

## PATRICK OWEN SABOE

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### ACADEMICS

**Doctor of Philosophy in Chemical Engineering**, Department of Chemical Engineering, The Pennsylvania State University, University Park, PA, expected May 2016.

**Bachelor of Science in Chemical Engineering**, Department of Chemical Engineering, University of New Haven, West Haven, CT, 2007-2011, GPA: 3.98.

### EXPERIENCE

**Visiting Researcher**, Department of Cell Biology, Harvard Medical School, Tom Walz' Lab, Boston, MA, 2012

Project: Water permeability and pore regulation of mammalian eye lens protein, Aquaporin-0

**Research Intern**, Mascaro Center for Sustainable Innovation, University of Pittsburgh, Pittsburgh, PA, 2010

Project: Coupled algae growth and wastewater treatment for sustainable biofuel production and containment removal

**Teaching Assistant**, University of New Haven, West Haven, CT, 2009-2011

Courses: Methods of Engineering Analysis, General Chemistry, Chemistry with Application to Biosystems Laboratory

### AWARDS

- US Environmental Protection Agency (EPA) Science to Achieve Results (STAR) Fellowship, EPA, 2014 – 2016
- Honorable Mention, Graduate Research Fellowship Program, National Science Foundation, 2013
- Dow Sustainability Innovation Student Challenge Award (SISCA), Second Prize, Penn State University, 2012
- Student Award for Outstanding Academic, Personal and Professional Achievement in the Field of Chemical Engineering, AIChE, New Haven Section, 2011
- Award in Chemical Engineering for High Academic Achievement and Demonstrated Leadership, University of New Haven, 2010
- Alumni Association Scholarship, University of New Haven, 2010
- Eagle Scout Award, Boy Scouts of America, 2006

## PUBLICATIONS

1. **Saboe, P.**, Rapisarda, C., Hsiao, Y., Kaptan, S., Groot, B.D., Summers, S., Zorzi, R.D., Dukovski, D., Kumar, M., Walz, T. "*Role of pore-lining residues in defining the rate and pH sensitivity of water conduction by aquaporin-0.*" (in preparation).
2. Schantz, A.B, **Saboe, P.**, Sines, I., Butler, P., Kumar, M., Maranas, J. "*The influence of temperature and detergent on polymer exchange rate for PEE-PEO vesicles.*" (in preparation).
3. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Yan, H., Chan, S., Ferlez, B., Bazan, G.C., Golbeck, J., Kumar, M. "*Two-dimensional protein crystals for solar energy conversion.*" Advanced Materials 2014
4. Shen, Y., **Saboe, P.**, Sines, I., Erbakan, M., Kumar, M. "*Biomimetic Membranes: A Review.*" Journal of Membrane Science 2014, 454 359-381
5. Kumar, M., Shen, Y., **Saboe, P.** "*Biological and Biomimetic Membranes.*" Encyclopedia of Membrane Science and Technology 2013

## PRESENTATIONS

1. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Yan, H., Chan, C., Ferlez, B., Bazan, G., Golbeck, J., Kumar, M. "*Two-dimensional Protein Crystals for Solar Energy Conversion*" Poster Presented at the Gordon Research Conference, Photosynthesis, West Dover, VT, August 2014
2. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Yan, H., Chan, C., Ferlez, B., Bazan, G., Golbeck, J., Kumar, M. "*Two-dimensional Protein Crystals for Solar Energy Conversion*" Presented at the Gordon Research Seminar, Photosynthesis, West Dover, VT, August 2014
3. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Yan, H., Chan, C., Ferlez, B., Bazan, G., Golbeck, J., Kumar, M. "*Photosynthetic membrane protein crystals for hydrogen production.*" Poster presented at the Gordon Research Conference, Membranes: Materials and Processes, New London, NH, July 2014
4. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Yan, H., Chan, C., Ferlez, B., Bazan, G., Golbeck, J., Kumar, M. "*Photosynthetic membrane protein crystals for hydrogen production*" Poster presented at the North American Membrane Society 24<sup>th</sup> Annual Meeting, Houston, TX, June 2013
5. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Yan, H., Chan, C., Ferlez, B., Bazan, G., Golbeck, J., Kumar, M. "*Photosynthetic membrane protein crystals for hydrogen production*" Presented at the North American Membrane Society 24<sup>th</sup> Annual Meeting, Houston, TX, June 2013
6. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Golbeck, J., Kumar, M. "*Biomimetic two-dimensional crystals of photosynthetic proteins for membrane based energy production*"

Presented at the American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2013

7. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Golbeck, J., Kumar, M. “*Solar hydrogen production using biomimetic two-dimensional crystals of photosynthetic proteins*” Presented at the 246<sup>th</sup> American Chemical Society National Meeting and Exposition, Indianapolis, IN, September 2013
8. **Saboe, P.**, Lubner, C., McCool, N., Vargas-Barbosa N., Golbeck, J., Kumar, M. “*Biomimetic two-dimensional crystals of photosynthetic proteins for membrane based energy production*” Poster presented at the North American Membrane Society 23<sup>rd</sup> Annual Meeting, Boise, ID, June 2013
9. **Saboe, P.**, Rapisarda, C., Kumar, M., Walz, T. “*Water transport functional studies of AQP0 for planar biomimetic membranes.*” Poster Presented at the Gordon Research Conference, Membranes: Materials and Processes, New London, NH, July 2012
10. **Saboe, P.**, Schalles, J. “*Coupling biofuel production with biological wastewater treatment.*” Presented at the Mascaro Center for Sustainable Innovation Undergraduate Summer Research Symposium, August 2010