society  
3439 SE Hawthorne Blvd, #247  
Portland, OR 97214-5048  
[codeforsociety.org](http://codeforsociety.org)

May 16, 2022

Dear Convergence Accelerator Program Director(s),

By signing below, I acknowledge that I will provide the assistance or collaborate as indicated in the proposal, entitled "NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation" with Michael W. Wagner, Ph.D. as the Principal Investigator. I agree to undertake the tasks assigned to me, as described in the proposal, and I commit to provide or make available the resources described.

Sincerely,



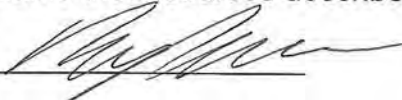
Alex Hanna  
Director of Research  
The Distributed AI Research Institute,  
A Project of Code for Science & Society

Phone: +1 (510) 674-6258  
Email: [alex@dair-institute.org](mailto:alex@dair-institute.org)



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Signed: 

Print Name: BAYBARS ORSEK

Date: 5/16/2022

Organization: Director of the International Fact-Checking Network and International Programming at Poynter Institute



The University of Texas at Austin  
**Communication Studies**  
*Moody College of Communication*

2504 A Whitis Ave., A1105  
Austin, Texas 78712-1075  
512-471-5251  
commstudies.utexas.edu

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*Natalie (Talia) Jomini Stroud*

Signed: .


Print Name: Natalie (Talia) Jomini Stroud

Date: May 17, 2022

Organization: University of Texas at Austin

To: Convergence Accelerator Program Director(s),

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Signed: 

Print Name: Shouvik Banerjee

Date: May 17 2022

Organization: AverPoint

# UNIVERSITY OF MINNESOTA

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*Twin Cities Campus*

*Hubbard School of Journalism  
and Mass Communication  
College of Liberal Arts*

*111 Murphy Hall  
206 Church Street S.E.  
Minneapolis, MN 55455-0418  
Office: 612-625-1338  
Fax: 612-625-9525*

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Signed: 

Print Name: Danielle K Brown

Date: 5.17.2022

Organization: University of Minnesota



**Department of Educational Psychology**

Educational Sciences Building  
1025 W. Johnson Street  
Madison, Wisconsin 53706-1796  
Phone: 608-263-3600  
Fax: 608-262-0843  
E-mail: pmatthews@wisc.edu

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Signed: 

Print Name: Percival G. Matthews

Date: 05/17/2022

Organization: University of Wisconsin-Madison



To: Convergence Accelerator Program Director(s),

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Signed:  \_\_\_\_\_

Print Name: Huan Liu

Date: 5/17/2022

Organization: Arizona State University



**Northeastern University**  
**Khoury College of**  
**Computer Sciences**

To: Convergence Accelerator Program Director(s),

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Signed: *Tina Eliassi-Rad* Print Name: Tina Eliassi-Rad

Date: 5/17/2022 Organization: Northeastern University

**TEKTONIC, LLC**

Tektonic  
1878 Colvin Avenue  
Saint Paul, MN  
55116


From: Scott Moore

To: Convergence Accelerator Program Director(s),

By signing below, I acknowledge that I will provide the assistance or collaborate as indicated in the proposal, entitled "NSF Convergence Accelerator Track F: Course Correct: Precision Guidance Against Misinformation" with Michael W. Wagner, Ph.D. as the Principal Investigator.

I agree to undertake the tasks assigned to me, as described in the proposal, and I commit to provide or make available the resources described

Signed:

  
Name: Scott Moore  
Title: President  
Date: May 15, 2022  
Organization: Tektonic



**USC** University of  
Southern California

**Emilio Ferrara, PhD**

Associate Professor

School of Communication & Dept. of Computer Science

Associate Director, Data Science programs

University of Southern California

emiliofe@usc.edu | 310-570-9919

[www.emilio.ferrara.name](http://www.emilio.ferrara.name)

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Signed: 

Print Name: Emilio Ferrara

Date: May 18, 2022

Organization: University of Southern California

**Emilio Ferrara, Ph.D.**

Associate Professor of Communication / USC Annenberg School for Communication  
Associate Professor of Computer Science / USC Viterbi Computer Science Department  
Associate Director of Informatics & Data Science / USC Viterbi Computer Science Department  
Research Team Leader / USC Information Sciences Institute  
Principal Investigator / USC-ISI Machine Intelligence and Data Science (MINDS) center

*Dr. Emilio Ferrara is Associate Professor of Communication & Computer Science jointly at the USC Annenberg & Viterbi Schools of Communication and Engineering, Associate Director of Undergraduate and Master's Programs in Data Science, Research Team Leader at the USC Information Sciences Institute, and Principal Investigator at the USC/ISI Machine Intelligence and Data Science (MINDS) center. Ferrara's research uses AI and network science to study human behavior in techno-social systems and information networks. Ferrara has published over 150 articles on social networks, machine learning, and network science, appeared in venues like Proceeding of the National Academy of Sciences, Communications of the ACM, Physical Review Letters, and his research has been featured on all major news outlets. He was named 2015 IBM Watson Big Data Influencer, he received the 2016 Complex Systems Society Junior Scientific Award, the 2016 DARPA Young Faculty Award, and the 2018 DARPA Director's Fellowship. As PI, he received over \$20M from DARPA, IARPA, AFOSR, and the Office of Naval Research.*



**National Conference on Citizenship**  
*Connecting People. Strengthening Our Country.*

May 18, 2022

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Regards,

Cameron Hickey

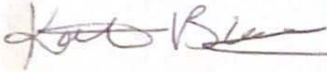
Director, Algorithmic Transparency Institute  
National Conference on Citizenship

Signed: May 18, 2022

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Signed:



Print Name: Kate Blackburn

Date: May 19<sup>th</sup>, 2022

Organization: TikTok



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Signed: *Koustuv Saha*

Print Name: Koustuv Saha

Date: May 19, 2022

Organization: Microsoft Research, Montreal