

Vasiliki Lykourinou, Ph.D.

Assistant Teaching Professor, Department of Chemistry and Chemical Biology Northeastern University, Boston MA, 02115

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EDUCATION

Ph.D. Chemistry emphasis Bioinorganic Chemistry

December 2006- University of South Florida, Tampa FL

Advisor: Dr Li-June Ming

Dissertation title: 'Copper and Iron Complexes of Linear and Crosslinked Polymers as Catalysts for Phosphoester Hydrolysis and Oxidative Transformation of Phenolic and Catecholic Substrates'

B.S. Chemistry

May 2000- University of South Florida, Tampa FL

Completed all courses up to junior-senior level at the Department of Chemistry, University of Crete, Heraklion Greece, transferred to University of South Florida May 1998

PROFESSIONAL EXPERIENCE

Assistant Teaching Professor

Department of Chemistry & Chemical Biology Northeastern University Aug 2015-current

Laboratory Educational Manager

Department of Chemistry & Chemical Biology, Northeastern University Aug 2014-Aug 2015

Senior Instructor and Director of General Chemistry Laboratories Aug 2013-Aug 2014

Department of Chemistry, University of South Florida

Instructor I and Director of General Chemistry Laboratories Jan 2008-July 2013

Department of Chemistry, University of South Florida

Visiting Instructor Aug 2006-Dec 2007

Department of Chemistry, University of South Florida

Adjunct Instructor Jan 2006 –May 2006

Department of Chemistry, University of Tampa

HONORS AND AWARDS

- Northeastern University Center for Advancing Teaching and Learning Through Research (CATLR) Learning and Teaching Faculty Scholar, Fall 2016
- Provost Faculty Development Grant recipient for 2016- support to travel to Barcelona Spain to present together with an undergraduate student scholar at the Eurovariety Conference on Chemical Education, September 2016
- ACS-Division of Chemical Education (CHED) Travel Award to support attendance at an International Conference in 2011
- Alexiou Award in Environmental Chemistry for 2005, University of South Florida Chemistry Department
- Tharp Award for Summer 2004, University of South Florida, Chemistry Department

- Best Oral Presentation Award, Annual Raymond Castle Conference 2003, University of South Florida

AFFILIATIONS

American Chemical Society, Bioinorganic and Chemical Education Divisions

PROFESSIONAL DEVELOPMENT-WORKSHOPS

- ‘Preparing TAs for leadership in STEM education’, Cottrell Scholars Collaborative- National Teaching Assistant Workshop May 2015, Georgia Institute of Technology, Atlanta GA. *Workshop to help facilitate broad adoption of interactive and evidence-based teaching and learning strategies by harnessing the immense potential of teaching assistants (TAs). Teams of one "master" TA and faculty member from Physics or Chemistry Departments are eligible to apply. Co-attended workshop with NEU graduate teaching assistant John De La Parra (Advisor Dr Carolyn Lee-Parsons).*
- CATLR Workshops and Summer Institutes *focusing on implementing project based learning (PBL) and team based learning (TBL), developing hybrid courses, teaching honors courses, Northeastern University, Boston MA, Fall 2014-15.*
- ‘Transforming STEM education at USF’ supported by NSF Grant DUE 1347753. *Series of invited lectures by national leaders and faculty targeted literature discussion aiming to transform STEM education in a large urban-serving university and increase retention of STEM majors, especially underrepresented groups, University of South Florida, Tampa FL, December 2013-2014.*
- ‘cCWCS workshop-Materials Science & Nanotechnology’ *NSF funded workshop focusing on a chemical view of materials science and the nanoworld and how to incorporate these topics into the core curriculum, Beloit College WI, July 21-26, 2013.*
- ‘cCWCS workshop-Chemical Education: Supporting Student Laboratory Learning through Chemistry Collaborations, Workshops and Communities of Scholars’ *NSF funded workshop on new approaches to laboratory instruction based on principles established for faculty development and student laboratory instruction, Chicago IL, June 3-8, 2012.*
- ‘ACELL-Advancing Chemistry by Enhancing Learning in the Laboratory’ *NSF funded workshop to support research-based problem and inquiry learning strategies in laboratory instruction, Purdue, IN, May 20-24, 2012.*
- ‘Workshops on Teaching Innovation and Technology in Course Development’ *Workshop focused on innovative pedagogies (e.g. flipped classroom) and use of various software tools- Articulate Engage, Canvas, Advanced Blackboard, Developing Multimedia, Softchalk, Academy of Teaching and Learning Excellence (ATLE) and eTG center (e-Teaching and technology Group), Tampa FL, Spring 2012- Summer 2013.*
- ‘National Center for Academic Transformations (NCAT)’ *Series of webinars and day long workshop sponsored by Student Success Center aimed to familiarize key faculty in alternative models of instruction to address student difficulties in large enrolment courses, University of South Florida, December 2011.*

- 'Process Oriented Guided Inquiry Learning (POGIL) and the Science Writing Heuristic (SWH)' *Workshop focused on implementing the Science Writing Heuristic in laboratory instruction*, Warrensburg, MO, July 21-23, 2008.

SYMPOSIA ORGANIZATION

'Research on Learning in the Laboratory', S. Sandi-Urena, V. Lykourinou T. Gatlin, A. Villalta-Cerdas, International Conference on Chemical Education (ICCE), Toronto Canada, July 13 –18, 2014.

'Project Based Green Laboratories: a student led innovation' E. Navarrete, V. Lykourinou, EuroVariety in Chemistry Symposium, Belgrade Serbia, June 2017.

PUBLICATIONS

1. John de la Parra, Julian Stanley, Suraya Foster, Caroline Webb, Vasiliki Lykourinou* **Crafting A More Environmentally Benign Extraction and Analysis of Pharmaceutical Precursors from a Medicinal Plant: A Student-Led Innovation**. *ChemRxiv*. Preprint. **2019**, <https://doi.org/10.26434/chemrxiv.7791716.v1>
2. Chris Corcoran, Christian C Tang, Lykourinou, Andrew Terentis, Alexander Andgerhofer, Li-June Ming* **Iron(III) Complex of 4-Vinylpyridine-Acrylamide Copolymer as a Prototype for Effective Aromatics Degradation by Biomimetic Metallopolymers: Catechol Dioxygenase Activity**, *Eur. J. Inorg. Chem.*, **2018**, 106, 87-91.
3. Vasiliki Lykourinou, Li-June Ming* **Mechanistic Insight into Phenol Oxidation by a Copper(II) Complex of a Pyridine/Amide-Containing Copolymer in Aqueous Medium**, *Eur. J. Inorg. Chem.*, **2015**, 3, 368-369, *Issue Cover*.
4. Yao Chen, Vasiliki Lykourinou, Tran Hoang, Li-June Ming, Shenqian Ma* **Size-Selective Biocatalysis of Myoglobin Immobilized into a Mesoporous Metal-Organic Framework with Hierarchical Pore Sizes**, *Inorg. Chem.*, **2012**, 51, 9156-9158.
5. Yao Chen, Vasiliki Lykourinou, Carissa Vetromile, Tran Hoang, Li-June Ming, Randy Larsen and Shenqian Ma* **How Can Proteins Enter the Interior of a MOF? Investigation of Cytochrome c Translocation into a MOF Consisting of Mesoporous Cages with Microporous Windows**, *J. Am. Chem. Soc.*, **2012**, 134, 13188-13191.
6. Adrian Villalta-Cerdas, Todd Gatlin, Vasiliki Lykourinou* **Curriculum Design, Implementation and Assessment to Support Learning in General Chemistry Labs**, *Proceedings of ICCE-ECRICE Conference*, **2012**, Rome Italy, *submitted*.
7. Vasiliki Lykourinou, Yao Chen, Xi-Sen Wang, Tran Hoan, Li-June Ming, Ronald Musselman, Shengqian Ma* **Immobilization of MP-11 into a Mesoporous Metal–Organic Framework, MP-11@mesoMOF: A New Platform for Enzymatic Catalysis**, *J. Am. Chem. Soc.*, **2011**, 133, 10382-10385.
8. Le Wang, Yong Ye, Vasiliki Lykourinou, Alexander Angerhofer, Yufen Zhao, Li-June Ming* **Metal Complexes of Multidentate Cyclophosphazene with Imidazole-containing Side Chains for Hydrolyses of Phosphoesters-Bimolecular vs Intramolecular Dinuclear Pathway**, *Eur. J. Inorg. Chem.*, **2011**, 674-682.
9. Vasiliki Lykourinou, Ahmed I. Hanafy, Kirpal S. Bisht, Alexander Angerhofer, Li-June Ming*, **Iron(III) Complexes of Metal-Binding Copolymers as Proficient catalysts for Acid Hydrolysis of Phosphodiester and Oxidative DNA Cleavage**, *Eur. J. Inorg. Chem.*, **2009**, 9, 1197-1207.

10. Giordano F. da Silva, Vasiliki Lykourinou, Alex Angerhofer, Li-June Ming*, **Methionine Does Not Reduce Cu(II)- β -Amyloid-Rectification of the Roles of Methionine-35 and Reducing Agents in Metal-centered Oxidation Chemistry of Cu(II)- β -amyloid**, *Biochimica et Biophysica Acta*, **2009**, 49,1792.
11. Vasiliki Lykourinou-Tibbs, Ahmed Hanafy, Giordano F. Z. DaSilva, Kirpal Bisht, Randy Larsen, Brian T. Livingston, Alex Angerhofer, Li-June Ming*, **How Well Should The Active Site and the Specific Recognition Be Defined for Proficient Catalyses?** *Eur. J. Inorg. Chem.* **2008**,16, 2584–2592.
12. Ahmed Hanafy, Vasiliki Lykourinou-Tibbs, Kirpal S. Bisht, Li-June Ming* **Effective Heterogeneous Hydrolysis of Phosphodiester by Pyridine-containing Metallopolymers**, *Inorg. Chim. Acta*, **2005**, 358, 1247-1252.
13. Vasiliki Lykourinou-Tibbs, Altan Ercan, Li-June Ming* **Iron(III)-Chelex Resin Complex as Prototypical Heterogeneous Catalyst for Phosphodiester Hydrolysis**, *Catalysis Communications*, **2003**, 4, 549-553.
14. Le Wang, Yong Ye, Vasiliki Lykourinou, Junliang Yang, Alexander Angerhofer, Yufen Zhao, Li-June Ming* **Mechanistic Insights into Oxidative Activity of Cyclotriphosphazene-Based Multinuclear Copper Complexes in Aqueous Medium**, *manuscript in preparation*.
*Corresponding author is designated with an asterisk **

BOOK CHAPTER

‘Metalloproteins and Metallopeptides-Natural Metallofoldamers’ by Vasiliki Lykourinou and Li-June Ming in *Metallofoldamers: Supramolecular Architectures from Helicates to Biomimetics* (Editors: Marcus Albrecht and Galia Maayan), John Wiley & Sons, pp 1-30, **2013**.

PATENTS

Yao Chen, Vasiliki Lykourinou, Li-June Ming, Shenquian Ma ‘Polyhedral Cage-Containing Mesoporous Metal-Organic Frameworks as Platform for Biocatalysis’ August 2, **2016**, Patent Number 9404105.

LIST OF PRESENTATIONS AND PUBLISHED ABSTRACTS

- H. Shirley, E. Navarrete, S. Burcett, A. Rovira, **Creating an Equilibrium Between Teaching and Research in a General Chemistry Curriculum: Students Reinvent Lab Modules**, EuroVariety Conference, Florence Italy, July 2019.
- E. Navarrete, V. Lykourinou, J.Perrier, L. Rajic, **From Research to the Teaching Labs: Crafting Research Inspired Laboratory Projects for General Chemistry Laboratories using Undergraduate Students as Active Participants in the Design and implementation of an electrochemistry water remediation project**, ACS Green Chemistry Conference, Portland OR, June 2018, Oral Presentation.
- A. Rovira, V. Lykourinou, J. de la Parra, **Students as participants in curriculum redesign: development of a project based introductory chemistry laboratory curriculum**, European Conference of Research in Chemical Education (ECRICE) Conference, Barcelona Spain, September 2016.
- Vasiliki Lykourinou, John de la Parra, Thomas Gilbert, Carolyn Lee-Parsons, Alejandro Rovira, Shannon Song, Sylvie Dufort, **Linking Learning to Real Life Research Goals: Biofuel**

Production and Analysis in the Classroom and the Laboratory, ACS National Conference, 2015, Boston, MA, Oral Presentation.

- Vasiliki Lykourinou, Thomas Gilbert, Carolyn Lee-Parsons, Alejandro Rovira, Shannon Song **Experiential Learning Through Course Development and Implementation of a Green Chemistry Laboratory**, Gordon Research Conference, 2015, Bates College, ME, Poster Presentation.
- Vasiliki Lykourinou, Thomas Gilbert, Carolyn Lee-Parsons, Alejandro Rovira, Shannon Song, Sylvie Dufort, **Experiential Learning Through Course Development and Implementation of a Green Chemistry Laboratory**, Conference for Advancing Evidence-based Teaching, May 2015, Northeastern University, Boston, MA, Oral Presentation.
- Vasiliki Lykourinou, Todd Gatlin, Adrian Villalta-Cerdas, **Outcomes, Strategies and Challenges in the Implementation of Authentic Chemistry Experiments in the Introductory Lab Curriculum**, 5th EuroVariety Conference In Chemistry Education, July 2013, Limerick Ireland, Oral Presentation.
- Vasiliki Lykourinou, Adrian Villalta-Cerdas, Todd Gatlin, **Curriculum Design, Implementation and Assessment to Support Learning in General Chemistry Labs**, 22nd Biannual Conference on Chemical Education (BCCE), July-August 2012, PennState University, College Station, PA, Oral Presentation.
- Vasiliki Lykourinou, Adrian Villalta-Cerdas, Todd Gatlin, **Curriculum Design, Implementation and Assessment to Support Learning in General Chemistry Labs**, 22nd International Conference on Chemical Education and 11th European Conference on Research in Chemical Education (ICCE-ECRICE), July 2012, Rome Italy, Poster Presentation.
- Vasiliki Lykourinou, **Contrasting Pedagogical Training and Practices in Tertiary Education in European and American Universities**, National ACS Meeting and Exposition, March 2012, San Diego CA, *Invited Oral presentation in 'International and Multicultural Perspectives' Symposium.*
- Vasiliki Lykourinou, **The Science Writing Heuristic in Large Enrollment General Chemistry Labs**, 4th EuroVariety Conference in Chemistry Education, September 2011, Bremen Germany, Oral Presentation.
- Vasiliki Lykourinou, **Implementation of Science Writing Heuristic in Large Enrollment Laboratory Courses**, 21st Biannual Conference on Chemical Education (BCCE), August 2010, Denton TX, Oral presentation.
- Vasiliki Lykourinou, **Implementation of Science Writing Heuristic in Large Enrollment Laboratory Courses**, POGIL workshop, 240th National ACS Meeting and Exposition, August 2010, Boston MA, Oral Presentation.
- Vasiliki Lykourinou, Ahmed I. Hanafy, Li-June-Ming, **Antioxidant Activity of Phytochemicals towards Oxidation of Neurotransmitters by Cu(II)-(4-vinylpyridine-co-acrylamide) Copolymer Complex**, Florida American Chemical Society meeting (FAME)-Biochemistry Section, May 2005, Orlando Florida, Oral Presentation.
- Vasiliki Lykourinou, Ahmed I. Hanafy, Li-June-Ming, **Heterogeneous Catalysis by Pyridine Containing Metallopolymers**, Florida American Chemical Society meeting (FAME)-Metal Organic Section, May 2004, Orlando Florida, Oral Presentation.
- Vasiliki Lykourinou, Li-June-Ming, **Chemical Nucleases-polymer Based Metal Complexes as Catalysts in Phosphoester and DNA Hydrolysis**, Raymond Castle Conference, April 2003, University of South Florida, Tampa FL, Oral Presentation.

- Vasiliki Lykourinou, Li-June-Ming, Heterogeneous Metal-centered Hydrolysis of Phosphodiester/Phosphonoesters, National American Chemical Society meeting, May 2002, Orlando FL, Oral Presentation.

GRANTS AND AWARDS

Undergraduate Research and Creative Endeavor (UGRCE) Award: \$ 3,500 for each student applicant (Spring-Summer 2017) to support research efforts by two students (E. Navarrete, H. Shirley) in testing and optimization of an electrolytic system coupled with a heterogeneous green catalyst for water remediation.

Honors Early Research Award: \$1,500 for each student applicant in: 2016 (A. Rovira) and 2017 (J. Wise, N. Rodriguez) to help develop cooperative green chemistry lab projects, in 2019 (S. Garg) to start a collaborative project among NEU-USF-Media Lab for factors affecting levels of volatile flavor molecules in the *Lamiacea* family of herbs using GCMS.

Faculty Scholars Award, CATLR, Northeastern University: \$1,200 stipend, *Spring 2016-Fall 2016*. Award given to selected faculty to support a creative project related to Scholarship of Teaching & Learning Research.

Northeastern Provost Full Time Faculty Travel Award, \$2,000 to support travel to Barcelona Spain to the ECRICE conference in 2016.

'Integration of Cooperative, Project-based, Authentic Experiments in the General Chemistry Laboratory Program at the University of South Florida' PI Santiago Sandi-Urena, Co-PI Vasiliki Lykourinou, NSF-TUES, *submitted May 2012 (resubmission awaited solicitation announcement under the new NSF-CAUSE program)*.

MENTORING STUDENTS IN UNDERGRADUATE RESEARCH EXPERIENCE

At Northeastern

In collaboration with Drs Lee-Parsons, Deravi & Manetsch and lab (Chemistry Dept NEU), PROTECT group-Environmental Engineering NEU (Dr Rajic) (Spring 17-Fall 2018)

Several projects actively engaging students majoring in chemistry, biochemistry, cell and molecular biology, health sciences, biology, chemical engineering, environmental policy, anthropology.

Mentored 3 GTAs in development of curriculum material, >20 students in research activities and preparation to be learning assistants in lab

Past collaborations at the University of South Florida

In collaboration with Professors Li-June Ming and Shenquian Ma

Encapsulation of metallopeptides and protein in polyhedral cages for crystalline heterogeneous catalysts.

Mentoring: *over 40 Graduate Teaching Assistants (GTAs, per year) in teaching duties, 4 Graduate Teaching Assistants (GTAs) co-mentoring in curriculum development and research >20 undergraduates in research projects (co-mentoring) and in Honors Thesis work.*

TEACHING EXPERIENCE-COURSES TAUGHT

At Northeastern

General Chemistry Laboratory (CHM 1212 & 1215 Honors)

Spring 2015

General Chemistry I & II Lectures (CHM 1211 & CHEM 1214)

Fall 2016-19

University of South Florida

General Chemistry Laboratory Courses (CHM 2045L, CHM 2046L, CHS 2440L)

Fall 2007-Spring 2013

Graduate Instruction Methods (CHM 6946)

Fall 2007-Spring 2013

Clinical Chemistry Courses (CHS 4300 Lecture, CHS 4301L Laboratory)

Clinical Lecture Course Fall 2009-2013 (offered only in Fall semesters)

Clinical Lab Course Spring 2012-2013 (offered only in Spring semesters)

Introduction to Biochemistry (CHM 3023)

Fall 2008

General Chemistry I Lecture (CHM 2045)

Fall 2007 and Spring 2008

Historical Perspectives of Chemistry (CHM 4070)

Spring 2011

Peer Leading for Chemistry (CHM 4932)

Spring 2009

Methods of Chemical Investigation (CHM 4130C)

Spring 2011-2012

Professional Development Institute for K-12 Science Teachers

Spring-Summer 2009 and 2010

SERVICE ACTIVITIES

DEPARTMENT/COLLEGE

- Curriculum Committee CCB 2016-current
- FTNTT Faculty Search CCB 2018- committee member
- Chair Search Committee CCB 2020-committee member
- Senate Full Time Non-Tenured Track Faculty Committee (FTNTTFC) 2019-2020- member of a committee across colleges to examine key issues pertaining to FTNTT faculty
- Senate FDC (Faculty Development Committee) 2019-member of a committee across colleges to examine specific issues identified by college surveys relating to faculty development
- Judge for Poster Session- NU- Chapter of American Society for Biochemistry and Molecular Biology(NU-ASBMB) Fall 2019.

DISCIPLINE

- Symposium co-organizer 'Research on Learning in the Laboratory', S. Sandi-Urena, V. Lykourinou T. Gatlin, A. Villalta-Cerdas, International Conference on Chemical Education (ICCE), Toronto Canada, July 13 –18, 2014.
- Organized workshop 'Project Based Green Laboratories: a Student led Innovation' E. Navarrete*, V. Lykourinou, EuroVariety in Chemistry Symposium, Belgrade Serbia, June 2017 *undergraduate student

- Invited participation in ‘Introduction to Health Sciences Research” PHSC 2650, Professor Dr Diomedes Logothetis
- Participation in organizing discussions and attendance at the ACS-Sponsored Green Chemistry Summit-Reston VA June 2019.
- Organizer at FL-ACS Inorganic Chemistry Symposium, Orlando FL, 2009-2010.