Marie Burkland

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Education

Massachusetts Institute of Technology (MIT) Cambridge, MA
Candidate for Bachelor of Science in Chemical Engineering; GPA: 4.5/5.0 June 2013
Relevant coursework: Differential Equations, Organic Chemistry, Engineering Innovation and Design, Chemical and Biological Eng. Thermodynamics, Fluid Mechanics, Biochemistry, Transport Processes, Laboratory Chemistry.

Experience

Ford Motor Company Dearborn, MI
Summer Intern for Environmental Quality Office May-Aug. 2011

- Developed database containing detailed information on all storage tanks owned by Ford worldwide.
- Created a global cooling tower database; analyzed data to identify inefficient towers and suggested implementation of an appropriate, cost-effective product to improve tower efficiency for each sub-par tower.
- Gathered information and documents on air and water quality, safety procedures, waste products, and regulations for facilities in the Research and Engineering Center; produced an organized reference manual for each building.
- Performed humidification testing on experimental fuel cells.
- Planned project phases and held meetings with global representatives.

Hammond Research Group, Department of Chemical Engineering, MIT Sept. 2010-present
Laboratory Technician

- Fabricated composite layer-by-layer membranes to be used in fuel cells by adding thin polyelectrolyte layers to nylon mats via spraying and immersion methods.
- Performed tests on conductivity and methanol permeability of membranes.
- Tested the energy output of membranes in fuel cells to see whether efficiency increased.

United States Army Tank Automotive Research, Development and Engineering Center (TARDEC)
Summer Intern for Petroleum and Water Systems Warren, MI

- Developed and implemented a test to determine quality of ultrafiltration membranes on the Lightweight Water Purifier (LWP), used during military operations; worked on a team of four. June-Aug. 2010
- Researched possible testing methods and developed project phases.
- Built a model filtration system and chose most efficient integrity test; implemented test onto LWP.
- Wrote 18-page technical report on testing procedures and results; presented work to leaders within TARDEC.

Leadership

MIT VentureShips Program, XL Hybrids Sept. 2011-present

- Worked on a team of five to create a commercial pricing model for a start-up called XL Hybrids.
- Conducted market research and provided cost-analysis data to determine the profitability of bundling a telematics system with technology used to improve the efficiency of fleet vehicles.

Gordon Engineering Leadership Program, MIT Mar. 2011-present
Undergraduate Practice Opportunities Program (UPOP), MIT Sept. 2010-present

- Developed professional skills in the areas of leadership, teamwork, presenting, decision-making, networking, project management, and negotiation by attending various workshops and participating in group exercises.
- Managed a seven-person team to design and model an energy-efficient home to meet a budget and regulations.

Next House Executive Board, MIT Sept.-Dec. 2010
Dormitory Wing Representative

- Allocated the budget for a fifty-member wing based on input from residents.
- Organized four social events and ordered appliances to improve the wing's common areas.

Awards

OnStar Student Developer Challenge – First Place Jan.-Apr. 2011

- Worked on four-person team to design and develop EatOn, a speech recognition application that allows a driver to search for nearby restaurants while in the car.
- Presented product to OnStar executives and leaders in voice technology at Where 2.0 Conference in Santa Clara, CA.

Activities

Engineers Without Borders – Fuel Team Sept. 2011-present
Society of Women Engineers – National Member Sept. 2010-present
MIT Women's Club Ice Hockey Jan. 2010-present
MIT Varsity Cross Country, Indoor and Outdoor Track Aug. 2009-present

Skills

Computer: Microsoft Office Suite, familiarity with C++ and MATLAB.
Language: Intermediate proficiency in Spanish.