

This summer we have a great crew of students doing research in the lab. Things are going well and there are several manuscripts in preparation! Excellent!



Summer 2015 Crew!

Cain Valtierrez has returned to the lab for a second year. He is splitting his time between Augsburg and the U of M working on monolayers and graphene oxide sheets. Kayla Washenberger, a senior physics major, refugee from Space Physics, and vice president of Augsburg's Society of Physics Students has joined the lab. Kayla is working this summer to develop the lab's expertise in lipid bilayers. After many years of resisting we are finally studying the lipid bilayer!!!



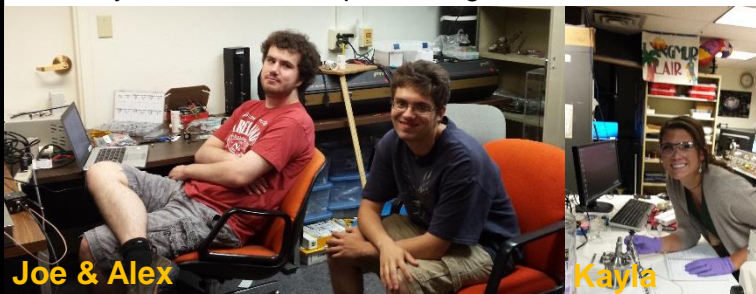
Students take the first step in their careers! Working on projects from biomaterials to STEM education.

Nora



Cain, Blair, Lyle

Alex Sushko and Joe Farley are currently refurbishing and modifying a Kibron MicroTrough X the lab picked up on eBay to be used for nano-particle lipid studies. They hope to finish the project in time to have the trough used in the fall semester of PHY 245 Modern Physics. First year student Blair Stewig has picked up where Vision Bagonza left off earlier in the spring and is doing analysis of the hydroxysterol interactions within monolayers. She will be presenting at the 2016 BPS!



Joe & Alex



Kayla

Finally, two alumni of the lab can be seen regularly in Augsburg's basement. We are grateful to Eric Alfuth for providing a little bit of supervision and oversight of our fabrication efforts and Nora Helf has returned to prepare Arduino curriculum for the Minneapolis Public Schools..



Kids enjoying LN2 fun! It is great to see members of the lab start their own families and encouraging science in another generation.

LN2 Ice Cream recipe: ½ whole milk, ½ heavy cream, vanilla and sugar to taste. Add LN2 and stir!

RECENT NEWS ITEMS

It has been a busy time for the lab and we can celebrate many accomplishments of students and faculty. We almost have a full column of news to report!

■ Prof. Stottrup was co-author with researchers from the University of Minnesota on a paper of 2D Zeolite films. This paper secured a *Hot Paper* designation in Angewandte Chemie. *"It is a privilege to work with such great researchers at the U of M."*

■ Juan Tigre, Eric Alfuth, Drs. Stottrup & Kunz presented at the 2015 Biophysical Society Meeting in February.

■ Cain Valtierrez presented at IPRIME in May on his research with Graphene Oxide. Cain also was selected as a Rossing Scholar for 2015-2016 as well as received a scholarship from the Twin Cities Chapter of the Society of Hispanic Professional Engineers.

■ Prof. Stottrup secured an appointment as an adjunct faculty member with the prestigious University of Minnesota's Chemical Engineering program. This will enhance collaboration.

■ Profs. Kunz and Stottrup attended the Spring ACTC Biophysics Journal Club at St. Kate's

■ Several members of the lab are off campus working in different research settings. *Eleni Beyene* is working at the University of Minnesota with their Food Science department on Turkeys and health. *Vision Bagonza* is spending a summer at the Mayo Clinic working at the intersection of ethics, medicine, and science –Vision also spent a week with Prof. Matt Beckman learning about genetics at Juniata College. *Juan Tigre* is working with Sarah Veatch at the University of Michigan and Cain Valtierrez is working in collaboration with Prof. Chris Macosko in the University of Minnesota's Chemical Engineering Department. *Eric Alfuth* has landed a Tech-Aide internship at 3M. He is working there this summer.

■ Nora Helf has rejoined the lab as an AmeriCorps volunteer to develop some Arduino related curriculum.

■ Nate Roisen is now working at T3 Scientific! Nate reports that his education in Augsburg's physics department is proving very helpful.

■ Sumaya Abdullahi has landed at Medtronic, she and her fellow 2012 Lab Alum Mahelet Maru have offered some career advice for students on the next page.

■ Promise Okeke has been accepted to Harvard's MBA program and is working at Bain & Company.



Women in Science: We caught up with two lab alumni at the summer BBQ. Here is their take on life after college, finding a job, networking, Medtronic and Ecolab!

Sumaya's Take on *The Real World* "I have worked as a data analyst for David Murr in the fall season of 2014 and early into 2015. From then on, I got hired as a chemistry technologist at Medtronic world head quarters. The campus is only a mile away from where I live, so it is pretty awesome that I got an opportunity to work at Medtronic. I am also a sensor engineer for the current projects I am working on. Our team is working really hard on a next generation treatment for kidney failure.

My advice for students is actually learn what you are taught... It is applied in the real world. For the current projects I am working on I use many principles I learned from physics and chemistry. Furthermore, **GET SOME RESEARCH EXPERIENCE!** My research experiences came in very handy. For many of the instruments at Medtronic, I am expected to know how they operate, why we use certain instruments for experiments, and sometimes how to operate them. People are very busy and they do not have time to train you. So get as many experiences as you can before you graduate. Also learn how to work independently. I learned how to do that working for Murr. It is a very important skill. Take advantage of the resources available to you. Moreover, I know many students in physics do not go as far as taking analytical chemistry and advanced analytical chemistry, but I strongly advise that you take those courses. I utilize everything I learned from the analytical chemistry classes. Also, take thermodynamics if you can.

One of my most important advice is **NETWORK NETWORK NETWORK AND ADVOCATE FOR YOURSELF!** Make a resume before you graduated and create a LinkedIn profile and start reaching out to people that share same background as yourself and ask to meet. 90% of the interviews I went through were from reaching out to employees and hiring managers. Last but not least, please advocate for yourself; this is the most important advice that Stottrup has given me and I did not take it seriously until I actually got out into the workforce to try to find a job. No one will advocate more for

you than you yourself. That advice landed me a great opportunity and I love my job as an engineer. I get to apply what I learned from physics and chemistry.

And oh I forgot, make sure that as a senior that you apply for jobs starting early October through end of January. the hiring season begins Late Jan or early Feb and ends by mid May. I had a very hard time finding a job during the summer. Employers usually collect many resumes through the summer and start reaching out to candidates in fall and in Jan and Feb.



Sumaya and Mahelet in the Lab! From Graphene Oxide, to microfluidics, to lipid monolayers they have done it all!

Mahelet's Take: "I have been working at Ecolab for almost ten months now. Ecolab is a cleaning supply company with many divisions including food and beverage, warehouse, floor care, housekeeping, and laundry departments. I work in the laundry R&D department improving existing products as well as testing improved products. Right now, I am working on a project to design a dispenser for our solid detergent, bleach, and softeners within the laundry engineering department. Augsburg's biophysics lab has exposed me to different fields of science by working with students with different backgrounds. The interdisciplinary aspect of the lab benefited me the most since I wasn't sure what I wanted to do after college and working at Ecolab is helping me narrow it down. Whether a student does or doesn't know what their interest of field is, Augsburg's biophysics lab is a great place to figure out or to confirm that interest."

Special Thanks To: Anonymous Donors, Augsburg College and URGO, McNair Scholars Program, Dean and Amy Sundquist, Ken Rosenblum, Research Corporation, Eppley Foundation for Research, and NSF awards DUE 0837182, CHE 1040126, and DMR 1207544.

GET INVOLVED! We have great projects for students, as well as equipment and expertise for collaboration. Check us out at: <http://web.augsburg.edu/~stottrup>

Ben Stottrup, PhD
Augsburg College
2211 Riverside Ave.
Minneapolis, MN 55454
stottrup@augsborg.edu
(612) 330-1035

Interested in Giving?

Prof. Stottrup would be happy to connect you with Augsburg's Development Office.

