

Curriculum Vitae

Jarrold F. Eubank, Ph.D.

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Education

2002-2008, **Ph.D.** in Chemistry (Concentration: Metal-Organic Materials), University of South Florida (Cumulative GPA = 4.0), Mentor: Prof. Mohamed Eddaoudi
Dissertation: "Rational Synthesis Toward the Design of Functional Metal-Organic Materials".
1998-2002, **B.S.** in Chemistry and Recombinant Gene Technology, Western Kentucky University (Cumulative GPA = 3.77, Magna Cum Laude).

Awards/Honors

Workshop on Structure and Properties of Nanomaterials Travel Award, International Center for Materials Research (ICMR), Richards Bay, South Africa, 2007.

Theodore and Venette Askounes Ashford Doctoral Fellowship in Chemistry, Department of Chemistry, University of South Florida (USF), 2007. Given annually (\$1000) based on GPA, achievements, progress, good citizenship, and the understanding that the student will be present for one more academic year to serve as an example to others.

Provost Certificate of Recognition for Outstanding Teaching by a Graduate Teaching Assistant. Center for 21st Century Teaching Excellence, USF, 2006.

Alexiou Award in Environmental Chemistry, Department of Chemistry, USF, 2006. Awarded annually (\$500) to a deserving graduate student based on GPA and significance of their research to Environmental Chemistry.

USF Department of Chemistry Travel Award, Department of Chemistry, USF, 2006.

Graduate Student Representative Elect, Graduate Council, Department of Chemistry, USF, 2005-2008.

3rd International Conference of Africa Materials Research Society (Africa MRS) Travel Award, ICMR, Marrakech, Morocco, 2005.

NSF IGERT and NSF Bridge to the Doctorate Travel Award, Inaugural Interdisciplinary Research Symposium, First Place (poster), USF, 2005.

Awards/Honors (continued)

Meeting-in-Miniature, American Chemical Society (ACS), Tampa Bay Local Section, First Place (oral), Inorganic Division, USF - St. Petersburg, 2005.

NSF Travel Award, National Science Foundation (NSF), Southeastern Regional Meeting of the ACS (SERMACS), 2004.

Tharp Endowed Award, Department of Chemistry, USF, 2004.

The George Bursa Award, Department of Chemistry, USF, 2004. Given annually (\$1000) to a deserving graduate student in Chemistry, who has demonstrated notable professional dedication and consideration for others.

Third Annual Raymond Castle Student Research Conference, Third Place (poster), Inorganic Chemistry Division, Department of Chemistry, USF, 2003.

USDA, APHIS, PPQ William F. Helms Memorial Scholarship, 1 of 31 in the nation, United States Department of Agriculture (USDA), Animal and Plant Health Inspection Services (APHIS), Plant Protection and Quarantine (PPQ), 2000-2001.

Positions Held

Summer 2008, Post-Doctoral Fellow/Laboratory Manager, M. Eddaoudi Group

University of South Florida

My responsibilities included supervision of 6-8 graduate students, safety protocols, equipment/software protocols and maintenance, and manuscript/grant/patent preparation, as well as solid-state synthesis, organic and inorganic chemistries, solvo/hydro thermal synthesis, characterization techniques [atomic absorption, inelastic neutron scattering (INS), IR, NMR, powder X-ray diffraction (PXRD), single-crystal X-ray diffraction, thermogravimetric analysis (TGA), and UV/vis], and other physical methods to characterize porous materials.

Summer 2003, Instructor, Organic Chemistry I Lab Lecture

University of South Florida

My responsibilities included teaching an Organic Chemistry I lab lecture of ~100 students, as described below.

Spring 2003, Instructor, Organic Chemistry I Lab Lecture

University of South Florida

Lectures on experiments ranging from distillation to chromatography to IR/NMR spectroscopy to chirality, including experimental theory and equipment, development and grading of assignments and exams, assisting other teaching assistants with their experiments, directing fellow teaching assistants, organizing meetings associated with teaching an Organic Chemistry I lab lecture of ~100 students.

Fall 2002 - present, Graduate Assistant, Organic Chemistry I/II Lab

University of South Florida

Teaching Assistant - Preparation of chemicals and equipment, lectures ranging from distillation to chromatography to IR/NMR spectroscopy to chirality to Diels-Alder/Grignard/Wittig/Friedel-Crafts syntheses, and development and grading of assignments and exams associated with an Organic Chemistry I/II lab of twelve students.

Positions Held (continued)

Research Assistant – Solid-state synthesis, organic and inorganic chemistries, solvo/hydro thermal synthesis, characterization techniques [atomic absorption, inelastic neutron scattering (INS), IR, NMR, powder X-ray diffraction (PXRD), single-crystal X-ray diffraction, thermogravimetric analysis (TGA), and UV/vis], and other physical methods to characterize porous materials.

Summer 2002, Research Technician

Western Kentucky University

Microsatellite DNA analysis of elk (*Cervus canadensis nelsoni*) reintroduced in Kentucky, including DNA isolation (genomic), polymerase chain reaction (PCR) techniques, and ABI Gene Sequencer analysis.

Spring 2002, Teaching Assistant, Organic Chemistry II Lab

Western Kentucky University

Preparation of chemicals and equipment, lectures ranging from Diels-Alder to Grignard to Wittig to Friedel-Crafts syntheses, and development and grading of assignments and exams associated with an Organic Chemistry II lab of twenty students.

Fall 2001, Chemistry Stockroom Technician

Western Kentucky University

Maintenance, safety, chemical transportation/storage/disposal, and organization of the stockroom facility, as well as distribution of chemicals and supplies for the chemistry laboratories in the Department of Chemistry.

Summer 2001, GS-5

USDA, APHIS, PPQ

Construction, placement, maintenance, observation, and collection of Delta traps, baited with (+)Disparlure pheromone for the invasive European gypsy moth (*Lymantria dispar* L.), using global positioning system (GPS) monitoring over four counties (Hopkins, McLean, Ohio, and Webster) in Kentucky, identification and collection of blue mold samples in Kentucky tobacco, identification and collection of Carnal Bunt syndrome in Kentucky wheat, and airport identification of potential hazardous biological materials (associated with noxious plants/animals).

Books

- M. Eddaoudi and **J. F. Eubank** In *Organic Nanostructures*; J. L. Atwood and J. W. Steed, Eds.; WILEY-VCH Verlag GmbH & Co. KGaA: Weinheim, 2008; pp. 251-276: “Periodic nanostructures based on metal-organic frameworks (MOFs): En route to zeolite-like metal-organic frameworks (ZMOFs)”.
- M. Eddaoudi, **J. F. Eubank**, Y. Liu, V. Ch. Kravtsov and J. A. Brant In *From Zeolites to Porous MOF Materials: Proceedings of the 15th International Zeolite Conference*, *Stud. Surf. Sci. Catal.*; R. Xu, Z. Gao, J. Chen and W. Yan, Eds.; Elsevier: New York, 2007; pp. 2021-2029: “Zeolites embrace metal-organic frameworks: Building block approach to the design and synthesis of zeolite-like metal-organic frameworks (ZMOFs)”.

Patents

F. Nouar, **J. F. Eubank**, T. Bousquet, L. Wojtas, M. J. Zaworotko and M. Eddaoudi “Method of making porous metal-organic frameworks”, *U.S. Patent* 60/988,195 **2007**.

Publications

M. H. Alkordi, Y. Liu, R. Larsen, **J. F. Eubank**, and M. Eddaoudi “Zeolite-like Metal-Organic Frameworks (ZMOFs) as Platforms For Applications: On Metalloporphyrin-Based Catalysts”, *J. Am. Chem. Soc.* **2008**, submitted.

J. F. Eubank, Y. Liu, V. Ch. Kravtsov and M. Eddaoudi “Molecular building blocks (MBBs) approach from single-metal ions as a viable pathway toward the design and synthesis of functional materials”, *Proc. 3rd Int. Conference of Africa MRS* **2008**, accepted.

D. F. Sava, V. Ch. Kravtsov, F. Nouar, L. Wojtas, **J. F. Eubank** and M. Eddaoudi “Quest for zeolite-like metal-organic frameworks (ZMOFs): On pyrimidinecarboxylate bridging ligands”, *J. Am. Chem. Soc.* **2008**, *130*, 3768-3770.

F. Nouar, **J. F. Eubank**, T. Bousquet, L. Wojtas, M. J. Zaworotko and M. Eddaoudi “Supermolecular building blocks (SBBs) for the design and synthesis of highly porous metal-organic frameworks”, *J. Am. Chem. Soc.* **2008**, *130*, 1833-1835.

J. F. Eubank, V. Ch. Kravtsov and M. Eddaoudi “Synthesis of organic photodimeric cage molecules based on cycloaddition via metal-ligand directed assembly”, *J. Am. Chem. Soc.* **2007**, *129*, 5820-5821.

Y. Liu, **J. F. Eubank**, A. J. Cairns, J. Eckert, V. Ch. Kravtsov, R. Luebke and M. Eddaoudi “Assembly of metal-organic frameworks based on indium trimer building blocks: A novel porous MOF with unprecedented *soc* topology and high hydrogen storage”, *Angew. Chem. Int. Ed.* **2007**, *46*, 1-7.

J. F. Eubank, R. D. Walsh, P. Poddar, H. Srikanth, R. W. Larsen and M. Eddaoudi “Metal-organic framework diversity via heterocoordination of a multifunctional ligand: SrAl₂ and an unprecedented topology”, *Cryst. Growth Des.* **2006**, *6*, 1453-1457.

Y. Liu, V. Ch. Kravtsov, D. A. Beauchamp, **J. F. Eubank** and M. Eddaoudi “4-Connected metal-organic assemblies mediated via heterochelation and bridging of single metal ions: Kagomé lattice and the M₆L₁₂ octahedron”, *J. Am. Chem. Soc.* **2005**, *127*, 7266-7267.

J. F. Eubank, R. D. Walsh and M. Eddaoudi “Terminal co-ligand directed synthesis of a neutral, non-interpenetrated (10,3)-*a* metal-organic framework”, *Chem. Commun.* **2005**, 2095-2097.

R. J. Cohen, D. L. Fox, **J. F. Eubank** and R. N. Salvatore “Mild and efficient Cs₂CO₃-promoted synthesis of phosphonates”, *Tet. Lett.* **2003**, *44*, 8617-8621.

Conference Presentations

- “Design and synthesis of metal-organic frameworks based on trinuclear indium-carboxylate molecular building blocks: Square-octahedron (*soc*) topology and high hydrogen uptake” (poster); Workshop on Structure and Properties of Nanomaterials, ICMR, Richards Bay, South Africa, July 30, 2007.
- “Topological depth in metal-organic frameworks via multifunctional three-connected ligands” (oral); 231st ACS National Meeting; Atlanta, GA, March 26, 2006.
- “Zeolite-net-like metal-organic frameworks (ZMOFS): materials for (host-guest)-guest sensing and catalysis” (oral); 3rd International Conference of Africa MRS; Marrakech, Morocco; December 5, 2005.
- “Design and synthesis of zeolite-net-like metal-organic frameworks (ZMOFs): nanoscale materials for (host-guest)-guest sensing and porphyrin-based catalysis” (poster); Florida Inorganic Mini-Symposium (FIMS); University of Florida, Gainesville, FL; September 24, 2005.
- “Dicarboxylate proximity affects steric torsion resulting in diverse metal-organic frameworks” (oral); Florida Annual Meeting and Exposition of the American Chemical Society (FAME); Orlando, FL; May 5, 2005.
- “Design and synthesis of zeolite-net-like metal-organic frameworks (ZMOFs): nanoscale materials for (host-guest)-guest sensing and porphyrin-based catalysis” (poster); Raymond Castle Student Research Conference; USF, Tampa, FL; April 30, 2005.
- “Design and synthesis of zeolite-net-like metal-organic frameworks (ZMOFs): nanoscale materials for (host-guest)-guest sensing and porphyrin-based catalysis” (poster); Inaugural Interdisciplinary Research Symposium, NSF IGERT and NSF Bridge to the Doctorate, USF, Tampa, FL; April 19, 2005.
- “Dicarboxylate proximity affects steric torsion resulting in diverse metal-organic frameworks” (oral); Meeting-in-Miniature, ACS, Tampa Bay Local Section; USF - St. Petersburg, St. Petersburg, FL; April 15, 2005.
- “Metal-organic frameworks: network diversity via isomeric ligands” (oral); SERMACS; Research Triangle Park, Durham, NC; November 13, 2004.
- “A chiral directed metal-organic framework” (poster); FIMS; USF, Tampa, FL; October 30, 2004.
- “Design and synthesis of metal-organic frameworks: network diversity via isomeric ligands” (oral); FAME; Orlando, FL; May 6, 2004.
- “Assembly of three-connected SBUs into predicted extended metal-organic frameworks” (oral); FIMS; University of Florida, Gainesville, FL; October 25, 2003.

Conference Presentations (continued)

“Assembly of three-connected secondary building units into novel extended metal-organic frameworks” (poster); Raymond Castle Student Research Conference; USF, Tampa, FL; April 19, 2003.

“Resurgence of elk (*Cervus elaphus*) in Kentucky: PCR-based standards for long-term population monitoring and use in law enforcement” (oral); Fourth Annual Western Kentucky University (WKU) Kentucky Biodiversity Conference; WKU, Bowling Green, KY; April 18, 2002.

“Mild and efficient Cs_2CO_3 -promoted synthesis of phosphonates” (poster); Fourth Annual WKU Kentucky Biodiversity Conference; WKU, Bowling Green, KY; April 18, 2002.

References

Mohamed Eddaoudi*, Assistant Professor, Chemistry, USF, eddaoudi@cas.usf.edu, (813) 974-9622.

Mike Zaworotko, Chairman and Professor, Chemistry, USF, xtal@cas.usf.edu, (813) 974-3451.

Brian Space, Professor, Chemistry, USF, space@cas.usf.edu, (813) 765-4846.

Juergen Eckert, Physicist, Materials Research Laboratory, University of California-Santa Barbara/Los Alamos National Laboratory, juergen@mrl.ucsb.edu, (805) 893-8247.

Lester Pesterfield, Professor, Chemistry, WKU, lester.pestherfield@wku.edu, (270) 745-6246.

Robert Holman, Chairman and Professor, Chemistry, Idaho State University, holmrobe@isu.edu, (208) 282-4331.

Ralph Salvatore, Chairman and Professor, Chemistry, Lehman College-The City University of New York, Bronx, NY, ralph.salvatore@lehman.cuny.edu, (718) 960-8146.

Bonnie J. Furman, Legume Germplasm Curator, Genetic Resource Unit, ICARDA, Aleppo, Syrian Arab Republic, b.furman@cgiar.org, (963-21) 2225012 ext. 699.

Harold Hempfling, USDA, APHIS, PPQ, Georgetown, KY, harold.hempfling@aphis.usda.gov, (502) 863-2646.

Memberships/Committees

Member, Materials Research Society (MRS), since 2006.

Departmental Open House/Social, Department of Chemistry, USF, Organizer (2006)

Fifth Annual Raymond N. Castle Student Research Conference Committee, Student-led and student organized, USF, Chair (2006).

Graduate Council, Department of Chemistry, USF, Graduate Student Representative Elect (2005-2008).

Fourth Annual Raymond N. Castle Student Research Conference Committee, USF, Co-chair (2005).

New Horizons in Chemistry I: Molecular Building Block Approach to Functional Materials International Mini-Symposium, USF, Co-organizer (2004).

Member, American Chemical Society (ACS), since 2003.

Third Annual Raymond N. Castle Student Research Conference Committee, Student-led and student organized, USF, Finance (2003).

Charter Member/Co-founder, WKU chapter, Ducks Unlimited, since 2001, Promotional Manager (2001-2002).

Member, Association of Undergraduate Geneticists (AUG), WKU chapter (2000-2002)

Memberships/Committees (continued)

Charter Member/Co-founder, Lambda Alpha Omega (LAO) social organization, WKU, 2000-2002, Treasurer (2000-2001).

Member, Block and Bridle Club, WKU chapter (1999-2001)

Member, Phi Sigma Pi National Honor Fraternity, WKU chapter, Secretary (1999).

Member, Golden Key International Honor Society, since 1999.

Extra-Curricular Activities

SCUBA - Open Water Diver, Level 1, Certified April 2008

Photography - Digital, Color, Black and White (Concentrations: Outdoor, Wedding, Portrait)

- Third Place, Portrait, Color, Florida State Fair, 2007
- Second Place, Animal, Digital, Florida Strawberry Festival, 2006
- Second Place, Plants, Black and White, Florida Strawberry Festival, 2006
- Second Place, Places, Black and White, Florida Strawberry Festival, 2006
- Three Awards of Merit, Florida Strawberry Festival, 2006
- First Place, Human, Color, Florida Strawberry Festival, 2005

Intramural Sports - Basketball, Co-Ed Bowling, Co-Ed Football, Softball, Ultimate Frisbee, Co-Ed Volleyball

Languages

English - native language

French - read and write with proficiency, speak with basic competence