



ANNUAL REPORT, FISCAL YEAR 2008

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OFFICE OF RESEARCH AND SPONSORED PROGRAMS



WAKE FOREST  
UNIVERSITY

# A MESSAGE FROM THE ASSOCIATE PROVOST FOR FACULTY AFFAIRS

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This annual report contains graphs as well as stories that represent thousands of hours of work by our faculty and staff over the last year. There is no way to truly capture or acknowledge the enormity of this effort. The best we can do is remember to stop and say thank you often.

Our faculty requested over \$49 million in new external support in 2007-2008, almost \$8 million more than in 2006-2007. They received almost \$9 million in new awards, up over \$1 million from the 2006-2007 total. This success has been accomplished in a national environment where many other universities have seen their external funding flatten or fall.

In addition to the work of our faculty, we have dedicated central staff in the Office of Research and Sponsored Programs, Financial and Accounting Services, and Compliance as well as departmental business managers who work hard to help our faculty get new awards and then administer those awards after we receive them. They deserve our congratulations as well.

In 2007-2008, the Department of Health and Exercise Science received the most external funding at \$1.76 million, followed closely by Biology and Physics. The Department of Biology received the most awards at 18, followed by Physics, Health and Exercise Science, and Anthropology. The Department of Computer Science more than doubled the amount received last year. One faculty member won a Guggenheim Fellowship (Sarah Watts, History) and three won Fulbright Fellowships (Sylvain Boko, Economics; Jon Duchac, Calloway; and David Weinstein, Political Science). Several faculty members were principal investigators on two or more new external research awards (Jennifer Burg, Computer Science; Errin Fulp, Computer Science; Ellen Miller, Anthropology; and Miles Silman, Biology).

Everyone who applied for either internal grants or externally sponsored grants and fellowships will be celebrated at a reception at the President's home on October 1.

Thanks again to faculty and staff for a job well done in 2007-2008.

Mark E. Welker

# EXECUTIVE SUMMARY

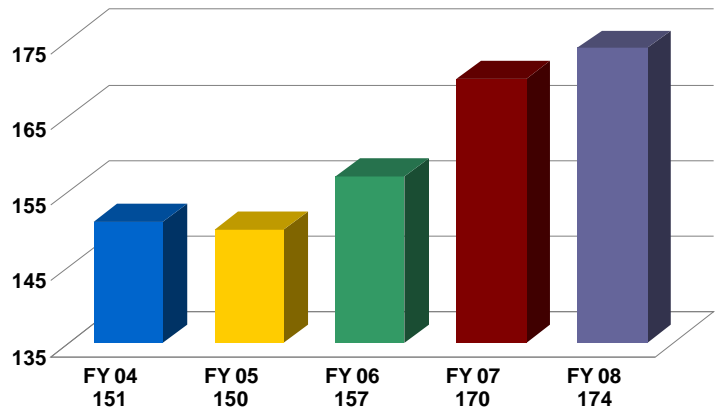
This report summarizes funding processed through Wake Forest University's Office of Research and Sponsored Programs (ORSP) for the Reynolda campus in Fiscal Year 2008.

Our totals do not include gifts or the many fellowships awarded to individual faculty. In addition, they represent authorization to spend as opposed to research expenditures.

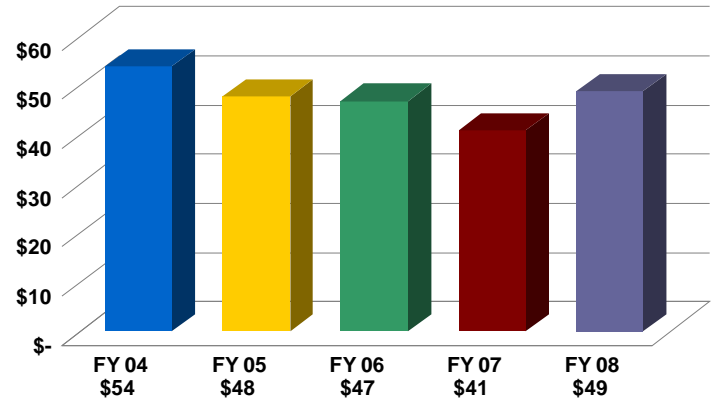
Dollars awarded this year were up more than \$1 million, representing a nearly 14 percent increase over FY07.

Reynolda Campus Principal Investigators submitted a record number of proposals again this year, requesting 17 percent more than they did in FY07.

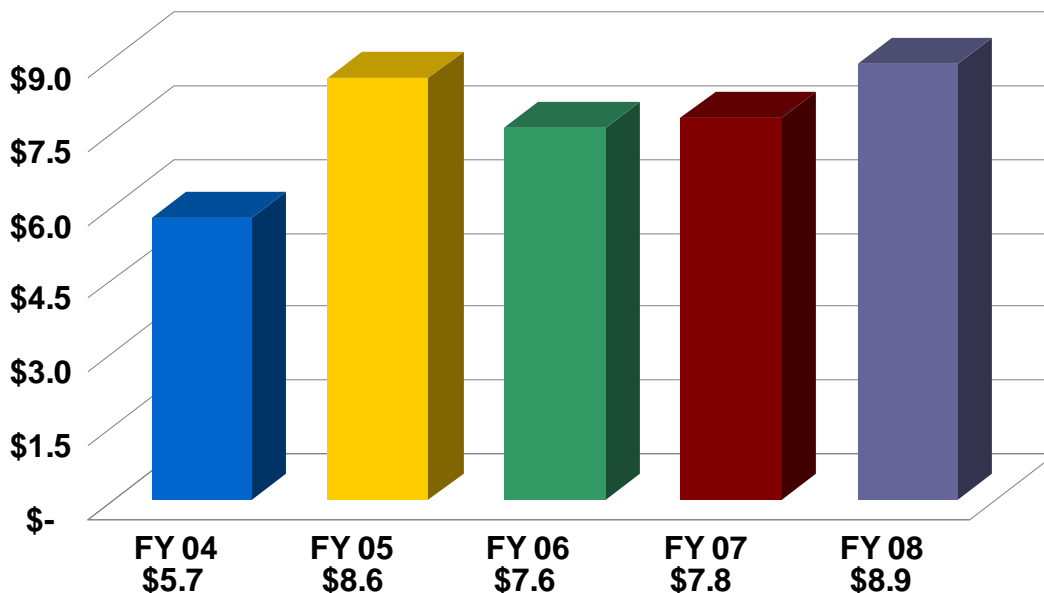
**Proposals Submitted, Fiscal Years 2004-2008**



**Grant Funds Requested, Fiscal Years 2004-2008 (\$Millions)**



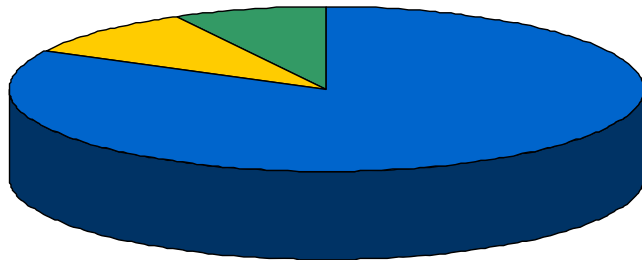
**Awards Received, Fiscal Years 2004-2008 (\$Millions)**



# HIGHLIGHTS

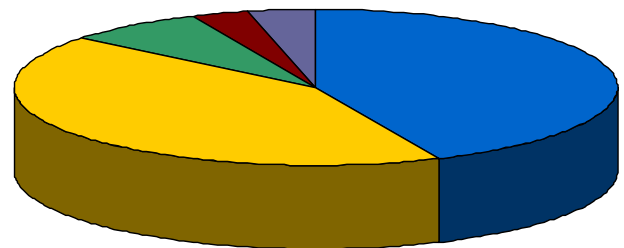
- The National Science Foundation (NSF) edged out the National Institutes of Health (NIH) to become our major sponsor; more than 43 percent of our federal funding came from NSF.

**Awards by Funding Source**



■ Federal, 82.7    ■ Foundation, 9.6    ■ Other, 7.7

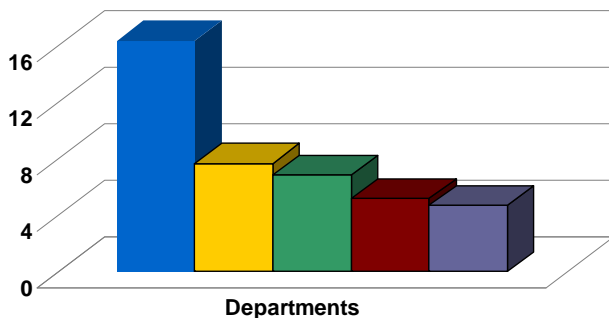
**Federal Funding by Agency**



■ National Science Foundation, 43.4  
 ■ National Institutes of Health, 42.7%  
 ■ Department of Defense, 7.4%  
 ■ Department of Energy, 3.0%  
 ■ Other, 3.7%

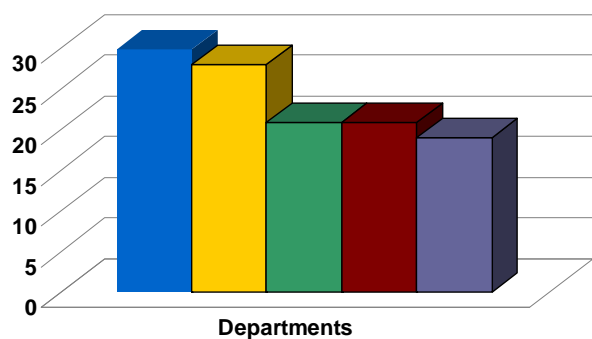
- Funding in English increased by more than 16 percent.
- The Department of Health and Exercise Science received the largest single-year award.
- The Office of Entrepreneurship and Liberal Arts received the largest award for a nonscience department.
- The Computer Science Department more than doubled the amount it received last year.

**Most Dollars Requested (\$ Millions)**



■ Physics    ■ Chemistry    ■ HES    ■ Biology    ■ Computer Science

**Most Proposals Submitted**



■ Physics    ■ HES    ■ Anthropology    ■ Chemistry    ■ Biology

Department	Awards	Amount
HES	17.0	\$1,760,641.92
Biology	18.0	\$1,737,908.00
Physics	17.5	\$1,595,567.14
Computer Science	9.5	\$1,119,548.00
Entrepreneurship	2.0	\$1,010,679.00
Chemistry	6.0	\$575,443.00
Psychology	5.0	\$366,573.00
Mathematics	3.0	\$206,032.00
Anthropology	13.0	\$202,284.26
Communication	5.0	\$105,758.00
ZSR Library	1.0	\$74,079.00
Economics	3.0	\$41,937.00
Education	1.0	\$37,603.00
English	1.0	\$35,000.00
Secret Artist Series	2.0	\$6,368.00
Law School	2.0	\$6,000.00

# OUTSTANDING ACCOMPLISHMENTS

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Associate Professor of Computer Science **Jennifer Burg** received 2 NSF awards. *CPATH: Revitalizing Computer Science Education through the Science of Digital Media*, proposes an exciting new interdisciplinary model especially appropriate to liberal arts universities. Representatives from academia, business, and industry will meet at workshops around the country to devise new, more practical approaches to computer science education. *Linking Science, Art, and Practice in Digital Sound* engages computer science, education, and digital sound design professors to create textbook material, interactive online tutorials, worksheets, MATLAB and programming exercises, and application-based projects that explain the science and mathematics of digital sound using examples from theater, film, and music production.



Associate Professor of Computer Science **Errin Fulp** won two awards funded by the Department of Energy. The first, *Integrated Parallel Firewall for IDS and High-Speed Networks*, aims to develop a new, scalable network Intrusion Protection System that can manage increasing traffic loads, higher network speeds, and strict Quality of Service requirements. *Securing the Next Generation of Information Infrastructure* aims to develop next-generation computing technologies to ensure secure command/control and information infrastructures to support the predictive defense/adaptive systems focus areas sponsored by the Information and Infrastructure Integrity Initiative.

**Betsy Gatewood**, Director of the Office of Entrepreneurship and Liberal Arts, and Psychology Professor **Deborah Best**, then-Dean of the College of Arts and Sciences, won a 3-year NSF Partners for Innovation award. *Creating Academic Community Partnerships: Fostering Innovation and Entrepreneurship in a Liberal Arts Institution* aims to transform new knowledge and educational approaches into sustainable innovations that can create wealth, build strong local, regional, and national economies, and more fully meet national workforce needs. Only 10-15 grants are supported annually.



Economics Professor **Jac Heckelman** received an NSF award to investigate *Delegate Voting at the Constitutional Convention*. This project aims to infer delegate positions on all substantive roll-call votes from primary sources, such as statements in debate, attendance records, state-level votes, and the formal rule that the majority of state delegates determined their state's vote. "Ideal points" will then be estimated to test: 1) the validity of the Beard thesis that delegates followed their economic interests; 2) the influence of the Great Compromise; and 3) the preference stability of a few key delegates who were allegedly persuaded to change their positions. Results will have important implications for theories of representation, constitutional process, institutional development, and legal interpretations of original intent.

**Jefferson Holdridge**, Associate Professor of English and Director of Wake Forest University Press, won support from the National Endowment for the Arts to publish *The New North: Contemporary Poetry from Northern Ireland*.



Associate Professor of Anthropology **Ellen Miller** secured National Geographic Society funding to study *Fossil mammals from Khasm El-Raqaba, Eastern Desert, Egypt*. She will conduct paleontological and geological fieldwork at a deposit preserving small mammals and reptiles. Preliminary results indicate the presence of at least three species of hipposiderine bats and one primitive ctenodactylid rodent, suggesting that part of the samples stem from the early Miocene. If some fauna prove to be late Eocene-Oligocene, it will provide an expanded view of Oligocene African faunal evolution. If early Miocene, it will represent the only known microfauna of that age anywhere in Egypt. In middle to late Miocene, a comparison with other locales will provide insights into biodiversity and biogeography as they relate to climate change.

Associate Professor of Biology **Miles Silman** won funding for four projects. First, he received the second of three years of support from the Gordon and Betty Moore Foundation's Andes to Amazon Program. *Conservation Implications of Climate Change and Fire in the Eastern Andes* focuses on the threatened eastern slope, home to the Earth's highest biodiversity, where human activities hamper natural plant migration in response to climate change. The NSF is supporting three collaborative projects. *Understanding the Role of Landcover and Landform in the Spatial Organization of the Diurnal Cycle of Orographic Clouds and Rainfall* uses elevation gradients in the Himalayas and tropical Andes to study the mutual influence of large-scale circulation, local geomorphology, vegetation, and cloud formation, crucial to understanding future ecosystem responses to climate change. *Determining the Ecological Legacy of Pre-Columbian Human Impact on Amazonian Ecology* studies 18 ecosystems across Amazonia for the effects of human occupation before 1492. Finally, *Tropical Forests in a Changing World* aims to create an interdisciplinary network of scientists from tropical field sites with long-term data records to test hypotheses about forest change and its drivers. Network activities will be integrated with broad outreach initiatives to the K-12 community and the general public.



Charles H. Babcock Professor of Botany **William Kirby Smith** won NSF support for *BINET: A Research Network for Sustaining Barrier Island Ecosystems in a Changing Global Environment*. Barrier islands (BI) cover approximately 85 percent of the east and Gulf shorelines, absorbing and dissipating wave and wind energy, especially during violent storms. They make possible bays, sounds, and estuaries that host an array of native and migratory species. BINET is an effort by ecologists, geologists, economists, and cultural scientists to sustain these ecosystems against the pressures of continued development and global change. Programs for faculty and K-college students include workshops, summer courses, a website, and an infrastructure for sharing new techniques, instrumentation, and facilities and creating new partnerships.



# FELLOWSHIPS AND ARTISTIC ACTIVITIES

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**Sylvain Boko**, Zachary T. Smith Associate Professor of Economics, won a Fulbright Scholar award to conduct research on *Postconflict Reconstruction and Development: The Role of Decentralized Governance* and to teach at the Makerere University Institute of Social Research in Kampala, Uganda, for the 2008-2009 academic year.

Calloway Professor **Jon Duchac**, won a Fulbright Distinguished Chair award to join the faculty of the Vienna School of Economics for a 3.5-month appointment as lecturer. He will teach two courses and a doctoral seminar as well as lecture on *Accounting for Financial Instruments* and *The Convergence Between US GAAP and International Accounting Standards* at the University of Iceland.



Lecturer in Art **Leigh Ann Hallberg's** solo exhibition of graphite on mylar works, "Disegni", was held at the Galleria del Carbone in Ferrara, Italy, 4-24 June 2008. The catalogue features an essay by Erika Doss from the University of Notre Dame.

**Kevin Jung**, Assistant Professor of Divinity, won a Lilly Theology Scholars research award from the Association of Theological Schools.



**Sarah Watts**, Professor of History, won a 2008 John Simon Guggenheim Memorial Foundation Fellowship to revise scholarship on German Expressionist Lyonel Feininger and established views about the development of satirical humor, literature, and art in Germany.

**David Weinstein**, Professor of Political Science, won a Fulbright fellowship to conduct research and teach at the Simon Dubnow Institute at Leipzig University in Saxony, Germany. His research focuses on Jewish political philosophers, including Karl Popper and Leo Strauss, who were forced to flee from Germany and Austria in the 1930s.



# PROFESSIONAL DEVELOPMENT INITIATIVES

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**CRADLE.** The Associate Provost for Research and ORSP launched the Creative Research Activities DeveLopment and Enrichment (CRADLE) initiative to help faculty win external support for multiyear research, creative, and service projects through intensive mentoring. The ten CRADLE fellows include Steve Giles, Communication; John McNally, English; Charles Wilkins, History; Satvroula Glezakos, Philosophy; Jed Macosko, Physics; Michaelle Browers and Bryan Shelly, Political Science; Lisa Kiang, John Petrocelli, and Wayne Pratt, Psychology. They receive a \$6K summer stipend to focus on the program plus a \$1K travel supplement for each of its two years. In addition, two 2-day seminars about applying for external funds were held for all interested faculty and graduate students. Group and individual training is directed by consultant David G. Bauer, author of 10 books on grantsmanship.

**INTERDISCIPLINARY RESEARCH RETREAT.** The Associate Provost for Research and ORSP hosted a retreat to allow faculty from different disciplines to explore research topics of mutual interest and to develop collaborative center proposals to external sponsors. Groups were convened in applied math and statistics in the social and natural sciences; behavioral health; cellular signaling; environmental science; ethics, law, and religion; global humanities; Latin American studies; materials; neuroscience; and social enterprise. They all received targeted searches of funding opportunities. In a spring competition, four were awarded one-year planning grants of up to \$50,000 to develop a 5-year operational plan for a new research center by May 2009.

**SERVICES AND EVENTS.** ORSP edited 87 proposals, performed over 72 funding opportunity searches, and spent over \$83,000 hosting and coordinating workshops and supporting research-related committees, faculty travel to sponsors, and professional development seminars. Events included those mentioned above and:

- ACC Meeting of the Minds
- New Faculty Orientation
- Reception to Recognize Research Excellence
- Reception to Honor Authors, Editors, and Fine and Performing Artists.

## INTERNAL AWARDS

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ORSP assists the Associate Provost for Research in administering and coordinating internal award programs. FY2008 awards were as follows:

Cross-Campus Collaborative Research Fund	\$131,922
Science Research Fund	\$113,336
Social, Behavioral, and Economic Science Research Fund	\$56,287
Translational Science Institute	\$75,000
Bridge and supplemental funding	\$10,416

In addition, \$188,581.85 was provided as match/cost share for faculty research projects and \$55,000 for graduate student support.



# COMPLIANCE

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ORSP provides administrative support to the Institutional Review Board (IRB) under 45 CFR §46 by maintaining IRB records, facilitating communication between the IRB and researchers; coordinating meetings; updating and maintaining the University's IRB policies and website; monitoring training for researchers and other key personnel; providing continuing education for IRB members; and keeping the University's Federalwide Assurance (FWA) and IRB Registration current.

This year, ORSP implemented eIRB, an online application submission and review system, for researchers on the Reynolda campus. Training sessions for researchers and IRB members were offered before the system went live. Continuing education and user support were provided to departments and individual researchers as needed after the conversion. Both paper and electronic systems were maintained; existing research protocols originally submitted on paper were not transitioned and will remain in paper until closed.

The creation of a new position, Associate Director for Faculty Research Compliance and Support, fulfilled part of ORSP'S strategic plan. IRB members and the new Associate Director visited academic departments with two goals: to get direct feedback from eIRB users and to give the IRB a "human face" to facilitate ongoing dialog. Existing outreach programs were continued; for example, the IRB column in ORSP's bi-annual Research News.

In FY2008, the IRB reviewed 138 new applications. Six studies were reviewed by the full board, 104 qualified as expedited review, and 28 as exempt research. The change from the familiar paper application process to electronic submission may explain the decrease from 173 new applications in FY2007.

ORSP will soon oversee financial conflicts of interest for Wake Forest research faculty. This function was under the auspices of the Compliance Office and includes soliciting and collecting annual disclosures, routing potential conflicts to department chairs for review and management plan development (if applicable), and forwarding those plans to the University's Conflict of Interest Committee for review and approval.

# MISSION

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Wake Forest University's Office of Research and Sponsored Programs assists the Associate Provost for Research in building faculty research programs of nationally recognized excellence. Our mission is to assist faculty in their pursuit and management of sponsored activities; to encourage and to support ethical research achievement, especially involving human subjects, in compliance with all relevant laws and regulations; to protect the university's interests, and to acknowledge and publicize faculty distinction.

# STAFF

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