

Edward P. Zovinka

Department of Chemistry
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Education:

Ph.D., Chemistry, University of California, Davis 12/92
Dissertation: *Structure and Oxidation of Metal Oxophlorin Complexes and Chromium Porphyrins*.
Advisor: Alan L. Balch
Bachelor of Science, Chemistry, *cum laude*, Roanoke College, Salem, VA 5/87

Administrative Experience:

Saint Francis University Science Building Shepherd, 2011-2013
Director, Rural Outreach Chemistry for Kids (ROCK): 1995-present
Chair, Department of Chemistry, Mathematics, & Physical Science, 2003-2005
Acting Chair, Department of Chemistry, Mathematics, & Physical Science, 2002-2003
Chemistry Coordinator, 2000-2002

Outreach Service:

ROCK: Developer and Director of Rural Outreach Chemistry for Kids (R.O.C.K.) program. It is an outreach program, initiated in 1995, focusing on hands-on activities for K-12 students.
Totals from 1995-present: K-12 students reached: >75,000

ROLL: Co-developer (with Dr. Rose Clark), a equipment loan program to high schools. Equipment available for loan include: AFM, Mini-GCs, Visible Spectrometers, electrochemical apparatus, portable NMR

Co-author of SFU Title II part B - Math and Science Partnerships Program (2004-2007) which resulted in 4 different three-year grant projects awarded to local Intermediate Unit and Saint Francis University. SFU faculty collaborate with K-12 educators from 4 surrounding counties to further integrate science content. The project morphed over the grant periods, with activities including site visits to K-12 by faculty to leading workshops to the K-12 educators on specific projects.

Team Member & Community Partner with Penn Highlands Community College for PAsmart Advancing Grant, "Southern Alleghenies STEM Ecosystem"

Teaching Experience:

Professor of Chemistry, Saint Francis University 8/04-present
Associate Professor of Chemistry, Saint Francis University 8/98-8/04
Assistant Professor of Chemistry, Saint Francis College 8/94-8/98

Lecturer, North Carolina State University 7/94-8/94
Chemistry 315 - Taught analytical chemistry to chemistry and engineering majors.

Visiting Assistant Professor, Davidson College 1/94-5/94
Chemistry 105 - Instructed a non-science major class involving an introduction to the fundamentals of chemistry as well as practical aspects

Chancellor's Teaching Fellow, University of California Davis Chemistry 2A 9/92-12/92
Lectured to 400 freshman in the first course of the general chemistry sequence.

Research:**Research Interests:**

1. Green Chemistry, including the reduced use of solvents in synthesis and mechanochemistry
2. Science of Art w/ current focus: Paint Pouring
3. Analysis of reaction of aluminum ions at low pH on calcite surface using AFM

Research Experience:**Sabbatical Researcher,** Yale University 1/18-5/18:

Studied low valent iron organometallic complexes Preceptor: Pat Holland

Sabbatical Researcher, Carnegie-Mellon University 1/09-5/09:

Studied the FeTAML initiated degradation of Prozac & metallation kinetics of cobalt TAMLs Preceptor: Terry Collins

Sabbatical Researcher, Pennsylvania State University 1/02-7/02

Synthesized and characterized a model for Heme P460, a novel 2 electron oxidant that is in the enzyme Hydroxylamine oxidoreductase of *Nitrosomonas europaea*. The enzyme catalyzes the conversion of Hydroxylamine to nitrite. Preceptor: Richard Koerner

Visiting Summer Researcher, Pennsylvania State University 5/95-8/95

Studied Class B β -lactamase metalloenzyme from *Bacteroides fragilis* to determine structure, reactivity, and kinetics with various substrates. Preceptor: Steven J. Benkovic

Postdoctoral Fellow, North Carolina State University 1/93-5/94

Prepared tetradentate ligands containing pyridine, amide, imine, and phenolate moieties in various groupings. Ligated vanadium to these ligands to determine the amide contribution to the ESR spectroscopic signature. Extended these results to examine vanadium interactions with the N-terminal of serum albumin and protein peptide phosphatase. Advisor: Charles R. Cornman

Graduate Study, University of California, Davis 9/88-12-92

Developed the coordination chemistry of several metal oxophlorins (Zn, Ni, Fe, Ga) in order to understand the role of the ligand in oxidative heme cleavage. Structurally and spectroscopically identified the radical and protonated species of Zn and Ni. Characterized the five coordinate iron oxophlorin dimer, acid and base cleavage products, and the oxidative products. Used ^2H NMR to investigate chromium porphyrins. Advisor: Alan L. Balch

Summer Intern:, Argonne National Laboratory 6/86-8/86

Examined the effect of ozone stress on the plant mass, photosynthetic capacity, and production of soybeans. Advisors: Lance Kress and Patricia Irving

Major Grants & Foundation Awards:

- \$3,300 Awarded Council on Undergraduate Research Summer Opportunities for Research (CURSOR) Grant to support Jennifer Ropp (Jr. Chem. major) for summer of undergraduate research-1996.
- \$20,000 ACS-PRF, funded 5/97-12/99, "Multiply Functionalized Metallocenes"
- \$2,250 ACS-Project SEED (with Dr. Marlon O. Rhem) for Summer Research Experience for Economically Disadvantaged High School students-1997
- \$5,000 College Grant of Spectroscopy Society of Pittsburgh (w/ Dr. Marlon Rhem) for purchase of Fluorometer-1997
- \$6,000 Pittsburgh Conference Memorial National College Grant (w/ Dr. Marlon O. Rhem) for purchase of High Performance Liquid Chromatograph (HPLC) 1997

\$4,000 Pittsburgh Conference for Rural Outreach Chemistry for Kids (R.O.C.K.) – 1997
\$5,000 ACS-PRF Summer Faculty Research Fellowship-1998
\$17,000 Chevrolet Venture from Mark Thomas Chevrolet for Rural Outreach Chemistry for Kids (ROCK)– 1999
\$5000 from Spectroscopy Society of Pittsburgh toward an NMR consortium
(with Dr. Rose Clark & Dr. Pedro Muiño) - 2000
\$5,000 from the Association of Independent Colleges and Universities of Pennsylvania (AICUP)
toward Rural Outreach Chemistry for Kids (ROCK) - 2000
\$4,500 from the Society for Analytical Chemists of Pittsburgh (SACP)
toward Rural Outreach Chemistry for Kids (ROCK) - 2000
\$200,000 from the National Science Foundation (NSF) toward the development and
implementation of a Web Accesible Single Crystal X-Ray Diffractometer for
Undergraduate Instruction at a Consortium of Predominately Undergraduate Institutions
co-PI with Dr. Allan Hunter (PI) of Youngstown State University and others 2001-2004
\$6,258 from the Pennsylvania and West Virginia Campus Compacts for to undertake a formal
assessment of the Effects of Service Learning on Education (with Mark Lynch of Social
Work Department)-2001-2002
\$4,500 from the Society for Analytical Chemists of Pittsburgh (SACP)
toward Rural Outreach Chemistry for Kids (ROCK) - 2003
\$995 awarded to Christopher Yeisley and Edward Zovinka for a Sigma Xi Undergraduate
Research Grant to initiate electrochemical research on a HAO model compound-2004
\$1,000,000 Member, TEAMS: No Child Left Behind Planning Committee, grant awarded in part
to Saint Francis University, 2004-2005
\$53,016 co-PI on *“Integration of Gas Chromatography/Mass Spectrometry Problem-Based
Laboratories into a Newly Revised Undergraduate Chemistry Curriculum”*
R.A. Clark PI and Balazs Hargittai, Pedro L. Muiño CoPIs NSF-DUE-CCLI-A&I #
0410147, 9/1/04-9/1/06
\$6,000 awarded from the Spectroscopy Society of Pittsburgh for the purchase of a Perkin-Elmer
Lambda 25 UV-Vis Spectrophotometer, \$6,393 match from SFU, 2005
\$4500 from Society for Analytical Chemists of Pittsburgh (SACP) for ROCK program, 2005
\$498,406 PI on “STEM the Flow: Connecting Undergraduates with Applied Sciences” RA
Clark, B Hargittai, L Loya, & S Reimer coPI's. NSF-DUE-0525440, (1/06-12/10)
\$95,000 “Building Model Compounds of the heme P460 found in Hydroxylamine
oxidoreductase” NSF-CHE-0718749 (7/1/07-7/1/10)
\$7500 from Society for Analytical Chemists of Pittsburgh (SACP) for ROCK program, 2007
\$94,920.00 “Educating Green Chemists through Cross-Curricular Incorporation of Microwave
Synthesis Methods and Ion Chromatography, NSF-DUE-0737268 (7/08-7/10)
\$6,000 awarded from the Buhl Foundation (as part of \$10,000 total award)
with Allison Felix & John Harris, 2009
\$68,000 toward a 90MHz Anasazi NMR from the Alden Trust (w/ B. Hargittai, & M. Hargittai),
2010
\$7500 from Society for Analytical Chemists of Pittsburgh (SACP) for ROCK program, 2010
\$10,100 from Buhl Foundation for Rural Outreach Learning Laboratory (ROLL),
with R.A. Clark and A. Felix) 2010
\$30,000 from Columbia Pipeline Group for ROCK, 2013
\$7500 from from Society for Analytical Chemists of Pittsburgh (SACP) for ROCK, 2014
\$7500 from Society for Analytical Chemists of Pittsburgh (SACP) for ROCK, 2015
\$21,455 from Thomas Automotive Family (2014 Honda Odyssey) for ROCK
\$83,181 NSF (1919589) MRI: Acquisition of AFM to Enhance Surface Science and
nanochemistry @ SFU
\$20,000 Divine Mercy Catholic Academy Science Inquiry Professional Development, 2020

Professional Organizations:

Member of the American Chemical Society
 ACS National Meetings & Exposition Committee, 2019-2021
 ACS Pittsburgh Section Travel Grants Committee, 2017-
 ACS Pittsburgh Section "On the Road" Chair, 2019-
 ACS Pittsburgh Section Chair Elect, 2022
 ACS Pittsburgh Councilor, 2018-2021
 Member of Project Kaleidoscope, Class of 1995
 Spectroscopy Society of Pittsburgh
 Executive Board, Secretary 2019-2020, Chair-elect 2022
 The Pittsburgh Conference
 Conference Committee, 2020 - present
 Pittcon Program Chair Elect, 2022, Chair 2023 (Philadelphia)

Community/Professional Service/Development

Faculty Advisor of Saint Francis Chemistry Club-re-Started club in 1994,
 ACS "Commendable Chapter" award 1996-1997, 1997-1998, 1998-1999, 2000-2018
 ACS "Outstanding Chapter" award: 2019-2021,
 ACS "Green chemistry" chapter Award: 2016-2020
 Board of Trustees "A Quaint Corner Children's Museum & Discovery Center",
 Altoona PA, 2018-present
 Head Referee, FIRST LEGO League PA SW/Central Championship, 2013-2020

University Committees:

| <u>Committee</u> | <u>Dates of Service</u> | <u>Role/Responsibility</u> |
|---|-----------------------------------|----------------------------|
| Salary & Benefits Committee | 2012-2014, 2017-2020 2021-2023 | |
| Promotion Committee | 2008, 2009 | |
| Athletics Advisory Board | 2008, 2010-2014, 2015-2018 | FAR , 2011-2014 |
| Faculty Senate | 1996-1999, 2007-2010 | Senator |
| Faculty Affairs Committee | 1995-1998 | |
| General Education Committee | 1998-2002 | |
| Curriculum Committee | 2000-2003, 2019-2022 | |
| Safety Committee | 1996- 2012 | |
| Committee on Committees | 1997-1999 | |
| Curriculum | 2000-2003 | |
| Science & Technology Center | 2000-2001 | |
| INFONET Information Resources Management Subcommittee | 1996-1997 | |
| Organized Undergraduate Research Discussion Group (URDG) Distributed ~\$2500/year for undergraduate research through a coordinated, competitive grant process. Money obtained from Academic Affairs and AHEC. Active from 1997-2001. | | |
| Instrument Maintenance | 1994-present | |
| Recruiting | 1996-present | |

Awards and Honors:

Bittle Scholar-1983-1987
Analytical Chemistry Award-1986
American Institute of Chemists Student Award-1987
Senior Scholar-1987
Chlorox Graduate Assistant Teaching Award-1990
Chancellor's Teaching Fellow-1992
Project Kaleidoscope (PKAL)-1995-present
Council for Advancement and Support of Education *1997 Pennsylvania Professor the Year*
Swatsworth Faculty Award – 1997, Finalist – 2003, 2007, 2008, 2010, 2012, 2014, 2015
Nominated for Distinguished Faculty Award given by Saint Francis Alumni Association - 1999
CERMUSA Distance Learning Fellow – 1998-1999
Nominated for Saint Francis Honor Society Distinguished Faculty Award-2000, 2001, 2003, 2004, 2005, 2006, 2007, 2015, 2016, 2017, 2022
“Honorable Mention” from the Carnegie Science Center Awards for Excellence in the University/Post-secondary Educator category 2007
Student Government Association Outstanding Educator Award – 2010
J. Kevin Scanlon Award for the Promotion of Science, Spectroscopy Society of Pittsburgh -2015
SFU “*Become that Someone*” Community Engagement Award Nominee – 2018
Roanoke College Maroon Spotlight (Science) – 2018
Francis the Builder Award, SFU - 2019

Public Features:

2008: Zovinka, Edward P. "ROCK Program Rolls into Schools." The Tribune-Democrat 27 January 2008: E9.
2015: <https://vimeo.com/118827736> for the TV show Kaleidoscope: The Series Episode 207 “ROCK ‘n’ Roller
2016: <http://www.wearecentralpa.com/news/students-treated-to-special-science-class> featured by WTAJ TV, Sept 30
2019: featured on WTAJ-TV, April 23 on community engagement class (CHEM 401)
<https://www.wearecentralpa.com/news/students-help-young-boy-overcome-disabilities/1947936886> & (4/28/19) Johnstown Tribune-Democrat Newspaper, https://www.tribdem.com/news/st-francis-students-collaborate-to-help-blind-deaf--year/article_81ee600e-695e-11e9-bc21-c308fc7c6baa.html
2019: SFU Community Engagement Spotlight on Wastewater Treatment Signs: <https://www.youtube.com/watch?v=W3NbDiIdTU4&feature=youtu.be>
2021: Roanoke College Magazine <https://www.roanoke.edu/magazine>

Popular Books:

Zovinka, Edward P. **Real Chemistry Experiments: 40 Exciting STEAM Activities for Kids**. Rockridge Press, 2019 (ISBN 978-1-64152-684-5), available on Amazon.
“Air Force” Experiment featured on Science with Shields, “<https://www.wearecentralpa.com/wtaj-plus/science-with-shields/science-with-shields-episode-27-air-pressure/>” April 2020
Experiment featured on Science with Shields, <https://www.wearecentralpa.com/wtaj-plus/science-with-shields-episode-46-iron-cereal/> August 2020.

Clark, Rose A. & Zovinka, Edward P. **A Kid’s Guide to the Periodic Table. Everything you need to Know about the Elements**. Rockridge Press, 2020 (ISBN 978-1-64611-689-8), available on Amazon July 21, 2020

Patents:

Acid Mine Drainage Remediation: Aluminum Chelation Using Functional Graphenic Materials” filed with the USPTO on June 5, 2020. This PPA has been assigned No. 63/035054. International Patent Application No. PCT/US21/35901, 6/4/2021, Inventors: Anne Arnold, Michelle Karpinsky, Stefanie Sydlik, Edward P. Zovinka

Research & Education Journal Publications:

Papers(* denotes undergraduate author at SFU)

35. Smith, A.M.; Zovinka, E.P. “Green Chemistry Teaching and Research at a Small, Catholic University” submitted to Green Chemistry and U.N. Sustainable Development Goals, Vol. 9, Kosmas, S. and Benvenuto, M.(eds.) De Gruyter, *submitted* 5/27/21.

34. Zoe M. Wright, Avanti M. Pandit, Michelle M. Karpinsky*, Brian D. Holt, Stefanie A. Sydlik, Edward P. Zovinka Bioactive, Ion-releasing PMMA Bone Cement Filled with Functional Graphenic Materials, *Adv. Healthcare Mater.* **2020**, 2001189. Online 12/16/2020 <https://doi.org/10.1002/adhm.20200189>.

33. Michelle M. Karpinsky*, Anne M. Arnold, Jaejung Lee, Genell Jasper*, Michael R. Bockstaller, Stefanie A. Sydlik, Edward P. Zovinka Acid Mine Drainage Remediation: Aluminum Chelation Using Functional Graphenic Materials, *ACS Applied Materials & Interfaces*, **2020**, 12, 29, 32642-32648 (Energy, Environmental, and Catalysis Applications) DOI: 10.1021/acsami.0c06958

32. MacLeod, K. C.; DiMucci, I; Zovinka, E.P.; McWilliams, S. F.; Mercado, B.Q.; Lancaster, K.M.; Holland, P.L.; Masked Radicals: Iron Complexes of Trityl, Benzophenone, and Phenylacetylene *Organometallics*, **2019**, 38, 21, 4224-4232. <https://doi.org/10.1021/acs.organomet.9b00534>

Reports the 1st iron organometallic complex with an elongated Fe–C bond, which is easily broken by neutral π -acceptor ligands to generate the triphenylmethyl radical. The formally Fe^I complexes are more consistent with an Fe^{II} center in which doubly occupied frontier molecular orbitals are shared by the iron and π -acceptor ligands, with the unpaired electrons residing on the metal. (Part of Sean McWilliams 2020 Inorganic Young Investigator Award)

31. Clark, R.A.; Schorr, H.*; Zovinka, E.P. “Fundraising to Keep the SFU Chemistry Club Active and Engaged” in ACS Books Symposium Series "Building and Maintaining Award-Winning ACS Student Members”, Mio, M.J. and Benvenuto, M.(eds.) Vol 3. *ACS Symposium Series*, “Building and Maintaining Award-Winning ACS Student Member Chapters Volume 3 **Dec 14, 2018** 10.1021/bk-2018-1278 *ACS Symposium Series*, Vol. 1278, Chapter 8, pp 97–105

30. Clark, R.A.; Fry, C.M.*, Mosier, D.R.*; Zovinka, E.P. “Using Community Service Activities to Invigorate the SFU Chemistry Club” in *ACS Books Symposium Series* "Building and Maintaining Award-Winning ACS Student Member Chapters”, Mio, M.J. and Benvenuto, M.(eds.) **October 5, 2016** DOI 10.1021/bk-2016-1230.ch009. *ACS Symposium Series*, Vol. 1230, Chapter 9, pp 95–108

29. Fry, C.M*; Mosier, D.R.*; Zovinka, E.P. Saint Francis University Chemistry Club: Learning to be Green *The Nexus*, (<http://www.acs.org/content/acs/en/greenchemistry/the-nexus-newsletter-blog.html>) October 22, **2015**

28. Clark, R.A.; Stock, A.E.*; Zovinka, E.P. “Metalloporphyrins as Oxidation Catalysts of Organic Substrates Comprehensive Organic Chemistry Experiments for the Laboratory Classroom (COCELC); Afonso, C., Ed.; Royal Society of Chemistry: Cambridge, **2016**.

27. Spellman Jr., C.*; Carvajal, S.*; Weyant, C.J.*; Krug, J.P.*; Krupa, R.C.*; Wolfe, D.*; Li, Y.; Zovinka, E.P.; Rose, A.; Strosnider, W. Research, Teaching and Service with Open Limestone Channels and Undergraduates in the Allegheny Highlands Reclamation Matters, Spring **2015**, 28-31.
26. Arnold, A.M.*; Kwak, D.J.*; Löfgren, L.E.*; Walters, B.M.*; Wilt, A.L.*; Woldemeskel, S.A.*; Zovinka, E.P. Microwaving Metals: Inserting Metals into Porphyrin Ligands using Microwave Methods *The Chemical Educator*, **2014**, 19, 296-298.
25. Horner* A. R., Clark; R.A. , LoRusso; S. M., and Zovinka E. P. "Measuring Potassium in Muscle Tissue Utilizing an Atomic Absorption Spectrometer Validation of an Adaptation for a Whole-body Potassium Counting Method" *American Journal of Undergraduate Research*, December **2012** (vol. 11, no. 3&4), pp.1-8.
24. Rosmus, T.*; Minor, J.*; Zovinka, E.P. "Science R.O.C.K.s at Saint Francis University and Soon will ROLL, *InChemistry* Apr/May **2012**, pp. 19-23.
23. Clark, R.A.; Stock, A.E.*; Zovinka, E.P. "Metalloporphyrins as Oxidation Catalysts: Moving Toward "Greener" Chemistry in the Inorganic Chemistry Laboratory" *J. Chem. Educ.*, **2012**, 89 (2), 271-275. <http://dx.doi.org/10.1021/ed100609f>
22. Stock, A.*; Zovinka, E.P. "Microwaves: Green Machines for Green Chemistry?" *J. Chem. Ed.* **2010**, 87, 350-352. <https://doi.org/10.1021/ed800150e>
21. Felix, A.; Zovinka, E.P. "One STEP: Enhancing Student Retention Through Early Introduction of Research for STEM Majors", *CUR Quarterly*, **2008**, 29, 42-47.
20. Conrad, D.*; DeCoskey, J.*; Mock, S.*; Petrovic, J.*; Noll, B.C.; Zovinka, E.P. "Zinc Tetra(2,6-dimethoxyphenyl)porphyrin", *Acta Cryst* (2007). E**63**, m3058.
19. Conrad, D.*; DeCoskey, J.*; Yeisley, C.*; Zeller, M.; Hunter, A.D.; Zovinka, E.P. "Nickel Tetra(2,6-dimethoxyphenyl)porphyrin" *Acta Cryst* (2007). E**63**, m2824.
18. Lynch, M.T.; Zovinka, E.P.; Zhang, L.; Hruska, J.L.*; Lee, A.M.* "Rural Outreach Chemistry for Kids (ROCK): The Program and Its Evaluation" *Journal of Higher Education Outreach and Engagement*, **2005**, 10, 125-141.
17. Solomon, D.*; Bopp J.*; O'Donnell, L.*; Petrovic, J.*; Snavey, R.*; Zovinka, E.P. "Using Campus Radon Testing as a Freshman Colloquium" *The Chemical Educator* 8 (**2003**) 1, 37-40 DOI 10.1333/s00897030649a
16. Sunseri, D.R.*; Zovinka, E.P. "Photochemotherapy: Light Dependent Therapies in Medicine" *J. Chem. Ed.*, **2002**, 79, 1331-1335.
15. Gryshuk, A.L.*; Cox, D.⁺; Howard, R.J.*; Maelia, L.E.; Zovinka, E.P. "The Synthesis of Thiaporphyrins as Possible Photodynamic Cancer Therapy Agents" Essay #28 in Graduate Admissions Essays, 2nd Ed. by D. Asher, Ten Speed Press: Toronto, **2000**, 205-214. (⁺ Project SEED Student)
14. Cornman, C.R.; Zovinka, E.P.; Boyajian, Y.D.; Olmstead, M.M. Noll, B.C. Synthesis and Structure of a Vanadium (IV)-amide metallacyclic complex *Inorganica Chimica Acta*, **1999**, 285, 134-137.
13. Howard, R.J.*; Ropp, J.A.*; Wasil, C.*; Zovinka, E.P. Rural Outreach Chemistry for Kids (R.O.C.K.) A Service Project to Involve More than Chemistry Majors in a Chemistry Club" *The Chemical Educator* [Online] **1997**, 2, 3, S1430-4171(97)03130-2 DOI 10.1007/s00897970122a

12. Balch, A.L.; Koerner, R.; Latos-Grazynski, L.; Lewis, J.E.; St. Claire, T.N.; Zovinka, E.P. Coupled Oxidation of Heme without Pyridine. Formation of Cyano Complexes of Iron Oxophlorin and 5-Oxaporphyrin (Verdoheme) from Octaethylheme *Inorg. Chem.* **1997**, *36*, 3892-3897.
11. Crowder, M.; Wang, Z.; Franklin, S.L.; Zovinka, E.P.; Benkovic, S.J.; Characterization of the Metal-binding Site of β -Lactamase from *Bacteroides fragilis* *Biochemistry* **1996**, *35*, 12126-12132. (work performed summer of 1995- first summer at SFU)
10. Cornman, C.R.; Zovinka, E.P., Meixner, M.H. Vanadium Complexes of the Active-Site Peptide of Protein Tyrosine Phosphatase 1B: $V^{IV}O(VHCSAG-NH_2)_n$ *Inorg. Chem.* **1995**, *34*, 5099-5100.
9. Cornman, C.R.; Zovinka, E.P. Chpt 14 "Mechanistic Aspects of the Chemistry of N-Alkyl Porphyrins" in Mechanistic Bioinorganic Chemistry ACS Advances in Chemistry Series #246, Thorp, H.H. and Pecoraro, V.L.(eds.) **1995**, 373-403.
8. Cornman, C.R.; Zovinka, E.P.; Boyajian, Y.D.; Geiser-Bush, K.M.; Boyle, P.; Singh, P Structural and EPR Studies of Vanadium Complexes of Deprotonated Amide Ligands: Effects on the ^{51}V Nuclear Coupling Constant *Inorg. Chem.* **1995**, *34*, 4213-4219.
7. Balch, A.L.; Latos-Grazynski, L.; Noll, B.C.; Szterenber, L.; Zovinka, E.P. The Chemistry of Iron Oxophlorins II. Oxidation of Iron(III) Octaethyloxophlorin Dimer and Observation of Stepwise, Two Electron Oxidation of the Oxophlorin Macrocycle *J. Am. Chem. Soc.* **1993**, *115*, 11846-11854.
6. Balch, A.L.; Noll, B.C.; Phillips, S.L.; Reid, S.M.; Zovinka, E.P. Structural Characterization of Nickel (II) Complexes of Octaethyloxophlorin Dianion and Octaethyloxophlorin Radical Dianion *Inorg. Chem.* **1993**, *32*, 4730-4736.
5. Balch, A.L.; Noll, B.C.; Reid, S.M.; Zovinka, E.P. Coordination Patterns for Oxophlorin Ligands: Pyridine Induced Cleavage of Dimeric Manganese(III) and Iron(III) Octaethyloxophlorin Complexes *Inorg. Chem.* **1993**, *32*, 2610-2611.
4. Balch, A.L.; Noll, B.C.; Reid, S.M.; Zovinka, E.P. Carbon-Carbon Bond Formation in the Dimerization of Nickel(II)(Octaethyloxophlorin Radical) *J. Am. Chem. Soc.* **1993**, *115*, 2531-2532.
3. Balch, A.L.; Latos-Grazynski, L.; Noll, B.C.; Olmstead, M.M.; Zovinka, E.P. The Chemistry of Iron Oxophorins, I. 1H NMR and Structural Studies of Five Coordinate Iron (III) Complexes *Inorg. Chem.* **1992**, *31*, 2248-2255.
2. Balch, A.L.; Noll, B.C.; Zovinka, E.P. Structural Characterization of Zinc(II) Complexes of Octaethyloxophlorin Dianion and Octaethyloxophlorin Radical Dianion *J. Am. Chem. Soc.* **1992**, *114*, 3380-3385.
1. Balch, A.L.; Latos-Grazynski, L.; Noll, B.C.; Olmstead, M.M.; Zovinka, E.P. Geometric and Electronic Structure of Paramagnetic Tetra(aryl)porphyrin Complexes of Chromium *Inorg. Chem* **1992**, *31*, 1148-1151.

Presentations (* denotes undergraduate author at SFU)

56. Cranswick, M. Zovinka, E. P. De Backere, J. *Redesigning Tetraphenylporphyrin Synthesis and Metallation as a Greener Undergraduate Teaching Experience*, 26th Annual Green Chemistry & Engineering Conference June 6-8, 2022, Reston VA
55. Ochs, A.M.*; Arnold, A.; Barber, K.; Zovinka, E.P. “*Can Paint Pouring Help Students Learn Density and Viscosity? Connecting Active Artwork to Chemistry*” 2022 #RSC Poster Twitter Conference, March 1-2, 2022 United Kingdom.
54. Invited Panelist, Yale University Professional Development Network: Teaching Careers Panel, Yale University, Sterling Laboratory 5/18/18
53. Paul T. Kasunic, Mitchell E. Hogue, Kelsey S. Patterson, Hannah Schorr, Edward P. Zovinka “*Saint Francis University Chemistry Club: Creating Unbreakable Bonds*” 55th ACS National Meeting, New Orleans, LA, March 18-22, 2018 Paper ID: 2872979
52. Edward P. Zovinka, Rose A. Clark “*Saint Francis University Rural Outreach Chemistry for Kids (R.O.C.K.) Program: Over twenty years in the making*” 55th ACS National Meeting, New Orleans, LA, March 18-22, 2018. PAPER ID: 2871164
51. Edward P. Zovinka, Rose A. Clark, “Test Reworks”, Saint Francis University Center for Excellence in Teaching and Learning, November 17, 2017
50. Edward P. Zovinka, Cosmic Cocktails @ Allegheny Creamery& Crepes, Hollidaysburg PA “The Discovery and Uses of Wonderful Buckyballs, 11/2/17. Fundraiser for A Quaint Corner Children's Museum & Discovery Center, Altoona PA.
49. Charles Spellman Jr.*, David Madl*, Arthur Rose, Perez Youmbi*, Jessica Schulte*, Edward P. Zovinka, Joel Bandstra, William Strosnider “*Mass Transport Controls on Aluminum Removal in Limestone Based Treatment Systems*”, 34th Annual Meeting of the 2017 American Society of Mining & Reclamation, April 9-13, 2017, Morgantown WV.
48. Rebekah Krupa*, Hannah Schorr*, William Shee*, Edward P. Zovinka *DON'T WORRY ABOUT IT, DAD* presented at the National ACS Meeting, San Francisco, CA, April 3 2017.
47. Rebekah Krupa,* David Madl,* Jessica Schulte,* Perez Youmbi,* Edward P. Zovinka, Joel Bandstra *Laboratory Simulation of the Open Limestone Channel at Abandoned Coal Mine Swank 13* presented at the 253rd National ACS Meeting, San Francisco, CA, April 3 2017.
46. Kebede, Bemnet*; Krug, James P.* ; Krupa, Rebekah C.* ; Mosier, Dallas R.* , Weyant, Caleb J.* ; Strosnider, William H. ; Zovinka, Edward P. *Analysis of the open limestone channel at the Swank 13 abandoned coal mine at CUR Posters on the Hill, Washington DC April 20, 2016.*
45. Kebede, Bemnet*; Krug, James P.* ; Krupa, Rebekah C.* ; Mosier, Dallas R.* , Weyant, Caleb J.* ; Strosnider, William H. ; Zovinka, Edward P. *Analysis of the open limestone channel at the Swank 13 abandoned coal mine* at 251st Annual Meeting of the American Chemical Society, San Diego CA, March 14, 2016.
44. Ciraula, S.; Fry, C.; Mosier, D.; Zovinka, E.P. Saint Francis University Chemistry Club: Safe But Fun at 249th Annual Meeting of the American Chemical Society, Denver CO, March 23, 2015.
43. Kebede, Bemnet*; Krug, James P.* ; Krupa, Rebekah C.* ; Mosier, Dallas R.* , Weyant, Caleb J.* ;

Strosnider, William H. ; Zovinka, Edward P. *Analysis of the open limestone channel at the Swank 13 abandoned coal mine* at 249th Annual Meeting of the American Chemical Society, Denver CO, March 23, 2015.

42. Krupa, Rebekah C.* ; Smith, Benjamin D. ; D'Andrea, Dominick (pre-college); Edward P. Zovinka *Gold Nanoparticles Synthesis from Tea Leaves for Biodiesel Production* at the 2014 ACS Central Regional Meeting, Pittsburgh, PA Oct 31.

41. Kebede, Bemnet*; Krug, James P.* ; Krupa, Rebekah C.* ; Mosier, Dallas R.*, Weyant, Caleb J.* ; Strosnider, William H. ; Zovinka, Edward P. *Analysis of the open limestone channel at the Swank 13 abandoned coal mine* at the 2014 ACS Central Regional Meeting, Pittsburgh, PA Oct 31.

40. Albright, C*; Mountain, G.*; Zovinka, EP Saint Francis University Chemistry Club: A Systematic View of Chapter Activities and Success 247th Annual Meeting of the American Chemical Society, Dallas TX, March 17, 2014

39. Mosier, D.*; Kebede, BA*; Zovinka, EP Powder Analysis of Acid Mine Drainage Precipitate, 247th Annual Meeting of the American Chemical Society, Dallas TX, March 17, 2014

38. Zovinka, E.P.; Clark, R.A.; Felix, A.L.; "STEMing the flow: Connecting undergraduates with applied science" (CHED 1460) March 2011, 241st American Chemical Society National Meeting and Exposition, Anaheim, CA.

37. Arnold, A.*; Wilt, A.*; Kwak, D.*; Woldemeskel, S*.; Zovinka, E.P. "[Using microwave methods to synthesize and metallate model metalloporphyrins](#)" (CHED 605) March 2011, 241st American Chemical Society National Meeting and Exposition, Anaheim, CA.

36. Stock, A.E.*; Zovinka, E.P.; Clark, R.A. "Integrating green chemistry methods into the inorganic chemistry laboratory" (CHED 209) August, 2009, 238th American Chemical Society National Meeting and Exposition, Washington DC

35. Horner, A.R.*; Zovinka, E.P.; Clark, R.A.; LoRusso, S. "Measuring potassium in muscle tissue through atomic emission" (CHED 212) August, 2009, 238th American Chemical Society National Meeting and Exposition, Washington DC

34. Wolfel, A.M.*; Walters, B.M.* Zovinka, E.P. "Microwave metallation of porphyrins (CHED 214) August, 2009, 238th American Chemical Society National Meeting and Exposition, Washington DC

33. Clark, R. A.; Zovinka, EP "How to Turn One Curriculum Proposal into another" (CHED 444) August, 2009, 238th American Chemical Society National Meeting and Exposition, Washington DC (invited speaker)

32. Stock, A.E.*; Walters, B.*; Zovinka, EP "Iron Porphyrins as model compounds for Hydroxylamine Oxidoreductase" August 19, 2008, 236th National Meeting of the American Chemical Society, Philadelphia, PA

31. Felix, A.; Zovinka, EP "Does early introduction into research make a difference?" August 21st, 2008, 236th National Meeting of the American Chemical Society, Philadelphia, PA

30. "STEMing the Flow: Connecting Undergraduates with Applied Science" at the 2009 6th Annual STEP Grantees meeting, March 12, 2009, *Washington DC*.

29. Moderator at session on “Leveraging Your STEP Project” at 6th Annual STEP Grantees meeting, March 12, 2009, *Washington DC*.

28. Williamson, J.*; Zovinka, E.P. Synthesis and Characterization of Chloro Iron (III) Tetra (2', 6'-dimethoxyphenyl)porphyrin January 24, 2008, 8th Annual Graduate & 3rd Undergraduate Student poster Session of the Philadelphia Section of the American Chemical Society, Philadelphia, PA (4th place award)

27. Zovinka, E.P., Felix, A. The Saint Francis STEP Program November 3, 2007, 2007 F21 National Assembly: Leaders Developing Leaders Developing Leaders...Chantilly, Virginia

26. Conrad, D.M.*; DeCoskey, J.*; Williamson, J.*; Zeller, M.; Zovinka, E.P. Structural and Solution Characterization of Metal Complexes of Tetra(2', 6'-dimethoxyphenyl)porphyrins June 4, 2006, 38th Middle Atlantic Regional Meeting of the ACS, Hershey, PA

25. DeCoskey, J.*; Conrad, D.*; Zovinka, E.P. Tetra(2', 6'-dimethoxyphenyl)porphyrins as a model for Hydroxylamine Oxidoreductase Aug 28, 2006, 230th ACS National Meeting, Wash DC

24. Yeisley, C.*; DeCoskey, J.*; Zovinka, E.P. Model Compounds of Hydroxylamine Oxidoreductase from *Nitrosomonas europaea*, 59th Annual Eastern Colleges Science Conference, April 9, 2005, Central CT State University, New Britain, CT

Outstanding Poster Presentation in Chemistry, Eng., or Math awarded to Jennifer DeCoskey

23. Lynch, M.; Zhang, L.; Zovinka, E.P. Service Learning Experience: Effects on the University Student and the Community” at the National Society of Experiential Learning Las Vegas, NV Oct 3, 2002

22. Koerner, R., Zovinka, E.P.; Sunseri, D.R. Structure and Reactivity of Cl-FeIII (meso-{2hydroxyphenyl}-octaethylporphyrin 224th ACS National Meeting, Boston MA August 18-22, 2002

22. Bopp, J.; O'Donnel, L.; Snavelly, R.; Petrovic, J.; Solomon, D.; Hawk, H.; Zovinka, E.P. Measurement of Radon Levels on a College Campus, presented at the 55th ECSC, Wilkes University, Wilkes-Barre, PA, Mar 31st, 2001.

21. Sunseri, D. R.*; Zovinka, E.P. Metallation of Thiaporphyrins and Dithiaporphyrins, Presented at 220th ACS National Meeting, Washington, DC August 21st 2000

20. Gryshuk. A.L.*; Zovinka, E.P. Metallation of Dithiaporphyrins, Presented at the 219th ACS National Meeting, San Francisco, CA March 27th 2000

19. Gryshuk, A.L.*; Howard, R.J.*; Cox, D.; Zovinka, E.P.; Maelia, L.E. Metallothiaporphyrins as Photodynamic Therapy Agents, Presented at the 53rd Eastern Colleges Science Conference, Sacred Heart University, April 24 1999

First Place Chemistry Poster awarded to Amy Gryshuk

18. Petrarca, C.M.*; Espenlaub, R.C.*; Zovinka, E.P.; Maelia, L.E. Better Catalysts Through the Functionalization of Metallocenes Duquesne University, July 31, 1998

17. Gryshuk, A.L.*; Howard, R.J.*; Cox, D.; Zovinka, E.P.; Maelia, L.E. The Synthesis of Thiaporphyrin as a Possible Photodynamic Therapy Agent, Duquesne University, July 31, 1998

16. Howard, R.J.*; Cox, D.; Ropp, J.A.*; Zovinka, E.P. Molybdenum Thiaporphyrin Complexes Presented at the 52nd Eastern Colleges Science Conference, Niagara University, April 25 1998

Award Winning Poster-Certificate presented to Ryan Howard

15. Espenlaub, R.C.*; Howard, R.J.*; Zovinka, E.P. Preparation of Polyphosphinated Ferrocene and Ruthenocene as a Starting Point for Catalytic Activity. Presented at the 52nd Eastern Colleges Science Conference, Niagara University, April 25 1998
14. Wasil, C.*; Zovinka, E.P.; Zuraw, L Comparing Lecture to Activity Based Learning. Presented at the 51st Eastern College Science Conference, New Britain CT, April 12, 1997
13. Howard, R. H.*; Ropp, J.*; Zovinka, E.P. Tungsten/Molybdenum Thiaporphyrin Complexes. Presented at the 51st Eastern College Science Conference, New Britain CT, April 12, 1997
12. Fredricks, D.; Woodside, D.; Zovinka, E.; Keating, S.; Trimble, J. The Impact of Active Teaching in the General Education Curriculum Presented at the 6th Annual Conference on Advancing Teaching in College Classrooms and Campus Cultures, State College, PA March 20, 1997.
11. Howard, R.H.*; Ropp, J.*; Zovinka, E.P. Warning: Thiaporphyrin Crossing or How I Spent My Summer Vacation Presented at the 3rd Annual St. Francis College Day, November 22, 1996.
10. Howard, R.H.*; Ropp, J.*; Zovinka, E.P. Rural Outreach Chemistry for Kids (R.O.C.K.) Presented at the 212th ACS National Meeting, Orlando, FL, August 1996.
9. Zovinka, E.P. Biotechnology and Chemistry: Increase the Communication! Presented at the 14th Annual Biennial Conference on Chemical Education, Clemson, SC, August 1996. Presided over Biotechnology Session.
8. Zovinka, E.P.; Cornman, C.R. Vanadium(IV) Complexes with N-terminal Polypeptide of Human Serum Albumin. Presented at the 27th Central Regional Meeting of ACS, Akron, OH, June 1, 1995.
7. Cornman, C.R.; Zovinka, E.P.; Boyajian, Y.D.; Geiser, K.M.; Singh, P. Synthesis, Structure, and Spectroscopy of Vanadium(IV) and Vanadium(V) Amide Complexes. Presented at the Vanadium Symposium, Montreal, Canada, July 1994 *Can. J. of Physio. and Pharm.*, **1994**, 72, supplement 3, 15.
6. Zovinka, E.P.; Boyajian, Y.D.; Geiser, K.M.; Sutherland, T.; Singh, P.; Cornman, C.R. Synthesis, Structure, and Reactivity of Vanadium Amide Complexes. Presented at the International Conference on Bioinorganic Chemistry, San Diego, CA, August 1993. *J. Inorg. Biochem.* **1993**, 51, 166.
5. Zovinka, E.P. Boyajian, Y.D.; Geiser, K.M.; Sutherland, T.; Singh, P.; Cornman, C.R. Synthesis, Structure, and Reactivity of Vanadium Complexes Containing Deprotonated Amide Ligands. Presented at the 107th Sectional Conference of the North Carolina Section of the ACS, April 1993.
4. Zovinka, E.P.; Balch, A.L.; Latos-Grazynski, L.; Noll, B.C.; Olmstead, M.M. Structure and Oxidation of Metal Oxophlorin Complexes. Presented at the 203rd ACS National Meeting, San Francisco, CA April 1992.
3. Zovinka, E.P.; Balch, A.L.; Latos-Grazynski, L.; Noll, B.C.; Olmstead, M.M. Iron Acetoxyporphyrins Presented at the 1991 FACSS/Pacific Conference, Anaheim, CA October 1991.
2. Zovinka, E.P.; Balch, A.L.; Noll, B.C. Zinc and Nickel Octaethyloxophlorins. Presented at the Fourth Chemical Congress of North America, New York, NY August 1991.
1. Zovinka, E.P.; Huddle, B.P. An X-ray Analysis of football amine bis(borane). Presented at the First Annual National Conference on Undergraduate Research, Asheville, NC April 1987.