

First Quarterly Report for NSF ADVANCE Program, October 1 to December 31, 2010

Lehigh ADVANCE: Building Community Beyond Academic Departments

Overarching Goals:

- ✚ To transform Lehigh through improved recruitment, retention, career satisfaction, and leadership development of early- to mid-career women faculty in the Sciences, Technology, Engineering, and Mathematics (STEM).
- ✚ To contribute to national discussion and social science scholarship by testing whether or not interdisciplinary organization can help to create a critical mass and more equitable work environments for women STEM faculty if facilitated by vigorous search strategies, proactive evaluation policies, and mentoring and networking programs geared specifically to interdisciplinary research and teaching.

Project Management and Organization

The Lehigh ADVANCE *Leadership Team (LT)* began meeting twice a month in August 2010, at the start of the Fall semester, when it became likely that we would receive the ADVANCE grant from the National Science Foundation and have continued that schedule through the semester. The LT initially included the PI, Provost Patrick Farrell; the four Co-PIs, Professors Diane Hyland, Jacqueline Krasas, Sibel Pamukcu, and Jeffrey Sands; project director Professor Jean Soderlund; internal evaluator M. Jean Russo; and Provost Office Administrative Director Patricia Mann. Since mid-November four additional members have joined us, creating a strong interdisciplinary team with significant relevant experience. Professor Tina Richardson of the College of Education will lead our efforts in leadership development; Professors Susan Szczepanski of Mathematics and Mooi-Choo Chuah of Computer Science and Engineering will serve as the ADVANCE Chairs for 2011; and Marci Levine, who holds a PhD in Nutritional Science from Purdue University and has six years experience working as staff scientist and project manager at the International Life Sciences Institute in Washington DC, has been appointed as project manager.

Our *Internal Advisory Committee* is chaired by PI Farrell and includes Dean Anne Meltzer of the College of Arts and Sciences and Professor of Earth and Environmental Sciences; Dean S. David Wu of the Rossin College of Engineering and Applied Science and Professor of Industrial and Systems Engineering; Vice President and Associate Provost for Research and Graduate Studies Alan Snyder; Deputy Provost for Faculty Affairs Vincent Munley; Professor Jennifer Swann of Biological Sciences; Associate Professor Tiffany Jing Li of Electrical and Computer Engineering; D. Gary Harlow, Chair and Professor of Mechanical Engineering and Mechanics; Frank Pazzaglia, Chair and Professor of Earth and Environmental Sciences; and the members of the Leadership Team. We held our first meeting on December 17, 2010, when we focused on the

issue of how Lehigh ADVANCE can be most effective in improving recruitment of women to tenure-track STEM positions at Lehigh.

We have also formed the *External Advisory Committee*, which will hold its first meeting at Lehigh on January 28, 2011. Its members include Alice Gast, President, Lehigh University, EAC Chair; Susan Carlson, University of California; Jo Handelsman, Yale University; Jennifer Sheridan, University of Wisconsin; and Karen Thole, The Pennsylvania State University. As part of this day-long meeting, we will ask the external advisors to share advice from their own experience with ADVANCE programs on such issues as 1) recruitment of STEM women faculty; 2) networking/ mentoring programs; 3) leadership development; and 4) workshops for STEM women faculty and department chairs, P&T committees, and other evaluators. We will schedule separate meetings on these topics with subgroups of the Leadership Team, Internal Advisory Committee, and women STEM faculty. We would like to discuss what strategies worked for the EAC members, what did not work, and how Lehigh ADVANCE can take advantage of their experience.

The *Lehigh ADVANCE Program Offices* are located in Rooms 312, 314, and 316 of the new STEPS Building, which houses the Science, Technology, Environment, Policy, and Society Initiative; Earth and Environmental Sciences Department; Civil and Environmental Engineering Department; and undergraduate laboratories. We are very pleased with the space because Lehigh ADVANCE is thus situated at the heart of a major interdisciplinary initiative and in proximity to STEM faculty from both colleges. The location symbolizes Lehigh ADVANCE's role in institutional transformation. The rooms include project manager Marci Levine's office; a meeting room that will accommodate small meetings, our resource library, and space for individual study; and the office of the social science research associate.

Communications

The Leadership Team worked with Lehigh's Office of Communications and Public Affairs to announce the NSF ADVANCE award early in October. The news release and web article resulted in follow-up interviews for front-page articles in the Lehigh Valley newspaper *Express-Times* and the Lehigh student newspaper *Brown & White*. Lehigh was also recognized by Harvard's Collaborative on Academic Careers in Higher Education as one of 32 colleges and universities "most friendly to junior faculty," as reported in the *Chronicle of Higher Education*.

We followed up the very positive publicity on our ADVANCE award by creating a temporary webpage on the Provost's website, which can be accessed at <http://www.lehigh.edu/~inprv/initiatives/nsf.html> . We have used this site and direct emails to announce the award and solicit nominations for the ADVANCE Chair positions. This site currently includes the press release; the application for requesting recruitment seminar funds; and the revised Lehigh ADVANCE proposal summary, narrative, and research statement.

Marci Levine is currently leading the effort to create our permanent Lehigh ADVANCE website, which will be directly linked to and from the Provost's Office, Office of Research, College of Arts and Sciences, Rossin College of Engineering and Applied Science, and other relevant Lehigh websites. She is working with the website experts in Communications and Public Affairs, Pat Mann and Linda Mery in the Provost's Office, Tina Richardson, and an outside consultant who will develop the site.

We held our Kick-Off Luncheon with STEM women faculty, department chairs, and deans on Nov. 4, 2010, with attendance numbering thirty-one. Members of the Leadership Team made short presentations about the ADVANCE program and goals, then led small-group discussions at individual tables about challenges and strategies for transforming the institution. We received important feedback and were pleased with the attendance and enthusiasm of many participants.

NSF ADVANCE Conference

Five members of our Leadership Team—Patrick Farrell, Diane Hyland, Jackie Krasas, Sibel Pamukcu, and Jean Soderlund—attended the NSF ADVANCE AWIS Workshop in Alexandria Virginia on November 7-9, 2010. This was an excellent conference that gave us the opportunity to network, learn from the experience of other ADVANCE-IT programs, and hear discussions of topics as diverse as incivility in the classroom to peer mentoring. We discussed what we learned at an LT meeting and are assembling a reference document with resources and session notes.

Programs

One challenge in developing programs is to schedule events in a way that demonstrates purposeful planning and gives Lehigh ADVANCE presence on campus without overwhelming women STEM faculty with numerous invitations. During Spring 2011, the schedule will include WISE luncheons in January and March; the luncheon speaker Susan Basow in February; and the workshop for STEM women in May. We will also invite individual STEM women to participate in meetings with the EAC and the NSF site visit and the leadership and retention interviews. Please see below for more details on these activities and other planned events.

A. Leadership and retention interviews

The Co-PIs and ADVANCE Chairs who are STEM faculty, Sibel Pamukcu, Jeffrey Sands, Mooi-Choo Chuah, and Susan Szczepanski, will conduct the leadership and retention interviews with all pre-tenure and tenured women STEM faculty at Lehigh early in the Spring 2011 semester. Data collected during these interviews will assist us in developing best practices for mentoring and evaluating women STEM faculty involved in interdisciplinary work and for cultivating leadership. We will use the information gained to help build our knowledge base on interdisciplinarity and gender to be used for workshops, online toolkits, and publications on women and cross-disciplinary teams. Social scientists Diane Hyland, Jackie Krasas, and Tina Richardson are helping to develop the questions and submit the IRB protocol for this specific activity.

B. Women's Studies programs and networking

Jackie Krasas, Co-PI and Director of Women's Studies, has organized two discussions this fall on the issues of gender and interdisciplinarity and increasing the representation of women in STEM fields.

Oct. 25: WS Reading Group on Rhoten & Pfirman (2007), "Women in Interdisciplinary Science: Exploring Preferences and Consequences."

Dec. 13: WS Reading Group on Stout et al. (2007), "Affective Stories: Understanding the Lack of Progress of Women Faculty."

Dec. 16: WS Retention Group Networking event

On February 25, 2011 Professor Susan Basow of Lafayette College will give a talk for women STEM faculty and department chairs on Gender and Teaching Evaluations. This

talk will contribute to faculty and department chair understandings of Basow's research on how student perceptions and expectations result in differences in the ways in which they evaluate female and male STEM faculty. There will be a lunch hour presentation followed by discussion.

C. Women in Science and Engineering (WISE)

With Mooi-Choo Chuah, Susan Szczepanski, and Tina Richardson, Co-PI Sibel Pamukcu is leading the effort to create a WISE group, first at Lehigh and then expanded to include scholars at other colleges, non-profit organizations, and corporations in the Lehigh Valley and adjacent regions. We have decided that it is most important to start with women STEM faculty at Lehigh, who do not all know one another and sometimes lack knowledge of the range of their research activities. Once this core community is created we intend to expand the group to Lehigh women research scientists and postdoctoral scholars, and then to the larger region. We will start with a luncheon for Lehigh women STEM faculty during the first week of classes and plan a second luncheon in March. The WISE goals include sharing knowledge about their research, shedding light on opportunities for collaboration, and in the process reducing professional isolation. We will ask for volunteers among the pre-tenure and recently tenured faculty to make brief presentations about their research followed by discussion. At the first meeting we also plan to obtain feedback on the goals and structure of the WISE group.

D. Workshops

Co-PI Jeff Sands will take the lead in organizing the workshop for Lehigh pre-tenure and mid-career STEM faculty, postdoctoral scholars and advanced graduate students, which will be held as a day-long "retreat" type workshop in early May (after classes have ended but before faculty leave on summer research). Co-PI Diane Hyland will take the lead in organizing workshops on interdisciplinary networking/mentoring in spring 2011 and workshops for college tenure and promotion committees in early fall 2011. Content for these workshops will be developed from the results of the Lehigh STEM leadership and retention interviews, and review of best practices at other institutions.

E. Leadership development for senior women STEM faculty

Prof. Tina Richardson will work as Special Assistant to Provost Farrell to develop the Lehigh ADVANCE leadership program for tenured women STEM faculty at Lehigh. She is reviewing the websites of prior NSF Awards (e.g., IT, IT Catalyst, etc.) and other best practice leadership development initiatives in order to identify best practices for the proposed leadership seminars. At the start of the Spring 2011 semester, she will solicit input from the senior women STEM faculty regarding leadership topics/issues and priorities, and will then design the leadership seminar series, to be launched in late spring.

F. Recruitment Strategies

As noted in our proposal, improving recruitment of women and scholars from other underrepresented groups is a priority for Lehigh ADVANCE. We have initiated our grant program to provide funding for departments and interdisciplinary programs to bring women STEM postdoctoral scholars and advanced graduate students to campus to give a

seminar about their research and network with Lehigh faculty with the goal of encouraging them to consider Lehigh when appropriate positions become available.

Provost Pat Farrell has moved forward with several University initiatives that intersect with Lehigh ADVANCE goals. He has appointed a search committee for the new position of Vice Provost for Academic Diversity, whose major responsibility will be to assist departments and programs with faculty recruitment. The Lehigh ADVANCE Leadership Team expects to work closely with the VPAD. Provost Farrell has also moved forward with a pilot program for interdisciplinary faculty cluster hires, which is being led by the Cluster Faculty Hiring Committee. During the Fall semester, the committee solicited pre-proposals and has now made recommendations to the Provost regarding which pre-proposals should proceed to full proposal review. The potential for recruiting faculty from underrepresented groups, including women in STEM fields, was one of the criteria for selection.

G. Interdisciplinary networking and evaluation

An important learning from the NSF conference in Alexandria was to use the word “Networking” instead of “Mentoring” in programs for faculty. We will take this advice as we develop our programs. Provost Pat Farrell and project director Jean Soderlund will take the lead in working with the Deputy Provost for Faculty Affairs Vincent Munley and the Committee on Faculty Mentoring and Work Life Issues to develop the interdisciplinary networking committees for new faculty entering August 2011. Their plan is to create the structure during Spring 2011 and work with faculty to create the committees for new STEM faculty as they are hired during the spring and early summer. As noted above, Co-PI Hyland will coordinate development of the workshops for the interdisciplinary networking committees. Farrell and Soderlund will also explore with Lehigh faculty leaders the effort to review Lehigh’s reappointment, tenure, and promotion policies to ascertain what changes are needed to ensure that faculty engaged in interdisciplinary research and teaching are evaluated fairly. While Lehigh recently revised its policies for faculty with formal joint appointments to align with academic best practices, we believe that changes should be considered for faculty with less formal interdisciplinary arrangements. We anticipate that a faculty committee or task force will be needed to review formal policies and department/college cultures regarding such issues as appointment of external evaluators, lists of acceptable journals, distribution of teaching and service responsibilities, and many other concerns.

Social Science Research: Gender and Interdisciplinarity

The first task (which is essential to all the research studies) is to hire the research associate. We have identified the position responsibilities, specified the necessary educational and experiential background, drafted a position description, and advertised the position. We are currently reviewing applications and scheduling interviews. We hope to have the research associate in place by mid-January. In the interim, we have identified office space and are ordering equipment. We have also taken the lead in the IRB submission process. While we have received preliminary IRB approval for the ADVANCE project, we need to submit modification requests (which include finalized descriptions of participants, measures, and informed consent forms) for each specific research study prior to data collection. We have submitted the IRB modification request for the Leadership and Retention

Interviews. We have also been developing the survey instrument for the multi-institutional study of the gendering of attitudes, activities, and outcomes of interdisciplinary research. A preliminary time line for the social research component of the ADVANCE social research studies is attached.

Evaluation

The internal evaluation is on track. The internal evaluator, Jean Russo, attended Leadership Team meetings and project activities and is documenting the implementation of the program as indicated in the evaluation timeline. The internal and external evaluator, Christine Pribbenow, held a phone conference to discuss plans for the evaluation and to clarify the roles of the evaluators. They agreed to confer twice yearly, in the spring and fall. The internal evaluator has developed, along with the Social Science Research Team, a baseline survey that will be administered to all women STEM faculty at the time of the Leadership and Retention Interviews that will be conducted in spring of 2011. This survey will also be administered online to the remainder of the STEM faculty. The survey instrument will be submitted shortly to Lehigh University's Institutional Review Board for approval.

Institutional Indicators Data Collection and Reporting

Internal evaluator Jean Russo, project director Jean Soderlund, and project manager Marci Levine are collaborating with the Provost's Office and Vice Provost for Institutional Research J. Gary Lutz to compile and analyze the required data for the first annual report. The internal evaluator has secured a preliminary report on space allocation assembled by Lehigh's Facilities Services staff, and archival data on faculty salaries will be collected shortly with the help of the Lehigh's Office of Institutional Research.

Preliminary Time Line for ADVANCE Social Research Component

DATE	STUDY 1: Cross Institution Faculty Survey	STUDY 1A: Cross Institution Department Chair Survey	STUDY 2: Bibliometric Analysis of Faculty Productivity	STUDY 3: Lehigh Labor Process Study (includes proximity factor)
Oct. – Dec. 2010	<ul style="list-style-type: none"> Construct survey 	<ul style="list-style-type: none"> Construct survey 		
Jan. – April 2011	<ul style="list-style-type: none"> Get IRB approval Select Participants Set up online survey procedures 	<ul style="list-style-type: none"> Get IRB approval Select Participants Set up online survey procedures 	<ul style="list-style-type: none"> Check IRB requirements 	
May – August 2011	<ul style="list-style-type: none"> Collect data Send reminders 	<ul style="list-style-type: none"> Collect data Send reminders 	<ul style="list-style-type: none"> Select Participants Finalize Coding System 	
Sept. – Dec. 2011	<ul style="list-style-type: none"> Code and analyze data 	<ul style="list-style-type: none"> Code and analyze data 	<ul style="list-style-type: none"> Obtain scholarly records Input data 	<ul style="list-style-type: none"> Construct interview guide IRB
Jan. – April 2012	<ul style="list-style-type: none"> Write reports and begin to disseminate results 	<ul style="list-style-type: none"> Write reports and begin to disseminate results 	<ul style="list-style-type: none"> Obtain scholarly records Input data 	<ul style="list-style-type: none"> Select participants Schedule interviews
May – August 2012			<ul style="list-style-type: none"> Write reports and begin to disseminate results 	<ul style="list-style-type: none"> Interviews Transcription
Sept. – Dec. 2012				<ul style="list-style-type: none"> Interviews Transcription
Jan. – May 2013				<ul style="list-style-type: none"> Code and analyze data
June– Aug. 2013				<ul style="list-style-type: none"> Reports, dissemination