

Office of Research and Sponsored Programs

2016 Annual Report



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UNIVERSITY

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MISSION

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

CREDITS

The Office of Research and Sponsored Programs gratefully acknowledges Ken Bennett's and Stephen Williams' photographs.

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From The Director

Dear Researchers,

What a fantastic and exciting year! Awards received during FY16 set a new record, with support for research and other sponsored projects topping \$16.4 million. This total is \$1 million more than the previous record set in FY10.

In addition to seeing our highest numbers ever, we entered a new age with respect to the types of funding and projects. The three new awards highlighted below and on the following pages exemplify this new era of research at WFU:

First ever U01 (Cooperative Agreement) from NIH – A study team, lead by Steve Messier, Health and Exercise Science, will receive \$6 million over 5 years to investigate the effects of diet and exercise on knee osteoarthritis.

First award from USAID – Miles Silman, Biology and the Center for Energy, Environment and Sustainability, and his collaborators received the \$2.5 million cooperative agreement, along with cash and in-kind contributions from other partners, to establish a research center in Peru.

The largest social sciences grant in the history of WFU – Will Fleeson, Psychology, and a multi-disciplinary faculty team were awarded \$3.9 million from the Templeton Religion Trust for their project to study the morally exceptional and improving moral character.

If you submitted a proposal in FY16 you know our campus is now using Cayuse SP and 424 to help prepare, route, and submit them. The response to Cayuse has been overwhelmingly positive. Time needed for the routing and approval process has decreased and proposals can be reviewed and approved anywhere the user has internet access. In the near future all of our proposal and award data will be maintained on-line. The implementation of Cayuse, combined with all the other electronic processes ORSP has adopted over the years, has resulted in a significant resource savings. As a result of this savings we applied for and received a Champions of Change Resource Conservation Waste Reduction Award in spring 2016.

Our big staffing news in FY16 was the retirement of long-time ORSP editor extraordinaire, Julie Edelson. Julie is missed at our regular staff meetings but she hopes to help out with special editing requests as her travel schedule allows. I continued serving on the Board of Directors for the Research Administrator's Certification Council and presented at the National Council of University Research Administrator's Financial Research Administrator's meeting. Pam Moser renewed her Certified IRB Professional (CIP) credential. Mark Woodard, Health and Exercise Science, became the first Certified Research Administrator outside ORSP- congratulations, Mark!

Sincerely,

Lori Messer, CRA
Director

Outstanding Projects

CENTER FOR ENERGY ENVIRONMENT, & SUSTAINABILITY



Miles Silman, Biology, received \$2.5 million from the United States Agency for International Development (USAID) to build a research center in Peru. Along with Michelle Klosterman and Luis Fernandez, he has created the Centro de Innovación Científica Amazónica (CINCIA) which translates to the Center for Amazonian Scientific Innovation. The project is also supported by numerous partners including the Amazon Aid Foundation, Ecosphere Capital Partners/Athelia Climate Change Fund, ESRI Global Inc., World Wildlife Fund (WWF) and Universidad de Ingeniería y Tecnología (UTEC). The research aims to develop transformative solutions to promote sustainable use of tropical landscapes, combat environmental destruction and improve human health in the Amazonian province of Madre de Dios (MDD) in Peru. MDD is a region in the Peruvian Amazon the size of South Carolina and covered by the most biodiverse and pristine tropical rainforests in the Amazon Basin. Through collaborative research, innovative education programs and apprenticeships, CINCIA hopes to inspire and groom future local scientists while also engaging with the local community to create needed change and sustainability to turn the tide of destruction in the rainforest province.

CHEMISTRY



Abdou Lachgar received an award from the United States Agency for International Development (USAID) and the National Academy of Sciences for *Empowering Pakistani women through scientific research, technology development, and entrepreneurship: Waste-to-energy technology development*. Wake Forest University developed and demonstrated the effectiveness of a new catalyst based on hydrothermal carbon (HTC) that converts waste vegetable oil and animal fats to advanced biofuels. This collaboration will commercialize the technology to contribute to human and economic development in the region around the University of Sindh. Pakistani and US researchers will develop and test the technology's application to sustainable energy and water purification projects in Pakistan, while the economic development strategy provides entrepreneurial opportunities and training for Pakistani women.

Outstanding Projects

ECONOMICS



Amanda Griffith, in collaboration with Joyce Main at Purdue University, received a grant from the National Science Foundation's Improving Undergraduate STEM Education (IUSE) program for their project, titled *An engineer like me: How perceived similarity and peer effects influence major choice*. This research will examine how peer characteristics influence major choice by studying students in the College of Engineering at Purdue University. Drs. Griffith and Main will analyze what factors influence Purdue engineering students' specialty choices by looking at the information the students receive about the different programs and observing the characteristics of the students who major in them. It is hoped that this research will ultimately provide data that can be used to increase the number of female and minority students who pursue degrees in engineering, as well as other STEM fields, across the country.

HEALTH & EXERCISE SCIENCE



Kristen Beavers, who is also associated with the Translational Science Center, secured two awards this year. The first, investigating the *Effect of exercise modality during weight loss on bone health in older adults*, is a K01 Mentored Research Scientist Development Award sponsored by the National Institutes of Health (NIH). Weight loss improves many clinical consequences of obesity, but physicians do not routinely recommend it for older adults based on the potential for age-related bone-mass loss, osteoporosis, and fracture. This clinical study is designed to clarify which exercise and weight-loss therapies maximize health benefits and minimize loss of bone mass and quality.

The second project, supported by a private sponsor, aims to determine whether a high-protein weight-loss program improves physical function in the elderly. While obesity in old age is a common risk factor for disability, morbidity, and mortality, physicians hesitate to recommend weight loss believing that the accompanying loss of fat-free mass may exacerbate age-related functional decline. This study tests the hypothesis that the amount of dietary protein consumed during caloric restriction will offset negative functional outcomes.

Outstanding Projects

HEALTH & EXERCISE SCIENCE (CONT.)



Steve Messier was awarded nearly \$6M from the NIH to conduct *WE-CAN: Weight loss and exercise for communities with arthritis in North Carolina*. Obesity is a modifiable risk factor for knee osteoarthritis (OA), and weight loss is an effective nonpharmacologic treatment to reduce pain. Under ideal, highly controlled circumstances, the WFU research team determined that a 10-percent diet-induced weight loss combined with exercise was twice as effective at relieving pain as either intervention alone. This pragmatic community-based trial will determine if these benefits can be translated to real-world settings. Results will provide a blueprint for clinicians and public health officials in urban and rural communities to implement a much-needed weight loss and exercise program designed to reduce knee pain and improve other clinical outcomes in overweight and obese adults with knee OA.

PSYCHOLOGY



William Fleeson, R. Michael Furr, Eranda Jayawickreme, and Christian Miller, PHILOSOPHY, have been awarded almost \$4M by the Templeton Religion Trust to conduct *The Beacon Project: Founding a field of the morally exceptional*. The project aims (a) to develop a field that studies moral excellence, equivalent in scope to the fields that study exceptional cognitive ability; (b) to integrate philosophical, theological, and psychological expertise to characterize its sources and qualities; and (c) to answer major questions about it, including how it can be inculcated. To achieve these aims, the team is requesting and supporting proposals for research on the morally exceptional; hosting two research conferences and a summer seminar; and developing a relevant website and campus reading group and lecture series.

Fellowships



Laura L. Aull, Assistant Professor of English and Linguistics, received a 2016-2017 Spencer Postdoctoral Fellowship from the National Academy of Education to work on *A Generalizing Genre: The Development and Dangers of the American Essay in School and Public Discourse*. At all levels, from college papers to popular magazines and op-ed pieces, American popular essays

tend to include more generalizations than other genres. This project uses corpus linguistic analysis of large text databases to identify recurring linguistic patterns related to generalizations. In light of these patterns, the project considers how and why the generalist essay genre developed in the twentieth century and raises important questions about the essay's frequent use in schooling and public debate. In particular, it explores implications for the essay--discursively, if subtly, characterized by generalizations--in a world of diverse perspectives.

Timo Thonhauser, Associate Professor of Physics, is one of 14 professors in the nation named a Simons Fellow by the Simons Foundation Division for Mathematics and the Physical Sciences. The award supports up to a semester's leave, which, combined with his sabbatical from Wake Forest, will allow him to

spend a year at MIT. Thonhauser's research focuses on using condensed matter theory to solve currently

outstanding problems in physics, biophysics, chemistry, and materials science, with applications to nano-, bio-, and energy-related materials ranging from cell-phones and computers to energy production and storage.

David Weinstein, Emeritus Professor of Politics and International Affairs, has been awarded a Franklin Research Grant from the American Philosophical Society. Building on an award from the WFU Humanities Institute, funds will allow him to spend two months using the extensive resources of the Bodleian Library, Oxford University, UK, to compose

Classical Utilitarianism and the Anxiety of Influence. The book will be the first to compare and contrast the thought of Herbert Spencer; classical utilitarians like Mill and Sidgwick; idealists like Green, Bradley, and Caird; and new liberals like Hobhouse and Ritchie.



Pilot Grants

Once again, awards sponsored by Blue Cross Blue Shield of North Carolina are enabling Reynolda campus faculty to develop creative, high-impact approaches to solve the state's healthcare problems. Winners each receive up to \$50,000 for the exciting one-year projects described below.



Christina Dalton, Economics: *Price Changes Ahead: Behavioral Effects of Threshold Pricing in Medicare Part D.* Increasingly, medical insurance plans feature pricing mechanisms that change after enrollees reach a certain level of spending. Deductibles, out-of-pocket maximums, and donut holes attempt to cut costs, but their efficacy depends on

enrollees adjusting their current spending in light of future prices. This project will test a new, potentially groundbreaking method to determine the behavioral effects of these pricing features, based on data from Medicare Part D plans.



Steve Folmar, Anthropology: *Health Disparities and Cultural Sensitivity in Mental Health Encounters among College Students.* This study will complete a project initiated last year with funds provided by ORSP. Based on the research team's strength in anthropology, psychiatry, and psychology and its experience in investigating the intersection of culture and mental health in

Nepal, it will measure how cultural sensitivity affects psychiatric therapy at Wake Forest University and Winston-Salem State University. Although cultural influences on psychiatric health and illness are increasingly recognized, professional training in cultural sensitivity is not systematic, and efficacy is measured by self-report and patient satisfaction. This project begins with qualitative approaches to identify key variables, resulting in a questionnaire for population-based research into how widespread and effective cultural sensitivity is in a variety of psychiatric therapy settings. Results will improve our ability to address mental health disparities, not only on college campuses, but among the general adult population of North Carolina.



Mark Hall, Law: *Reforming and Expanding North Carolina Medicaid: Empirical Evidence to Inform Public Policy.* In 2012, the US Supreme Court ruled that states may decline Patient Protection and Affordable Care Act (ACA) funding to expand their Medicaid programs to cover substantially

more people near poverty, and North Carolina so far has opted not to cover the additional 500,000 people who would be eligible. Some reason that Medicaid should be reformed before it is expanded. However, in September 2015, the NC General Assembly adopted managed care reforms, following the very type of "hybrid" approach supported by the policy brief (Shoaf & Hall, 2015a) and op-ed pieces resulting from this project's first round of BCBS funding. To advance reform, this year's project will

Pilot Grants

Mark Hall (cont)

amass, analyze, and disseminate objective evidence on hotly debated questions related to Medicaid expansion and reform. These questions include (1) the historical performance of managed care organizations and accountable care organizations in delivering Medicaid services; (2) the success and limitations of measures other states use to oversee private managed care plans to protect Medicaid beneficiaries and to achieve cost savings; (3) the true costs of Medicaid expansion and its economic stimulus effects; and (4) whether or not Medicaid coverage saves lives, improves health, and reduces inefficient use of emergency rooms.



Professional Development

INTERNAL AWARDS

The Office of Research and Sponsored Programs assists the Associate Provost for Research in coordinating and administering internal award programs. The second competition for the Blue Cross Blue Shield of North Carolina (BCBSNC) pilot grant program was held in the fall of 2015. In addition, there were two deadlines for Pilot Research Grants and one for Collaborative Pilot Grants. In the spring, a competition was held for a new pilot grant in cooperation with the Maya Angelou Center for Health Equity (MACHE). These new collaborative awards, focused on health disparities, will be effective in 2017.

FY16 awards by program are as follows:

BCBSNC Pilot Grants	\$98,910
Pilot Research Grants (PRG)	\$60,411*
Collaborative Pilot Grants (PRG)	\$20,000*

*Funding from the ZSR Foundation provided \$50,000 toward PRG and CPG Grants.

The office also manages matching/cost share funds. In FY16, over \$203K was provided for sponsored project cost share, high-speed computing, open-access publishing, and other initiatives.

FACULTY DEVELOPMENT

In FY16, the office spent nearly \$60K hosting and coordinating workshops and events, supporting research-related committees, paying for faculty travel to professional development seminars, and research-related training. Supported programs and events include:

Recognition of Research Excellence

Reception to Honor Authors, Editors, and Fine & Performing Artists

Creative Research Activities Development & Enrichment Program (CRADLE)

Responsible Conduct of Research Training for Graduate and Undergraduate Students

NEH Regional Grant Writing Workshop

ACC Innovation Competition

Building Research Success at Wake Forest University

The Winning Grants Seminar – Part I, Federal

The Winning Grants Seminar – Part II, Foundations and Corporations

Quality Circles

Centers and Institutes Retreat

Compliance

HUMAN RESEARCH PROTECTION

ORSP provides administrative support to the Institutional Review Board (IRB) under 45CFR §46. Pam Moser, Associate Director for Human Research Protection, maintains IRB records; facilitates communication between the IRB and researchers; coordinates meetings; updates and maintains the university's IRB policies and website; monitors training for researchers and other key personnel; provides continuing education for IRB members; and keeps the university's Federalwide Assurance and IRB Registration current. She is assisted by Jeanie Baird, Human Research Protection Specialist.

In 2015-2016, the IRB reviewed 136 new applications (124 expedited review and 12 exempt). An additional 190 amendments, 162 continuing reviews, and 18 safety events (14 protocol deviations and 2 unanticipated problems) were processed. The highest recorded number of active applications (330) was achieved in June. All category totals exceed last year's numbers with the exceptions of full board (decreased from 3 to 0) and exempt level reviews (no change). A marked increase in reported cases of investigator noncompliance, protocol deviations and unanticipated problems reflects more vigilant oversight and investigators' increased awareness of reporting requirements.

FY 15-16 was the first full year of post-approval monitoring (PM), a necessary component of a comprehensive human research protection program. Our goals for PM are to ensure the safety of human research subjects, provide education to researchers and identify areas for improvement in research practices. Two studies were selected based on federal funding and greater than minimal risk level, i.e., not "for cause".

Group outreach efforts targeted Education graduate students as well as undergraduate URECA Scholars/Fellows and Political Science, Counseling and First Year Seminar classes. Our office facilitated collaborative research by executing IRB Authorization Agreements, developing an administrative procedure for establishing cross-campus eIRB accounts with Wake Forest School of Medicine and approving recruitment of WFU personnel by non-affiliated investigators. Training and support for eIRB, the electronic submission and review system, continued for individual users across campus.



Funding Highlights

Wake Forest University researchers brought in nearly \$16.5 million from external sponsors, not including fellowship support for scholarship in the social sciences and humanities— approximately \$7.5 million more than in FY16. In addition, faculty and staff submitted a total of 118 proposals, requesting just over \$30 million.

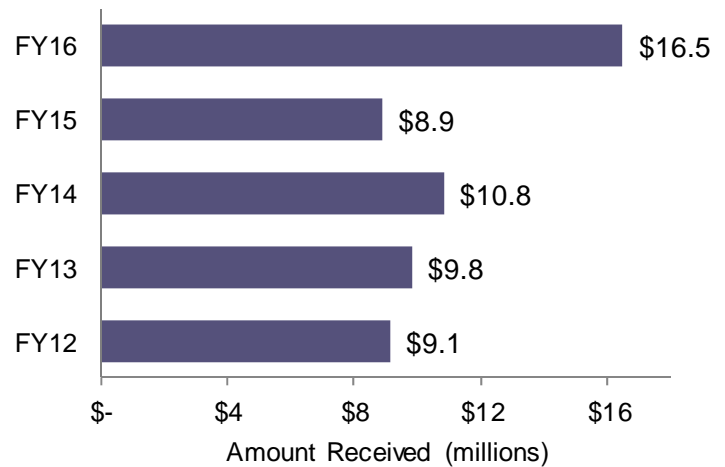
Psychology faculty received the most funding this fiscal year; their awards increased by more than \$4.5 million as compared to FY15. The Health and Exercise Science Department received the next highest level of funding, increasing their awards by more than \$1.6 million. The Physics Department submitted the most proposals and requested the most dollars.

During FY16, the Chaplain’s Office, the Anna Julia Cooper Center, and the Pro Humanitate Institute each submitted proposals and received their first externally-sponsored awards. In addition, the following faculty and staff received their first grants at WFU in FY16:

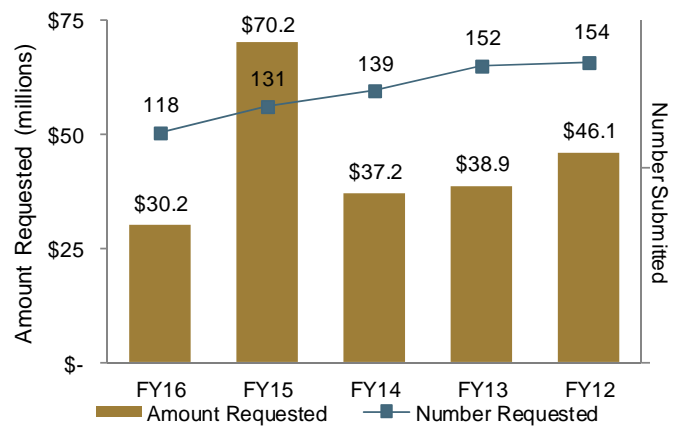
- Amanda Griffith, Economics
- E.J. Masicampo, Psychology
- Dani Parker, Pro Humanitate Institute/Anna Julia Cooper Center

The statistics that follow summarize Reynolda campus sponsored research activity for FY16. These graphs include funding processed through the Office of Research and Sponsored Programs and not gifts or the many fellowship awards made to individual faculty. Awards represent authorization to spend as opposed to research expenditures.

AWARDS BY YEAR: 2012-2016

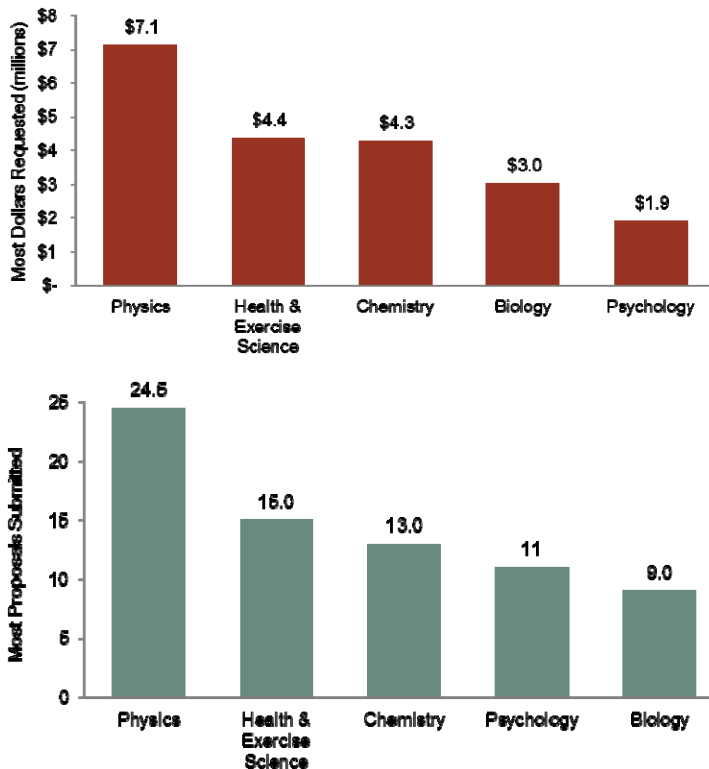


PROPOSALS BY YEAR: 2012-2016

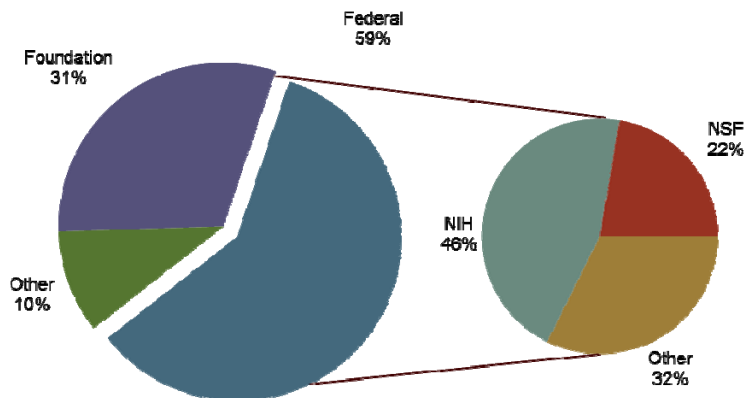


Funding Highlights

PROPOSALS BY DEPARTMENT



FUNDING SOURCES



Department/Center	Awards	Amount
Psychology	5.0	\$5,043,477.00
Health & Exercise Science	21.0	\$3,689,602.00
Biology	8.0	\$2,128,392.00
Physics	16.0	\$1,697,499.50
Center for Energy, Environment & Sustainability	2.5	\$1,334,072.00
Chemistry	6.5	\$643,231.50
Center for Molecular Signaling	3.5	\$602,153.00
Center for Nanotechnology & Molecular Materials	2.0	\$363,999.00
Translational Science Center	1.5	\$292,649.00
Communication	1.0	\$250,000.00
Mathematics	3.5	\$101,174.00
Politics & International Affairs	1.0	\$80,000.00
Computer Science	1.5	\$70,076.00
Religion	1.0	\$48,800.00
Economics	1.0	\$47,350.00
Anthropology	2.0	\$24,998.00
Anna Julia Cooper Center	0.5	\$24,751.50
Pro Humanitate Institute	0.5	\$24,751.50
ZSR Library	1.0	\$15,235.00
School of Law	1.0	\$2,500.00
Chaplain's Office	1.0	\$2,000.00



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