2019-2020 S3 Annual Report

The S3 Interdisciplinary Seed Grant provides $10,000 to newly-formed interdisciplinary teams to offset the costs of new interdisciplinary collaborations that seek external funding. To be eligible, collaborative teams have to include at least one MSU STEM faculty member or health professional and at least one MSU science studies faculty member (a scholar using social science or humanities approaches to study science). The seed grant program is unique, and uniquely suited to MSU's combination of an especially large population of STEM/biomedical scholars and also a large—perhaps the largest at any institution—collection of science studies scholars of various sorts.

In the 2019-2020 cycle, 25 seed grant proposals were received, and 9 were ultimately funded (see *Appendix 2*). Application numbers fluctuate year-to-year, with 2019-2020 being a relatively high demand year. The S3 Interdisciplinary Seed Grant process combines rigorous review and high-quality formative feedback, designed to foster promising new projects. S3's Board provides this feedback to every team. Proposals are peer reviewed by 3-4 board members and notifications are prompt, made 5 weeks later after the S3 Board meeting (see *Appendix 1*).

The 2019-2020 academic year brought the S3 program to an important milestone, as it was the final year of the program's second 3-year cycle of funding through the Office of the Vice President of Research and Innovation. S3 will spend the 2020-2021 academic year planning the future of the program. Up to this point, S3 has been funded by a combination of the VPRI funding and co-funding from MSU's various colleges and offices. That model of S3 is due for a reevaluation, with an eye to making S3's operational model more sustainable than short-term funding commitments can provide.

As it was designed to do, over the years, S3 has facilitated MSU faculty members' acquisition of increasingly large amounts of external funding. A breakdown of annual external grant funding accomplishments of S3 projects are summarized in the table below. Fostering these kinds of successes is a worthy endeavor, and S3 aims to continue playing a key facilitating role helping novel interdisciplinary projects to get off the ground.

Year	External Grants Awards from S3 Projects
2014-2015	$267,801
2015-2016	$400,000
2016-2017	$1,245,351
2018-2019	$1,414,478
2019-2020	TBA

In fall of 2020, Dr. David Stroupe (Associate Director of STEM Teacher Education at the CREATE for STEM Institute, Department of Teacher Education, College of Education) will be stepping into the role of Director of S3. Dr. Stroupe is also a co-founder of the S3; the program is in capable hands. 2020-2021 is shaping up to be an especially challenging academic year in innumerable ways, but hopefully it will also serve as an opportune moment to reflect on goals and priorities.

Sean A. Valles

Director, MSU Science and Society @ State Program
http://s3.msu.edu/

Associate Professor
Lyman Briggs College and Dept. of Philosophy
Michigan State University
35 East Holmes Hall
919 East Shaw Lane
East Lansing, MI 48825
valles@msu.edu
http://seanvalles.com/

Appendix 1, S3 Co-Funding Units and Board Members

MSU Units That Have Contributed Funding to S3

- Office of the Vice President for Research and Innovation
- College of Agriculture and Natural Resources (with AgBioResearch)
- College of Arts and Letters
- College of Engineering
- College of Human Medicine
- College of Communication Arts and Sciences
- College of Education
- College of Music
- College of Social Science
- College of Veterinary Medicine
- The Graduate School
- James Madison College
- Lyman Briggs College
- Residential College in Arts and Humanities
- University Outreach and Engagement

The S3 Board in 2019-2020

- Eric Aronoff (RCAH)
- Georgina Montgomery (LBC)
- Sharlissa Moore (JMC)
- Casey O'Donnell (CAS)
- Judith Stoddart (GRAD)
- David Stroupe (ED)
- Mark Sullivan (MUS)
- Brian Teppen (CANR)
- Adam Zwickle (CSS)

Humans-in-the-Loop Development of Rapid Intelligent Misinformation Detection System Using Artificial Intelligence to Prevent Outbreaks of Vaccine-Preventable Diseases

This project proposes to develop an artificial-intelligence (AI) based misinformation detector that adapts to anti-vaccinists' changing tactics timely and accurately. This detector, the Rapid Intelligent Misinformation Detector (RIMD), overcomes obstacles that hinder adaptable algorithmic regulation, such as time-consuming data collection and human annotation. The successful achievement of this objective will help society lessen the dangers of hoaxes and pseudoscience and decrease outbreaks of vaccine-preventable diseases.

Young Anna Argyris, Department of Media and Information, College of Communication Arts and Sciences
Pang-Ning Tan, Computer Science and Engineering, College of Engineering

Assessing the Value of Music and Dance Performance in Improving the Health and Wellness of Senior Center Residents

This project assesses the value of music and dance performance on the physical, social, and mental health and well-being of senior center residents. It builds on successful work at Burcham Hills Continuing Care Community with a weekly partnership dance class for residents. This partnership between Dr. Joanna Bosse (RCAH) and Dr. Amanda Woodward (SSW) begins a new stage of research that will involve a diverse and robust assessment protocol employing both quantitative and qualitative methods to develop a set of recommended practices for employing participatory arts performance in senior centers programming. The project will involve faculty, graduate assistants and undergraduate research assistants working together with residents to discover the health and wellness benefits of moving to music.

Joanna Bosse, Residential College in the Arts and Humanities
Amanda Woodward, School of Social Work

"Feeling the Pinch": Commodity Production, Forest Conservation, and Equitable Development in Peru's Forested Frontiers

Peru's exceptional forest resources are threatened by in-migration for agricultural and agroforestry development, which results in competition for land use and often permanent loss of complex tropical forest. Increasing agricultural commodity production

activities is the number one driver of forest loss in this region, pinching rural communities between conservation and development pressures. Agroforestry and agribusiness proponents argue that development programs can motivate forest conservation and agricultural innovation by increasing financial returns on fewer hectares, thereby reducing pressure on remaining forestland. However, there is little understanding of why these strategies are more successful in some areas than others, if they contribute to conservation targets, and their effects on gender roles and rural livelihoods. Our proposal combines environmental conservation planning, agribusiness, and gender and social equity approaches to investigate how forestry and agriculture development institutions navigate these competing priorities and with what effects.

Lauren Cooper, Forestry, College of Agriculture and Natural Resources
Rowenn Kalman, Anthropology, College of Social Science
Brent Ross, Agricultural, Food, and Resource Economics, College of Agriculture and Natural Resources

A Test Case for Experience-Based Science Communication

This project aims to test a new approach for communicating about contested areas of science. It focuses on Lyme disease, a tick-borne bacterial disease that can have severe effects if left untreated. It has also become the subject of significant disputes between mainstream medical groups and patient advocacy organizations. These groups have clashed over the prevalence of the disease, the extent to which it is likely to cause long-term symptoms even after treatment, and the best ways of helping those who suffer with long-term symptoms. In recent years, science communication scholars have been exploring the best ways to approach these sorts of controversies. We plan to investigate how an "experience based" approach to science communication could help promote better understanding of the perspectives taken by the different stakeholders in this conflict. Our approach will focus less on the transmission of information and more on understanding how both scientists and non-scientists interpret their experiences with scientific content. Our project will provide a "proof of concept" for a new approach to science communication that could potentially be employed in a wide variety of other scientific controversies.

Kevin Elliott, Lyman Briggs College and Dept. of Fisheries and Wildlife (College of Agriculture and Natural Resources), Dept. of Philosophy (College of Arts and Letters)
Megan Halpern, Lyman Briggs College, Center for Interdisciplinarity (College of Arts and Letters)
Jean Tsao, Dept. of Fisheries and Wildlife (College of Agriculture and Natural Resources), Large Animal Clinic Sciences (College of Veterinary Medicine)

Indigenous Approaches to Postpartum Mental Health: Exploring Opportunities for Community-Based Solutions

Indigenous community research requires commitment, time and support in the development stages for establishment of solid long-term partnerships. This project focuses on this first stage of development, to first consult with Indigenous health agency and service provider leaders, focus on relationship building, and gather pilot information grounded in locally appropriate protocols, ethics, and collaboratively designed methods. We aim to explore how postpartum Indigenous women's mental health is understood and considered within and across the diverse urban and Tribal communities in Michigan, where there already exist a range of services aimed at prenatal care and postnatal infant wellness.

Danielle Gartner, Epidemiology & Biostatistics, College of Human Medicine
Heather Howard, Anthropology, College of Social Science

Preliminary Assessment of Telehealth Needs among Rural Community Stakeholders

This project team will conduct an essential preliminary assessment of telehealth needs among rural community stakeholders in lower Northern Michigan. Findings from this study will provide pilot data to inform a future grant application to implement telehealth initiatives in rural Michigan. Our project seeks to engage multiple community organizations and stakeholders through focus groups, meetings, interviews, and surveys throughout northern Michigan to guide our efforts toward those with the most community relevance and potential impact. Engaging the community through existing contacts and Michigan State University Extension, the assessment will identify actions needed to implement telehealth initiatives across Michigan's rural regions. The data gathered from this research assist in identifying specific barriers and needs to increase knowledge on how to best implement telemedicine technology in rural Northern Michigan. This research will also foster relationships across multiple communities and stakeholders for continued engagement.

Bree Holtz, Advertising and Public Relations, College of Communication Arts and Sciences
Sabrina Ford, Institute for Health Policy and Department of Obstetrics, Gynecology & Reproductive Biology, College of Human Medicine.
Dr. Kelly Hirko, Department of Epidemiology and Biostatistics, College of Human Medicine

Strategies to Develop Positive Work Environments at Michigan State University

Workplace climate and culture, at an institutional level, can affect the lived experience of individual employees. Levels of safety and trust vary, resulting in different work environments within the same institution. Toxic work environments, including instances of bullying and incivility, are highly prevalent at Michigan State University. While internal MSU surveys have produced results indicating this problem, there is a general lack of high-quality applied research that rigorously addresses the efficacy of evidence-based (or best practice) intervention. The current multidisciplinary team will take a mixed-methods approach focused on workplace climate and culture. We plan to analyze empirical data gathered through interviews, prior surveys, and evidence-based tools. We will develop/design concrete intervention strategies to address workplace safety, toxicity, levels of trust, etc. Our goal is to produce and test strategies that will result in a more positive work environment at Michigan State University. The strategies will be replicable and, when possible, leverage existing employee and supervisory tools to improve the integrity and quality of life for MSU employees.

Barbara Roberts, MSU WorkLife Office, Senior Advisor to the Provost
Ann Marie Ryan, Psychology, College of Social Science
Jo Alanis, Organizational Psychology, College of Social Science
John Girdwood, MSU WorkLife Office
Claudia Finkelstein, Family Medicine; College of Human Medicine
Judy Arnetz, College of Human Medicine
Bengt Arnetz, Department of Family Medicine, College of Human Medicine
Morteza Mahmoudi, Department of Radiology & Precision Health Program, College of Human Medicine

Exploring Women's Experiences with Chronic Pelvic Pain Care: A Feminist Analysis of Power in Health Systems

This interdisciplinary collaboration brings together scholars from Michigan State University and the University of Michigan to better understand the relational and structural barriers to care for women with chronic pelvic pain. Unlike other chronic conditions, chronic pelvic pain frequently occurs without underlying pathology being identified. As a result, patients with chronic pelvic pain can undergo cycles of re-investigations and re-referrals for diagnosis and management without resolution. For these reasons, epidemiological and medical research has focused on understanding clinical outcomes. However, much less is known about the socio-political conditions that produce inequities in clinical outcomes. From a feminist perspective, this is particularly problematic because it is widely accepted that women's pain is taken less seriously due to systemic sexism within health systems. Further, women's experiences are systematically homogenized at the outcome level, which classifies 'women' as a biological category rather than a diverse population whose experiences and identities are constructed within complex gendered, racialized, and classed power relations. This

classification also serves to marginalize patients with chronic pelvic pain who do not identify as women. This project aims to bridge the gap in knowledge between clinical outcomes and social-political conditions, by conducting a feminist network-based analysis to investigate the power dynamics that help and hinder the management of chronic pelvic pain. Ultimately, the goals of the project are to improve quality of life for women with chronic pelvic pain, develop research around non-binary services and care for chronic pelvic pain, and infuse intersectional feminist perspectives into scientific efforts in order to understand inequities in care and clinical outcomes related to chronic pelvic pain.

Lucy Thompson, Department of Psychology, College of Social Science, Center for Gender in Global Context, International Studies and Programs
Kristen Upson, Department of Epidemiology & Biostatistics, College of Human Medicine
Suzie (Sawsan) As-Sanie, Department of Obstetrics and Gynecology, Michigan Medicine, University of Michigan
Jenna Watling Neal, Department of Psychology, College of Social Science

Operationalizing Values for among Farmers Market Participation for Benchmarking and Impact

Participants in farmers markets (managers, vendors, customers) frequently appeal to values of ecological sustainability and social equity when discussing their participation in a local market. Despite these intentions, gaps remain in developing appropriate instruments to measure and benchmark the impact of farmers markets in these areas. This gap reflects two broad challenges facing market participants: *defining* their values in an operational way and *adopting* the technological and academic tools necessary to benchmark progress. We will conduct a mixed-methods case study of three farmers markets across the state of Michigan. Interviews with market vendors, consumers, and managers will allow us to identify the ecological sustainability and social equity values motivating their engagement with the market, their current capacity to benchmark impact, and barriers that prevent internal evaluation. These interviews will form the basis for the project team to develop and validate metrics in line with these stated values, in order to assess the current impact of the case markets on the Michigan system.

Phillip Warsaw, Community Sustainability, Agriculture and Natural Resources
Chelsea Wentworth-Fournier, Community Sustainability, College of Agriculture and Natural Resources
Abou Traore, Community Sustainability, College of Agriculture and Natural Resources
Krista Isaacs, Plant, Soil, and Microbial Sciences, College of Agriculture and Natural Resources