



University at Buffalo

Center for Information Integrity

## Kick-Off Symposium

January 21, 2022

- 9:00 Opening Remarks: Dean Kemper Lewis and David Castillo, CII Co-Director
- 9:25 Panel 1: Siwei Lyu, Department of Computer Science and Engineering  
Kenny Joseph, Department of Computer Science and Engineering  
Jun Zhuang, Department of Industrial and Systems Engineering
- 10:30 BREAK
- 10:45 Panel 2: Jessie Poon, Department of Geography  
James Gardner, School of Law and Department of Political Science  
Jennifer Surtees, Department of Biochemistry  
Laurene Tumiel-Berhalter, Departments Family Medicine and Epidemiology and  
Environmental Health
- 12:00 LUNCH
- 12:30 Panel 3: Hongxin Hu, Department of Computer Science and Engineering  
E. Bruce Pitman, Department of Materials Design and Innovation  
Ewa Ziarek, Department of Comparative Literature  
David Castillo, Department of Romance Languages and Literatures
- 1:45 BREAK
- 2:00 Panel 4: John Fiege, Department of Media Studies  
Yotam Ophir, Department of Communication  
Matthew Kenyon, Department of Art

### **DART-Range: A Disinformation Training Ground —Siwei Lyu**

In this talk I will provide an overview of the work in progress by the multi-disciplinary, multi-institutional DART-Range team. We received a grant from the NSF-Convergence Accelerator to develop a gamified platform or *disinformation range* designed to assist users to better discern false or misleading information and other inauthentic online behaviors. The disinformation range will take the form of a sandboxed “training ground,” where trainees will be exposed to synthesized false information in a simulated environment to learn to handle disinformation encountered in real world situations.

### **How Do We (know when we have) Persuaded Someone on Social Media? —Kenny Joseph**

In this talk I will briefly discuss our recent efforts to better understand how the self is presented on social media. I will then explore how (I think that) the desire to self-present in particular ways is in turn tied to what we can, and cannot, easily measure about social media users, and what this means for our ability to infer the impact of interventions conducted upon social media users. The talk will feature more questions than answers, with the hopes of finding others in the community working on the same or similar problems.

### **Managing Misinformation on Social Media During Disasters: A Machine Learning and Game-Theoretical Approach —Jun Zhuang**

Social media has been increasingly utilized to spread breaking news and risk communications during disasters. Unfortunately, due to the unmoderated nature of social media platforms such as Twitter and Facebook, rumors and misinformation could propagate widely. To address the problem, we develop a machine learning framework to predict the veracity of tweets that are spread during crisis events. The tweets are tracked based on the veracity of their content as either true, false, or neutral. We conduct four separate studies, and the results suggest that the framework is capable of tracking multiple cases of misinformation simultaneously. We also develop two game-theoretical models “Rumor Selection for Clarification” and “Learning for Rumor Clarification”, to help decide which rumor to clarify and when to clarify, respectively. This research provides novel insights on how to efficiently monitor misinformation that is spread during disasters.

### **Global Warming Misinformation among Millennials —Jessie Poon**

In 2016, the Oxford Dictionary selected “post-truth” as the word of the year writing that post-truth “relates to or denotes circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief”.

In this presentation, I examine personal belief in the context of relational spaces focusing on trust and authority as mechanisms by which post-truth and misinformation operate. Based on a forthcoming book, I will present the results of a survey of millennials’ trust of scientific information on global warming in the US. The results indicate that hyper-local spaces of relations where information is trusted are more likely to lead to misinformation on global warming. However, epistemic authority expressed through institutional gatekeeping mitigates against misinformation.

### **Rethinking Civil Society —James Gardner**

The American constitutional regime of free speech is founded upon a set of assumptions about the proper relationship between the domains of civil society and politics. Civil society is understood to be a realm of complete freedom of thought, in which citizens formulate their beliefs entirely free from interference by the

state. Having formulated their beliefs, individuals then take those beliefs into the realm of politics, a constitutionally structured realm in which their behavior may legitimately be regulated to achieve collective social goals. Recent research into private opinion formation has revealed the constitutional model of civil society to be empirically false: the presumptively free and unstructured process of private belief formation is in fact deeply influenced by what occurs in the more controlled domain of politics. As a result, continued insistence by the courts on the foundational model is doing considerable damage to the quality of democratic politics. It is long past due to rethink the legal regime governing civil society in light of these findings.

### **Practicing Responsible Science through Community Engagement —Jennifer Surtees**

As researchers at a public university, we have a responsibility to engage with our community. Over the past 6+ years, we have focused on improving genome and microbiome literacy in our K-16 and adult populations. We believe that it is our responsibility to provide our citizenry with the tools and knowledge to understand, regulate, ensure ethical and equitable use of, and derive maximum benefit from the astonishing advances in these biomedical sciences. We have developed a variety of hands-on, inquiry-based activities for all ages and have developed strong community partnerships. Since the beginning of the COVID-19 pandemic, we have shifted to engaging with our community around our evolving understanding of the virus and vaccine education. Our goal is to nurture robust community partnerships to better understand the unique cross-cutting needs of diverse communities and to develop an infrastructure of trust through which to communicate scientific advances, from genomic medicine to pandemic risk.

### **Misinformation and Public Health —Laurene Tumiel-Berhalter**

Misinformation has been and remains a public health challenge, creating community concern regarding infectious and chronic diseases. The COVID-19 pandemic has brought misinformation to the forefront like never before. Widespread use of social media facilitates the spread of misinformation. The evolving nature of scientific discovery causes additional confusion that can lead to misinformation. The community is challenged by deciphering what is misinformation and identifying and trustworthy sources of information. This presentation will discuss the role of misinformation in public health over time, the role of social media in the spread of misinformation, and strategies to address misinformation in public health.

### **Defending Against Cyberharassment in the Age of Machine Learning —Hongxin Hu**

With the rise of social media, cyberharassment (e.g., cyberbullying and online hate) has become more prevalent in daily interactions and has thus been identified as a critical social problem. It often involves inappropriate online behaviors and deliberate cyber threats against individuals, or specific social groups on the grounds of characteristics such as race, sexual orientation, gender, or religious affiliation. Although Machine Learning (ML) has immense potential for automatic cyberharassment detection and researchers are increasingly using ML techniques to address this important social problem, they face key challenges to effectively address cyberharassment using ML. First, the representation of cyberharassment has shifted from traditional text-based cyberharassment to multimodal (i.e., both text and images) cyberharassment, which poses new challenges to effective cyberharassment detection. Second, cyberharassment is a fast-evolving phenomenon, whether fueled by current events or by people looking for new ways to evade cyberharassment detection systems with techniques such as adversarial examples against ML-based models. In this talk, I will present our recent work on defending against cyberharassment using ML techniques. I will especially discuss (1) understanding and defending against visual cyberbullying, (2) detecting and explaining online hateful content, and (3) exploring the robustness of multimodal models employed in cyberharassment defense.

## **How Confident Are You? —Bruce Pitman**

Scientific investigation often asks the researcher to make a prediction – What value is expected, or to which class does an object belong. Many artificial intelligence systems provide these answers – “2”, or “Class B”. In many applications these answers have been remarkably effective and useful. However, knowing the answer is 2 does not tell us whether we should really expect “2”, or if we might expect any number between 1 and 3 with all possibilities equally likely. This talk will discuss the successes and failings of some of these AI systems and introduce alternative ‘Statistical Learning’ methods that provide not just a point estimate answer but, rather, a probability distribution for the answer. Such a distribution informs us of how confident we may be in the answer we compute and allows us to see how uncertainty arises at several stages in addressing the problem at hand.

## **‘Double Coding’ of Disinformation: Digital Racism, Abstraction, and Content Validity —Ewa Ziarek**

In order to discuss the issue of information integrity, we need to address disinformation in broader sociopolitical and technological contexts. First, we need to address complex ways larger social and political patterns of dominations, such as racism, gender and economic inequities, have historically structured public discourse and the privileged categories of “information.” As the groundbreaking work of O’Neil, Noble, Benjamin, Eubanks, Pasquale, Rouvroy, among others, demonstrates only too well, this level shows us that we never have access to information outside power relations and human desires, and therefore, that we need to analyze how these power relations—or what black feminist scholars have called intersectionality – structure not only data but also the information/disinformation distinction.

Second, we need to analyze how information and data shaped by power relations are further transformed and deformed by being translated into machine recognizable quantification. The two crucial problems to be addressed here are first the level of abstraction of data and algorithmic modeling, and second the process of translation of incalculable qualitative ideas into quantitative form. By building on Jacobs and Wallach’s argument, I claim that any discussion of disinformation in ML is insufficient if it focuses only on reliable measurement (the so called “operational” reliability) but fails to question the validity of transforming qualitative into quantitative research (“Measurement and Fairness,” 2021).

These two levels of power, separated here for heuristic purposes, are inextricably combined and structure each stage of machine learning pipeline.

To address these two levels of disinformation in the broader context of political, socio- economic, and algorithmic power, I will draw on the notion of double coding, proposed by Ruha Benjamin, a critical race and critical data scholar.

## **Disinformation Has a History and We Can Learn from It —David Castillo**

When we talk about disinformation today as an existential threat to democracy in the aftermath of the Jan 6, 2021, insurrection and the continued attacks on education and voting rights, we must keep in mind that disinformation itself is not a new phenomenon. While our polarizing and divisive politics and the deeply siloed media environment of the digital age have no doubt amplified the disinformation challenge in unprecedented ways, this does not mean we cannot or should not pause to learn from history, starting at the dawn of another age of inflationary media, one that preceded our own by nearly half a millennium. We can also learn from the media literacy strategies and parodic craft of such authors as Miguel de Cervantes who saw the writing on the wall back in his day and did not hesitate to raise the alarm.

## **Storytelling as an Antidote to Misinformation, Deception, and Manipulation —John Fiege**

Stories are often the vectors of misinformation, deception, and manipulation. We might say a particular story is “misleading” or “not true.” We might say, “it’s just a story,” as if being a story itself makes it unreliable. But stories can also be powerful antidotes to this same misinformation, deception, and manipulation. Stories can convey an emotional truth more affecting than any facts or figures, more convincing than any opinions or chicanery that might be floating out there in the ether. In my work in filmmaking and podcasting, I have continually sought out this potent emotional truth that can give stories the power to cut through the duplicity, mendacity, and fraudulence that so often masquerades as the truth in our public life. In this talk, I will share some examples of my filmmaking and podcasting work and tell some of the stories behind these stories.

### **Communicating Science in an Age of Misinformation —Yotam Ophir**

In this brief talk I will discuss some of the challenges facing those who wish to communicate and educate the public about scientific discoveries, failures, and the scientific method itself. A key question would be why should we even trust science? A seemingly easy question to answer, it had been at the heart of the philosophy of science for thousands of years, with the answer keep changing over time.

### **S.W.A.M.P. (Studies of Work Atmospheres and Mass Production) —Matthew Kenyon**

My studio, S.W.A.M.P. (Studies of Work Atmospheres and Mass Production) focuses on critical themes addressing the effects of global corporate operations, mass media and communication, military- industrial complexes, and general meditations on the liminal area between life and artificial life.

I like to work with media and technology because on the one hand, I am familiar with them and like the power they hold, and, on the other hand, I want to use art and design to critically examine and disrupt that power. My interdisciplinary art practice combines materials research, biological art, chemistry and phenomena, performance art, and physical computing.

Over the past twenty years, SWAMP has created a body of work that examines various socio-political phenomena-from housing markets to climate change. While I have experimented with a wide array of media, I have defined an important part of my practice as Inverse Biotelemetry. Coordinating data mining with physical computing, Inverse Biotelemetry has been a supervenient discovery in forming a meta-narrative for my research clarifying my observations regarding the effects of post-human systems upon the individual person.

## Presenters:



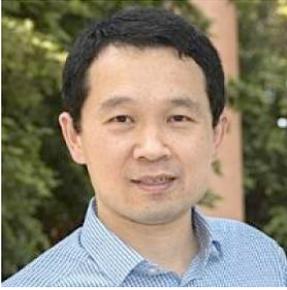
**David R. Castillo** is Professor of Spanish, Director of the Humanities Institute and co-director of the Center for Information Integrity at SUNY Buffalo where he served as Chair of the Department of Romance Languages and Literatures from 2009 to 2015. He is the author of *Un-Deceptions: Cervantine Strategies for the Disinformation Age*, *Baroque Horrors: Roots of the Fantastic in the Age of Curiosities* and *Awry Views: Anamorphosis, Cervantes, and the Early Picaresque*, and co-author of *What Would Cervantes Do? Navigating Post-truth with Spanish Baroque Literature*, *Medialogies: Reading Reality in the Age of Inflationary Media*, and *Zombie Talk: Culture, History, Politics*. Castillo has also coedited *Reason and Its Others: Italy, Spain, and the New World*, *Spectacle and Topophilia: Reading Early and Postmodern Hispanic Cultures*, *Writing in the End Times: Apocalyptic Imagination in the Hispanic World*, and *Continental Theory Buffalo: Transatlantic Crossroads of a Critical Insurrection*.



**John Fiege** is a film director, cinematographer, photographer, and podcaster whose work explores our relationships with one another and the rest of life on Earth. His award-winning films have played at Hot Docs, SXSW, Big Sky, MoMA, Cannes, and many others, receiving distribution on Netflix, iTunes, Amazon, Sundance Now, and other platforms. He has received numerous fellowships, grants, and residencies, including from The Redford Center, Doc Society, University at Buffalo's Humanities Institute, Austin Film Society, CrossCurrents Foundation, Film Society of Lincoln Center, Carleton College, Princess Grace Foundation, The University of Texas, University Film and Video Association, Kodak, and Smithsonian Institution. He hosts the Chrysalis podcast, which is a space for transformative conversations about our physical and spiritual relationship to the rest of life on Earth. He holds a B.A. from Carleton College, an M.S. in geography from The Pennsylvania State University, and an M.F.A. in film production from the University of Texas at Austin, where he also worked as a lecturer. He is currently Assistant Professor in the Department of Media Study at the University at Buffalo, State University of New York, and an affiliate of the Department of Environment and Sustainability.



**James Gardner** James A. Gardner is Bridget and Thomas Black SUNY Distinguished Professor at the State University of New York, University at Buffalo School of Law, where he teaches in the areas of constitutional, government, and election law. Gardner received his B.A. from Yale in 1980 and his J.D. from the University of Chicago in 1984. From 1984 to 1988, he practiced in the Civil Division of the United States Department of Justice, in Washington, D.C. He is the author or editor of seven books and seventy articles and book chapters. His work, which deals largely with issues of constitutional structure and design, focuses on two areas: the law and legal structure of democratic institutions, and the structure and operation in practice of federal forms of governance. His books include *Comparative Election Law* (forthcoming 2021); *Election Law in the American Political System* (with Guy-Uriel Charles, Aspen, 2018); *New Frontiers of State Constitutional Law: Dual Enforcement of Norms* (with Jim Rossi, co-ed., Oxford, 2011); and *What Are Campaigns For? The Role of Persuasion in Electoral Law and Politics* (Oxford 2009). Each year since 2015, he has been named one of the ten most-cited U.S. legal authorities on election law by the Election Law Blog. From December 2014, through June 2017, he served as Interim Dean of the School of Law.



**Hongxin Hu** is an Associate Professor in the Department of Computer Science and Engineering at University at Buffalo, SUNY. He is a recipient of NSF CAREER Award for 2019. His research spans security & privacy, networking, and machine learning. He has led multiple cross-university, cross-disciplinary projects funded by NSF. His research has also been funded by [USDOT](#), Google, VMware, Amazon, Dell, etc. He has published over 100 refereed technical papers, many of which appeared in top-tier conferences such as CCS, USENIX Security, NDSS, SIGCOMM, NSDI, CHI, and CSCW, and top journals such as IEEE TIFS, IEEE TDSC, IEEE/ACM TON, and IEEE TKDE. He is the recipient of the Best Paper Awards from ACSAC 2020, IEEE ICC 2020, ACM SIGCSE 2018, and ACM CODASPY 2014, and the Best Paper Award Honorable Mentions from ACM SACMAT 2016, IEEE ICNP 2015, and ACM SACMAT 2011. His research has won the First Place in [ACM SIGCOMM 2018 SRC](#). His research has also been featured by the IEEE Special Technical Community on Social Networking, and received 50+ press coverage including ACM TechNews, InformationWeek, Slashdot, etc. He is currently associate editors of IEEE Transactions on Dependable and Secure Computing (TDSC), and Computers & Security.



**Kenny Joseph** is an Assistant Professor in Computer Science and Engineering at the University at Buffalo. In the past, I was a postdoc with David Lazer at the Network Science Institute at Northeastern University, and a fellow at Harvard's Institute for Quantitative Social Science. I completed my graduate work in the Societal Computing program in the School of Computer Science at Carnegie Mellon University. Methodologically, my research broadly focuses on identifying productive ways in which the social and computational sciences can speak to each other. Substantively, I am broadly interested in the interplay of social identity, social behavior/expression, and social structure.



**Matt Kenyon** is a new-media artist and designer. Kenyon's work has been exhibited nationally and internationally in such venues as the Museum of Modern Art, New York, MOCAD Detroit, Science Gallery Dublin, Centre de Cultura Contemporània de Barcelona, and the International Print Center. He is a TED Fellow, a MacDowell Fellow, and his work has been awarded the FILE Prix Lux. His work has been featured in The New York Times, Wired, and Gizmodo, and has also appeared in edited volumes such as A Touch of Code (Gestalten Press) and Adversarial Design (MIT Press). He lives and works in Buffalo, New York, where he is an Associate Professor in the Department of Art at the University at Buffalo, and part of PLATFORM, UB's

socially engaged design studio.



**Siwei Lyu** Siwei Lyu is a SUNY Empire Innovation Professor at the Department of Computer Science and Engineering, the Director of UB Media Forensic Lab (UB MDFL), and the founding Co-Director of Center for Information Integrity (CII) of University at Buffalo, State University of New York. Dr. Lyu's research interests include digital media forensics, computer vision, and machine learning. Dr. Lyu has published over 170 refereed journal and conference papers. He is the recipient of the IEEE Signal Processing Society Best Paper Award (2011), the National Science Foundation CAREER Award (2010), SUNY Albany's Presidential Award for Excellence in Research and Creative Activities (2017), SUNY Chancellor's Award for Excellence in

Research and Creative Activities (2018), Google Faculty Research Award (2019), and IEEE Region 1 Technological Innovation (Academic) Award (2021). He is a Fellow of IEEE.



**Yotam Ophir** is an Assistant Professor of Communication at the University at Buffalo, State University of New York, studying political and science communication, misinformation, persuasion, and media effects. Ophir authored and co-authored journal articles, published in journals such as *Journal of Communication*, *Political Communication*, *Communication Methods & Measures*, *Communication Research*, *Journalism*, *Communication Monographs*, *Health Communication*, *PLOS ONE*, *Nicotine & Tobacco Research*, and *American Journal of Public Health*, as well as multiple book chapters for edited volumes. His research combines novel computational tools for automated content analysis, such as machine learning, topic modeling, and network analysis, with experimental and survey designs, used together to study media content and its effects on audiences.



**E. Bruce Pitman** is a Professor in the Department of Materials Design and Innovation. He earned his PhD in mathematics from Duke University in 1985 and came to UB's Math Department in 1989. The author or co-author of more than 90 research articles, he has been a principal investigator or co-investigator on approximately \$15M of research and equipment awards. An expert in mathematical modeling, for the last two decades he has been studying uncertainty quantification – techniques for understanding uncertainty in models of physical or biological systems, and how computing can account for these uncertainties. In addition to his research and teaching activities, Pitman served as Vice-Provost for Educational

Technology from 2000-2203, and as Associate Dean for Research and Sponsored Programs in the College of Arts and Sciences from 2003-2011. He served as Dean of CAS from 2011-2016. He joined MDI in 2016. During 2019-2021 Pitman served as Interim Director of the Institute for Computational and Data Science.



**Jessie Poon** is a professor in the Department of Geography. Her research interests are on international trade and technological innovation. Funded by National Science Foundation grants, she has published over 100 papers on the topics. Her forthcoming book *Misinformation in the Digital Age* will be released in Spring 2022. She is editor of *Environment and Planning A*, currently serves on numerous editorial boards, and is the first female chair of Regional Studies Association. She is a recipient of the SUNY's Chancellor Award for Excellence in Teaching and the Outstanding Contribution to International Education Award.

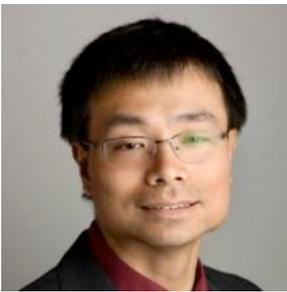


**Jennifer Surtees** is Associate Professor of Biochemistry. The Surtees lab explores mechanisms of genome stability, the many and varied pathways that protect the integrity of genomes. Surtees believes that scientists have a responsibility to communicate clearly with the public as discoveries push the boundaries of knowledge and technology in biology. An informed public is better able to support science and benefit from it. She serves as co-director of the Genome, Environment and Microbiome (GEM) Community of Excellence at UB, which advances understanding of the genome and microbiome and their interaction with the environment through research, education, community programs and art.

During the COVID-19 pandemic, Surtees has worked with UB colleagues and a number of COVID-19 testing partners to conduct genomic sequencing of virus samples in Western New York. These efforts have aided the region's COVID-19 response, identifying the arrival of new variants and helping the community understand how SARS-CoV2 infections are changing locally as the virus evolves. She also collaborated with faculty students and staff to develop K-12 "Covid Chats" and vaccine information for all ages.



**Laurene Tumiel-Berhalter**, is Associate Professor and Director of Community Translational Research in the Jacobs School of Medicine and Biomedical Sciences, Department of Family Medicine. An epidemiologist by training, she has over 25 years' experience conducting community based participatory research and health disparities research to improve the patient-provider interface among underserved communities in chronic disease self-management and cancer prevention. She has worked with a variety of partners from both urban and rural communities. For over 11 years, she has worked with the Patient Voices Network (PVN), a grassroots group of patients receiving care from safety-net practices, to design and implement programs to improve the delivery of health care using a Patient Ambassador model, a peer support model to empower patients in their own care and to address social determinants of health. As Director of the Community Engagement Team at the UB Clinical and Translational Science Institute (CTSI) she is committed to building infrastructure to facilitate community engagement and community partnered research.



**Jun Zhuang** is Morton C. Frank Professor, Director of Graduate Studies, and Director of the Decision, Risk & Data Laboratory, Department of Industrial and Systems Engineering, at the University at Buffalo (UB), the State University of New York (SUNY). Dr. Zhuang has a Ph.D. in Industrial Engineering in 2008 from the University of Wisconsin-Madison. Dr. Zhuang's long-term research goal is to integrate operations research, big data analytics, game theory, and decision analysis to improve mitigation, preparedness, response, and recovery for natural and man-made disasters. Other areas of interest include applications to health care, sports, transportation, supply chain management, sustainability, and architecture. Dr. Zhuang has been a principal investigator of over 30 research grants funded by the U.S. National Science Foundation, by the U.S. Department of Homeland Security, by the U.S. Department of Energy, by the U.S. Air Force Office of Scientific Research, and by the National Fire Protection Association. Dr. Zhuang received numerous research awards including the 2020-2021 SUNY Chancellor's Awards for Excellence in Scholarship and Creative Activities, the 2019 Chauncey Starr Distinguished Young Risk Analyst Award from the Society for Risk Analysis, the UB's 2019 Exceptional Scholar Award - Sustained Achievement, and the 2017 Koopman Prize from the INFORMS' Military Applications Society.



**Ewa Ziarek** is Julian Park Professor of Comparative Literature at UB and a Visiting Faculty in the Institute for Doctoral Studies in the Visual Arts Maine. Most recently she co-authored with Rosalyn Diprose *Arendt, Natality and Biopolitics: Towards Democratic Plurality and Reproductive Justice* (2019), a book awarded Book Prize of *Symposium: Canadian Journal for Continental Philosophy*. Her other books include *Feminist Aesthetics and the Politics of Modernism* (2012); *An Ethics of Dissensus: Feminism, Postmodernity, and the Politics of Radical Democracy* (2001); *The Rhetoric of Failure: Deconstruction of Skepticism, Reinvention of Modernism* (1995); and co-edited volumes, such as, *Intermedialities: Philosophy, Art, Politics* (2010); *Time for the Humanities* (2008) and *Revolt, Affect, Collectivity: The Unstable Boundaries of Kristeva's Polis* (2005). Her interdisciplinary research interests include feminist political theory, modernism, critical race theory, and recently, algorithmic culture.