

**Mastering the Role of the Principal Investigator – NIH Insights**

Tuesday, November 8, 2011

1:30pm – 2:45pm

**2011 CAREER Award Regional Forum**

November 8-9, 2011

The Cook Hotel and Conference Center at LSU

Baton Rouge, Louisiana

## **Panelists**

**T. Scott Little, PhD - Moderator**

Director  
South Carolina EPSCoR/IDeA State Office

**R. Bruce Dunlap, PhD**

Distinguished Professor Emeritus  
Department of Chemistry and Biochemistry  
University of South Carolina

**Michael H. Sayre, PhD**

Deputy Director, Division of Research Infrastructure  
National Center for Research Resources, NIH

## **Presenters**

**Jeff C. Marshall, PhD**

Director, Inquiry in Motion Institute  
Associate Professor, Science Education  
Clemson University

**Cassie Quigley, PhD**

Assistant Professor of Science Education  
Clemson University

**Kevin R. Macaluso, PhD**

Associate Professor  
Department of Pathobiological Sciences  
Louisiana State University

## **Agenda**

**A. Welcome and Introductions of the Panelists**

T. Scott Little – Moderator

**B. Overview**

**C. Mentoring to Master the Role of Principal Investigator**

R. Bruce Dunlap

**D. Challenges in Acquiring NSF Support**

Jeff Marshall and Cassie Quigley

**E. A 'Young Giant's' Strategy for Academia Success (version 7.0)**

Kevin Macaluso

**F. Identification and Description of Faculty Support Awards from the NIH and NGOs**

Michael Sayre

**G. Panel and Speaker Discussion: Questions and Answers**

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**BREAK-OUT SESSION REPORT**  
**MENTORING TO MASTER THE ROLE OF PI - NIH INSIGHTS**

**REPORT**

**Talking Point: Essential strategies that lead to a high frequency of successful CAREER and other extramural award applications.**

**Priorities for Institutions and Departments:**

Institutions and Departments need to have or **develop Strategic Plans with mission statements clearly defining the importance of faculty research.**

At least 6 months before an ad is placed seeking applications for new faculty, the institution and department must **translate the principles defining the importance of faculty research from their Strategic Plans into specific supporting activities.** In the instance where the institution and department seek to hire a faculty member who will perform biomedical or non-biomedical related research they must be willing to make the following commitments:

1. agree on the specific area(s) in which the new faculty(s) is to be recruited and make the commitment to "hire for tenure." In other words, only interview candidates whose track record and recommendations and whose performance during the interview strongly indicate that there is at least an 80% chance, before extending an offer, that the new hire will perform sufficiently well to be awarded tenure and promotion. The institution and departmental chair must be explicit with the candidates regarding exactly how and when the faculty member will be evaluated during her/his non-tenured status as well as the specific institutional requirements in terms of teaching, research, and service that must be satisfied in order to earn tenure and promotion.
2. nature of the interview. Besides the typical meetings with faculty members, students, the department chair, dean, etc, and the presentation of the review seminar, each interviewee should submit detailed written research plans and teaching interests to the search committee and should present and defend her/his research plans after the research seminar in a meeting with the members of the search committee and other interested faculty. **The thorough review and evaluation of the candidate's research plan, her/his ability to defend the plan, and an appraisal of her/his ability to bring that plan to fruition at the institution are the three most important factors that will determine whether or not the candidate will successfully compete for external funding at the institution and ultimately produce a competitive CAREER or other application that is worthy of funding.**
3. agree to provide the new faculty with an appropriate amount of modern research space that is competitive with that for comparable faculty in peer institutions,

4. agree to a range of start-up funding for the purchase of research instrumentation, equipment, and supplies that is comparable to that offered by peer institutions,
5. agree to provide the new faculty with sufficient funds to hire graduate research assistants (comprehensive research universities) or undergraduate researchers (predominately undergraduate institutions) for at least 2 years during the academic year and the summer sessions,
6. agree to a defined low teaching load within the first 2-4 years in which the faculty member is asked to teach no more than 1-2 courses per semester and asked to prepare no more than 4 new courses over the course of his/her first four years,
7. limit the committee assignments of the new faculty within the first four years so that the faculty member(s) can devote a majority of their time to working with research students in the laboratory to generate preliminary results necessary for the writing of successful proposals; an exception would be that the new faculty member should be asked to serve on the Graduate Student Recruitment and Admissions Committee in order to enhance the opportunity to attract new graduate students to her/his laboratory; similar comments would apply to undergraduate student recruiting committees at predominately undergraduate institutions,
8. agree to provide a senior faculty member in the department as an internal mentor or to provide the new faculty with the resources to contract an external mentor for 2-4 years.

**Priorities for Faculty Seeking CAREER and Other Extramural Support:**

Identify a senior faculty member to serve as a mentor from within the department, or in a related department, who is an experienced and successful researcher and who has the ability to impart her/his research philosophy to the new faculty member; OR, identify an external mentor from another institution; OR, hire a recently retired faculty member as a consultant who has been a successful faculty member and researcher. **The duties of the mentor, as described below, are very extensive: they are absolutely crucial to the development of the research and teaching skills of a new faculty member who seeks to be successful in winning extramural support, including the NSF CAREER Award and/or R01 and related awards from the NIH.** Further, if conducted properly, the required mentoring activities are very time-consuming. In the case of an internal mentor the institution should be prepared to provide relief from teaching and/or service to the faculty member in order for the mentor to devote the necessary time and effort to the mentoring activities. In the case of an external mentor, whether an active faculty member at another institution or a recently retired faculty member with extensive experience in research and faculty mentoring, the institution must be willing to offer reasonable compensation and travel expenses for semiannual visits to such individuals. The latter investment will be small in comparison to the rewards that are reaped from it.

Develop a mentoring plan that includes the following elements:



- a. features frequent meetings that will assist the new faculty "to learn the ropes and the institutional "idiosyncrasies" from the mentor,
- b. establish guidelines and timelines for applying for internal institutional funding as well as "starter" proposals to the Research Corporation, the Petroleum Research Foundation, the Dreyfus Foundation, etc and the NIH as well as the appropriate private health organizations, such as the American Cancer Society, the American Heart Association, the American Lung Association, etc,
- c. assists the new faculty member in organizing her/his laboratory and to schedule frequent research group meetings where students begin to learn how to read the literature productively, how to present their research results to his/her peers and the faculty member, and how to digest experimental results and learn the strategies associated with rationally proposing the next series of experiments,
- d. develop a routine through which the mentor assists the new faculty member by reviewing and editing proposals, posters, presentations, etc well before their deadlines for submission, reviewing and editing research manuscripts before submission and working with the faculty member to cope with and respond to external reviews of manuscripts as well as correspondence from journal editors,
- e. provides opportunities for the mentor to counsel the faculty member on the importance of devoting appropriate time and effort to effective teaching that is balanced with her/his research efforts,
- f. counsel the faculty member with respect to what is needed to submit and win a competitive application in terms of accomplishments and achievements at her/his institution such as preliminary research results, presentations at regional and national meetings, publications (in preparation, under review, published), students trained, awards and honors won, proposals submitted and funded, proposals submitted, collaborations established, etc.
- g. assists the faculty member understanding the relative importance of each component of the application, including any outreach components that may involve external institutions and their students; **in the case of biomedically oriented faculty, it is crucial for the faculty member to understand that he/she must emphasize the basic research aspects of the research program in proposals submitted to the NSF or the mission oriented agencies (DOE, DoD NASA, etc.) rather than justify the proposed research in terms of its potential to address the cause and cure of diseases.**

#### **Priorities for EPSCoR Jurisdictions:**

In EPSCoR states it would be exceedingly worthwhile for two to three current or previous CAREER awardees to mentor or coach the faculty member some 9-12 months prior to the date that the CAREER application is due; such an interaction should involve face-to-face meetings, sharing of successful CAREER proposals with the faculty member as models for the proposal to be written, evaluations of outlines and drafts of the CAREER proposal by the CAREER mentors, and related interactions. In the case of faculty members who are at predominately undergraduate institutions, though not essential, it would be highly beneficial for that faculty member to have established a strong collaborative effort with a well-funded faculty member at a comprehensive research university.

The competition for CAREER awards is exceptionally high, and for those with a biomedical focus, even higher. A preliminary review of CAREER awards indicates that less than 10% of all CAREER awards made have a biomedical related focus. This translates into a less than a 3% chance of the application being supported. It will be highly unlikely, in an EPSCoR jurisdiction, that a faculty member wishing to propose a biomedical related application will be able to find a local CAREER awardee to mentor or coach the applicant. With the paucity of CAREER awardees in EPSCoR jurisdictions, and in particular biomedical focused awards, all new faculty desiring CAREER awards should form a coalition that advocates for inviting current and previous CAREER awardees to visit her/his institution to present a seminar(s). The agenda for the visit should include meetings with individual faculty members of the coalition. The meeting(s) should be focused on an effort to learn as much as possible from the CAREER awardee about how they approached writing their CAREER application, especially the educational outreach plan. For faculty wishing to propose an application with a biomedical focus, the meeting should focus on how the awardee successfully navigated the need to emphasize the basic research components of their research interests while downplaying the health oriented appeal of the work.




## Challenges in Acquiring NSF Support

Drs. Jeff C. Marshall &  
Cassie Quigley  
Clemson University

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## Background

**Jeff**

- PhD from Indiana University
- Associate Professor, Science Education / Director, Inquiry in Motion Institute and Center of Excellence
- Research Interests: science education, inquiry-based instruction, math/science partnerships

**Cassie**

- PhD from Indiana University in C & I / Science Education
- Assistant Professor in Middle Level Science Education
- Research Interests: 1. Equitable pedagogical practices for science education 2. Discourse studies in science education for marginalized communities

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## What's your approach to grants?

Go after anything that moves?





Selectively target a few?

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INQUIRY IN  
MOTION

## Proof of Concept

- Two Paradoxes:
  - You need \$1 million to get a \$1 million grant.
  - You need to complete the project before you receive funding.
- How do you overcome these paradoxes?
- Matching funds may no longer be required, but proof of concept is critical.
- What is the tipping point?

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INQUIRY IN  
MOTION

## Building Collaborations

- Start early
- Be clear on the goals and focus
- Agree that coherence is critical from the onset.
- Keep asking how does this address the broader impact issue.
- Research for the sake of research is an endangered species.

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INQUIRY IN  
MOTION

## Keys to Success

- Clear Focus, Clear Plan, Clear Outcomes
- Persistence, Persistence, Persistence
- Good Rapport with PO
- Follow the Guidelines
- A Little Luck
  - However, remember that luck favors those who are prepared.

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## Getting Connected Early and Wisely

- Continue collaboration with previous university while building new research partners at current university.
- Utilize resources available to early career researchers (i.e. Grant writing workshops, small seed grants, mentoring).
- Be cautious about the types of projects that you get involved in.

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## Re-Submitting the Grant

- Use the reviewers comments as a guide
- Re-format the grant to fit the new proposal
- Pay attention to the objectives/goals of the call
- Have multiple people read your proposal
  - Ask them, “What is the main purpose of my proposal?”

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
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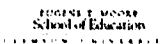

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## Contact Information

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- Cassie Quigley
  - [cassieq@clemson.edu](mailto:cassieq@clemson.edu)
- Inquiry in Motion Website
  - [www.clemson.edu/iim](http://www.clemson.edu/iim)

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**JEFF C. MARSHALL, Ph.D.**  
**Associate Professor, Science Education**  
**Moore School of Education**  
**Clemson University**

**Professional Preparation**

University of Central Oklahoma, Edmond, OK	B.S., Science Education (Chemistry)	1991
Indiana University, Bloomington, IN	M.S., Curriculum and Instruction	2002
Indiana University, Bloomington, IN	Ph.D., Curriculum and Instruction	2004

**Appointments**

2010-Present, Director, Inquiry in Motion Institute, Clemson University; Director, Center of Excellence for Inquiry in Mathematics and Science; Associate Professor (Science Education)

2006-2010, Assistant Professor, Science Education, Clemson University

2003-2006, Assistant Professor, Middle/Secondary Education, Butler University, Indianapolis, IN

2001-2003, Associate Instructor, Indiana University, College of Education, Bloomington, IN

1991-2001, Physics, Chemistry, Biology, and 8<sup>th</sup> Grade Science Teacher in alternative and traditional education settings in Putnam City and Oklahoma City Public Schools, OK

**Recent Books and Publications**

Marshall, J. C. & Horton, R. M. (2009) *Developing, assessing, and sustaining inquiry-based instruction: A guide for math and science teachers and leaders*. Germany: VDM Verlag.

Marshall, J. C. (2008) *Overcoming Student Apathy: Motivating Students for Academic Success*. Lanham, MD: Rowman & Littlefield Publishers, Inc.

Marshall, J. C., Smart, J., Lotter, C., & Sirbu, C. (2011). Comparative analysis of two inquiry observational protocols: Striving to better understand the quality of teacher facilitated inquiry-based instruction. *School Science and Mathematics*, 111(6), 306-315.

Marshall, J. C., Smart, J., & Horton, R. M. (2011). Tracking perceived and observed growth of inquiry practice: A formative plan to improve professional development experiences. *Science Educator*, 20(1), 14-25.

Marshall, J. C., & Horton, R. M. (2011). The relationship of teacher facilitated inquiry-based instruction to student higher-order thinking. *School Science and Mathematics*, 111(3), 93-101.

Marshall, J. C., Smart, J., & Horton, R. M. (2010). The design and validation of EQUIP: An instrument to assess inquiry-based instruction. *International Journal of Science and Mathematics Education*, 8(2), 299-321.

Marshall, J. C., Horton, B., & Smart, J. (2009). 4E x 2 Instructional Model: Uniting three learning constructs to improve praxis in science and mathematics classrooms. *Journal of Science Teacher Education*, 20(6), 501-516.

Marshall, J. C., Horton, B., & White, C. (2009). EQUIPPing teachers: A protocol to guide and improve inquiry-based instruction. *The Science Teacher*, 76(4), 46-53.

Marshall, J. C., Horton, R. M., Igo, B. L., & Switzer, D. M. (2009). K-12 science and mathematics teachers' beliefs about and use of inquiry in the classroom. *International Journal of Science and Mathematics Education*, 7(3), 575-596.

#### **Summary of Recent Grants and Consulting Projects**

1. Consulting work with school districts and various grants:
  - a. Texas Christian University—charge: lead training for statewide initiative in science and math education
  - b. Woodrow Wilson Fellow Program at IUPUI—charge: improve quality of inquiry-based instruction being led in classrooms.
  - c. Western Carolina University STEM Program—charge: improve the rigor and quality of inquiry-based instruction with their in-service math/science teachers.
  - d. Philippines project (part of a US Department of State ILEP program)—charge: to meet the challenge of improving high-quality inquiry instruction in 12 Philippino schools.
2. Marshall, J. *Creating Effective, Sustainable Inquiry-Based Instruction in Middle School Classrooms*. National Science Foundation (CAREER grant). Approved, Feb. 2010. Role: PI.
3. Marshall, J; Horton, R.; & Padilla, M. Center of Excellence for Inquiry in Mathematics and Science. Approved, March 2008. Role PD/PI.
4. Inquiry in Motion Institute Startup:  
Marshall, J. & Horton, R. Funding from Greenville County School District to fund Inquiry in Motion Institute pilot professional development institutes during 2007, 2008, and 2009. Approved Fall 2007, 2008, 2009. Role: PI.
5. External evaluator for a South Carolina Improving Teacher Quality Grant at University of South Carolina and for an NSF GK-12 grant at Costal Carolina University.

**Cassie Quigley**

Assistant Professor of Assistant Professor of Science Education in the Eugene T. Moore School of Education in the Middle Years Program

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**Professional Preparation**

Indiana University, B.S in Biology 2000

Indiana University Purdue University Indianapolis, M.S, Science Education 2002

Indiana University, Ph.D. Curriculum and Instruction 2010

**Appointments**

2010-present Assistant Professor in Science Education, Clemson University

**Publications****(i) Closely Related Publications**

Quigley, C. F (2011-in press). With Their Help: How Community Members Construct a Congruent Third Space in an Urban Kindergarten Classroom. *International Journal of Science Education*.

Buck, G., Cook, K., & Quigley, C. (2011- in press). The effects of becoming a science-focus school in regards to urban, low SES, African American girls' attitudes toward science. *Journal of Women and Minorities in Science and Engineering*.

Buck, G. A., Cook, K., Quigley, C., Eastwood, J., Lucas, Y. (2009). Urban, low SES, African American girls' personal science orientations: A sequential mixed-methods study. *The Journal of Mixed-Methods Research*, 3(4), 386-410

Quigley, C.F., Pongsanon, K. & Akerson, V. (2010) If we teach them, they can learn: Young Students Views of Nature of Science Aspects During an Informal Science Educational Program. *Journal of Science Teacher Education* 22(2): 129-149.

Buck, G.A., & Quigley (2010). Allowing our Research on African American Girls and Science Education to Actively and Continually Rewrite Itself. In NARST publication for Equity and Ethics. Routledge. *In press*.

**(ii) Other Significant Publications**

Quigley, C. (2011) Pushing the Boundaries of Cultural Congruence Pedagogy in Science Education Towards a Third Space. *Cultural Studies of Science Education. Online First*. DOI 10.1007/s11422-011-9335-5.

Quigley, C.F. (2009). Globalization and Indigenous Knowledge: Implications for Science Education. *International Journal of Educational Studies* 2(1): 76-89

Quigley, C.F., Oliveira, A. W., Curry, A., Horn, N. & Buck, G.A. (2011). Coming to Terms with Language: A Comparative Text Analysis of the Translation Techniques on Technical Terminology in a Science Textbook from English to Khmer. *Language, Culture, and Curriculum*, 24(2) 159-174.

### **Synergistic Activities**

1. 2008- 2010 Passport to Science Professional Development. Responsibilities: developed, implemented, and coordinated professional development session for elementary science teachers for Indianapolis Public School System

2. 2008-2010 Science Inquiry Professional Development. Responsibilities: successfully trained 12 elementary school teachers in science inquiry skills, Also, developed, implemented and coordinated a 3 year long research project that included data collection, analysis, and dissemination of results in an urban, low-SES elementary schools.

3. 2009 Environmental Education Curriculum Development and Presenter. Responsibilities included: developed and presented a professional development session for science teachers from Gary community schools cooperation

4. 2008 Special Education Science Curriculum Development and Program Evaluator. Responsibilities: developed, implemented, and evaluated an inclusive science education methods course for graduate students.

5. 2007– present Science Education Curriculum Development and Program Evaluation Royal University of Phnom Penh, Cambodia Responsibilities: developed, implemented, and evaluated a placed-based curriculum for pre-service teachers

### **Collaborators (last 4 years)**

Indiana University: Valarie Akerson, Sonya Atalay, Gayle Buck, Kristin Cook, Tarajeau Yazzie-Mintz, Nicole Beeman-Cadwallader, Jesse Goodman, Robert Sherwood.

Penn State University: Stephanie Serriere

SUNY-Albany: Alan Oliveir

University of Louisville, Ingrid Weiland

### **Graduate and Postdoctoral Advisers**

Charles Barman, IUPUI

Gayle Buck, Indiana University

**Cassie Quigley**  
**Clemson University**

## **GRANTS**

### **External**

Buck, G.A, Cross, D. & Quigley, C.F. *Enhancing urban, African American girls' conceptual engagement in science and mathematics*. Indiana Department of Education Mathematics and Science Partnership Program (MSP). 2008.

Medford, L., Johnson, D. & Quigley, C.F. *Southeast Regional Noyce Conference Grant*. National Science Foundation (NSF). 2011.

### Proposals Undergoing Review

Quigley, C.F., Che., S.M., Dogbey, J., Oliveira, A., & Speziale, B. PIRE: A Synergistic Approach to Sustainable Environmental Relationships and Values. National Science Foundation. 2011

Quigley, C.F. CAREER: Creating Effective, Informal STEM Opportunities for Marginalized Communities. National Science Foundation. 2011

Quigley, C.F., Crissy, H., & Hughes, D. A Proposal for Incorporating STEM curriculum into marginalized communities in North Charleston. Technical Proposal: Science, Technology, Engineering, & Mathematics (STEM) for K-12 & Institutions of Higher Education. Office of Naval Research. 2011

Moysey, S, Quigley, C. , Visser, R. A Proposal for Enhancing environmental education in middle-schools and colleges using serious games. Environmental Protection Agency. 2011

### **Internal**

Quigley, C. & Spearman. The Sustainable Food Project: A Service-Learning Project with Future Science and Social Studies Teachers to Promote and Encourage Sustainable Living. Service Learning Alliance 2020 Planning Grant.

Quigley, C. *In Their Words: The Use of Photo-elicitation techniques to understand the acquisition of scientific vocabulary in urban elementary girls*. E. Wayne Gross Fellowship. 2009.

Quigley, C. *The effects of current methods courses of pre-service Cambodian science teachers on Cambodian girls*. E. Wayne Gross Fellowship. 2008.

### Proposals Undergoing Review

Quigley, C. The Sustainable Food Project: A Service-Learning Project with Future Science Teachers to Promote and Encourage Sustainable Living. *Citizens and Scholars* Grant.



## A 'young giant's' strategy for academia success (version 7.0)

Kevin R. Macaluso, Ph.D.  
Department of Pathobiological Sciences  
Louisiana State University  
School of Veterinary Medicine

LSU



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### Start-up package

#### What to look for:

1. Guarantee for equipment
2. Limited outside commitments

#### What to avoid:

1. Group negotiations
2. Inflexible contracts/policies/accounts

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### Setting up the laboratory

#### What to do:

1. Hire your first technician
2. Fire your first technician (< 6 months)
3. Hire first postdoctoral fellow

#### What to avoid:

1. Trying to duplicate your postdoctoral laboratory
2. Being overly concerned with space

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## Teaching requirements

### What to look for:

1. Curriculum you can contribute to
2. Faculty support

### What to avoid:

1. Extensive commitment within 2 years
2. Course development

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## Trainees

(Postdoctoral fellows & graduate students)

### What to look for:

1. Competitive personality
2. 'B' student

### What to avoid:

1. Free students... 'Free' is not free...
2. Frustration...

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## Collaboration with Colleagues (home institution)

### What to look for:

1. Genuine interest...
2. Potential for success...

### What to avoid:

1. Research sponsored by your startup...
2. Ideas that failed peer review...

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## Selecting a mentor

### Internal criteria:

1. Agency peers...
2. Ambitious peers...

### External criteria:

1. Last advisor/mentor...
2. Everyone in your community...
  - a. Attend meetings
  - b. Invite potential mentors to your institution

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## Research approach

### What to do:

1. Develop central research statement/hypothesis for your lab...
2. Know what you can do...
3. Pick the low-hanging fruit...it's okay...

### What to avoid:

1. New areas outside of expertise...
2. Too many new ideas by colleagues...
3. Too much discovery

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## Applying for funding

### What to do:

1. Apply early, apply often
2. Know the appropriate mechanism (NIH)
3. State-supported research
4. School-supported research  
'take the money'

### What to avoid:

1. Bad pairing and others' research
2. Proposing too much...

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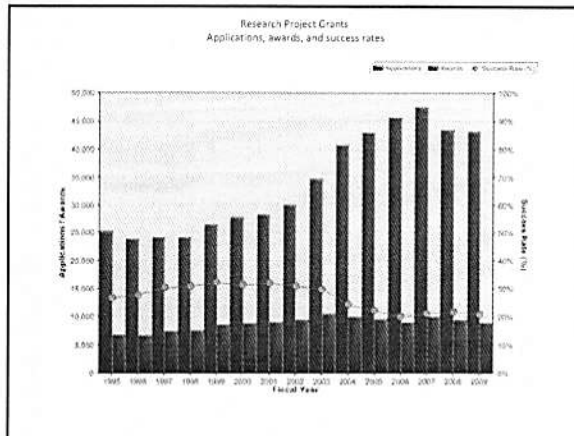
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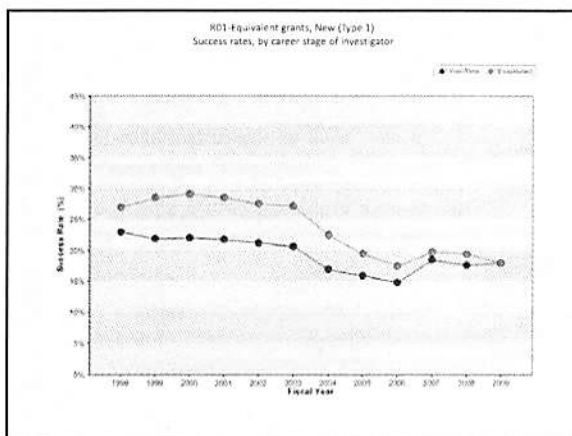
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## General strategies

### What to do:

1. Enjoy your research...
2. Enjoy your opportunities...(training, etc...)

### What to avoid:

1. Getting involved in departmental politics...
  2. Going to work...
3. Taking yourself too seriously...
  - a. Set realistic goals...
  - b. Getting comfortable...

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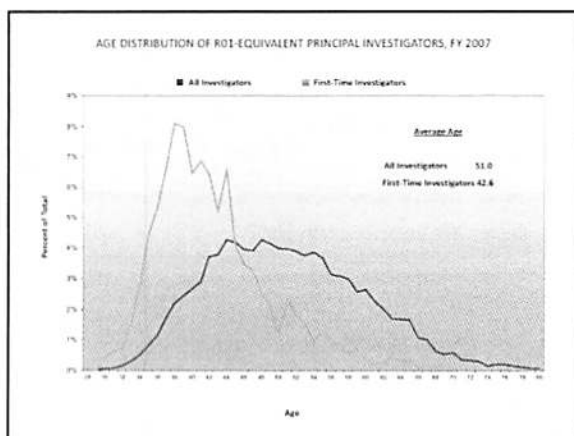
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## Acknowledgements

### Forum and Session organizers:

Dr. Randy Duran

Dr. Bruce Dunlap

### Sponsoring agencies:

The National Science Foundation

The LSU Office of Research & Economic Development

The LSU Gordon A. Cain Center for STEM Literacy

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### **EDUCATION**

**Undergraduate:** 1990-1991; St. Petersburg Junior College, St. Petersburg, FL  
1991-1994; Colorado State University, Fort Collins, CO  
B.S. Biological Science

**Graduate:** 1994-1996; Sul Ross State University, Alpine, TX,  
Department of Biology  
M.S. Biology                                      Advisor: Dr. Jim V. Richerson (Deceased)

1996-2000; Oklahoma State University, Stillwater, OK  
Department of Entomology and Plant Pathology  
Ph.D. Entomology                                      Advisor: Dr. Stephen K. Wikel

### **AWARDS**

1995; Professional Society Travel Award. Department of Biology, Sul Ross State University.

1998; President's Award. Student competition; Section D, Ten-minute paper on graduate research. ESA Annual Meeting, Las Vegas, NV.

2002-2004; National Institutes of Health, NIAID, Individual National Research Service Award (F-32). Postdoctoral training fellowship.

2005-2008; National Institutes of Health, NIAID. Research Career Development Award (K22). Career transition award.

2007; Pfizer Award for Research Excellence. Louisiana State University School of Veterinary Medicine.

2010; Louisiana State University School of Veterinary Medicine Faculty Distinguished Scholar Award.

## **AFFILIATIONS**

Member: 1994-Present; Entomological Society of America  
2000-Present; American Society for Rickettsiology and Rickettsial Diseases  
2003-Present; American Society for Microbiology  
2004-Present; American Association for the Advancement of Science  
2007-2009; Executive Committee, American Society for Rickettsiology and Rickettsial Diseases  
2007-Present; American Tropical Medicine and Hygiene  
2008-Present; Louisiana State University Science Club (Chair 2011/2012)  
2009-Present; Executive Counsel (Chair), American Committee on Medical Entomology

Reviewer: 2002-Present; Journal of Medical Entomology  
2004-Present; Insect Biochemistry and Molecular Biology  
2005-Present; Emerging Infectious Diseases  
2005-Present; Vector-borne and Zoonotic Diseases  
2005-Present; American Journal for Tropical Medicine and Hygiene  
2007-Present; National Research Fund for Tick-Borne Diseases, Inc.  
2009-Present; Military Infectious Disease Research Program.  
2009; NIH VB Study Section, *ad hoc* reviewer  
2010-2011; NIH Special Emphasis Panel IDM-B, *ad hoc* reviewer

## **EMPLOYMENT/RESEARCH EXPERIENCE**

1992-1994; Flea colony maintenance at Heska Corp (formerly Paravax Inc.), under the supervision of Dr. Rex Thomas. Research included the development of methods to increase flea production.

1994-1996; Graduate research assistant at Sul Ross State University, Department of Biology. Thesis project describing endo- and ectoparasites of a dense population of grasshopper mice, *Onychomys*, from Southwest Texas.

1996-2000; Graduate research assistant at Oklahoma State University, Department of Entomology and Plant Pathology. Thesis involved characterizing the immunological basis of tick-host interactions.

2000-2004; National Institutes of Health Postdoctoral Fellowship, Department of Microbiology and Immunology, University of Maryland at Baltimore, School of Medicine. Research includes examining the molecular mechanisms of *Rickettsia*/tick and flea interactions.

2004-2008; Assistant Professor in the Department of Pathobiological Sciences, Louisiana State University, School of Veterinary Medicine.

2009-present; Associate Professor in the Department of Pathobiological Sciences, Louisiana State University, School of Veterinary Medicine.

### **TEACHING EXPERIENCE**

1996; Graduate teaching assistant at Sul Ross State University, Department of Biology. Taught introductory lectures and prepared laboratory exercises for Medical and Veterinary Entomology. Instructor: Dr. Jim V. Richerson

1997-98; Graduate teaching assistant at Oklahoma State University, Department of Entomology and Plant Pathology. Taught introductory lectures and laboratory exercises for Livestock Entomology. Instructor: Dr. Robert W. Barker

1999; Graduate teaching assistant at Oklahoma State University, Department of Entomology and Plant Pathology. Taught introductory lectures and laboratory exercises for Horticultural Entomology. Instructor: Dr. Kenneth N. Pinkston

2000-03; Volunteer laboratory assistant at University of Maryland, Baltimore, School of Medicine. Prepared the laboratory exercises for the arthropod-borne disease portion of the medical school course in Parasitology. Instructor: Dr. Abdu F. Azad

### **Graduate Student Instruction (Louisiana State University)**

Course Number/Title: VMP 7417/ Immune Response to Infectious and Parasitic Agents

Course Coordinator: Dr. Tom Klei

Total contact time: 12 hours (2005 & 2011)

Contributions: Presented two lectures, attended/contributed to three additional lectures, participated in grant review exercise.

Course Number/Title: VMP 7004/ Parasitology Journal Club (every Spring and Fall)

Course Coordinator: Dr. Jim Miller

Total contact time: 25 hours

Contributions: Present and discuss current literature related to Parasitology.

Course Number/Title: VMP 7417/ Immune Response to Infectious and Parasitic Agents

Course Coordinator: Dr. Jim Miller

Total contact time: 2 hours (2005-2011)

Contributions: Presented one lecture.

Program Number/Title: United States of America-Brazil Exchange Program

Program Coordinator: Dr. Jack Malone

Total contact time: 50 hours (Fall 2005)

Contributions: Mentored Brazilian exchange veterinary student. Served as committee chair.

Program Number/Title: Departmental Student Laboratory Rotation Program.

Program Coordinator: Dr. Jim Miller

Total contact time: 80 hours (2005-2011)

Contributions: Mentored seven graduate students through 6-week rotations in the laboratory.



Course Number /Title: PBS 7003/Department of Pathobiological Sciences Core Course  
Course Coordinator: Dr. Phil Elzer                      Total contact time: 6 hours (Spring 2006-2011)  
Contributions: Presented a series of lectures in both bacteriology and parasitology sections.

Course Number /Title: PBS 7404/Bacterial Pathogenesis.  
Course Coordinator: Dr. Phil Elzer                      Total contact time: 8 hours (Fall 2006)  
Contributions: Presented a series of lectures and critical analysis of current research in literature.

Course Number /Title: PBS 7007/Department of Pathobiological Sciences Seminar Course  
Course Coordinator: Dr. Kevin Macaluso      Total contact time: 32 hours (every Fall/Spring)  
Contributions: Organize visiting seminar speakers and present pre-visit lectures on the related research.

**Graduate Committees: chair or member (current)**

(Committee member for two Ph.D. and two M.S. candidates recently completed)  
Sunita Seemanapalli, Ph.D. Candidate (Committee Member)  
Allison Kinny, Ph.D. Candidate (Committee Member)  
Michael Becker, M.S. Candidate (Committee Member –Department of Entomology)  
Christy Landry, Ph.D. Candidate (Committee Member)  
Andre S. Zanetti, M.S. Candidate (Major Professor/Chair)  
Soma Chowdhury, M.S. Candidate (Major Professor/Chair)  
Kathryn Reif, Ph.D. Candidate (Major Professor/Chair) – Currently NIH postdoctoral fellow at Washington State University, G. Palmer Laboratory.  
Piyanate Sunyakumthorn, Ph.D. Candidate (Major Professor/Chair) – Currently a Henry Jackson Foundation Scholar on collaborative research between US Naval Medical Research Center and Oxford University.  
Natthida Pettenchampi, Ph.D. Candidate (Major Professor/Chair)  
Briton Grasperge, DVM, PhD Candidate (Major Professor/Chair)  
Victoria Verhove, Ph.D. Candidate (Major Professor/Chair)  
Emma Harris, Ph.D. Candidate (Major Professor/Chair)

**Veterinary Students Mentored:**

2006-2007; Mentored a NIH-supported (T-35) veterinary student, Gretchen Henry, for two 8-week summer research projects. (Now Ph.D candidate Univ. Florida)  
2007; Mentored a NIH-supported (T-35) veterinary student, Laura Sarradet, for an 8-week summer research project.  
2009; Mentored a NIH-supported (T-35) veterinary student, Joseph Bynog, for an 8-week summer research project.  
2011; Mentored a NIH-supported (T-35) veterinary student, Lauren Dubec, for an 8-week summer research project.

### **Visiting Scientist Trained:**

Andre S. Zanetti, D.V.M., San Paulo State University, Brazil. January 2006-Present.

Apichai Bourchookarn, Ph.D. candidate, Institute of Molecular Biology and Genetics, Mahidol University, Thailand. April-September 2006; May-August 2008. Currently Faculty

Walairat Pornwiroon, Ph.D., postdoctoral research fellow. November 2005-May 2010.

Chutima Thepparit, Ph.D., postdoctoral research fellow. October 2007-May 2011.

Supanee Hirunkanokpun, Ph.D., postdoctoral research fellow. March 2008-October 2011.

### **PUBLICATIONS**

**Macaluso KR**, A Mulenga, JA Simser, and AF Azad. Characterization of *Dermacentor variabilis* molecules associated with rickettsial infection. *Ann NY Acad Sci.* 2006; 1078: 384-388.

Pornwiroon W, SS Pourciau, LD Foil, and **KR Macaluso**. *Rickettsia felis* from cat fleas: Isolation and culture in a tick-derived cell line. *App Environ Microbiol.* 2006; 72:5589-5595.

Henry K, J Jiang, PJ Rozmajzl, AF Azad, **KR Macaluso**, AL Richards. Development of quantitative real-time PCR assays to detect *Rickettsia typhi* and *Rickettsia felis*, the causative agents of murine typhus and flea-borne spotted fever. *Molec & Cell Probes.* 2007: 21:17-23.

Pornwiroon W, Husseneder C, Kearney MT, Foil LD, **KR Macaluso**. Comparative microbiota of *Rickettsia felis*-uninfected and -infected colonized cat fleas, *Ctenocephalides felis*. *ISME J* 2007: 1:394-402.

Zanetti AS, W Pornwiroon, MT Kearney, **KR Macaluso**. Characterization of rickettsial infection in *Amblyomma americanum* (Acari:Ixodidae) by quantitative real-time PCR. *J Med Entomol* 2008; 45:267-275.

**Macaluso KR**, W Pornwiroon, VL Popov, and LD Foil. Identification of *Rickettsia felis* in the salivary glands of cat fleas. *Vector Borne Zoonotic Dis* 2008; 8:391-396.

Sunyakumthorn P, A Bourchookarn, W Pornwiroon, C David, SA Barker, and **KR Macaluso**. Characterization and growth of polymorphic *Rickettsia felis* in a tick cell line. *Appl Environ Microbiol.* 2008; 74(10): 394-402.

Reif KE, RW Stout, GC Henry, LD Foil, and **KR Macaluso\***. Prevalence and infection load dynamics of *Rickettsia felis* in actively feeding *Ctenocephalides felis*. *PLoSOne.* 2008;3(7).

Reif KE and **KR Macaluso**. The ecology of *Rickettsia felis*. *J Med Entomol.* 2009: 46(4):723-736.

Pornwiroon W, A Bourchookarn, CD Paddock, **KR Macaluso**. Proteomic analysis of *Rickettsia parkeri* strain Portsmouth. *Infect Immun*. 2009; 77(12):5262-5271.

Thepparit C, A Bourchookarn, N. Petchampai, SA Barker, **KR Macaluso**. *Rickettsia felis* interaction with histone H2B facilitates infection of tick cell line. *Microbiol*. 2010; Sep;156(Pt 9):2855-63. Epub 2010 Jun 17. PMID: 20558510.

Husseneder C, SP Garner, LF Foil, **KR Macaluso**. Development of microsatellites for genetic analyses and population assignment of the cat flea, *Ctenocephalides felis* (Siphonaptera: Pulicidae). *J Med Entomol*. 2010; 47(6):1028-1033.

Reif KE, MT Kearney, LD Foil, **KR Macaluso**. Acquisition of *Rickettsia felis* by cat fleas during feeding. *Vector Borne Zoonotic Dis*. 2011;11(7):963-968.

Soto E, J Wiles, P Elzer, **K Macaluso**, and JP Hawke. Attenuated *Francisella asiatica* igIC mutant induces protective immunity to francisellosis in tilapia. *Vaccine*. 2011; 29(3):593-98.

Thepparit C, P Sunyakumthorn, ML Guillotte, VL Popov, LD Foil, and **KR Macaluso**. Isolation of a rickettsial pathogen from a non-hematophagous arthropod. *PLoS One*. 2011; Jan 25;6(1):e16396.

Hirunkanokpun, S, C Thepparit, LD Foil, and **KR Macaluso**. Horizontal transmission of *Rickettsia felis* between cat fleas, *Ctenocephalides felis*. *Mol Ecol*. 2011 Oct 4; ahead of print doi: 10.1111/j.1365-294X.2011.05289.x.

### **Book Chapters**

Thomas RE, **KR Macaluso**, and AF Azad. Laboratory rearing and experimental infection of fleas (Siphonaptera). *In: The Biology of Disease Vectors*. W.C. Marquardt ed. Elsevier, New York, NY, 2005; p727-732.

**KR Macaluso** and AF Azad. *Rickettsia rickettsii* and other spotted fever group rickettsiae. *In: Tick-borne Infections of Humans*. J. L. Goodman, D. T. Dennis, and D. E. Sonenshine, eds. ASM Press, Washington D.C., 2005; p292-301.

Hechemy KE, Y Rikihisa, **KR Macaluso**, AW Burgess, BE Anderson, and HA Thompson. The Rickettsiaceae, Anaplasmataceae, Bartonellaceae, and Coxiellaceae. *In: Manual of Molecular and Clinical Laboratory Immunology*, 7th Edition. B. Detrick, and R.G. Hamilton, eds. ASM Press, Washington D.C., 2006; 1,374 pages.

**Macaluso, KR**. Epidemic typhus and other louse- and mite-borne infections, in Edman, J. (ed.), *Vector-Borne Diseases: The Biomedical & Life Sciences Collection*, 2010. Henry Stewart Talks Ltd, London (online at <http://hstalks.com/?t=BL1182708-Macaluso>)

**ONGOING RESEARCH and PROGRAMMATIC SUPPORT**

1R01 AI077784 Macaluso (PI) 9/01/2009-8/31/2014

NIH/NIAID

Molecular basis for spotted fever group rickettsia vector competence in ticks.

This study is designed to examine the interplay between ticks and *Rickettsia* spp. which facilitates transmission.

T35 RR017504-08 Macaluso (PI) 9/18/2009-8/31/2014

NIH/NCRR

Biomedical Research Experience for Veterinary Students.

This proposal supports LSU/SVM summer scholar program to introduce veterinary students to biomedical research.

**COMPLETED RESEARCH SUPPORT**

F32 AI-051857 Macaluso (PI) 3/01/2002-8/15/2004

NIH/NIAID

Tick Susceptibility and Response to Rickettsiae.

This study was designed to determine the tick response to spotted fever group rickettsiae at the molecular level and determine if principle rickettsiae-vector relationships exist.

Pilot Funding for New Research Macaluso (PI) 2/01/2005-2/01/2006

Louisiana State Board of Regents

Interactions between Rickettsial Endosymbionts and Ixodid Ticks

This study was designed to determine the influence of endosymbiotic rickettsiae on tick feeding and reproduction.

K22 AI060821-01 Macaluso (PI) 3/01/2005-3/01/2009

NIH/NIAID

Molecular Dynamics of Rickettsial Infection in Ticks.

This study is designed to determine the utilization of tick-derived molecules by spotted fever group rickettsiae during infection.

Research Competitiveness Subprogram Macaluso (PI) 7/01/2005-7/01/2008

Louisiana State Board of Regents

Tick Response to Atypical Rickettsial Infections

This study is designed to determine the response of ticks to atypical rickettsial infections with the aim to delineate mechanisms of vector competence.

R21 AI070705-01 Macaluso (PI) 6/01/2006-5/31/2008  
NIH/NIAID

Comparative Rickettsial Protein Profiles During Tick Infection.

This study is designed to determine the protein expression by spotted fever group rickettsiae during tick infection and during transmission events.

P20 RR0201595 Kousoulas (PI) 1/02/2007-12/31/2008  
NIH:NCRR

The Louisiana Center of Biomedical Research Excellence (COBRE) in Experimental Infectious Disease Research (CEIDR) - Pilot/supplemental

My participation in the COBRE is in a pilot project that supplements the research activities in my laboratory.

1 R21 AI069248-01 Macaluso (PI) 9/01/2007-8/31/2010  
NIH/NIAID

Role of fleas in transmission of rickettsiae: ecology of flea-borne spotted fever.

This study is designed to determine the mechanisms of *Rickettsia felis* transmission by fleas.

Collaborative project with Dr. Lane Foil (LSU/Entomology).

1R21 AI069248-S1 Macaluso (PI) 9/01/2009-8/31/2010  
NIH/NIAID-ARRA


Role of fleas in transmission of rickettsiae: ecology of flea-borne spotted fever.

This supplement provided the resources for development of multiplex-qPCR for detection of *Rickettsia felis* and *Wolbachia* in fleas.

#### **PENDING RESEARCH SUPPORT**

1R01AI095627-01A1 Macaluso (PI)

Mechanisms and molecules required for flea-borne transmission of *Rickettsia felis*. Objective is to examine the ecology and biology of an emerging flea-borne rickettsiosis. Proposed start date June 2012, 5 yr duration.



National Center for  
Research Resources  
NATIONAL INSTITUTES OF HEALTH  
COORDINATING AND PROVIDING VARIETY FROM NATIONWIDE TECHNICAL EXPERTISE

## Career Development Opportunities in Biomedical and Behavioral Research

2011 CAREER Award Regional Forum  
Baton Rouge, Louisiana  
November 8, 2011

Michael H. Sayre, Ph.D.  
Deputy Director, Division of Research Infrastructure  
National Center for Research Resources, NIH  
[sayrem@mail.nih.gov](mailto:sayrem@mail.nih.gov)

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### NIH K Awards for Individuals with a Research Doctorate

- K99/R00 Pathway to Independence Awards- transition from postdoc to faculty position with independent NIH funding (R00 phase) at earlier stage than current norm
- K01 Mentored Research Scientist Development Awards- for new faculty members who need additional supervised research experience (career hiatus, switch to new field)
- K02 Independent Scientist Awards- scientists who recently received independent research support, at least 75 percent protected time to focus on research
- K22 Career Transition Awards- support during early years of new faculty position; used differently by various NIH units; applicants should carefully review relevant program announcements



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### Career Development Awards (K Awards) for Individuals with a Research Doctorate



**Note: The following awards are not shown:**

- Academic Career Award (K07)
- Mentored Quantitative Research Career Development Award (K05)
- New Career Investigator Award in Mouse Pathology Research (K20)

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### NIH K Awards for Individuals with a Health-Professional Doctorate

- K12 Mentored Clinical Scientist Developmental Program Awards are made to institutions; interested candidates should ask the chair of their department if K12 training slots are available
- K08 Mentored Clinical Scientist Awards support career development experiences for individuals interested in research in areas that don't involve human subjects
- K23 Mentored Patient-Oriented Research Career Development Awards provide training for work with human subjects
- K24 Mid-Career Investigator in Patient-Oriented Research Awards are for well-trained investigators who want to serve as mentors to more junior clinicians




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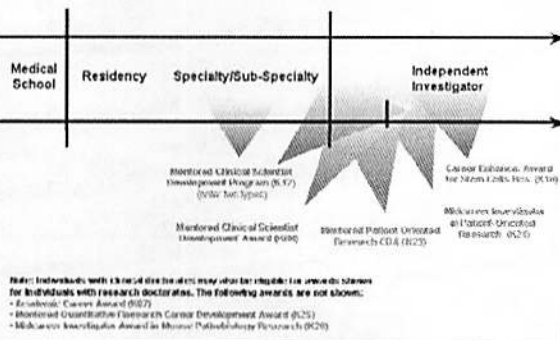
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### Career Development Awards (K Awards) for Individuals with a Health-Professional Doctorate




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### NIH Academic Research Enhancement Award (AREA) Grants (R15) <http://grants.nih.gov/grants/funding/area.htm>

- Support small research projects in biomedical and behavioral sciences conducted by faculty and students in health professional schools and other academic institutions that have not been major recipients of NIH research grant funds
- AREA program goals:
  - support meritorious research
  - strengthen the research environment of the institution
  - expose students to meritorious original research
- Focus is on hands-on research, not coursework. Students benefit from participating in original research and will be encouraged to continue studies in the biomedical sciences.




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### Whom Should You Seek as Mentors?

Immediate superior, of course, but also...

- Someone who has achieved the next step at your institution
- Someone in your specific field
- Former supervisors
- A peer who seems to be doing well
- An administrative person who can help you with paperwork
- Anyone (senior, junior or peer) in your organization or field with whom you can make a personal connection



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### Why Multiple Mentors?

- Thriving within any organization requires a lot of information
- No single person has all the information you need to survive in your department/school
- Spreading out your questions fosters a perception of independence
- If two or more mentors give you the same advice, follow it!



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### Leverage Any Commonality

Shared love of science, of course, but also...

- Alma Mater
- Hometown, state
- Social organizations
- Similar tastes in music, art
- Sports

(Hint- Learn to scan an office!)



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### Institutional Development Award (IDeA) Program

Established in 1993 within NCRR with the intent to develop competitive biomedical research infrastructure and faculty in eligible states

NCRR

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### Centers of Biomedical Research Excellence (COBRE)

- ❖ Develop advanced research infrastructure
- ❖ Develop critical mass of investigators in thematic area

**Phase I (P20)**

Core Facilities  
Mentoring  
Research Projects  
(Junior Investigators)

PAR-11-286  
Receipt date:  
Feb 21, 2012

**Phase II**

Core Facilities  
Mentoring  
Research Projects  
(Junior and Senior Investigators)

PAR-09-180

**Phase III (P30)**

Core Facilities  
Mentoring  
Pilot Project Program

PAR-10-196  
Receipt date:  
July 20, 2012

NCRR

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## INBRE PROGRAM

2001 - 2003 Biomedical Research Infrastructure Networks (BRIN)  
2004 - present IDeA Networks of Biomedical Research Excellence (INBRE)

Increase research support to faculty, postdoctoral fellows and students

**Goals**

Build a statewide multi-disciplinary research network

Enhance knowledge of science and technology in the state's workforce

Support undergraduate student research to fill the "pipeline" for health research careers

NCRR

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## Research Centers in Minority Institutions (RCMI) Program




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## RCMI Program Activities

RCMI Center (G12)	Core Labs & Equipment Technical & Administrative Staff and Faculty Pilot Projects
RCTRs	Outpatient Clinical Research Units & Research Staff Community Engagement Pilot Projects
RTRN	Infrastructure for multi-site clinical and translational research Access to web-based research, training and educational resources
CRECD (Trans NIH Program)	Develop and implement curriculum-based programs in minority institutions leading to a Master of Science in Clinical Research or Master of Public Health in a clinically relevant area

NCRR

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## RCMI G12 Centers Funding Opportunity Announcement

### Links to FOA and FAQs:

[PAR-11-132](#) (standard receipt dates; next is Jan. 25, 2012)

[RCMI G12 FOA FAQs](#)

### Link to Technical Assistance workshop webinar:

<https://webmeeting.nih.gov/p77059173/>

NCRR Program Contact: Shelia McClure, Ph.D.

[mccclursh@mail.nih.gov](mailto:mccclursh@mail.nih.gov)

NCRR Review Contact: Steve Birken, Ph.D.

NCRR Grants Management Contact: Jenelle Wiggins

NCRR

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### Workforce Development

Clinical Research Education and Career Development (CRECD) Program (R25)

❖ PAR-11-325 (next receipt date November 2, 2012)

• Participating ICs: NIAMS, NIA, NIDA, NICHD, NCI, NCRR

❖ Trans-NIH program supported *in part* by RCMI to enable training of doctoral and post-doctoral candidates in clinical and translational research

❖ Supports development/implementation of curriculum-based programs in minority institutions leading to a Master of Science in Clinical Research or a Master of Public Health degree in a clinically relevant area



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### Questions?

Michael H. Sayre, Ph.D.  
NIH/NCRR  
[sayrem@mail.nih.gov](mailto:sayrem@mail.nih.gov)



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## **K Award Kiosk - Information about NIH Career Development Awards**

**<http://grants.nih.gov/training/careerdevelopmentawards.htm>**

### **K Awards for Individuals with a Research Doctorate**

**K99/R00 Pathway to Independence Awards** support transition from a mentored postdoc position to a stable independent research position with independent NIH or other research support at an earlier stage than the current norm. Candidates should contact relevant NIH staff for IC-specific information.

**K01 Mentored Research Scientist Development Awards** are for new faculty members who need additional supervised research experience (e.g., due to career hiatus, or switch to new area of research).

**K02 Independent Scientist Awards** are for scientists who recently received independent research support, provide at least 75 percent effort (protected time) to focus development of research program.

**K05 Senior Scientist Awards** provide protected time and salary support for established scientists.

**K22 Career Transition Awards** provide support during early years of new faculty position; used differently by various NIH units; applicants should carefully review relevant program announcements.

### **K Awards for Individuals with a Health-Professional Doctorate**

**K12 Mentored Clinical Scientist Developmental Program Awards** are made to institutions; interested candidates should ask the chair of their department if K12 training slots are available.

**K08 Mentored Clinical Scientist Awards** support career development experiences for individuals interested in research in areas that don't involve human subjects.

**K23 Mentored Patient-Oriented Research Career Development Awards** provide training for work with human subjects.

**K24 Mid-Career Investigator in Patient-Oriented Research Awards** are for well-trained investigators who want to serve as mentors to more junior clinicians.

### **K Awards for Research and/or Health-Professional Doctorates**

**K07 Academic Awards** are used to recruit research faculty into scientific areas where there is a growing need for research and instructional capabilities.

**K18 Career Enhancement Award in Stem Cell Research**

**K25 Mentored Quantitative Research Career Development Award**

**K26 Midcareer Investigator Award in Mouse Pathobiology Research**

## **NIH Academic Research Enhancement Award (AREA) Grants - (R15)**

**<http://grants.nih.gov/grants/funding/area.htm>**

### **Introduction**

AREA grants support small research projects in the biomedical and behavioral sciences conducted by faculty and students in health professional schools, and other academic components that have not been major recipients of NIH research grant funds

- **Academic Research Enhancement Award (R15)** - NIH Guide Program Announcement (Funding Opportunity Announcement)

The three goals of the AREA program are:

- to support meritorious research,
- to strengthen the research environment of the institution, and
- to expose students to research.

The AREA/R15 grant is a research award, not a training award, so the focus is not on course work but on hands-on meritorious research. Students benefit from participating in meritorious research and will be encouraged to continue studies in the biomedical sciences.

### **Eligibility**

Health professional schools/colleges: School/College of Medicine, Veterinary Medicine, Podiatry, Nutrition, Dentistry, Osteopathy, Pharmacy, Public Health, Optometry, Nursing, Chiropractic Medicine, and Allied Health. All other NIH funding is considered "Other Academic."

The list of ineligible schools/colleges/components is provided below and is updated annually. Eligibility is determined at the time of application and is based on receipt of \$6 million or less in research grants in 4 out of the last 7 fiscal years.

- **Research Supplements to Promote Diversity in Health-Related Research** - Principal Investigators holding an active Academic Research Enhancement Award (R15) Grant also may apply for a supplement under this program. Grantees must check with the appropriate awarding component before an application for a supplement is submitted.
- **Review Guidance for AREA applications** - AREA applications are evaluated using the standard NIH review criteria for unsolicited research grants. Reviewers will assess the AREA-specific programmatic features of an application under the Investigator and Environment criteria.
- **Submission Date Schedule**
  - Standard application deadlines: February 25, June 25, and October 25
  - AIDS-related research deadlines: January 7, May 7, and September 7

## **Private funder career development awards (selected examples)**

### **American Cancer Society Mentored Training and Career Development Grants**

**MENTORED RESEARCH SCHOLAR GRANT IN APPLIED AND CLINICAL RESEARCH** provides support for mentored research and training to full-time junior faculty, typically within the initial four years of their first independent appointment, to become independent researchers as either clinician scientists or cancer control and prevention researchers. Awards are for up to five years and for up to \$135,000 per year (direct costs), plus 8% allowable indirect costs. A maximum of \$10,000 per year for the mentor(s) (regardless of the number of mentors) is included in the \$135,000. [READ MORE »](#)

**CANCER CONTROL CAREER DEVELOPMENT AWARDS FOR PRIMARY CARE PHYSICIANS** support primary care physicians with a rank of instructor to assistant professor who are pursuing an academic career with an emphasis on cancer control. Awards are for three years and for up to \$100,000 per year. A maximum of \$10,000 per year for the mentor(s) may be included in the budget. [READ MORE »](#)

### **American Heart Association Funding Opportunities**

**Clinical Research Program** encourages early career investigators who have appropriate, supportive mentoring relationships to engage in high quality introductory and pilot clinical studies that will guide future strategies for reducing cardiovascular disease and stroke while fostering new research in clinical and translational science, and encouraging community- and population-based activities.

**Fellow-to-Faculty Transition Award** provides funding for trainees with outstanding potential for careers as physician-scientists in cardiovascular or stroke research during the crucial period of career development spanning completion of research training through the early years of a first faculty/staff position. Awards provide supportive mentored experiences during this transition.

**Beginning Grant-In-Aid** promotes the independent status of promising beginning scientists.

**Scientist Development Grant** supports highly promising beginning scientists in their progress toward independence by encouraging and adequately funding research projects that can bridge the gap between completion of research training and readiness for successful competition as an independent investigator.

### **Burroughs Wellcome Fund Career Awards for Medical Scientists**

Five-year \$700,000 awards for physician-scientists bridge advanced postdoctoral/fellowship training and the early years of faculty service. Proposals must be areas of basic biomedical, disease-oriented, or translational research. Proposals in health services research or involving large-scale clinical trials are ineligible. Awards are to degree-granting institutions in the U.S. or Canada on behalf of the awardee.

### **March of Dimes Research Grants**

**Basil O'Connor Starter Scholar Research Awards** are funded in a program specifically designed to support scientists just embarking on their independent research careers. Created in 1973 and named for the first March of Dimes chairman and president, this program provides funding to young investigators to start their own research projects on topics related to the March of Dimes mission.

## **Robert Wood Johnson Foundation**

<http://www.rwjf.org/applications/solicited/cfp.jsp?ID=21301>

**Clinical Scholars Program** awards foster the development of physicians who will lead the transformation of Americans' health and health. Highlights include leadership training; mentoring; protected research time; local, regional and national networking; health services and community-based research training; and financial support for research projects and professional travel. First-year scholar stipend is \$62,000 with an increase the second year. Additional financial support is provided for research projects and professional travel. To be eligible, physicians must be committed to a career in academic medicine, public health, health policy or another career congruent with the program's purposes and priorities of developing physician leaders and skilled researchers.

### **American Lung Association Nationwide Award and Grant Program**

**Biomedical Research Grant (\$40,000/yr)** provides seed monies for *junior investigators* researching the mechanisms of lung disease and general lung biology. [Click here for the program description.](#)

**Dalsemer Research Grant (\$40,000/yr)** provides seed monies for *junior investigators* researching interstitial lung disease. [Click here for the program description.](#)

**Clinical Patient Care Research Grant (\$40,000/yr)** provides seed monies for *junior investigators* working on traditional clinical studies examining methods of improving patient care and/or treatment for lung disease. [Click here for the program description.](#)

**Social-Behavioral Research Grant (\$40,000/yr)** provides seed monies for *junior investigators* working on epidemiological and behavioral studies examining risk factors affecting lung health. This grant includes studies concerning the ethical, legal and economic aspects of health services and policies. [Click here for the program description.](#)

**American Lung Association /The CHEST Foundation Asthma Clinical Patient Care Grant (\$40,000/yr)** provides seed monies for *junior investigators* working on traditional clinical studies examining methods for improving patient care and treatment for asthma. [Click here for the program description.](#)

### **Multiple Sclerosis Society Research Grants**

**Career Transition Fellowship-** Finding a way to stop MS, restore function and end MS forever will require a cadre of well-trained scientists engaged in MS-related research. The Society's Career Transition Fellowship addresses this need by fostering the development and productivity of young scientists who have potential to make significant contributions to MS research and help ensure the future and stability of MS research. The Career Transition Fellowship targets current postdoctoral trainees who demonstrate both commitment and exceptional potential to conduct MS-related research. The award provides approximately \$550,000 over five years to support a two-year period of advanced postdoctoral training in MS research and the first three years of research support in a new faculty appointment.