

News Release

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FOR IMMEDIATE RELEASE

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Research Corporation Announces Fall 2005 Awards

Research Corporation has awarded thirty-four grants to support the work of scientists conducting research in colleges and universities in the U.S. and Canada. One or more of those grants has been awarded to a scientist at a university near you (See attached listing).

A foundation for the advancement of science, Research Corporation will be 100 years old in 2012. It is the brainchild of Frederick Gardner Cottrell, the scientist-philanthropist who invented the electrostatic precipitator, then used its proceeds to fund serendipitous research in university laboratories. In the course of time, RC has funded the early work of such scientists as E.O. Lawrence, Charles H. Townes, Richard Smalley, Tom Cech and Carl Wieman. RC is proud, after almost 100 years in the "business," to continue its tradition of funding research at the cutting-edge of science.

RC's oldest grants program, the Cottrell College Science Award (CCSA), champions important research that promises to affect the advancement of science. The foundation is committed to the scholarly development of both teachers and students; this grant is available to faculty at undergraduate institutions. Thirty-one men and women have been awarded Cottrell College Science Awards this fall. Among them are:

- James J. Butler from Pacific University is working to develop non-linear capillary waveguides that limit the intensity of light that is transmitted as the light intensity increases. These materials have possible applications in lenses to protect one's eyes from laser or other high intensity light beams. They allow transmittance of most of the light at low intensity, but limit more and more of the light from being transmitted as the intensity increases.
- Mark Olsen of West Texas A&M University proposes to gain insight into the formation of complex sulfated polysaccharides, such as dermatan sulfate, which are known to play a role in tumor progression, metastasis, wound healing and immune response.
- Thomas A. Stephenson of Swarthmore College is using fundamental molecular spectroscopy to examine collision dynamics of oxygen atoms, O, and nitric oxide, NO, in the gas phase. This work is relevant to understanding chemical reactions in the atmosphere and has obvious applications in environmental atmospheric chemistry and air pollution

The Research Opportunity Award is targeted to established scientists at Ph.D.-granting institutions who are interested in exploring a new area of research. Scientists with labs already in place often have trouble receiving funding when changing the course of their research. The Research Opportunity Award encourages scientists to "stretch their wings" in new directions. Three of these awards were made, one of which is highlighted below:

- Joshua L. Cohn, of University of Miami, is a condensed matter experimentalist. Until recently, he has been working on transport properties in bulk transition-metal oxides and in thermoelectric materials. This grant will enable him to focus on dielectric constant measurement in strongly correlated transition metal oxides.

In total, over a million dollars of research money will be made available. Research Corporation funds awards two times each year. A list of all recipients is attached.

RESEARCH CORPORATION

Fall 2005 Awards

COTTRELL COLLEGE SCIENCE AWARDS

Adelphi University, Joshua M. Grossman, Department of Physics: Microscopic magnetic surface traps for individual atoms-\$35,644

Brock University, Travis Dudding, Department of Chemistry: A strategic approach for the development of catalytic enantioselective aza-Stetter reactions-\$26,800

California State University, Long Beach, Xianhui Bu, Department of Chemistry and Biochemistry: Synthesis and characterization of cysteine-peptide capped CdS nanoclusters and crystalline superlattices-\$35,000

California State University, Sacramento, Katherine D. McReynolds, Department of Chemistry: Synthesis of novel anionic glycodendrimers and evaluation of their anti-viral properties-\$41,220

Centenary College of Louisiana, Joshua D. Lawrence, Department of Chemistry: Trifluoromethylation of aromatic compounds via C-H activation using iron reagents-\$40,171

Colgate University, Enrique J. "Kiko" Galvez, Department of Physics and Astronomy: Optical singularities in high-order modes of gaussian beams-\$36,411

College of Wooster, Paul A. Bonvallet, Department of Chemistry: The synthesis, characterization, and supramolecular properties of a light-emitting polymer-\$36,232

Drake University, Charles Nelson, Department of Physics and Astronomy: Circumnuclear dynamics of the host galaxies of active galactic nuclei-\$30,226

Harvey Mudd College, David A. Vosburg, Department of Chemistry: Biomimetic cyclization cascades to form endiandric acid natural products-\$35,683

Hofstra University, Gregory C. Levine, Department of Physics: Entanglement entropy in impure condensed matter-\$23,684

James Madison University, Kathryn A. Layman, Department of Chemistry: Spectroscopic investigation of catalytic solid-liquid interfaces-\$38,951

James Madison University, Scott Paulson, Department of Physics: Electrical properties of CVD grown double-walled carbon nanotubes-\$41,651

Marist College, John Morrison Galbraith, Department of Chemistry and Physics: Valence bond studies of transition metal dioxygen bonding: A key intermediate in enzymatic reactions and catalysis-\$35,718

Missouri State University, Nikolay Nikolaevich Gerasimchuk, Department of Chemistry: Visible light insensitive silver(I) cyanoximates-\$30,996

Montclair State University, Jeffrey H. Toney, Department of Chemistry and Biochemistry: An interdisciplinary study of the beneficial effects of peanuts in preventing onset of type 2 diabetes-\$44,176

Mount Saint Vincent University, Aibing Xia, Department of Chemistry: Synthesis and catalytic applications of novel bidentate N-heterocyclic carbenes (NHCs) in aerobic oxidation of alcohols-\$37,665

Oakland University, George B. Martins, Department of Physics: Strong correlation effects in transport properties of carbon nanotubes-\$44,996

Oberlin College, Jason M. Belitsky, Department of Chemistry and Biochemistry: Aminooxy serine/threonine peptide ligation-\$45,640

Pacific University, James J. Butler, Department of Physics: Investigation of the nonlinear optical properties of capillary waveguides and waveguide arrays at infrared wavelengths-\$39,984

Saint Louis University, Brent M. Znosko, Department of Chemistry: Thermodynamic and structural characterization of short RNA oligomers containing inosine-\$45,068

COTTRELL COLLEGE SCIENCE AWARDS, Continued

San Francisco State University, Scott Gronert, Department of Chemistry and Biochemistry: Mass spectrometric analysis of protein carbonylation from oxidative stress-\$38,000

Swarthmore College, Thomas A. Stephenson, Department of Chemistry and Biochemistry: Inelastic collision dynamics in the O + NO system: Rotational and spin-orbit distributions-\$35,000

Texas State University, San Marcos, Rachell E. Booth, Department of Chemistry and Biochemistry: An investigation into subunit-subunit interactions within the epithelial sodium channel (ENaC)-\$34,738

Trinity University, Adam R. Urbach, Department of Chemistry: Cofactor-modulated recognition of peptides in aqueous solution by a synthetic host-\$38,880

Truman State University, Maria C. Nagan, Department of Chemistry: Molecular dynamics studies of human immunodeficiency virus Rev-RRE recognition-\$35,400

University of Minnesota, Duluth, Leng Chee Chang, Department of Chemistry: Inhibition of aerial hyphae formation in streptomyces sp. to search for protein kinase inhibitors-\$39,718

University of Minnesota, Duluth, Josef P. Werne, Department of Chemistry: Response of terrestrial vegetation in tropical East Africa to temperature, aridity, and pCO₂: A molecular isotopic approach-\$39,543

University of Puget Sound, Christine M. Smith, Department of Chemistry: Investigating in vivo targets of histone acetylases and deacetylases using isotopic labeling and tandem mass spectrometry-\$32,306

University of Scranton, John C. Deak, Department of Chemistry: Mechanisms of vibrational energy transfer through self-assembled molecular aggregates-\$36,218

University of Texas at Brownsville, Soumya Darshan Mohanty, Department of Physics and Astronomy: Improved hierarchical search algorithms for gravitational wave data analysis-\$22,400

West Texas A&M University, Mark Olsen, Department of Math and Physical Science: Directed evolution of chondroitinase B using flow cytometry and cell surface display technology-\$35,218

RESEARCH OPPORTUNITY AWARDS

University of Miami, Joshua Lawrence Cohn, Department of Physics: Dielectric studies of low-dimensional and competing-order ground states in transition-metal oxides-\$50,000

University of Rochester, Frank L.H. Wolfs, Department of Physics: Pushing the dark-matter limit: R&D for Zeplin IV-\$50,000

University of Wisconsin, Madison, Michael J. Winokur, Department of Physics: Computer modeling of conducting polymer microstructures and the influence of templating interfaces-\$50,000