Columbia University Fosters High-Risk Research with Funding

The RISE competition identified six winning teams to receive $80,000 per year for two years to spur innovative and unusual collaboration around basic research.

NEW YORK, June 8, 2015—Columbia University’s Office of the Executive Vice President for Research announced today the names of six teams that won the 2015 Research Initiatives in Science & Engineering (RISE) competition. Awarded annually, RISE provides funds to up to six interdisciplinary and collaborative faculty teams primarily within the basic sciences, engineering, and medicine, to pursue very early-stage, highly-imaginative research. Each team’s award is worth $80,000 per year for up to two years’ time.

The RISE competition was created to provide Columbia faculty-level researchers with the funding necessary to explore paradigm-challenging preliminary ideas, gather data, and take risks, thereby making their high-risk proposals slightly less risky. Amidst federal budget cuts for the basic sciences, researchers are challenged to provide initial proofs of concept to demonstrate viability, but without readily-available funding to complete such preliminary work. Columbia follows the National Institutes of Health’s definition of high-risk research as that “with an inherent high degree of uncertainty and the capability to produce a major impact on important problems in biomedical/behavioral research.”

“We saw an extraordinary collection of highly competitive applications this year,” says Dr. G. Michael Purdy, Executive Vice President for Research and Professor of Earth & Environmental Sciences. “The 2015 winning teams exemplify the ingenuity, creativity, and excellence that so well characterize Columbia’s preeminent research enterprise.”

The 2015 competition accepted 53 Phase 1 applications, invited 18 Phase 2 proposals, and today announces six winning collaborations.

“Together, the programs we funded this year convey the spirit and diversity of our community; from using machine learning to understand phytoplankton processes in the global ocean, to applying a new technique to understand interaction of speech perception and decision making, these researchers are driving Columbia forward in remarkable and previously-unimagined ways,” says Purdy.

**2015 RISE Winning Teams**

**Barclay Morrison & Steven Kernie**  
*A Novel Biomechanically-Based Approach for the Treatment of Brain Swelling After Injury*

**James Hone, David Schiminovich & John Kymissis**  
*Novel Boron Nitride Deep Ultraviolet Sensors and Light-Emitting Diodes for Astrophysical & Biomedical Applications*

**Joaquim Goes, Tony Jebara, Ryan Abernathey & Helga Gomes**  
*Inferring Spatial Heterogeneity in Marine Phytoplankton Using Fluid Dynamics & Bayesian Machine Learning Techniques*

**Nima Mesgarani & Sameer Sheth**  
*Neurobiology of Robust Speech Perception in Human Auditory Cortex*

**Timothy Bestor, Jingyue Ju & James Russo**  
*Single-Cell, High-Resolution Methylation Profiling for Personalized Medicine*
Applications are evaluated through two rounds of review, with at least four peer reviewers assigned to each second-round application. 64 reviewers evaluated applications for the 2015 RISE competition.

The Impact of RISE

"RISE awards have seeded several highly interdisciplinary projects in my laboratory, which would have been impossible to initiate otherwise,” remarks Dr. Ruben Gonzalez, 2009 and 2012 RISE winner and Associate Professor of Chemistry. “These collaborations with synthetic biologists, crystallographers, and microbiologists have enabled the creation of entirely new and unique research directions in our labs. The results of these ground-breaking studies have been published in high-impact journals, have been highlighted by post-publication peer review services, and have recently evolved into established, NIH-funded research programs."

RISE not only awards critical seed funding for risky and interdisciplinary collaborations, but tracks how the seed funding contributes to the researchers’ abilities to obtain subsequent funding from government agencies and private foundations.

“Over the past decade, we see that the external funding generated as a direct result of these small, but crucial seed funds is many times that of our initial investment,” says Purdy. Since 2004, RISE has awarded approximately $7.2 Million in seed funds to 54 individual projects. These 54 winning teams have secured more than $33 Million in supplemental funds from extramural sponsors: A nearly five times return on Columbia’s investment. These projects have also garnered more than 140 peer-reviewed publications, and educated 100+ postdoctoral scientists and graduate, undergraduate, and high school students. For a full listing of all RISE-funded researchers and titles, please click here.

As Purdy notes, “RISE encourages PIs to take risks, push the boundaries of their conventional disciplines always with the goal of making fundamental new discoveries.”

Nominations for the 2016 competition will run from September to mid-October 2015, with five to six winning teams announced in June 2016.

For interview requests and additional programmatic information, please contact Marley Bauce (marley.bauce@columbia.edu; 212-854-7836). To fund a RISE project and learn more about Columbia’s Science Initiative, please contact Sylvia Humphrey (sylvia.humphrey@columbia.edu; 212-851-4377).

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About Columbia University’s Office of the Executive Vice President for Research

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the conduct of research at the University, and oversees the management of its research programs. It also assists investigators seeking external funding, promotes interdisciplinary research, and awards seed money for early stage investigations. For more detailed information, please visit: http://evpr.columbia.edu.