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EDUCATIONAL BACKGROUND

- University of California--Irvine
MS/PhD in Chemical and Material Physics (ChaMP)/Physics in progress. Cumulative course GPA: 3.988/4. High Pass on Qualifying Examination, June 2007. Anticipated completion of MS degree: Fall 2009. Anticipated graduation: 2011.
- University of Wisconsin--Madison
Bachelor of Science degrees in Mathematics and Physics. Graduated with honors, May 2006.
- Goodrich High School--Fond du Lac, Wisconsin. Graduated valedictorian, June 2001.

RESEARCH EXPERIENCE

- MS/PhD Graduate Student Research, UC-Irvine Chemistry Department—June 2007-Present
PI: Asst. Prof. Rachel Martin
Projects: solid state NMR investigation of membrane behavior of danicalipin A, experimental design for Switched Angle Spinning (SAS) solid state NMR of oriented membrane proteins
Additional related research interests include: Variable Angle Spinning (VAS), residual dipolar couplings, dipolar recoupling, bicelles, liquid crystals, NMR simulation (SPINEVOLUTION), matrilysin (MMP7), membrane-complexed defensin-like proteins (DLPs), protein structure determination.
- Plasma Physics Research on the Madison Symmetric Torus (MST), UW-Madison Physics Department—August 2005 to July 2006.
PI: Dr. Daniel Den Hartog
Duties included: programming projects for senior scientists and graduate students to increase the efficiency of data collection and storage and improve the ease of data manipulation and analysis, setting up equipment in the laboratory and developing customized pieces in the machine shop, taking calibration data for the Thomson Scattering project on MST, and collaborating on data interpretation and error analysis.
- Mathematical Biology Collaborative Undergraduate Research Laboratory (CURL) – UW-Madison Mathematics Department. May to August 2004. Coordinators: Profs. Anthony Ives (Ecology) and Paul Milewski (Mathematics). Duties included: Developing mathematical models to describe behavior of periodical cicadas. Resulting publication: “Evolution of Periodicity in Periodical Cicadas.” Lehmann-Ziebarth, N. Heideman, P. P. Shapiro, R. A. Stoddart, S. L. Hsiao, C. C. L. Stephenson, G. R. Milewski, P. A. and Ives, A. R. *Ecology* (Special Feature), 86(12), 2005, pp. 3200-3211

TEACHING EXPERIENCE

- Collaboration with School Partnership in Research and Information Technology (SPIRIT) outreach program (funded by NSF CAREER grant awarded 2009 to Dr. Rachel Martin), UC-Irvine – February 2009 to Present. Duties include: Developing educational activities and worksheets related to Martin Lab research for visiting 9-12th grade students, aiding in coordination of outreach visits, leading lab activity.
- Teaching Assistantships, University of California Irvine:
 - Physical Chemistry 131A, UCI Dept. of Chemistry. Grader and discussion leader for Prof. Peter Rentzepis, Fall Quarter 2008. General Physics 7A/Lab 7LA (Measurement, Kinematics, Forces), UCI Dept. of Physics. Grader, lab head, and discussion leader for Prof. Roger McWilliams, Summer Session 2008.
 - Quantum Mechanics 113A, UCI Dept. of Physics. Grader and discussion leader for Prof. Michael Dennin, Spring Quarter 2008. Additional Note: Gave the two lectures on quantum mechanics formalism.
 - Statistical Mechanics 115A, UCI Dept. of Physics. Grader and discussion leader for Prof. Clare Yu, Spring Quarter 2008.
 - General Physics 7E (waves and oscillations), UCI Dept. of Physics. Discussion leader for Prof. Anne Kirkby, Winter Quarter 2008. Additional Note: Wrote student quizzes.
 - General Physics Lab 3LB (electricity, waves, sound). UCI Dept. of Physics. Lab head for Prof. Steven Barwick, Spring Quarter 2007.
 - General Physics Lab 3LB (electricity, waves, sound). UCI Dept. of Physics. Lab head for Prof. Ilya Krivorotov, Winter Quarter 2007.
 - General Physics 7A/Lab 7LA (Measurement, Kinematics, Forces), UCI Dept. of Physics. Lab head and discussion leader for Prof. Arnold Guerra, Fall Quarter 2006.
- Independent tutoring/tutoring for UW-Madison Mathematics Dept., Chemistry Dept., Physics Dept., and ILS program – Fall 2001 to Spring 2006.
- Outreach Program for High School Women – September 2004 to April 2006. Duties included: organizing and running program in which undergraduate and graduate math students mentor local high school girls through collaboration on comprehensive math projects.
- Math Lab – UW-Madison Mathematics Department. September 2002 to May 2004. Duties included: providing math tutoring for all levels of undergraduate math.

PRESENTATIONS

- “Pneumatic SAS Probe for High Resolution NMR of Oriented Bicelles”—poster. Experimental Nuclear Magnetic Resonance Conference (ENC) March/April 2009.
- “Measurements of Scaled Dipolar Couplings in Oriented Bicelles with Variable Angle Spinning (VAS)”—poster presentation. ENC March 2008.
- “Variable Angle Spinning Measurements of Residual Dipolar Couplings in Oriented Samples”—oral presentation, UC Irvine ChaMP program, February 2008

- “Concepts and Applications of Solid State NMR”—oral presentation; joint meeting of Martin, Cocco, and Weiss research labs at UC Irvine; February 2008
- “Thomson Scattering Diagnostic Calibrations on the Madison Symmetric Torus (MST)—”—poster presentation, Undergraduate Research Symposium, UW-Madison, April 2006.
- “Evolution of Periodicity in Periodical Cicadas”—poster presentation. Undergraduate Research Symposium, UW-Madison, April 2005.

ATTENDED COURSES/WORKSHOPS

- Advanced Practical Course in NMR Techniques for Membrane Proteins, Rutherford Appleton Laboratory, May 11-14 2009
- High Resolution Structures: NMR and X-ray Methods (course offered Fall 2008 through Molecular Biology and Biochemistry department at UCI; audited NMR module taught by Asst Prof. Melanie Cocco)

AWARDS

- UCI Regents’ Fellowship, 2006-2008
- UW-Madison Dean’s List, September 2001-May 2006
- L. R. Ingersoll Award, Spring 2002-2003 (UW-Physics Department)
- Fay Ajzenberg-Selove Award, 2005 (UW-Madison Physics Department)
- Frank D. Cady Scholarship, 2003 (UW-Madison Mathematics Department)
- Honor Societies include: Golden Key International, Phi Beta Kappa, National Society of Collegiate Scholars (NSCS).
- Undergraduate Analytical Chemistry Award, Spring 2001-2002 (UW-Chemistry Department)
- National Merit Scholar

ADDITIONAL SKILLS INFORMATION

- Proficient with Spinsight software and P-Code programming for Chemagnetix Infinity spectrometer, SPINEVOLUTION simulation software, LaTeX, Matlab, Mathematica, and C programming language
- Familiar with VNMR (Varian) and XWIN-NMR (Bruker) software, Labview, and IDL programming language

REFERENCES

Assistant Professor Rachel Martin
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