

## Ronald M. Jarret, Ph.D.

College of the Holy Cross	Email: <a href="mailto:RJarret@holycross.edu">RJarret@holycross.edu</a>
PO Box C	Phone: 508-793-3462
Department of Chemistry	FAX: 508-793-3051
College Street, Worcester, MA 01610-2395	Updated Jan 22, 2019

### Education

Ph.D. (Physical Organic Chemistry), Yale University, 1987 (Advisor: Dr. Martin Saunders).

Thesis: "Isotopic Equilibria, Carbocation Formation and Rearrangement, and Molecular Mechanics."

B.S. (Chemistry), B.A. (Biology), Rhode Island College, 1982, *Summa Cum Laude*, minors in Math and Physics.

### Teaching and Administrative Experience

Holy Cross, Chemistry Department: Instructor (1986-87); Asst. Professor (1987-92); Assoc. Professor (1992-2001); Professor (2001-present); *Chair* (1996-2008); Dean, Class of 2012 and Transfer Students (2008-2012); Assistant Dean (2012-2013); Associate Dean of the College (2013-2017); Music Department: Administrator (2014-2017); sabbatical leaves: 1992-93, 1999-2000, 2006-07, 2017-18. Tufts University, Chemistry Department: Professor (summers, 1992-2011).

### Awards & Honors (post-graduate)

1993 Alumni Honor Roll Award (Role model for science students) Rhode Island College, Providence RI.

1995-96 Distinguished Teacher, College of the Holy Cross, Worcester, MA.

Who's Who in the East, 1995-1996; Who's Who Among America's Teachers, 2000.

Faculty Marshall – 5 times (1990, 1994, 1997, 2002 and 2008).

Nominated for the 2006 Carnegie Foundation for the Advancement of Teaching US Professors of the Year Program.

Last Lecture Series Presenter, December 2011.

### Courses Taught

Organic Chemistry I & II (Traditional/Discovery) – numerous times each
Atoms and Molecules – General Chemistry I (Discovery) – twice
Intro Equilibrium & Reactivity – General Chemistry II (Discovery) – twice
Spectroscopy (Chemistry Major Elective) – numerous times as class, tutorial and seminar
Director of Research & Seminar Program (Chemistry Major Elective) – twice
Chemistry & Physics of Matter (Science Elective) – once
Methods of Chemistry (Science Elective) – once (Passport Summer Program)
Science Experiments/Demonstrations for K-12 Teachers – once (Summer Program)

### Guided Inquiry Experiments Developed for Organic, General and Physical Chemistry

- |                               |   |
|-------------------------------|---|
| <i>Organic Chemistry</i>      | 7. Electrophilic Aromatic Substitution II       |
| 1. Acid-Base Chemistry        | 8. Nucleophilic Substitution                    |
| 2. Distillation               | 9. Epoxide Ring Opening                         |
| 3. Models and Stereochemistry | <i>Atoms &amp; Molecules</i>                    |
| 4. Dehydration                | 10. Ionic and Covalent Compounds in Solution    |
| 5. Additions to Alkenes       | <i>Physical Chemistry</i>                       |
| 6. Diels-Alder Reaction       | 11. Rotation Barriers in Alkyne-Metal Complexes |

### Toolbook Modules Authored (*Organic Chemistry*)

"EAS II," 1995; "NAS," 1996; "SN1/SN2," 1997

### Internships, Honors Theses, Student Research (CHEM406 and CHEM408)

Faculty Sponsor for Academic Internships:	8 Students
Faculty Director for College Honors Theses:	5 Chemistry Majors (2 co-directed)
Faculty Advisor (Reader) for Theses:	2 Biology & Several Chemistry Majors
Research Director for Department Honors (2 year) Theses:	20 Chemistry Majors (10 co-directed)
Research Director for Senior (1 year) Theses:	40 Science Majors (7 co-directed)
Director of Other Short Research Projects:	12 Students
Director of Summer Research Fellowships:	44 (17 co-directed) filled by 31 Students High School: 2 Teachers & 4 Students

## Research Interests

Discovery Lab Development for Organic and General Chemistry.  
Direct Observation of Carbocations.  
 $^{13}\text{C}$ - $^{13}\text{C}$  Couplings in Molecules with Unusual Bonding.  
Isotopic Perturbation of Equilibria and NMR Chemical Shifts.  
Development of New Methods of Analysis with NMR Spectroscopy.  
Conformational Studies; Computational Modeling and Calculations.

## Grants and Awards - External Funding

### American Chemical Society - Petroleum research Fund:

#19391-GB4: "The Use of  $^{13}\text{C}$ - $^{13}\text{C}$  Coupling Constants as a Probe for Detailed Molecular Structure Determination" (\$18,000, 1987-90).

### Camille & Henry Dreyfus Foundation :

#UG-99-002 Jean Dreyfus Boissevain "Undergraduate Scholarship for Excellence in Chemistry" (\$5,500, 1999).

### Coca Cola Foundation:

"Density Experiment," Co-P.I. (\$10,000, 1998-2000).

### Council of Undergraduate Research:

Student Summer Fellow – Joshua Farrell, Co-Advisor (\$3,150, 1993).

### Hewlett-Packard:

#10526: "A Guided Inquiry Approach in Organic Chemistry" (Equipment Gift - \$9,900, 1991).

### National Science Foundation:

1. PSC CHE-870029P "Quantum Mechanical Calculations of Cation Rearrangements" (55 service units, 1988-89).
2. ILI USE-8852774 "Improvement of the Chemistry Curriculum Through FT-NMR Spectroscopy" (\$100,000, 1988-90)
3. ILI USE-9052318 "A Guided Inquiry Approach to Organic Chemistry" (\$74,000, 1990-92).
4. PSC CHE900066P "Geometry Optimization of Novel Carbocations and Halonium Ions" (10 service units, 1991-92).
5. RUI CHE-9202367 "Spectroscopic & Synthetic Aspects of Alkynes as  $\pi$ -Base Ligands," Co-P.I. (\$132,100, 1992-94)
6. NSF "Instructor's Reference Manual for Discovery Chemistry," Co-P.I. (\$143,000, 1993-95)
7. NSF "Establishing New Traditions: Revitalizing the Curriculum," University of Wisconsin, Co-Participant (\$133,053, 1995-97).
8. NSF CHE-0079348 MRI "Acquisition of a 300 MHz NMR Spectrometer to Support Research and Education in the Chemistry Curriculum," P.I. (\$171,115, 2000-02).
9. MRI "Acquisition of a 400 MHz NMR Spectrometer for Undergraduate Research and Education," P.I. (\$458,500) submitted 1/20/19, under review.

### Pew Charitable Trust - NECUSE:

1. "Workshop on Meaningful Introduction of Modern Instrumentation into the Undergraduate Chemistry Curriculum" (\$1960, July, 1990).
2. "Workshop on the Discovery Approach in the Undergraduate Chemistry Curriculum" (\$2700, August, 1991).
3. "A Discovery Approach to Teaching Introductory Chemistry," Co-P.I. (\$36,000 - 1991).
4. "Developing an Instructor's Reference Manual for Discovery Chemistry," Co.-P.I. (\$24,200, 1992-94).
5. "Computer to Develop Multimedia Software," Co-P.I. (\$4200, 1994).
6. Student Travel Rebecca Slate - Co-Advisor (\$1025, 1994).

### Pfizer Foundation:

1. "The Art of Teaching Chemistry," Co.-P.I. (\$25,000, 1994-97).
2. Student Summer Fellow: Matthew Dintzner, " $^{13}\text{C}$ - $^{13}\text{C}$  Coupling in 7-norbornenyl Cation" (\$4000, 1991).
3. Student Summer Fellow: Jeffrey Robertson, (Co-Advisor) "Alkynyl Tungsten Compounds," (\$4000, 1993).
4. Student Summer Fellow: Lisa Thornton, (Co-Advisor) "Ferrocene Bis(Peptide) Compounds," (\$4000, 1995).
5. Student Summer Fellow: Mark Chrostowski, (Co-Advisor) "Ferrocene Bis(Amino Acid) Compounds," (\$5000, 1997).
6. Student Summer Fellow: Jude Rieger, "Free Radical Discovery Lab," (\$4850, 2001).

### Research Corporation:

"The Preparation and Observation of Stable Solutions of Novel Carbocations," (\$20,000, 1987-91).

## Grants and Awards - Internal Funding

### Batchelor Ford Fellowships:

1. "Preparation and Observation of Benzyl Cation" (\$2,000, 1987).
2. "Isotopic Perturbation of Chemical Shifts in Cyclo-Amides and Lactams" (\$1,000, 1988).

### Research and Publication Committee:

1. "Di-<sup>13</sup>C-Labeling in Cyclopropyl Carbinyl Cation and Norbornyl - Nortricyclyl Derivatives" (\$532, 1986-87).
2. "The Nature of Halonium Ion" (\$895, 1987-88).
3. "Identification of the 7-Norbornyl Cation" (\$650, 1988-89).
4. "NMR Study of a Novel Tetramethyl-2-Norbornyl Cation" (\$1000, 1989-90).
5. "<sup>13</sup>C-<sup>13</sup>C Coupling at Penta-Coordinated Centers of Carbocations" (\$700, 1991).
6. "Metal Mediated Ordering of Peptides," Co-P.I. (\$1320, 1992).
7. "Ordering of Peptides Through Tungsten Bis-Alkyne Complexes," Co-P.I. (\$1750, 1993).
8. "Modeling Studies of Ferrocene Bis(Amino Acid) Compounds," Co-P.I. (\$750, 1996).
9. "Direct Observation of -Carbocation Complexes" (\$600, 2000).
10. "Using Computational Chemistry to Study Conformations, Stereochemistry & Organic Reactions" (\$700, 2006).

### Hewlett Mellon Committee:

Exploring the restructuring of teaching schedules for CHEM 181 and CHEM 221 to include shorter labs. (2008)

### HHMI, Fisher Fortin Foundation, Merck/AAAS:

1. Software to Develop Chemistry Review Modules for the Web, Co-P.I. (\$895, 1997).
2. Faculty Development – *Supersense*, course taken through Oxford University Continuing Education (1999).
3. Student Summer Research Fellowships: 11 (3 declined).
4. Student Travel Awards to National ACS Meetings: 9.

### Publications While at Yale University (Prior to Holy Cross)

1. A New Method for Obtaining Isotopic Fractionation Data at Multiple Sites in Rapidly Exchanging Systems; R.M. Jarret and M. Saunders, *J. Am. Chem. Soc.*, 1985, 107, 2648.
2. Cyclization of 5-Hexenyllithium to (Cyclopentyl)lithium; W.F. Bailey, J.J. Patricia, V.C. DeI Gobbo, R.M. Jarret and P.J. Okarma, *J. Org. Chem.*, 1985, 50, 1999.
3. Parametric Analysis of Conductance Data; R.M. Fuoss and R.M. Jarret, *J. Phys. Chem.*, 1985, 89, 3167.
4. Rapid Interactive Structure Input for MM2 (#488); M. Saunders and R.M. Jarret, *Quant. Chem. Prog. Ex.*, Indiana University, 1985, 5, 27.
5. 6-Methylenebicyclo[3.1.0]hex-3-en-2-yl Cation, an Isomer of Benzyl Cation; R.M. Jarret, M. Saunders S. Pikulin and J. Berson, *J. Am. Chem. Soc.*, 1986, 108, 2768.
6. A New Method for Molecular Mechanics; M. Saunders and R.M. Jarret, *J. Comp. Chem.*, 1986, 7, 578.
7. STRUCTURE: Rapid Interactive Structure Input and Geometry Optimization (#512); M. Saunders and R.M. Jarret, *Quant. Chem. Prog. Ex.*, Indiana Univ., 1986, 6, 62.
8. The Use of Various Nuclei as Probes in a New NMR Method for Obtaining Proton/Deuteron Fractionation Data; R.M. Jarret and M. Saunders, *J. Am. Chem. Soc.*, 1986, 108, 7549.
9. Ionization of Fluorobullualene. Proton Rearrangement in Protonated Naphthalene; R.M. Jarret and M. Saunders, *J. Org. Chem.*, 1986, 51, 5427.
10. Carbon Scrambling and <sup>13</sup>C-<sup>13</sup>C Coupling Constants in <sup>13</sup>C-NMR Spectra of 2-Norbornyl Chloride; R.M. Jarret and M. Saunders, *J. Am. Chem. Soc.*, 1987, 109, 647.
11. Nortricyclyl-Norbornenyl Cation. Isotopic Perturbation and Isotopic Scrambling; M. Saunders, P. Pramanik and R. M. Jarret, *J. Am. Chem. Soc.*, 1987, 109, 3735.

### Publications While at Holy Cross (\*Undergraduate)

12. <sup>13</sup>C<sub>2</sub> Labeling: A Means to Measure <sup>12</sup>C-<sup>13</sup>C Isotopic Equilibria in 2-Norbornyl Cation; R.M. Jarret and M. Saunders, *J. Am. Chem. Soc.*, 1987, 109, 3366.
13. The High-Resolution <sup>1</sup>H NMR Spectra and Conformations of N-Acetyl--D-Galactopyranosylamine Peracetate and 1,1- Bis(Aceti-amido)-1-Deoxy-D-Glucitol Peracetate in Aqueous Medium; M.C. Matulewicz, C.A. Stortz, R.M. Jarret and A.S. Cerezo. *J. Carbohydrate Chem.*, 1987, 6, 515.
14. Kinetics of Degenerate Rearrangements in Nortricyclyl Cation; R.M. Jarret, J.C. Veniero\*, T.P. Byrne\*, M. Saunders and K.E. Laidig. *J. Am. Chem. Soc.*, 1988, 110, 8287.
15. ZMAKER: Z-Matrix Generation from Cartesian Coordinates(553); R.M. Jarret and J.C. Veniero\*, *Quant. Chem. Prog. Ex. Bull.*, 1988, 8, 131.

16. The Use of IR Spectroscopy to Monitor The Conversion of Matrix Isolated Phenylacetyl Chloride to Phenylacetyl Cation, Without Decarbonylation to Benzyl Cation; R.M. Jarret, N. Sin<sup>\*</sup>, T. Ramsey<sup>\*</sup> and M. Saunders, *J. Phys. Org. Chem.*, 1989, 2, 51.
17. Friedel-Crafts Acylation and Alkylation with Acid Chlorides; R.M. Jarret, N. Keil, S. Allen<sup>\*</sup>, L. Cannon<sup>\*</sup>, J. Coughlan<sup>\*</sup>, L. Cusumano<sup>\*</sup> and B. Nolan<sup>\*</sup>, *J. Chem. Educ.*, 1989, 66, 1053.
18. Molecular Mechanics as an Organic Chemistry Laboratory Exercise; R.M. Jarret and N. Sin<sup>\*</sup>, *J. Chem. Educ.*, 1990, 67, 153.
19. <sup>13</sup>C-<sup>13</sup>C Coupling in [1.1.1]Propellane; R.M. Jarret and L. Cusumano<sup>\*</sup>, *Tetrahedron Letters*, 1990, 32, 171.
20. Kinetic and Spectroscopic Studies of Transients Produced by Flash Photolysis of M(CO)<sub>3</sub>(PR<sub>3</sub>)<sub>2</sub>X<sub>2</sub> (M = Mo, W; X = Cl, Br); R.S. Herrick, M. George<sup>\*</sup>, R. Duff, Jr.<sup>\*</sup>, F.H. D'Aulnois<sup>\*</sup> and R.M. Jarret, *J. Inorg. Chem.*, 1991, 30, 3711.
21. High Resolution <sup>13</sup>C N.M.R. Spectroscopy of 'Mixed Linkage' Xylans; M.C. Matulewicz, A.S. Cerezo, R.M. Jarret and N. Sin<sup>\*</sup>, *Int. J. Biol. Macromol.* 1992, 14, 29.
22. <sup>13</sup>C-<sup>13</sup>C Coupling Constants in Carboxylate Esters; R.M. Jarret, L. Cusumano<sup>\*</sup>, M. Dintzner<sup>\*</sup>, M. Fortin<sup>\*</sup>, K. Pothier<sup>\*</sup>, J. Connolly<sup>\*</sup>, M. Biondi<sup>\*</sup> and T. Morrison<sup>\*</sup>, *Microchem. Jr.* 1993, 47, 187.
23. Teaching Organic Chemistry with Student-Generated Information; R.M. Jarret and P.D. McMaster, *J. Chem. Educ.*, 1994, 71, 1029.
24. The Holy Cross Discovery Chemistry Program; R.W. Ricci, M.A. Ditzler, R.M. Jarret, P.D. McMaster and R.S. Herrick, *J. Chem. Educ.*, 1994, 71, 404.
- 24a. Discovery Chemistry Labs; R.W. Ricci, M.A. Ditzler, R.M. Jarret, P.D. McMaster and R.S. Herrick, *Primis*, 1995.
25. Electrophilic Aromatic Substitution Discovery Lab; R.M. Jarret, J. New, and C. Patraitis<sup>\*</sup>, *J. Chem. Educ.*, 1995, 72, 457.
26. Ordered Conformations in Bis(Amino acid) Derivatives of 1,1'-Ferrocenedicarboxylic Acid; R.S. Herrick, R.M. Jarret, T.P. Curran, D.R. Dragoli<sup>\*</sup>, M.B. Flaherty<sup>\*</sup>, S.B. Lindyberg<sup>\*</sup>, R. Slate<sup>\*</sup> and L.C. Thornton<sup>\*</sup>, *Tetrahedron Letters*, 1996, 37, 5289.
27. Reactions of Bromine with Diphenylethylenes: An Introduction to Electrophilic Substitution; R.M. Jarret, J. New and K. Karaliolios<sup>\*</sup>, *J. Chem. Ed.*, 1997, 74, 109.
28. Deuterium Isotope Effects on <sup>13</sup>C NMR Chemical Shifts of Amides; R.M. Jarret, N. Sin<sup>\*</sup>, M. Dintzner<sup>\*</sup>, *Microchem. Jr.*, 1997, 56, 19.
29. Conformational Studies in the Cyclohexane Series. 1. Experimental and Computational Investigation of Methyl, Ethyl, Isopropyl, and *tert*-Butylcyclohexanes; K.B. Wiberg, J.D. Hammer, H. Castejon, W.F. Bailey and R.M. Jarret, *J. Org. Chem.*, 1999, 64, 2085.
30. Introducing Acid-Base Chemistry in the Organic Chemistry Laboratory With an Exercise That Simulates How a Virus Spreads Through a Population; R.M. Jarret, *J. Chem. Educ.*, 2001, 78, 525.
31. Looking Beyond the endo-Rule in a Diels-Alder Discovery Lab; R.M. Jarret, J. New, R. Hurley<sup>\*</sup> and L. Gillooly<sup>\*</sup>, *J. Chem. Educ.*, 2001, 78, 1262.
32. Conformational Preferences for 1,2- and 1,4- Difluorocyclohexane; K.B. Wiberg, W. Hinz, R.M. Jarret and K.B. Aubrecht, *J. Org. Chem.*, 2005, 70, 8381.
33. Developing 180 Researchers each Year in Chemistry at Holy Cross College; R.M. Jarret, *CUR book: "Designing, Implementing, and Sustaining a Research-Supportive Undergraduate Curriculum: A Compendium of Successful Curricular Practices from Faculty and Institutions Engaged in Undergraduate Research"* 2007.
34. Synthesis of tungsten compounds with Schiff base ligands prepared from ferrocenecarboxaldehyde. Observation of the migration of an imine double bond; R.S. Herrick, C.J. Ziegler, M. Precopio,<sup>\*</sup> K. Crandall,<sup>\*</sup> J. Shaw and R.M. Jarret *J. Organomet. Chem.* 2008, 693, 619.

#### Presentations at Scientific Meetings (\*Holy Cross Undergraduate)

1. "Di-<sup>13</sup>C-Labeling: A Means to Measure <sup>12</sup>C-<sup>13</sup>C Isotopic Equilibria in Norborn-2-yl Cation," R.M. Jarret and M. Saunders, Experiment NMR Conference - National Meeting, Asilomar, CA (April, 1987).
2. "Degenerate Rearrangements in Nortricycyl Cation," R.M. Jarret, J.C. Veniero<sup>\*</sup>, T.P. Byrne<sup>\*</sup>, M. Saunders and K.E. Laidig, ACS - NERM (18), Orono, ME (August, 1988).
3. "NMR Study of a Novel C<sub>7</sub>H<sub>11</sub> Cation in Superacid," R. Jarret, N. Sin<sup>\*</sup>, W. Kirmse and R. Siegfried ACS-NERM Albany, NY (June, 1989).
4. "<sup>13</sup>C-<sup>13</sup>C Coupling in [1.1.1]Propellane," R.M. Jarret and L. Cusumano<sup>\*</sup>, ACS National Meeting, Boston, MA (April, 1990).
5. "Discovery Approach in Organic Chemistry," R.M. Jarret, Leallyn Clapp Symposium, Brown University, Providence, RI (Oct, 1990).
6. "Molecular Mechanics in a Discovery Based Organic Chemistry Course," R.M. Jarret and N. Sin<sup>\*</sup>, 21st ACS Regional

Meeting, University of Massachusetts at Amherst (June, 1991).

7. "A Laboratory-Centered Inductive Approach to the Teaching of Chemistry," R.W. Ricci, M.A. Ditzler and R.M. Jarret, ACS National Meeting, San Francisco, CA (1992).
8. "Utilization of GC-Mass Spectrometers in Discovery-Based Organic Chemistry," R.M. Jarret, P.D. McMaster, J. Rapa and C. Patraitis\*, ACS National Meeting, Denver, CO (April, 1993).
9. "Discovery Chemistry: A Five Year Update," M.A. Ditzler, R.W. Ricci, R.S. Herrick, R.M. Jarret and P.D. McMaster, 207<sup>th</sup> ACS National Meeting (March, 1994).
10. "Toolbook Generated Multimedia Aids for Discovery Laboratories," R.M. Jarret, R.S. Herrick and A. Deckert, NSF Workshop, Holy Cross, Worcester, MA (October 1994). *Presenter & Co-Organizer*.
11. "Development of MultiMedia Review Resources," R.S. Herrick, A. Deckert and R.M. Jarret, Gordon Conference, Oxnard CA (Jan, 1995).
12. "Toolbook Multimedia Chemistry Modules as Student Review Resources," R.M. Jarret and R.S. Herrick, Worcester Polytechnic Institute, Worcester, MA (October 1995).
13. "Toolbook MultiMedia Chemistry Modules as Student Review Resources," R.Herrick and R.M. Jarret, Kansas State University (May 1996).
14. "Ordered Conformations in Bis(Amino acid) Derivatives of 1,1'-Ferrocenedicarboxylic Acid," R.S. Herrick, R.M. Jarret, T.P. Curran, D.R. Dragoli\*, M.B. Flaherty\*, S.B. Lindyberg\*, R. Slate\* and L.C. Thornton\*, Conference on Supramolecular Chemistry, Wichita State University (May 29, 1996).
15. "Organic Chemistry - The Discovery Approach," P.D. McMaster and R.M. Jarret, 14th Biennial Conference on Chemical Education, Clemson University (August 4, 1996).
16. "Utilizing MultiMedia Software as Student Review Resources," R.M. Jarret, R.S. Herrick and A. Deckert, ACS National Meeting, Orlando, FL (August 24, 1996).
17. "Ordered Conformations in Bis(Amino acid) Derivatives of 1,1'-Ferrocenedicarboxylic Acid," R.S. Herrick, R.M. Jarret, T.P. Curran, D.R. Dragoli\*, M.B. Flaherty\*, S.B. Lindyberg\*, R. Slate\*, L.C. Thornton\*, ACS National Meeting, Orlando FL (Aug, 1996).
18. "Discovery Chemistry as the Common Thread in a Blended General/Organic Course Sequence," R.M. Jarret, ACS National Meeting, San Francisco CA (April 13, 1997). *Invited talk*
19. "Integrated Laboratories in the General and Organic Discovery Curriculum at Holy Cross College. General Principles," R.S. Herrick, R.M. Jarret, P.D. McMaster and R.W. Ricci, 5<sup>th</sup> North American Chemical Congress, Cancun, Mexico (Nov, 1997). *Invited*
20. "Integrated Laboratories in the General and Organic Discovery Curriculum at Holy Cross College. Specific Examples," R.M. Jarret, R.S. Herrick, P.D. McMaster and R.W. Ricci, 5<sup>th</sup> North American Chemical Congress, Cancun, Mexico (Nov, 1997). *Invited*
21. "Introduction of Simple Acid-Base Chemistry in an Organic Chemistry Lab Through an Exercise that Simulates a Virus Spreading Through a Population," R.M. Jarret, 15<sup>th</sup> Biennial Conference on Chemical Education, Waterloo Ontario, Canada (August, 1998).
22. "Discovering Carbocation Rearrangements in the Organic Chemistry Laboratory." R.M. Jarret, L.A. Gillyooly\*, A. Rogers\* and J. Mandeville\*, ACS National Meeting, Boston MA (August, 1998).

#### Invited Lectures (hour length)

1. "<sup>13</sup>C Labeling in Carbocation Research," University of Massachusetts Medical School, Worcester, MA (Jan. 5, 1988).
2. "<sup>13</sup>C Labeling in Carbocation Research," University of Massachusetts, Amherst, MA (March 8, 1988).
3. "<sup>13</sup>C NMR and Carbon Coupling," Rhode Island College, Providence, RI (November 23, 1988).
4. "<sup>13</sup>C-<sup>13</sup>C Couplings in Bicyclic Systems," Central MA Meeting of the ACS, Worcester, MA (Oct. 22, 1990).
5. "<sup>13</sup>C NMR and Carbon Coupling," Connecticut College, New London, CT (October 26, 1990).
6. "<sup>13</sup>C-<sup>13</sup>C Couplings in Bicyclic Systems," Wesleyan University, Middletown, CT (November 26, 1991).
7. "Discovery Chemistry," Workshop Participant, University of Wisconsin at Madison (February 1994).
8. "Bis-Peptide Ferrocenyl Complexes," Rhode Island College, Providence, RI (October 21, 1994).
9. "Using the Scientific Method in Introductory Science Courses," Diocese of Worcester Education Workshop, 1994.
10. "Teaching & Learning Chemistry through the Discovery Method," Holy Cross College, Parents Weekend, 1996.
11. "Science & Humanities," Holy Cross College, Worcester, MA (IAAY Humanities Days, 1997).
12. "From Cyclohexane to Ferrocene, Conformation is Key," Rhode Island College, Providence, RI (March 24, 2000).

#### Student (\*) Research Presentations at Scientific Meetings

1. "Benzyl Carbocations," Timothy M. Ramsey\* and R.M. Jarret, Seventeenth Annual Meeting-in-Miniature of the Central MA Section of the ACS (April, 1987).
2. "Implementation of a Molecular Modeling System for Medicinal and Organic Chemistry," Christopher Peters\* and

- R.M. Jarret, 17th Annual Meeting-in-Miniature, Central MA ACS Section (April 1987).
- "The Measurement of  $^{13}\text{C}$ - $^{13}\text{C}$  Coupling Constants in Norborn-2-yl Derivatives," Leonarda Cusumano<sup>\*</sup> and R.M. Jarret, Society for Applied Spectroscopy, New England Section (March, 1988).
  - "The Measurement of  $^{13}\text{C}$ - $^{13}\text{C}$  Coupling Constants in Norborn-2-yl Derivatives," Leonarda Cusumano<sup>\*</sup> and R.M. Jarret, Eighteenth Annual Meeting-in-Miniature, Central MA Section of ACS, Holy Cross College (April, 1988).
  - "A Study of  $\text{C}_4\text{H}_7^+$  Rearrangements," Julie L. Coughlan<sup>\*</sup> and R.M. Jarret, Eighteenth Annual Meeting-In-Miniature of the Central MA Section of the ACS, College of the Holy Cross (April, 1988).
  - "The Bicyclo[3.1.1]Heptenyl Cation," Timothy P. Byrne<sup>\*</sup> and R.M. Jarret, Eighteenth Annual Meeting-in-Miniature of the Central MA Section of the ACS, College of the Holy Cross (April, 1988).
  - "Measurement of  $^{13}\text{C}$ - $^{13}\text{C}$  Coupling Constants in Rigid Ring Systems," Leonarda Cusumano<sup>\*</sup> and R.M. Jarret, Nineteenth Annual Meeting-in-Miniature of Central MA Section of ACS (April, 1989).
  - "NMR Study of A Novel  $\text{C}_7\text{H}_{11}$  Cation in Superacid," Ny Sin<sup>\*</sup> and R.M. Jarret, Nineteenth Annual Meeting-in-Miniature of the Central MA Section of the ACS (April, 1989).
  - "Synthesis and Spectroscopic Study of  $\text{Mo}(\text{S}_2\text{CNR})_2(\text{CO})(\text{H}_2^{13}\text{C}_2)$ ," Janet Burke<sup>\*</sup>, R.S. Herrick and R.M. Jarret, NECUSE-OSURG Conference, Williams College (June, 1991).
  - "Measurement of  $^{13}\text{C}$ - $^{13}\text{C}$  Coupling Constants in 7-norbornenyl Cation," Matthew Dintzner<sup>\*</sup> and R.M. Jarret, Pfizer Foundation, Groton, CT (October 11, 1991).
  - "Alkynyl Ferrocene Derivatives Part I-IV," Tim Mahoney<sup>\*</sup>, Maryellen Flaherty<sup>\*</sup>, Jeff Robertson<sup>\*</sup>, Janet Burke<sup>\*</sup>, R.S. Herrick, R.M. Jarret, NECUSE-OSURG Conference, Holy Cross (June, 1992).
  - "Ferrocene Amino Acids Complexes Part I&II," Maryellen Flaherty<sup>\*</sup>, Rebecca Slate<sup>\*</sup>, R.S. Herrick and R.M. Jarret, NECUSE- OSURG, College of the Holy Cross (June, 1993).
  - "Alkynyl Ferrocene, Part I-III," Tim Mahoney<sup>\*</sup>, Jeff Robertson<sup>\*</sup>, Joshua Farrell<sup>\*</sup>, R.S. Herrick and R.M. Jarret, NECUSE-OSURG, College of the Holy Cross (June, 1993).
  - "Binding of Ferrocenyl Alkynes to  $d^4$  metal Complexes," Jeffrey Robertson<sup>\*</sup>, R.M. Jarret and R.S. Herrick, Pfizer Foundation, Groton, CT (October 15, 1993).
  - "The Structure of Bromonium Ion Intermediates," Kalliopi Karaliolios<sup>\*</sup> and R.M. Jarret, NECUSE-OSURG Conference, Williams College (Summer 1994).
  - "Synthesis of Bis Ferrocene Amino Acid Derivatives Part I-III," Dean R. Dragoli<sup>\*</sup>, Lisa C. Thornton<sup>\*</sup>, Sue Lindyberg<sup>\*</sup>, R.S. Herrick and R.M. Jarret, NECUSE-OSURG Conference, Williams College (Summer 1994).
  - "Modeling Studies of Peptides Attached to Ferrocene" Rebecca Slate<sup>\*</sup>, R.M. Jarret and R.S. Herrick, ACS National Meeting, San Diego, CA (March 1994).
  - "An Investigation of Hydrogen-Bonding in Mono and BIS Amino Acid Derivatives of Ferrocene," Lisa C. Thornton<sup>\*</sup>, Dean Dragoli<sup>\*</sup>, R.S. Herrick, R.M. Jarret and T.P. Curran, ACS National Meeting, Chicago, IL (August, 1995).
  - "Synthesis of BIS Ferrocene Amino Acid Derivatives," Dean R. Dragoli<sup>\*</sup>, Lisa C. Thornton<sup>\*</sup>, R.S. Herrick and R.M. Jarret, ACS National Meeting, Chicago, IL (August, 1995).
  - "Investigations into the Reactivities of Substituted Benzaldehydes in Aldol Condensation Reactions," Heather O'Donnell<sup>\*</sup> and R.M. Jarret, ACS National Meeting, San Francisco, CA (April 14, 1997).
  - "Ordered Conformations in Bis(Peptide) Derivatives of 1,1'-Ferrocenedicarboxylic Acid," Mark Chrostowski<sup>\*</sup>, R.M. Jarret and R.S. Herrick, Pfizer Foundation, Groton, CT (September, 1997).
  - "Organic Chemistry Discovery Labs," Laura Gillooly<sup>\*</sup> and R.M. Jarret, ACS National Meeting, Dallas, TX (March, 1998).
  - "Conformationally Restricted Bis-Amino Acid Derivatives of Ferrocenedicarboxylic Acid," Mark Chrostowski<sup>\*</sup>, R.S. Herrick and R.M. Jarret, ACS National Meeting, Dallas, TX (March, 1998).
  - "Discovering E1 and E2 Reactions in the Organic Chemistry Laboratory," Jessica Mandeville<sup>\*</sup> and R.M. Jarret, ACS National Meeting (March, 2000).
  - "Opening of Epoxides: a Discovery Approach," Michelle Cardona<sup>\*</sup> and R.M. Jarret, ACS National Meeting (March, 2000).
  - "Free Radical Halogenation: a Discovery Lab Exploration," Jude Rieger<sup>\*</sup> and R.M. Jarret, ACS National Meeting (April, 2002).
  - "Alkene Synthesis in the Organic Chemistry Lab," James Conley<sup>\*</sup> and R.M. Jarret, ACS National Meeting (April, 2002).

### **Memberships in Professional Societies**

American Chemical Society, 1982-present; ACS Central Mass Section: Chair-Elect, 1991-92, Chair 1992-93, 2005-06.

Council on Undergraduate Research 1998-present.

American Association for the Advancement of Science, 1999-2003, 2006-2008.

International Jesuit Association of Chemistry and Chemical Engineering University and Schools, 2003.

Alpha Sigma Nu, 1997-present.

AJCU, 2012-2017.