JONAS I. GOLDSMITH

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Department of Chemistry
Bryn Mawr College
101 N. Merion Avenue
Bryn Mawr, PA 19010
(610)-526-5137

EDUCATION

Cornell University, Ithaca, NY
Ph.D. in Inorganic/Physical Chemistry, August 2002
Advisor: Professor Héctor D. Abruña

Cornell University, Ithaca, NY
Master of Science in Inorganic/Physical Chemistry, June 1999

Swarthmore College, Swarthmore, PA
Bachelor of Arts in Chemistry, with Distinction, May 1996

PROFESSIONAL EXPERIENCE

Associate Professor of Physical Chemistry (tenured) 2013-present
Department of Chemistry, Bryn Mawr College, Bryn Mawr, PA

Assistant Professor of Physical Chemistry 2005 - 2013
Department of Chemistry, Bryn Mawr College, Bryn Mawr, PA

Post-doctoral Researcher 2004 – 2005
Advisor: Professor Stefan Bernhard, Princeton University, Princeton, NJ

Visiting Assistant Professor of Physical Chemistry 2003 - 2004
Department of Chemistry, Hobart and William Smith Colleges, Geneva NY
Chair: Professor Walter J. Bowyer

Post-doctoral Researcher 2002 – 2003
Advisors: Professor Alan T. Johnson (Department of Physics) and
Professor Alan G. MacDiarmid (Department of Chemistry)
University of Pennsylvania, Philadelphia, PA

PROFESSIONAL EXPERIENCE (cont.)

Graduate Research Assistant 1998 – 2002
Advisor: Professor Héctor D. Abruña, Cornell University, Ithaca, NY

Graduate Teaching Assistant 1997 – 2001
Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY
Electrochemistry (graduate class), Honors General Chemistry

Undergraduate Researcher 1995 – 1996
Advisor: Professor Robert F. Pasternack, Swarthmore College, Swarthmore, PA

Undergraduate Researcher Summer 1994
Advisor: Professor Joseph P. Dinnocenzo, University of Rochester, Rochester, NY

Undergraduate Teaching Assistant 1993 – 1996
Department of Chemistry, Swarthmore College, Swarthmore, PA
General, Inorganic and Physical Chemistry

PUBLICATIONS SINCE BEGINNING AT BRYN MAWR

Fealy, R.J.; **Melker, A**.; Goldsmith, J. I. "Photocatalytic water reduction with complexes containing multiple Iridium(III) phenylpyridine-bipyridine centers." **Manuscript in preparation.**

21. Li, M.; Takada, K.; Goldsmith J. I.; Bernhard S. "Iridium(III) bis-pyridine-2-sulfonamide complexes as efficient and durable catalysts for homogeneous water oxidation." *Inorg. Chem.,* **2016**, *55*(2), 518-526.

20. Lerner, M. B.; Reczenski, J. M.; Amin, A.; Johnson, R.; Goldsmith J. I.; Johnson, A. T. "Towards quantifying the electrostatic transduction mechanism in carbon nanotube molecular sensors." *J. Am. Chem. Soc.,* **2012**, *134*(35), 14318-14321.

19. Fealy, R. J. and Goldsmith J. I. "Investigating electron transfer in macromolecular ruthenium tris(bipyridyl) complexes using collection experiments at a rotating ring-disc electrode." *J. Phys. Chem. C.*, **2012**, *116* (24), 13133-13142.

18. Oze, C.; Jones, L. C.; Goldsmith, J. I.; and Rosenbauer, R. J. R. "Differentiating biotic from abiotic methane genesis in hydrothermally active planetary surfaces." *Proc. Nat. Acad. Sci.*, **2012**, *109* (25), 9750-9754.

17. Jones, L. C.; Rosenbauer, R.; Goldsmith, J. I.; Oze, C. "Carbonate control of H_2 and CH_4 production in serpentinization systems at elevated P-Ts." *Geophysical Research Letters,* **2010**. *37*, L14306.

16. Goldsmith, J. I.; Smith, H. L.; Usala, R. L.; McQueen, E. W. "Novel polyaromatic-terminated transition metal complexes for the functionalization of carbon surfaces." *Langmuir,* **2010,** *26* (5), 3342–3349.

15. Goldsmith, J. I.; McQueen, E. W. "Electrochemical analysis of single-walled carbon nanotubes functionalized with pyrene-pendant transition metal complexes." *J. Am. Chem. Soc.* **2009**, *131 (48)*, 17554-17556**.**

14. Lowry, M. S.; Goldsmith, J. I.; Slinker, J. D.; Pascal, R. A. Jr.; Malliaras, G. G.; Bernhard, S. "High Energy Emission from a Single-Layer Iridium (III) Electroluminescent Device." *Chem. Mat.* **2005**; *17(23);* 5712-5719.

PUBLICATIONS PRIOR TO BEGINNING AT BRYN MAWR

13. Goldsmith, J.I.; Hudson, W.R.; Lowry, M.S.; Bernhard, S. "Discovery and High-Throughput Screening of Heteroleptic Iridium Complexes for Photo-Induced Hydrogen Production." *J. Am. Chem. Soc.*, **2005**, *127(20)*, 7502-10.

12. Sydora, O.L.; Goldsmith, J.I.; Vaid, T. P.; Miller, A. E.; Wolczanski, P. T.; and Abruña, H. D. "Syntheses and electrochemistry of (p-$XC_6H_4O)_6W$ (1-X, X = H, CH_3, OCH_3, Cl, Br, OH, OCH_2Ph) and (p-$XC_6H_4O)_5W(OC_6H_4OH)$ (X = H, CH_3, OCH_3, Cl, Br): an approach to electrocatalytic CH bond activation." *Polyhedron,* **2004***, 23(11)*, 2841-56.

11. Takada, K.; Goldsmith, J.I.; Bernhard, S.; Abruña, H.D. "Dendrimers on Electrodes" in Encyclopedia of Electrochemistry, Volume 10, A.J. Bard and M. Stratmann, editors WILEY-VCH, Weinheim, Berlin, **2004**.

10. Bernhard, S.; Goldsmith, J.I.; Takada, K.; Abruña, H.D. "Iron (II) and Copper(I) Coordination Polymers: Electrochromic Materials with and without Chiroptical Properties." *Inor. Chem.*, **2003**, *42(14)*, 4389-93.

9. Amatore, C.; Bouret, Y.; Maisonhaute, E.; Abruña, H.D.; Goldsmith, J.I. "Electrochemistry within Molecules Using Ultrafast Cyclic Voltammetry." *Comptes Rendus Chemie*, **2003**, *6(1)*, 99-115.

8. Park, J.; Pasupathy, A.N.; Goldsmith, J.I.; Soldatov, A.V.; Chang, C.; Yaish, Y.; Sethna, J.P.; Abruña, H.D.; Ralph, D.C.; McEuen, P.L. "Wiring up Single Molecules." *Thin Solid Films*, **2003**, *438-439*, 457-461.

7. Park, J.; Pasupathy, A.N.; Goldsmith, J.I.; Chang, C.; Yaish, Y.;Petta, J.R.; Rinkoski, M.; Sethna, J.P.; Abruña, H.D.; McEuen, P.L.; Ralph, D.C. " Coulomb Blockade and the Kondo Effect in Single Atom Transistors." *Nature*, **2002**, *417*, 722-725.

6. Goldsmith, J.I.; Takada, K.; Abruña, H.D. "Probing Diffusional Transport in Redox-active Dendrimers." *J. Phys. Chem B.* , **2002**, *106(34)*, 8504-8513.

5. Amatore, C.; Bouret, Y.; Maisonhaute, E.; Goldsmith, J.I.; Abruña, H.D. "Precise Adjustment of Nanometric-Scale Diffusion Layers Within a Redox Dendrimer Molecule By Ultrafast Cyclic Voltammetry: an Electrochemical Nanometric Microtome." *Chem--Eur.J.*, **2001**, *7* (10), 2206-2226.

4. Amatore, C.; Bouret, Y.; Maisonhaute, E.; Goldsmith, J.I.; Abruña, H.D. "Ultrafast Voltammetry of Adsorbed Redox Active Dendrimers with Nanometric Resolution: An Electrochemical Microtome." *ChemPhysChem*, **2001**, *2* (2), 130-134.

3. Takada, K.; Storrier, G.D.; Goldsmith, J.I.; Abruña, H.D. "Electrochemical and Adsorption Properties of PAMAM Dendrimers Surface-Functionalized with Polypyridyl Cobalt Complexes." *J. Phys. Chem. B*, **2001,** *105*, 2404-2411.

PUBLICATIONS PRIOR TO BEGINNING AT BRYN MAWR(cont.)

2. Pasternack, R.F.; Goldsmith, J.I.; Szep, S.; Gibbs, E.J. "A Spectroscopic and Thermodynamic Study of Porphyrin/DNA Supramolecular Assemblies." *Biophys.J.*, **1998**, *75*, 1024-31.

1. Potter, T.L.; Fagerson, I.S.; Goldsmith, J.I. "Mysteries of Maple Syrup Flavor." *Maple Syrup Digest*, **1995,** *7A* (2), 9-13.

GRANTS AND AWARDS

Research at Undergraduate Institutions Grant ($197,408) 2019-2024
National Science Foundation
Awarded by the National Science Foundation for "Harnessing electronanalytical chemistry for the exploration of photocatalytic electron transfer processes"

HHMI New Directions Grant ($17445) 2014-2016
Bryn Mawr College, Bryn Mawr, PA
Awarded by the HHMI Award Committee for investigating the kinetics of photocatalytic water reduction by experimental and computational techniques.

Faculty Research Grant ($3500) 2012-2013
Bryn Mawr College, Bryn Mawr, PA
Awarded by the Committee on Faculty Awards and Grants for investigating the use of macromolecular iridium-based photosensitizers for the reduction of water to hydrogen.

Major Research Instrumentation Grant (co-PI) ($263,900) 2010-2013
National Science Foundation
"400 MHz NMR Acquisition"

Faculty Research Grant ($4900) 2009-2010
Bryn Mawr College, Bryn Mawr, PA
Awarded by the Committee on Faculty Awards and Grants for developing methodologies to conduct electrochemical experiments at edge-plane pyrolytic graphite surfaces.

Type G Starter Grant ($40,000) 2007-2011
Petroleum Research Fund of the American Chemical Society
"Rational Self Assembly of Macromolecular Arrays for Optimized Light Harvesting and Photocatalytic Hydrogen Production"

Faculty Research Grant ($3746) 2007-2008
Bryn Mawr College, Bryn Mawr, PA
Awarded by the Committee on Faculty Awards and Grants for the construction of a multi-well apparatus to examine the photocatalytic reduction of water to hydrogen.

PCNMCG Instrument Grant ($9,000) June 2006
Pittsburgh Conference National Memorial College Grant Program
Grant for the purchase of a bipotentiostat and rotating ring-disc electrodes

Faculty Start-up Award ($30,000) 2005-2011
Camille and Henry Dreyfus Foundation
"Non-covalent functionalization of single-walled carbon nanotubes via molecular interfaces based on polypyridyl transition metal complexes"

GRANTS AND AWARDS (cont.)

Faculty Research Grant May 2003
Hobart and William Smith Colleges, Geneva, NY
Awarded by the Committee on Faculty Research and the Provost to support research on electron transfer in linear macromolecular transition metal complexes

Wentink Outstanding Graduate Student Award April 2002
Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY
Awarded to graduate students who have distinguished themselves both academically and in the quality and quantity of their research

Stanley Adamson Prize in Chemistry May 1995
Department of Chemistry, Swarthmore College, Swarthmore, PA
Awarded to the outstanding junior in the Chemistry Department

PROFESSIONAL ORGANIZATIONS

• American Chemical Society

COURSES TAUGHT

• **CHEM 101** Chemistry Fundamentals
• **CHEM 103** General Chemistry I
• **CHEM 104** General Chemistry II
• **CHEM 206** Science of Renewable Energy
• **CHEM 221** Physical Chemistry I
• **CHEM 222** Physical Chemistry II
• **CHEM 251** Research Methodology I
• **CHEM 252** Research Methodology II
• **CHEM 321/521** Advanced Physical Chemistry: Topics in Nanoscience
• **CHEM 321/521** Advanced Physical Chemistry: Inorganic Photochemistry
• **ENVS 397** Senior Seminar in Environmental Studies
• **EMLY 001** Emily Balch Seminar: The Physician's Life

SERVICE ACTIVITIES AT BRYN MAWR

• Physical Chemist Search Committee (Haverford College)	2005
• Science Node Representative	2005-2009
• Chemistry Colloquium Coordinator	2005, -09, -11
• Director of Graduate Studies in Chemistry	2006, -13, -15
• Chemistry Representative to Environmental Studies Concentration	2006-present
• Committee on Libraries, Information Services and Computing	2007-10
• Physical Chemist Search Committee (Haverford College)	2007
• Volunteer Advisor for first year students	2007 - present
• Physicist Search Committee (Bryn Mawr College)	2009
• Bucher-Jackson Postdoctoral Fellowship Search Committee	2010
• Organic Chemist Search Committee (Bryn Mawr College)	2010
• Chemistry Placement Exam Coordinator	2011-13
• Faculty Representative to the Task Force on the Competitive Position of the College (Market Position Subcommittee)	2011
• Committee on Academic Priorities Working Group on Faculty Workload	2011
• Gates/NGLC Blended Learning Grant Participant	2011-12
• Organic Chemist Search Committee (Bryn Mawr College)	2011
• Premedical Curriculum Working Group	2012
• Biochemist Search Committee – Chair (Bryn Mawr College)	2012
• Faculty Advisor (pilot program) to first year students	2012-2014
• Athletic Department Faculty Fellow	2013-present
• Ad hoc Committee on Faculty Advising	2013
• General Chemistry Lab Instructor Search Committee (Bryn Mawr College)	2014
• Representative to the Administrative Board of the Academic Honor System	2015-2018
• Quantitative Steering Committee	2015-present
• Committee on Academic Priorities	2015-2019
• General Chemistry Lab Instructor Search Committee (Bryn Mawr College)	2015
• Field Hockey Head Coach Search Committee (Bryn Mawr College)	2016
• College Budget Committee	2015-17
• Strategic Advisory Group	2017-2019
• Swimming Head Coach Search Committee (Bryn Mawr College)	2018

• Committee on Academic Priorities (chair)	2018-2019
• Organic Chemist Search Committee (chair) (Bryn Mawr College)	2018
• Middle States Reaccreditation Steering Committee	2018-2019
• Faculty Representative to the Board of Trustees	2018-2019
• Faculty Fellow for the Soccer team	2018-present
• Chemistry Department Chair	2020-present
• STEMLA Steering Committee	2020-present
• Faculty Undergraduate Admissions Committee	2022-2025
• Chair of Science Chairs	2023-2024
• Chief Financial Officer Search Committee	2024

SERVICE TO THE PROFESSION

• Textbook Reviewer for Academic Press	2005
• Reviewer for the *Journal of Electroanalytical Chemistry*	2005-present
• Proposal Reviewer for NSF Inorganic Division	2007-present
• Proposal Reviewer for NSF Macromolec/Supramolec/Nano Divison	2009-present
• Reviewer for *Carbon*	2011-present
• Reviewer for *Langmuir*	2011-present
• Proposal Reviewer for the Petroleum Research Fund of the American Chemical Society (ACS-PRF)	2012-present
• Reviewer for *Coordination Chemistry Reviews*	2012-present
• Reviewer for the *Journal of Physical Chemistry*	2013-present
• Reviewer for the *Journal of Physical Chemistry Letters*	2013-present
• Reviewer for the *Journal the American Chemical Society*	2015-present

RESEARCH STUDENTS

• Hillary Smith'06
• Rachel Usala '07
• Samira Zamani '07
• Danielle Carlin '07
• Amy Case '08
• Eden McQueen '09
• Suzanne Ali, '09
• Erica Lo '09
• Maggie Ahrens '12
• Anna Melker '12
• Julia Heer '14
• Callista Jerman '15
• Katie Guye '15
• Audrey Burnim '17
• Muhui Chen '17
• Jasmine Rangel '17
• Steffany Chou '18
• Natalie Schalick '19
• Angela Zhang '19
• Zhouwen Yu '19
• Dana Yang '21
• Gaoan Sheng '21
• Karen Guo '22
• Rubia Fernandes '23
• Maddie Hicks '23
• Saeina Charles '24
• Anam Rawoof '24
• Ruolin Zhang '24
• Anna Moravec '24
• Tiffany Xue '25
• Bernie Schintz '25
• Taylor Ferreira '25
• Anna Gray Ashton '26
• Eliana Haah '26
• Carmen Gitchell '26
• Kristin Kurek (GS) M.A. 2008
• Ryan Fealy (GS) Ph.D. 2014
• Samantha Klein (GS) Ph.D. 2019
• Michele Seiler (GS) left program 2016

GRADUATE STUDENT COMMITTEES SERVED ON

• Matthew Wampole (Ph. D. Chemistry 2009)
• Shannon Dalton (Ph. D. Chemistry 2009)
• Kelly Ginion (Ph. D. Chemistry 2009)
• Matthew Fury (Ph. D. Mathematics, 2010) – served as outside chair of committee
• Alyssa Bohen (Ph.D. Chemistry, 2013)
• Benjamin Williams (M.A. Chemistry 2011, Ph.D Chemistry 2015)
• Toni Mandelbaum (Ph. D. Social Work and Social Research, 2016) – served as outside chair of committee
• Maria DeMurro Winters (Ph. D. Chemistry 2014)
• Douglas Gisewhite (M.A. Chemistry 2013, Ph. D. 2017)
• Nissa Abidi (M.A. Chemistry 2015)
• Bashkim Kokona (M.A. Chemistry 2014, Ph. D 2018)