

Steinbrenner Institute Announces the 2014-2015 Graduate Environmental Research Fellows

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Daniel is currently working on an alternative to the “hungry city” model of resource use which is based on the inefficient and unsustainable concept of resource into the city, used once, and rejected. Developing more sustainable urban infrastructure systems will require changing this model to one of resources into the city, used repeatedly, and rejected only when there are no more feasible uses for the resource. One such change can occur in the area of public water supply and wastewater treatment, using a technology called forward osmosis. Daniel’s project entails evaluating the feasibility of forward osmosis; clarifying economic and environmental savings from using forward osmosis; and characterization of technical, economic, and social barriers to implementing forward osmosis.



Michael Polen is originally from Pottstown, Pennsylvania. He graduated with a Bachelor’s of Science in Chemistry at Widener University in Chester, Pennsylvania and is currently a Ph.D. student in Chemistry at Carnegie Mellon University. He previously worked as a tutor at Widener University in physics, chemistry, and mathematics. The SEER fellowship will fund his research into the effects of aqueous chemistry in cloud droplets. This project will provide insights into the aging of individual cloud droplets through the use of trapping forces from an aerosol optical tweezers system.

The results obtained can then be used to inform global climate models of highly uncertain aerosol effects. Michael is working on a second project on the use of a cold plate system to observe ice nucleation abilities of biomass burning aerosols. Development of the system and use of the CMU smog chamber provide further evidence of aerosol effects on cloud development, which can additionally be used to enlighten global climate models to these effects.



Georges Saliba grew up between, the scarred buildings of a long civil war and the impressive scenery of Lebanon, and the magical and historic streets of Paris in France. After finishing his high school education in Lebanon, he moved back to France and spent two years in the military. In the spring of 2008, he enrolled as an undergraduate in Mechanical Engineering at the American University of Beirut. After graduation, he worked in the HVAC industry for two years.

Georges’s research as a Ph.D. student in the Department of Mechanical Engineering at Carnegie Mellon University focuses on studying the light absorption enhancement of anthropogenic emitted Black Carbon due to the condensation of different species in the atmosphere towards an effort to better understand and characterize the overall radiative balance of the Earth.

Congratulations to all of the Steinbrenner Fellowship recipients and best wishes for a productive year of research!