

Board of Trustees Meeting

October 6, 2023



Sponsored Research Awards Highlights

June 2023

Principal Investigator and Department	Sponsor	Grant Title	Total Project Award Amount
Marc Caffee College of Science – Physics and Astronomy	National Science Foundation	Collaborative Research: Research Infrastructure: CFS (Track III) Cosmogenic Nuclides in Earth Science Research: Allied facilities for sample preparation, analysis, and training	\$3,793,185.00
Shelley MacDermid Wadsworth College of Health and Human Sciences – Human Development and Family Sciences	Lilly Endowment Inc.	Sustaining Support for Military and Veteran Families	\$3,500,000.00
Dallas Morissette College of Engineering – Electrical and Computer Engineering	GlobalFoundries U.S. Inc.	Optimization and Commercialization of Advanced Trench SiC MOSFETs	\$2,626,091.00
Shaoshuai Mou College of Engineering – Aeronautics and Astronautics	Saab North America Inc. / Office of Naval Research	Threat & Situational Understanding with Networked-Online Machine Intelligence (TSUNOMI)	\$4,372,073.00
Mathew Trampski Centers & Institutes – Technical Assistance Program/Manufacturing Extension Program	Bank of America	Global Operations Executive Education Program	\$2,250,419.00
Amit Varma IRIS – Infra Research & Innovative Solutions	Bechtel National Inc. / U.S. Department of Air Force	BNI Phase 2 Dynamic Testing (GBSD Phase II)	\$2,544,864.01
George Wodicka Centers & Institutes – Bindley Bioscience	Indiana University / National Institutes of Health-National Center for Advancing Translational Sciences	Indiana Clinical and Translational Sciences Institute	\$6,849,951.00
Gyeong Mee Yoon College of Agriculture – Botany and Plant Pathology	National Science Foundation	A functional link between ethylene biosynthesis and autophagy	\$1,156,024.00

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July 2023

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Stephen Beaudoin College of Engineering – Chemical Engineering	Advanced Technology International / U.S. Department of Defense	Modern Manufacturing of Energetics	\$2,300,000.00
Darcy Bullock College of Engineering – Civil Engineering	Indiana Department of Transportation / U.S. Department of Transportation	TPF-5(519): Expansion: Enhanced Traffic Signal Performance Measures	\$1,020,000.00
Amanda Case College of Education – Educational Studies	National Science Foundation	Fostering Black and Latinx student STEM efficacy, interests, and identity: A participatory study of STEM programming and practices at one community-based organization	\$1,969,709.00
Supriyo Datta College of Engineering – Electrical and Computer Engineering	Office of Naval Research	OptNet: Optimization with p-bit Networks	\$4,500,000.00
Kathleen Howell College of Engineering – Aeronautics and Astronautics	Air Force Office of Scientific Research	Characterizing Highways & Automated Navigation in Cislunar Environment (CHANCE)	\$4,499,998.00
Yk Hei Franki Kung College of Health and Human Sciences – Psychological Sciences	National Science Foundation	CAREER: Mechanistic Dehumanization of Asians: Identifying Causes, Consequences, and Countermeasures for a More Inclusive STEM Workforce	\$936,983.00
Christina Li College of Science – Chemistry	Public Health Service-National Institutes of Health-National Institute of General Medical Sciences	Heterogeneous Directed Hydrogenation of Arenes and Olefins with Chemo- and Stereoselectivity	\$1,865,324.00

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Shelley MacDermid Wadsworth College of Health and Human Sciences – Human Development and Family Sciences	U.S. Army Medical Research Acquisition Activity	Turning Training into Action: Translating Training of Behavioral Health Providers into Evidence-Based Practices	\$1,294,062.00
Jenna Rickus Vice Provost for Teaching and Learning – Vice President for Teaching and Learning Administration	Lilly Endowment Inc.	Purdue University Science of Reading Implementation Grant	\$1,500,000.00
Severin Thomas Schneebeli College of Pharmacy – Industrial and Physical Pharmacy	National Institutes of Health	Robust Sequence-defined Nanocages with Protein-mimetic Cavities	\$1,832,411.00

Sponsored Research Awards Highlights

August 2023

Principal Investigator and Department	Sponsor	Grant Title	Total Project Award Amount
Sunil Bhave Centers & Institutes – Birck Nanotechnology	École polytechnique fédérale de Lausanne / Defense Advanced Research Projects Agency	An integrated optomechanical mid-IR detector based on soft-clamped ultrahigh-Q resonators	\$1,077,938.00
Daniel DeLaurentis Centers & Institutes – Centers & Institutes	Stevens Institute of Technology / Systems Engineering Research Center	WRT 1080- Research in support of the Defense Civilian Training Corps (DCTC) Program Development, Piloting, and Instrumentation	\$4,455,594.00
Songlin Fei College of Agriculture – Forestry and Natural Resources	American Forest Foundation / Natural Resources Conservation Service	Engaging Family Forests to Improve Climate-Smart Commodities (EFFICACI)	\$8,957,033.00
Daniel Flaherty College of Pharmacy – Medicinal Chemistry and Molecular Pharmacology	University of Rochester / Public Health Service-National Institutes of Health-National Institute of Allergy and Infectious Diseases	Inhibitors of adaptive efflux mediated resistance in <i>Acinetobacter baumannii</i>	\$1,748,870.00
Krishna Jayant College of Engineering – Biomedical Engineering	Public Health Service-National Institutes of Health-National Institute of Mental Health	Massively scalable 3D electrophysiology and two-photon imaging in freely-moving animals	\$1,304,216.00
Eugene Jones Centers & Institutes – Technical Assistance Program/Manufacturing Extension Program	Office of Local Defense Community Cooperation	Indiana Defense Industrial Base (DIB) Capability Accelerator Program (IDCAP) 2.0 - Modernization	\$1,000,000.00
Tongcang Li College of Science – Physics and Astronomy	Gordon and Betty Moore Foundation	Nuclear spin detection and control in 2D materials	\$1,250,000.00

Sponsored Research Awards Highlights

August 2023

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Linda Mason College of Agriculture – Entomology	National Science Foundation	NSF Graduate Research Fellowship Program (GRFP) - Program Year 2023-24	\$2,407,000.00
Scott Meyer College of Engineering – Mechanical Engineering	Rolls-Royce Corporation	Increased High Pressure Air Storage for Zucrow Laboratories	\$3,348,000.00
Andrew Otte College of Engineering – Biomedical Engineering	National Institutes of Health-National Institute on Drug Abuse	Long-acting biodegradable buprenorphine depots	\$1,745,583.00
Yichao Rui College of Agriculture – Agronomy	National Institute of Food and Agriculture	Empowering Indiana's Organic Farmers: Assessing Regional and Farm Scale Soil Health with a Farmer Network	\$999,297.00
Carson Slabaugh College of Engineering – Aeronautics and Astronautics	Air Force Research Laboratory	Liquified Natural Gas for Aviation Propulsion	\$3,500,000.00
Kevin Webb College of Engineering – Electrical and Computer Engineering	Air Force Office of Scientific Research	Super-Resolution Imaging and Sensing with Relative Motion in Structured Illumination and Multiply-Scattered Light	\$1,255,785.00
Amanda Dovidio Zelechowski College of Humanities, Education and Social Sciences – Psychology	Substance Abuse and Mental Health Services Administration	Northwest Indiana Identification and Management of Pediatric Experiences of Trauma and Underlying Stress (NWI IMPETUS)	\$2,999,623.00

Sponsored Research Awards Highlights

September 2023

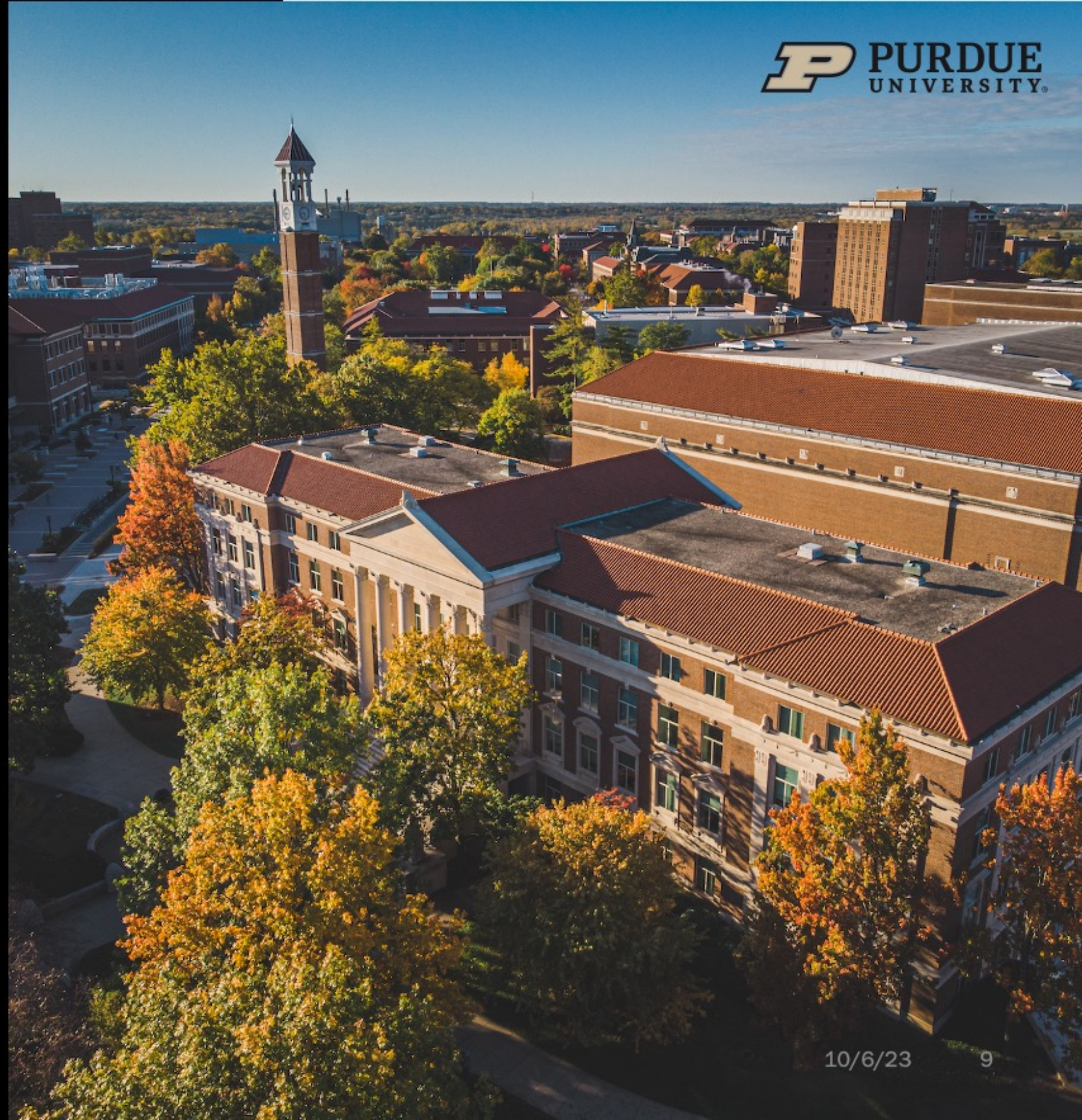
Principal Investigator and Department	Sponsor	Grant Title	Total Project Award Amount
Marshallrhea Evans Baker College of Veterinary Medicine – Diversity Programs	Health Resources and Services Administration	Vet Up! The National HCOP Academy for Veterinary Medicine	\$3,225,879.00
Adam Baxmeyer Administrative Operations – Airport Operations	Federal Aviation Administration	Runway 5/23 Rehabilitation and Taxiway B3 Removal	\$2,747,650.00
Chittaranjan Das College of Science – Chemistry	Public Health Service-National Institutes of Health-National Institute of General Medical Sciences	Mechanism of atypical ubiquitination and deubiquitination by bacterial effectors	\$1,769,331.00
Rong Huang College of Pharmacy – Medicinal Chemistry and Molecular Pharmacology	Army Medical Research Acquisition Activity	Targeting NNMT to inhibit obesity-associated breast cancer development and progression	\$1,054,933.00
Casey Downs Mull College of Agriculture – CES-4H	National Institute of Food and Agriculture	FY2023 Military Teen Adventure Camps	\$1,140,000.00
Natalia Maria Rodriguez College of Health and Human Sciences – Public Health	Public Health Service-National Institutes of Health-National Institute on Minority Health and Health Disparities	Addressing Cervical Cancer Disparities Among People Experiencing Homelessness	\$1,382,625.00
Tianyi Zhang College of Science – Computer Science	National Science Foundation	Proto-OKN Theme 1: Knowledge Graph Construction for Resilient, Trustworthy, and Secure Software Supply Chain	\$1,499,989.00

Resolutions of Appreciation

Anonymous College of Engineering	\$25M
Scott and Julie Moorehead Mitchell E. Daniels, Jr. School of Business	\$2.5M
Anonymous Division of Financial Aid	\$1.068M
Mary Findling College of Liberal Arts	\$1M
Richard and Anne Borch College of Pharmacy	Undisclosed
Thomas Gambrell College of Health and Human Sciences	Undisclosed
Barbara Kile College of Science	Undisclosed
Trimble Inc. Purdue Polytechnic Institute	Undisclosed

Purdue's 5 Next Moves

- 1) Transformative Education 2.0
- 2) Equity Task Force
- 3) Plant Sciences 2.0
- 4) Purdue Applied Research Institute
- 5) National Security and Technology Initiative



Enhancing Degree-Planning Experience

EduNav



Accounting (BS)



Completed courses

Summer 2023 6 CR

- MA 15555 3 CR
Quantitative Reasoning
UCC:Quantitative Reasoning - TR
- PSY 12000 3 CR
Elementary Psychology
Multiple requirements TR

Fall 2023 Show my schedule
Planned: 16 CR Registered: 16 CR Term limit: 16 CR

- MGMT 19700 (24990, Kevin Koharko) 1 CR
Careers In Acct & Finance
Careers in Accounting & Finance Registered
- SCLA 10100 (27798, Brandon Rdzak) 3 CR
Crt Think & Com I
Multiple requirements Registered
- EAPS 10000 (17524, Ashika Capra...) 3 CR
Planet Earth
UCC:Science, Tech & Society (1 Class) Registered
- EAPS 10500 (22696, Andrew Freed) 3 CR
The Planets
UCC:Science Registered
- MA 16010 (16132, Nicholas Giamon...) 3 CR
Applied Calculus I
Calculus Registered
- MGMT 25400 (23105, Milana Gena) 3 CR
Legal Found Business
Legal Foundations of Business I Registered

What is next?

Spring 2024 15/15 CR

- ECON 25100 3 CR
Microeconomics
Microeconomics
- MGMT 20000 3 CR
Intro Accounting
Introductory Accounting
- COM 11400 3 CR
Fundament Of Speech
Multiple requirements
- PHIL 11100 3 CR
Introduction To Ethics
UCC:Humanities (1 Class)
- STAT 30301 3 CR
Prob & Stat For Business
Multiple requirements

Fall 2024 15/15 CR

- ECON 25200 3 CR
Macroeconomics
Macroeconomics
- MGMT 29500 1 CR
Career Readiness & Explor
Career Readiness & Exploration
- MGMT 30500 3 CR
Business Statistics
Multiple requirements
- MGMT 35000 3 CR
Intermediate Acctg I
Multiple requirements
- MGMT 37300 3 CR
Acct Inf Sys & Data Anlyt
Multiple requirements
- ELECTIVES 2 CR
Choose course(s) to satisfy the minimum 120 credits required.

Spring 2025 15/15 CR

- CS 23500 3 CR
Intro Organizational Comp
Introduction to Organizational ...
- MGMT 20100 3 CR
Mgmt Accounting I
Management Accounting
- MGMT 35100 3 CR
Intermediate Acctg II
Multiple requirements
- MGMT 38200 3 CR
Mgmt & Informatn System
Multiple requirements
- OBHR 33000 3 CR
Intro To Org Behavior
Multiple requirements

Fall 2025 15/15 CR

- MGMT 31000 3 CR
Financial Mgmt
Multiple requirements
- MGMT 32400 3 CR
Marketing Mgmt
Multiple requirements
- MGMT 36100 3 CR
Operations Management
Multiple requirements
- ANTH 20400 3 CR
Human Origins
UCC:Science
- MGMT 47200 3 CR
Adv Spreadsheet Mod & Sim
32 Upper Level Credits Require...

Spring 2026 15/15 CR

- MGMT 50500 3 CR
Mgmt Accounting II
Multiple requirements
- MGMT 50600 3 CR
Auditing
Multiple requirements
- ENGL 42000 3 CR
Business Writing
Multiple requirements
- MGMT 41300 3 CR
Corporate Finance
Multiple requirements
- MGMT 41500 3 CR
Intl Financial Mgmt
Multiple requirements

Goals - Declared

“I like that I can see the overall balance of my classes, by semester instead of a big, long list of everything I have left [to graduate]. It is less stressful to me.”

Fall 2023 Pilot // First Week

- 410 students and 47 advisors have logged in 1,200 times
- Students have created a total of 577 academic plans
- Advisors have changed 191 student plans
- Advisors have made 3,600+ total changes to plans



Transforming the Academic Process

Institutional Workflow Enhancements

Fewer Forms

- Reduced 29 distinct course and curricula proposals down to 10 (**65% reduction**)

Faster, More Efficient Reviews

- Reduced all curricular workflows between 7 and 13 steps (**50% reduction**)
- New curricular workflows **eliminated 78 total steps.**
- Consistent, predictable approval timelines for **undergraduate** and **graduate** proposals

Faculty Time Saved

- **1500+ hours saved** in faculty reviewing proposals each academic year
- **1-2 hours saved** in faculty initiating and getting each academic proposal approved

Institutional Process Decisions

Academic Catalog Deadline (April 1)

- Submissions after deadline will be postponed until next academic year.

Hide Rules | Plans of Study

- For transparency and equity to all students, hiding courses will no longer be standard practice.

Variable Title Courses | Plans of Study

- For ease of degree planning and transparency, any specific variable title course number will fulfill the same degree requirements

PURDUE'S NEXT
MOVES

CURRENT
STATE

PURDUE
EQUITY
TASK FORCE



BLACK STUDENT CENSUS	Fall '22	Fall '23	# Change	% Change
Undergraduates	946	1,021	75	8%
% of total undergraduates	2.49% ¹	2.61%	—	—
Graduates	361	364	3	1%
% of total graduates	3%	3%	—	—
Professional ²	43	36	-7	-16%
% of total professional	4.68%	3.98%	—	—
All Student Levels	1,350	1,421	71	5.25%
% of total enrollment	2.65%	2.72%	—	—

BLACK FACULTY & STAFF CENSUS	Fall '21	Fall '22 ³	# Change	% Change
T/TT Faculty	60	66	6	10%
% of total T/TT faculty	3.13%	3.18%	—	—
Staff ⁴	227	268	41	18.1%
% of total staff	2.94%	3.32%	—	—
ALL FACULTY & STAFF	349	390	41	11.7%
% of total faculty & staff	3.04%	3.25%	—	—

Notes:

¹ Lowest % of total undergraduates in 30+ years

² Professional students = DVM and PharmD only

³ Fall 2023 Staff and Faculty Census to be based on 10/31/2023 snapshot

⁴ Staff = Executive, Management, Professional, Extension, Service, Support and Temporary Categories

PURDUE'S NEXT

MOVES

GO FORWARD
PLANS

PURDUE
EQUITY
TASK FORCE



MARKETING

Direct marketing campaign (MarCom)

- ✓ College fairs + high school administrator relationships

- ✓ Campus visits

Precollege pathways

- ✓ K-12 pathway programs
- ✓ Purdue Polytechnic High Schools
- ✓ Strengthen K-12 partnerships

Transfers

- ✓ Purdue regional campuses, Ivy Tech, Vincennes University
- ✓ Leveraging Purdue University in Indianapolis

Partnerships

- ✓ HBCUs
- ✓ Funding partnerships (e.g., NSF, DOD)

RECRUITING

Critical need to increase applications from 2,600 to 5,200 over 2-3 years

Identify target metropolitan areas

- ✓ Cultivate authentic relationships with high schools + communities
- ✓ Cover Indiana high schools with diverse populations
- ✓ Engage alumni + leverage PBAO relationships

Create + increase on-campus activities

- ✓ Expose to college life
- ✓ Create hands-on activities (i.e., robotics, math, science)

Plant Sciences and Digital Forestry



Measure every tree and crop on the planet

Plant Sciences

- Playing a key supporting role in College of Agriculture being **#3 in North America** and **#5 in the world**
- Groundbreaking for university's **new phenotyping greenhouse**, which will:
 - **support research and discoveries** related to plant health, nutrition, drought and disease stress, and root health
 - **enable integration** into existing controlled environment phenotyping facility

Plant Sciences and Digital Forestry



Measure every tree and crop on the planet

INSTITUTE FOR **Digital Forestry**

- Mapped locations of **273,485,688 trees** in **330+ cities** nationwide
- Mapped locations of **3,341,088 trees** in over **137,970 acres** in Indianapolis
- Engaged with **15 departments or schools** in *Agriculture, Engineering, Libraries, Science and Polytechnic*
- **2023 \$10M PERSEUS grant** from USDA, Purdue lead
- **2023 \$9M EFFICACI grant** from USDA, Purdue subcontract

Building PARI's Organizational Structure

Executive Leadership Team in Place

- CEO, COO, Chief of Staff, Chief External Relations Officer, Senior Directors of Finance, Senior Director of Comms, Director of Contracts
- Division and Executive Leadership met to refine PARI business model, operating assumptions and future organizational structure; 7-9 September at Purdue, 21-22 September in D.C.

Research Team

- 50+ PARI/Purdue employees charging >50% on PARI contracts (incl. 23 students)
- 2 new hires in HAMTC, 6 new GDI staff (Oct. 1) since last BOT meeting
- Moving toward a model of dedicated research staff

Facilities

- HARF occupied; sponsored research already underway in HAMTC
- Facility clearance in process for Mann Hall and HARF: NSWC site inspection 13 November
- Establishing physical presence at WestGate; negotiating 10-year lease

Advisory Board of Distinguished Leaders

- Network of champions to raise PARI stature, advise on technical topics and direction, and drive new opportunities
- Chaired by Hon. Lisa Hershman, former chief management officer; includes Gen. Hawk Carlisle, USAF (Ret.); engaging future members

PARI Divisions

National Security and Technology

- The Hypersonics Advanced Manufacturing Technology Center (HAMTC) enables the design, manufacturing, joining and testing of hypersonic components and subsystems in one location and the transition of these technologies to the defense industrial base.
- 9 PARI and 23 seconded employees
- \$19.5M OSD contract

Infrastructure Research and Innovative Solutions (IRIS)

- Drives innovation, efficacy and efficiency in construction of the next generation of facilities infrastructure including hardened structures, nuclear power structures, high-rise building construction and renewable energy
- 6 PARI and 17 seconded employees
- 3 awards totaling \$9.5M

Global Development and Innovation (GDI)

- PARI-GDI partners with faculty, students and staff to collaborate with primary stakeholders in lower- and middle-income countries to co-create solutions to achieve sustainable, measurable and equitable impact.
- 10 PARI and 5 seconded employees
- 5 awards totaling \$4.35M

Technology Acceleration – DIAL Ventures

- Drives digital innovation to benefit the agri-food industry by launching leading startups through a venture studio model
- 8 PARI and 4 seconded employees
- \$12M in investments committed from 4 investors
- \$2.25M gifts to support Fellows program

Building the Pipeline

26 June NSWC Crane Visit

- CRADA signed 27 June
- DD254 initiated facility clearance process
- \$2.65M initial funding

18 July NSWC Dahlgren Visit

- Draft IDIQ review 18 August
- Fall Purdue visit planned

3 August imec Visit

- PARI likely with role on \$10.5M agreement
- Teaming to pursue CHIPS and other ME funding

17 August meeting with SAAB CTO and Executive Steering Group

29-30 August Visit to Sandia National Lab

- Plan to turn partnership into sponsored work
- Mark Lewis to join board on Digitally Enhanced Manufacturing

5 September signing ceremony at NSWC Crane

- Established permanent Purdue presence at WestGate

DARPA

- 25 August meeting on Hypersonics
- 15 September meeting on Energetics

18-19 September Lockheed Martin visit

- Exploring offsets opportunity

19-21 September, Hypersonic Weapons Summit Chair

Exploring research collaboration opportunities with Peraton

Exploring partnership and funding opportunities in Energetics

Supporting the Indiana Research Consortium

Signed Industry Partnership Agreements:

- Stratolaunch
- Boeing
- GE

Breaking Records, Expanding Partnerships in National Security Research

FY23: DOD is largest source of sponsored research awards — FIRST TIME EVER at PURDUE!

Notable new wins:

- Purdue Computes: DOD ME Commons award — **Silicon Crossroads Microelectronics Commons (SCMC) Hub**
 - Applied Research Institute (ARI): \$32.9M for Year 1

Partnerships:

- Office of Naval Research (ONR)-funded project partnership with SAAB NA Inc.
 - Over \$10M of direct-sponsored and federal-sponsored with SAAB over past 3 years
- AFRL Regional Research Hub
 - Greater than \$25M commitment to the industry/academic partnerships

Undergraduate Opportunities:

- Defense Civilian Training Corps
 - Student scholarships to build career path with Department of Defense — \$4.2M



SAAB



Thank You

