

RUTGERS UNIVERSITY
ACADEMIC EXCELLENCE FUND AWARDS 2005-2006

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| A Center for Marine Biotechnology at Rutgers University <i>(Paul Falkowski, Richard Lutz, Cook College and IMCS)</i> To establish a new Rutgers University Center for Marine Biotechnology (RUCMB) that will examine the potential to make major impacts in bioremediation, biomaterials, biomimicry, nanotechnology, novel sensors, and new drugs. | \$160,000 |
| Affordable Housing in New Jersey: Yesterday and Today <i>(Carol Roehrenbeck, Kevin Reiss, Rutgers School of Law-Newark)</i> To develop a digital archive of affordable housing and exclusionary zoning materials including administrative rulings, statutes, regulations, case law, and background materials from a series of cases that helped establish the existing policy in New Jersey and to make it available to the general public on the website. | \$19,525 |
| Airborne Nanoparticle Investigation Initiative <i>(Gediminas Mainelis, Cook College)</i> This initiative will focus on evaluating human exposure to naturally occurring and manufactured nanoparticles, analysis and design of control measures, and investigation of airborne nanoparticle toxicity. | \$135,000 |
| Campus-Business Community Service Learning and Research Initiatives <i>(Peter A. Gold, School of Business-Camden)</i> An initiative to foster opportunities for campus-wide student and faculty research and for service learning through development of creative interfaces between the faculty and students and tenants and staff of the Rutgers Camden Small Business Incubator. | \$75,000 |
| Classics Visual Studies Teaching Initiative <i>(T. Corey Brennan, FAS-NB)</i> This initiative involves the completion of an ambitious slide digitization and metadata markup project, conducted in coordination with Rutgers University Libraries Technical and Automated Services. | \$25,000 |
| Computational Materials Design: Unique Solution to the Problem of Describing the Long-Time Behavior of Materials with Atomistic Resolution <i>(Stephen H. Garofalini, A. Cuitino, A. Khachaturyan, M. Parashar, SOE)</i> A unique combination of spatially resolved atomistic simulations with previously unattainable long-time atomistic evolution for new materials design. | \$50,000 |
| Creating A Ph.D. in Public Affairs at Rutgers-Camden <i>(Richard A. Harris, FAS-C)</i> To help create a Ph.D. degree in Public Affairs at Rutgers-Camden. | \$75,000 |

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| <p>Development of Center for Hydrogen Storage Materials <i>(Jing Li, Yves Chabal, Ted Madey, FAS-NB)</i> To help develop existing and new hydrogen storage materials as an initial step toward the formation of a center for hydrogen storage materials research.</p> | <p>\$150,000</p> |
| <p>Dye-Sensitized Solar Cells: A Viable Emerging Alternative Energy Source <i>(Joint Proposal: Dunbar Birnie, Robert Bartynski, Frank Zimmerman Adrian Mann, FAS-NB and SOE)</i> To provide seed support for an interdisciplinary team investigating the photovoltaic behavior of novel nanostructured titania for solar cell applications.</p> | <p>\$150,000</p> |
| <p>East Asian Business Center <i>(John Cantwell, Chao Chen, RBS – Newark and New Brunswick)</i> Funding to launch a new East Asian Business Center that will be used to support four new research projects and a seminar series hosting ten international business specialists, grounded on the theme of global business, global change and creativity.</p> | <p>\$75,000</p> |
| <p>Enhancing Chaser - The Resource Center for Graduate Student External Support <i>(Teresa Delcorso, Harvey Waterman, GS-NB)</i> To support revitalizing the Chaser website by creating an interactive electronic mentoring system that will allow honors undergraduates, graduate students and post doctoral researchers to access information and use an interactive set of proposal writing tools to identify funding resources and develop competitive proposals.</p> | <p>\$40,000</p> |
| <p>Establishment of a Center for the Production of Novel Protein Targets from Pathogenic Parasites <i>(Stephen Anderson, CABM)</i> To leverage the eukaryotic protein production technology being developed at Rutgers by the Northeast Structural Genomics Consortium by using it to nucleate a new initiative in the proteomics of pathogenic parasites (beginning with malaria) which, by providing a steady source of novel vaccine and drug targets, should facilitate the discovery and production of enhanced treatments for diseases of the developing world.</p> | <p>\$40,000</p> |
| <p>Excellence and Diversity at the Graduate School-New Brunswick: Expanding our Reach <i>(Evelyn S. Erenrich, Jolie Cizewski, GS-NB)</i> To create a graduate assistant position and to provide summer research stipends to undergraduate students from traditionally underrepresented backgrounds in the STEM disciplines.</p> | <p>\$100,000</p> |
| <p>Expansion and Institutionalization of the Educational Policy and Leadership Track of the MPA <i>(Marie Cornelia, Gloria Bonilla Santiago, FAS-C)</i> To further develop and expand to personnel of all local school districts a highly successful pilot program in the Educational Policy & Leadership track of the Master's in Public Administration.</p> | <p>\$75,000</p> |

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| <p>Fault-Tolerant Wireless Networks for Patient Care in the Intensive Care Unit <i>(Michael L. Bushnell, Manish Parashar, Wade Trappe, Yangyong Zhang, Ivan Marsic, SOE)</i> To convert all instruments monitoring patients in the Intensive Care Unit at Robert Wood Johnson Hospital into wireless devices, to eliminate all attached wires to severely ill patients, and improve patient safety, reduce clutter, improve data accuracy, and improve critical patient care.</p> | <p>\$50,000</p> |
| <p>Foundations of International Trade & Foreign Direct Investment Faculty Working Group <i>(Michael Santoro, RBS – Newark and New Brunswick)</i> To help support an interdisciplinary faculty group which has been meeting on the economic, legal, and social aspects of international trade and foreign direct investment.</p> | <p>\$5,000</p> |
| <p>Funding Initiative for MFA Start-up and Visiting Writers/Editors Series <i>(Jayne Anne Phillips, FAS-N)</i> To help support basic start-up costs and launch of the MFA Program and the crucial accompanying element of a Visiting Writers/Editors Series.</p> | <p>\$24,300</p> |
| <p>Increasing the Supply of Well-Prepared K-12 Science and Mathematics Teachers in New Jersey Through the TeachRU Program <i>(Kathleen Scott, FAS-NB; Warren Crown, GSE)</i> To help develop recruitment and retention programs designed to increase the number of mathematics and science majors who consider and ultimately choose middle/high school teaching as a career.</p> | <p>\$150,000</p> |
| <p>Infrastructure for Biomaterials Informatics <i>(Joachim Kohn, Doyle Knight, New Jersey Center for Biomaterials)</i> To help extend the predictive power of computational models of bioresponse to biomaterials by fully incorporating molecular dynamics simulations, through a new computational cluster; and to develop a prototype biomaterials informatics database into an integrated, web-based environment for design, synthesis and modeling of new polymeric biomaterials, through a dedicated database architect.</p> | <p>\$60,000</p> |
| <p>Institute for Women and Art <i>(Gregory J. Perry, Zimmerli; Judith Brodsky, Mason Gross; Ferris Olin, Douglass Library)</i> To create an Institute for Women and Art at Rutgers University, uniting teaching faculty, scholars, curators, researchers, and artists in order to promote dialogue and interdisciplinary projects in a key area of excellence, and to leverage outside recognition and financial support.</p> | <p>\$60,000</p> |

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| <p>Integrated Ion Scattered and Vibrational Spectroscopy of Quantitative Analysis of Hydrogen and Low-Mass Atoms in Biological, Pharmaceutical and Electronic Applications</p> | <p>\$150,000</p> |
| <p><i>(Torgny Gustafsson, Yves Chabal, LSM)</i> To support the construction of a state-of-the-art ultra-high vacuum system to perform ion forward recoil scattering, using grazing angle detection and in-situ infrared spectroscopy, for the detection of hydrogen and low-mass elements critical for pharmaceutical, biotechnology and microelectronic applications.</p> | |
| <p>Juvenile Rights Clinic</p> | <p>\$75,000</p> |
| <p><i>(Alice Dueker, Ann Freedman, Victoria Chase-Walters, School of Law-Camden)</i> This project will combine representation of teen-age delinquents in Camden with a holistic family approach that promises to improve both their representation and rehabilitation and will provide a curricular experience for our students.</p> | |
| <p>Laboratory for Multidisciplinary Research on Chronic Disease</p> | <p>\$125,000</p> |
| <p><i>(Richard J. Contrada, IHCPAR)</i> To support multidisciplinary research on chronic disease by enhancing and coordinating three existing laboratories for cognitive-affective and biobehavioral health research and linking them to ongoing and planned psychosocial investigations.</p> | |
| <p>Leveraging Our Progress in Building the Basic Mathematics Program: Part 2</p> | <p>\$105,925</p> |
| <p><i>(Annette Juliano, Al Brown FAS-N)</i> To strengthen N-CAS and UC-N Developmental Math Courses and their connection with the College Algebra curriculum in the Department of Mathematics and Computer Science.</p> | |
| <p>LTQ Linear Ion Trap Mass Spectrometer for Cancer Prevention and Drug Metabolism Research</p> | <p>\$150,000</p> |
| <p><i>(Chung S. Yang, Pharmacy; Chi-Tang Ho, Cook College)</i> To acquire a LTQ Linear Ion Trap Mass Spectrometer system for analyzing the bioavailability and metabolism of different dietary chemicals and drugs as well as markers of their biological effects in our new metabolomics initiative.</p> | |
| <p>Macromolecules in Solution: Characterization of Structure and Transport</p> | <p>\$100,000</p> |
| <p><i>(Kathryn Uhrich, Edward Castner, FAS-NB)</i> To obtain instrumentation needed to analyze the structure and transport of macromolecules in solution.</p> | |
| <p>Meeting the Need: Development of the Doctorate of Nursing Practice Degree (DNP) at Rutgers</p> | <p>\$100,000</p> |
| <p><i>(Wendy Nehring, College of Nursing)</i> To develop the DNP program in an online format at Rutgers.</p> | |

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| <p>Organizational Learning Within an Emergency Management Context <i>(Marc Holzer, Kyle Farmbry, FAS-N)</i> To explore applications of organizational learning theories to emergency management contexts, with an emphasis on key lessons from recent years in which emergency management providers have had to develop response strategies.</p> | <p>\$30,000</p> |
| <p>Rutgers Center for Green Building Excellence <i>(Henry Mayer, Scott Weiner, Clinton Andrews, David Listokin, Michael Greenberg, Bloustein School)</i> To create the pre-eminent interdisciplinary center for green building excellence in the northeast.</p> | <p>\$100,000</p> |
| <p>Rutgers Center for Philosophy and the Sciences <i>(Barry Loewer, Tim Maudlin, Frank Arntzenius, Peter Klein, FAS-NB)</i> To initiate the Center for Philosophy and the Sciences at Rutgers University that will sponsor workshops, conferences, course design and generally encourage communication among faculty interested in foundational and methodological issues in the sciences.</p> | <p>\$130,000</p> |
| <p>Software and Integrated Arts <i>(Ian Watson, FAS-N)</i> To purchase specialized software to support major curricular changes in the Department of Visual and Performing Arts.</p> | <p>\$48,250</p> |
| <p>The Joint DIMACS-CAIT Laboratory for Port Security <i>(Tayfur Altiok, Ali Maher, Benjamin Meland, Fred Roberts, DIMACS and CAIT)</i> To formalize and foster collaborative research on marine port and coastal security by establishing a new joint DIMACS-CAIT research laboratory, called the Laboratory for Port Security.</p> | <p>\$120,000</p> |
| <p>Tourette Syndrome Project - Research & Service <i>(Lew Gantwerk, Lori Rockmore, GSAPP; Jay Tischfield, FAS-NB)</i> To bring together the Graduate School of Applied and Professional Psychology, the Department of Genetics and UMDNJ in an effort to develop state of the art research and treatment regarding Tourette Syndrome.</p> | <p>\$125,000</p> |
| <p>Toward a Rational State Policy on Educational Finance & Accountability <i>(Paul Tractenberg, Alan Sadovnik, Brenda Liss, Rutgers School of Law-Newark)</i> This project will be the first step in a multi-year, multi-disciplinary study of New Jersey's school finance laws and its laws and policy on school district accountability, focusing on whether two ostensibly unrelated recent developments, one providing for state intervention in local district operations based on a "continuum of need" and the other providing for financial support to local districts on a similar basis, should be considered together for the purpose of developing one comprehensive state policy.</p> | <p>\$80,000</p> |
| <p>Trace Gas Detection Utilizing Optical Spectroscopy of Microresonant Cavities <i>(Tobias Rossman, Zhixiong Guo, SOE)</i> The goal of this project is to develop a new generation of high accuracy trace gas detection sensors using novel nanostructured optical devices.</p> | <p>\$50,000</p> |

Traffic Accident Prevention and Management Through Distributed Automotive Sensing and Control Systems

\$50,000

(Marco Gruteser, Kaan Ozbay, Wade Trappe, Yangyong Zhang, SOE)

To join the unique capabilities developed at CAIT and WINLAB to initiate research on traffic accident avoidance based on distributed control systems between vehicles and roadside units, connected by wireless communications.

Uses of Diversity in the Classroom

\$112,000

(John Gunkel, Newark – Campus-wide)

To inventory the teaching of diversity in undergraduate classes, to encourage the use of students' diversity in the classroom through the creation of new courses and revision of existing ones, and to organize faculty discussions on the use of diversity in the classroom.