

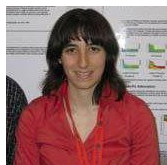


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THE RHODE ISLAND SECTION OF THE AMERICAN CHEMICAL SOCIETY
"THE FIRST SECTION"

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Prof. Brenda Rubenstein
Brown University
Computing with Molecules

Thursday, May 10, 2018
University of Rhode Island

6:00	Light Buffet Dinner	The Richard E. Beupre Center for Chemical and Forensic Sciences 140 Flagg Road Kingston Campus
7:00	Presentation of Award and Lecture	Beupre Room 105

For dinner reservations, please email Louis Kirschenbaum lkirsch@chm.uri.edu by *Friday, May 4 at noon*. Cost: \$10, \$5 for students.

Parking is available in Lot 13 behind the Beupre Center. See <https://web.uri.edu/parking/kingston-campus-parking-map/>

Dr. Brenda Rubenstein is currently an Assistant Professor of Chemistry at Brown University. While the focus of her work is on developing new electronic structure methods, she is also deeply engaged in rethinking computing architectures. Prior to arriving at Brown, she was a Lawrence Distinguished Postdoctoral Fellow at Lawrence Livermore National Laboratory. She received her Sc.B.s in Chemical Physics and Applied Mathematics at Brown University, her M.Phil. in Computational Chemistry while a Churchill Scholar at the University of Cambridge, and her Ph.D. in Chemical Physics at Columbia University. She is always interested in working with the larger Rhode Island community to increase access to higher education.

Computing with Molecules

As transistors near the size of molecules, computer engineers are increasingly finding themselves asking a once completely idle question: *how can we compute using chemistry?* In this talk, I will discuss the growing synergy between chemistry and computation, and introduce you to such alternative forms of computing as DNA and quantum computing, both of which are grounded in basic chemistry. I will then describe some of my Brown Molecular Informatics team's recent work demonstrating how small, unordered molecules in solution can be used to store and compute on vast amounts of data. If time permits, I will additionally touch upon my group's efforts to identify the molecular source of anomalous noise in ion trap quantum computers. All in all, I hope to convince the audience that computing is creating new, unique opportunities for chemistry that chemists would be remiss to ignore.

The 2018 Benjamin Peterson Award for Excellence in Teaching Secondary School Chemistry

The 2018 Benjamin Peterson Award for Secondary School Chemistry Teaching will be presented at the May ACS meeting.

Rhode Island Section Officers for 2018

Susan Meschwitz, Chair

Salve Regina University, Newport, RI
(401) 341-3121
susan.meschwitz@salve.edu

Clifford Murphy, Chair-elect

Roger Williams University, Bristol, RI
(401) 254-5657
cbmurphy@rwu.edu

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86 Spring Rd, North Kingstown, RI 02852-1650
(401) 885-1608
kathys5@cox.net

Glenn Thompson, Treasurer

33 Lawton Foster Rd S, Hopkinton, RI 02833
(401) 212-6234
gthomps2@juno.com

Peter Bonk, Councilor

27 Saratoga Avenue, Westerly, RI 02891,
(401) 823-2025
peterjbonk@gmail.com

Louis Kirschenbaum, Alternate Councilor

University of Rhode Island
(401) 874-2340
kirschenbaum@chm.uri.edu

Editor, Fission Product

James G. Magyar
Physical Science Department, Rhode Island College
Providence, RI 02908-1991
(401) 456-9697, FAX 456-8396, jmagyar@ric.edu

Members-at-Large of the Executive Committee

Paul Czech
(401) 865-2476 pczech@providence.edu

Elaine S. Magyar
(401) 456-9747 emagyar@ric.edu

Herb Katz
(401) 942-4832

Paul Williard
(401) 863-3589 Paul_Williard@Brown.edu

Michael Gray
mgpssusa1@aol.com

Mark Zell
(734) 424-9727 zellm_98@yahoo.com

<http://www.ric.edu/faculty/organic/fission/>



**2018 Outstanding Chemistry Students from RI Colleges and Universities
Awards presented at the May RIACS meeting at Providence College**