

Research News

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OFFICE of RESEARCH and SPONSORED PROGRAMS

October 2009

CROSSTOWN TRAFFIC

Although Wake Forest University (WFU) and Wake Forest University Health Sciences (WFUHS) have been separate legal entities since 2002, their research collaboration has never been more intense, as evidenced by the number of applications to, and awards by, the Cross-Campus Collaborative Research Fund (CCCRF). As shown below, the amount awarded has increased over 250% since FY04.

CCCRF History, FY04- FY09

Fiscal Year	Dollars Awarded
FY04	\$39,840
FY05	\$74,678
FY06	\$80,000
FY07	\$108,108
FY08	\$131,922
FY09	\$143,898
TOTAL	\$578,446

CCCRF was launched to stimulate pilot research deemed likely to generate the preliminary data to secure extramural funding for both institutions. The first, in 1997, was awarded to Dany Kim-Shapiro and Roy Hantgan for *Static and Dynamic Polarized Light Scattering of Biological Systems*.

Many successful collaborations were strengthened by a CCCRF award: *Cooperative Lifestyle Intervention Program (CLIP)*, directed by Jack Rejeski and David Goff; *Standardized Rehabilitation for ICU Patients with Acute Respiratory Failure*, Michael Berry and Peter Morris, and most recently, *Stress-Activated Signaling in Prostate Cancer*, based on pilot data generated from a CCCRF award directed by George Kulik, Fred Salisbury and Mark Welker.

Faculty who have never collaborated on an extramural proposal with "the other campus" may be surprised at how easy it can be. The process is similar to collaborating with researchers at other universities, but some short-cuts and cost-savings make collaboration within WFU an advantage.

For example, institutions like WFUHS that calculate indirect costs on a modified total direct cost (MTDC) basis may apply their indirect cost rate to the first \$25,000 of any subcontract. For subawards involving the Reynolda campus, WFUHS has agreed to waive these costs. The Reynolda campus, which does not use MTDC, cannot charge indirect costs on subawards.

Payments between the campuses can use the monthly cash swap. After invoices are received and approved by the PI, they can be paid via electronic transfer.

Pre-award administration is simple, especially if you inform ORSP well in advance of the deadline. We will contact the appropriate WFUHS department administrator and obtain a budget for the work to be performed there, which will be incorporated in the final budget submitted to the sponsor. If the Reynolda campus is the lead, the PI should write the total request, including funds for WFUHS, on the routing form. The WFUHS PI must route the Medical School part of the budget. Neither campus requires a signed letter of intent, but the research office of the institution that is not the lead will email the other to indicate that its budget has been reviewed and approved.

If WFUHS is the lead, ORSP should still prepare or at least review and approve the final budget for our campus. In the past, confusion has arisen since our faculty are on 9-month appointments versus 12 at WFUHS. In addition, our indirect costs are applied to salaries and wages only, rather than on the MTDC basis that WFUHS uses.

For more information, please contact ORSP at 758-5888 or research@wfu.edu. For questions related to WFUHS proposals, please contact Theresa Sears, Associate Director, Grants Administration, at grantsadmin@wfubmc.edu.

The key to successful collaboration is communication. Contact ORSP and your other partners early and often!

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WAKE FOREST
UNIVERSITY

BIG CHANGES AT NIH, 1/25/10

New Page Limits and Format

Starting 25 January 2010, grants submitted to the National Institutes of Health (NIH) will be radically shorter and respond more directly to reviewer criteria. As Dr. Welker observed, “whack your proposal by half.” Note that the numbers indicated in the summary below apply to the R01 and other mechanisms formerly allowed 25 pages; limits for other mechanisms differ. See <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-149.html> for details.

- **Introductions, or response to critique**, allowed only for resubmissions or revisions, are limited to 1 page; *don't quote or archly thank that mush-mouth Reviewer B! Accentuate your positive changes.*
- **Specific Aims** are officially limited to 1 page; 1 page, *hypothesis-driven*, was always ideal.
- **Research Strategy** replaces Background & Significance, Preliminary Studies/Progress Report, and Research Design & Methods and is limited to 12 pages.
 - It is organized to address **review criteria—Significance, Innovation, Approach**. *The smart money always pitched the proposal to reviewer criteria.*
 - Background should be used to substantiate claims about significance and innovation, but with about 3 pages to establish the primary criterion—**impact**—references must be strictly targeted.
 - Use a program like Reference Manager to reduce the space literature citations take up. Information about the research team should go under Personnel.
 - **Preliminary data** for new applications or **progress reports** for renewals or revisions are now part of Approach section; *more than ever, you must clearly distinguish what you've done from what you'll do.*

Beyond the 12-page limit:

- **Facilities and Other Resources** now requires a description of unique features that will contribute to *this* project's success, and Early Stage Investigators must describe institutional investment in their career; e.g., the start-up package. *Boilerplate is out.*
- **Biosketches** now include a personal statement about why your experience and qualifications make you ideal for your role. Publications are limited to the 15 most recent, relevant, and important. *Tailor the biosketch for each proposal.*

Old	New
1. Introduction (only resubmissions/revisions) - 3 pp	1. Introduction (only resubmissions/revisions) – 1 p
2. Specific Aims	2. Specific Aims – 1 p
3. Background & Significance	3. Research Strategy – 12 pp a. Significance b. Innovation c. Approach, including • Preliminary Studies (New Applications) OR • Progress Report (Renewals/Revisions)
4. Preliminary Studies/Progress Report	
5. Research Design and Methods	
6. to 12.	4. to 10. (renumbered)
13. Select Agent Research	11. Select Agent Research (modified)
14. to 17.	12. to 15. (renumbered)

New Forms

By December 2009, NIH will post new versions of the paper PHS 398 and electronic SF 424 (R&R) applications. When it does, it will issue a Guide Notice and new parent (PA) and Funding Opportunity Announcements (FOAs). *Applicants who have been preparing proposals under the old announcements must return to the reissued versions to download the new forms for deadlines on or after 25 January 2010.*

New Review Criteria kick in for the same deadlines (see <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-025.html>).

Overall Impact. Reviewers provide an overall impact score that considers the 5 core review criteria and additional criteria applicable to the project but *not as a summary*.

Core Criteria. Reviewers separately score each of the 5 criteria on scientific and technical merit. *An application need not be strong in all categories to score well in overall impact*; e.g., a project may not be innovative but still essential to advancing a field.

Significance. If the aims are achieved, will knowledge, technical capability, or clinical practice improve? Will concepts, methods, technologies, treatments, services, or preventive interventions change?

Investigators. Is the team well suited to the project? If Early Stage or New Investigators, do they have sufficient experience and training? If established, do they have an ongoing record of accomplishments? Do collaborations have complementary and integrated expertise; are leadership, governance, and organization appropriate?

Innovation. Does the project use a novel theory, approach, method, instrument, or intervention? Is it novel in one field or more broadly? Is it a refinement, improvement, or a new application?

Approach. Are the strategy, methods, and analyses reasonable and appropriate to accomplish the specific aims? Are potential problems, alternative strategies, and benchmarks presented? If the project is in the early stages, will the strategy establish feasibility and risky aspects be managed? If it involves clinical research, are the plans for protecting human subjects and including minorities, both sexes/genders, or children justified?

Environment. Are the institutional support, equipment, and other physical resources adequate? Will the project benefit from unique features, subject populations, or collaborations?

Additional Review Criteria. Reviewers will consider but not score proposals on measures to protect human subjects; include women, minorities, and children; and handle vertebrate animals and biohazards.

Resubmissions. Panels will evaluate changes made in response to comments from the previous panel. *Proposals may be resubmitted only once.*

Renewals. Panels consider progress in the last funding period.

Revisions. If the application proposes a line of investigation that was originally not approved, the panel will consider whether the response to critique is adequate, and changes to the rejected plan substantial.

Additional Considerations. Budget and Period of Support; Select Agent Research; Foreign Organizations; and Resource Sharing Plans will be addressed as applicable to the project but *not scored or considered in the overall impact score.*

Implementation. The new scoring system uses a 9-point scale (1 = exceptional; 9 = poor).

Not Recommended for Further Consideration. If the proposal is deemed to lack significant merit or presents

serious ethical problems in human subjects protection or use of vertebrate animals, biohazards, or select agents, it will not proceed.

Scores for Individual Criteria. Before the meeting, each reviewer and discussant scores the assigned application on each of the 5 core criteria. These scores will be reported on the summary statement for all applications, even those not discussed by the full panel.

Priority Scores. Before the meeting, each reviewer and discussant will assign their applications a preliminary impact score, which will determine those that are discussed. The overall impact score for discussed proposals will be determined by calculating the mean score from the members' final impact scores and multiplying it by 10. Thus, *81 possible overall impact scores* will range from 10-90. They will only be reported on the summary statement for discussed applications.

Funding Decisions. The new scoring system may produce more tie scores, so such factors as *relevance to the institute's mission and portfolio* will tip the balance.

NIH AREA

Wake Forest faculty and administrators attended a workshop hosted by the University of North Carolina, Greensboro, on the NIH Academic Research Enhancement Award (AREA; R15) just as an extra Recovery Act deadline approached. The October competition marked changes to pay-outs and previewed new page limits and scoring criteria applicable to all NIH grants starting in January (see above). Program administrators (PAs) from the National Institute of Environmental Health Sciences presented frank insights and advice.

In 1985, NIH realized that many of the nation's scientists earn their degrees at institutions that are not major recipients of its funding. AREA was created to promote small-scale, health-related research and strengthen the environment at these institutions. WFU investigators have consistently supported their research and mentoring through AREA, and it is one good reason we are a separate entity from the School of Medicine.

The R15 is a research award. Proposals focus on science, not coursework or training objectives. Leave out how students will be trained to do the project; how many and their tasks go under personnel along with collaborators.

AREA grants typically propose pilot or feasibility studies; developing, testing, and refining techniques; secondary analysis of data sets; and similar discrete projects that demonstrate research capacity. Preliminary data need only support feasibility. They typically have 2-3 aims

Investigators may now apply for up to \$300,000 (formerly \$150,000) for up to 3 years, and eligible institutions may have received NIH funding up to \$6 million (formerly \$3M) a year in each of 4 or more of the past 7 years.

AREA grants must compete for renewal. Investigators can't be the PI on an NIH research grant at the time of award nor hold more than one R15 at a time, but they can hold different ones successively. Junior faculty should note their status as New Investigators, meaning they have not held an R01, or Early Stage Investigators (ESI), a new category for those within 10 years of the PhD who have not held an R01, for special consideration.

For any NIH grant, start at least 3 months in advance. Think in terms of aims that test hypotheses and how results will advance your carefully chosen niche area over the long-term – the big picture. Assemble a team; you don't have the knowledge to accomplish your ambitions alone. Talk to the PA before you start writing to be sure the institute is interested in your ideas and, if not, to learn the better fit.

Complete a draft 1 month ahead for critique by outsiders and ask the PA to review the Specific Aims page. They look at about 12 a week, and their judgment provides a tacit comparison to your competition. They want to see a testable hypothesis before they are a third of the way down. Do not rely on reviewers to develop it.

The 200-word abstract identifies the long-term public health problem and who cares about it; how you will solve it; 1-2 hypotheses; the 2-3 aims that test them; the approach, techniques, and methods; and the impact of expected results.

Consult with the PA to make sure you request a review panel that has the expertise to understand your approach; e.g., basic scientists rather than clinicians. AREA applications are evaluated using standard NIH criteria, and panels using the new system are struggling with it. They assess AREA features under the Investigator and Environment criteria: experience with students, the institution's suitability, and the award's impact on the

institution. Failure to address these points explicitly will diminish enthusiasm. Again, if your work isn't innovative, say so, but note why it's valuable for other reasons. NIH doesn't fund followers, gap-filling, or verification/replication. Tell the reviewers what they want to hear. Overall AREA success rates are 25 percent, although they vary among institutes.

COLLABORATIVE PROPOSALS TO THE NATIONAL SCIENCE FOUNDATION

In collaborative proposals, investigators from two or more organizations plan to conduct a unified research project. They may be submitted to NSF as a single proposal requesting a single award, with subawards administered by the lead organization, or as simultaneous proposals from different organizations, each requesting a separate award. In either case, the lead organization's proposal must contain all of the requisite sections as a single package that will be provided to reviewers; this process that will happen automatically when procedures noted below are followed. The Project Description for all collaborative proposals must clearly describe the roles that the other organizations will play, managerial arrangements, and the advantages of the multi-organizational effort. PIs are strongly encouraged to contact the cognizant NSF Program Officer and ORSP before embarking on a collaborative proposal.

The single proposal method allows investigators from two or more organizations who have developed an integrated research project to submit a single, focused proposal. One investigator bears primary responsibility for administering the grant and discussions with NSF, and investigators from the participating organizations may be designated co-PIs, although they remain subawardees.

By submitting a collaborative proposal, the organization attests its confidence that the proposed activity is manageable. NSF may request a revised proposal if it considers the project so complex that it will be too difficult to review or to administer as presented. See [GPG, Chapter II.C.2.g.\(vi\)\(e\)](#) for additional instructions.

Sometimes, simultaneous submission of proposals from each organization may be preferable. Their titles must begin *Collaborative Research*: The lead organization's submission will include a Cover Sheet, Project Summary, Project Description, References Cited, Biographical Sketches, Budgets and Budget Justification, Current and Pending Support, and Facilities, Equipment, and Other Resources for their organization as well as the one-page supplemental mentoring plan

for all postdoctoral researchers supported under the *entire* collaborative project. Non-lead organizations submit all of the above for their organization except the Project Summary, Project Description, and References Cited, which will be the same for all of the partners. FastLane will combine the submissions for printing or electronic viewing.

ORSP has experience in submitting such proposals and can guide you through the process. Extra lead-time is requested and appreciated.

WANT A POSTDOC? WRITE A PLAN

The National Science Foundation has posted its *Proposal and Award Policies and Procedures Guide*, which includes the *Grant Proposal Guide*, for January 2010 (www.nsf.gov/pubs/policydocs/pappguide/nsf10_1/index.jsp).

Exhibit II-1, Proposal Preparation Checklist, confirms that the supplementary documentation required for ARRA proposals requesting support for a postdoctoral researcher is now required for all such proposals. Failure to include a mentoring plan will result in return without review (see [GPG Chapter IV.B](#)).

Happily, the one-page description is not considered part of the 15-page Project Description nor an appendix, which reviewers would not have to read.

The mentoring plan must describe the professional development activities that will be provided to all postdoctoral researchers supported by the project, whether they reside at the submitting organization, a subawardee organization, or any organization participating in a simultaneously submitted collaborative project.

Examples include, but are not limited to, career counseling; training in preparing grant proposals, publications, and presentations; guidance on ways to improve teaching and mentoring skills; guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and training in responsible professional practices. The agency provides a sample plan (www.nsf.gov/eng/iip/sbir/Sample_Postdoc_Mentoring_Plan.doc). Proposed activities will be evaluated as part of the merit review process under the broader impacts criterion.

TEMPLATE FOR MULTIPLE PI PROJECTS

from *Grantseeker Tips* 262 (26 May 2009)

Collaborative proposals with multiple PIs or project directors (PDs) are a growing trend. The National Institutes of Health (NIH) require a leadership plan, and at any agency, reviewers must know how large-scale projects will be administered. This template generally follows NIH guides (http://grants.nih.gov/grants/multi_pi/overview.htm).

Rationale. Explain why you need multiple PIs. Is your project interdisciplinary, interinstitutional, or international? Is a team approach required?

Organizational Structure. Present a chart showing the relationship among the PIs. Each may have primary responsibility for one project facet, while sharing equally in project authority and responsibility, intellectually and logistically.

Governance. Communication is critical.

1. **Communication Philosophy.** Is communication a core project value? Is responsibility shared equally among all PIs or relegated to an individual?
2. **Audiences.** Who are your primary external and internal audiences? What messages must be disseminated to them? How will you communicate them and how often?
3. **Decision-Making.** What process will you use to make project decisions? How will you resolve inevitable differences of opinion?
4. **Roles and Responsibilities.** Prepare a three column table with Individual, Project Role, and Project Responsibilities as headers. In the rows, name each participant, role in the project, and three types of responsibilities: administrative, technical, and scientific.
5. **Budget Allocation.** Finally, indicate how the budget will be divided among the PIs.

NSF ISSUES RESEARCH TRAINING OVERSIGHT REQUIREMENTS

Effective 4 January 2010, the National Science Foundation implements a new requirement. Institutions must have a plan in place to provide training and oversight in responsible and ethical research conduct to undergraduates, graduate students, and postdoctoral fellows engaged in NSF-supported projects. One or more institutional officials must oversee compliance and verify that training was provided. The requirement, stated in the *Proposal and Award Policies and Procedures Guide*, chapter IV.B, "Responsible Conduct of Research", responds to Section 7009 of the America COMPETES Act.

While training plans need not be included in proposals, NSF may request them for review. Standard award conditions now clearly hold institutions responsible for verifying the RCR training of students and postdocs.

The agency is not specifying standards "and recognizes that training needs may vary depending on specific circumstances of research or the needs of students intending to pursue careers in a variety of science and engineering settings after completing their education. Therefore, it is the responsibility of each institution to determine both the content and the delivery method for the training that will meet the institution's particular needs . . . each institution must decide if development of content or pedagogical method is required, or if appropriate content and training can be provided from . . . existing sources or capabilities . . ." (*Federal Register* 74, 160 [20 August 2009]; <http://edocket.access.gpo.gov/2009/E9-19930.htm>).

At Wake Forest, the Graduate School offered RCR training for its students this fall, and procedures for undergraduates are under discussion.

NSF will develop an online digital library of research findings and pedagogical resources on promising practices. Informed by the research communities that NSF supports, this growing multimedia resource may be used to train current and future generations of scientists and engineers (*National Science Foundation Policy Office Newsletter*, May 2009; <http://www.nsf.gov/pubs/policydocs/newsletter/may09/>).

OPEN-ACCESS FUND

Open-access literature is defined as "digital, online, free of charge, and free of most copyright and licensing restrictions" (www.earlham.edu/~peters/fos/overview.htm). Its advocates, including the National Institutes of Health, hold that taxpayer-funded research results should be publicly available. Like other scholarly journals, open-access journals are peer-reviewed.

ORSP, the home department, and the Z. Smith Reynolds Library will each pay one third of the publication fees charged by open-access journals to assist Reynolda campus faculty. Priority will be given to those who do not have grants to support these expenses. See <http://zsr.wfu.edu/about/scholarly/openaccess/fund.html>.

EXTERNAL REVIEW FOR MULTI-INVESTIGATOR TRAINING AND CENTER PROPOSALS

ORSP will pay up to \$500 to external experts to review Wake Forest multi-investigator training and Center proposals prior to their submission to the sponsoring agency. The PI should identify the external expert and coordinate the review process. The external consultant will be required to complete a W-9 form before payment can be made.

ROCKING CRADLE, II

The successful 2-year CRADLE program begins again with 10 promising new fellows. They will be nurtured by both external and internal consultants in grant skills, so they can plan and achieve superior, long-term research and creative activities. They receive a \$5K summer salary stipend, a \$1K travel supplement, and intensive group and individual training. Fellows for 2010-2011 are Sandya Hewamanne, Anthropology; Erik Johnson, Biology; Lindsay Comstock and Patricia Dos Santos, Chemistry; Kristin Bennett and Adam Friedman, Education; Jeff Katula, Health & Exercise Science; Nate Plageman, History; Jennifer Erway, Mathematics; and Timo Thonhauser, Physics.

COMPLIANCE HOTLINE. Call 1-877-880-7888 or email www.tnvinc.com/Reportline/International/ to report suspected violations of laws, regulations, rules, policies, procedures, ethics, or other information anonymously. The operator, who is not a university employee, will report your concerns to the University Compliance Office.

OUTSTANDING PROJECT PROFILES

Wake Forest University won two prestigious training grants recently. These grants multiply the impact and reach of our teacher/scholar ideals across time, space, and social barriers.

Education Professor Leah McCoy and Angela King, Senior Lecturer in Chemistry, were awarded \$893,753 over 5 years from the National Science Foundation's Robert Noyce Teacher Scholarship Program. *WINS, Wake Innovative Noyce Scholars*, will aggressively recruit undergraduate Biology, Chemistry, Mathematics, and Physics majors and professionals in these fields, seeking a diverse cohort in terms of both disciplinary concentration and demographics. Recruitment sites will include HBCUs and women's colleges. Eight candidates each year will receive full tuition and a stipend to participate in a 13-month program leading to teacher licensure in a STEM field (grades 9-12) and a Master's in Education. The program will include extensive study of the teaching and learning process, based on best-practices research and focusing on content, pedagogy, diversity, and leadership.

Graduates will be required to teach for two years in a high-need school, supported by electronic mentoring through email, discussion boards, and blogs; two annual on-campus seminars; and financial support to attend professional conferences.

The program will produce annual cadres of committed, innovative, effective STEM teachers, who will stimulate and guide the development of future generations. WIN scholars will maximize the science and mathematics achievement of students in high-need schools and serve as models for other teachers. Project results, including analysis, conclusions, and reflections, will be disseminated in presentations and publications as a national model for improving teacher education and retention in STEM fields.

WINS builds on the 20-year success of the Wake Forest Master Teacher Fellows program, directed by Dr. McCoy. Her research has been supported by the Spencer Foundation, among other sources. Dr. King has earned successive extramural funding to promote teacher professional development and student learning in science and math.

"Studies show that the teacher is the most important factor in whether or not students achieve," Dr. McCoy said in a *Window on Wake Forest* interview. Dr. King added, "Any impact a person can have . . . in their professional field is amplified by teaching through a ripple effect. It's a chance to change the prevailing social attitude. Meet an adult who

cannot read the newspaper, and we are shocked. Meet an adult who doesn't understand probability or statistics, and most of us don't think a thing of it. Ignorance in math and science is considered acceptable in our culture—especially for women—even though these disciplines are equally important to being a productive member of society. Teachers have an opportunity to change this."

In Biology, Professor Wayne Silver and Reynolds Professor of Neuroscience Susan Fahrback, with co-PI Dr. Azeez Aileru at Winston-Salem State University, won 5 years' support for an *Undergraduate Neuroscience Training Cooperative between Wake Forest University and Winston-Salem State University* from the National Institutes of Health.

The goal is to encourage and to prepare underrepresented minorities to pursue careers in neuroscience by making the undergraduate neuroscience minor at Wake Forest available to students at Winston-Salem State, a historically black institution. Although WSSU has several research neuroscientists, its curriculum has no neuroscience-related courses, and its students lack the training or experience to explore neuroscience when they consider postgraduate study or careers.

The new cooperative arrangement builds on a developing relationship in the life sciences between WFU and WSSU, reflected in the School of Medicine's participation in WSSU's Biomedical Research Center and Research Infrastructure in Minority Institutions programs. It is innovative in its focus on undergraduates. WSSU students will be able to take courses in WFU's undergraduate neuroscience minor and conduct research with neuroscientists at WFU, WSSU, or WFU School of Medicine. They will be paired with mentors in the WFU Graduate Neuroscience Program and attend a Society for Neuroscience annual meeting to get a clear idea of the potential for satisfying careers in the field.

The project will also train a postdoctoral fellow for a career in teaching and research. The fellow, who will be supported by funds from Wake Forest University, will assist faculty in coordinating neuroscience courses and conduct research in a WSSU neuroscience laboratory, which will have the added benefit of advancing the WSSU researcher's career.

This opportunity will enable WSSU undergraduates already interested in neuroscience to take concrete steps to achieve their professional goals, but it will also attract students to neuroscience who might otherwise be excluded. Diversifying the WFU neuroscience minor will have immediate and long-term benefits for all involved.

NEW FACULTY BOOKS

March - September 2009

ART

Gentry, Jennifer (illustrator). *Partial Breast Reconstruction* by Losken & Hamdi. Quality Medical Publishing, 2008.

BABCOCK SCHOOL OF MANAGEMENT

Meredith, Jack, & Scott Shafer. *Operations Management for MBAs*. 4th ed. John Wiley & Sons, 2009.

Narus, James, & Bob Donath. *Build, Fix, or Terminate: The Distributor's Guide to More Profitable Supplier Relations*. NAW Institute for Distribution Excellence, 2009.

CALLOWAY SCHOOL

Bamford, Charles, & **G. Page West, III.** *Strategic Management: Value Creation, Sustainability, Performance*. South-Western, 2009.

Bliss, Robert, & George Kaufman. *Financial Institutions and Markets: 2007-2008 – The Year of Crisis*. Palgrave MacMillan, 2009.

Gatewood, Elizabeth, G. Page West, III, & Kelly Shaver. *Handbook of University-wide Entrepreneurship Education*. Edward Elgar, 2009.

COUNSELING

Gladding, Samuel, & Deborah Newsome. *Clinical Mental Health Counseling in Community and Agency Settings*. 3rd ed. Prentice Hall, 2009.

DIVINITY

Leonard, Bill. *Baptist Questions, Baptist Answers: Exploring Christian Faith*. Westminster John Knox Press, 2009.

———, et al., eds. *The Acts of the Apostles: Four Centuries of Baptist Interpretation*. Baylor UP, 2009.

ECONOMICS

Frey, Donald. *America's Moralists: A History of Rival Ethics and Economics*. State UP of New York, 2009.

EDUCATION

Cunningham, Patricia, & James Cunningham. *What Really Matters in Writing: Research-based Practices across the Elementary Curriculum*. Allyn & Bacon, 2009.

GERMAN AND RUSSIAN

Thomas, Rebecca, trans. *We Never Sleep* by Kathrin Roggla. Ariadne Press, 2009.

HISTORY

O'Connell, Monique. *Men of Empire: Power and Negotiation in Venice's Maritime State*. Johns Hopkins UP, 2009.

LAW

Davis, Timothy, et al. *Sports Law and Regulation: Cases, Materials, and Problems*. 2nd ed. Aspen Publishers, 2009.

Markel, Dan, **Jennifer Collins,** & Ethan Leib. *Privilege or Punish: Criminal Justice and the Challenge of Family Ties*. Oxford UP, 2009.

Palmiter, Alan. *Corporations: Examples & Explanations*. 6th ed. Aspen Publishers, 2009.

MUSIC

Borwick, Susan. "We Gather Together (On Kremser)" for brass quintet. MorningStar Music, 2009.

———. "Joy to the World (On Antioch)" for brass quintet. MorningStar Music, 2009.

———. "The Child" for chorus. MorningStar Music, 2009.

POLITICAL SCIENCE

Browsers, Michaele. *Political Ideology in the Arab World: Accommodation and Transformation*. Cambridge UP, 2009.

Coates, David. *Answering Back: Liberal Responses to Conservative Arguments*. Continuum, 2009.

———, & **Peter Siavelis.** *Getting Immigration Right: What Every American Needs to Know*. Potomac Books, 2009.

Sznajder, Mario, & **Luis Roniger.** *The Politics of Exile in Latin America*. Cambridge UP, 2009.

Fisher, Louis, & **Katy Harriger.** *American Constitutional Law*. 8th ed. Carolina Academic Press, 2009.

RELIGION

Foskett, Mary. *Interpreting the Bible*. Fortress Press, 2009.

ROMANCE LANGUAGES

Gala, Candelas, & Anne Hardcastle. *Entre Pureza y Revolución: Essays in Honor of Juan Cano Ballesta*. Juan de la Cuesta, 2009.

Lanzoni, Remi Fournier. *Comedy Italian Style: The Golden Age of Italian Film Comedies*. Continuum, 2009.

NEW FACULTY BOOKS

March - September 2009

ROMANCE LANGUAGES (cont.)

Wells, Byron, & E. Joe Johnson, eds. *An American Voltaire: Essays in Memory of J. Patrick Lee*. Cambridge Scholars Publishing, 2009.

SOCIOLOGY

Smith, Earl. *Race, Sport and the American Dream*. 2nd ed. Carolina Academic Press, 2009.

———, ed. *Sociology of Sport and Social Theory*. Human Kinetics, 2009.

———, & Angela Hattery. *Interracial Intimacies: An Examination of Powerful Men and Their Relationships across the Color Line*. Carolina Academic Press, 2009.

———, & Angela Hattery. *Interracial Relationships in the 21st Century*. Carolina Academic Press, 2009.

Z. SMITH REYNOLDS LIBRARY

Pressley, Lauren. *So You Want to Be a Librarian*. Library Juice Press, 2009.

FUNDED FACULTY RESEARCH

February - September 2009

ANTHROPOLOGY

Ellen Miller, *Paleontological exploration at Buluk, Northern Kenya*, Leakey Foundation, \$17,796

Kenneth Robinson

- *Historical research, survey*, PTRP Holdings, LLC, \$10,253
- *Archaeology survey, power poles on federal lands*, Randolph Electrical Membership Corp., \$2,998
- *Ground-penetrating radar study*, Joppa Cemetery, Inc., \$1,500
- *Assessment, Uwharrie River access*, Uwharrie National Forest, \$2,245

Stephen Whittington

- *Painted hide conservation*, Institute of Museum and Library Services, \$3,000
- *Painted hide conservation*, North Carolina Preservation Consortium, \$1,645

FUNDED FACULTY RESEARCH

February - September 2009, continued

BIOLOGY

James Curran, *AREA: Translational Roles of the Ribosomal E site*, National Institutes of Health (NIH), \$204,951

Susan Fahrback

- *FIBR: Bee.Space - An interactive environment for analyzing nature and nurture in societal roles*, National Science Foundation (NSF)/University of Illinois, \$10,970
- *Young Investigators Symposium, Steroid Workshop*, NSF, \$14,355
- *Muscarinic regulation of plasticity in the brain*, NIH/University of Illinois, \$68,150
- with **Wayne Silver**, *Undergraduate neuroscience training cooperative between WFU and WSSU*, NIH, \$177,896

Erik Johnson, *Roles of the AMP-activated kinase in metabolic homeostasis in Drosophila*, NSF, \$330,278

Kathleen Kron, *Collaborative Research: Phylogenetic, biogeographic, and monographic studies in the wintergreen group*, NSF, \$122,720

Gloria K. Muday

- *Arabidopsis 2010 Collaborative Research: Modeling biological networks in Arabidopsis through integration of genomic, proteomic, and metabolomic data*, NSF, \$274,984
- *Dynamics of auxin transport protein localization and gravitropism*, NASA, \$278,728

Miles R. Silman, *Norwegian climate and forest initiative: ACA new REDD models for tropical montane forest*, Amazon Conservation Association, Inc., \$10,000

Wayne Silver, with **Susan Fahrback**, *Undergraduate neuroscience training cooperative between WFU and WSSU*, NIH, \$177,896

Clifford Zeyl

- *Evolutionary advantage, recombination, and adaptation in experimental yeast populations*, NSF, \$7,000
- *Mating behavior in allopatric and sympatric postzygotically isolated populations of the model Saccharomyces paradoxus*, NSF, \$7,000

FUNDED FACULTY RESEARCH

February - September 2009, continued

CHEMISTRY

Rebecca Alexander

- *Biotechnology partners fellowship program*, North Carolina Biotechnology Center (NCBC), \$5,750
- *CAREER: Dissecting domain-domain communication in methionyl-tRNA synthetase*, NSF, \$26,398

Ulrich Bierbach, *Novel DNA-metalating hybrid anticancer agents*, NIH, \$229,541

Christa Colyer, *Affinity-based CE studies to facilitate bioprobe design and microbe detection*, NSF, \$113,000

Willie Hinze, *Surfactant-mediated extractive preconcentration of nanomaterials*, NCBC, \$26,850

Bradley Jones, *Portable tungsten-coil atomic emission detector for nuclear forensics*, Department of Homeland Security, \$99,315

Angela King, with **Leah McCoy, Education**, *WTNS = Wake Innovative Noyce Scholars*, NSF, \$893,753

S. Bruce King

- *Proteomic profiling of cancer-related redox signaling pathways*, NIH/WFU Health Sciences (WFUHS), \$10,000; \$10,000
- with **Daniel Kim-Shapiro, Physics**, *Effects of nitric oxide in sickle cell blood*, NIH, \$341,309
- *Nitroxyl-nitric oxide-producing reactions of hydroxyurea and related compounds*, NIH, \$324,069
- *Synthesis of hydroxamic acids through NOH insertion of ketones*, Petroleum Research Fund, \$50,000
- *Nanotubes in tumor imaging and therapy*, NIH/WFUHS, \$53,612

Abdou Lachgar, *Metal-organic materials for tobacco smoke filtration and waste water purification*, Reynolds Tobacco, \$124,882

COMMUNICATION

Allan Loudon, *Ben Franklin Transatlantic Institute*, State Department, \$5,000

Ananda Mitra, *SPARC study to prevent alcohol-related consequences*, NIH/WFUHS, \$11,684.50

COMPUTER SCIENCE

Jacquelyn Fetrow (also **Physics**)

- *Computational modeling of dendritic cell maturation*, NIH, \$83,387
- *Analysis of redox-modulated signaling networks in response to ionizing radiation*, NIH/WFUHS, \$48,912
- *WFU Older Americans Independence Center, Molecular Science Resource Center*, NIH/WFUHS, \$15,295
- *Systems biology approach to discovery of novel pathways in osteoarthritis*, Arthritis Foundation/WFUHS, \$29,020

Errin Fulp

- *Securing the next generation of information infrastructure*, Department of Energy (DOE)/Battelle Memorial Institute, \$16,635; \$22,189
- *Integrated parallel firewall and IDS for high-speed networks*, DOE/Greatwall Systems, Inc., \$40,292

Victor Pauca, *Practical enhanced-resolution integrated optical digital imaging camera*, Defense Microelectronics Activity/Catholic University of America, \$14,979

Todd Torgersen, *Utilizing computational imaging for laser intensity reduction at CCD focal planes*, Army Research Office/Agiltron Corporation, \$21,000

EDUCATION

Leah McCoy, with **Angela King, Chemistry**, *WTNS = Wake Innovative Noyce Scholars*, NSF, \$893,753

HEALTH AND EXERCISE SCIENCE

Michael Berry, *Standardized rehabilitation for ICU patients with acute respiratory failure*, NIH, \$95,556

Jeffrey Katula, *Translating Research in Practice (TRIP)*, NIH/WFUHS, \$61,524

Anthony Marsh

- *Co-Core leader, Pepper Center clinical research*, NIH/WFUHS, \$12,370
- *Demo II: Loss of adipose tissue and physical function responses to exercises*, NIH/WFUHS, \$88,263

FUNDED FACULTY RESEARCH

February - September 2009, continued

HEALTH AND EXERCISE SCIENCE (cont.)

Stephen Messier, *Intensive dietary restriction with exercise in arthritis*, NIH, \$589,139

Gary Miller, *Hydration Performance Plus: Acceptance, tolerance, and effectiveness studies*, NutraFood Nutrients, Inc., \$5, 999

Patricia Nixon

- *Prenatal events, postnatal consequences*, NIH/WFUHS, \$74,844; \$107,792
- *Antenatal steroids and blood pressure in childhood*, NIH/WFUHS, \$48,812

Jack Rejeski

- *Cooperative Lifestyle Intervention Program*, NIH, \$482,419
- *Co-Core Leader for clinical research at the Pepper Center*, NIH/WFUHS, \$21,651
- *Longitudinal methods for complex interactions in elderly populations*, NIH/WFUHS, \$16,725
- *Intervening on spontaneous physical activity to prevent weight regain in women*, NIH/WFUHS, \$56,294

MATHEMATICS

Jennifer Erway

- *Second-order methods for large-scale optimization in compressed sensing*, NSF, \$48,303
- *Optimization methods for solving the Einstein constraint equations*, Oak Ridge Associated Universities (ORAU), \$5,000

PHYSICS

Paul Anderson, *Studies of quantum fields in cosmological and black hole spacetimes*, NSF, \$120,000

Joel Berry, *Development of collagen-based engineered blood vessels*, NIH/WFUHS, \$77,597

PHYSICS (cont.)

David Carroll

- *MURI: Self-Assembled soft optical NIMS*, Air Force Office of Scientific Research (AFOSR)/Kent State University, \$56,482
- *Nanotubes in tumor imaging and therapy*, NIH/WFUHS, \$22,395
- *PureLux*, PureLux, Inc., \$100,000
- *FiberCell*, FiberCell, Inc., \$100,000
- *Nanocomposite distal tips for guidewires*, Cook Medical, \$45,000
- *Characterization of the potential toxicity of metal nanoparticles in marine ecosystems using oysters*, Environmental Protection Agency/UNC-Charlotte, \$34,600

Martin Guthold, *Mechanical properties of native and variant fibrin fibers*, American Heart Association, \$20,000

Oana Jurchescu, *Nondestructive deposition of electrical contacts on organic semiconductors*, National Institute of Standards and Technology, \$120,040

Daniel Kim-Shapiro

- *Multifunctional Blood Substitute (MBS) for field resuscitation of polytrauma combat casualties*, Army Research Office (ARO)/University of Pittsburgh, \$7,500
- with **S. Bruce King, Chemistry**, *Effects of nitric oxide in sickle cell blood*, NIH, \$341,309

Jed Macosko

- *Better, faster live-cell imaging: Motion-enhanced DIC (MEDIC) with fluorescence*, NIH, \$195,109; \$31,262
- *Cellcraft: Exploring the cell through computer games*, MacArthur Foundation, \$25,490

Fred Salsbury

- *Targeting the MSH2-dependent apoptotic pathway*, NIH, \$316,952
- *Drug design, discovery, and development—Molecules to Medicines*, NCBC/WFUHS, \$11,939

FUNDED FACULTY RESEARCH

February—September 2009, continued

PHYSICS (cont.)

Timo Thonhauser, *Ab-initio materials modeling including van der Waals forces*, ORAU, \$5,000

Richard Williams, *fs laser studies of scintillation processes and materials—high-excitation density, transient absorption probes, and role of carrier diffusion*, DOE/University of California Regents, \$55,143

PROVOST'S OFFICE

Mark Welker, *CRADLE grants writing workshop*, NCBC, \$2,100

RELIGION

LeRhonda Manigault

- *Ab Tulk to de Dead all de Time*, Ford Foundation, \$40,000
- *Ab Tulk to de Dead all de Time*, Louisville Institute, \$40,000

Z. SMITH REYNOLDS LIBRARY

Susan Smith, *Preserving Forsyth's Past outreach program*, State Library of North Carolina, \$33,151

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