

Engineers Without Borders

Rose-Hulman Institute of Technology



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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, Paige Rinker, making friends with a local boy from Gomoa Gyaman, Ghana

In this Issue

This year, EWB-RHIT has been busy with both international travel and local projects. A team traveled to Gomoa Gyaman, Ghana during the winter quarter break and successfully completed the superstructure of our second community latrine. They also performed an assessment of the future needs of the community. Locally, EWB-RHIT attended an ASCE event to promote the STEM field among elementary students and held a wallyball tournament fundraiser. Lastly, check out Andrew Roan's alumni testimonial and Louis Campbell's student spotlight, both past travel team members.



The EWB-RHIT Team

Co-Presidents

Camille Blaisdell

Jr., Biomedical Engineering

Hometown: Barrington, Illinois

Rachel Broughton

Jr., Engineering Physics

Hometown: Libertyville, Illinois

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Soph., Biomedical Engineering

Hometown: Bel Air, Maryland

Ghana Winter Trip

This February marked EWB-RHIT's fifth trip to Gomoa Gyaman, Ghana. Eight students and one faculty mentor, split into two separate teams, traveled to the community. One team was in charge of assessing potential sites for future latrines and determining the ideal method of construction for the substructure. The other team implemented the superstructure for the second community latrine. Prior to their arrival, one completed 12-stall community latrine and a second completed latrine substructure had been implemented by previous Rose-Hulman travel teams.

The assessment team evaluated four potential sites. The team first created a general map of the community to record the site and current latrine locations. At each site, the team tested the soil for permeability, determined soil size and quality, measured elevation changes, and made general observations. Additionally, a social assessment was conducted by asking various village members questions in regards to the first completed latrine. The club intends to use all of the gathered information to improve the latrine design and better serve the community.

The implementation team constructed the superstructure of Gomoa Gyaman's second ventilated pit latrine on top of the existing substructure. Their tasks consisted of laying the block

walls, pouring the bond beam, constructing wooden rafters for the roof, and building a stand for the water tank. The team worked alongside community workers and guided the masons, carpenters, and laborers in completing the superstructure. The Gomoa Gyaman people were left to put the finishing touches on the latrine. The facility will be open and ready for use by the summer of 2017.



Winter travel team students working with Gomoa Gyaman locals to construct the latrine walls.

In addition to learning about engineering practices, the travel team learned about the culture of the community. They had the opportunity to visit the local school where the faculty mentor, a native of Ghana, presented to the children about the latrine project. Even though there was much work to be done, the team managed to fit in some fun by taking pictures and playing the game Uno. Balancing multiple responsibilities proved to be a challenge, but ultimately the trip was a success.



The completed structural portion of the second latrine superstructure. Aesthetic details will be added by the community.

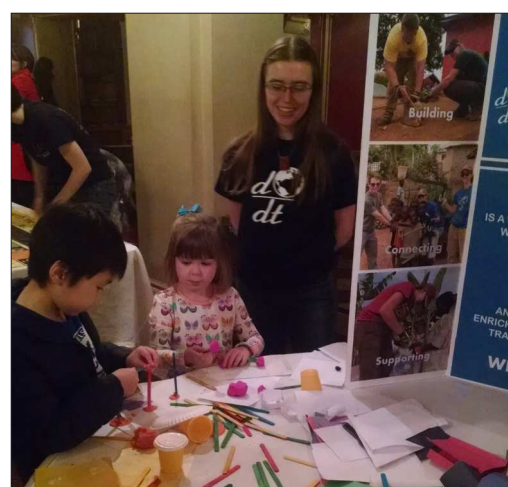


Students surveying the elevation of a potential latrine site.

Dream Big Event

On Saturday, March 11, the American Society of Civil Engineers (ASCE) hosted a STEM event at the Indiana Theater in Terre Haute for local children. The event featured a variety of booths set up by Rose-Hulman organizations, including Engineers Without Borders, followed by a screening of the movie Dream Big: Engineering Our World. The booths featured hands-on activities for the children to participate in before watching the movie, which showcased the interesting problems engineers can solve and the importance of solving them. Our activity focused on structural stability of different materials, which relates to our latrine project.

The event as a whole was a success; families crowded the booth area for the hour and a half before the movie started. Our table received many young visitors, who created their own unique structures and hopefully came away a little more interested in engineering.



EWB member helping children build model houses at the ASCE Dream Big event.

Wallyball Tournament



The winning Wallyball team at EWB's annual Tournament.

On January 27, 2017, Engineers Without Borders held their second annual Wallyball tournament in the SRC racquetball courts. The goal of the tournament was to raise awareness about EWB around campus and raise funds for their current project in Ghana. Ten teams participated in a double elimination bracket with twelve minute games. The winning team was the defending champions, Good Game, who swept the second place team, To Be Decided (TBD), in the championship game. All the teams had a great time playing wallyball and the event was a great success. Engineers Without Borders would like to thank everyone that came out to the tournament to support the cause and enjoyed a fun and competitive atmosphere. Make sure you look out for our soccer tournament in the spring

Student Spotlight: Jackie Miller

I joined Engineers Without Borders because I was interested in becoming involved in the volunteer work overseas and in the Terre Haute community. I enjoy spending time with the club members and the hands on experience we get through our projects. Being a part of the Winter 2017 travel team was a great experience. I didn't expect Ghana to be so warm! Every day was oppressively hot. I thought the language barrier would have been bigger. I was surprised by how well the people understood what we meant. There were many challenges I did not anticipate, but I bonded with the team every night while playing uno. Getting the opportunity to travel made me think a lot more about how the club works and what we do. though they are a lot of work it is very rewarding.



EWB-RHIT Mentors

Technical Mentor

Roger Ward

Professional Engineer

EWB-Indianapolis

Technical Mentor

Jed Holt

P.E. (retired)

President Emeritus, Bowen Construction

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.

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 developing 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 Cydney Ogan at: ogancj@rose-hulman.edu

Contact Us

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

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



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Alumna Testimonial: Andrew Roan

I joined EWB because I wanted to gain real world hands-on engineering experience and hopefully gain the opportunity to be selected for a travel team. Prior to my first year in college, I already had some international experience and knew that I enjoyed visiting new places as well as volunteering with various different organizations. The culture within EWB was extremely welcoming and it was attractive to see people so passionate about their past project implementations.



My favorite part/experience with EWB was traveling to Ghana in August 2015 to complete the first phase of the community latrine project (substructure implementation). From our travel team group there were four of us that had been with EWB for the previous three years, and two newbies. I was able to work alongside community members and learn some important aspects regarding Civil Engineering. For instance, I was able to learn the difference between concrete and cement. Also the difference between planning and implementation. The ironworkers (skilled labor) showed me how to cut and bend rebar to specification without electrical power tools. I remember a group project of constructing an additional ladder out of leftover lumber and almost not being able to carry the thing because we used “heavy wood.” The community held a large festival before we left where they picked our leader Jordan Kamp up, paraded him up and down the streets, and inducted him as a King. Finally yet importantly, the PINEAPPLE was unbelievable!

Being a part of EWB was an extremely rewarding experience and at many times I had to face uncomfortable and unfamiliar situations that challenged me and fostered personal growth. The culture shock of actually living abroad is real and will have a meaningful impact on me for the rest of my life. Following the implementation trip to Ghana, I was motivated to continue traveling and spent 4 months living in Germany. Through EWB and the Study Abroad Programs at Rose-Hulman I was able to have my own unique college experience that has helped me differentiate myself from other students when searching for full-time employment.

Additional Technical Mentor Wanted

Our chapter of EWB is currently looking for an additional technical mentor. As a technical mentor, one would travel on trips with the Engineers Without Borders team to assist in construction. Technical Mentors offer guidance in the implementation and assessment of the project as well. A Technical Mentor must have two years construction experience and willingness and availability to travel. If interested, contact Rachel Broughton broughra@rose-hulman.edu or Camille Blaisdell blaisdcb@rose-hulman.edu.

ENGINEERING A MORE SUSTAINABLE WORLD—ONE COMMUNITY AT A TIME

