Photo by John Seyfried

Jesse Rowsell

In Memoriam

Ren Wiscons

This past semester, the Oberlin community lost an esteemed colleague, teacher, and friend. Assistant Professor of Chemistry Jesse Rowsell passed away at age 37 on Jan. 30, while on a hiking trip in northern Ontario. A native of Cambridge, Ontario, Rowsell studied materials chemistry and its applicability for energy use and the environment at the University of Waterloo, the University of Michigan, and eventually Oberlin College. While at the University of Michigan, Rowsell won the Kasimir Fajans Award for best dissertation in chemistry, as well as both the Outstanding Graduate Student Researcher and Student Instructor Award. In total, Rowsell published 22 articles in peer reviewed journals, including four first-author publications that have been cited more than 1,000 times each. Scientific accomplishments aside, Rowsell was a beloved friend and mentor to six graduating, and three to be graduating, classes of scientists. The Synapse humbly presents this article by Ren Wiscons OC '15, a recent graduate of his tutelage.

Gabe Hitchcock, *Editor-in-Chief*

On April 4th 2015, chemists, crystallographers, friends, family, colleagues, and students congregated in Wright 201 to celebrate the life and work of Dr. Jesse L. C. Rowsell, who was lost to exposure while hiking in late January. Presentations navigated the audience through Rowsell's remarkable academic chronology, beginning with his undergraduate work on lithium-ion batteries at the University of Waterloo to cutting-edge research in hydrogen-storage. Rowsell was a materials chemist and a crystallographer, exploring both the design of microscopic architectures and the ways in which these highly geometric networks may be characterized and discussed in a systematic way.

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Recent work in the Rowsell lab has deviated from the geometrical ideality achieved by inorganic and metal-organic architectures by focusing on small molecule-based materials, a relatively novel extension of gas-capture materials chemistry. In the same way that amino acids can link together and form incredibly elaborate architectures in the solution, larger scale assembly can be 'coded' into molecules. During the crystallization process, molecules are most stabilized by maximizing the number of favorable contacts and minimizing void space in the solid. These tenants can be used to design molecules with specific shapes and substituents that allow individual molecules to link up through the specified region on the molecule. The study of these intermolecular interactions is referred to as supramolecular chemistry.

Projects in the Rowsell lab focused on synthesizing new molecular building blocks, crystallizing functional materials, and fundamental explorations of the intermolecular interactions between molecular units. Students that worked with Rowsell on research projects received extensive training on X-ray diffraction instrumentation and a suite of techniques necessary to assess the structure and quality of materials. There was a certain degree of ridiculousness that seemed to surround the Rowsell lab. Rumors of late hours and danger shaped the

Photo by Ren Wiscons

way in which the lab was perceived. His mentality in lab was no different than that in lecture: he would ask students for the same attentiveness to detail to which he held himself.

There was a frustration inspired by the simplicity of his questions, for which the answer was almost always known, but the words to convey your understanding or perspective were difficult to arrange. As a student of his, I could sense myself becoming a better scientist simply by gaining the courage to ask about the obvious and answer questions beginning from the basics. But the lessons I learned in the lab made me a better person as well. There was a certain ease that crept into my everyday interactions that allowed me to think with greater clarity and speak with greater precision, unbridled by nerves. Professor Rowsell's dedication to his students was inspiring and his commitment to learning was unfaltering. Every question was genuine and unpolished, illustrating to students that accuracy is neither a indicator of an experiment's usefulness or a qualifier for intelligence. This mentality propagated through Professor Rowsell's students, challenging them to take risks and ask questions. He was venerated by all of his students and it is through them that his boundless curiosity will endure.

Publications

A Sampling of Prof. Rowsell's Work

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Rowsell JL, Yaghi OM. "Effects of functionalization, catenation, and variation of the metal oxide and organic linking units on the low-pressure hydrogen adsorption properties of metal-organic frameworks" J Am Chem Soc. 2006 Feb 1;128(4):1304-15. PMID: 16433549

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