

# Janet B. Foley

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## Professional Experience:

**Professor of Chemistry:** (9/98 to present) Bennington College, Bennington, VT 05201

- Teaching responsibilities: Organic chemistry with lab, General Chemistry with lab, Environmental Chemistry, the chemistry of Drugs and Natural Remedies, and research tutorials.
- Undergraduate Research: supervising students working on research in gold chemistry.
- Research Interests: the photochemical and antimicrobial properties of gold dinuclear complexes. Environmental chemistry topics include the ocean acidification, arsenic in wells and PFOA contamination in the Bennington/Hoosic Falls community
- Director of the Post Baccalaureate Premedical Program.

**Researcher:** (9/96 to 8/98) Biode, 20 Freedom Parkway, Hermon, ME 04401

Worked as the chemist in a biosensor research and development company. Used surface techniques to characterize self-assembled monolayers on gold surfaces for use as biosensors for pathogenic antigens.

**Chemistry Instructor:** (9/96 to 8/98) Chemistry Department; University of Maine; Orono, Maine 04469

Employed as a full-time instructor, responsible for all aspects of course preparation, testing and grading. Courses taught: General Chemistry, The Chemistry of Everyday Living (including the Lab), and Applications of Chemistry

## Education:

Ph.D. Inorganic Chemistry; Aug. 1996; University of Maine; Orono, ME  
**“Chemical and Photochemical Reactivity of Gold(I) Dinuclear Complexes.”** Advisors: Alice Bruce and Mitchell Bruce

New York State Education Certification in Chemistry and General Science, Secondary Level; 1975; Herbert Lehman College of the City University of New York; Bronx, NY

BA in Political Science, 1971; Fordham University; Bronx, NY

## Publications:

Foley, J.B., A., Herring, Li, B., and Dikarev, E. V., "Photochemical Reactivity of Two Gold(I) Dinuclear Complexes, *Cis/Trans*-(AupNBT)<sub>2</sub>dppee: Isomerization for *Cis*-(AupNBT)<sub>2</sub>dppee Isomer, Wavelength Dependent Radical Substitution for *trans*-(AupNBT)<sub>2</sub>dppee" *Inorganica Chimica Acta*, **2012**, 392, 300

Foley, J.B.; Gay, S.; Vela, M.; Foxman, B.; Bruce, A. E.; Bruce, M. R. M. "Structure and Photoisomerization of the Dinuclear Gold(I) Halide Bis(diphosphino)ethylene Complexes; Correlation Between Quantum Yield and Auophilicity", *Eur. J. Inorg. Chem.*, **2007**, 4946.

Foley, J. B.; Gay, S. E.; Turmel, C.; Wei, G.; Jiang, T.; Naranyanaswamy, R.; Foxman, B. M.; Vela, M. J.; Bruce, A. E., Bruce, M. R. M., "Electronic Structure of Dinuclear Gold(I) Complexes", *Metal-Based Drugs*, **1999**, 6,4-5, 255.

Andle, J., Schweyer, M., Munson, J., Roderick, R., McCallister, D, French, L., Vetelino, J., Watson, C., Foley, J., Bruce, A., Bruce, M., "Electrochemical Piezoelectric Sensors for Trace Ionic Contaminants", **1998**, 45, 5, 1408, *IEEE Transactions on UFFC (Ultrasonics, Ferroelectrics and Frequency Control)*

Foley, J. B., Bruce, A. E., Bruce, M. R. M., "An Unprecedented Photochemical *Cis* to *Trans* Isomerization of Dinuclear Gold(I) Bis(diphenylphosphino)ethylene Complexes", *J. Am. Chem. Soc.*, **1995**, 117, 9596.

Foley, J., Fort, R. C. Jr., McDougal, K., Bruce, M. R. M., Bruce, A. E., "Electronic and Steric Effects in Gold(I) Phosphine Complexes", *Metal-Based Drugs*, **1994**, 1,(5-6), 405.

## Grants:

**NSF IUSE grant # 1711637 2017-2020** : Co-PI Understanding PFOA: Improving STEM Education By Demonstrating How Science Matters, pending.

**NSF RAPID Response grant # 1634237 2016-2017**. RAPID: Understanding the Hoosick Falls Water Crisis, Co-PI, funded, in progress.

**NSF TUES grant # 1141281 2012-2016**. The Future of a New England Mill Town, PI, funded, completed.

**August 2007**: Bennington Faculty Grant to attend ACS conference in Boston to present work.

**June 2004 – Aug 2004:** EPSCoR Baccalaureate College Development Grant – “Does the Structure of Gold(I) Dinuclear Complexes Affect Cytotoxic Properties?”

**June 2002: Applied for a NSF CAREER Grant:** “The Effects of Gold-Gold Interactions on the Reactivity of Phosphine Gold Thiol Complexes and the Antimicrobial Activity of these Complexes.” Not funded.

### **Selected Presentations:**

**August 2016:** ACS Conference, Philadelphia, PA: (1.) To get students to think like scientists, get them to read scientists, J Foley, J. Bullock (2.) What’s in your water? A class tackles PFOA pollution in North Bennington, Vermont, J. Foley, D. Bond, T. Schroeder.

**ACS Conference, New Orleans, LA:** 2013 Sensitive Photoionization (PID) Method for the measurement of ppb levels of arsenic in well water. Driscoll, Maclachlan, Foley.

**August 21, 2012** Talk presented at the 244<sup>th</sup> Annual ACS Meeting, Philadelphia, PA “Photochemical reactivity of two gold(I) dinuclear complexes, *Cis/trans*-(Au<sup>p</sup>NBT)<sub>2</sub>dppee” J Foley, Herring, A.

**August 19, 2007** Poster presentation at the National American Chemical Society Meeting in Boston, “Photochemical reactivity of *cis* and *trans*(Au<sup>p</sup>NBT)<sub>2</sub>dppee: A role for gold-gold interactions?” Foley, J, Herring, A,

**March 28, 2007**, Poster presented at the Vermont EPSCoR Meeting, Wyndham Hotel, Burlington, VT “Photochemical reactivity of a gold(I) dinuclear complex: *trans*-(Au<sup>p</sup>NBT)<sub>2</sub>dppee”, Angela Herring, Janet Foley

**October 9, 2006:** Talk at Northeastern Regional Meeting, Binghamton, NY : “Photochemical reactivity of a gold(I) dinuclear complex: *trans*-(Au<sup>p</sup>-NBT)<sub>2</sub>dppee” Janet B. Foley, Angela Herring, Bennington College, Bennington, VT 05201.

**June 2004:** Poster Presentation at the National American Chemical Society Conference, Philadelphia, PA, June 23, 2004. “Do Gold-Gold Interactions Affect the Photochemical Properties of *Cis* and *Trans*-(Au<sup>p</sup>NBT)<sub>2</sub>dppee?” Foley, A. Herring, L. Kovacs, M. Hunter.

**June, 2003:** Poster presentation at Northeast Regional Meeting of the American Chemical Society, Saratoga Springs, NY: “Photochemical and Biological Properties of Two Gold Dinuclear Compounds”, Mark Hunter, Daya Iyer, Janet B. Foley.

**June, 2001:** Talk at Northeast Regional Meeting of the American Chemical Society, Durham NH, “Wavelength Dependent Photochemistry of *Cis*-(Au<sup>p</sup>NBT)<sub>2</sub>dppee.” J. Foley, R. Puentedura, E. Walker, D.Iyer, K.Slack.

**August, 1998:** Presented a talk at the American Chemical Society Meeting in Boston, MA: "Photoisomerization of Gold(I) *Cis*-dppee Complexes: A One-way Gold Photoswitch – An Electrochemical Investigation."

### **Courses Taught:**

Chemistry 1,2,3, and 4 with accompanying labs, Biochemistry, Drugs and Natural Remedies, Environmental Chemistry, Heavy Metal Pathways (with T. Schroeder), The Chemistry of Two Ponds (with B. Sherman), Field Course in Coral Reef Chemistry and Biology (with B. Sherman), Fifth Term Science and Math Seminar, Advanced Chemistry Seminar, Independent Projects in Chemistry, research tutorials.

### **Recent Educational Initiatives**

Development of a novel approach to teaching the chemistry sequence that integrates general and organic chemistry from the first class in collaboration with chemistry colleague, John Bullock.

The preparation of an online text to reflect our integrated curriculum. This is in progress.

Worked with two other faculty members to develop a course that presented the chemistry, geology, and policy needed to understand the ongoing PFOA contamination in the Hoosick Falls/North Bennington area. Students collected water samples, participated in town meetings, and are involved in ongoing analysis of the data.

### **Professional Affiliations:**

Member of the American Chemical Society

Member of American Association of University Women

Member of NEAAHP (New England Association of Advisors to the Health Professions) and NAAHP (National Association of Advisors to the Health Professions)