

Kelly's Individual Contribution Page

Spring 2012 Contributions

This semester, I am working on the Foam Filtration team to help design an emergency filtration unit.

On the foam team, I worked on:

- Foam filtration prototype
 - Worked with team to design filter with roughing and finishing foam filters in series. Previous team had shown small scale tests were effective with foam as a filtration medium. We created the full scale prototype with adjustable height filters connected with flexible tubing.
 - Co-designed "plunger" cleaning method
 - Researched foam sources in Honduras at a reasonable price. For prototype, acquired rectangular foam blocks and worked with shop team to create cylindrical filtration medium.
 - Configured pump system to circulate water through filter during 2 day exhibition. Ran filter with pump and found that effluent successfully met EPA turbidity standards (<0.3 NTU)
- EPA P3 Phase II Competition
 - Built competition-ready prototype (clear PVC to showcase foam in filtration process, added labels to working filter). Configured pump system and maintained filter operation during expo.
 - Compiled summary of findings on [poster](#) displaying grant proposal contents. Created diagrams for poster and helped compile information from grant proposal into a concise display of the project.
 - Co-wrote grant proposal submission for P3 Phase II proposal. Focused on first section "Summary of Phase I Results." This included the introduction, problem definition, purpose and scope, and previous findings from Phase I team. Contributed and edited other sections. Completed a literature review and researched existing filtration studies, finding that we were the first team to create a filter using polyurethane foam.
 - Showcased prototype and poster at 2 day EPA National Sustainable Design Expo on the national mall. Explained and demonstrated filter capabilities to the general public and presented filtration capabilities to P3 competition judges.
- American Waterworks Association 2012 Water Quality & Technology Conference
 - Paper submission: "[Multi-Stage Polyurethane Foam Filtration for Emergency Point-of-Use Water Treatment.](#)" Sarah Levine, Rachel Philipson, Michael Adelman, Kelly McBride, Bradshaw Irish, Sarah Stodter, Monroe Weber-Shirk
 - Responsible for researching and completing Introduction section. Contributed and edited other sections