

Rutgers University
Women in Engineering Leadership League (RU WELL): A
Dynamic Approach to Mentoring and Leadership Training

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Abstract - In an effort to address the retention rate and the needs of women enrolled in the engineering curriculum, the Office of Student Development at the School of Engineering coordinates the Rutgers University Women in Engineering Leadership League (RU WELL). RU WELL is an innovative program designed to increase the retention and graduation of women in the School of Engineering and to destroy negative stereotypes concerning the ability of women to achieve in an engineering profession. Members of the League participate in e-mentoring, leadership development workshops, student organizations, professional interviews, and corporate tours. Assessment of the program is based on student retention and graduation and participant evaluations.

Program Overview

The Office of Student Development (OSD) at the Rutgers University School of Engineering is dedicated to providing the undergraduate population with the necessary academic, personal, and professional support necessary to successfully complete a baccalaureate degree in engineering. The OSD provides a variety of summer and academic year programs for pre-college and college students. In order to address the needs of our female undergraduate students, the OSD developed the Rutgers University Women in Engineering Leadership League (RU WELL) in the fall semester of 2000 and inducted its first class in the spring semester of 2001. To date, RU WELL has inducted four classes welcoming fifty students to the League.

RU WELL is specifically designed to increase the retention and graduation of women in the School of Engineering. The program serves as a support network that provides both academic and professional resources. RU WELL is a multifaceted program, which includes an e-mentoring network, leadership workshops, student organization participation, professional interviews, and

corporate tours. The following sections will describe the student and mentor recruiting process, program activities, program assessment, and future goals.

Based on the notion that women tend to study subjects that are more socially relevant (Farrell, 2002), RU WELL seeks to give females a real-life perspective on engineering that is socially relevant. This is facilitated through a personal connection to the professional field of engineering via a mentorship component. Also, RU WELL hopes to retain its members by allowing for a social connection through leadership training. RU WELL members are encouraged to utilize the leadership skills that they gain through program participation by taking an active role in University organizations.

The nature of the League's activities lends well to a low operational budget. All mentors and workshop facilitators are involved on a voluntary basis. Each semester, the Office of Student Development allocates approximately eighty dollars for refreshments to be served during leadership workshops. Also, one hundred dollars is allocated to funding travel expenses to corporate tours. In the future RU WELL would like to develop a comprehensive assessment plan that will be developed and conducted by a work study student majoring in statistics. Therefore, RU WELL is able to operate on a minimal budget.

Student and Mentor Recruitment

In order to create a League experience, students must apply for RU WELL membership. During the fall semester, first and second year students are invited to apply for RU WELL membership. Students are recruited only in their first and second year so that the members may experience at least two to four years of leadership training. Applicants are evaluated on the basis of a personal statement, leadership experience, academic achievement, community service involvement and interest in the field of engineering. Once a student is accepted into the League, she will participate in RU WELL activities for the duration of her undergraduate career. All members receive a handbook that outlines member responsibilities and privileges. A student may retain her membership as long as she participates in eighty percent of leadership workshops and corporate tours, communicates monthly with her mentor, actively searches for an internship or co-op, holds a leadership position within a student organization, and provides continuous feedback in the form of program evaluations.

Since one goal of RU WELL is to develop leaders, each League member is paired with a mentor who holds a senior level position in corporate America or in academia. Mentors are recruited through a variety of resources. Our greatest recruitment tool is in returning mentors who invite colleagues to participate in the mentor program. Since RU WELL conducts an e-mentor program (mentoring over e-mail), we recruit throughout the nation and internationally. Invitations to mentors are sent via e-mail over organizational list-serves, such as the Society of Women Engineers, and through human resource departments of various companies. An invitational e-mail is sent in August of each year and approximately twenty mentors are recruited to provide a one-to-one relationship between mentor (professional) and protégée (student). To establish and maintain a working relationship, protégées and mentors are provided with a mentoring packet that contains typical mentoring topics and an outlined timeline for communication.

The success of the mentoring depends on the ability of the mentor to relate to her protégée. In order to properly match mentor with protégée, students and professionals complete a personal profile questionnaire and are matched according to a positive correlation among responses. Students are required to communicate with their mentor at least once-a-month, but may communicate more frequently on a pace that is conducive to both protégée's and mentor's schedule. With the guided assistance of a mentor, students are linked directly to the professional realm and begin to develop proper business etiquette.

Program Activities

Mentoring is a process that links the experienced person (mentor) with those less experienced (protégées) in a paired relationship that benefits each. For the purpose of RU WELL, the mentorship process is conducted through email (e-mentoring). E-mentoring offers a unique experience in that it fosters the development relationships that are open and supportive (Single & Muller, 2001). The goal of a mentor is to foster a climate for the protégée to reach her full potential by helping to identify and eliminate barriers to effective performance and success. If the mentorship is to have a positive influence on the protégée, then the mentoring alliance must be personalized. Therefore, students are encouraged to discuss topics from the leadership workshops, issues that arise throughout their undergraduate career, concerns about future professional opportunities, and other appropriate topics.

In the first year of RU WELL, students participated in monthly lectures conducted by a senior level woman in industry. The main focus of these monthly seminars was to expose the students to professional women and their successful business strategies. Guest speakers touched on topics such as "The Glass Ceiling in the 21st Century," "Technology of Today," and "Boardroom Tactics". Through these monthly seminars, students had the opportunity to interact face-to-face with professional role models and begin to develop personalized strategic plans for future endeavors. While the seminars were successful in the first two years of the program, members expressed a lack of interest and seminars moved to a leadership development model.

Since RU WELL is focused on fostering leadership, members participate in workshops that enhance and build "soft" skills. Psychologists from the University Counseling Center facilitate workshops that focus on conflict resolution, working with individuals from diverse backgrounds, management skills, and successful leadership strategies. RU WELL members discuss various leadership and management styles, engage in role plays, discuss psychological findings, and investigate current research that is being conducted on human relations. Workshops are held once-a-month throughout the academic calendar. In order to accommodate as many schedules as possible, workshops are scheduled on two consecutive days. Members select one workshop that best fits their schedule. For example, the Conflict Resolution Workshop is offered on Wednesday at 3rd period and Thursday at 4th period. The same material is presented on Wednesday and Thursday. Members attend the session that best fits her schedule.

Through the leadership development workshops, RU WELL provides its members with the resources necessary to successfully advance into a position of engineering leadership in a professional environment by addressing the issues that women in leadership positions may face;

such as, gender role stereotyping, fear of evaluation, self-esteem concerns (Boatwright & Egidio, 2003). In order to utilize developed leadership skills in a “real life” setting, RU WELL members must actively participate in an engineering student organization. Therefore, after one year of membership, members are required to either hold an executive board position or facilitate/chair an event for an engineering student organization. Many of the skills that are utilized as an executive board member in a student organization will carry over to the professional realm. Members are encouraged to present any conflicts or leadership quandaries that may arise in their chosen student organization during the leadership workshops for group discussion on possible resolutions.

RU WELL members are encouraged to utilize the acquired skills by not only becoming actively involved in student organizations, but also by participating in undergraduate research, internship and co-op opportunities. In an effort to expose RU WELL members to various engineering opportunities, students travel to local companies for site tours. During the corporate visit, the members are offered a tour of the facilities and lunch with a panel of professional female engineers discussing issues concerning corporate climate, professional development, employment opportunities, and answer any questions from the audience. RU WELL members have the exclusive opportunity to apply for various internship and co-op positions. In an effort to utilize developed leadership skills, corporations are informed of the specific training that members receive from RU WELL and are encouraged to place members into internship or co-op opportunities that highlight a leadership component. RU WELL member resumes are distributed to recruitment specialists for special consideration.

At the conclusion of the academic year, RU WELL members attend an awards luncheon. Members have the opportunity to evaluate the program, discuss the future of RU WELL and receive a Certificate of Membership. Students are encouraged to continue communication with their mentors throughout their academic careers. As members graduate from the School of Engineering, they will be inducted into the RU WELL Alumni Association, which will allow for continued League involvement in terms of mentoring and/or monetary support. As future leaders in their community, the RU WELL members are destined to take on leadership roles. We believe that programs, such as RU WELL, will help women envision and plan for their future. Today, it is evident that these women will be tomorrow’s deans, presidents, chief executive officers and corporate directors.

Program Assessment

Since the main goal of RU WELL is to retain female undergraduate students, a preliminary assessment, to evaluate this goal, tracked the retention and graduation rates of the RU WELL members. Also, members completed a survey to measure membership satisfaction with League activities. At this time, no data have been collected to compare retention and graduation rates of members verses non-members. However, future assessment data will include a comparison to the retention and graduation of non-RU WELL female engineering undergraduates. The following paragraph will provide a breakdown of membership demographics, the retention and graduation numbers of each of the four RU WELL classes.

In developing the League, the intention was to induct a new RU WELL class every fall semester. However, due to funding and resource issues, two classes were inducted in spring semesters and a lapse in League recruiting activities occurred in 2003, but League activities continued on a regular basis. The first RU WELL class was inducted in the spring of 2001 followed by subsequent classes in the fall of 2002, the spring of 2004, and the fall of 2004. In total, RU WELL has welcomed fifty students into the League and the demographics of the members are as follows: 26% African-American, 14% Hispanics, 18% Asian/Pacific Islander, and 42% Caucasian. Two students graduated in May 2003, nine graduated in May 2004, five are scheduled for graduation in May 2005, twelve are scheduled for graduation in May 2006, twelve are scheduled for graduation in May 2007, three have withdrawn from the engineering program, and two have been dismissed from the engineering program. (See data table below.) Based on these numbers, RU WELL has retained 90% of the membership. These preliminary findings reflect positively on the program, but are not conclusive at this point. We would like to continue with more detailed and in-depth analysis on comparative retention and graduation rates as the League progresses (see *RU WELL Future* section below).

	Spg '01	Fall '01	Spg '02	Fall '02	Spg '03	Fall '03	Spg '04	Fall '04
Inducted	15	N/A	N/A	16	N/A	N/A	11	8
Returning	N/A	15	15	15	30	28	27	
Graduated	N/A	N/A	N/A	N/A	N/A	2	N/A	9
Not Enrolled	N/A	0	0	0	1	0	1	2

Spg = Spring; N/A = Not Applicable

In order for members to utilize their leadership skills in a real-life environment, the members must hold a leadership position within a student organization. A leadership position may be serving on the executive board, holding a chair position, or organizing a major event. As of fall 2004, thirty-two out of the fifty RU WELL members have held a leadership position with a student organization.

RU WELL members are asked to complete evaluation questionnaires to measure their satisfaction with the program. Success of the program is measured by the continuation of participation of members, increase in grade point averages, consistent communication with mentors, and active participation in student organizations, internships, and co-ops. Below are comments from students that illustrate the overall satisfaction of the RU WELL members:

RU WELL is a place where we can not only further develop our leadership potential, but a place where we can learn from the experiences of women in leadership positions, positions we may be in the future.

-Helen Soltesz '04

Although I had been at Rutgers University for over 2 years within the engineering discipline, I hadn't found a great connection with other women at Rutgers. Other than the Society of Women Engineers, meeting other women in engineering at Rutgers solely depends on one's own interpersonal skills as well as the right classes. RU WELL took care of that void that was missing in introducing me to other young female engineers at Rutgers with serious leadership goals, creating bonds that I plan to keep for a long time.

-Cynthia Gwaro '06

Being a member of RU WELL has given me a sense of pride in being an engineer. Listening to the accomplishments and the stories of female engineering alumni has helped me to develop a great sense of confidence in my commitment to engineering. In addition, this organization has provided me with the opportunity to meet fellow female engineers. Knowing other engineers at a large university makes the experience a much more comfortable and enjoyable one.

- Kristen Jenorki '05

RU WELL has had a tremendous effect on my undergraduate experience. The league has taught me that women can be strong leaders in all fields, while maintaining a family life. It also has been a great outlet for us, future leaders, to share experiences, skills, ideas and advice, to help each other succeed in our goals.

-Yosira Downs '05

RU WELL has enhanced my undergraduate experience by setting me up with a mentor that I can talk to when school gets too tough and I feel like giving up. It has also put me in connection with other women in my field, people I can make ties with and turn to when engineering seems to be getting the better of me. These women make me feel not so alone and in doing so allow me to develop leadership skills I will need in my future.

-Meghan Lee '06

RU WELL Future

In terms of program structure, we strive to provide greater resources to our RU WELL members. While RU WELL is growing in numbers, we struggle to provide services to the entire general membership body. In the future, we hope to create internal levels that will allow senior RU WELL members to facilitate leadership workshops for newly inducted members. Members have also expressed an interest in conducting leadership retreat weekends as an outlet from the school environment while providing the members with the opportunity to bond as a group.

In terms of assessment, we would like to establish a comprehensive quantitative and qualitative study of RU WELL members and non-members. The quantitative study would measure retention rates of members verses non-members. Also, we will use a quantitative study to measure the various facets of the RU WELL program and the effect each component has on the overall retention and satisfaction of RU WELL members. The qualitative study would be conducted on RU WELL graduates as they continue in their professional career to measure the lasting effect of the RU WELL program and their advancement in leadership positions.

Overall, RU WELL is a fairly new program at the Rutgers University School of Engineering that has experienced early signs of success. The main goal of the Rutgers University Women in Engineering Leadership League is to increase the retention rates of female undergraduate engineering students. In addition to increasing retention rates, the secondary goal of RU WELL is to train the future female leaders in the engineering corporate and academic arenas.

References

Boatwright, K. J. & Egidio, R. K. (2003). Psychological Predictors of College Women's Leadership Aspirations. *Journal of College Student Development*, 44 (5), p653-69.

Farrell, E. F. (2002). Engineering a Warmer Welcome for Female Students. *Chronicle of Higher Education*, 48 (24), p. A31

Single, P.B. & Muller, C. (2001). When Email and Mentoring Unite: The Implementation of a Nationwide Electronic Mentoring Program – MentorNet; the National Electronic Industrial Network for Women in Engineering and Science. In Stromei, Linda Kyle, Ed. *"Creating Mentoring and Coaching Programs: Twelve Case Studies from the Real World of Training. In Action Series."* American Society for Training and Development, p107-22.

Thom, M (2001). Balancing the Equation: Where Are Women and Girls in Science, Engineering and Technology? *National Council for Research on Women* New York.

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