**Curriculum Vitae**

Ryan Coppage, Ph.D.

Department of Chemistry

University of Richmond

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**Previous Academic Positions**

Director of General and Inorganic Labs, University of Richmond, 2016 – Current.

Visiting Faculty of Chemistry, University of Richmond 2015-2016

Assistant Professor of Chemistry, University of Pikeville 2014-2015

Visiting Assistant Professor of Chemistry, University of Pittsburgh, Johnstown 2013-2014

**Education**

Bachelor of Science earned in Chemistry: Murray State University 2005

Masters of Science earned in Chemistry: Murray State University 2008

PhD Doctoral Candidate in Chemistry: University of Kentucky (transfer with PI) 2008-2011

PhD earned in Chemistry: University of Miami 2011-2013

**Professional Organizations/Awards**

American Chemical Society (Inorganic Chemistry)

Max Steckler Fellowship for Academic Achievement

Research Challenge Trust Fund Fellowship

Dissertation Year Fellowship

Congressional Citation for Achievement from Kentucky Representative Tommy Thompson

2017 Faculty Accomplishments Award, University of Richmond

**Courses Taught**

General Chemistry I and II

Combined General Chemistry (into one semester)

Accompanying labs for General Chemistry I, II

Preparatory Chemistry

Nursing Chemistry Lab I
Quantitative Analysis and Quant Lab

Physical Chemistry I: Thermodynamics

Inorganic Chemistry

Inorganic Synthesis Lab

**Other Teaching Experience**

High school chemistry teacher (Praxis/PLT certified, as of 2005)

Learning disabilities chemistry tutoring

Homeschool chemistry class teacher through St. Leo’s Catholic Church, Murray KY.

General I and II, Organic I and II Lab TA

Upward Bound Chemistry Instructor Introductory Wheel-Throwing and Pottery

Advanced Japanese Ceramics and Glaze Design

**Research Interests**

Noble metal nanoparticle synthesis for optical glaze color effects; development of ceramic systems with vibrational shock absorbance and dislocation resistance; formation of nanoscale nucleation sites in reduction atmosphere ceramic firing; replacement of surface bulk metal concentrations with optically active nanomaterials; bio-mimetic inorganic nanomaterial synthesis for green/catalysis applications.

**Committee and Service Work**

Member, Student Clay Club. Murray, KY. 2002-2005

Member, SLIP ceramics club. Lexington, KY. 2008-2011

Member, student representative on the Science Communication Committee. 2009-2011

Member, Potter’s Guild Club. Miami, FL. 2011-2013

Faculty Sponsor, UPJ Art Club. 2013-2014

Developed/revised upper-division Chemistry curriculum for Inorganic Synthesis Lab. 2014

Member, Special Events Planning Committee. 2014

Consultant and Design Manager: The Mud House ceramics studio, City of Pikeville. 2014

Committee member: The Arts House Board Committee 2015

Community Ceramics Instructor: classes at Mud House studio, in session 2015

Academic Advisor. 2014-Current

Ceramics Guild. 2015-2017

Visual Arts Center of Richmond: Instructor

**Skills Profile**

-Nanomaterials synthesis experience with noble metals, including Pd and Au.

-Knowledge of nanomaterial synthesis techniques with Ag, Cu, Co, Ni, Pt, and Fe.

-Nanomaterial glaze formulation in reduction firing methods.

-Significant experience synthesizing and purifying various peptide sequences.

-Exceptional knowledge of bio-analytical/characterization instruments including GC, HPLC, DLS, UV-vis, TEM, HR-TEM, FTIR, NRM, TETRAS peptide synthesizer, and QCM-D.

-Experience modeling layer deposition via QCM-D with a Langmuir model isotherm.

-Experience with ceramic clay formulation at the studio level, including various vitrification additives.

-Experience with a wide range varying temperature vitrification ceramic bodies mid and high fire oxidation and reduction atmosphere firing.

-Teaching experience in Preparatory Chemistry, General Chemistry 1, General Chemistry 2, Quantitative -Analysis, Physical Chemistry 1: Thermodynamics, corresponding labs, and Nursing Chem lab.

-Online course development through Courseweb/Blackboard and Joule, including assessment development, online quiz module creation, and regular class assignment management.

**Oral Presentations:**

Chemistry of Energy & Food, American Chemical Society (ACS) From April 7-11, 2013 at New

Orleans, Louisana. “Elucidation of Peptide Sequence Effects that Control the Size, Activity, and Function of Nanoparticles.” Ryan Coppage, Joseph M. Slocik, Rajesh R. Naik, Marc R. Knecht.

University of Northern Colorado, Guest Research Lecturer. Feb 5th. 2015 at Greeley, CO. Structures and Color for Low Metal Loading Ceramic Glaze Applications. Ryan Coppage, Rajesh R. Naik, Marc R. Knecht.

Lora Robins Special Exhibit Opening, Guest Research Lecturer. April 13, 2017 at University of Richmond. *The First 40 Years*. Ceramic Glaze Inspiration from Mineral Color. Ryan Coppage.

**Poster Presentations:**

Biointerface Science, Gordon Research Conference (GRC), 2012 from June 20-25, 2012 at Les

Diablerets, Switzerland. “Controlling Material Properties and Functionality via Biointerfaces” Ryan Coppage, Joseph M. Slocik, Rajesh R. Naik, Marc R. Knecht.

Structure-Function Design Strategies for Bio-enabled Materials System, MRS 2012, San Francisco, CA. “Determining Peptide Sequence Effects that Control the Size, Structure, and Function of Peptide-Capped Nanomaterial Nanoparticles” Ryan Coppage, Joseph M. Slocik, Beverly D. Briggs, Anatoly I. Frenkel, Rajesh R. Naik, Marc R. Knecht.

CeRMACS, ACS Regional Meeting 2010, Dayton, Ohio. “Elucidation of Peptide Effects that Control the Activity of Nanoparticles” Ryan Coppage, Joseph Slocik, Manish Sethi, Dennis Pacardo, Rajesh Naik, and Marc R. Knecht.

36th Annual NAFF Symposium on Chemistry and Molecular Biology, University of Kentucky 2010.

**Publications:**

Raef H. Lambertson, Christie Davis, Michael C. Leopold,\* and Ryan H. Coppage\*
Gold Nanoparticle Colorants as Traditional Ceramic Glaze Alternatives. May. J Am Ceramics Soc. **2017**.

Coppage, R. Visual Arts Oxidation Shino. *Techno File*. Ceramics Monthly. 2017, September 1. 66-68.

Originally published in September 2017 issue of Ceramics Monthly, pages (66-68). <http://www.ceramicsmonthly.org>. Copyright, The American Ceramic Society.

Coppage, R. Opacity: Color and Cost. Techno File. Ceramics Monthly. 2017, March 1. 69-70.
Originally published in March 2017 issue of Ceramics Monthly, pages (69-70). <http://www.ceramicsmonthly.org>. Copyright, The American Ceramic Society.

Coppage, R. Electric Wood Ash. Techno File. Ceramics Monthly. 2016, October 1. 98-99.
Originally published in October 2016 issue of Ceramics Monthly, pages (98-99). <http://www.ceramicsmonthly.org>. Copyright, The American Ceramic Society.

Coppage, R. ﻿[Reduction Misnomer﻿. Techno File. Ceramics Monthly. 2016, March 1. 58-59.](http://ceramicartsdaily.org/ceramics-monthly/article/techno-file-reduction-misnomer/)
Originally published in March 2016 issue of Ceramics Monthly, pages (58-59). <http://www.ceramicsmonthly.org>. Copyright, The American Ceramic Society.

Coppage, R.; Knecht, M. R. Bio-Inspired Nanocatalysis. Bio-Inspired Nanotechnology. Springer New York. **2014**, 1, 173 – 219. (book chapter)

Coppage, R.; Slocik, J.M; Ramezani-Dakhel, H.; Bedford, N.M.; Heinz, H.; Naik, R.R.; Knecht, M.R. Exploiting Localized Surface Binding Effects to Enhance the Catalytic Reactivity of Peptide-Capped Nanoparticles. J. Am. Chem. Soc. **2013**, 135, 11048-11054.

Coppage, R.; Slocik, J.M.; Briggs, B.D.; Frenkel, A.I.; Naik, R.R.; Knecht, M.R. Determining

Peptide Sequence Effects that Control the Size, Structure, and Function of Nanoparticles. ACS Nano, **2012**, 1625-1636.

Bhandari, R.; Coppage, R.; Knecht, M. Mimicking Nature's Strategies for the Design of Nanocatalysts. Catal. Sci. Technol. **2012**, 2, 256-266. (Published as a HOT Article; featured on the inside front cover of the February 2012 issue.)

Stolarczyk, E. I.; Reiling, C. J.; Pickin, K. A.; Coppage, R.; Knecht, M. R.; Paumi, C. M. Casein kinase 2α regulates multidrug resistance-associated protein 1 function via phosphorylation of Thr249. Mol Pharmacol. **2012**, 82(3):488-99.

Coppage, R.; Slocik, J.M.; Briggs, B.D.; Frenkel, A.I.; Heinz, H.; Naik, R.R.; Knecht, M.R.;

Crystallographic Recognition Controls Peptide Binding for Bio-based Nanomaterials. J. Am. Chem. Soc. **2011**, 133, 12346-12349.

Coppage, R.; Slocik, J.M.; Sethi, M.; Pacardo, D.B.; Naik, R.R.; Knecht, M.R. Elucidation of Peptide Effects that Control the Activity of Nanoparticles, Angew. Chem., Int. Ed. **2010**, 49, 3767-3770.

**Research Students**

Past: 6 Undergraduate, nanomaterial synthesis, glaze design, nanoparticle doping and stabilization in glazes. Supported with departmental moneys and support from a local art studio. 1 (one summer and 1 semester) was spent developing new curriculum for Chem 141.

Current: 2 Undergraduate student, successfully nanomaterial synthesis and implementation in reduction-fired ceramic glazes.

**Professional References**:

Dr. Robert Arts: Professor of Physics 606-218-5476

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Pikeville, KY 41501

Dr. Lisa Bell-Loncella: Associate Professor 814-269-2904

University of Pittsburgh, Johnstown etbell@pitt.edu

450 Schoolhouse Road

Johnstown, PA 15904

Dr. Marc Knecht: Associate Professor 305-284-9351

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