



**The Directorate of
Social, Behavioral and Economic (SBE) Sciences
and
Research on Innovation, Culture, and Creativity**

Your Life, Our Work, SBE

- To support **basic research on people and society**. The SBE sciences focus on human behavior and social organizations and how social, economic, political, cultural, and environmental forces affect the lives of people from birth to old age and how people, in turn, shape those forces.
- SBE sciences cover topics ...
 - from neurons to nations
 - from evolution to economics
 - from ancient ruins to artificial intelligence



SBE: We like to be social and welcome Partnerships



SBE Core Programs

SBE Office of Multidisciplinary Activities (SMA)

- **Build and Broaden**
- **Ethical and Responsible Research**
- Research Experiences for Undergraduates Sites
- SBE Postdoctoral Research Fellowships

Behavioral and Cognitive Sciences (BCS)

- **Cognitive Neuroscience**
- **Perception, Action, and Cognition**
- **Science of Learning and Augmented Intelligence**
- **Linguistics**
- **Linguistics and Dynamic Language Infrastructure**
- **Cultural Anthropology**
- **Developmental Sciences**
- **Human-Environment and Geographical Sciences**
- Archaeology and Archaeometry
- Biological Anthropology
- Human Networks and Data Science
- Social Psychology

Social and Economic Sciences (SES)

- **Economics**
- **Science of Organizations**
- **Science and Technology Studies**
- **Science of Science: Discovery, Communication, and Impact**
- Accountable Institutions and Behavior
- Decision, Risk and Management Sciences
- Law and Science
- Methodology, Measurement, and Statistics
- Security and Preparedness
- Sociology
- Research Infrastructure in SBE sciences

National Center for Science and Engineering Statistics (NCSES)

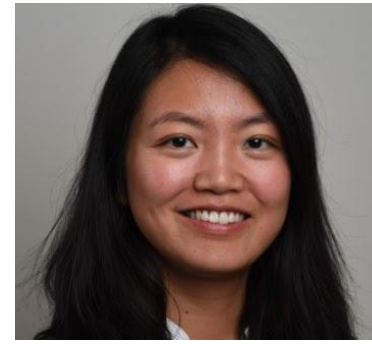
- **Science, Technology and Innovation - Public Information**
- **Infrastructure and Tools**
- **Science, Technology, and Innovation Analysis**
- **Statistics, Methods, and Innovation**
- **Science, Technology, and Innovation Survey Management**
- Office of the Division Director
- Office of the Deputy Division Director
- Office of the Chief Statistician
- Resource Management
- Data Access, Confidentiality and Quality Assessment



Examples of SBE awards on Research on Innovation, Culture, and Creativity



Reward Prediction in Creative Perception and Production



Psyche Loui, Neuroscience,
Northeastern



Elizabeth Margulis
Music, Princeton

- Integrate neuroscience, natural language processing, and music to study creativity arising from defying expectations by contributing something surprising or novel.
- Design experiments to test the hypotheses:
 - Creativity as a positive reward prediction error in the context of imagined narrative and musical sequence generation tasks.
 - EEG markers of reward prediction error and fMRI activity and connectivity in the reward system can signal the psychological experience of creativity

Collaborative Research: Designing smart environments to augment collective learning & creativity

- Study cooperative behavior, collective intelligence, and collective creativity in socio-technical learning environments.
- Design large-scale online experiments and computational models to understand:
 1. Group-directed interactions, collective learning of cooperation and self-governance
 2. Conditions that augment meta-decision-making processes for collective learning and its mechanism
 3. Parameters that drive group-directed learning of collective creativity



Seth Frey
Communication, UC-Davis

Nori Jacoby (Psychology, Cornell); Ofer Tchernichovski (Animal Behavior, Hunter CUNY); Dalton Conley (Sociology, Princeton)



CAREER: How Does Core Scientific Knowledge Advance? Understanding Team Innovation at the Foundations of Sciences

- Study the organization of scientific teams and scientific advances
- Analyze 46M scientific publications across 292 research fields and 7M syllabi across 62 study fields, 20M research teams over 19 disciplines in 3,562 cities, 2M scientists at their earlier and later career stages, 3M acknowledgments of funding agencies, etc.
- Test if the increasing dominance of large but less innovative teams contributes to scientific stagnation.
- Understand the roles of teams in unfolding scientific innovation.



Lingfei Wu
Computational
Social Scientist
Pittsburg



Your Life, Our Work, SBE

It all comes back to people and society. Understanding ourselves, our problems and how we create solutions.... Converging to culture, creativity, innovation

SBE: be social and build Partnerships

