

## VISION

We catalyze deep collaboration across disciplines to generate new and profoundly integrative approaches to life sciences research.

## **MISSION**

We foster excellence in life sciences research and graduate training through focused investment in outstanding faculty, interdisciplinary programs, and state-of-the-art facilities.

## **CULTURE**

We approach the vast Penn State resources available to us with a nimble mindset. Ever flexible, we leverage these resources in creative ways that extend our reach across the entire university system. As a truly diverse team of faculty, staff members and trainees, we inspire one another to reach higher than any of us could on our own.

## **Collaborative Research**

- 110 co-hired faculty researchers
- 9 participating Penn State Colleges
- 6-8-fold ROI
- Impacting \$290M annual research portfolio

## **Graduate Education**

- 250 PhD students advised by 330 faculty
- Inter-College thesis committees
- Unique lab rotation system
- Robust training grant program

# **Translational Impact**

- Advancing biotechnology
- Improving global health
- Building the STEM economy
- Launching distinguished careers

# STRATEGIC GOALS (2021-25)

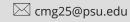
- \* Attract and retain a diverse community of the best and brightest faculty, staff, graduate students, and postdocs by providing an inspiring, inclusive working environment equipped with best- in-class facilities and instrumentation
- \* Fund bold and transformative research in the life sciences at Penn State through internal seed grant programs that spur new and promising innovations
- \* Contribute to the growth of the high-tech STEM economy by facilitating discoveries in biotechnology and training the next generation of research scientists and technologists
- \* Build upon Penn State's reputation as a global leader in infectious diseases; food and biosecurity; and global health

- \* Advance Penn State's capacities to comprehensively map and assess factors that interactively affect the health of plants, animals and people across natural ecosystems and the built environment
- \* Expand Penn State's capacities in biomedical research through strategic internal partnerships with Engineering, Social Sciences and Data Sciences, as well as external partners in the field
- \* Continually improve administrative processes to foster healthy levels of innovation and risk-taking while maintaining security and stability across departments



# **Christina Grozinger**

Director of the Center for Pollinator Research; Director of the Insect Biodiversity Center; Publius Vergilius Maro Professor and Huck Scholar of Entomology





We immerse students in an environment built on interdisciplinary collaboration—with unparalleled access to state-of-the-art facilities. That is why we consistently recruit outstanding people from across the globe. Programs include: Bioinformatics and Genomics; Ecology; Integrative and Biomedical Physiology; Master of Biotechnology; Molecular, Cellular and Integrative Biosciences; Neuroscience; and Plant Biology.

7 Intercollege Programs







With more than \$25 million of direct investment into core facilities since 2010, we provide services to over 300 research groups each year. Cores include: Automated Calorimetry; Cryo-Electron Microscopy; Fermentation; Flow Cytometry; Genomics; High-Field MRI; Metabolomics; Microscopy; Proteomics and Mass Spectrometry; Cell Culture; X-Ray Crystallography.



11 Cores

Our academic teams cut across dozens of departments at Penn State, engaging an unsurpassed variety of disciplines in life sciences research. Key topics include bio-renewables; infectious disease dynamics; human evolution and diversity; structural biology and oncology; industrial biotechnology; ecology; genome sciences; insect biodiversity; microbiomes; neuroscience; human health; and a unique variety of plant science initiatives.

33 Research Units







The deeply complex and interconnected challenges we collectively face today can only be addressed by teams that bring in expertise from a variety of fields and backgrounds. At the Huck, we believe in bringing together scientists and stakeholders to collaborate in the face of threats as local as the aging population of Pennsylvania and as global as climate change and pandemics.



## **Key Collaborations**

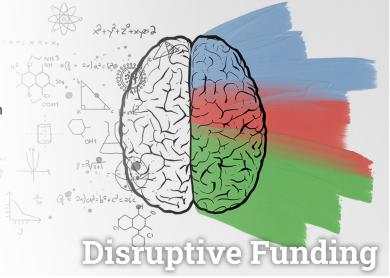
- PlantVillage
- Communication, Science and Society Initiative (CSSI)
- Geroscience and Dementia Prevention
- · Program for Enhancing the Health and Productivity of Livestock (PEHPL)

We believe it's essential to take big risks in science - to think outside the box, "swing for the fences" and pursue ideas that might never yield success, but which could change the world if they do. That's why we have implemented internal funding mechanisms at Penn State that empower bold, innovative researchers to fearlessly test out their most novel, unproven and exciting ideas, with room to fail. Because sometimes they don't.

# **Key Programs**

- Huck Innovative and Transformational Seed (HITS) Fund
- Patricia and Steven Benkovic Research Initiative
- Seed-Funded Interdisciplinary COVID-19 Projects







With hundreds of scientists working at Huck, translating the innumerable insights yielded by their research requires constant creativity.

It also requires clear, engaging methods of communication. From our SciArt initiatives to our videos, podcasts, and eNews updates, we're proud to produce media that tells the stories of the science done here, the people who do it, and the impacts our science has on communities around the world.

# **Key Outlets**

- The Symbiotic Podcast
- SciArt Initiatives
- · Life From All Angles videos
- The Pulse Newsletter

#### **Huck Executive Team**

Associate Director of Operations Jim Marden

Associate Director of Strategic Initiatives
Camelia Kantor

Associate Director Vivek Kapur

Managing Director Emily Martell

#### **Graduate Degree Program Leadership**

Director of Graduate Training Initiatives

Donna Korzick

Bioinformatics and Genomics David Koslicki

> **Ecology** Jason Kaye

Integrative and Biomedical Physiology Greg Shearer

> Master of Biotechnology Natasha Tirko

Molecular, Cellular, and Integrative Biosciences
Melissa Rolls

Neuroscience Sonia Cavigelli

Plant Biology Teh-hui Kao

### Director, Huck Institutes of the Life Sciences

Christina Grozinger

Administrative Support Coordinator;
Assistant to the Director
Abby Ranio

Administrative Support Coordinator
Ashley Smith

#### Department Heads

Huck Managing Director Emily Martell

> Budget Analyst Josh Yoas

**Director of Facilities** 

Mike Uchneat

Director of Information Technology Wilson Diaz

Graduate Program Coordinator Dana Coval-Dinant

Director of Core Facilities; Genomics Core Facility Director Craig Praul

Director of Communications & Marketing
Cole Hons

Director of Science-Art Initiatives
Daryl Branford

#### **Core Instrumentation Facilities Directors**

Automated Biological Calorimetry & X-Ray Crystallography Neela Yennawar

CSL Behring Fermentation Facility
Deniz Cekmecelioglu

Cryo-Electron Microscopy Facility Sung Hyun (Joseph) Cho

> Flow Cytometry Facility Rajeswaran Mani

Genomics Core Facility Craig Praul

High Field MRI Facility Thomas Neuberger

Metabolomics Facility Ashley Shay

Microscopy Facility Gang (Greg) Ning

Proteomics and Mass Spectrometry Facility
Tatiana Laremore

Sartorius Cell Culture Facility Randy Rossi

## **Research Center and Institute Directors**

Center for Biorenewables Charles Anderson & Daniel Ciolkosz

Center for Brain, Behavior, and Cognition Sonia Cavigelli

> Center for Cellular Dynamics Melissa Rolls

Center for Chemical Ecology Jared Ali

Center for Computational Biology and Bioinformatics Paul Medvedev

Center for Eukaryotic Gene Regulation Song Tan

Center for Infectious Disease Dynamics
Matthew Ferrari

Center for Human Evolution and Diversity

Mark Shriver

**Center for Malaria Research** Scott Lindner & Manuel Llinas

Center for Mathematical Biology Andrew Belmonte

Center for Mathematics of Living and Mimetic Matter Igor Aronson & Leonid Berlyand Center for Medical Genomics Kateryna Makova

Center for Molecular Immunology and Infectious Disease Girish Kirimanjeswara

Center for Molecular Investigation of Neurological Disorders Bernhard Luscher

Center for Molecular Toxicology and Carcinogenesis Gary Perdew

Center for Movement Science and Technology Robert Sainburg

> Center for Neural Engineering Bruce Gluckman

Center for Neurotechnology in Mental Health Research

Nanyin Zhang

Center for Parasitic and Carnivorous Plants Claude dePamphilis

> Center for Pollinator Research Heather Hines

Center for Reproductive Biology and Health Francisco Diaz

> **Center for RNA Molecular Biology** Paul Babitzke & Philip Bevilacqua

Center for Root and Rhizosphere Biology Liana Burghardt

> Center for Statistical Genetics Rongling Wu

Center for Structural Biology Katsuhiko Murakami

Center of Excellence in Industrial Biotechnology Daniel Hayes

> Ecology Institute Jennifer Macalady

Genome Sciences Institute Francesca Chiaromonte

Insect Biodiversity Center Heather Hines

Neuroscience Institute Nikki Crowley

One Health Microbiome Center Seth Bordenstein

Regenerative Engineering and Translational Ecosystem Forum Dino Ravnic & Daniel Hayes

> Plant Institute Mark Guiltinan

