



UA ADVANCE AWARDS EQUITY RESEARCH FELLOWSHIPS

This semester, UA ADVANCE awarded competitive research fellowships for inquiry into equity issues to three outstanding projects. The fellowship program challenges faculty members to discover for themselves the parameters of climate, fairness, and unconscious bias by means and avenues appropriate to their own discipline and through interdisciplinary collaboration. Please join UA ADVANCE in congratulating (1) Rebekah Jackowski and Martha Fankhauser for their project, "Assessment of Mentoring Programs in Departments at the Colleges of Medicine, Nursing, Pharmacy, and Public Health at The Arizona Health Sciences Center"; (2) Leslie Eldenberg, Thomas Miller, and Sarah Harris for their project, "Balancing the Needs to Mentor and Assess P&T Candidates"; and (3) Stephanie Fryberg, Ashima Singh, and Rabiah Muhammad for their project, "The Influence of Cultural Models of 'Success' in STEM Fields on Diversity in the Academic Pipeline."

Assessment of Mentoring Programs in Departments at the Colleges of Medicine, Nursing, Pharmacy, and Public Health at the Arizona Health Sciences Center

By Heather Metcalf

Jackowski and Fankhauser's project draws on extensive research on mentoring as a key element in the development of junior faculty. They seek to assess the status of mentoring programs across twenty-seven departments housed in the Colleges of Medicine, Nursing, Pharmacy, and Public Health. Jackowski, the principal investigator on the research fellowship and clinical assistant professor of Pharmacy Practice and Science, explains that they will be surveying each of the department heads to find out if they have a formal or informal mentoring program enacted in their department, how they're defining mentoring, and how the underlying components of the program function. This first phase of the project is meant to paint a picture of what mentoring looks like in the health sciences at UA. Next, Jackowski says, she and Fankhauser, a clinical professor, plan to investigate the specific role the mentoring program plays in the advancement of junior faculty, particularly for those populations that tend to be underrepresented in the health sciences. Inspired by the positive impact that their own department's shift to a formal mentoring program has had on



left: Martha Fankhauser; right Rebekah Jackowski

junior faculty, Jackowski and Fankhauser want to gain a comprehensive understanding of how other departments in the health sciences might be effectively mentoring their faculty. Jackowski explains that junior faculty might "feel a little lost...if you're new to the institution, there are a lot of things from the day-to-day functions all the way through to the more complex things [that can make doing your job unnecessarily confusing]. For example, if you're going to do a study, where do you go for your IRB? Those sorts of things that you need to know to be able to do your job successfully are just a portion of what can be provided to faculty through mentoring." *cont., page 3*

ERRATA

In this Fall's UA ADVANCE Newsletter article on the 2009 UA ADVANCE Seed Grant recipients, Dr. Janet Funk was erroneously referred to as Dr. Janet Franks. We regret the error and look forward to sharing updates on Dr. Funk's ground-breaking research with the university community.



SPOTLIGHT ON A UA FEMALE SCIENTIST:

By Heather Metcalf

Cognitive science is a particularly interdisciplinary field and Carole Beal, UA professor of cognitive science, is a living example of how an undergraduate studying art and art history might find herself researching technology for mathematics learning.

As a visual arts undergraduate, Beal was intrigued by human representation of things, but was unable to answer questions about how the human mind can “create things that convey feelings and information and that those products can communicate to people at other times, other places, other contexts” in the art world alone. Instead of graduating in four years, Beal, with the advice and support of her faculty mentor, continued her undergraduate work for an extra year in order to obtain a second major in psychology. She then started her graduate work in psychology at UCLA while she was on the waiting list for Stanford. During the summer, she was in a research rut and also found herself without funding. Instead of being discouraged, she began writing to prominent researchers in her field looking for summer work. Her efforts paid off and she ended up working for a leading developmental psychologist at Stanford on a project studying children’s learning. By the end of the summer, a spot opened up for her at Stanford, allowing her to continue this research for her dissertation. She explains that even if things don’t seem to be working out, they “eventually just fall into place sometimes.”

Often, things falling into place requires a bit of ingenuity, as Beal’s letter writing component of her job search illustrates. This ingenuity also helped her find her niche in the broad research area of mathematics learning. As a professor of cognitive science at the UA, Beal’s research focuses on teaching mathematics online

DR. CAROLE BEAL

and asks how *all* students’ learning needs can be met. As she was looking for grant funding, Beal noticed that there was a large awareness of math achievement as a particular problem area. While there were other huge groups researching this topic, Beal was just one person. In trying to find a space that would make her work in this area unique, she asked herself, who is this technology not serving? Asking this question not only helped her obtain grant funding, but it influenced her research on online



Carole Beal

mathematics learning for English language learners and students with visual impairments.

Websites, she explains, can allow for adaptable instruction that might be difficult to do in the classroom alone. “English language learners, for example, are often conversationally proficient in English, but they can’t read English well enough to read the textbook so that they can really learn the material. But, we can do more than just give math problems. We can give explanations that are either in grade three English or grade eight English.” This adaptability is also applied to online mathematics tutoring for students with visual

impairments. Many students with visual impairments “can’t see the screen at all and often use screen reading programs that just read what’s on the page. But most webpages are not designed to be listened to and often there’s a lot of information. Our working memory is not good enough to hold it all at once. So we’ve been trying to figure out how to present word problems to students in a way that they can listen and learn. It’s extremely challenging.” She and her research team comprised of students, faculty, and staff from the Computer Science Department, the Teacher and Teacher Education Program, and the Department of Disability and Psychoeducational Studies, are up to the challenge. Beal says that loving the work she does and knowing that she’s trying to meet a need in the educational community is incredibly rewarding and motivational.

Beal explains that one of the biggest career lessons she has learned on her path from art student to cognitive scientist is that small things can have huge impact. When she was in Massachusetts running studies in classrooms, upon finishing a study, she would bring a note and a bag of coffee or cookies to the teachers. She went back to one school six years later and “they knew who I was and they remembered that I had done that and they were happy to do anything I wanted. I was surprised that something so simple could make such a big impression.” Something as small as writing a letter helped her find summer graduate work and led her to get letters of support from twenty-six schools for the blind from around the country when she was applying for a large NIH grant. “A little thing can go a long way,” she explains. ■

Balancing the Needs to Mentor and Assess Promotion & Tenure Candidates

by Lara dos Passos Coggin

I sat down with this grant's Principal and Co-Principal Investigators on a November afternoon to discuss what motivated them to propose this research topic, what they hope to see emerge from their investigations, and their progress to date. As stated in their proposal to UA ADVANCE, the research team seeks to address the following problem:

Currently, the University of Arizona draws upon conflict of interest principles set by the National Science Foundation and National Institutes of Health when determining appropriate reviews for the Promotion and Tenure [P & T] process. Because coauthors are expected to recuse themselves from voting on a candidate or reviewing their work, a legitimate conflict arises in small departments between encouraging collaborative research and insuring impartial review of all candidates. This same conflict may arise with interdisciplinary research.

The first stages of the research will entail making a comparison of "how the UA's peer institutions [of which there are 15 total, as defined by the UA's Board of Regents] address the conflict between supporting collaboration and securing independent reviews." The Principal and Co-Principal Investigators will then "survey the P & T guidelines from the UA's peer institutions to assess how collaborators are considered in selecting reviewers and committee members, [and] conduct qualitative interviews with stakeholders from each of these institutions, with interviews subjects at the departmental, college, and university level."

As a result of their analysis of the collected data, the researchers hope to develop a "pragmatic set of best practices that will make a genuine contribution to the P & T deliberations in STEM fields, both at the University of Arizona and nationally."

Drs. Leslie Eldenburg and Thomas Miller share different insider's experiences with regard to the topic of the grant, and Sarah Harris, a Doctoral Candidate in Rhetoric Composition, and the Teaching of English, will take the lead in contacting UA's peer institutions. As Vice Dean and McClelland Professor of Accounting in the Eller College of Management, Dr. Eldenburg lived firsthand the conflict between mentoring and serving as a reviewer on a faculty member's Promotion and Tenure committee. According to Dr. Eldenburg, because departments at Eller are relatively small (twelve to fourteen faculty), and senior faculty all make an effort to work with new faculty on projects, senior faculty find themselves in a bind when it comes to review. Can they provide unbiased evaluations of the dossiers of faculty with whom they have collaborated? On the other side, continued Dr. Eldenburg, the field of health care accounting is so small (three or four at the national level) that she may well be the only scholar capable of evaluating (or even really understanding) the work of the Assistant and Associate Professors under review. Dr. Eldenburg elaborated that it is not only



left to right: Leslie Eldenburg, Tom Miller, and Sarah Harris

committee members who need to serve in an informed way in the review of the candidate, but also external letter writers, for whom the same constraints apply. Of particular interest to UA ADVANCE is the way that this conflict affects women and minority faculty, who are often counseled to work and collaborate with senior faculty in their department in preparation for promotion and tenure, only to find those mentors are unable to serve as reviewers.

Sarah Harris, as part of her review of literature on mentorship and collaborative research as it applies to women and minority scholars, found a general consensus that working with senior faculty is essential for their success. Specifically, Harris concluded that these research

collaborations function best when they are "integrally related to the processes and structures of organizations"; in other words, mentoring works best when it "counts," that is, when it advances the mentee's

career. In the case of collaborations that do not produce publications, one wonders if proper mentorship is really being provided, since the result will not count institutionally. Harris noted that one way institutions have made these types of partnerships worthwhile is to formally recognize faculty mentors with awards, given in recognition of service, one of the three pillars of faculty career building (the other two being research and teaching). Harris added that this conflict between impartial review and mentorship is already a subject of interest and investigation at some of UA's peer institutions, following their own extensive reports on interdisciplinary research, collaboration, and related issues. She expects to find, after interviewing more administrative and faculty stakeholders from this pool that UA is by no means alone in the struggle to arrive at an equitable and practical response to this situation.

Meanwhile, Dr. Miller's vantage point from the position of Associate Provost for Faculty Affairs has revealed multiple difficulties associated with returning dossiers to departments because of the perception of partiality in the review committee. First, there is the issue of time wasted, which,

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Career Discussion Series "Navigating Departmental and Institutional Politics"

with Randy Richardson, Professor of Geosciences and UA ADVANCE Co-Principal Investigator
Thursday, January 21, 2010
12:00-1:00 p.m., Sabino Room, Student Union Memorial Center (SUMC)

Junior Scientist Dr. Anita Tam Layton, Assistant Professor of Mathematics at Duke University

Hosting Department: Physiology
Nominated by Dr. Thomas Pannabecker, Research Assistant Professor of Physiology
Friday, January 29, 2010
11:00-12:00 p.m., Arizona Health Sciences Center, Room TBA

Junior Scientist Dr. Mya Breitbart, Assistant Professor of Biological Oceanography at the University of South Florida

Hosting Department: Ecology and Evolutionary Biology
Nominated by Dr. Matthew Sullivan, Assistant Professor of Ecology & Evolutionary Biology
Monday, February 1, 2010
Time and Location TBA

Junior Scientist Dr. Yana Yunusova, Assistant Professor of Speech-Language Pathology at the University of Toronto

Hosting Department: Speech, Language, and Hearing
Nominated by Dr. Kate Bunton, Assistant Research Scientist in Speech, Language, & Hearing
Monday, February 8, 2010, 12:00-1:00 p.m., Speech & Hearing Sciences Building, Room 2005

Career Discussion Series "Grant Writing 101"

with Neal Armstrong, Professor of Chemistry & Biochemistry and Optical Sciences
Thursday, February 25, 2010
12:00-1:00 p.m., Sabino Room, Student Union Memorial Center (SUMC)

Junior Scientist Dr. Julia C. Lee, Assistant Professor of Astronomy at Harvard University

Hosting Department: Astronomy
Nominated by Dr. Jill Bechtold, Professor of Astronomy and Astronomer at the Steward Observatory
Thursday, February 25, 2010, 4:00-5:00 p.m., Steward Observatory Room N210

Career Discussion Series "A Conversation with Dr. Elizabeth Boyd, Assistant Vice President of Research Compliance and Policy"

With Dr. Elizabeth Boyd, Assistant Vice President of Research Compliance and Policy and Clinical Associate Professor of Pharmacy Practice and Science
Thursday, March 25, 2010
12:00-1:00 p.m., Sabino Room, Student Union Memorial Center (SUMC)

Career Discussion Series, Panel Discussion on Interdisciplinary Research

with Jeffrey Dean, Professor in the School of Anthropology and Professor of Dendrochronology;
Jonathan Chorover, Professor of Soil, Water, and Environmental Science; and
Joaquin Ruiz, Executive Dean, Colleges of Letters, Arts, and Science, and Professor of Geosciences
Thursday, April 22, 2010
12:00-1:00 p.m., Sabino Room, Student Union Memorial Center (SUMC)

DISTINGUISHED SCIENTISTS: LECTURES AND CAREER DISCUSSION SESSIONS

Dr. Joan B. Rose, Homer Nowlin Endowed Chair of Water Research at Michigan State University

Hosting Department: Soil, Water, and Environmental Science
Nominated by Dr. Chuck Gerba, Professor of Soil, Water, and Environmental Science
Career Discussion: Mon., March 8, 2010 (Time and Location TBA)
Public Lecture: Mon., March 8, 2010 (Time and Location TBA)

Dr. Rita Colwell, Distinguished Professor at the University of Maryland, College Park and Johns Hopkins University Bloomberg School of Public Health, and Chairman of Canon US Life Sciences, Inc.

Hosting College: Zuckerman College of Public Health
Nominated by Dr. Mary Kay O'Rourke, Associate Professor, Community, Environment, and Policy
Career Discussion: Tue., March 23, 2010, 2:30-3:30 p.m. (Location TBA)
Public Lecture: Tue., March 23, 2010, 12:30-2:30 p.m. (Location TBA)

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Promotion and Tenure: cont. from page 3

when multiplied by the total number of cases where this conflict occurs across the University, adds up to a considerable drag on the efficiency of the institution. In addition, there is a sense of consternation among senior faculty who recommended a candidate for approval, then see their recommendation rejected, since they feel they were qualified to make a proper assessment the first time around. Finally, varying interpretations exist as to what constitutes an improper collaboration. Dr. Miller believes that the research that this team undertakes, with the support provided by UA ADVANCE, will help elevate the conversation about this conflict above the level of anecdote and personal experience. Whether UA decides to prohibit collaborators from serving on P & T review committees, allows them with disclosure, establishes a scale to measure the intensity of the collaboration (for example, one of four co-authors on a grant versus one of two), or decides to take some other creative route (such as allowing the collaborator to serve as a commentator on the dossier but not contribute to the final vote), the practices we come up with will emanate from a research base.

This type of self-directed, equity-oriented institutional research goes to the heart of the UA ADVANCE mission, at the national and UA level. Whatever the final recommendations of Ms. Harris and Drs. Eldenburg and Miller, we can be proud that UA has taken the first steps. ■