



ANNUAL PI GRANTEE RECEPTION

Celebrating Faculty and Staff Principal Investigators and Project Directors



May 14, 2024



Bucknell
UNIVERSITY

JAMES ARTHUR

Assistant Professor of Mechanical Engineering

Project:

"Bot Speed Cooker (senior design)"

Sponsor: Vargo



JAMES BAISH

Presidential Professor (2007-2010) of
Biomedical Engineering

Project:

"Systems Biology of Antigen and T-Cell Transport in Cancer
Immunotherapy"

Sponsor: National Institutes of Health



EMMA BANKS

Assistant Professor of International Relations

Project:

"Vanderbilt University: Research Opportunity Award
Supplement: The Consequences of Violence in Social
Movements"

Sponsor: National Science Foundation



SHAUNNA BARNHART

Program Director, Place Studies Program

Projects:

- “Resiliency Workshops”
- “Environmental Resiliency VISTA, Year 2”

Sponsors:

- Pennsylvania Department of Environmental Protection
- AmeriCorps: Partners for Campus Community Engagement



CRAIG BEAL

Associate Professor of Mechanical Engineering

Project:

“Design of Traffic Cone Placement & Retrieval Mechanism”

Sponsor: Pennsylvania Department of Community and Economic Development, Manufacturing Innovation Program



M. LAURA BENINATI

Associate Professor of Mechanical Engineering

Projects:

- "Folding Module for Housing (senior design)"
- "Product development of a surgical tool (senior design)"
- "Modular Construction Research (senior design)"

Sponsors:

- Iron Valley
- Affirm Surgical
- Iron Valley



KELLY BICKEL

Associate Professor of Mathematics
Operator Theory and Complex Analysis

PAMELA GORKIN

Presidential Professor (2001-2003) of
Mathematics Operator Theory, Function
Theory, Linear Algebra

Project:

“Centre International de Rencontres Mathématiques (CIRM)
Conference 2024: Operators on analytic function spaces”

Sponsor: National Science Foundation



OLIVIA BOERMAN

Assistant Professor of Biomedical Engineering

Projects:

- “In Vitro Microfluidics System to Investigate Blood Rheology and Biophysical Mechanisms of Angiogenesis”
- “Engineering Research Initiation: A Computational and Experimental Approach to Establishing Multiscale and Multiphasic Structure-Function Mechanisms of Muscle Stiffness”

Sponsors:

- Bucknell Geisinger Research Initiative
- National Science Foundation



PETER BROOKSBANK

Presidential Professor (2024-2027) of Mathematics
Computational group theory

Projects:

“Collaborative Research: Algorithms for Threat Detection:
Rapid Structure Recovery and Outlier Detection in
Multidimensional Data”

Sponsors: National Science Foundation



ALAN CHEVILLE

Professor of Electrical Engineering

Projects:

- "Edge Networking for the Energy Industry (senior design)"
- "Tracking WALDO (senior design)"
- "Model Smart Home Energy System in a HIL Environment (senior design)"

Sponsors:

- Kyndryl
- Pi Variables
- Typhoon HIL, Inc.



ANDREW CIOTOLA

Program Manager, Stadler Center for Poetry;
Managing Editor of West Branch

Project:

“Arts Organizations & Arts Programs 2023-2024 Funding”

Sponsor: National Endowment for the Arts



JOHN DOCES

Associate Professor of Political Science
Co-director, Bucknell Institute for Public Policy

Project:

“Political Violence: Its Legacy and Our Fate”

Sponsor: Open Discourse Coalition



MATTHEW CLARK

Assistant Professor of Biology

Project:

"Pueblo Brain Science: Building Diversity in Neuroscience
2024 Workshop"

Sponsor: Genetics Society of America



DAVID EVANS

Professor of Psychology

Project:

“Obsessive-compulsive and psychotic-like behaviors across PWS subtypes: Developmental considerations”

Sponsor: The Foundation for Prader-Willi Research



ERIC FADEN

Associate Professor of English

Project:

“The Japanese Paper Film Project”

Sponsor: Japan-U.S. Friendship Commission



DOUG GABAUER

Associate Professor of Civil & Environmental Engineering

Project:

"NCHRP 22-59: Safety Risks of Occupant Compartment
Damage During Crashes"

Sponsor: National Academy of Science, National Cooperative
Highway Research Program



ANDREA HALPERN

Professor of Psychology
Department Co-Chair of Psychology

Project:

“The Inner Music and Wellbeing Network”

Sponsor: Arts and Humanities Research Council (UK)



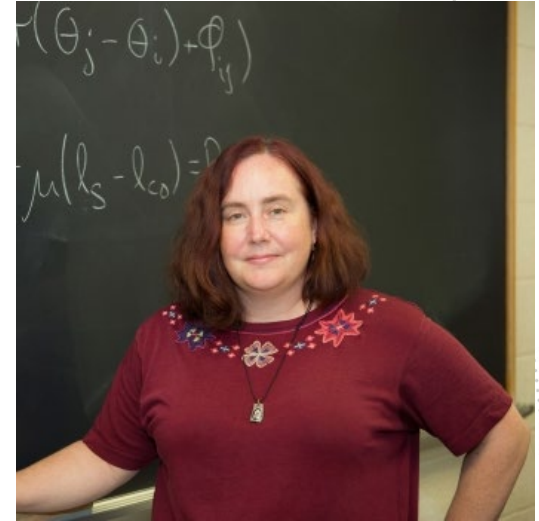
CHRISTINA HAMLET

Associate Professor of Mathematics
Applied Mathematics, Biofluids and Biomechanics

Project:

“Collaborative Research: DMS/NIGMS2: Computational and Experimental Analysis of Choanoflagellate Hydrodynamic Performance - Selective Factors in the Evolution of Multicellularity”

Sponsor: National Science Foundation



MARK HAUSSMANN

Russell-Childers Professor in the Laboratory Sciences and
Professor of Biology
Biology Associate Department Chair

Project:

“Collaborative Research: Research at Undergraduate
Institutions: Life history strategies within a population depend
on cellular and organismal traits that underlie differences in
resource acquisition and allocation”

Sponsor: National Science Foundation



MATTHEW HIGGINS

Claire W. Carlson Chair in Environmental Engineering,
Professor of Civil & Environmental Engineering
Faculty Director, BCSE

Projects:

- "Thermal Hydrolysis and Pilot Research for PVSC"
- "Impact of Food Waste Co-Digestion on Anaerobic Digestion and Dewatering Performance at San Francisco Airport"
- "Thermal hydrolysis testing of straw and anaerobic digestate for increased gas production and digestate volume reduction"

Sponsors:

- Arcadis US Inc.
- AECOM and San Francisco Airport
- Equilon Enterprises LLC (Shell)



ERIN JABLONSKI

Associate Dean of Engineering

Projects:

- "Folding Chair Shade Accessory"
- "Housing Module Folding"
- "IDSD"
- "Medical Device Innovation"

Sponsors:

- True Places
- Iron Valley
- Corning
- Globus Medical



DIANE JAKACKI

Digital Scholarship Coordinator

Project:

“Enhancing LEAF Functionality”

Sponsor: University of Guelph



CHARLES KIM

Professor of Mechanical Engineering
Mechanical Engineering Interim Chair

Project:

“Wireless Charging for Implantable Devices (senior design)”

Sponsor: Globus Medical



BRIAN KING

Associate Professor of Computer Science

Projects:

- "Vision Guided Robotic Tool Handling (senior design)"
- "Cybersecurity Dashboard Upgraded Document Import Tool (senior design)"

Sponsors:

- TE Connectivity
- Core Business Solutions, Inc.



HALEY KRAGNESS

Assistant Professor in Psychology

Project:

“Northeastern University: Research Opportunity Award
Supplement: Prediction and Reward in Auditory Statistical
Learning”

Sponsor: National Science Foundation



JASON LEDDINGTON

Professor of Philosophy

Project:

“Art & Aesthetics of Illusion Workshop”

Sponsor: British Society of Aesthetics

MATTHEW MCTAMMANY

David & Patricia Ekedahl Professor in
Environmental Studies, and Professor of
Biology, Environmental Studies & Sciences

Project:

“Stroud Water Research Center: Research Opportunity
Award Supplement: A Macrosystems Perspective on River
Eutrophication from Chlorophyll Abundance Patterns”

Sponsor: National Science Foundation



KATHRYN MAGUET

Executive Director, Weis Center for the Performing Arts

JOHANNA KODLICK

Director of Operations, Weis Center for the Performing Arts

Projects:

- "Martha Redbone"
- "Legendary Ingramettes"
- "DuPont Brass"
- "Caña Dulce y Caña Brava"
- "Hamid Rahmanian (Songs of North)"
- "La Banda Morisca"
- "Mariachi Herencia"
- "Arts Organizations & Arts Programs 2023-2024"

Sponsors:

- Mid Atlantic Arts
- National Endowment for the Arts



XIANNONG MENG

Professor of Computer Science

Project:

“New Patient Onboarding (senior design)”

Sponsor: Rooted Relational Therapy





**DARAKHSHAN
MIR**

Associate Professor
of Computer Science



**VANESSA
MASSARO**

Associate Professor
of Geography
Geography
Department Chair



ANNE ROSS

Assistant
Professor of
Computer Science



NATHAN RYAN

Professor of
Mathematics
Affiliated Faculty in
Latin American
Studies



SARA STOUTD

Assistant
Professor of
Mathematics
Ecological
Statistics

Project:

"Building a Just Computing Movement: Integrating curricular and co-curricular experiences"

Sponsor: Mozilla Foundation

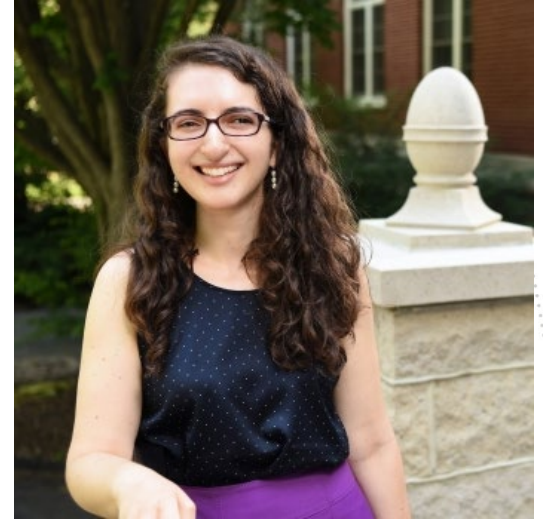
ELIF MISKIOGLU

Assistant Professor of Chemical Engineering

Project:

“Collaborative Research: Research at Undergraduate Institutions: Trust but Verify: The Use of Intuition in Engineering Problem Solving”

Sponsor: National Science Foundation



LOGAN OSGOOD-ZIMMERMAN

Manager, Industry Partnerships

Projects:

- “Various Senior Design, AY 2023 -2024”
- “Design of Traffic Cone Placement & Retrieval Mechanism”

Sponsors:

- Affirm Surgical, Build It Right, LLC (Kyndryl), Construction Specialties Inc, Core Business Solutions, Inc., Corning Incorporated, Evergreen Cleaning Co., Globus Medical Inc., Iron Valley, Keurig Dr Pepper, Keystone Ag Spraying, Pi Variables Inc., Rooted Relational Therapy, TE Connectivity, True Places, Typhoon HIL, Inc., Vargo and Weis Markets, Inc.
- Pennsylvania Department of Community and Economic Development Manufacturing Innovation Program

IAN PROUD

Engineering Innovation Manager

Project:

“Design and Development of a New Hydraulic Holding Mechanism”

Sponsor: Pennsylvania Department of Community and Economic Development Manufacturing Innovation Program



BRAD PUTMAN

Richard E. Garman Dean of the College of Engineering

Project:

“Research in Virtual Exchange”

Sponsor: Stevens Initiative at the Aspen Institute



DEEANN REEDER

Presidential Professor (2015-2018) of Biology

Project:

“Tissue samples from wild meat markets from South Sudan”

Sponsor: Fauna & Flora International



RICHARD RINEHART

Director, Samek Art Museum

Project:

"Arts Organizations & Arts Programs 2023-2024 Funding"

Sponsor: National Endowment for the Arts



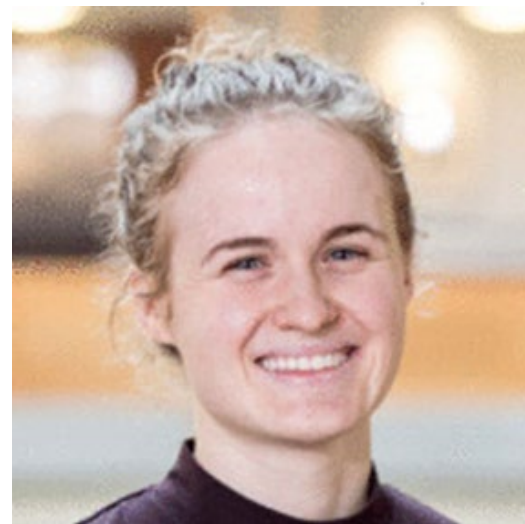
ANNE ROSS

Assistant Professor of Computer Science

Project:

“Computer and Information Science and Engineering Research
Initiation Initiative: Human-Centered Computing: Cross-Team
Collaboration to Create Accessible Software for People with
Disabilities”

Sponsor: National Science Foundation



DAVID ROVNYAK

Professor of Chemistry

Project:

“Research at Undergraduate Institutions: Towards Robust Sparsity in Nonuniform Sampling Multidimensional NMR”

Sponsor: National Science Foundation



ANDREW SLOBODA

Assistant Professor of Mechanical Engineering

Project:

“Ultrasonic Welder Predictive Tensile Testing (senior design)”

Sponsor: TE Connectivity



BRIAN SMITH

Assistant Professor of Chemistry

Project:

"Major Research Instrumentation: Track 1: Acquisition of a Single-Crystal X-ray Diffractometer to Support Primarily Undergraduate Research in the Greater Susquehanna Valley"

Sponsor: National Science Foundation



TOM SOLOMON

Presidential Professor (2013-2016) of Physics & Astronomy

Project:

“Research at Undergraduate Institutions: Experimental Studies of Active Mixing in Extended Fluid Systems”

Sponsor: National Science Foundation



STEVEN STUMBRIS

Director of the Small Business Development Center

Projects:

- "Bucknell University Incubators: Startup Lewisburg & Danville"
- "PA ENGAGE Funding"
- "PA Partnerships for Regional Economic Performance 23-24 Funding"
- "Small Business Administration 2024 Funding"
- "Central PA Business Retention and Expansion Program, 23-24"
- "Enhancing Small Business Competitiveness in Central Pennsylvania Through Integration of Innovative Artificial Intelligence (AI) Tools"
- "Design and Development of a New Hydraulic Holding Mechanism"
- "StartUp Milton"
- "Danville Small Business Hub"
- "PA Small Business Development Center Network Portability Project"

Sponsors:

- Ben Franklin Technology Partners Northeast Pennsylvania
- SEDA-Council of Governments
- Pennsylvania Department of Community & Economic Development
- U.S. Small Business Administration
- U.S. Department of Agriculture



REBECCA SWITZER

Associate Professor of Chemistry

Project:

“Equipment Supplement: Investigating the Impact of Disease-Associated Mutations on DNA Methyltransferase 1 Function”

Sponsor: National Institutes of Health



JONATHAN TORRES

Assistant Professor of Mechanical Engineering

Projects:

- “Design and Development of a New Hydraulic Holding Mechanism”
- “Sunshade for Emmett Outdoor Portable Chair (senior design)”

Sponsors:

- Pennsylvania Department of Community and Economic Development Manufacturing Innovation Program
- True Places



BRANDON VOGEL

Associate Professor of Chemical Engineering

Projects:

- "Exterior Cleaning Surfactant (senior design)"
- "Preventing Aluminum Corrosion for Next Gen Unreleased Product (senior design)"
- "Ammonia Control Chemicals (senior design)"
- "Digester Design project for the CHEG 410 course (senior design)"

Sponsors:

- Evergreen Cleaning
- Keurig Dr. Pepper
- Keystone Ag Spraying
- Weis Markets



KAT WAKABAYASHI

Professor of Chemical Engineering

Projects:

- “Extrusion of Novel Petroleum-Based Composites, Phase 1C”
- “Liquid-particle separation and classification (senior design)”
- “Zero Waste (senior design)”

Sponsors:

- ExxonMobil
- Corning
- Construction Specialties, Inc.



BENJAMIN WHEATLEY

Associate Professor of Mechanical Engineering

Project:

“Engineering Research Initiation: A Computational and Experimental Approach to Establishing Multiscale and Multiphasic Structure-Function Mechanisms of Muscle Stiffness”

Sponsor: National Science Foundation



JOE WILCK

Associate Professor of Practice in Analytics & Operations
Management

Project:

“Improving Patient Access at ADMI through Simulating
Schedule Prioritization”

Sponsor: Bucknell Geisinger Research Initiative

