ISSUE
17
Fall 2015

Engineers Without Borders

Rose-Hulman Institute of Technology

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ENGINEERING. SUSTAINABILITY. COMMUNITY.

What is Engineers Without Borders?

EWB-RHIT is part of the national Engineers Without Borders USA organization. EWB-USA is a non-profit humanitarian organization established to partner with developing communities worldwide in order to improve their quality of life. Since its founding in 2000, EWB-USA has run more than 80 projects in 35 countries. The projects we work on are initiated by and completed with contributions from the host community, which helps ensure that our work will be maintained after we leave.

Our **VISION** is a world in which the communities we serve have the capacity to sustainably meet their basic human needs and that our members have enriched global perspectives.

Our **MISSION** is to support community-driven development programs worldwide by collaborating with local partners to design and implement sustainable engineering projects, while creating transformative experiences and responsible leaders.

Student member, Camille Blaisdell, opening a cement bag with a local boy from Gomoa Gyaman, Ghana

In this Issue

Hello and welcome to EWB-RHIT's Fall 2015 Newsletter! We've had an active summer and fall quarter completing an implementation to Ghana, getting involved in the Terre Haute community, and attending the EWB Regional Conference. In this issue, you will find further descriptions of these activities along with some great photos!

The EWB-RHIT Team

Co-Presidents
Sanders Park
Senior, Civil Engineering
Hometown: Alpharetta, Georgia

Amanda Sparks
Senior, Civil Engineering
Hometown: Kennebunk, Maine

Fundraising and Marketing Team Co-Managers
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Sophomore, Computer Engineering
Hometown: Beijing, China

Karina Colotl
Sophomore, Electrical Engineering
Hometown: Kearny, New Jersey

Engineering Team Co-Managers
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Senior, Mechanical Engineering
Hometown: Frankfort, Illinois

Andrew Roan
Senior, Electrical Engineering
Hometown: Springfield, Illinois

Treasurer
Rachel Broughton
Sophomore, Engineering Physics
Hometown: Libertyville, Illinois

Secretary
Camille Blaisdell
Sophomore, Biomedical Engineering
Hometown: Barrington, Illinois

Local Outreach Chair
Ross Hunter
Senior, Biology
Hometown: Martinsville, Indiana

Second Annual 5K

EWB-RHIT hosted a 5K in Hawthorn Park on October 4, 2015 in order to raise money for their next implementation trip to Ghana, which will occur over quarter break in February 2016. In total, twenty-three students, faculty members, and alumni participated in the race. The race went smoothly without injuries, and people enjoyed themselves. The fundraising team utilized a new shirt company to print race shirts, which helped redesign the shirts specifically for this event. Our new members were hugely involved in this event, and we gathered enough people to take shifts at six intersections and two water stations, which guaranteed that racers wouldn't get lost or thirsty.

Rose-Hulman freshman, Patrick Mellor, had the overall fastest time of 23:35; he received a free race shirt for his performance.

EWB Regional Conference

The University of Toledo recently hosted a regional conference for members of Engineers Without Borders USA. The conference featured intensive workshops designed to teach EWB members about leadership and practical skills, including sustainable engineering, team management, and organizational building. Speakers also covered topics such as solar electricity, hand pumps (for water), EWB-USA's new domestic project division. These skills will enhance our members' abilities to plan and implement more efficient and sustainable projects abroad.

Our attending members also had a chance to meet with our Indiana state EWB representative and other Indiana EWB chapters. The attending members gained valuable skills such as merit analysis of solutions to engineering problems and mapping of societal networks to design impactful goals.

Additionally, some members attended a discussion on precautions one should know when traveling and the procedures and actions to take when unexpected situations arise. The speaker discussed EWB's new insurance policy as well as related some chapter's incidents and how they were handled. More practically speaking, students learned about proper graphical form and layouts when writing EWB engineering reports or formalizing EWB project solutions. There was also a talk designed for EWB members focused on the transition from student to professional EWB involvement, exploring relevant topics like locating a professional chapter and maintaining a connection with EWB at one's alma mater. In conclusion, EWB-RHIT members had a great time at the conference. They learned about the different projects going on in the region and about other projects around the world. EWB-RHIT members were able to meet with other chapters and share information on their functionality and events. The University of Toledo put on a very informative and enjoyable conference this year with all the breakout sessions they had available. Our chapter hopes to be able to continue going to these conferences in order to improve the chapter and network with others in the region to expand our knowledge.

From L to R: Nate Bonshire, Ally Phillips, Karina Colotl, and Scott Szatkowski

Ghana Implementation Trip

After two years of overcoming many design and logistic obstacles, we returned to the community of Gomoa Gyaman in August of 2015 to begin construction of the first of four ventilated pit latrines. We arrived after twenty hours of travel and were greeted with open arms. Our first day on site consisted of material evaluation, dimensioning of the pit, meeting with community members, and a lively ceremony initiated by the Queen Mother and the Elders. For the next two weeks, we worked cooperatively with local workers to construct the substructure of the latrine. The design plans changed often as we ran into difficulties finding materials similar to those used in the United States. For example, while we initially planned to use concrete masonry units to construct the pit walls, the quality of material available was not what we expected. Consequently, we redesigned the substructure with cast-in place walls. The community support and effort was essential in completing this first phase of this structure. People of all ages were involved in the process and eager to help. Some days, we worked well past sunset and into the night.

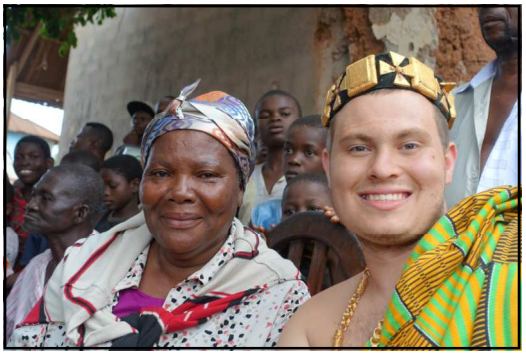
In addition to learning about local materials, we also learned about local construction processes. For example, while we had planned to use reinforced CMUs to build to superstructure walls, Gomoa Gyaman members told us that they typically build with beam-column construction. This fall, we have been redesigning the superstructure to fit these specifications obtained from community input.

The final latrine structure will feature 12 gender divided stalls, 10 of which will be toilets and two of which will be hand washing stations. The roof will be made of aluminum and feature a gutter system to catch and funnel rain into water reservoirs to be used in the hand washing stations. The walls will be beam column construction with concrete masonry unit fill and feature windows for increased lighting and ventilation inside of the superstructure.

Ultimately, there will be four latrines constructed in the community. Each is designed to service one quarter of the community, roughly 700 residents, for up to five years before needing to be emptied. A professional waste removal service from a nearby city is able to be contracted to remove the waste as needed.

The team plans to return to Gomoa Gyaman in February 2016 to complete the superstructure of the first latrine, educate the community on proper hygienic practices, and to assess other needs of the community.

Back from L to R: Camille Blaisdell, Amanda Sparks, Jed Holt, and Jordan Kamp
Front from L to R: Dr. Garcia, Sanders Park, Andrew Roan, and Rachel Broughton



The recently crowned, honorary chief of Gomoa Gyaman (EWB Member Jordan Kamp) and the Gomoa Gyaman Queen Mother

EWB-RHIT Mentors

Technical Mentor
Roger Ward
Professional Engineer
EWB-Indianapolis

Faculty Mentor
Dr. John Gardner
Spanish Professor
Rose-Hulman Inst. of Tech

Faculty Mentor
Dr. John Aidoo
Civil Engineering Professor
Rose-Hulman Inst. of Tech

Student Spotlight: Rachel Broughton

Q: How will your experience working with a different culture affect you as an engineer?

I believe working with EWB and learning about the different cultures we reach out to will help me become a better person in the future. Getting to experience different cultures early on in life, I believe, is crucial to helping you understand different people's viewpoints for future endeavors. Engineering is about designing specific solutions and sometimes what works in one culture doesn't work in another. So, learning how to communicate effectively is also very important and a skill that can be sharpened through this working experience.

Fundraising

Fundraising is vital to our ability to continue using our Rose-Hulman education to impact developing communities worldwide. The cost of travel and construction materials is extremely high, but both are necessary for our chapter.

Through school organizations, such as the Student Government Association, we are able to raise some funds for our projects. This only covers a fraction of the total amount needed to complete our projects—especially for international air travel. We rely on private donors like you to support our projects and make a difference in third-world communities.

Donating to EWB

Contributions can be made to
"Rose-Hulman Institute
of Technology",
directed to
"Engineers Without Borders"
in the memo.

For more information, contact
Zhou Zhou at:
zhouz2@rose-hulman.edu

Contact Us

Please contact us at parkms@rose-hulman.edu if you have any questions or would like to become more involved.

More information can also be found on our website at:
www.rose-hulman.edu/ewb

Find us on: facebook

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Ramping Up Service

Student members standing on the finished ramp

Once again, EWB-RHIT has recently teamed up with Terre Haute's SAWs organization (Servants at Work) to improve the standard of living one wheelchair ramp at a time. The SAWs group noticed the need for people in wheelchairs to have easy access to their homes. SAWs' mission is to provide volunteer opportunities by constructing high-quality wooden wheelchair ramps for those who cannot leave their own homes or afford their own ramp. Members from EWB volunteered to meet up with Terre Haute's SAWs group on Saturday September 19 & 26 to aid with construction and serve the community. Students helped with carrying materials and using screw guns to construct the ramp at the community member's home. The project was an impactful opportunity for the students to apply their engineering skills to help those in need. EWB at Rose has completed two ramps this fall and will continue to partner with SAWs throughout the year.

Alumni Testimonial: Nate Moore

Alumni, Nate Moore, walking with children in the community of Gomoa Gyaman, Ghana

"My time in Engineers Without Borders provided me with some of my best experiences in college. I was able to travel twice with EWB, once to the Dominican Republic, and once to Ghana. Both times, I learned a great deal about other cultures and gained invaluable leadership skills. EWB opened my eyes to how much of the world lives, and how much potential we have to make a positive difference in many people's lives.

EWB was also an important part of my education; as a medical student, I am already putting to use the skills I gained both in cross-cultural communication and in effective teamwork. Our chapter was truly student-driven; we were responsible for every aspect of our trip, whether it be raising funds, designing latrines, or communicating with our partnering community. Organizing an international construction project requires a great deal of leadership and teamwork, skills that aren't taught in a classroom. EWB was an extremely helpful platform to gain experience in these important real-world skills.

Whenever I talk about my undergraduate experience at Rose-Hulman, I inevitably recall the time I spent in EWB. I am immensely grateful that I had the opportunity to be a part of our chapter, and would encourage any student to join the club! Whether you're interested in leadership, engineering, travel, or just want to build your resume, EWB has something for you – and you will end up learning more than you thought you would!"

Nate Moore graduated from Rose-Hulman in the spring of 2014 with a degree in Computer Science. He is currently attending medical school at Indiana University.

ENGINEERING A MORE SUSTAINABLE WORLD—ONE COMMUNITY AT A TIME