Ruby Kohn

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Education

Smith College, Northampton, MA
BS, Engineering (expected May 2019)
Full-Year Honors Thesis: "Design of Microcosms for Testing of Contaminant Removal"
GPA: 3.72/4.0

Experience

Research Assistant, February 2017 - Present
Ismail Lab, Smith College

- Designed and implemented original experiments assessing the ability of zooplankton to filter *E. coli* from aquatic systems under varied environmental conditions
- Currently building flow-through microcosm tanks that model engineered treatment wetlands to study the long-term filter feeding behavior of zooplankton in natural systems
- Collected water quality data of a stream running through a cattle pasture at the Smith field station to asses diurnal impact and geographic correlation of fecal contamination, informing rechanneling of the stream
- Coordinated laboratory upkeep, maintenance of organisms, and training of new research assistants

NSF Funded Research Experience for Undergraduates (REU), June - August 2018
Institute for Mechatronic Systems, Technical University Darmstadt, Germany

- Created a model of charging infrastructure for electric vehicles in residential complexes based on driver habits and charger scenarios using MATLAB
- Optimized the model to significantly reduce the energy consumption of an outdated housing complex being refurbished with a smart grid controller
- Directed the research and design of the model independently in collaboration with a graduate mentor

Controlled Flight Aerial Vehicle Design Project, January – May 2019
Aerial Vehicle Design, Smith College

- Fabricated a small glider capable of controlled flight with the goal of staying in the air as long as possible
- Soldered chosen components onto a PCB, programmed a microcontroller using Propeller Tool to control glider components during flight, and effectively debugged both hardware and software issues
- Conducted flight tests, recorded pressure sensor data, and iterated design to optimize glide ratio

Mushroom Mycelium Project, September - December 2017
Contaminants in Aquatic Systems, Smith College

- Designed an experiment measuring the sorbtion of lead from water by powdered mycelium in collaboration with a local farmer to develop a productive use for mushroom mycelium waste
- Performed batch experiments, collected data using a microwave digestor and ICP-OES, and evaluated sorbtion favorability using the Freundlich isotherm model

Rhythmic Gymnastics Coach, November 2013 - August 2015
YMCA, Encinitas, CA

- Coached beginner and intermediate rhythmic gymnastics classes made up of girls ages five to twelve
- Individualized training to inspire each gymnast to set goals and do their best to achieve them

Skills and Activities

Proficient in MATLAB, Mathematica, Python, R, ArcGIS, and Microsoft Suite
Administrative liaison for Divest Smith College, a social and environmental justice organization