

*NCA Self Study*  
*Criterion 3 Documents*

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Eastern Illinois University

Year 2014

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Chemistry Undergraduate/Graduate  
Research Presentations and Publications

Chemistry Department, EIU

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## Chemistry Undergraduate/Graduate Research Presentations and Publications

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Chemistry Department Undergraduate/Graduate / Faculty Mentor

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**246th National Meeting of the American Chemical Society (ACS)**  
Indianapolis, IN (Sept 8-12, 2013)

**Megan E. Schutzbach**, **Kraig A. Wheeler** *Selective [2+2] photodimerization reactions in molecular crystals*

**Megan M. Laffoon**, **Morgan E. Roberts**, **Mary E. Konkle** *Expression, purification, and chemical modification of MitoNEET: A novel diabetes drug target*

**Savannah Kapper**, **Mark E. McGuire** *Ligand-centered absorptions as a means of enhancing the visible absorption spectra of ruthenium(II) polypyridyl complexes used in dye-sensitized solar cells*

**Jacquelyn P. Crail**, **Morgan E. Roberts**, William Fernandez, **Michael A. Menze<sup>†</sup>**, **Mary E. Konkle<sup>\*</sup>**  
*Characterizing protein binding partners of MitoNEET*  
<sup>†</sup>Department of Biological Sciences   <sup>\*</sup>Department of Chemistry

**Matthew W. Foster**, **Ben T. Mehl**, Edward M. Treadwell, **Kraig A. Wheeler**, **Radu F. Semeniuc**  
*On the host-guest chemistry of benzobis(imidazolium) salts and crown ethers: Exploring the path toward carbene based interlocked molecules*

**Teage K. Collett**, **Cody A. Gass**, **Rajan Giri**, **Mihiri S. Weerasinghe**, **Megan E. Schutzbach**, **Kraig A. Wheeler** *New frontiers in desymmetrized molecular crystal reactions*

**48th Midwest Regional Meeting of the American Chemical Society, Springfield, MO (October 16-19, 2013)**

**Kraig A. Wheeler**, **Cody A. Gass**, **Rajan Giri**, **Mihiri Weerasighe** *Molecular shape directed crystal transformations*

**247th National Meeting of the American Chemical Society (ACS)**  
Dallas, TX (March 16-20, 2014)

**Xiao Xiao**; **John M. Saathoff**, **Edward M. Treadwell** *Synthesis of cinnamaldehyde semicarbazones and their photochromicity*

**Olga Livshits**, **Edward M. Treadwell** *Alkynyl versions of cinnamaldehyde semicarbazone and their photochromicity*

**NCUR 2014: National Conference on Undergraduate Research, Lexington, KY  
(April 3-5, 2014)**

**Jacquelyn Crail**, **Mary Konkle\***, **Michael Menze<sup>†</sup>**

*Analysis of the Oligomeric State of MitoNEET: A Novel Type-2 Diabetes Drug Target*

\*Department of Chemistry <sup>†</sup>Department of Biological Sciences

**Rachel E. Dorris**, **Cori L. Christenholz**, **Rebecca A. Peebles**, **Sean A. Peebles**

*Structure Determination of  $H_2C=CHF...H_2C=CF_2$  by Fourier-Transform Microwave Spectroscopy*

Nicolas A. Ferry, **Megan M. Laffoon**, **Mary E. Konkle\***, **Michael A. Menze<sup>†</sup>**

*MitoNEET: Reduction In Insulin Resistance Through Ameliorated Oxidative Stress?*

\*Department of Chemistry <sup>†</sup>Department of Biological Sciences

**Denise M. Funk**, **Suzanne M. Walker**, **Landry Umbu**, **Brandon S. Martin** and **Gopal R.**

**Periyannan** *Aromatic Hydrocarbon Metabolism By Caulobacter Crescentus*

**Lauren Humphrey**, **Doug Klarup** *An Investigation of Chemical Interferences In Two Different Methods of Vehicle Arson Accelerant Identification*

**Savannah Kapper**, **Mark McGuire** *Ligand-Centered Absorptions As a Means of Enhancing the Visible Absorption Spectra of Ruthenium(II) Polypyridyl Complexes Used In Dye-Sensitized Solar Cells.*

**Megan M. Laffoon**, **Michael A. Menze<sup>†</sup>**, **Mary E. Konkle\*** *Chemical Modification of MitoNEET: A Novel Diabetes Drug Target*

<sup>†</sup>Department of Biological Sciences \*Department of Chemistry

**Zachary D. Price**, **Tamara Bowen**, **Zhiqing Yan** *Synthesis of "Clip" Molecules Involving Diels-Alder Reaction of Dienes with Electron-Withdrawing/Donating Groups*

**Megan E. Schutzbach**, **Kraig A. Wheeler** *There and Back Again: A Chemist's Tale of Studying Molecular Shape and Reactivity*

## Peer-reviewed publications with undergraduate co-authors: 2013-2014

Semeniuc, R.F.; Baum, R.R.; Veach, J.J.; Wheeler, K.A.; Pellechia, P.J. Metal Complexes of Ditopic Dithiophosphonate Ligands Built on a Naphthalenediimide Core *Inorg. Chim. Acta* **2013**, *400*, 228-238.

Yan, Z.; Bolokowicz, A.J.; Collett, T.K.; Reeb, S.A.; Wiseman, J.D.; Wheeler, K.A. Solid State Photodimerization Reactions of Racemic and Homochiral Phenylalanine Sulfonamidecinnamic *Acids Cryst. Eng. Commun.* **2013**, *15*, 27-30.

Presley, G.N.; Payea, M.J.; Hurst, L.R.; Egan, A.E.; Martin, B.S.; Periyannan, G.P. Extracellular Gluco-Oligosaccharide Degradation by *Caulobacter Crescentus* *Microbiology* **2014**, *160*, 635-645.

Roberts, M.E.; Crail, J.P.; Laffoon, M.M.; Fernandez, W.G.; Menze<sup>†</sup>, M.A.; Konkle\*, M.E. Identification of Disulfide Bond Formation between MitoNEET and Glutamate Dehydrogenase 1 *Biochemistry* **2013**, *52*, 8869 – 8971.

<sup>†</sup>Department of Biological Sciences \*Department of Chemistry

Baum, R.R.; Veach, J.J.; Wheeler, K.A.; Semeniuc, R.F.; Pellechia, P.J. Metal Complexes of Ditopic Dithiophosphonate Ligands Built on a Naphthalenediimide Core *Inorganica Chimica Acta*, **2013**, *400*, 228-238.

Christenholz, C.L.; Obenchain, D.A.; Peebles, R.A.; Peebles, S.A. Rotational Spectroscopic Studies of C-H•••F Interactions in the Vinyl Fluoride•••Difluoromethane Complex *J. Phys. Chem. A* **2014**, *118*, 1610-1616.

Ulrich, N.W.; Songer, T.S.; Peebles, R.A.; Peebles, S.A.; Seifert, N. A.; Perez, C.; Pate, B.H. Effect of Aromatic Ring Fluorination on CH••• $\pi$  interactions: Rotational Spectrum and Structure of the Fluorobenzene•••acetylene Weakly Bound Dimer *Phys. Chem. Chem. Phys.* **2013**, *15*, 18148-18154.

Lu, Y; Bolokowicz, A. J.; Reeb, S. A.; Wiseman, J. D.; Wheeler, K. A. Chiral Transmission to Crystal Photodimerizations of Leucine-Methionine Quasiracemic Assemblies *RSC Advances* **2014**, *4*, 8125-8131.