

Jonathan J. Brege

8450 Cambridge St. Apt 2135*Houston, TX 77054

(989) 306-0004*jonathan.brege@rice.edu

Education

Rice University, Houston TX	
Ph.D. Inorganic Chemistry	<i>expected 2008</i>
M.A. Chemistry	<i>May 2007</i>
Central Michigan University, Mount Pleasant MI	
B.S. Chemistry and Math, <i>cum laude</i>	<i>May 2005</i>
Alpena Community College, Alpena MI	
A.A. Concentration in Education	<i>May 2003</i>

Experience

Rice University, Houston TX

Research Assistant *2005-present*

Conducted original research under the guidance of Professor Andrew R. Barron. Contributed to peer-reviewed journals, research proposals, and defended the second year research proposal entitled, "Fluorous N-Heterocyclic Carbene Ligands: Challenging Electron Withdrawing Effects."

Chemistry Outreach Magic Show *2005-present*

Performed monthly chemistry demonstrations for K-12 students to interest them in science.

Project GRAD Instructor *Summer 2007*

Taught 28 students in the first ever chemistry laboratory section of Houston Project GRAD, a federal outreach program to help disadvantaged students graduate from high school and enter college.

CBEN Summer Academy Instructor *Summers 2006, 2007*

Instructed 15 high school students in a research project including field work, laboratory analysis, and interpretation of results for the Center for Biological and Environmental Nanotechnology.

Supervisor Teaching Assistant *2006-2007*

Supervised and instructed 22 general chemistry and 4 honors chemistry teaching assistants regarding the weekly laboratory procedures. Designed new and exciting experiments, managed grading sessions, weekly help sessions, while fulfilling general TA duties.

Teaching Assistant *2005-2006*

Provided pre-lab instruction, guided students in the laboratory, and graded lab reports for 31 students in the Freshman Honors Chemistry course.

Central Michigan University, Mount Pleasant MI

Teaching Assistant *2004-2005*

Explained concepts, altered procedures, graded lab reports, and demonstrated time saving techniques to improve the overall learning experience for students of the introductory chemistry course.

GRE Course Instructor *2004-2005*

Prepared 9 graduating seniors of multiple disciplines in the McNair Scholars Program for graduate studies through a GRE preparation class.

Alpena Community College, Alpena MI

Tutor *2001-2003*

Taught, assisted, and facilitated study sessions for college students and learning disabled students in the areas of chemistry, math, physics, biology, speech, and English at the Learning Center.

Academic Service

Rice University, Houston TX

Treasurer 2007-present

Maintained financial records of all transactions of Valhalla, a graduate student-run business, provided financial advice to the Valhalla managers, and attended the monthly Board of Directors meetings to provide updates on the financial status of Valhalla.

Graduate Recruitment Committee 2007-present

Introduced prospective graduate students to the university, answered questions about the chemistry department and area, and provided them with the information necessary to make their decision on attending graduate school.

Graduate Teaching Committee 2006-present

Served on a joint committee with faculty and graduate students to set teaching requirements, evaluation methods, and course structure.

Central Michigan University, Mount Pleasant MI

Secretary 2003-2005

Documented meeting minutes, monitored attendance, corresponded with members via email, and scheduled and coordinated meetings as a member of the executive board of the American Chemical Society Student Affiliates CMU Chapter.

Alpena Community College, Alpena MI

Board of Trustees Student Representative 2002-2003

Acted as a liaison between the students and the administration and compiled monthly reports to the board of trustees expressing the concerns and interests of the student body.

Student Senate President 2002-2003

Set goals, resolved conflicts, and organized and implemented student activities aimed at bringing together the student population. Approved and allocated university funding to various student organizations.

Student Senate Representative 2001-2002

Stimulated student involvement, represented student opinions, and organized student activities. Participated in school events, volunteered on campus, and attended monthly meetings.

Honors and Awards

- Harry B. Weiser Award for Excellence in Teaching (Rice 2007)
- Robert A. Welch Fellowship (Rice 2005)
- McNair Scholar (CMU 2004-2005)
- Centralis Scholar (CMU 2003-2005)
- Student Commencement Speaker (ACC 2003)
- Jesse Besser Outstanding Student Award (ACC 2003)
- USA Today All-American Scholar, All-Michigan Academic Team (ACC 2003)
- Special Recognition for Outstanding Scholarly work presented by the State of Michigan Governor Jennifer Granholm and the 92nd Legislature (ACC 2003)
- Central Michigan University Board of Trustees Scholarship (2003)
- Michigan State Trooper's Scholarship (2001)
- Lake Huron Area Council Boy Scouts of America Scholarship (2001)
- Presque Isle Electric and Gas Scholarship (2001)
- Wild Turkey Federation Scholarship (2001)
- Rogers City Women's Civic League Scholarship (2001)
- Robert R. Chater Memorial Scholarship (2001)

- Daughters of Isabella Scholarship (2001)
- Michigan Merit Award (2001)
- Michigan Competitive Scholarship (2001)
- Eagle Scout Award (2000)

Affiliations

- American Chemical Society (2004-present)
- Phi Theta Kappa National Honor Society (2002-2003)

Publications

1. "Quenching of Single Walled Carbon Nanotubes by Transition Metal Ions: A Better Understanding of Paramagnetic Effects" In preparation, J. J. Brege and A. R. Barron.
2. "Fluorescence Quenching of Single Walled Carbon Nanotubes in SDBS Surfactant Suspension by Metal Ions: Quenching Efficiency as a Function of Metal and Nanotube Identity" *J. Phys. Chem. C* **2007**, Accepted for publication. J. J. Brege, C. Gallaway, and A. R. Barron.
3. "Room-Temperature Growth of Carbon Nanofibers from Iron-Encapsulated Dendritic Catalysts" *Polymer News* **2005**, 30, 330-333. J. E. Raymond, J. K. Vohs, J. J. Brege, S. Rozeveld, D. J. LeCaptain, L. E. Slusher, G. L. Williams, and B. D. Fahlman.
4. J.K. Vohs, J.E. Raymond, J.J. Brege, S. Rozeveld, G.L. Williams, and B.D. Fahlman: Room-Temperature Growth of Carbon Nanofibers, in *Chemistry of Nanomaterial Synthesis and Processing*, edited by X. Peng, X. Feng, J. Liu, Z. Ren, and J.A. Voigt (Mater. Res. Soc. Symp. Proc. **879E**, Warrendale, PA, 2005), Z1.1.
5. "Supercritical Fluid Facilitated Growth of Copper and Aluminum Oxide Nanoparticles" *J. Chem. Ed.*, **2005**, 82, 771-774. G.L. Williams, J.K. Vohs, J.J. Brege, and B.D. Fahlman.
6. "Low Temperature Growth of Carbon Nanotubes from the Catalytic Decomposition of Carbon Tetrachloride" *J. Am. Chem. Soc.* **2004**, 126, 9936-9937. J. K. Vohs, J. J. Brege, J. E. Raymond, A. E. Brown, G. L. Williams, and B. D. Fahlman.

Presentations

1. "Quenching of Surfacted Single Walled Carbon Nanotubes" J. J. Brege and A. R. Barron; 62nd Southwest Regional Meeting of the American Chemical Society, Houston, TX October **2006**.
2. "Transition Metal Ion Quenching of Single Walled Carbon Nanotube Fluorescence" J. J. Brege, R. Loscutova, and A. R. Barron; 232nd National Meeting of the American Chemical Society, San Francisco, CA September **2006**.
3. "Synthesis and Characterization of Bimetallic Nanoparticles and Metal Oxide-Dendrimer Nanocomposites within Supercritical Carbon Dioxide" J. J. Brege, and B. D. Fahlman; Council on Undergraduate Research Posters on the Hill, Washington, D.C. April **2005**.
4. "Controlled Growth of Bimetallic Nanoparticles in Supercritical Carbon Dioxide" J. J. Brege and B. D. Fahlman; 6th National McNair Scholars and Undergraduate Research Conference, College Park, MD March **2005**.
5. "Supercritical Fluid Cosolvent-Diffusion Facilitated Synthesis of Bimetallic Nanoparticles" J. J. Brege, J. K. Vohs, and B. D. Fahlman; 229th National Meeting of the American Chemical Society, San Diego, CA March **2005**.

6. "Controlled Growth of Bimetallic Nano-alloys in Supercritical Carbon Dioxide" J. J. Brege; Ronald E. McNair Research Symposium, Mount Pleasant, MI June **2004**.
7. "Low Temperature Growth of Carbon Nanotubes" J. J. Brege, J. E. Raymond, and B. D. Fahlman; Posters at the Capitol, Lansing, MI May **2004**.
8. "Supercritical Fluid Facilitated Growth of Metal and Metal Oxide Nanoparticles" J. J. Brege, J. K. Vohs, and B. D. Fahlman; 227th National Meeting of the American Chemical Society, Anaheim, CA March **2004**.

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References

Available Upon Request