

The last six months have been extremely productive for Augsburg's Biophysics Lab and our students can show many accomplishments. In this 14th issue of *The Micelle* we highlight the work of the lab at the intersection of instrument design and fundamental properties of lipids. As always, we are grateful to everyone who has provided support and encouragement for the lab. **Sincerely,** -Prof. Stottrup



**Annual Alumni BBQ**

It was great to see so many alumni and long time friends of the lab attend the 9<sup>th</sup> Annual Augsburg Biophysics and Networking BBQ. Props to Alison Heussler who traveled from Australia (coincidentally of course ☺).



This fall we offered a second incarnation of PHYSICS 317: Biophysics. Several guest speakers participated in the course, including the Biophysical Society's 2014 Margaret Oakley Dayhoff award winner Sarah Veatch! Thank you Sarah. Four students also traveled with Drs. Kunz and Stottrup to a regional biophysics networking in La Crosse Wisconsin. It was an interesting and long day... but the students appreciated that they could see how the topics discussed were aligned with the work they were doing in the course. In the Spring of 2015 we will offer a second course in biophysics as a directed study, so far we have two students signed up!

Vision Bagonza and Blair Stewig won competitive URGO awards to carry out research this spring. Congratulations to them both! We are looking forward to a productive spring of research.

**Congratulations to Harvard Summer Student Promise Okeke who was featured on YouTube.**



The HSCI Internship Program: Promise's Story



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## RECENT NEWS ITEMS

- Drs. Stottrup & Kunz and Luis Hernandez, Ben Sonquist, and Andrew Nguyen published in the Journal of Physical Chemistry B. **AWESOME JOB!!!**
- Luis Hernandez presented his poster at the Minnesota Area Association of Physics Teachers Conference and **won the Poster Competition**. Congratulations Luis!
- Sergio Romero Garcia continued to donate time to get the MNV working. **THANK YOU SERGIO.**
- Juan and Vision presented at the Fall meeting of the Associated Colleges of the Twin Cities Biophysics Journal Club! The meeting was hosted by Augsburg.
- Stu Anderson provided expertise in optics and spectroscopy and mentored Joseph Farley on the design of a new experimental apparatus. **NEW TOOLS!!!**
- Augsburg Biophysics headed to La Crosse Wisconsin for the Regional Biophysics Networking Event.
- Cain Valtierrez presented to Prof. Macosko's research group. His work has laid the foundation for graphene oxide work to continue.
- Honorary lab member Elly Bier started graduate school at Duke University in Medical Physics. Luis started graduate school at the North Carolina State University in Materials Science. Gottlieb Uahengo has moved on from General Mills to graduate study at the University of California Riverside.
- Keng Thao presented his research at Berkeley with the McNair Scholar's program.
- Lab Alumni Promise Okeke spent his summer as a cell biology researcher at Harvard.
- Lab Alumni Mahelet Maru landed a job at Ecolab.
- Ben Grant secured a position at a local startup Fluorescence Innovations. Ben also donated a weekend to the lab to help get ready for PHY 317. **Thanks Ben!**





## More Lab Space!

## Prof. Stottrup learns Twitter.

We have made some big progress in the lab. Arlie Madigan and the grounds crew removed our "giant magnet" and now we have newfound space. **Thank you Arlie!** Luis Hernandez, now a NCSU graduate student, pushed the final yards to get the 25-OH paper published. The entire lab is grateful for this drive and dedication. Writing begins anew on our line tension work in lipid monolayers!



Prof. Anderson and Joe Farley '16 worked to set up a thin film interference system to study interfaces. Right: Stu checks over Joe's assertions.



## Friday Morning Group Meetings

This summer the lab gathered each Friday morning to discuss research, take a moment to consider how we can improve the safety of our facilities. Prof. Kunz provided a variety of scones.

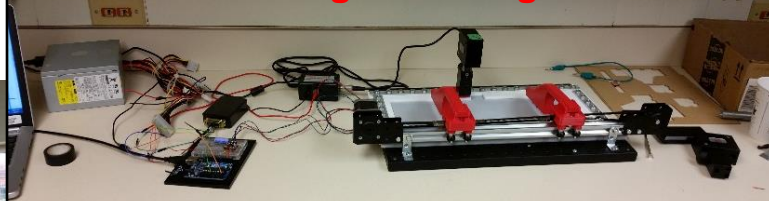
## 3D Printing Comes to Augsburg!

One of the biggest events for the lab this summer was the purchase of a 3D printer. **Congratulations to Professor Haines** of the Math department who secured a grant from the Margaret A. Cargill foundation. One of the most exciting developments is the ability for small labs like ours to prototype new products and tools. The 3D printer made a huge impact and Eric Alfuth will be presenting his work to create affordable Langmuir film-balances at the annual Biophysical Society conference in Baltimore. The photos show Eric with a plaque made at Augsburg using the 3D printer. Luckily we got the tetrameric structure of aquaporin correct! Below we also see Eric's mid-sized Langmuir trough... the flashy red barriers are a nice touch. Here is a great quote highlighting the potential of 3D printers in the liberal arts and literacy.



*"Literacy in the modern sense emerged in the Renaissance as mastery of the liberal arts. This is liberal in the sense of liberation, not politically liberal. The trivium and the quadrivium represented the available means of expression. Since then we've boiled that down to just reading and writing, but the means have changed quite a bit since the Renaissance. In a very real sense post-digital literacy now includes 3D machining and microcontroller programming. I've even been taking my twins, now 6, in to use MIT's workshops; they talk about going to MIT to make things they think of rather than going to a toy store to buy what someone else has designed."* -Neil Gershenfeld

## A home-built Langmuir trough.



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**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>

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Interested in Giving?

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

