

Research Accomplishments. Carnes, Mary (Molly) L.

We have had two manuscripts published this year that helped inform the science on which the Bias Literacy Workshop is based:

1. Isaac C, Lee B, Carnes M. Interventions that affect gender bias in hiring: a systematic review. *Acad Med.* 2009 Oct;84(10):1440-6. Review. PMID: 19881440
2. Sheridan JT, Fine E, Pribbenow CM, Handelsman J, Carnes M. Searching for excellence & diversity: increasing the hiring of women faculty at one academic medical center. *Acad Med.* 2010 Jun;85(6):999-1007. PMID: 20505400

There has been no change in the Specific Aims proposed in the original grant application. We report progress on all three Specific Aims since funding began October 1, 2009.

Specific Aim #1. Clarify the relationships among department climate, academic productivity, job satisfaction, intent to leave, and attrition for male and female faculty members.

Studies, Results, and Plans: We have begun gathering the productivity and attrition data that will be linked to our climate survey data in order to estimate models of these relationships. Data for faculty patents and publications is complete. Data on faculty grants and attrition is still being collected. An unexpected windfall occurred in Fall, 2009 when the Office of the Provost asked us, through the Women in Science and Engineering Leadership Institute (WISELI), to survey UW-Madison faculty. We did not expect to run an all-faculty survey until the end of the grant, but because of the Provost's interest, we were able to get a survey out in the Spring of 2010. This provides baseline data closer to our intervention than the original baseline survey from 2006 that we were planning to use. Some surveys are still trickling in, but we have obtained a faculty response rate at this time of 54%. This is a real boon to both Specific Aim #1 and Specific Aim #2. Plans for the current year are to analyze the baseline data and add it to data from the first two waves for developing the proposed structural equation models to examine the relationships indicated above.

Specific Aim #2. Test the impact of a Bias Literacy Workshop on faculty: (a) motivation to respond without prejudice, (b) equity self-efficacy, and (c) positive equity outcome expectations; and department climate.

Studies, Results, and Plans: Work on this aim has focused on: 1) developing and refining questionnaires, 2) meeting with 90 departments to introduce the research, and 3) iterative prototyping of the workshop itself. We held two focus groups in Fall, 2009 with 5 faculty members (two senior male faculty in the College of Engineering, a mid-career female faculty member in the School of Medicine and Public Health, a senior male faculty member in the School of Education, and a female director of a large STEM education program). One was African American and the others white. The content of the discussion was examined and used to inform development of questions. We then developed and piloted our questionnaires several times (with IRB approval) with groups of non-faculty who are in STEM and several faculty members from departments not involved in this study.

Dr. Carnes has personally presented the scope of the R01 at Dean's meetings of the Chairs in the School of Medicine and Public Health, the College of Engineering, the College of Letters and Science, the School of Pharmacy, and the School of Veterinary Medicine. These have been followed by presentations at the individual faculty meetings of 87 of the 90 involved departments. We believe that this face-to-face meeting with faculty helped us achieve a high survey response rate and anticipate that it will increase the workshop participation rate.

IRB approvals have been obtained for both pilot and actual workshops. We have presented 3 pilot Bias Literacy Workshops, now entitled "Breaking the Prejudice Habit Through Bias Literacy". One was at the University of Virginia, one with the Facilities and Management Department at the UW-Madison, and one with the UW Department of Community and Environmental Sociology. The research team has made revisions based on experiences with, and feedback from, these pilots so that by the time we do our first official workshop the curriculum will be as standardized as possible. We are planning one more pilot with some faculty in early July, and then we will convene our first real workshop at the end of July or August.

We submitted a proposal to NIGMS for a competing revision to add a qualitative study to Specific Aim #2. This would include participant observation of the workshops and in-depth, longitudinal interviews with faculty in selected departments. We are awaiting notice of funding. We have a proposal pending for internal funding to begin this work as well.

Plans for this coming year are to begin delivering the workshops to departments and collecting the planned individual-level data.

Specific Aim #3. Examine receptivity and resistance to an equity intervention (Bias Literacy Workshop) through conversation analysis of verbal and non-verbal cues.

Studies, Results and Plans: The two pilots at the UW-Madison were video and audio taped.

During the first year of the NIH project on Bias Literacy, the conversation analysts videotaped, analyzed and evaluated the two UW pilot sessions for verbal and non-verbal behaviors of participants. After digitizing videotapes of two 2.5 hour pilots, Cecilia Ford and her grad students analyzed five hours of workshop interaction to arrive at focused feedback on verbal and non-verbal displays of receptivity and resistance by participants. The findings were reported to the larger team and have contributed to revisions in the workshop design. For example, the original case studies included some humor (e.g., a request for proposals from the National Endowment for Super Science). It appeared that the humor was confusing – the subject of gender equity is serious, why introduce humor? This case study now indicates that the request for proposals comes from the NIH. The tapes also indicated that participants are most engaged when they are actively working in pairs or small groups. Thus, we have adjusted the workshop curriculum to incorporate more of these exercises. Dr. Ford plans to analyze these tapes in considerably more detail to assist in production of anonymized ('cartoonized') video clips to train future leaders and facilitators.

HUMAN SUBJECTS

We have submitted a protocol to the IRB for the new qualitative arm of the study, which entails participant observation during the workshops and in-depth, longitudinal interviews with faculty in selected departments. This qualitative arm will have a separate informed consent form.

Dr. Carol Isaac will take detailed observational field notes on verbal and non-verbal interactions/responses during the 2.5-hour Bias Literacy Workshops. Four to six months following the workshop, e-mail invitations for interviews will be sent to a theoretical sample of approximately 6-8 faculty in a single department. Faculty selected will be from departments where the investigators have a sense from the 3-month questionnaires (supported by workshop participant observation) that some change is occurring. Faculty in the paired control department will also be selected for interview invitation. Invitation will come by email and be repeated once if no response is received. If an invited faculty member does not respond or declines to be interviewed, another faculty member in that department will be selected for invitation. The interview will begin with an open-ended query asking participants to talk about their background and role in the department. Subsequent questions will ask about perceptions of individual and departmental gender bias including some specific examples such as describing a faculty meeting. The interviews will likely take 30-60 minutes. These same participants will be re-interviewed, if they accept, 12 months after initial interviews. All interviews will be digitally audio-recorded and transcribed. If a participant asks for the recording to stop during the interview, or if she/he requests that a portion of the recording be erased upon completion of the interview, Dr. Isaac will comply with this request. After these recordings are transcribed and anonymized, participants will be sent their interview transcripts for their review (member checking). At that time, they may also remove portions of their transcript. All transcripts will be anonymized for future workshop dissemination, development, and publications. Only Dr. Isaac and her authorized students will have access to the files, which are stored in a password protected computer.

This research adds essentially no additional risks to the parent grant. It will provide rich, thick descriptions of how participation in the Bias Literacy Workshop is affecting attitudes, beliefs, and behaviors at the individual and departmental level.