

Robert A. Flowers II

Office:

Department of Chemistry
Lehigh University
Bethlehem, PA 18015
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Professional Experience

Danser Distinguished Faculty Chair in Chemistry, 7/08 to present

Visiting Professor, Research School of Chemistry, Australian National University,
5/14/12-5/30/12

Visiting Professor, School of Chemistry, University of Manchester, 2/1/10-5/7/10

Department Chair, Lehigh University, 12/03-6/15

Led the rebuilding the department. Hired 15 faculty and 5 staff, and worked with faculty to change the approach to freshman chemistry and upper level lab instruction.

Professor of Chemistry, Texas Tech University, 5/03 to 12/03

Associate Professor of Chemistry, Texas Tech University, 9/01 to 5/03

Associate Professor of Chemistry, University of Toledo, 5/00-8/01.

Assistant Professor of Chemistry, University of Toledo, 9/94-5/00.

Post-Doctoral Research Associate, June 1991 - Aug 1994

Mentor: Prof. Edward M. Arnett, Duke University, Durham, NC

Research Interests

Mechanistic analysis and synthetic development of Sm(II) and Ce(IV) reagents;
Mechanistic studies of single electron transfer; Calorimetric analysis of protein-ligand interactions, ion transport and molecular recognition; Back-Scattering Interferometry,
Development of novel protein renaturation reagents.

Professional Associations

American Chemical Society, Royal Society of Chemistry, Sigma Xi,
American Association for the Advancement of Science

Honors and Awards

Fellow of the American Association for the Advancement of Science
Eleanor and Joseph F. Libsch Research Award, Lehigh University, 2012
Chancellor's Council Distinguished Research Award, Texas Tech University, 2002
University of Toledo Outstanding Teacher Award, 1998
Master Teacher (2000-2001), The University of Toledo
Heim-Buch Graduate Fellowship (Lehigh University)

Education

Ph.D. Organic Chemistry, 1991 Lehigh University, Bethlehem, PA

Advisor: Prof. John W. Larsen

B.S. Chemistry, 1986 East Stroudsburg University, East Stroudsburg, PA

Robert A. Flowers II**Publications**

- 1 "Diffuse-Reflectance FTIR/ESR Study of the Reactivity of Native Free Radicals in Illinois No. 6 Coal" Flowers, R.A., II; Gebhard, L.A.; Larsen, J.W.; Silbernagel, B.G. *Energy & Fuels*, **1989**, 3, 762.
- 2 "Demineralization Effects on the EPR Properties of Argonne Premium Coals" Silbernagel, B.G.; Gebhard, L.A.; Flowers, R.A., II; Larsen, J. W. *Energy & Fuels*, **1991**, 5, 561.
- 3 "Diffuse-Reflectance FTIR/EPR Study of the Reactivity of Native Free Radicals in Argonne Coal" Flowers, R.A., II; Gebhard, L.A.; Larsen, J.W.; Silbernagel, B.G. *Energy & Fuels*, **1992**, 6, 455.
- 4 "A Thermochemical Confirmation of the Mechanism of Action of Vitamin K" Arnett, E.M.; Dowd, P.; Flowers, R.A., II; Ham, S.W.; Naganathan, S. *J. Am. Chem. Soc.* **1992**, 114, 9209.
- 5 "Bond Cleavage Energies for Molecules and Their Associated Radical Ions" Arnett, E.M.; Flowers, R.A., II *J. Chem. Soc. Rev.*, **1993**, 22(1), 9.
- 6 "Thermochemical Investigation of the Oxygenation of Vitamin K" Flowers, R.A., II; Naganathan, S.; Dowd, P.; Arnett, E.M.; Ham, S.W. *J. Am. Chem. Soc.* **1993**, 115, 9409.
- 7 "Energetics of Formation for Conjugate Xanthylium Carbenium Ions, Carbanions and Radicals by Hydride, Proton and Electron Transfer in Solution and Their Reactions to Give Symmetrical Bixanthylium." Arnett, E.M.; Flowers, R.A., II; Meekhof, A.E.; Miller, L. *J. Am. Chem. Soc.* **1993**, 115, 12583.
- 8 "Calorimetric Measurements of the Complexation of Cyclosporin A, Ascomycin, Fujimycin, and Rapamycin with Lithium Chloride and with an Immunophilin" Seebach, D.; Bossler, H.G.; Flowers, R.A., II; Arnett, E.M. *Helv. Chim. Acta.*, **1994**, 77, 291.
- 9 "Unusual Electronic Properties of Complexes Between Coals and the Oxidants TCNQ and TCNE" Flowers II, R.A.; Gebhard, L.; Larsen, J.W.; Sanada, Y.; Sasaki, M.; Silbernagel, B.G. *Energy & Fuels*, **1994**, 8, 1524.
- 10 "Stabilities of Some 2-[p-substituted Phenyl] 4,4,5,5 Tetramethyl 1,3-Dioxolanes Relative to their Conjugate Dioxolenium Ions, Radicals and Carbanions as Determined by Thermodynamics For Hydride and Electron Transfer in Solution" Arnett, E.M.; Flowers, R.A., II; Meekhof, A.; Pourjavadi, A.; Walek, S. A. *J. Phys. Org. Chem.*, **1994**, 7, 663.
- 11 "Thermodynamics for C-H Bond-Breaking of Some Amphihydric Compounds by Transfer of Protons, Hydride Ions, H-Atoms and Electrons" Arnett, E.M.; Flowers, R.A., II; Ludwig, R.T.; Walek, S. *Pure & Appl. Chem.*, **1995**, 67, 729.
- 12 Arnett, E.M.; Flowers, R.A., II in "Coordination and Electron Transfer to Carbocations - Direct Access to Heterolysis and Homolysis Energies in Solution; Stable Carbocation Chemistry; G.K. Surya Prakash; P. von R. Schleyer, Eds.; John Wiley & Sons: N.Y. **1997**, pp 265-296.

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- 13 "Electrochemical Investigation of the Reducing Power of SmI₂ and the Effect of HMPA Cosolvent" Shabangi, M.; Flowers, R.A., II *Tetrahedron Lett.* **1997**, *38*, 1137-1140.
- 14 "Structural Rearrangement of Strained Coals" Larsen, J.W.; Flowers, R.A., II; Hall, P.J.; Carlson, G. *Energy & Fuels*, **1997**, *11*, 998-1002
- 15 "9-Aryl-Xanthenes as Prototype Amphihydric Compounds for Relating the Stabilities of Cations, Anions, and Radicals by C-H Bond Cleavage and Electron Transfer" Arnett, E.M.; Flowers, R.A.; Ludwig, R.T.; Meekhof, A.E.; Walek, S. *J. Phys. Org. Chem.*, **1997**, *10*, 499-513.
- 16 "The Effect of Lithium Bromide and Lithium Chloride on the Reactivity of SmI₂ in THF" Fuchs, J.R.; Mitchell, M.L.; Shabangi, M.; Flowers, R.A., II *Tetrahedron Lett.* **1997**, *38*, 8157-8158.
- 17 "The Effect of Cosolvent on the Reducing Power of SmI₂ in Tetrahydrofuran" Shabangi, M.; Sealy, J.M.; Fuchs, J.R.; Flowers, R.A., II *Tetrahedron Lett.* **1998** *39*, 4429-4432.
- 18 "Calorimetric Determination of the Solution Affinity of YbCl₃ for HMPA in Tetrahydrofuran" Shotwell, J.B.; Flowers, R.A., II *Tetrahedron Lett.* **1998**, *39*, 8063-8066.
- 19 "Observation of Two-Mode Binding to DNA by Bipyridyl-(ethylenediamine) platinum(II): Isothermal Titration Calorimetry and Infrared Absorption Studies" Szabo, A.; Flowers, R.A., II; Carter, B.J.; Lee, S.A. *Phys. Rev. E.* **1998**, *58*, 7754-7760.
- 20 "Structural and Thermochemical Characterization of Lipoxxygenase Catechol Complexes" Pham, C.; Jankun, J.; Skrzypczak-Jankun, E.; Flowers, R.A., II; Funk, M.O., Jr. *Biochemistry* **1998**, *51*, 17952-17957.
- 21 "The Influence of Cosolvent and Additives on the Reactivity of Samarium Diiodide" Flowers, R.A., II; Shabangi, M.; Caracoti, A.; Sealy, J.M. *Recent Research Developments in Organic Chemistry* **1999**, *3*, 141-149.
- 22 "Structure and Energetics of the Samarium Diiodide-HMPA Complex in Tetrahydrofuran" Shotwell, J.B.; Sealy, J.M.; Flowers, R.A., II *J. Org. Chem.* **1999**, *64*, 5251-5255.
- 23 "Ethylammonium Nitrate: A Protein Crystallization Reagent" Garlitz, J.A.; Summers, C.A.; Flowers, R.A., II; Borgstahl, G.E.O. *Acta Cryst. D* **1999**, *D55*, 2037-2038.
- 24 "The Mechanism of Reduction of Primary Radicals by SmI₂-HMPA" Shabangi, M.; Kuhlman, M.L.; Flowers, R.A., II *Org. Lett.* **1999**, *1*, 2133 -2135
- 25 "Highly Organized Spherical Hosts That Bind Organic Guest in Aqueous Solution with Micromolar Affinity: Microcalorimetry Studies" Piatnitski, E.L.; Deshayes, K.; Flowers, R.A., II *Chem. Eur. J.* **2000**, *6*, 999-1006.
- 26 "Electrochemical Investigation of the Solvolytic Properties of Ethylammonium Nitrate (EAN)" Shotwell, J.B.; Flowers, R.A., II *Electroanalysis* **2000**, *12*, 223-226.

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- 27 "A Highly Stable, Six-Hydrogen Bonded Molecular Duplex" Zeng, H.; Miller, R.S.; Flowers, R.A., II; Gong, B. *J. Am. Chem. Soc.* **2000**, *122*, 2635-2644.
- 28 "SmI₂-Mediated Nitrile Aldol Reaction" Caracoti, A.; Flowers, R.A., II *Tetrahedron Lett.* **2000**, *41*, 3039-3041.
- 29 "Guest and Subunit Exchange in Self-Assembled Ionophores" Cai, M.; Sidorov, V.; Lam, Y.-F.; Flowers, R.A., II; Davis, J.T. *Org. Lett.* **2000**, *2*, 1665-1668.
- 30 "Inner-Sphere vs. Outer Sphere Electron Transfer in Reactions Mediated by Samarium(II)Iodide" Miller, R.S.; Sealy, J.M.; Fuchs, J.R.; Shabangi, M.; Flowers, R.A., II *J. Am. Chem. Soc.* **2000**, *122*, 7718-7722.
- 31 "Protein Renaturation by the Liquid Organic Salt Ethylammonium Nitrate (EAN)" Summers, C.A.; Flowers, R.A., II *Protein Science* **2000**, *9*, 2001-2008.
- 32 "Aggregation State and Reducing Power of the SmI₂-DMPU Complex in Acetonitrile" Kuhlman, M.L.; Flowers, R.A., II *Tetrahedron Lett.* **2000**, *41*, 8049-8052.
- 33 "Human Rad52 Protein Has Extreme Thermal Stability" Ranatunga, W.; Jackson, D.; Flowers, R.A., II; Borgstahl, G.E.O. *Biochemistry* **2001**, *40*, 8557-8562.
- 34 "Sequence Specificity of Hydrogen-Bonded Molecular Duplexes" Zeng, H.; Ickes, H.; Flowers, R.A., II; Gong, B. *J. Org. Chem.* **2001**, *66*, 3574-3583.
- 35 "Influence of HMPA on the Reducing Power and Reactivity of SmBr₂" Knettle, B.W.; Flowers, R.A., II *Org. Lett.* **2001**, *3*, 2321-2324.
- 36 "A Non-Covalent Approach to Anti-Parallel β -Sheet Formation" Zeng, H.; Yang, X.; Flowers, R.A., II; Gong, B. *J. Am. Chem. Soc.* **2002**, *124*, 2903-2910.
- 37 "Mechanistic Study of β -Substituent Effects on the Mechanism of Ketone Reduction by SmI₂" Prasad, E.; Flowers, R.A., II *J. Am. Chem. Soc.* **2002**, *124*, 6357-6361.
- 38 "Reduction of Alkyl Halides and Ketones by SmI₂ and Sm(II)-HMPA Complexes. Rate and Mechanistic Studies" Prasad, E.; Flowers, R.A., II *J. Am. Chem. Soc.* **2002**, *124*, 6895-6899.
- 39 "Protein Micelles from Lipoxygenase 3" Brault, P.-A.; Kariapper, M.S.T.; Pham, C.V.; Flowers, R.A., II; Gunning, W.T.; Funk, M.O., Jr. *Biomacromolecules* **2002**, *3*, 649-654.
- 40 "Investigation of the [Sm{N(SiMe₃)₂}]₂ Reducing System in THF. Rate and Mechanistic Studies" Prasad, E.; Knettle, B.W.; Flowers, R.A., II *J. Am. Chem. Soc.* **2002**, *124*, 14663-14667.
- 41 "Molecular Clips that Undergo Self-Sorting and Heterochiral Aggregation" Wu, A.; Chakraborty, A.; Fettingner, J.C.; Flowers, R.A., II; Isaacs, L. *Angew. Chem.* **2002**, *41*, 4028-4030.

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- 42 "Rapid SmI₂ Mediated Reductions of Alkyl Halides and Electrochemical Properties of SmI₂/H₂O/Amine" Dahlen, A.; Hilmersson, G.; Knettle, B.W.; Flowers, R.A., II *J. Org. Chem.* **2003**, *68*, 4870-4875.
- 43 "Mechanistic Investigation of Substrate Oxidation by Ce(IV) Reagents in Acetonitrile" Zhang, Y.; Flowers, R.A., II *J. Org. Chem.* **2003**, *68*, 4560-4562.
- 44 "Solvent Dependent Chemoselectivities in Ce(IV) Mediated Oxidative Coupling Reactions" Zhang, Y.; Raines, A.J.; Flowers, R.A., II *Org. Lett.* **2003**, *5*, 2363-2365.
- 45 "Reduction and Reductive Coupling of Imines by Sm(II)-Based Reagents" Kim, M.; Knettle, B.W.; Dahlen, A.; Hilmersson, G.; Flowers, R.A., II *Tetrahedron* **2003**, *59*, 10397-10402.
- 46 "The Role of Proton Donors in SmI₂ Mediated Ketone Reduction: New Mechanistic Insights" Chopade, P.; Prasad, E.; Flowers, R.A., II *J. Am. Chem. Soc.* **2004**, *126*, 44-45.
- 47 "The Role of Ligand Displacement in Sm(II)-HMPA Based Reductions" Prasad, E.; Knettle, B.W.; Flowers, R.A., II *J. Am. Chem. Soc.* **2004**, *126*, 6891-6894.
- 48 "A Polymer-Supported Phosphoramidate as a Lewis Base-Catalyst for the Catalytic Aldol Reaction" Flowers, R.A., II; Xu, X.; Timmons, C.; Li, G. *Eur. J. Org. Chem.* **2004**, 2988-2990.
- 49 "Solvent Dependent Diastereoselectivities in Reductions of β -Hydroxyketones by SmI₂" Chopade, P.; Davis, T.A.; Prasad, E.; Flowers, R.A., II *Org. Lett.* **2004**, *6*, 2685-2688.
- 50 "Solvent Dependent Chemoselectivities in Additions of β -Carbonyl Imines to Allyl Trimethylsilane Using CTAN" Zhang, Y.; Raines, A.J.; Flowers, R.A., II *J. Org. Chem.* **2004**, *69*, 6267-6272.
- 51 "Reduction of β -hydroxyketones by SmI₂/H₂O/Amine " Davis, T.A.; Chopade, P.; Hilmersson, G.; Flowers, R.A., II *Org. Lett.* **2005**, *7*, 119-122.
- 52 "Photoinduced Electron Transfer Reactions by SmI₂ in THF: Luminescence Quenching Studies and Mechanistic Investigations." Prasad, E.; Knettle, B.W.; Flowers, R.A., II *Chem. Eur. J.* **2005**, *11*, 3105-3112.
- 53 "Exploring SmBr₂, SmI₂, and YbI₂ Mediated Reactions assisted by Microwave Irradiation" Dahlén, A.; Prasad, E.; Flowers, R.A., II; Hilmersson, G. *Chem. Eur. J.*, **2005**, *11*, 3279-3284.
- 54 "Chelation-Controlled Diastereoselective Reduction of α -Fluoroketones" Mohanta, P.K.; Davis, T.A.; Gooch, J. R.; Flowers, R.A., II *J. Am. Chem. Soc.* **2005**, *127*, 11896-11897.
- 55 "Cyclic Aromatic Oligoamides as Highly Selective Receptors for the Guanidinium Ion" Sanford, A.R.; Yuan, L.H.; Feng, W.; Yamato, K.; Flowers, R.A. II; Gong, B. *Chem. Comm.* **2005**, 4720-4722.

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- 56 "Mechanistic Impact of Water Addition to SmI₂: Consequences in the Ground and Transition State" Prasad, E.; Flowers, R.A., II *J. Am. Chem. Soc.* **2005**, *127*, 18093-18099.
- 57 "Stopped-Flow Kinetics of Tetrazine Cycloadditions: Experimental and Computational Studies Towards Sequential Transition States" Sadasivam, D.V.; Prasad, E.; Flowers, R.A., II; Birney, D.M. *J. Phys. Chem.* **2006**, *110*, 1288-1294.
- 58 "Samarium(II)-Based Reductants" Flowers, R.A., II; Prasad, E. Handbook on the Physics and Chemistry of Rare Earths, Eds. K.A. Gschneidner, Jr. J.-C.G, Bunzli, V.K. Pecharsky, Elsevier, 2006, Vol. 36, Chapter 230, pgs. 393-473.
- 59 "Mild Conversion of β -diketones to Carboxylic Acids by CAN" Zhang, Y.; Jiao, J.; Flowers, R.A., II *J. Org. Chem.* **2006**, *71*, 4516-4520.
- 60 "Mechanistic Evidence for Intermolecular Radical Carbonyl Additions Promoted by Samarium Diiodide" Hansen, A.M.; Lindsay, K.B.; Antharjanam, P.K.S.; Karaffa, J.; Daasbjerg, K.; Flowers, R.A., II; Skrydstrup, T. *J. Am. Chem. Soc.* **2006**, *128*, 9616-9617.
- 61 "A Convenient One-Pot Synthesis of Spirocyclic Pyrido[1,2-a]indole Derivatives from 3-(2-Bromoethyl)indole" Jiao, J.; Zhang, Y.; Flowers, R.A., II *Synlett*, **2006**, 3355-3357.
- 62 "Solvation Controlled Luminescence of Sm(II) Complexes" Teprovich, J.A., Jr.; Prasad, E.; Flowers, R.A., II *Angew. Chem.* **2007**, *46*, 1145-1148. **VIP paper**
63. "An Efficient and General Approach to β -Functionalized Ketones" Jiao, J.; Nguyen, L. X.; Patterson, D.R.; Flowers, R.A., II *Org. Lett.* **2007**, *9*, 1323-1326.
64. "Mechanistic Studies of Ce(IV)-mediated Oxidation of 1,3-Dicarbonyls: Solvent-Dependent Behavior of Radical Cation Intermediates" Jiao, J.; Zhang, Y.; Devery, J.J.; Xu, L.; Deng, J.; Flowers, R.A., II *J. Org. Chem.* **2007**, *72*, 5486-5492.
65. "Mechanistic Role of Proton Donor Coordination in Reactions of Samarium Diiodide" Teprovich, J.A., Jr.; Balili, M.N.; Pintauer, T.; Flowers, R.A., II *Angew. Chem.* **2007**, *46*, 8160-8163. **VIP paper**
66. "Mechanistic Studies on the Role of Cosolvents and Additives in Samarium(II)-Based Reductions" Flowers, R.A., II *Synlett* **2008**, 1427-1439. Invited Account of my work
67. "Mechanistic Study of Samarium Diiodide-HMPA Initiated 5-exo-trig Ketyl-Olefin Coupling: The Role of HMPA in Post Electron Transfer Steps" Sadasivam, D.V.; Antharjanam, P.K.S.; Prasad, E.; Flowers, R.A., II *J. Am. Chem. Soc.* **2008**, *130*, 7228-7229. **First paper to be featured as an Image Challenge on the JACS[®] website.**
68. "Generation of Sm(II) Reductants Using High Intensity Ultrasound" Teprovich, J.A., Jr.; Antharjanam, P.K.S.; Prasad, E.; Pesciotta E. N.; Flowers, R.A., II *Eur. J. Inorg. Chem.* **2008**, 5015-5019. **Article featured on the journal cover.**

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69. "Synthesis of γ -substituted Ketones via the Ce(IV)-mediated Oxidative Coupling of Cyclobutanols and Inorganic Halides" Casey, B.M.; Eakin, C.A.; Flowers, R.A., II *Tetrahedron Lett.* **2009**, *50*, 1264-1266.
70. "Ce(IV)-Based Synthesis of Tetrasubstituted Pyrazoles" Devery, J.D., III; Mohanta, P.K.; Casey, B.M.; Flowers, R.A., II *Synlett* **2009**, 1490-1494.
71. "Generation of Triarylamine Radical Cations Through Reaction of Triarylamines with Cu(II) in Acetonitrile. A Kinetic Investigation" Sreenath, K.; Suneesh, C.V.; Gopidas, K.R.; Flowers, R.A., II *J. Phys. Chem. A* **2009** *113*, 6477-6483.
72. "Solvent-Dependent Oxidative Coupling of 1-Aryl-1,3-dicarbonyls and Styrene" Casey, B.M.; Eakin, C.A.; Jiao, J.; Flowers, R.A., II *Tetrahedron* **2009**, *65*, 10762-10768.
73. "Studies on the Mechanism, Selectivity, and Synthetic Utility of Lactone Reduction Using SmI₂ and H₂O" Parmar, D.; Sadasivam, D.V.; Matsubara, H.; Bradley, P.A.; Flowers, R.A., II; Procter, D.J. *J. Am. Chem. Soc.* **2009**, *131*, 15467-15473.
74. Procter, D.J.; Flowers, R.A., II; Skrydstrup, T. *Organic Synthesis Using Samarium Diiodide: A Practical Guide*; Royal Society of Chemistry Publishing: UK, 2010. **Book**
75. "Efficient protein renaturation using tunable hemifluorinated anionic surfactants as additives" Singh, R.; Flowers, R.A., II *Chem. Commun.* **2010**, *46*, 276-278.
76. "Peripheral Site Acetylcholinesterase Inhibitors Targeting Both Inflammation and Cholinergic Dysfunction" Young, S.; Fabio, K.; Guillon, C.; Mohanta, P. Halton, T.A.; Heck, D.E.; Flowers, R.A., II; Laskin, J.D.; Heindel, N.D. *Bioorg. Med. Chem. Lett.* **2010**, *20*, 2987-2990.
77. "Selective Monovalent Cation Association and Exchange around Keplerate Polyoxometalate Macroanions in Dilute Aqueous Solution" Pigga, J.M.; Teprovich, J.A., Jr.; Flowers, R.A., II; Antonio, M.R.; Liu, T. *Langmuir* **2010**, *26*, 9449-9456.
78. "Mechanistic Complexity in Organo-SOMO Activation" Devery, J.J., III; Conrad, J.C.; MacMillan, D.W.C.; Flowers, R.A., II *Angew. Chem., Int. Ed.* **2010**, *49*, 6106-6110.
79. "Dynamic Ligand Exchange in Reactions of Samarium Diiodide" Sadasivam, D. V.; Teprovich, J.A., Jr.; Procter, D.J.; Flowers, R.A., II *Org. Lett.* **2010**, *12*, 4140-4143.
80. "Uncovering the Mechanistic Role of HMPA in the Samarium Barbier Reaction" Choquette, K.A.; Sadasivam, D.V.; Flowers, R.A., II *J. Am. Chem. Soc.* **2010**, *132*, 17396-17398.
81. "Back-Scattering Interferometry: A Versatile Platform for the Study of Free-Solution vs. Surface Immobilized Hybridization" Pesciotta, E.; Bornhop, D.J.; Flowers, R.A., II *Chemistry, As. J.* **2011**, *6*, 70-73.
82. "A convenient pathway to Sm(II)-mediated chemistry in acetonitrile" Maisano, T.A.; Tempest, K.E.; Sadasivam, D.V.; Flowers, R.A., II *Org. Biomol. Chem.* **2011**, *9*, 1714-1716.

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83. “Back-scattering interferometry: an alternative approach for the study of hydrogen bonding interactions in organic solvents” Pesciotta, E.N.; Bornhop, D.J.; Flowers, R.A., II *Org. Lett.* **2011**, *13*, 2654-2657.
84. “Catalytic Ni(II) in Reactions of SmI₂: Sm(II) or Ni(0)-Based Chemistry?” Choquette, K.A.; Sadasivam, D.V.; Flowers, R.A., II *J. Am. Chem. Soc.* **2011**, *133*, 10655-10661.
85. “On the Nature of the Oxidative Heterocoupling of Lithium Enolates” Casey, B.M.; Flowers, R. A., II *J. Am. Chem. Soc.* **2011**, *133*, 11492–11495. **Featured as an Image Challenge on the JACS[®] website**
86. “Investigation of Anticholinergic and Non-steroidal Anti-inflammatory Prodrugs which Reduce Chemically-induced Skin Inflammation” Young, S.C.; Fabio, K.M.; Huang, M.-T.; Saxena, J.; Harman, M.P.; Guillon, C.D.; Heck, D.E.; Flowers, R.A., II; Heindel, N.D.; Laskin, J.D. *J. Appl. Tox.* **2012**, *32*, 135-141.
87. “Organic Synthesis Using Samarium Diiodide” Procter, D.J.; Flowers, R.A., II; Coote, S. C.; Skrydstrup, T. in *Encyclopedia of Radicals in Chemistry, Biology and Materials*, C. Chatgililoglu and A. Studer (eds). John Wiley & Sons Ltd, Chichester, UK, pp 849-900. **2012 Book Chapter**
88. “Structure-Based Design of a Potent and Selective Inhibitor of CYP2C19” Foti, R.S.; Rock, D.A.; Han, X.; Flowers, R.A., II; Wienkers, L.C.; Wahlstrom, J.L. *J. Med. Chem.* **2012**, *55*, 1205-1214.
89. “Synthesis and Calorimetric, Spectroscopic, and Structural Characterization of Isocyanide Complexes of Trialkylaluminum and Tri-tert-butylgallium” Kingsley, N.B.; Kirschbaum; Teprovich, J.A., Jr.; Flowers, R.A., II; Mason, M.R. *Inorg. Chem.* **2012**, *51*, 2494-2502.
90. “Effect of Crown Ethers on the Ground and Excited State Reactivity of Samarium Diiodide in Acetonitrile” Maity, S.; Choquette, K.A.; Flowers, R. A., II; Prasad, E. *J. Phys. Chem. A* **2012**, *116*, 2154-2160.
91. “Catalytic atom-economical aromatic substitution via radicals” Gansäuer, A.; Fleckhaus, A.; Behlendorf, M.; von Laufenberg, D.; Sadasivam, D.V.; Flowers, R.A., II *Angew. Chem. Int. Ed.* **2012**, *51*, 4739-4742. **Designated a Hot Paper by the journal editors**
92. “Study on the coupling of acyclic esters with alkene - the synthesis of 2-(2-hydroxyalkyl)cyclopropanols *via* cascade cyclization using allylsamarium bromide” Tu, Y.; Zhou, L.; Yin, R.; Lv, X.; Flowers, R.A., II; Choquette, K.A.; Liu, H.; Wang, X. *Chem. Commun.* **2012**, *48*, 11026-11028.
93. “Back-Scattering Interferometry: An Ultrasensitive Method for the Unperturbed Detection of Acetylcholinesterase-Inhibitor Interactions” Haddad, G. L.; Young, S.C.; Heindel, N.D.; Bornhop D. J.; Flowers R. A., II *Angew. Chem. Int. Ed.* **2012**, *51*, 11126-11130.
94. “Preparation and Use of Samarium Diiodide (SmI₂) in Organic Synthesis: The Mechanistic Role of HMPA and Ni(II) Salts in the Samarium Barbier Reaction” Sadasivam, D.V.; Choquette, K.A.; Flowers, R.A., II *J. Vis. Exp.* **2013**, (72), e4323, doi:10.3791/4323.

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95. “Uncovering the Mechanism of the Ag(I)/Persulfate-Catalyzed Cross-Coupling Reaction of Arylboronic Acids and Heteroarenes” Patel, N.R.; Flowers, R.A. II *J. Am. Chem. Soc.* **2013**, *135*, 4672-4675.
96. “Mechanistic studies on the CAN-mediated intramolecular cyclization of δ -aryl- β -dicarbonyl compounds” Casey, B.M.; Sadasivam, D.V.; Flowers, R.A., II *Beil. J. Org. Chem.* **2013**, *9*, 1472-1479.
97. “Substrate-Directable Electron Transfer Reactions. Dramatic Rate Enhancement in the Chemoselective Reduction of Cyclic Esters using $\text{SmI}_2\text{-H}_2\text{O}$: Mechanism, Scope and Synthetic Utility” Szostak, M.; Spain, M.; Choquette, K.A.; Flowers, R.A., II; Procter, D.J. *J. Am. Chem. Soc.* **2013**, *135*, 15702-15705.
98. “Substituent Effects and Supramolecular Stabilization of Titanocene(III): Implications for Catalysis in Single Electron Steps” Gansäuer, A.; Kube, C.; Daasbjerg, K.; Sure, R.; Grimme, S.; Fianu, G.D.; Sadasivam, D.V.; Flowers, R.A., II *J. Am. Chem. Soc.* **2014**, *136*, 1663-1671.
99. “Sm and Yb Reagents” Choquette, K.A.; Flowers, R.A., II in *Comprehensive Organic Synthesis, 2nd Edition*; Molander, G.A., Knochel, P., Eds.; Elsevier: Oxford, **2014**; Vol. 1, pp. 279-343. **Book Chapter**
100. “Solvent-Dependent Substrate Reduction by $[\text{Sm}\{\text{N}(\text{SiMe}_3)_2\}_2(\text{THF})_2]$. An Alternative Approach for Accelerating the Rate of Substrate Reduction by $\text{Sm}(\text{II})$ ” Chiuck, T.V.; Hilmersson, G.; Flowers, R.A., II *J. Org. Chem.* **2014**, *79*, 9441-9443.
101. “Kinetic and Mechanistic Properties of *fac*-Ir(ppy)₃-catalyzed Redox Neutral Coupling of Alkyl Halides and Arenes: The Fate of the Photocatalyst” Devery, J.J. III; Douglas, J.J.; Nguyen, J.D.; Cole, K.P.; Flowers, R.A. II; Stephenson, C.R.J. *Chem. Sci.* **2015**, *6*, 537-541.
102. “Mechanistic Study of the Titanocene(III)-Catalyzed Radical Arylation of Epoxides” Gansäuer, A.; von Laufenberg, D.; Kube, C.; Dahmen, T.; Michelmann, A.; Behlendorf, M.; Sure, R.; Seddiqzai, M.; Grimme, S.; Fianu, G.D.; Sadasivam, D.V.; Flowers, R.A., II *Chem. Eur. J.* **2015**, *21*, 280-289.
103. “Expedient and Highly Diastereoselective Synthesis of 2 (2-Hydroxyethyl)bicyclo[2.1.1]hexan-1-ols via Allylsamarium Bromide-Mediated Cascade Double-cyclization” Shen, M.; Tu, Y.; Xie, G.; Niu, Q.; Mao, H.; Xie, T.; Flowers, R.A., II; Lv, X.; Wang, X. *J. Org. Chem.* **2015**, *80*, 52-61.
104. “Mechanistic Study of the Samarium Diiodide - *N,N*-dimethyl-2-aminoethanol Reducing System” Chciuk, T.V.; Boland, B.P.; Flowers, R.A., II *Tetrahedron Letters* **2015**, *56*, 3212-3215. (invited article for a special issue in honor of Professor Harry Wasserman).
105. “Titanocenium(III) Complexes for Catalysis in Single Electron Steps” Gansäuer, A.; Hildebrandt, S.; Michelmann, Dahmen, T.; von Laufenberg, D.; Fianu, G.D.; Flowers, R.A., II *Angew. Chem. Int. Ed.* **2015**, *54*, 7003-7006.
106. “The Mechanism of Silver-Catalyzed Decarboxylative Fluorination” Patel, N.R.; Flowers, R.A., II *J. Org. Chem.* **2015**, *80*, 5834-5841.

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107. "Proton Coupled Electron Transfer in Reductions of Arenes by SmI₂-Water Complexes" Chiuck, T.V.; Flowers, R.A., II *J. Am. Chem. Soc.* **2015**, *137*, 11526-11531.

108. "Tuning the Redox Properties of the Titanocene(III)/(IV)-Couple for Catalysis in Single Electron Steps" Gansauer, A.; Hildebrandt, S.; Vogelsang, E.; Flowers, R.A., II *Dalton Trans.* **2016**, *45*, 448-452. Invited Frontier article.

109. "The Role of Solvents and Additives in Reactions of Samarium Diiodide and Related Reductants" Chciuk, T.V.; Flowers, R.A., II in *Science of Synthesis*, Marek, I., Ed.; Georg Thieme Verlag KG: Stuttgart. **Book Chapter** *in press*.

110. "The Origin and Prediction of Free-Solution Interaction Studies Performed Label-Free" Bornhop, D.J.; Kammer, M.N.; Kussrow, A.; Flowers, R.A., II; Meiler, J. *Proc. Nat. Acad. Sci.* **2016**, *113*, E1595-E1604.

111. "Highly Active Titanocene Catalysts for Epoxide Hydrosilylation - Synthesis, Theory, Kinetics, EPR" Henriques, D.S.G.; Klare, S.; Zimmer, K.; Meyer, A.; Rojo-Wiechel, E.; Bauer, M.; Sure, R.; Grimme, S.; Schiemann, O.; Flowers, R.A., II; Gansauer, A. *Angew. Chem. Int. Ed.* **2016** *in press*.

112. "High Affinity Proton Donors Promote Proton-Coupled Electron-Transfer Samarium Diiodide" Chiuck, T.V.; Anderson, W.R.; Flowers, R.A., II *Angew. Chem., Int. Ed.* **2016**, *55*, 6033-6036.

113. "Free Solution Detection of Various Single Nucleotide Polymorphisms in DNA Duplexes with Backscattering Interferometry" Haddad, G. L.; Bornhop D. J.; Flowers R. A., II *Anal. Biochem.* (*manuscript in preparation*).

114. "Rare Earths in Organic Synthesis and Catalysis" Chciuk, T.V.; Flowers, R.A., II in *The Lanthanides and Actinides: Synthesis, Reactivity, Properties and Applications*, Natrajan, L., Liddle, S., Eds.; Imperial College Press: London. **Book Chapter** *in preparation*.

Invited Presentations at Professional Meetings

"Calorimetric Investigations of Biologically Relevant Reaction Mechanisms" Gordon Research Conference on Bioorganic Chemistry. June 15-20, 1997, Proctor Academy, New Hampshire.

"Inner Sphere vs. Outer Sphere Electron Transfer in Reactions of Sm(II) Reductants: Controlling the Rate and Selectivity of Free Radical Production" at Gomberg 2000: A Century of Organic Free Radical Chemistry. June 29, 2000.

"Calorimetric Studies of Molecular Recognition" North American Thermal Analysis Society Meeting, Orlando, FL October 6, 2000 (**speaker and session chair**)

"Ketone Reduction by Sm(II) Reagents. Rate and Mechanistic Studies." 16th International Conference on Physical Organic Chemistry, San Diego, CA, August 4-9, 2002.

"Thermochemical and Mechanistic Studies of Sm-Based Reductants" 5th International Conference on F Element Chemistry, Geneva, Switzerland, August 25-29, 2003.

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“Thermochemical and Mechanistic Analysis of Sm(II)-based Reductants” International Symposium on the Frontiers of Chemistry in Honor of Professor Dong H. Kim, August 20, 2004.

"Mechanistic Role of Proton Donors in SmI₂-Mediated Reactions" Gordon Research Conference on Physical Organic Chemistry. June 28, 2005, Holderness School, New Hampshire.

“Mechanistic Role of HMPA in Samarium Diiodide-Initiated Reduction of Ketones and Aldehydes” International Symposium on Organic Free Radicals, August 6, 2008, Heron Island, Australia.

“Mechanistic Study of Enamine Oxidation” 236th ACS National Meeting, August 18, 2008 **James J. Devery III**, Robert A. Flowers II

“Solvent-Dependent Oxidative Coupling of 1-Aryl-1,3-Dicarbonyls and Styrenes via Ceric Reagents” 236th ACS National Meeting, August 18, 2008 **Brian M. Casey**, Jingliang Jiao, Robert A. Flowers II

“Unexpected Mechanistic Complexity in the Reduction of Aldehydes and Ketones by SmI₂-HMPA” 236th ACS National Meeting, August 18, 2008 **Dhandapani V. Sadasivam**, Edamana Prasad, Robert A. Flowers II

“Synthesis of hybrid fluorosurfactants and their application as additives for protein renaturation” 237th ACS National Meeting, March 25, 2009 **Rajni Singh**, Robert A. Flowers, II

“Proton Donor Induced Dynamic Ligand Exchange in Reactions of Samarium Diiodide” Organic Free Radicals, Ottawa, July 28, 2009, University of Ottawa, Canada.

“Catalytic Ni(II) with SmI₂: Expanding traditional samarium chemistry” 241st ACS National Meeting, March 30, 2011 **Kimberly A Choquette**, Dhandapani V Sadasivam, Robert A Flowers II

“Follow the Thread: Unraveling the Mechanism of Single-Electron Oxidation in Important Synthetic Reactions” 5th Pacific Symposium on Radical Chemistry, September 25-28, 2011, Shirahama, Japan

“Unraveling the Mechanism of Single-Electron Oxidation and Reduction in Important Synthetic Reactions” 244th ACS National Meeting, August 19, 2012

“Unraveling the Mechanism of Single-Electron Reduction in Synthetic Reactions” Gordon Research Conference on Physical Organic Chemistry, Holderness School, Plymouth, NH June 26, 2013.

“Application of Back-Scattering Interferometry in the Study of Biomolecular Interactions and Interactions in Non-Aqueous Media” PittCon, Chicago, IL March 6, 2014.

“Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Synthetic Reactions” International Conference on Physical Organic Chemistry, Ottawa, Canada, August 14, 2014.

Robert A. Flowers II**Invited Lectures**

- 1 "Thermochemical Analysis of Biologically Relevant Reaction Mechanisms" University of Toledo, Department of Medicinal and Biological Chemistry, April 27, 1995.
- 2 "Thermochemical Analysis of Biologically Relevant Reaction Mechanisms" Shippensburg University, Department of Chemistry, September 22, 1995.
- 3 "Thermochemical Analysis of Biologically Relevant Reaction Mechanisms" Appalachian State University, Department of Chemistry, September 15, 1995.
- 4 "Thermochemical Analysis of Biologically Relevant Reaction Mechanisms" Ohio Wesleyan University, Department of Chemistry, February 19, 1996.
- 5 "Calorimetric Analysis of Biologically Relevant Reaction Mechanisms" Schering AG, Berlin, Germany. May, 1997
- 6 "Calorimetric Investigations of Biologically Relevant Reaction Mechanisms" Oakland University, Department of Chemistry and Biochemistry, October 15, 1997.
- 7 "Calorimetric Analysis of Biologically Relevant Reaction Mechanisms" Purdue, Fort Wayne, Department of Chemistry, March 4, 1998.
- 8 "Calorimetric Analysis of Biologically Relevant Reaction Mechanisms" University of Toledo, Department of Chemical Engineering, February 20, 1998.
- 9 "Calorimetric Analysis of Biologically Relevant Reaction Mechanisms" East Stroudsburg University, Department of Chemistry. February 10, 1998.
- 10 "Calorimetric Analysis of Biologically Relevant Reaction Mechanisms" Bowling Green State University, Department of Chemistry, February 4, 1998.
- 11 "Calorimetric Analysis of the Interaction of X-ray and MRI Imaging Agents with Human Serum Albumin" Schering AG, Berlin, Germany. June 8, 1998.
- 12 "Thermochemical and Mechanistic Investigation of Sm(II) Reagents" Georgetown University, Department of Chemistry, April 14, 1999.
- 13 "Physical Organic Chemistry of Divalent Lanthanides" University of Maryland, Department of Chemistry, April 15, 1999.
- 14 "Thermochemical and Mechanistic Investigation of Divalent Lanthanide Reagents" Johns Hopkins University, Department of Chemistry, April 16, 1999.
- 15 "Physical Organic Chemistry of Divalent Lanthanides" Youngstown State University, Department of Chemistry, May 7, 1999.
- 16 "Thermochemical and Mechanistic Investigation of Divalent Lanthanide Reagents" John Carrol University, Department of Chemistry, March 22, 2000.
- 17 "Thermochemical and Mechanistic Investigation of Divalent Lanthanide Reagents" Indiana State University, Department of Chemistry, March 28, 2000.

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- 18 "Intermolecular Interactions: From Organic Synthesis to Protein Folding" Boehringer Ingelheim Pharmaceuticals, Ridgefield, CT, September 7, 2000.
- 19 "Intermolecular Interactions: From Organic Synthesis to Protein Folding" Mineral Technologies, Inc. Bethlehem, PA, September 28, 2000.
- 20 "Thermochemical and Mechanistic Studies of Sm(II) Reductants" University of Missouri, St. Louis, November, 2000.
- 21 "Inner Sphere vs. Outer Sphere Electron Transfer in Reactions of Sm(II) Reductants: Controlling the Rate and Stereoselectivity of Sm(II)-Promoted Free Radical Reactions." Appalachian State University, Department of Chemistry, February 15, 2002.
- 22 "Renaturation of Proteins Using Small Molecule Chaperones. A Novel Strategy for Protein Refolding and Renaturation." Pfizer - Ann Arbor, Discovery Technologies, April 16, 2002.
- 23 "Inner Sphere vs. Outer Sphere Electron Transfer in Reactions of Sm(II) Reductants: Controlling the Rate and Stereoselectivity of Sm(II)-Promoted Free Radical Reactions." Pfizer - Ann Arbor, Discovery Technologies, April 16, 2002.
- 24 "Mechanistic Analysis of Sm-Based Reductants" Texas Christian University, Department of Chemistry, September 26, 2002.
- 25 "Mechanistic Analysis of Sm-Based Reductants" University of North Texas, Department of Chemistry, September 27, 2002.
- 26 "Mechanistic Analysis of Sm-Based Reductants" Lehigh University, Department of Chemistry, October 17, 2002.
- 27 "Thermochemical and Mechanistic Studies of Sm-Based Reductants" Göteborg University, Sweden, September 1, 2003.
- 28 "Thermochemical and Mechanistic Studies of Sm(II)-Based Reductants" University of Texas, Arlington, November 14, 2003.
- 29 "Fluorous Surfactants. A Novel Approach to Protein Renaturation" Pfizer - Ann Arbor, Discovery Technologies, December 2, 2003.
- 30 "Thermochemical and Mechanistic Studies of Sm-Based Reductants" University of Arkansas, Department of Chemistry, March 19, 2004.
- 31 "Thermochemical and Mechanistic Studies of Sm(II)-Based Reductants" Korean Advanced Institute of Science and Technology (KAIST), Department of Chemistry, August 24, 2004.
- 32 "Thermochemical and Mechanistic Studies of Sm(II)-Based Reductants" Hongyang University, Seoul, South Korea Department of Chemistry, August 25, 2004.

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- 33 "Mechanistic Studies of Sm(II)-Based Reductants" University of Kentucky, Department of Chemistry and Department of Pharmaceutical Sciences, February 25, 2005.
- 34 "Mechanistic Studies of Sm-Based Reductants" Department of Chemistry & Biochemistry, Duquesne University, October 14, 2005.
- 35 "Mechanistic Analysis of Sm(II)-Based Reductants" Department of Chemistry, University of Toledo, November 9, 2005.
- 36 "Mechanistic Analysis of Sm(II)-Based Reductants" Department of Chemistry, Lycoming College, March 10, 2006.
- 37 "Mechanistic Studies of Sm-Based Reductants" Department of Chemistry, Virginia Commonwealth University, March 23, 2006.
- 38 "Mechanistic Studies of Sm-Based Reductants" Department of Chemistry, Vanderbilt University, April 24, 2006.
- 39 "Renaturation of Proteins Using Small Molecule Chaperones. A Novel Strategy for Protein Refolding and Renaturation" Department of Chemistry, University of Toledo, July 11, 2006.
40. "Mechanistic Studies of Lanthanide-Based Reactions" Department of Chemistry, Wake Forest University, September 5, 2007.
41. "Mechanistic Studies of Lanthanide-Based Reactions" Department of Chemistry, Indian Institute of Technology, Madras, October 9, 2007.
42. "Mechanistic Studies of Lanthanide-Based Reactions" National Institute of Interdisciplinary Science and Technology, Trivandrum, India, October 10, 2007.
43. "Intermolecular Interactions: From Mechanistic Organic Chemistry to Protein Renaturation" Department of Biochemistry, University of Rochester, April 18, 2008.
44. "Mechanistic Role of Additives in Reactions of Samarium Diiodide" Department of Chemistry, Idaho State University, October 24, 2008.
45. "Wet Chemistry: The Mechanistic Role of Water (and other additives) in Lanthanide-Based Reductions and Oxidations" School of Chemistry, University of Birmingham, UK, February 17, 2010.
46. "Wet Chemistry: The Mechanistic Role of Water (and other additives) in Lanthanide-Based Reductions and Oxidations" Kekulé Institute for Organic Chemistry and Biochemistry, University of Bonn, Germany, February 24, 2010.
47. "Wet Chemistry: The Mechanistic Role of Water (and other additives) in Lanthanide-Based Reductions and Oxidations" School of Chemistry, University of Manchester, UK, March 9, 2010.

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48. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" Department of Chemistry, University of California, Los Angeles, April 7, 2011.
49. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" Department of Chemistry, University of California, Santa Barbara, April 8, 2011.
50. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" Department of Chemistry, University of California, Santa Cruz, April 11, 2011.
51. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" Department of Chemistry, University of California, Davis, April 13, 2011.
52. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" Department of Chemistry, University of Pennsylvania, November 14, 2011.
53. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" Research School of Chemistry, Australian National University, May 17, 2012.
54. "Uncovering the Mechanism of the Silver(I)/Persulfate Catalyzed Cross-Coupling of Arylboronic Acids with Heteroarenes" Research School of Chemistry, Australian National University, May 18, 2012.
55. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" School of Chemistry, University of Tasmania, May 21, 2012.
56. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" School of Chemistry, University of Melbourne, May 22, 2012.
57. "Give or Take an Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions" School of Chemistry, University of Sydney, May 23, 2012.
58. "Follow the Thread: Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Important Synthetic Reactions" Department of Chemistry, Boston University, November 12, 2012.
59. "Follow the Thread: Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Important Synthetic Reactions" Department of Chemistry, Georgetown University, February 28, 2013.
60. "Follow the Thread: Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Important Synthetic Reactions" Philadelphia Organic Chemists Club, March 28, 2013.

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61. “Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Synthetic Reactions” Department of Chemistry, Ben Gurion University, Israel, April 21, 2013.
62. “Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Synthetic Reactions” Department of Chemistry, Bar-Ilan University, Israel, April 25, 2013.
63. “Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Synthetic Reactions” Department of Chemistry, Technion University, Israel, April 29, 2013.
64. “Unraveling the Mechanism of Single-Electron Reduction and Oxidation in Synthetic Reactions” Department of Chemistry, Hebrew University of Jerusalem, Israel, May 1, 2013.
65. “Unraveling the Mechanism of Single-Electron Reduction in Synthetic Reactions” Department of Chemistry, Washington College, October 24, 2013.
66. “Give or Take and Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions” Department of Chemistry, University of Michigan, October 15, 2014.
67. “Give or Take and Electron. Mechanistic Studies of Single Electron Transfer in Synthetically Important Reactions” Department of Chemistry, Wayne State University, October 16, 2014.
68. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Shanghai Institute of Organic Chemistry, April 9, 2015.
69. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Department of chemistry, Hangzhou University, April 13, 2015.
70. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Department of Chemistry, Beijing University, April 15, 2015.
71. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Department of Chemistry, Tsinghua University, April 16, 2015.
72. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Department of Chemistry, Messiah College, October 30, 2015.
73. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Department of Chemistry, Air Force Academy, November 13, 2015.
74. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Department of Chemistry, Lebanon Valley College, March 15, 2016
75. “Unravelling the Mechanism of Single-Electron Transfer in Synthetic Reactions” Department of Chemistry, Loyola University, Chicago, April 21, 2016.

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Current Students and Post-Docs

Graduate Students

Caroline Bartulovich (Ph.D. student)

Gabrielle Haddad (Ph.D. student)

Godfred Fianu (Ph. D. student)

Tesia Chciuk (Ph.D. student)

Andrew Reigel (Ph.D. student)

Research Scientists

Dr. Matthew McLaughlin

Dr. Larry Courtney

Undergraduate Students

Daniel Enny (B.S. student)

Anna Li (B.S. student)

Kayla Lash (B. S. student)