

UNIVERSITY OF KENTUCKY BOARD OF TRUSTEES

Ilhem Messaoudi, Acting Vice President for Research



UK RESEARCH HIGHLIGHTS

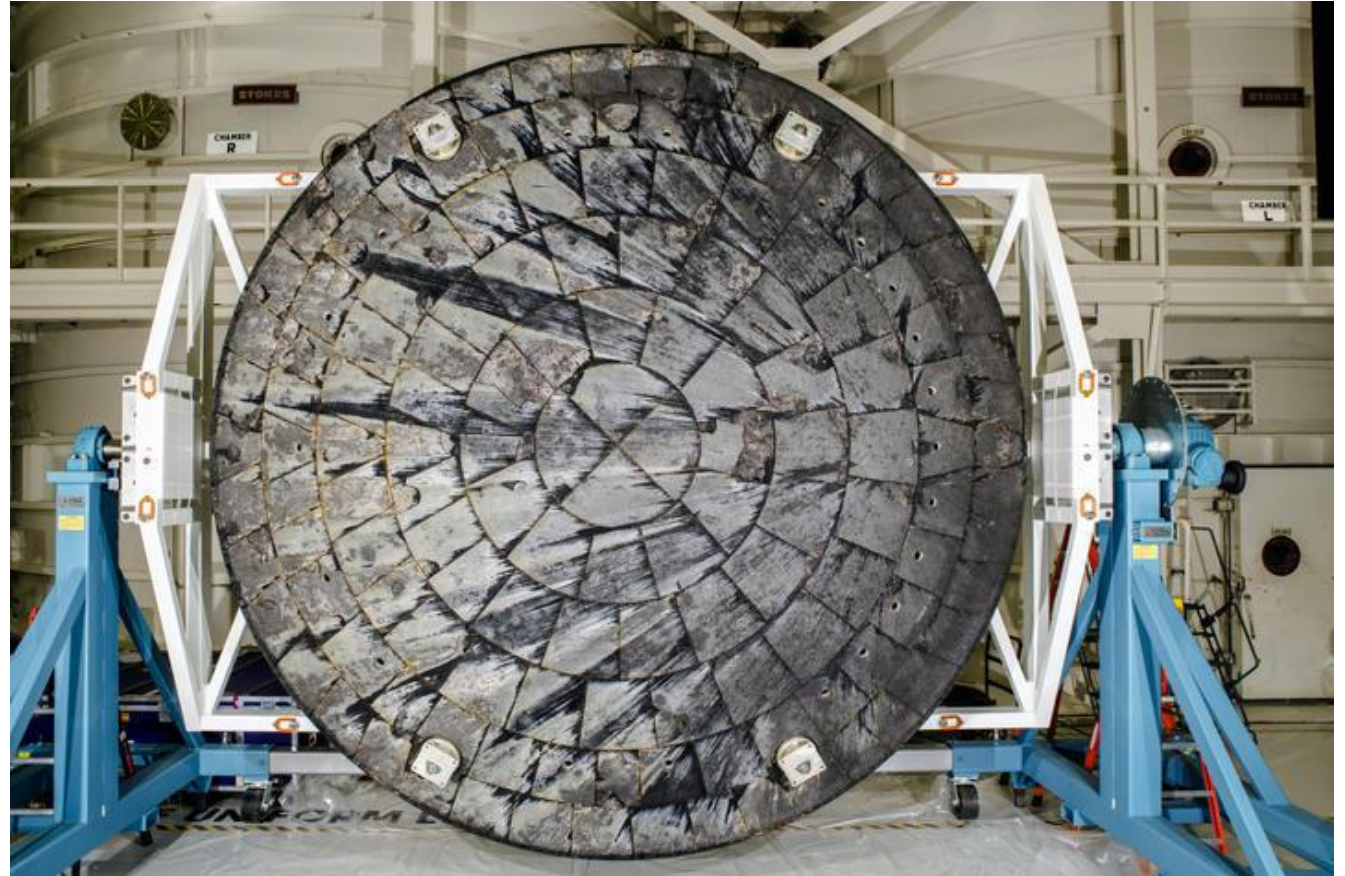
From the frontiers of space to the soil beneath our feet, UK researchers turn bold ideas into real-world breakthroughs, improving lives, strengthening communities and positioning Kentucky as a national leader in discovery and innovation.

Every investment in our research enterprise fuels the next generation of solutions.

UK Helps Power Safe Return of NASA's Artemis II

After the Artemis I test flight revealed heat-shield failures during re-entry, NASA launched a nationwide investigation. The culprit: gas buildup causing material to break away under extreme conditions.

Results: Stanley and Karen Pigman College of Engineering faculty designed a device to measure how gases move through microscopic pores in shield material and developed advanced 3D imaging methods, giving NASA the data to ensure crew safety for Artemis II.



Innovation Turns Distillery Waste to Energy Storage

Every bottle of bourbon generates up to 10 barrels of waste stillage. UK researchers are converting that byproduct into high-performance supercapacitor components for energy storage.

Results: 25x more energy stored per kilogram than conventional devices — with potential to help stabilize the electrical grid.



SMRI to Enhance Military Personnel Performance

A \$3.9 million U.S. Department of Defense grant is advancing research on physical and neurosensory performance of Navy and Marine Corps aviators at the Sports Medicine Research Institute (SMRI).

Focus: With a focus on enhancing performance monitoring and injury prevention, UK is developing a field-ready system to assess musculoskeletal and neurosensory function in service members. The work is a collaboration with the Naval Medical Center San Diego, Naval Medical Center Portsmouth, University of Montana and Judge Advocate General (JAG) Human Performance Consulting.



UK, Worldwide Team Win Breakthrough Prize in Physics

UK physicists are among an international team recognized with the 2026 Breakthrough Prize in Fundamental Physics. The award recognizes the global collaboration behind the muon g-2 experiment, a decades-long effort that focuses on the behavior of a subatomic particle known as the muon — a heavier cousin of the electron.

Results: The experiment enabled scientists to probe whether there may be new, undiscovered physics beyond what is currently understood.



Dementia Drug Could Treat Alcohol Withdrawal

Sanders-Brown Center on Aging researchers are exploring whether a drug to combat neuroinflammation in dementia could do the same for someone going through alcohol withdrawal. Brain inflammation from alcohol withdrawal can contribute to chronic relapse and long-term neurological damage.

Significance: Because this drug is already in development for other neurological diseases, it raises the chance that it could someday be repurposed for alcohol-related conditions.



Other High-impact Grants

- Centers of Biomedical Research Excellence (COBRE) for Translational Chemical Biology, Phase II (renewal), \$11.3 million, Jon Thorson (College of Pharmacy)
- Kentucky Women's Justice Community Overdose Innovation Network, Phase II (renewal), \$7.2 million, Michelle Staton/Carrie Oser (College of Medicine)
- UnLost: Uncovering Lost Knowledge from the Ancient Library of Herculaneum: Overcoming Damage and Reviving the Human Experience Using Physical Evidence, AI, and the Structuring of Diverse Data, \$4.7 million, Brent Seales (Pigman College of Engineering)
- DOE EPSCoR Implementation: Light-Matter Interactions in Magnetic Metamaterials (renewal), \$4.3 million, Todd Hastings (Pigman College of Engineering)
- Restoration and Maintenance of Physical and Neurosensory Performance (RAMP) in Naval and Marine Corps Aviation, \$3.9 million, Joshua Winters (College of Health Sciences)
- EAP-HI: Advancing Precision Neighborhood Scale Weather Forecasting with Autonomous Aircraft Systems and Adaptive Microscale Models, \$2 million, Sean Bailey (Pigman College of Engineering)
- East Palestine Train Derailment Health Research Program, \$1.8 million, Erin Haynes (College of Public Health)

Faculty Honors and Awards

College of Arts and Sciences

- **Frank X Walker:** 2025 PEN/Voelcker Award for Poetry
- **Gary Ferland:** Catherine Wolfe Bruce Gold Medal, Astronomical Society of the Pacific

Gatton College of Business and Economics

- **David Hardesty:** American Marketing Association (AMA) Lifetime Achievement Award

College of Health Sciences

- **Phillip Gribble:** National Athletic Trainers' Association (NATA) Most Distinguished Athletic Trainer

College of Medicine

- **Matthew Bush:** NSF Presidential Early Career Award for Scientists and Engineers (PECASE)

College of Design

- **Kristi Bartlett:** NSF CAREER Award

Martin-Gatton College of Agriculture, Food and Environment

- **Subba Reddy Palli:** National Academy of Inventors (NAI) Fellow

Stanley and Karen Pigman College of Engineering

- **Alexandre Martin:** NASA Exceptional Public Service Medal
- **Alexandra Paterson:** DARPA Young Faculty Award

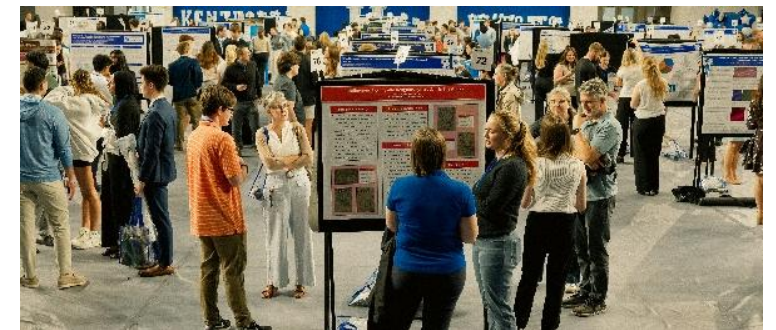
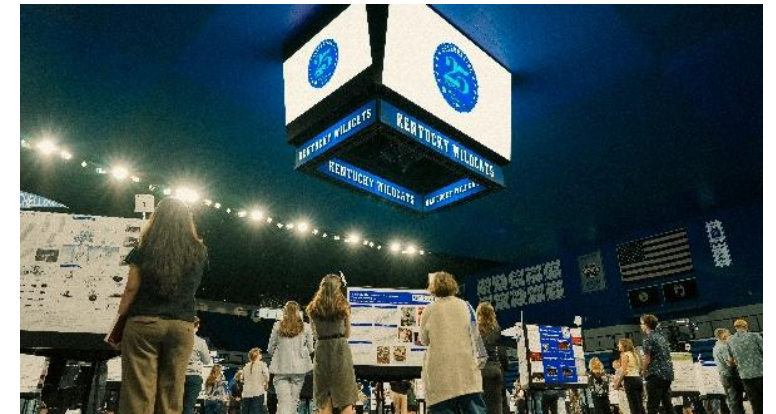
UK received the highest number of NSF CAREER awards to date.

Developing Tomorrow's Researchers: Supporting Undergrad Researchers

The **Office of Undergraduate Research (OUR)** promotes research as a high-impact student experience to foster student success and enhance readiness to succeed in future careers. UKRF provides funding to ensure undergraduates have research opportunities across all disciplines.

FY25 Highlights:

- **25th anniversary of OUR**
- **92** research stipends and travel awards funded
- **53** events engaging **1,980** students
- **304+** Research Ambassador service hours
- **7** students represented UK at the Council on Undergraduate Research advocacy event in Washington, D.C., and at Posters at the Capitol in Frankfort
- **548** undergrad research presentations (500 at UK Showcase, 48 at National Council on Undergraduate Research)



Developing Tomorrow's Researchers: Graduate Student Support

Research Assistants

Most RAs are funded by external grants, which must cover the Universal Tuition Rate. OVPR and The Graduate School partner to fund out-of-state tuition scholarships.

Teaching Assistants

UKRF has a long-standing commitment to TA support in the College of Arts and Sciences.



Developing Tomorrow's Researchers: Postdoctoral Support

The **Office of Postdoctoral Research, Innovation, Scholarship and Mentorship (PRISM)** empowers the next generation of researchers, innovators, scholars and mentors.

- UKRF provides stipend and research support funding for postdoctoral fellows
- Established the **Postdoc Success Talks (pst!)** series
 - BCTC partnership on community/technical college career pathways
 - 48 postdocs/senior graduate students attended
- **Society of Postdoctoral Scholars (SOPS)**
Symposium: Sept. 17



In the face of delayed federal awards and a shifting federal landscape, UK researchers have persevered.

Instead of resolving to “wait and see” and submitting fewer grant proposals, our faculty, staff and students have continued to conceive ideas, connect with partners, create plans and propose projects.

Proposals Submitted

2,493

8% YTD* increase over all of FY25

*YTD as of 6/15/26

Number of Grant and Contract Awards Received

- 1,744 awards (YTD, 5/31/26)
- 1,898 awards total in FY25

Awarded Dollars on Grants and Contracts

- \$470.1 million (YTD through 5/31/26)
- Estimated additional \$7.7 million for June 2026
- Estimated total FY26 = \$477.8 million (3.8% reduction compared to FY25)

QUESTIONS

