

Towards a global virtual community of female engineering students and professionals

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BACKGROUND

- ❖ An exploratory study on the experiences of women at Summer Start carried out by a graduate student (Sara Rimer) revealed that a major void that female engineering students experience throughout their education is the lack of a support network
- ❖ The main support system for women studying engineering in Liberia is their immediate family. However, while attending university, these students are oftentimes forced to live away from their immediate family and with extended family who are not necessarily supportive of their educational and professional pursuits
- ❖ With less than 5% of the engineering students being women, these students often feel isolated in their efforts to persist through their engineering studies and also as engineering professionals
- ❖ In order to establish a peer support system for the female engineering students in Liberia, the Liberia Society of Women Engineers (L-SWE) was initiated in August 2013 with the help of two UM graduate students (Sara Rimer and Sahithya Reddivari)
- ❖ L-SWE is the first SWE student chapter in the continent of Africa
- ❖ Since its initiation L-SWE has conducted various outreach events for high schools girls aspiring to become engineers

TIMELINE

Project Elements/Tasks & Milestones	May 2015- June 2015	July 2015 - August 2015	Sept. 2015 - Dec 2015	Jan. 2016 - May 2016
Survey on motivation to pursue and persist in Engineering	✓			
Survey on attitudes towards benefits of student organizations	✓			
Semi-structured interviews during the leadership camp		✓		
Reflection Journals during the leadership camp		✓		
Survey on post leadership camp academic performance and motivation to persist in engineering				✓
Surveys and Interviews on international experience and perspectives	✓		✓	
Transcribing interviews and manuscript preparation			✓	✓

RESEARCH QUESTIONS

1. How does the implementation of the international professional organization, the Society of Women Engineers, influence the experience of Liberian women studying engineering and their future professional opportunities?
2. How does an international partnership of student organizations influence the experience and international perspectives of U.S. and Liberian students?
3. Does a virtual community of female engineers satisfy the need for role models in communities where role models are scarce?



RESEARCH SETTING

- ❖ The data for this study will be collected during the leadership camp facilitated by UM-SWE and L-SWE for female engineering students at University of Liberia. This leadership camp is funded by CoE student organization travel grant and ASC faculty seed grant
- ❖ The goals of this leadership camp are (i) to empower the Liberian and US women engineers with the skills, support and inspiration necessary to becoming successful and well-rounded engineering professionals; and (ii) to build a virtual community of female engineers resulting in an international network of female engineering professionals
- ❖ The in-person collaboration between the members of UM-SWE and L-SWE will span two weeks:
 - i. the first week will involve the participation of five members from UM-SWE and ten from L-SWE who will together advance the L-SWE organization, including developing organizational skills and strategies for persisting as minorities in engineering; and the envisioning and implementation of student organization objectives. Additionally, a needs assessment of the L-SWE students and their organization will be carried out by the UM-SWE and L-SWE team, with particular attentiveness given to the impact of Ebola and its subsequent traumatic consequences. Furthermore, the combined team will initiate the coordination of activities for
 - ii. the second week of the program, which will be the L-SWE SUCCESS Leadership Camp expanded to include a total of 30 Liberian female engineering students participants, will include academic and professional skills sessions covering topics related to graduate school application process, GRE/TOEFL tips, proposal writing, leadership development, and networking skills
- ❖ Ultimately, the workshops for these two weeks will coordinate the development of a strong L-SWE student chapter in Liberia, and a body of undergraduate women equipped with the necessary skills and network to persist throughout the rest of their undergraduate education

METHODOLOGY

- ❖ Qualitative research study using the Psychological sense of community as framework
- ❖ Rich descriptions of perspectives provided by students will form the foundations of the study
- ❖ Data will be acquired through semi-structured interviews of 6-10 students
- ❖ Surveys will be used to gather information from students not being interviewed about motivation to study engineering, career plans and the sense of community within engineering peers
- ❖ We will administer these surveys at the beginning of the program, the end, and in subsequent years to gain longitudinal data