

ADVANCE Women's Leadership at The University of Delaware

Dr. Heather Doty, University of Delaware

Heather Doty is an assistant professor of mechanical engineering at the University of Delaware (UD). Dr. Doty teaches undergraduate courses in thermodynamics, statics, dynamics, and technical communication and conducts research on gender in the academic STEM workforce. She is co-PI on UD's NSF ADVANCE Institutional Transformation grant, which aims to recruit, retain, and advance women STEM faculty at UD. Dr. Doty is faculty advisor to UD's Women in Engineering Graduate Student Steering Committee.

Dr. Shawna Vican, University of Delaware

Shawna Vican is the Director of the UD ADVANCE Institute and holds a secondary appointment as an Assistant Professor of Sociology and Criminal Justice at the University of Delaware. She received her Ph.D. in Sociology from Harvard University. An organizational sociologist, Dr. Vican investigates the adoption and implementation of new employment practices and corporate social behaviors. Across her research, Dr. Vican explores how organizational policies and practices, managerial behavior, and workplace culture shape individual career outcomes as well as broader patterns of labor market inequality. Her current research includes a qualitative study of corporate diversity management strategies and a series of mixed-methods projects on diversity in the academic workforce.

Dr. Robin Andreasen, University of Delaware

Robin O. Andreasen (Ph.D. University of Wisconsin-Madison) is Associate Professor of Linguistics and Cognitive Science. She earned her PhD in philosophy and specializes in philosophy of science, philosophy of social science, and in science and policy. A race and gender scholar, Dr. Andreasen is research director and co-PI for UD's ADVANCE-IT grant.

Dr. Sue Giancola, University of Delaware

Dr. Sue Giancola joined the Center for Research in Education and Social Policy (CRESP) in 2017 after working over 20 years as an evaluator in both academia and private business. Her career has largely been focused on research and evaluation of programs to improve human services, as well as developing evaluation methods that can be embedded within programs.

Dr. Giancola's current work focuses on developing methodological processes to embed evaluation into human services programs, such that program development can be driven by reliable and valid information and impact findings can be properly interpreted. Much of her work employs theory-based methods, not to replace rigorous research designs, but rather to supplement, in order to better understand implementation and effectiveness.

ADVANCE Women's Leadership at the University of Delaware

Dr. Heather Doty, Dr. Shawna Vican, Dr. Robin Andreasen, Dr. Sue Giancola

Keywords: Faculty, Race/Ethnicity, Gender

ABSTRACT

In 2018 the ADVANCE program at the University of Delaware (UD) collaborated with UD's Business College to hold a multi-day leadership program for mid-career women faculty. Unlike leadership programs that assemble women from across the country, the UD ADVANCE Women's Leadership Program was designed specifically for UD women faculty; its emphasis was on cohort-building and peer mentorship. After an application process, 18 women were selected as the first UD ADVANCE Women's Leadership cohort. The cohort represented all of UD's colleges, with about half of participants from STEM departments. Close to a third of the participants were from underrepresented racial or ethnic groups. UD ADVANCE covered program registration, hotel, and meals costs for all participants.

The program consisted of two sessions. The first was a two-day overnight residency off campus where participants built community, networked, and learned new skills, such as leadership vision, motivating others, and having difficult conversations. Participants then completed individual assignments before reconvening a month later for the second session, where they learned more skills and heard from a panel of women leaders from UD.

Assessment data of the program were overwhelmingly positive. For example, despite the large time commitment required of participants, 100% agreed that the program encouraged meaningful collaboration with colleagues and was worth their time. Based on feedback from participants and demand from faculty unable to participate the first time, the UD ADVANCE leadership team is investigating how the program might be institutionalized and offered regularly to UD faculty.

This paper draws from institutional data and the broader literature to discuss why we chose an in-house workshop. Aiming to provide a model that can be used by other institutions, it describes the program, evaluation results, and outcomes, drawing attention to benefits and challenges.

I. Background: Program Origins and Development

Women are underrepresented nationally in academic leadership positions [1], [2], [3], [4], [5], [6]. Close to half of tenured/tenure-track (t/tt) faculty in the U.S. are women. However, the proportion of women at each academic rank shrinks as women move up the academic ladder. Women comprise just over half of t/tt assistant professors, 45% of t/tt associate professors, and just under a third of tenured full professors [5]. The lack of parity between women and men is especially pronounced in certain disciplines, including

STEM fields such as engineering and computing [7] and humanities fields such as philosophy [8]. Disparities occur at all administrative levels, from department chair, to dean, provost, and presidential levels. In contrast, women are overrepresented in lower-powered positions, such as non-tenure track or contingent faculty. Where progress is being made on women's participation in higher education careers, it tends to be at non-research-based institutions, such as community colleges [9].

There is no single reason why women are underrepresented in academic leadership, including the higher professorial ranks. A number of factors play a role in gender-based career disparities. Examples include explicit or implicit bias, personal choices (e.g., family-based, field of study), differential access to mentorship and networking opportunities, and the perception that advanced positions are not inviting of women [10], [11]. Within academia, for example, the timing of tenure, disproportionately large service loads, and time spent mentoring students can all work against women's advancement [6]. Whatever combination of factors are at play in any specific case, the result is that women are not gaining access to high-pay, high-power leadership positions at the same rate as men.

Institutions can take actions to increase women's access to leadership positions. One example is educating faculty and administrators on implicit bias and the role it plays in career development [6]. Another is providing opportunities for women to cultivate their own identities as leaders [10], often in the form of leadership programs for women. These workshops go beyond teaching leadership skills and strategies. The workshops provide guided opportunities for women to explore and develop their own purpose as a leader [10]. In other words, the workshops are not aimed at "fixing" women or teaching women how to survive in a man's world. Rather, the workshops directly address the dynamics of gender in the workplace in a way that prepares women to take on the challenges of leading with purpose and authenticity. In this paper we describe a workshop at our institution based on this model.

Women's Leadership at UD

Our institution, the University of Delaware (UD), is no exception to the trends described above. A Carnegie Research University with very high research activity, UD is a mid-sized (roughly 22,000 students and 1,200 full-time faculty) public institution with a private charter. Although it is the state's flagship institution, UD does not have a law or medical school. It is heavily invested in the STEM fields.

Across campus, women comprise 38% of full-time tenured or tenure-track (t/tt) faculty, concentrated in the lower ranks. Women make up 53% of assistant professors, 44% of associate professors, and only 27% of full professors. In contrast, women comprise 59% of full-time non-tenure track faculty. Women are also underrepresented in academic leadership positions on our campus. Women are currently well represented in our higher administration (3 of 7 deans are women, as is our provost). However, as of fall 2017 only 34% of full-time chairpersons or academic center directors were women [12], [13].

The numbers are significantly lower for women of color. As an illustration, African-American and Hispanic women together comprise 4% of t/tt assistant professors, 6% of t/tt associate professors, 2% of t/tt full professors, and 3% of full-time chairpersons or academic center directors. Asian women comprise

10% of t/tt assistant professors, 8% of t/tt associate professors, 3% of t/tt full professors, and 2% of chairpersons or academic center directors [13].

Like many institutions, UD is striving to improve the climate for women (students, faculty, and staff) and members of historically underrepresented groups on campus. As part of this work at the faculty level, UD applied for and was awarded a five-year National Science Foundation (NSF) ADVANCE Institutional Transformation grant in 2014. Established under this grant, the UD ADVANCE Institute operates with the broad goals of promoting faculty excellence and diversity with a primary focus on improving the representation and advancement of UD's underrepresented faculty—such as women in STEM or faculty of color across the institution. One of the specific goals of the grant is to increase the number of women in academic leadership positions on our campus [14]. A number of grant initiatives target this goal, for example, training on implicit bias for faculty and administrators, annual panels on the promotion and tenure process, mini-grants to fund women faculty to attend external leadership programs, and lunches for women faculty featuring speakers with discussion topics such as promoting academic work or research funding strategies.

Program evaluation reports indicate that these programs are valuable and we believe that they will make positive changes on our campus over time. However, the programs are relatively small scale and progress is slow. We are always looking for opportunities to support larger and broader initiatives to enhance women's leadership at UD. Such an opportunity arose in 2017 when we were approached by Professors Amanda Bullough and Wendy Smith, co-founders of the Women's Leadership Initiative in UD's Lerner College of Business and Economics. These faculty had already developed a successful women's leadership program focused on non-academic careers and they were interested in our work on leadership development for faculty. They proposed to partner with UD ADVANCE to create a leadership program tailored specifically for women faculty based on their proven model.

We were interested in the idea, but hosting our own program would be time consuming and expensive. We had to make sure it was worth it. There were already excellent women's leadership workshops available across the country (e.g., Drexel's ELATES [15] and Cold Spring Harbor Laboratory's Workshop on Leadership in Bioscience [16]). We had funded UD faculty to attend these and others through our mini-grant program. Participating faculty learned new skills and developed their professional networks. Feedback was always highly positive. Yet, there were drawbacks to the mini-grant model. For example, the external workshops are often associated with specific research disciplines, many of which are geared toward STEM. We could identify fewer opportunities for our faculty colleagues in the social sciences and humanities. Moreover, it was relatively costly per participant to fund travel and accommodations in addition to participation fees. We also perceived that the relatively involved application processes and time invested in travel to external workshops was a barrier to some women's participating. If we hosted our own program, far more UD women faculty could participate, at a far lower cost per person.

Before we fully committed to the idea we had to settle a number of details. Based on the existing workshop model for non-academic women, we knew the program would involve a two-day initial session including an overnight stay off campus and a second one-day session a month later on campus. Many questions remained, including:

- 1. Who would be the target audience? Would we include only UD faculty or open it up to other campuses? Would we accept faculty from all ranks or target specific levels? Would we accept non-t/tt faculty?
- 2. What would be the cost to participants?
- 3. How would the program be financed?
- 4. How would we recruit and select participants in a way that would be fair and also ensure diverse representation?

The UD ADVANCE leadership team discussed these questions with our colleagues in the Lerner College over the course of several months. To help us align our plans with the specific needs of our faculty we examined the results of a recent (2016) faculty climate survey [17] (UD ADVANCE conducts such a survey every two years). The survey collected faculty perceptions of the fairness and effectiveness of specific UD practices, policies and procedures, departmental and institutional climates, career progression, and aspects of professional satisfaction. The 2016 survey population included all full-time faculty who were not on leave (N=1,049). The survey response rate was 37.5%. We disaggregated survey results by rank and gender but not by race or ethnicity due to small sample size. Three key themes emerged that would provide insight into how we might structure the leadership workshop: 1. low levels of satisfaction among associate professors; 2. lack of community at UD; and 3. insufficient mentoring.

1. Low levels of satisfaction among associate professors

The survey probed career satisfaction with questions about career advancement, salary, research, teaching and service load, and experience of community at UD. Overall faculty satisfaction ratings were neutral to slightly favorable, particularly when looking at satisfaction with the overall experience of being a faculty member at UD. However, significant rank effects were observed, with tenured associate professors indicating lower levels of satisfaction with respect to salary, service load, support for professional development, and career advancement. A separate UD ADVANCE cohort study that took a closer look at career outcomes of UD faculty found some significant gender effects with respect to time in rank at associate professor [18].

2. Lack of community at UD

When asked about levels of departmental collegiality and inclusiveness, on average t/tt faculty rated their departments as somewhat collegial and inclusive. However, these scores are just above the midpoint of the scale, indicating that faculty do not view their departments as strongly inclusive or collegial. When disaggregated by rank and by gender, the results show significant effects. Associate professors perceive the departments as less inclusive than do full and assistant professors -- and men perceive their departments as more inclusive than do women.

3. Insufficient mentoring

The survey reports uneven availability and quality of formal and informal mentoring available to UD's faculty. Formal mentors are generally assigned by one's chair or supervisor, whereas informal mentors are not assigned. Results indicate that relatively few faculty receive formal mentoring; rates of informal mentoring are significantly higher. Additionally, assistant professors are significantly more likely to receive mentoring than associate or full professors. Satisfaction with mentoring, when it is received, is relatively high. Notably, however, faculty are most satisfied with informal mentoring *outside* UD.

Taken collectively, the above results suggest that assistant professors receive more support in terms of mentoring and professional development than do associate professors. They also suggest that women experience a less inclusive departmental climate than do their male counterparts. These results provided clarity on how we should target the program. First, we would prioritize UD associate professors (t/tt and full-time, continuing non-tenure track). It was clear that associate professors could use a boost in terms of professional-development opportunities and mentoring, so it made sense to give them first priority for the workshop.

Second, we decided that we would not include faculty outside of UD, at least for the pilot program. This decision was based on our desire to strengthen community among the participations. We would form a network of women faculty from across campus who would get to know each other well and learn new skills together at the workshop. As co-workers they would be positioned to support each other on an ongoing basis after the program ended. This type of network-based peer mentoring has been shown to be effective in leadership development in other institutions [19], [20]. Our hope was to seed a team of accomplished women who would learn from and support each other as they progressed through the ranks and perhaps into leadership positions on our campus. If this occurred, we would be forming the foundation of an institutional structure with the potential to change the culture at our institution.

Another advantage of limiting participation to UD faculty was that workshop content could focus to some extent on our institution. In early planning meetings a number of prospective participants expressed confusion about the concept of leadership. They didn't have a clear picture of what many of our leaders did, or what their formal jobs were. We decided to use a portion of the workshop to take a closer look at the norms and practices of our institution. We would consider question such as who are our leaders, what are their roles, and how did they get their jobs? Men tend to have stronger informal networks than do women [19], [10] and thus have more ready access to this type of knowledge. Our workshop would become a forum for women to learn about leadership in general, but also about the specific paths to leadership at our institution.

With the target audience selected and general ideas for workshop content circulating, UD ADVANCE leadership formally contracted with the Lerner College of Business and Economics to hold the inaugural UD ADVANCE Women's Leadership Program in spring 2018. In an effort to provide a model that other institutions may wish to follow, in the next section we will provide information on various aspects of

planning and implementing the workshop (the final answers to questions 2-4 posed above that we asked in the initial planning stages).

II. Program Implementation

Our contract with the Lerner College laid out clearly the responsibility of each party. We chose a 'turn-key' model under which the primary responsibility of the UD ADVANCE team would be to recruit participants. Lerner staff would handle all other aspects of implementation, including creating an advertising flier and a web-based application process, booking workshop space and hotel blocks, and handling all financial transactions.

Finances

Under this 'turn-key' model, the cost for the program, including instructor and administration fees, course materials, location rentals, food, and advertising, came to \$1,200 per participant (not including hotel costs for the required overnight). We wanted to offer the program at no cost to participants. We considered various models of cost sharing with other offices but in the end decided that for this first year we would cover all costs through our NSF ADVANCE grant. Participants were responsible only for providing their own transportation. The per-person cost of the workshop was substantially less than what we typically pay for faculty to participate in external leadership workshops, which has ranged from approximately \$3,750 to \$6,000.

Participant Recruitment and Screening

Participation in the workshop was limited to 18, based on the workshop instructors' successful past practice. Our priority was to fill the slots with a diverse group of women who would benefit from the workshop and use what they learned. We developed a simple online application that asked prospective participants to describe their leadership aspirations; their leadership experience, if any, where leadership was to be construed quite broadly; and what challenges they were currently facing in their leadership. The idea was to collect information that would allow us to choose applicants who would get the most out of the workshop but without burdening applicants with a lengthy set of questions and requirements.

We took a tiered approach to recruiting applicants. Early in the planning process we held a series of focus groups with women faculty chosen for their leadership potential based on past activities. The focus groups served a dual purpose: they provided input that informed the course content, and they were a powerful recruitment tool that we used to foster a sense of involvement and investment in the attendees, whom we later personally invited to apply for the workshop. This strategy was successful; several focus-group attendees ended up participating in the workshop. In addition, we published the application link on our website, advertised it in UD's online newspaper, and spread word via mailing lists and word of mouth. We planned to ask deans or chairs to nominate applicants if we didn't get enough on our own, but the spots filled quickly so nominations were not necessary.

We screened applicants for appropriate responses to the questions and accepted participants according to our stated priorities, starting with associate professors and moving on to senior assistant professors and recently promoted full professors. We were pleased to receive applications from a diverse population. The final pool of participants represented all seven UD colleges, with participants split roughly equally between STEM and non-STEM fields.

III. Program Description

The leadership program was instructed by our Lerner College colleagues, Professors Amanda Bullough and Wendy Smith, experts in women's leadership and organizational change. The program consisted of a two-day off-site residency to build cohort community, followed by an on-campus day-long event a month later focused on developing leadership clarity and personal leadership action plans. In between the two sessions participants worked on a personal leadership assessment project. While each of the classroom sessions had modules with distinct topics, the overall framework of the program centered on leadership clarity, capability, and community. The program employed a mix of readings, case studies, group activities, and focused discussion. Application of the leadership content was geared towards the UD context.

The first day of the off-site session began with introductions and a discussion about paradoxes of leadership, or how leaders frequently experience competing demands. In the case of women leaders, this may include inconsistent expectations around gender and leadership roles, such as the competence and likeability tradeoff. Participants reflected on personal leadership successes and challenges and group discussion centered on the wide range of leadership roles faculty may choose to pursue. Participants identified personal core values and developed an individualized leadership vision linked to these values. Other topics covered during the off-site residency included networking skills, best practices in understanding and motivating others, and managing difficult conversations.

In between the off-campus and on-campus sessions, participants worked on the Reflected Best Self Exercise [21]. The purpose of this exercise, a 360-degree assessment of leadership skills and capabilities, was to use a strength-based approach to leadership development. Participants identified 10-15 people in their personal and/or professional lives and asked them to tell a story about a time when the participant was at their best. Looking across these stories, participants identified their best characteristics, or areas of strength, upon which to build their leadership capabilities. This activity also linked to the core values participants previously identified, pushing participants to develop an authentic leadership style. A key part of this activity was pairing participants as accountability partners. These pairs had meetings throughout the break, further strengthening relationships among the cohort.

During the follow-up on-campus session, participants reported out on the results of the Reflected Best Self Exercise. A module followed on leading with power and authenticity. Participants were then joined by a panel of women leaders at UD, including two deans and a vice provost. The panelists reflected on their own leadership experiences and and answered participant questions. Lunch programming featured

break-out sessions on topics including managing professional brands and social media. The final sessions were on power and influence, leading with authenticity, and negotiation. The program ended with participants reflecting on what they would like to achieve in the next ten years, as well as steps to take immediately, within the next several months, and over the next year.

Building community among participants was a core component of the program. Throughout the classroom days, the instructors scheduled frequent breaks and actively encouraged participants to learn about each other via coffee and conversation, or practicing skills covered in class such as managing difficult conversations or networking. A group dinner on the first night of the program included ice-breaking activities to help participants get to know each other and build cohesion among the group. At lunch the following day, participants wrote down a professional challenge they were facing and then were grouped together by theme, allowing for peer mentoring among group members. Since the program concluded, participants have self-organized two social events to keep in touch. ADVANCE has also hosted a follow-up event for the program instructors and participants, giving then a chance to reconnect and check in about progress towards leadership goals.

IV. Program Results

An evaluation survey was administered following the residency component of the program and again following the on-campus workshop. The response from participants to the leadership program was overwhelmingly positive. 100% of participants agreed or strongly agreed that the workshop addressed important topics, included a good mix of topics, presented information that was relevant to them, was engaging and kept their attention, covered content that was new to them, was worth their time, met expectations, and that the overnight session encouraged meaningful collaboration with colleagues.

Written comments were perhaps even more powerful indicators of the value of the workshop to the women faculty. One participant commented, "Thank you for doing this for us—the knowledge I gained is invaluable and the people I've met (instructors and participants) are wonderful." Another wrote, "Thank you very much! This was very helpful, both for learning [and] for building a community. I hope there will be an even more extended version of this offering. Thanks also for paying attention to making it such a positive experience. This is the most valuable initiative I have seen from ADVANCE so far. It is really wonderful."

Most importantly, assessment results indicate that participants plan to make changes to their professional practices. The survey asked participants, "What do you plan to do differently as a result of attending this conference?" Common responses included prioritizing time more effectively, developing stronger networks and community, more purposeful decision and goal making, and appreciating one's own strengths. Sample examples include:

• "Now, instead of being stuck alon[e], I will seek help and support from other women faculty who I met in this workshop. Reaching out to them when they need me for help [and] support."

- I never considered how important it is to spend time listening to others. Our discussions have helped me to see how spending time to listen to others is a gift to the other person as well as to the listener that allows me to gain different perspectives. I plan to dedicate my efforts to be more in-line with my values."
- "I will approach my leadership position with higher level of confidence and will value myself higher. This conference showed me what I am doing right already."
- "Be more purposeful and deliberate in my decisions, focus on what I truly want to accomplish in relation to underlying goals."
- Prioritizing my daily activities. Delegating more. Create a plan for the next 10 years. Purposefully plan my work, rather than doing reactively."

When asked what they wish had been included, a number of participants called for more hands-on activities, including role playing and practicing difficult conversations. Many participants didn't want additional topics but would have liked more time to cover certain topics in greater depth. Others requested structured follow-up activities with the cohort.

Additional follow up with participants over time would help to assess the long-term impact and effects of the workshop. Follow-up interviews with the participants are already being conducted; we look forward to learning in richer detail about the participants' experiences and how their leadership has evolved in the months since the workshop. We are optimistic that the cohort will continue to get together and support each other as they advance in their careers.

V. Conclusion and future directions

The UD ADVANCE Women's Leadership pilot program was hugely successful, as indicated by demand for the workshop and participant feedback. We would love to provide the workshop, or some version of the workshop, on an ongoing basis. There is a clear need on our campus for the women's leadership workshop. Several members of the pilot cohort requested in-depth, follow-up sessions to the workshop. In addition, we have a waitlist of faculty who wanted to participate this first year whom we could not accommodate. A number of participants commented that we should open the workshop up more broadly, for example, to men of color.

An obvious challenge moving forward is how to fund the workshop in the absence of a grant. Through our NSF ADVANCE award we were able to provide the pilot workshop at no cost to participants. To offer the program in future years, the university would have to commit to the resources. The UD ADVANCE leadership team has been disseminating the results of the workshop to the upper administration, focusing on the unprecedented level of enthusiasm and positive feedback we received from all participants. We expect that ongoing evaluation, including tracking the progress of participants, will strengthen our case that the benefits of the program (e.g., career advancement, improved morale and professional satisfaction among participants) are worth the cost. We might also suggest that costs be

distributed to make the program affordable. For example, the provost might cover half of the expenses with deans and department chairs splitting the remainder for faculty in their units.

We acknowledge that our NSF grant and collaboration with Lerner College give us advantages that other institutions considering this type of program may not have. We suggest that there may be ways to start smaller than we did, for example, by reducing the program (perhaps at least initially) to one day. Or, keep the overnight but ask participants to cover the cost of their accommodations. We should also point out that for this pilot program we paid for a premier package offered by Lerner College, which included all program administration (e.g., website development, room reservations, hotel block reservations, catering ordered, etc.). Reducing these services or taking on some of them ourselves would cut the participant cost significantly.

In summary, early results of the UD ADVANCE Women's Leadership Program, held spring 2018, are promising. Based on participant feedback, the program successfully established a professional network among mid-career women faculty at our institution, many of whom did not know each other before the workshop. Participants reported a high-quality, high-impact program that they expect will positively influence their careers.

Acknowledgments

This project was funded by the National Science Foundation, HRD 1409472. The authors wish to thank Drs. Amanda Bullough and Wendy Smith from the Lerner College of Business and Economics for partnering with us on this exciting project and for instructing the UD ADVANCE Women's Leadership Program.

References

- [1] ACE, "Pipelines, Pathways, and Institutional Leadership: An Update on the Status of Women in Higher Education," American Council on Education, 2017. Available: https://www.acenet.edu/news-room/Documents/Higher-Ed-Spotlight-Pipelines-Pathways-and-Institutional-Leadership-Status-of-Women.pdf. [Accessed 29 November, 2018].
- [2] C. Bilen-Green, K. Froelich, S. Jacobson, "The Prevalence of Women in Academic Leadership Positions, and Potential Impact on Prevalence of Women in the Professorial Ranks," *WEPAN Conference Proceedings*, 2008.
- [3] C. Bilen-Green, K.Froelich, K.Sukalski, "Gateways to Academic Leadership Positions, and Impact on Women in the Professorial Ranks," *WEPAN Conference Proceedings*, 2009.
- [4] L. Ford, "Two steps forward, one step back? Strengthening the foundations of women's leadership in higher education," *Politics, Groups, and Identities*, Vol. 4, No. 3, pp. 499–512, 2016.
- [5] Catalyst, "Quick Take: Women in Academia" (October 20, 2017). Available: http://www.catalyst.org/knowledge/women-academia. [Accessed 29 November, 2018].

- [6] Pamela L. Eddy and Kelly Ward, "Problematizing Gender in Higher Education: Why *Leaning In Isn't Enough*," in *Critical Approaches to Women and Gender in Higher Education*, P.L. Eddy et al. (eds.), Palgrave Macmillan US, 2017.
- [7] B. Yoder, "Engineering by the Numbers," American Society for Engineering Education, 2017. Available: https://www.asee.org/documents/papers-and-publications/publications/college-profiles/2017-Engineering-by-Numbers-Engineering-Statistics.pdf. [Accessed 29 November, 2018].
- [8] M. Paxton, C. Figdor, and V. Tiberius, "Quantifying the Gender Gap: An Empirical Study of the Underrepresentation of Women in Philosophy," *Hypatia*, Vol. 27, No. 4, 2012, pp. 949-957.
- [9] A. Martin and K. O'Meara, "Conditions Enabling Women's Leadership in Community Colleges," in P.L. Eddy et al. (eds.), *Critical Approaches to Women and Gender in Higher Education*, P.L. Eddy et al. (eds.), Palgrave Macmillan US, 2017.
- [10] R. Ely, H. Ibarra, and D. Kolb, "Taking Gender Into Account: Theory and Design for Women's Leadership Development Programs," *Academy of Management Learning & Education*, Vol. 10, No. 3, pp. 474-493, 2011.
- [11] K. Ward and P. Eddy, "Women and Academic Leadership: Leaning Out," *Chronicle of Higher Education* online, December 9, 2013. Available: https://www.chronicle.com/article/WomenAcademic-Leadership-/143503 [Accessed 29 November 2018].
- [12] UD Diversity Brochure, 2017. Available: https://sites.udel.edu/advance/files/2018/03/ADVANCE-Demographics-2018-pddv9v.pdf [Accessed 04 February 2019].
- [13] UD Institutional Data, 2017-2018. Available: https://ire.udel.edu/files/2018/02/77-facranktenure-1rydkf3.pdf [Accessed 04 February 2019].
- [14] UD ADVANCE proposal, 2013. Available: https://sites.udel.edu/advance/files/2014/12/UD-ADVANCE-IT-Proposal-Final-29ieu8i.pdf [Accessed 04 February 2019].
- [15] https://drexel.edu/provost/initiatives/elates/. [Accessed 29 November 2018].
- [16] http://meetings.cshl.edu/Leadership18. [Accessed 29 November 2018].
- [17] UD Faculty Climate Survey report, 2016. Available: https://sites.udel.edu/advance/files/2014/12/UD-ADVANCE-2016-Climate-Survey-Report-pu92bd.pdf [Accessed 04 February 2019].
- [18] UD ADVANCE cohort study, 2015. Available: https://sites.udel.edu/advance/files/2014/12/ADVANCE-TP-Cohort-Analysis-08-25-16-2j5lh90.pdf [Accessed 04 February 2019].
- [19] K. Bartol, X. Zhang, "Networks and leadership development: Building linkages for capacity acquisition and capital accrual," *Human Resource Management Review* 17 pp. 388–401, 2007.
- [20] S. Gorman, M. Durmowicz, E. Roskes, and S. Slattery, "Women in the Academy: Female Leadership in STEM Education and the Evolution of a Mentoring Web," *Public Policy Online*, Vol. 201, 2013.
- [21] L. Roberts, J. Dutton, G. Spreitzer, E. Heaphy, R. Quinn. "Composing The Reflected Best-Self Portrait: Building Pathways For Becoming Extraordinary In Work Organizations," *Academy of Management Review* Vol. 30, No. 4, pp. 712-736, 2005.