



PennState

Senior Vice President
for Research

Welcome to Research @ Penn State!

Lora G. Weiss, Ph.D.

Senior Vice President for Research

August 20, 2020

Visualization of the powder/liquid interface at atomistic scale during the evaporation in Cold Sintering Process. Credit: van Duin Group / Penn State



More than **5,300** researchers collaborating globally

11 members
National Academy of Sciences

11 members
American Academy of Arts and Sciences

11 senior members and fellows
National Academy of Inventors

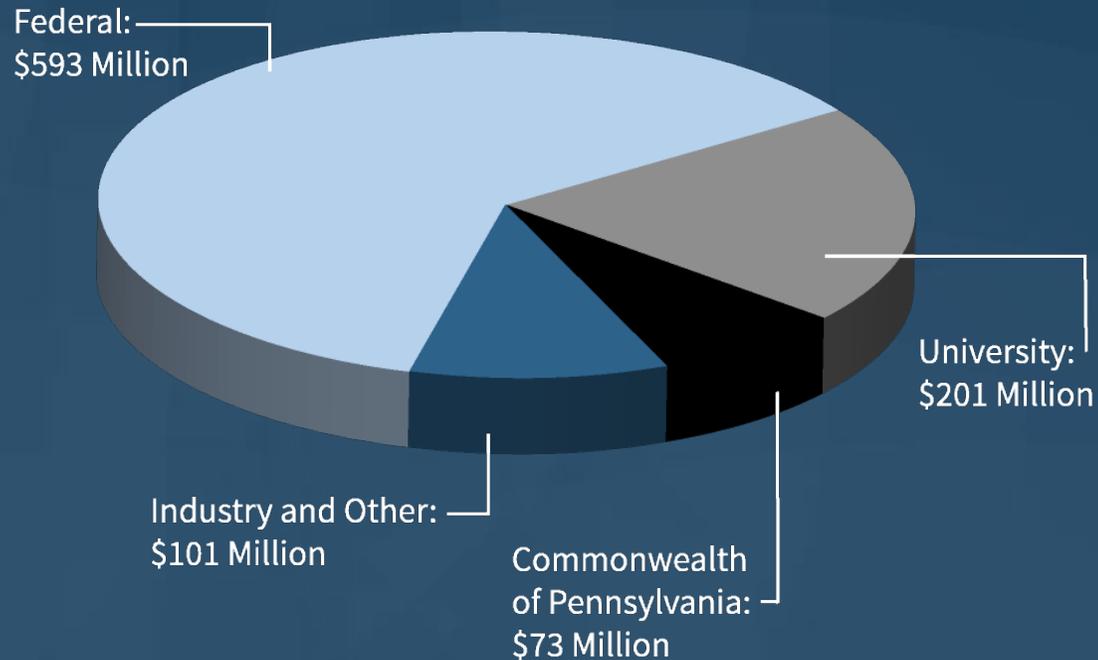
5 members
National Academy of Engineering

3 members
National Academy of Medicine

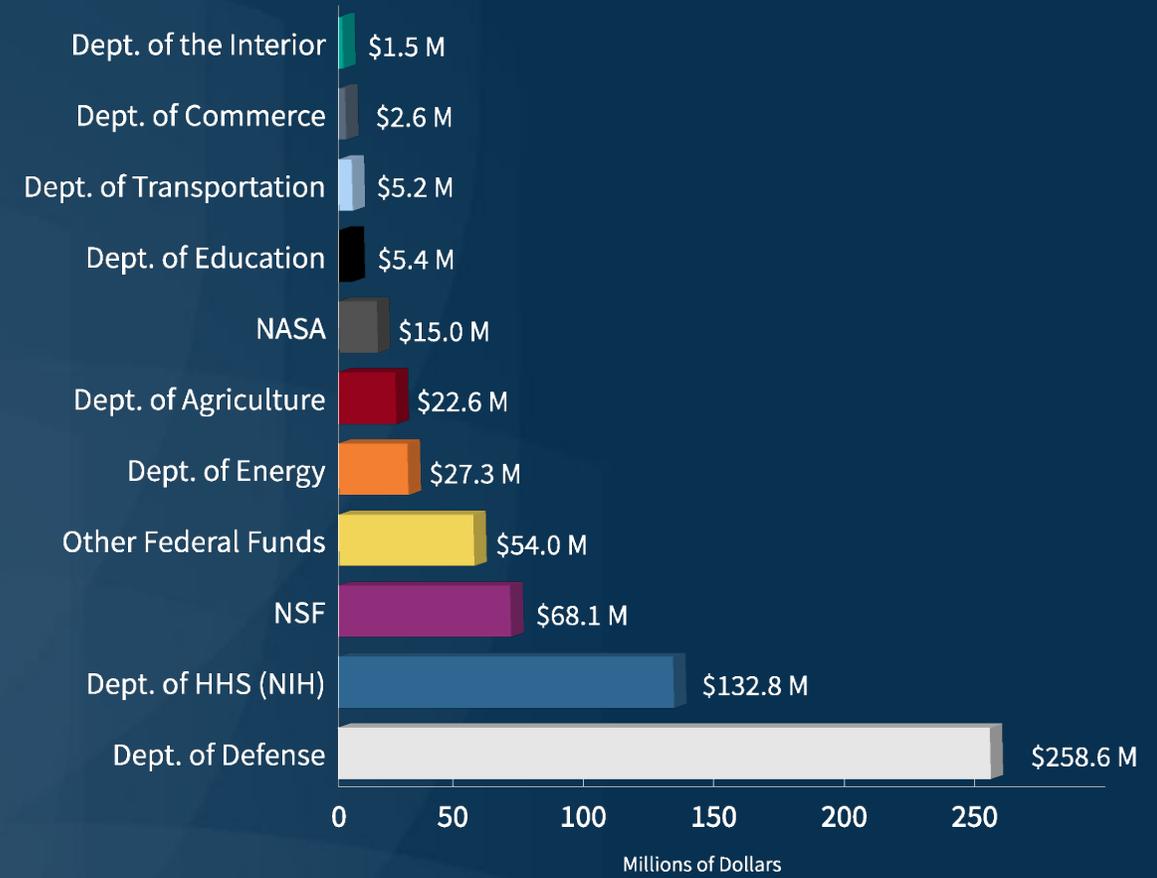
14 researchers named
“Highly Cited Researchers” by Clarivate Analytics

Research Expenditures FY 2019

Total Expenditures: \$968 million



Federal Expenditures: \$593 million



NSF Higher Education R&D (HERD) Rankings for FY 2018

- Penn State has 18 research fields ranked in the top 10
- This is more than any other university
- Testament to our
 - Excellence
 - Breadth
 - Depth

		Research expenditures rankings	
#1	Materials Science		
#2	Materials Engineering Mechanical Engineering		
#3	Psychology		
#4	Sociology Electrical Engineering	#21	All universities
		#12	All public universities
#5-10	Industrial Engineering Manufacturing Engineering Mathematics Computer & Information Sciences Geological & Earth Sciences Agricultural Sciences Chemical Engineering Physical Sciences Aerospace, Aeronautical & Astronautical Engineering	Federal agencies rankings	
		#3	DOD
		#11	USDA
		#17	NSF
		#20	NASA

Source: NSF Higher Ed R&D Survey FY2018, released Nov 2019



NSF Higher Education R&D (HERD) Rankings for FY 2018

Top 25 universities by key fields

	FY2018 Ranking	FY2017 Ranking	FY2016 Ranking	Industry	Total Engineering	Aero/Astro-Engineering	Bio-Engineering	Chemical Engineering	Civil Engineering	Eng - Electrical	Eng- Industrial/Manufact.	Eng - Materials	Eng - Mechanical	Total Physical Sciences	Chemistry	Material Science	Physics	Astronomy	Total Environmental Sci	Atmospheric/Meteorology	Geological and Earth Sci.	Ocean Sciences	Mathematical	Computer Science	Total Life Sciences	Agricultural	Biological	Health Sciences	Natural resources	Psychology	Total Social Sciences	Anthropology	Economics	Political Science	Sociology	Number In Top Ten Fields/Subfields	
Johns Hopkins	1	1	1	8	1	2	3	14	20	1	1	5	1	1	17	13	2	3	24	31	28	35	1	1	3	N/A	10	5	N/A	96	90	145	200	187	26	16	
Michigan	2	2	2	9	6	13	9	16	10	5	16	20	7	24	9	N/A	21	30	53	N/A	17	N/A	6	51	7	81	14	11	9	9	1	2	2	4	2	15	
UC San Francisco	3	3	4	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23	1	N/A	244	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	301	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4
U. Pennsylvania	4	4	3	3	52	N/A	15	25	N/A	38	N/A	N/A	22	26	29	8	23	48	193	N/A	132	N/A	31	20	2	102	1	38	N/A	11	10	35	23	22	3	6	
U. Washington	5	5	5	22	17	24	10	40	14	18	27	46	20	28	26	27	32	20	4	2	24	5	36	21	5	185	9	8	4	37	30	127	207	10	24	9	
UCLA	6	12	12	15	34	N/A	55	30	66	19	N/A	34	17	25	28	N/A	13	N/A	23	17	9	N/A	10	41	6	N/A	95	2	N/A	16	5	N/A	117	32	5	6	
UC San Diego	7	7	7	11	16	N/A	4	N/A	N/A	6	N/A	N/A	28	21	22	N/A	8	N/A	1	8	4	2	48	11	12	N/A	71	3	N/A	7	34	N/A	35	7	57	10	
Wisconsin	8	6	6	51	25	N/A	35	20	35	36	21	24	47	17	14	N/A	20	29	16	6	19	N/A	34	24	14	15	17	16	90	38	11	31	32	18	20	1	
Harvard	9	9	8	32	29	N/A	2	135	67	52	N/A	17	105	13	8	N/A	11	11	20	42	25	140	2	36	18	N/A	2	55	44	54	2	15	4	1	54	7	
Duke	10	8	10	1	32	N/A	7	N/A	30	24	N/A	53	41	72	68	N/A	60	N/A	63	N/A	86	32	17	88	4	N/A	15	4	31	44	18	28	44	6	12	4	
Stanford	11	10	9	6	18	17	6	10	26	28	N/A	42	12	11	19	7	12	23	45	76	31	53	40	18	13	N/A	19	12	48	13	27	7	18	80	142	5	
UNC	12	11	11	36	103	N/A	62	N/A	22	N/A	20	N/A	N/A	39	20	N/A	67	70	43	N/A	48	33	62	31	11	N/A	27	6	179	1	3	74	96	29	1	4	
Cornell	13	13	13	18	33	46	34	26	55	33	23	15	19	7	12	12	7	16	87	51	58	123	59	12	15	7	8	32	13	36	20	87	48	66	7	5	
Pittsburgh	14	16	17	59	76	N/A	33	42	114	66	33	N/A	64	43	32	N/A	65	35	58	N/A	111	N/A	56	71	9	N/A	12	10	N/A	22	116	95	118	50	212	2	
Yale	15	15	18	10	90	N/A	37	51	N/A	50	N/A	N/A	61	22	24	N/A	15	21	80	N/A	41	N/A	69	86	10	N/A	20	7	19	33	64	25	26	118	43	2	
MIT	16	14	14	2	3	6	1	2	18	12	100	4	4	6	6	16	9	6	22	16	12	29	16	6	93	95	58	114	67	133	16	N/A	5	31	254	13	
Minnesota	17	17	15	35	24	22	11	5	21	30	34	30	23	35	30	N/A	26	45	54	N/A	18	N/A	22	26	22	22	42	18	3	2	17	84	12	13	9	4	
Columbia	18	20	20	16	45	42	19	60	118	98	58	N/A	74	42	57	20	57	24	8	13	6	6	33	23	17	129	22	14	47	101	37	204	N/A	84	22	3	
UT MD Anderson	19	21	19	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	84	N/A	N/A	36	N/A	N/A	N/A	N/A	N/A	3	N/A	8	N/A	11	9	N/A	18	84	N/A	N/A	N/A	18	4	4
TX A&M U	20	19	16	38	5	11	17	6	1	22	22	8	11	27	15	23	27	27	6	32	20	3	20	25	45	1	60	73	33	104	23	30	13	20	70	7	
Penn State	21	23	21	44	4	10	40	8	38	4	5	2	2	9	31	1	18	10	15	10	7	46	5	8	52	8	46	68	116	3	21	10	30	54	4	18	
Georgia Tech	22	24	25	23	2	3	5	7	17	2	2	11	5	36	10	N/A	47	68	59	63	27	88	23	2	153	70	115	183	N/A	90	101	N/A	136	N/A	61	8	
USC	23	27	30	19	44	55	22	98	88	17	41	125	66	78	47	28	133	52	48	N/A	22	48	115	4	26	N/A	30	17	N/A	56	13	154	47	62	158	1	
NYU	24	18	23	39	37	N/A	N/A	112	107	55	N/A	N/A	104	61	46	N/A	46	N/A	273	N/A	194	134	14	32	24	N/A	13	24	N/A	4	22	N/A	67	21	16	1	
Ohio State	25	22	22	5	13	72	71	18	60	20	8	7	3	34	35	48	28	31	72	N/A	36	N/A	26	27	30	26	61	23	22	52	54	59	33	107	36	4	
Penn State 2017				38	4	10	27	13	16	4	4	2	3	11	32	1	25	8	21	11	10	52	7	9	57	12	52	66	67	3	10	5	25	28	2	15	
Penn State 2016				40	7	10	40	10	16	5	2	1	2	15	29	2	24	17	21	10	7	57	2	8	49	11	47	67	41	5	9	121	36	15	2	15	
Penn State 2015				33	5	11	54	13	14	4	*	2	3	22	31	*	21	11	13	9	7	37	9	8	55	13	68	62	*	5	11	*	42	26	2	10	
Penn State 2014				31	5	10	66	21	12	4		2	3	21	33		18	15	13	8	8	32	11	8	52	11	66	60		4	11		41	25	2	10	
Penn State 2013				27	5	8	76	19	9	4		1	3	21	26		17	15	14	9	9	35	11	8	47	8	64	58		2	14		45	28	3	12	
Penn State 2012				22	4	8	76	16	11	4		1	4	18	17		13	15	13	8	8	34	10	10	48	10	65	60		3	17		32	33	3	12	
Penn State 2011				8	4	10	73	11	14	4		1	4	17	18		14	14	13	8	8	35	9	9	45	8	62	62		1	17		37	29	2	12	

Source: NSF Higher Ed R&D Survey FY2018, released Nov 2019

Matching Funds Policy

- Equipment (if required by sponsor):
 - Match of 15% from central on minimum annual equipment cost of \$100,000
 - College/department must match at a minimum of 7.5%
policy.psu.edu/policies/rag51
- Graduate Assistantships/Traineeships (GA):
 - Match equal to 50% of F&A generated on GA costs or 10% of total GA costs
 - Minimum annual match of \$10,000
policy.psu.edu/policies/rag52

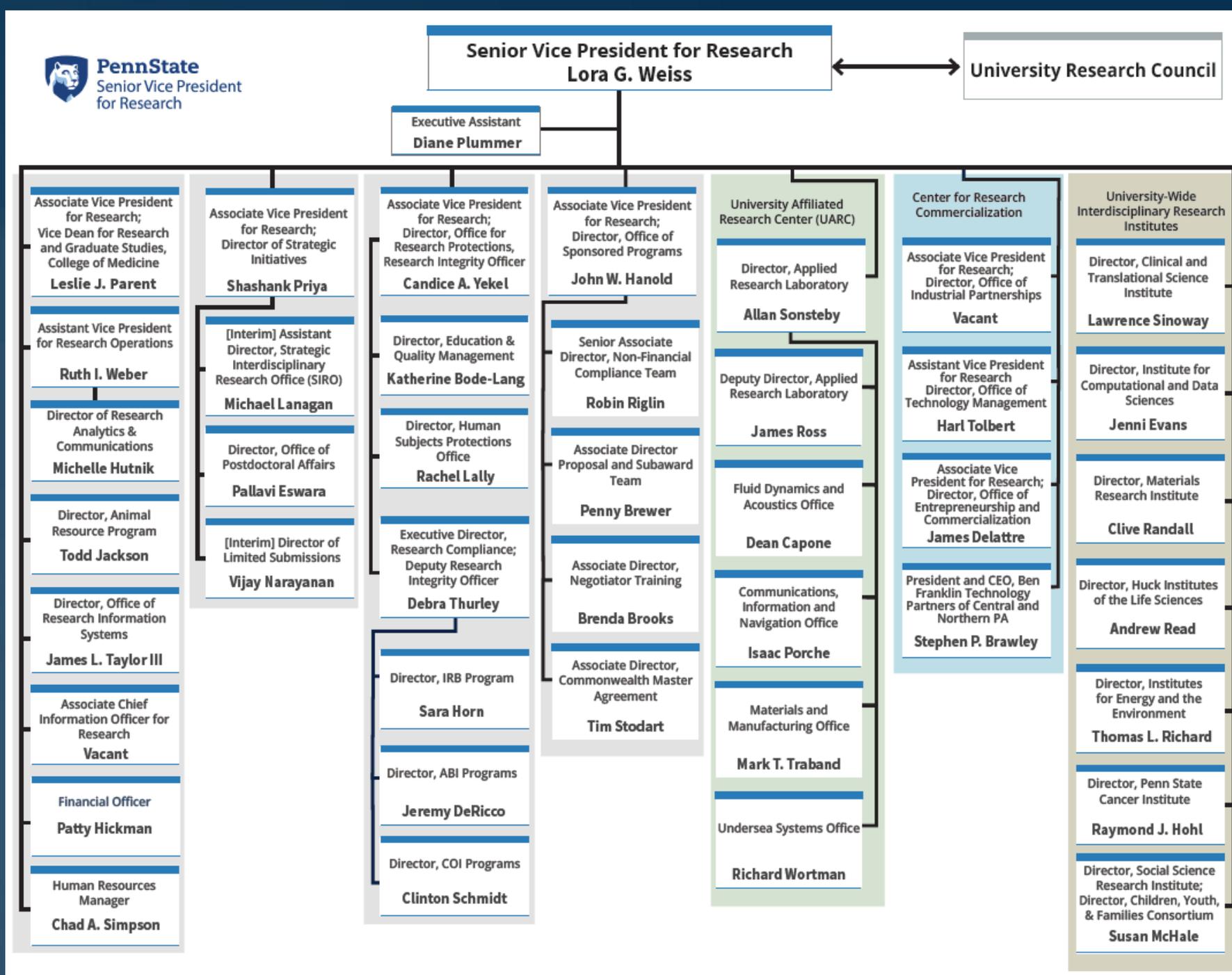


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OSVPR Organization

- Sponsored Programs
- Research Protections
- Animal Resource Program
- ORIS
- Strategic Initiatives
 - SIRO
 - Limited Submissions
 - Postdoctoral Affairs
- UARC
- Research Commercialization
 - Industrial Partnerships
 - Technology Management
 - Invent Penn State
 - Ben Franklin
- Research Institutes (7)
- URC/UHSC



Interdisciplinary Research Institutes



PennState
Cancer Institute



PennState
Materials Research
Institute



PennState
Social Science
Research Institute



PennState
Institute for Computational
and Data Sciences



PennState
Huck Institutes of
the Life Sciences



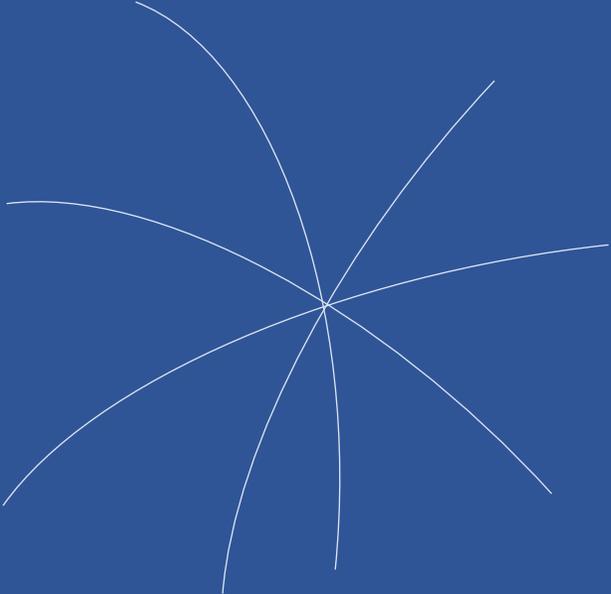
PennState
Institutes of Energy
and the Environment



PennState
Clinical and Translational
Science Institute

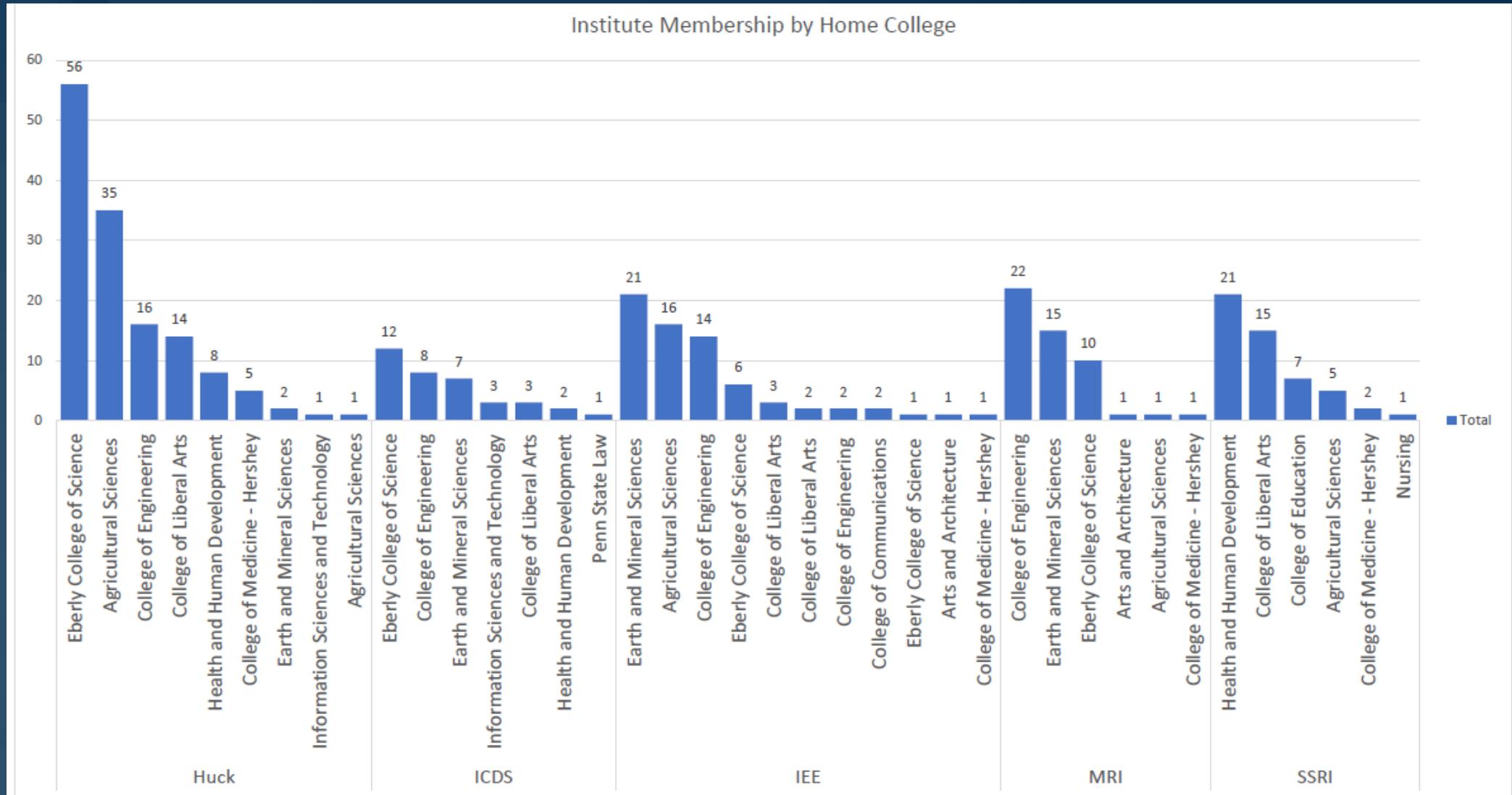


PennState
Applied Research
Laboratory



Co-Hires (Currently Active)

- 284 individual faculty members
- 11 faculty members co-funded by 2 institutes



Interdisciplinary Collaboration & Co-Hires



The Journal of Higher Education

ISSN: 0022-1546 (Print) 1538-4640 (Online) Journal homepage: <https://www.tandfonline.com/loi/uhej20>

Interdisciplinary Cluster Hiring Initiatives in U.S. Research Universities: More Straw than Bricks?

Quinn Bloom, Michaela Curran & Steve Brint

“There are exceptions to this rule. One university in our sample stood out...”

Dec 3, 2019

Differentiators

- Genuine partnership between deans & directors
 - Shared vision, shared expectations
- Institute directors are top scholars
 - Exceptionally attractive to junior hires
- Professional staffing of shared resources
 - Dedicated staff maintain and operate core facilities
- Seed grants
 - High risk-high payoff collaborations, bold forays into new research directions, and creation of new partnerships.
 - Gathering performance metrics
 - ~41% receive external funding

Mission of the Interdisciplinary Research Institutes

- ✓ Community of Colleagues
- ✓ Seminars & Workshops
- ✓ Team Building for
Research Initiatives
- ✓ Co-Funded Appointments
- ✓ Core Facilities
- ✓ Seed Funds for
Scholarship/Research



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Research Instrumentation

The 7 interdisciplinary research institutes operate core shared facilities available to internal and external users.

- Includes more than 300 instruments and services.

capabilities.psu.edu



Micro CT Scanner at the Center for Quantitative Imaging.



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Social Science Research Institute (SSRI)

SSRI 2015-2020 Strategic Aims

Smart and Connected Health

The Human System

Social Disparities

Data ↔ Knowledge ↔ Impact

- Innovative Methods
- Dissemination and Implementation Science

Example program:
Child Maltreatment Solutions Network.



In 2017, the Network was awarded the first-ever Capstone Center Grant from NIH for child maltreatment prevention research



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Institutes of Energy and the Environment (IEE)

More than 500
collaborating faculty

The mission of IEE is to foster and facilitate interdisciplinary scholarship and collaboration to positively impact important energy and environmental challenges.



Example
program:
Project
Drawdown

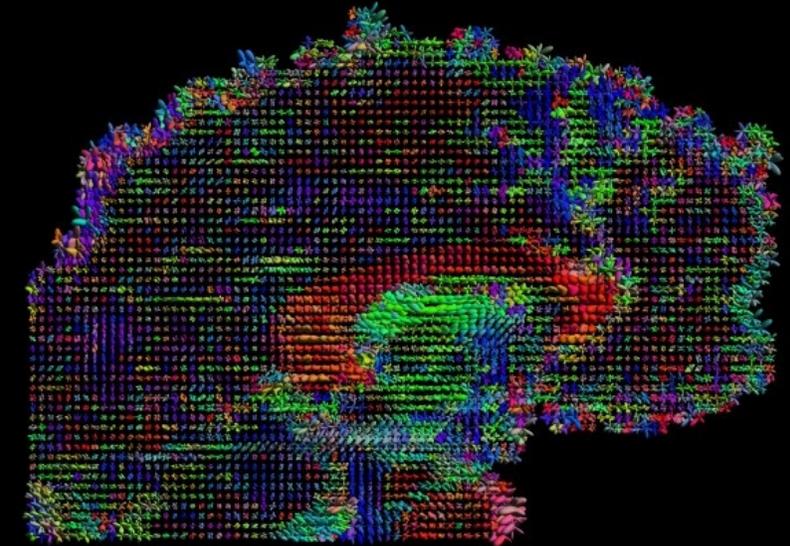


Institute for Computational and Data Sciences



ICDS supports researchers in applying big data and big simulation methods across the research landscape.

- ICDS maintains the ICDS Advanced Cyber Infrastructure (ICDS-ACI), Penn State's primary HPC system for researchers.
- ICDS offers
 - 36,500 computing cores
 - 25 PB of storage
 - A dynamic software stack of broadly used research applications
 - ~890 gigaflops of total peak theoretical performance



ICDS-powered study using data from the Human Connectome Project to better understand the correlations between brain features



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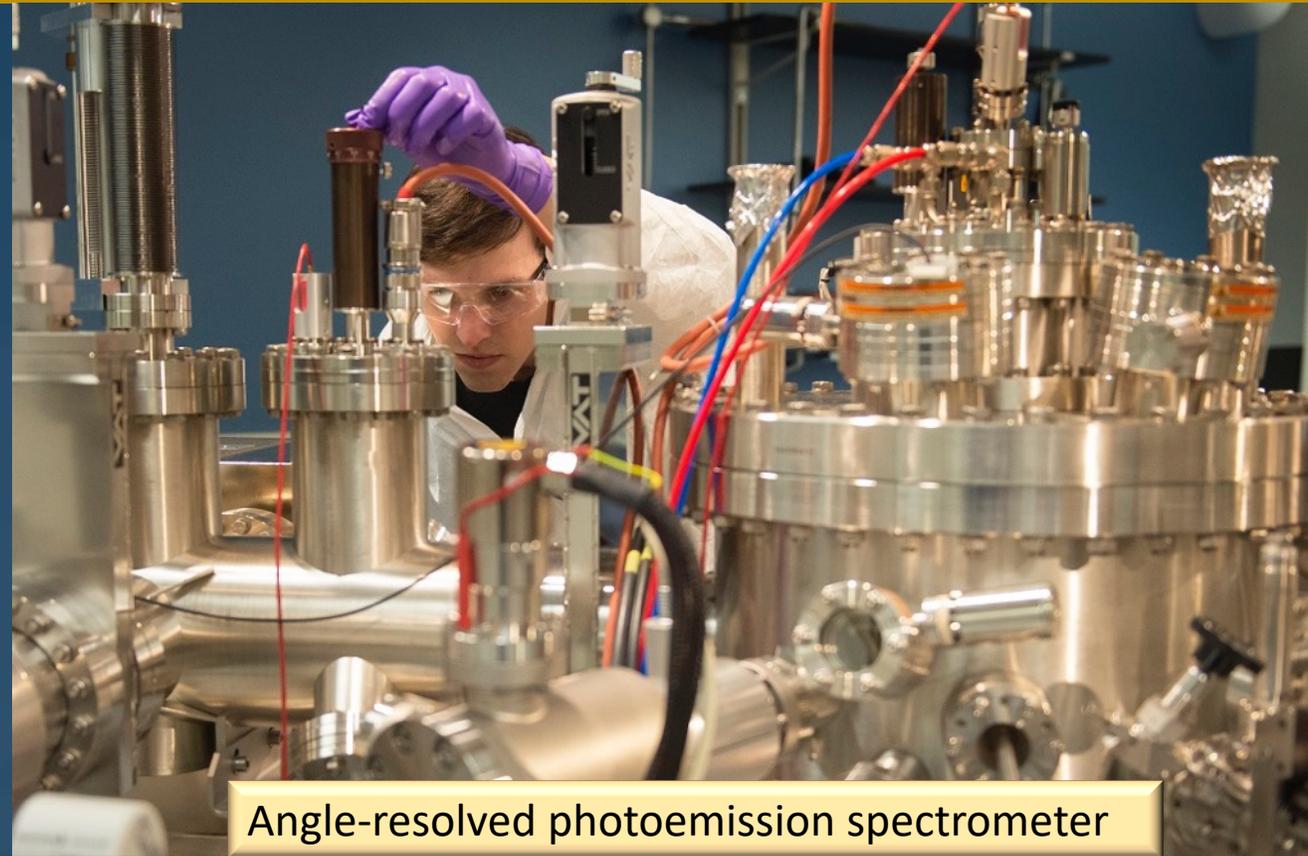
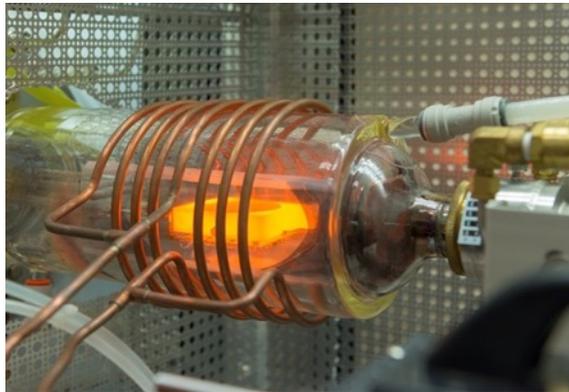
Materials Research Institute

State of the art shared core facilities supporting multidisciplinary research, education, and industry.



2D Crystal Consortium
NSF Materials Innovation Platform

Example Project: The 2D Crystal Consortium (2DCC) is an NSF Materials Innovation Platform (MIP) national user facility focused on advancing the synthesis of 2D chalcogenides for next generation electronics.



Angle-resolved photoemission spectrometer

One of only 2 NSF Materials Innovation Platforms in the U.S



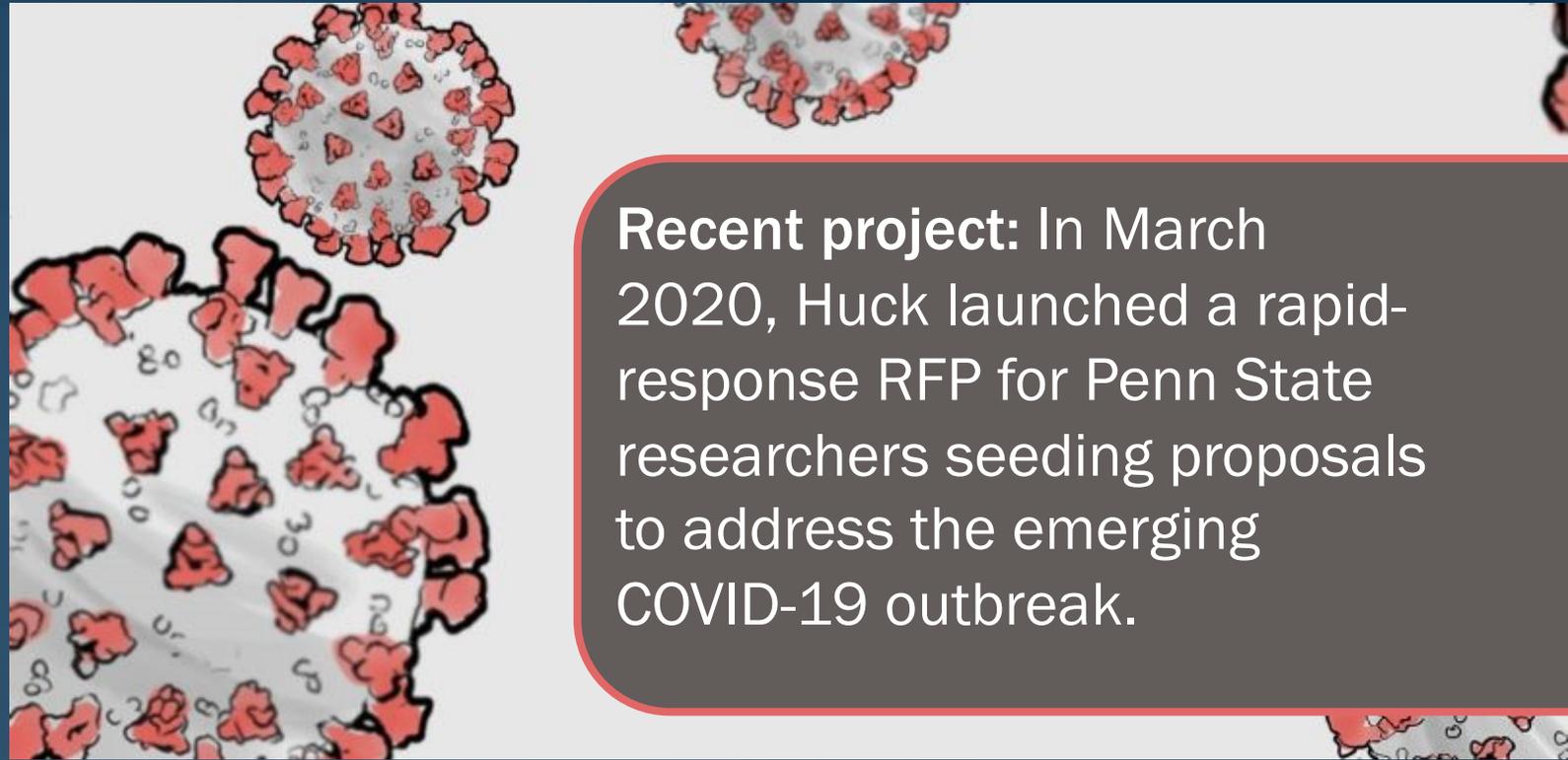
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Huck Institutes of the Life Sciences

Promoting excellence in research
and graduate training in the life sciences.

The Huck Institutes include:

- 30 research institutes and centers of excellence
- 11 shared core instrumentation facilities
- 7 advanced graduate programs



Recent project: In March 2020, Huck launched a rapid-response RFP for Penn State researchers seeding proposals to address the emerging COVID-19 outbreak.

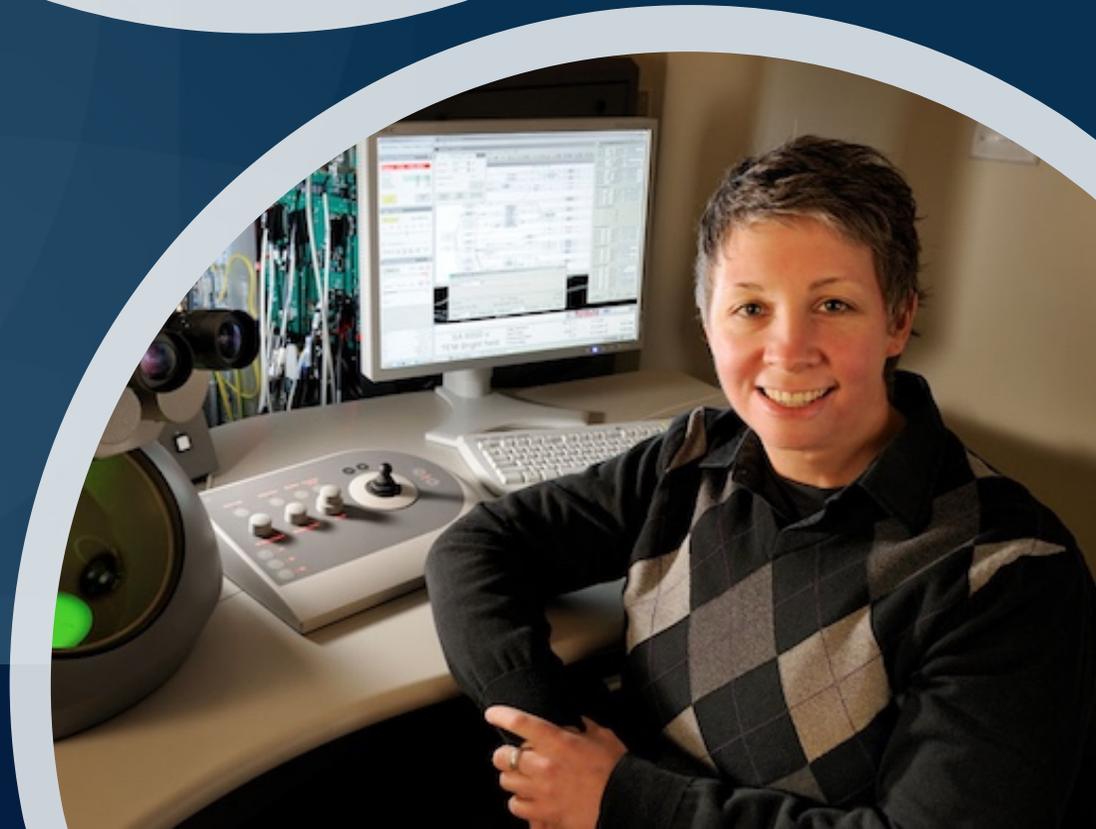


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Penn State Cancer Institute

- A premier academic oncology center that encompasses clinical care, research, education, and outreach.
- Example Research:
 - Deborah Kelly, Cancer Institute, Huck, Engineering
 - Developed new field of structural oncology, studying the protein players of cancer at the atomic scale, utilizing Huck's Cryo-electron microscope



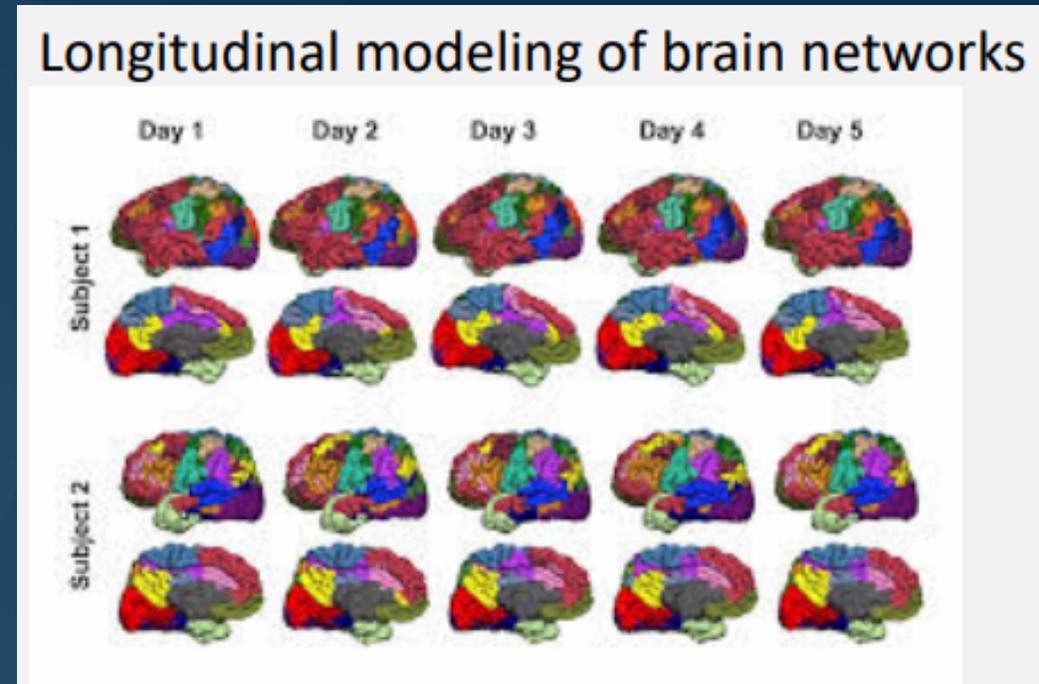
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Clinical and Translational Science Institute

- Accelerating discoveries to benefit human health.
- Featured Resource: Center for Big Data Analytics and Discovery Informatics
 - Headed by Vasant Honavar, CTSI, IST
 - Research interests around AI:
 - Predictive modeling from big data
 - Predicting protein-RNA, protein-protein interfaces and complexes

discovery-informatics.ist.psu.edu



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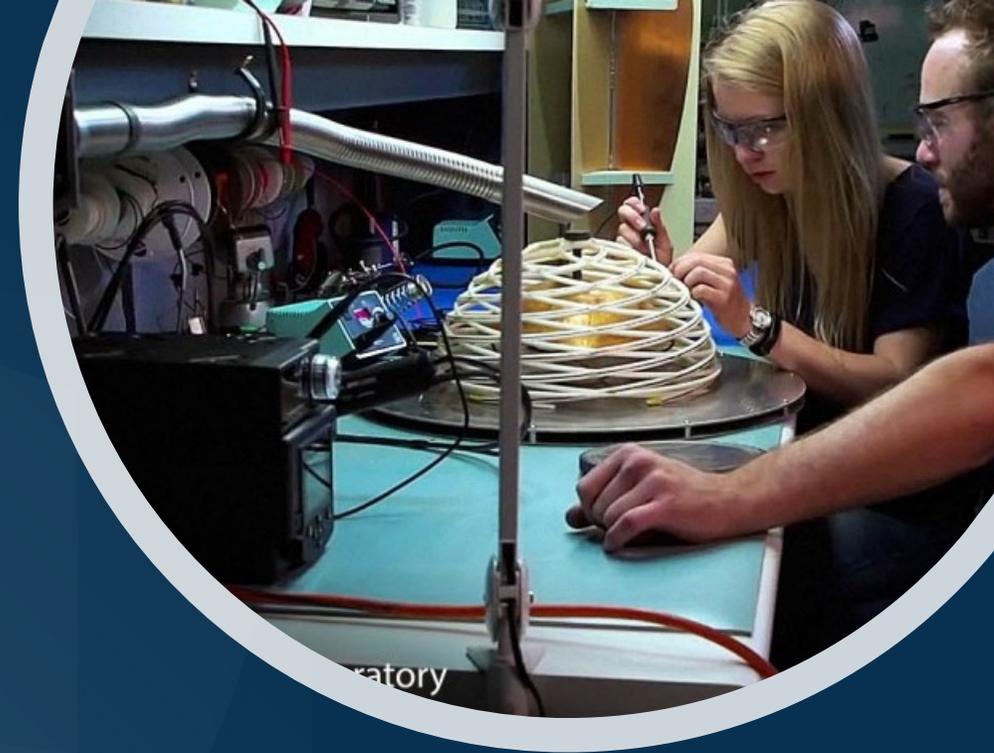
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Applied Research Laboratory

- University Affiliated Research Center (UARC)
 - Was approved by the Navy to execute up to \$2.1 billion in research over 10 years aimed at improving U.S. national security.
 - Has supported nation's security efforts for more than 75 years with basic and applied research.

www.arl.psu.edu

- Electro Optics Center
 - Navy's Technical Agent for Electro Optics
- www.eoc.psu.edu



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Research Compliance



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research.psu.edu

Disclosing International Activities



- While most international collaborations are acceptable and encouraged, we urge researchers to err on the side of transparency.
- It protects everyone's interests – the Federal government, Penn State, individual PIs, and their international collaborators – to have international relationships disclosed and vetted to determine if there are any potential conflict of commitments, duplications of research, and/or diversion of intellectual property in the performance of federally funded research.

Our website details the steps you can take to protect yourself and your research. New guidance and clarifications are being issued on a rolling basis; agency-specific updates are sent to research administrators, those with active grants and are posted here: research.psu.edu/international_affiliations



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Outside Professional Commitments

- Outside business activities cannot exceed 40 hours per month.
- Special care should be exercised in executing private consulting contracts or arrangements.
 - Contracts should be examined to ensure that the assignment of rights to intellectual property evolving from consulting activities does not conflict with the patent agreement signed by all faculty; and
 - Any associated compensation will likely require a financial disclosure by the faculty involved.

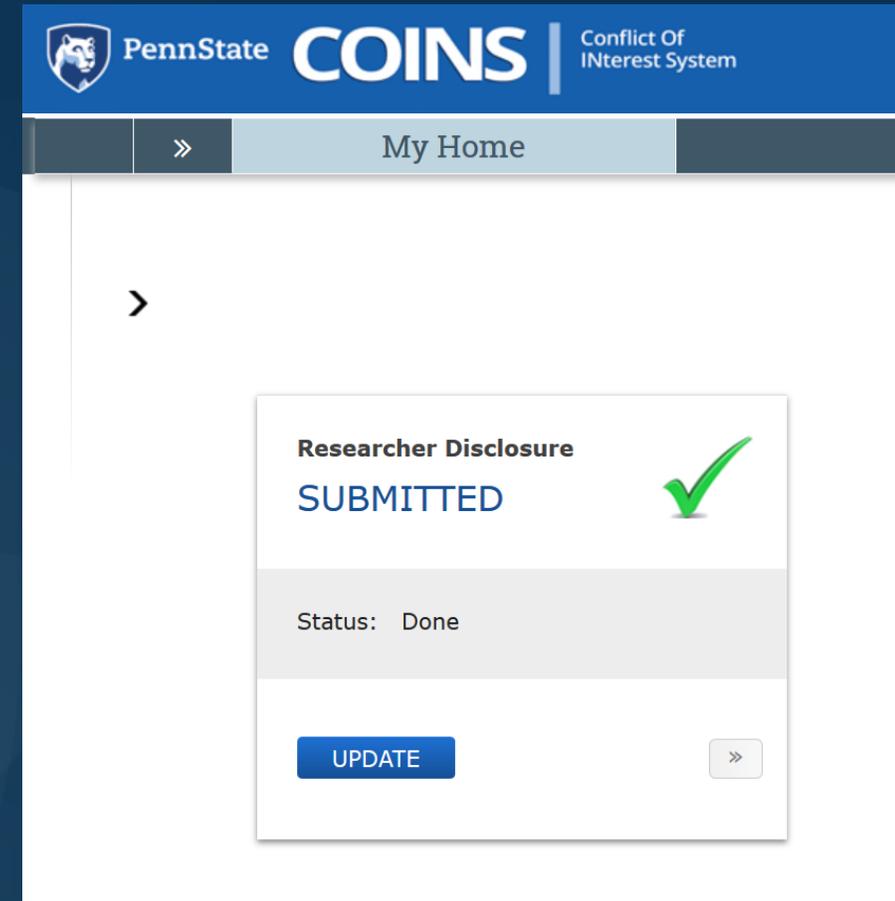
- AC80 - Outside Business Activities and Private Consulting
policy.psu.edu/policies/ac80
- AD77 - Engaging in Outside Professional Activities (Conflict of Commitment)
policy.psu.edu/policies/ad77
- RP06 - Disclosure and Management of Significant Financial Interests
policy.psu.edu/policies/rp06



Significant Financial Interests (“SFI”)

- Investigators are required to disclose personal financial interests that are related to his/her institutional responsibilities. You must disclose when:
 - You are hired*
 - At least annually
 - Within 30 days of discovering or acquiring a new SFI
 - Prior to submission of research proposals related to the SFI
- If the COI Committee determines a potential or perceived conflict between the disclosed SFI and Penn State research, it will work with the investigator to reduce or eliminate the conflict.
- See RP06: guru.psu.edu/policies/RP06.html

**New faculty will receive an email to complete a disclosure this fall*



The screenshot shows the Penn State COINS (Conflict of Interest System) interface. At the top, there is a blue header with the Penn State logo, the text 'PennState COINS', and 'Conflict Of Interest System'. Below the header is a navigation bar with 'My Home' and a right arrow. The main content area features a notification box with the text 'Researcher Disclosure SUBMITTED' and a large green checkmark. Below this, it says 'Status: Done'. At the bottom of the notification box, there is a blue 'UPDATE' button and a right arrow button.

Data Management and Integrity

Researchers are responsible for:

- Ensuring the integrity of their data

RP02 policy.psu.edu/policies/rp02

- Ensuring that the data from published papers are publicly accessible

datacommons.psu.edu

- Properly archiving data

AD22 – Health Insurance Portability and Accountability Act (HIPAA)

AD35 – University Archives and Records Management

AD53 – Privacy Policy

AD95 – Information Assurance and IT Security

AD96 – Acceptable Use of University Information Resources



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Research Administration and Support



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research.psu.edu

Office of Research Protections (ORP)



- Leadership: Candice Yekel,
Associate Vice President for Research and Director, ORP

research.psu.edu/orp

- Human Research Protection Program (IRB)
- Animal, Biosafety, and Isotope Research Protection Program (IACUC, IBC, UIC)
- Dual Use Research of Concern
- Scientific Diving Program
- Unmanned Aircraft Program
- Human Embryonic Stem Cells
- Conflict of Interest Program
- Education & Quality Management
- Research Misconduct Inquiries & Investigations

Remember: You are a role model for your students



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ORP Training for Investigators

- **Required Training:** research.psu.edu/education
- **Scholarship and Research Integrity (SARI@PSU)** = training in the responsible conduct of research
 - Required for faculty: Any CITI online training OR 2 hours of discussion-based activities, plus 1 hour continuing education every 3 years: citi.psu.edu
- ORP's education arm is a central resource for:
 - IRB training (human subjects research)
 - IACUC training (research activities involving vertebrate animals)
 - Biosafety training (research activities involving biohazardous materials and/or bloodborne pathogens)
 - Trainings on UIC, IBC, UAS, GCP, GLP, DURC (based on your research)
 - Compliance system training (IRB, IACUC)



Animal Resource Program



- Leadership: Todd Jackson
- Veterinary Services
- Education & Training
- Purchase & Transportation
- Experimental Guidelines
- Husbandry/ Breeding



[Research.psu.edu/arp](https://research.psu.edu/arp)



Office of Sponsored Programs (OSP)



- Leadership: John Hanold, Associate Vice President for Research and Director, OSP
- Processes proposals and negotiates grants and NDAs
- Coordinates with research administrators across Penn State to ensure that all sponsored funds are administered in accordance with the agreed upon terms and conditions.

research.psu.edu/osp



Office of Research Information Systems (ORIS)



- Leadership: Jim Taylor, Director, OSP
- ORIS administers research administration software systems
- My Research Portal – centralized management of financial information, agreement requests (NDAs), proposal administration steps, conflict of Interest disclosures and more.
 - Provides investigators an integrated view of sponsored portfolio data
 - Simple tools to support the PI
 - Current and Pending report
 - Export financial data to Excel
 - [MyResearch.psu.edu](https://myresearch.psu.edu)
 - [New SIMBA portal](#)

The screenshot displays the MyResearch Portal interface. At the top, there is a navigation bar with the PennState logo, 'myResearch Portal', and links for Feedback, Help, and Logout. Below this is a secondary navigation bar with options like Portfolio, Abstract Search, Current & Pending, Other Reports, Delegate Access, Links, and Views. The main content area features a grid of eight blue tiles, each representing a different category with a count and an icon: Financial Accounts (0), Approvals (0), Negotiations (0), Protocols (0), Requests (0), Proposals (0), Awards (0), and Disclosures (1). The ORIS logo is visible in the bottom right corner of the dashboard.

Strategic Initiative Submissions



- Leadership: Shashank Priya, Associate Vice President for Research and Director of Strategic Initiatives
- Strategic Interdisciplinary Research Office (SIRO) – Grant development and administration support for large, interdisciplinary projects
 - Service request form available at research.psu.edu/siro
- Limited Submissions: research.psu.edu/limitedsubs
- Penn State at the Navy Yard: NavyYard.psu.edu



Office of Postdoctoral Affairs (OPA)

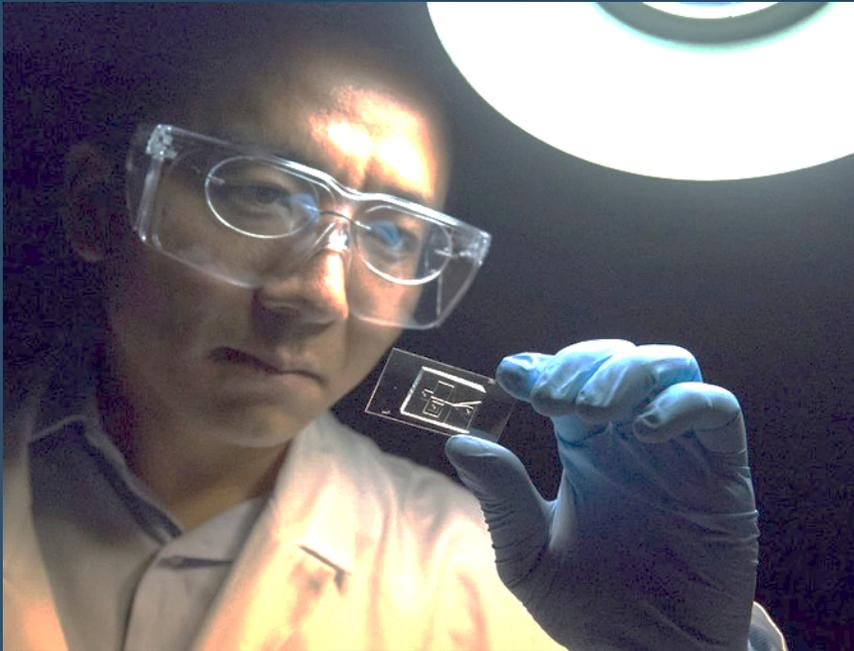


- Leadership: Pallavi Eswara, Director, OPA
- OPA manages all aspects of the unique and valuable relationship Penn State has with its postdoctoral scholars. This includes:
 - Travel
 - Benefits
 - Moving/residency
 - Collaboration and networking events

[Research.psu.edu/opa](https://research.psu.edu/opa)



Office of Technology Management (OTM)



- Leadership: Harl Tolbert, Assistant Vice President for Research and Director of OTM
- Works with PIs to protect intellectual property, support researchers in the patent process, and work with corporate partners in licensing Penn State technology
 - Technology disclosure form and invention disclosure portal available at:
research.psu.edu/otm



Office of Industrial Partnerships (OIP)

Works with PIs and external partners to support research collaborations with industry

- **Corporate Engagement Center** supports PIs developing industry-funded research relationships, corporate visits to campus, and more: [CorporateEngagement.psu.edu](https://www.psu.edu/corporateengagement)
- **Innovation Gateway** provides opportunities for industrial research projects: [InnovationGateway.psu.edu](https://www.psu.edu/innovationgateway)
- PennTap
- Innovation Park

Snap-Shot of Companies

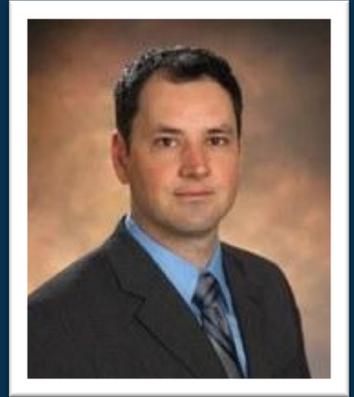
- 23 Incubator Tenants
- 7 Incubator Graduates
- 11 from Local Area
- 7 from PSU relationship
- 1 coupled with research
- 3 in process
- 8 showing interest



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Office of Entrepreneurship and Commercialization (OEC)



- Leadership: James Delattre, Associate Vice President for Research and Director of OEC
- Invent Penn State: invent.psu.edu
 - Innovation Hubs
 - Startup Week
 - NSF I-Corps Program
 - Fund for Innovation
 - Venture & IP Conference and more



Ben Franklin Technology Partners of Central and Northern PA



- Leadership: Steve Brawley,
President and CEO
- Invests in tech-based startups
in 32 counties in PA

cnp.benfranklin.org



More Resources

Find Research

- A searchable database of PSU researchers and papers:
[Pure.psu.edu](https://pure.psu.edu)

Find Computing/Data Resources

- Find networking services, tools, data sources and more.
[ResearchData.psu.edu](https://researchdata.psu.edu)

Find Funding

- Links to internal and external funding resources
[Funding.psu.edu](https://funding.psu.edu)

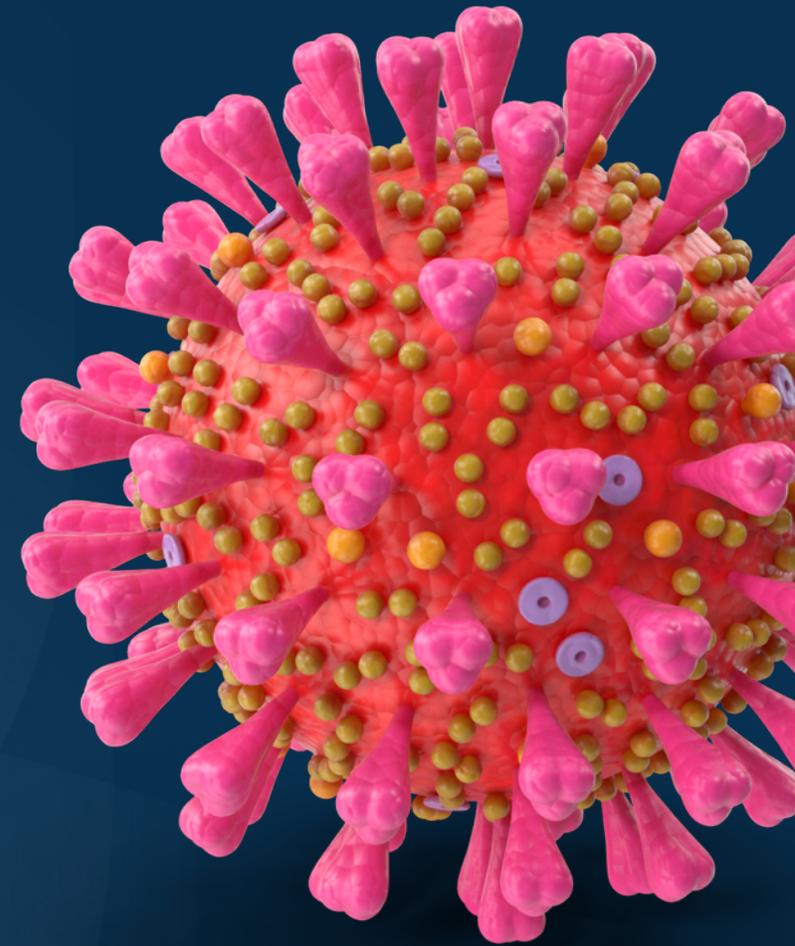
Find Instrumentation

- Penn State's shared core facilities
[Capabilities.psu.edu](https://capabilities.psu.edu)



COVID-19 and Research Activity

- Your dean or institute director is your primary source for guidance on conducting research amid COVID-19:
 - Each unit has research ramp-up and ramp-down plans that take into account unique and current circumstances for each unit, lab or campus location.
- The [Research.psu.edu](https://research.psu.edu) website will have a link on its homepage directing you to information about COVID-19 and research activities.

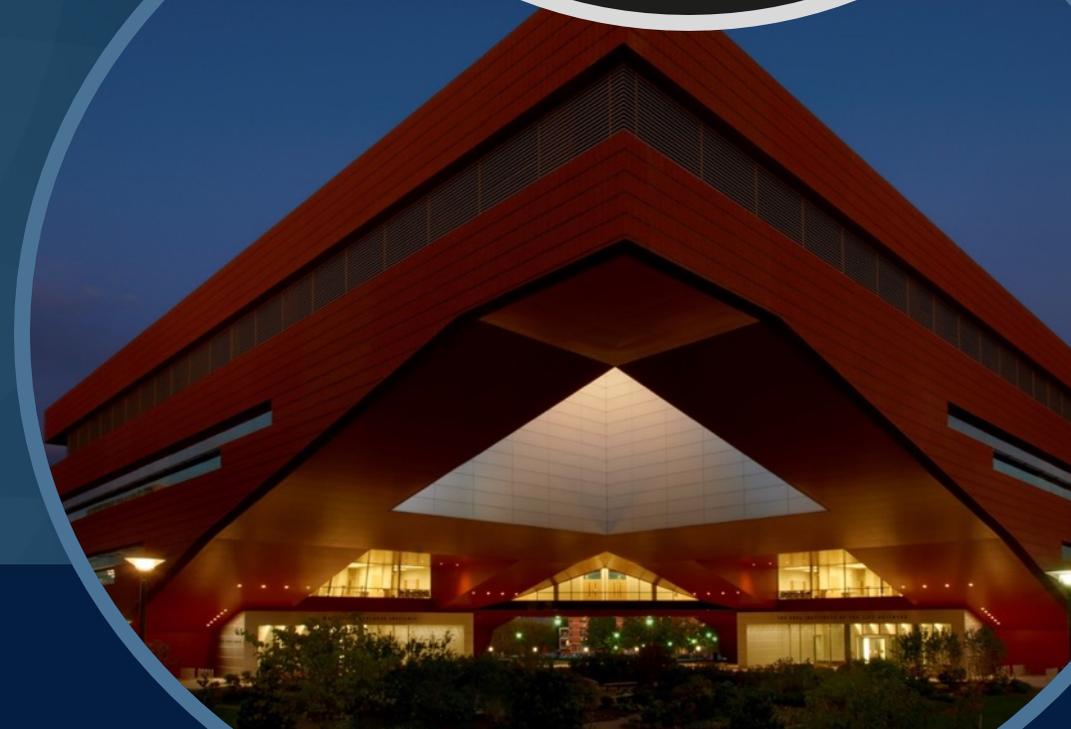


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Rapid Response to COVID-19

- February 18: Penn State became the first U.S. university signatory on the Wellcome Trust statement for providing immediate open access to research findings related to COVID-19.
- March 3: Huck Institutes of the Life Sciences and Huck Family Endowment launch seed funding for COVID-19 research proposals.



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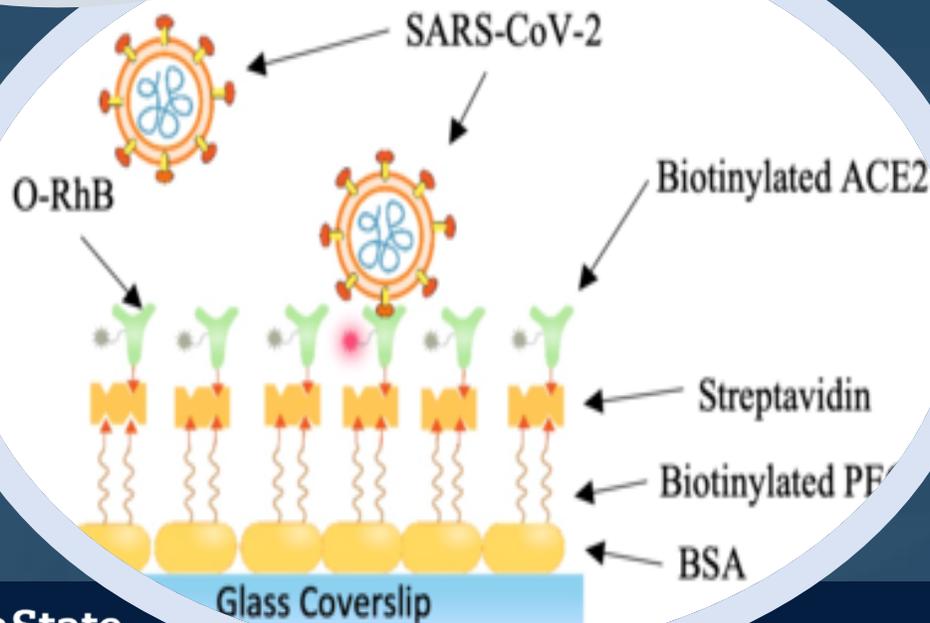
Seed Grants: \$2.25 million Awarded to 47 teams

Example Seed Grant

Paul Cremer, Professor of Chemistry

Developing sensors to detect coronavirus in enclosed spaces.

- Inexpensive, real-time sensors that continuously monitor for SARS-CoV-2 in enclosed spaces, such as a large conference room,
- Identify the presence of an infection before it spreads.



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Grassroots Faculty Engagement: MASC

- Manufacturing And Sterilization for COVID-19 (MASC)
- Donors, community members, and researchers can get involved at:

www.masc.psu.edu



Penn State for PA

Penn State donated 10K
pieces of personal
protective equipment (PPE)



On the Front Lines

- Penn State Health hospitals now using plasma from recovered patients as possible treatment for COVID-19
- Hershey Medical Center joins clinical trial evaluating antiviral drug remdesivir



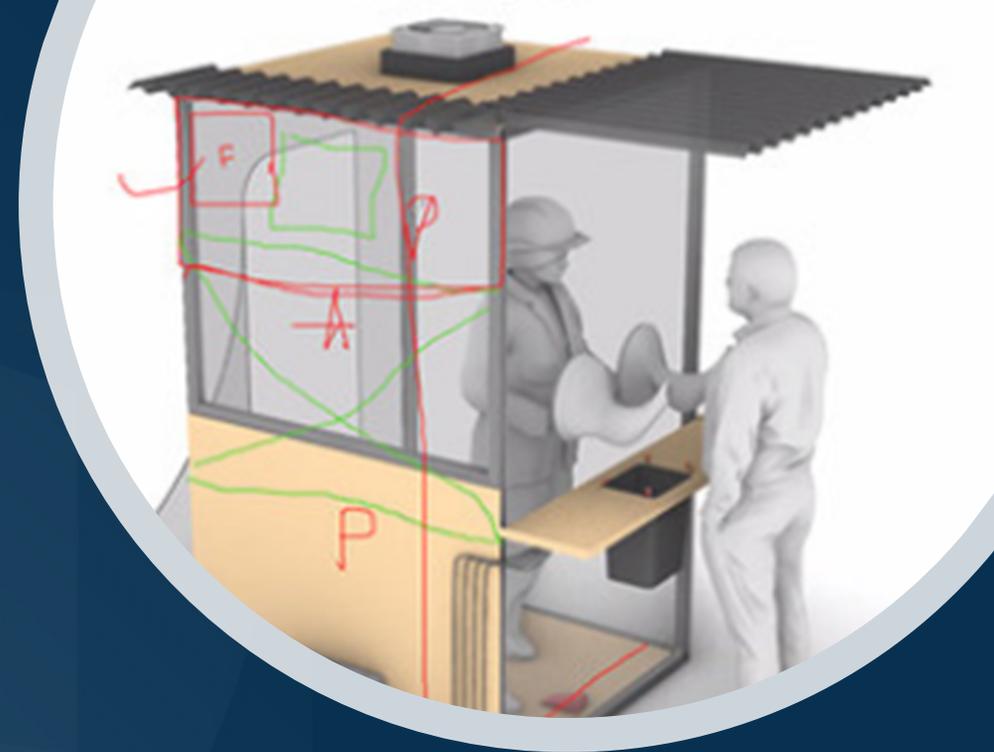
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Interdisciplinarity: Our Strength

- Colleges of Arts & Architecture and Engineering teamed up to design a glove-box nursing booth.
- Huck's Center for Infectious Disease Dynamics (CIDD) launched a video outreach series to answer the public's basic questions about the pandemic.

www.AskCIDD.psu.edu



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Research!**



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