

## Publications in Peer Reviewed Journal with WSU Undergraduate Co-Authors

### Paul Benny

- Benny, Paul D.; Fugate, Glenn A.; Barden, Adam O.; Morley, Jennifer E.; Silva-Lopez, Elsa; Twamley, Brendan. Metal Assisted *In situ* Formation of a Tridentate Acac Ligand for Complexation of *fac*- $\text{Re}(\text{CO})_3^+$  for Radiopharmaceutical Applications *Inorganic Chemistry* (2008), 47(7), 2240-2242.
- Synthesis and Characterization of **5-bis(benzyl thio)-1, 3, 4-thiadiazole** Complexes with *fac*- $\text{ReBr}_3(\text{CO})_3^{2-}$  Paul D. Benny<sup>1\*</sup>, Glenn A. Fugate<sup>1</sup>, Jennifer E. Morley<sup>1</sup>, Brenden Twamley<sup>2</sup> and Stephen Trabue<sup>3</sup>. Accepted to *Inorganica Chimica Acta*
- Haiyang He, Jennifer E. Morely, Silva-Lopez, Elsa; Bottenus, Brienne; Montajano<sup>†</sup>, Maribel; Fugate, Glenn A.; Twamley, Brendan Benny, Paul D. Synthesis of Flutamide Linked  $\text{M}(\text{CO})_3^+$  Compounds for Androgen Receptor Targeting in Prostate Cancer Imaging, *Bioconjugate Chemistry* (2009), 20(1), 78-86.
- Benny, Paul D.; Fugate, Glenn A.; Morley, Jennifer E.; Twamley Brenden; Trabue, Steven Synthesis and Characterization of 2,5-bis(benzyl thio)-1,3,4-thiadiazole Complexes with *fac*- $\text{ReBr}_3(\text{CO})_3^{2-}$  *Inorganica Chimica Acta* (2009) 1289-1294.
- Benny, Paul D.; Fugate, Glenn A.; Barden, Adam O.; Morley, Jennifer E.; Silva-Lopez, Elsa; Twamley, Brendan. Metal Assisted *In situ* Formation of a Tridentate Acac Ligand for Complexation of *fac*- $\text{Re}(\text{CO})_3^+$  for Radiopharmaceutical Applications *Inorganic Chemistry* (2008), 47(7), 2240-2242.
- Benny, Paul D.; Fugate, Glenn A.; Morley, Jennifer E.; Twamley Brenden; Trabue, Steven Synthesis and Characterization of 2,5-bis(benzyl thio)-1,3,4-thiadiazole Complexes with *fac*- $\text{ReBr}_3(\text{CO})_3^{2-}$  *Inorganica Chimica Acta* (2009) 1289-1294.
- Haiyang He, Jennifer E. Morley, Silva-Lopez, Elsa; Bottenus, Brienne; Montajano, Maribel; Fugate, Glenn A. ; Twamley, Brendan Benny, Paul D. Synthesis of Flutamide Linked  $\text{M}(\text{CO})_3^+$  Compounds for Androgen Receptor Targeting in Prostate Cancer Imaging, *Bioconjugate Chemistry* (2009), 20(1), 78-86.
- P. D. Benny, H. He, J. Morley. Functionalized Cysteine Derivatives for Labeling  $\text{Tc}(\text{CO})_3$  *J. Radiolabeled Compounds* (2009) S442.
- He, Haiyang; Morley, Jennifer E.; Twamley, Brendan; Groeneman, Ryan H.; MacGillivray, Leonard R.; Benny, Paul D. Synthesis and Characterization of the Coordination Interactions of S-Methylpyridyl-Cysteine Ligands with  $\text{M}(\text{CO})_3^+$  (M=<sup>99m</sup>Tc, Re) *Inorganic Chemistry* (2009), 48 (22), pp 10625–10634.
- Paul D. Benny, Tanushree Ganguly, Lyndel Raiford, Glenn A. Fugate, Brendan Twamley. Synthesis and Reactivity of Acetylacetonate with Amine Ligands in *fac*- $\text{Re}(\text{OH}_2)_3(\text{CO})_3^+$  complexes. *Inorganic Chemistry Communications*, In press (10/2010)

---

### Cliff Berkman

- Inhibition of Glutamate Carboxypeptidase by Phosphoryl and Thiophosphoryl Derivatives of Glutamic and 2-Hydroxyglutaric Acid. Lu, H.; Ng, R.; Shieh, C.C.\*; Martinez, A.R.\*; Berkman, C.E. *Phosphorus, Sulfur and Silicon*, **2003**, 178, 17.
- Synthesis of *N*-Thiophosphoryl amino acids via phosphoramidite amine-exchange. Maung, J.\*; Campbell, T.Y.; Shieh, C.C.\*; Berkman, C.E. *Synth. Comm.* **2004**, 34, 571.
- Alternatives to 1-*H*-Tetrazole in the Preparation of Phosphonate Diesters and Phosphoramidates from Phosponyl Dichlorides. Maung, J.\*; , Mallari, J.P.\*; Choy, C.J.; Berkman, C.E. *Tetrahedron Lett.* **2004**, 45, 6497.

- Probing for a Hydrophobic a Binding Register in Prostate-Specific Membrane Antigen with Phenylalkylphosphonamidates. Maung, J.\*; Mallari, J.P.\*; Girtsman, T.A.; Wu, L.Y.\*; Rowley, J.A.\*; Santiago, N.M.; Brunelle, A.; Berkman, C.E. *Bioorg. Med. Chem.* **2004**, *12*, 4969.
- Stereoselective Inhibition of Glutamate Carboxypeptidase by Organophosphorus Derivatives of Glutamic Acid. Mallari, J. P.\*; Choy, C.J.\*; Hu, Y.; Martinez, A.R.\*; Hosaka, M.\*; Toriyabe, Y.\*; Maung, J.\*; Blecha, J.E.\*; Pavkovic, S. F.; Berkman, C. E. *Bioorg. Med. Chem.*, **2004**, *12*, 6011.
- Synthesis of *N*-Phosphoryl Amino Acids Using Bis(9-fluorenylmethyl) Phosphite. Wu, L.\* C.E. Berkman, C.E. *Tetrahedron Lett.* **2005**, *46*, 5301.
- Optimizing Phenethylphosphonamidates for the Inhibition of Prostate-Specific Membrane Antigen. Wone, D.W.G.; Rowley, J.A.\*; Garofalo, A.W.; Berkman, C.E. *Bioorg. Med. Chem.* **2006**, *14*, 67.
- Inhibition of IGF-1R and Lipoxygenase by Nordihydroguaiaretic Acid (NDGA) Analogs. Blecha, J.E.; Anderson, M.O.; Chow, J.M.\*; Guevarra, C.C.\*; Pender, C.; Penaranda, C.; Zavodovskaya, M.; Youngren, J.F.; Berkman, C.E. *Bioorg. Med. Chem. Lett.* **2007**, *17*, 4026.
- Substrate Specificity of Prostate-Specific Membrane Antigen. Santiago, N.; Moser, J.\*; Rowley, J.A.\*; Davis, E. Anderson, M.O.; Berkman, C.E. *Bioorg. Med. Chem.* **2007**, *15*, 6678.
- The Molecular Pruning of a Phosphoramidate Inhibitor of Prostate-Specific Membrane Antigen. Wu, L.Y.; Anderson, M.O.; Toriyabe, Y.; Maung, J.\*; Campbell, T.Y.; Tajon, C.; Kazak, M.\*; Moser, J.\*; Berkman, C.E. *Bioorg. Med. Chem.* **2007**, *15*, 7434.
- Phosphoramidate Derivatives Of Hydroxysteriods As Inhibitors Of Prostate-Specific Membrane Antigen. Wu, L.Y.; Do, J.\*; Kazak, M.\*; Page, H.\*; Toriyabe, Y. Anderson, M.O.; Berkman, C.E. *Bioorg. Med. Chem. Lett.* **2008**, *18*, 281.
- Cell-Surface Labeling and Internalization by a Fluorescent Inhibitor of Prostate-Specific Membrane Antigen. Liu, T.; Wu, L.Y.; Kazak, M.\*; Berkman, C.E. *The Prostate* **2008**, *68*, 955.
- 

### **James Brozik**

Molecular Effects of a Nanocrystalline Quartz Support upon Planar Lipid Bilayers. Christopher M. Hartshorn, Cayla M. Jewett, and James A. Brozik. *Langmuir* **2010**, *26*, 2609-2617.

---

### **Sue Clark**

P. D. Schumacher, S. M. Miley, J. O. Schenk, and S. B. Clark (in press). Optimization of Nd(III) pre-concentration on a rotating disk mercury film electrode in aqueous solution, *Radiochimica Acta*.

P. D. Schumacher, N. A Woods, J. O. Schenk, and S. B. Clark (2010). Rapid pre-concentration of trivalent lanthanide elements on a mercury film from aqueous solution using rotating disk electrode voltammetry, *Analytical Chemistry*, *82*: 56635668..

---

### **Aurora Clark**

Bruhn, G.; Davidson, E. R.; Mayer, I.; Clark, A. E. Löwdin Population Analysis With and Without Rotational Variance. *Int. J. Quant. Chem.* **2006**, *106*, 2065.

Kvamme, B.; Wander, M. C. F.; Clark, A. E. The Role of Basis Set Superposition Error in Water Addition Reactions to Ln(III). *Int. J. Quant. Chem.* 2009, *109*, 2474-2481.

Zakharova, N. L.; Crawford, C. L.; Hauck, B. C.; Hill, H. H.; Clark, A. E. An Assessment of Computational Methods for Obtaining Gas Phase Structural Information of Moderately Flexible Biomolecules from ion Mobility Spectrometry Measurements, *Journal of the American Society of Mass Spectrometry* **2010**, Submitted.

---

Waldher, Benjamin\*; Kuta, Jadwiga; Chen, Samuel; Henson, Neil; Clark, Aurora E. ForceFit: A Code to Fit Classical Force Fields to Quantum Mechanical Potential Energy Surfaces, *Journal of Computational Chemistry* **2010**, *31*, 2307-2316.

---

### **Phil Garner**

Garner, P.; Hu, J.; **Parker, C. J.**; Youngs, W. J.; Medvetz, D. “The CuCatalyzed Exo-Selective Asymmetric ulticomponent [C+NC+CC] Reaction” *Tetrahedron Lett.* **2007**, *48*, 3867

Isleyen, A.; **Gonsky, C.**; Garner, P.; Ronald, R. “Synthesis of Oppolzer’s Glycyl Sultam *via* the Delépine Reaction” - manuscript in preparation.

---

### **K.W. Hipps**

Optimization of Film Stresses Utilized in Composite Piezoelectric Membrane Microgenerators. M.S. Kennedy, M. Zosel, C.D. Richards, R.F. Richards, D.F. Bahr, K.W. Hipps, and N.R. Moody. *Materials Research Society Proceedings*, **2004**, *795*, 503-508.

Nanomechanical Properties of Highly Ordered Phthalocyanine Langmuir-Blodgett Layers. T Oshiro, A. Backstrom, A. M. Cumberlandidge, S. Pevovar, D. Bahr, J. Smieja, K. W. Hipps, and U. Mazur. *Journal of Materials Research*, **2004**, *19*, 1461-1470.

Supramolecular Structures of Coronene and Alkane Acids at the Au(111) - Solution interface: A Scanning Tunneling Microscopy Study. Brett Gyarfás, Bryan Wiggins, Monica Zosel, and K. W. Hipps. *Langmuir*, **2005**, *21*, 919-923.

A Scanning Tunneling Microscopy Study of Self-assembled Nickel(II) Octaethylporphyrin Deposited from Solutions on HOPG. Ogunrinde, Ayowale; Hipps, K. W.; Scudiero, L. *Langmuir*; **2006**; *22*, 5697-5701.

Scanning Tunneling Microscopy and Orbital-Mediated Tunneling Spectroscopy Study of 1,5-Di(octyloxy)anthracene Adsorbed on Highly Ordered Pyrolytic Graphite from Various Solvents and in Different Environments . Mathew Pokrifchak, Tracey Turner, Ian Pilgrim, Martin R. Johnston, and K W Hipps *J. Phys. Chem. C*, **2007**; *111*(21); 7735-7740.

STM and OMTS Study of N,N'-Dioctyl-1,8:4,5-naphthalenediimide Adsorbed on Highly Ordered Pyrolytic Graphite from Various Solvents and In Different Environments. Leslie Shuhler, Rebekah Britain, Martin Johnson, and K. W. Hipps. *J. Phys. Chem. C*, **2008**, *112*, 14907- 14912.

Organization of Vanadyl and Metal-Free Tetrphenoxypthalocyanine Complexes on Highly Oriented Pyrolytic Graphite in the Presence of Paraffinic Solvents: an STM Study. Ursula Mazur, K. W. Hipps, and Shawn L. Riechers. *Journal of Physical Chemistry C* **2008**, *112*, 20347-20356.

Building Self-Assembled Molecular Layers with Axially Substituted Titanium Phthalocyanines. Tomohide Takami, Aurora Clark, Richard Caldwell, Ursula Mazur, and K.W. Hipps: *Langmuir* **2010**, *26*, 12709–12715, DOI: 10.1021/la1020127

Temperature Independence of Orbital Mediated Tunneling in Cobalt(II) Phthalocyanine. Brett Gyarfás, Bryan Wiggins, and K W Hipps, *J. Phys. Chem. B* **2010**, *114*, 13349-13353.

---

### **James Hurst**

David A. King, Mark W. Sheafor, and James K. Hurst: “Comparative Toxicities of Putative Phagocyte-generated Oxidizing Radicals toward a Bacterium (*Escherichia coli*) and a Yeast (*Saccharomyces cerevisiae*)”, *Free Radic. Biol. Med.* **2006**, *40*, 765-774.

Christine Suquet, Jeffrey J. Warren, Nimulreth Seth, and James K. Hurst: "DNA as a Probe of Intraphagosomal Bacterial Chlorination", *Chem. Res. Toxicol.* **2008**, *21*, submitted.

Jonathan L. Cape, Travis Lightbody, Sergei V. Lyman, and JKH: "Physical Properties of Intermediary Redox States of the Water Oxidation Catalyst,  $[\text{Ru}(\text{bpy})_2(\text{OH}_2)]_2\text{O}^{4+}$ ". *Inorganic Chemistry*, 2009 in press.

---

### **ChulHee Kang**

- Kang C, Webb, BN, Hayes, R, Hooper T and Xun, L (2011) Crystal structure of zinc-containing alcohol dehydrogenase from *Ralstonia eutropha* JMP134, FurX, and its reaction mechanism (submitted)
- Webb, BN, Ballinger JW, Kim E, Belchik S, Lam KS, Youn B, Nissen M, Xun L, and **Kang C.** (2010) Characterization of chlorophenol 4-monooxygenase (TftD) and NADH:FAD oxidoreductase (TftC) of *Burkholderia cepacia* AC1100. *J Biol. Chem.* *285*, 2014-2027.
- Nissen M, Kumar M, Youn B, Knowles DB, Lam KS, Ballinger WJ, Knowles NR and Kang C. (2009) Characterization of Potato Multicystatin and its Structural comparison with other Cystatins Plant Cell *21*, 861-875.
- Nissen M, Youn, B, Knowles D, Ballinger J, Belchik S, Xun L and Kang C (2008) Crystal structures of NADH:FMN oxidoreductase (EmoB) at different stages of catalysis. *J Biol. Chem.* *283*, 28710-20.
- Kim EJ, Youn B, Kemper L, Campbell C, Milting H, Varsanyi M & Kang C (2007) Biochemical analysis of human cardiac calsequestrin and its deleterious mutants. *J Mol Biol.* *373*, 1047-57.
- Youn B, Camacho R, Moinuddin SG, Lee C, Davin LB, Lewis NG, Kang C. (2006) Crystal structures and catalytic mechanism of the Arabidopsis cinnamyl alcohol dehydrogenases AtCAD5 and AtCAD4. *Org Biomol Chem.* *7*, 1687-97.
- Youn B, Kim SJ, Moinuddin SG, Lee C, Bedgar DL, Harper AR, Davin LB, Lewis NG & Kang C. (2006) Mechanistic and structural studies of apoform, binary, and ternary complexes of the Arabidopsis alkenal double bond reductase at5g16970. *J Biol Chem.* *281*, 40076-40088.
- Youn, B., Sellhorn, GE., Mirchel, RJ., Gaffney, BJ., Grimes, HD. & Kang, C. (2006) Crystal Structures of Vegetative Soybean Lipoxygenase VLX-B and VLX-D. *Proteins* *65*, 1008-1020.
- Park, I-Y., Kim, E-J., Park, H.J., Fields, K., Dunker, K.A., & Kang, C. (2005) Interaction between cardiac calsequestrin and drugs with known cardiotoxicity. *Mol. Pharmacology* *67*, 95-105.
- Kim, E.J., Tam, M., Siems, W.F., & Kang, C. (2005) Effects of the drugs with muscle-related side effects and affinity to calsequestrin on the calcium regulatory function of SR microsomes. *Mol. Pharmacology* **68**, 1708-1715.
- Park, H-J., Park, I-Y., Kim E.J., Wu, S., Youn, B., Fields, K., Dunker, A.K., & Kang, C. (2004) Comparing skeletal and cardiac calsequestrin structures and their calcium binding: a proposed mechanism for coupled calcium binding and protein polymerization. *J. Biol. Chem.* *279*, 18026-18033.
-

### Alex Li

Title: Foldamers with hybrid biological and synthetic sequences as selective DNA fluorescent probes Author(s): Wang W, Wan W, Stachiw A, et al. *BIOCHEMISTRY* Volume: **44** Issue: **32** Pages: 10751-10756

---

### Ursula Mazur

Nanomechanical properties of ordered phthalocyanine Langmuir-Blodgett layers. T. Oshiro, A. Backstrom, A. M. Cumberlidge, K.W. Hipps, S.P. Pevovar, D.F. Bahr, J. Smieja, and U. Mazur. *J. Mater. Res.* **2004**, *19*, 1462-1470.

Organization of Vanadyl and Metal Free Tetrphenoxo Phthalocyanine Complexes on HOPG in the Presence of Paraffinic Solvents: An STM Study, Ursula Mazur\*, K. W. Hipps, and Shawn L. Riechers, *J. Phys. Chem. C.* **2008**, *112*, 20347-56.

Takami, Tomohide; Clark, Aurora; Caldwell, Richard; Mazur, Ursula; Hipps, K. W. **Building Self-Assembled Molecular Layers with Axially Substituted Titanium Phthalocyanines.** *Langmuir* **2010**, *26*(15), 12709-12715.

---

### Jeanne McHale

“Betalain pigments for dye-sensitized solar cells,” Donghse Zhang, Suzanne M. Lanier, Jonathan A. Downing, Jason L. Avent, June Lum, Jeanne L. McHale, *J. Photochem. Photobiol. A*, **2008**, *195*, 72-80.

---

### Ken Nash

URANIUM REMOVAL FROM PROCESS EFFLUENTS CONTAINING CHROMATE AND ALUMINUM NITRATE. Martin, L. R.; Harrington, R. C.; Neeway, J. J.; Nash, K. L., Recent Advances in Actinide Science, [Proceedings of the Actinide Conference, Actinides 2005], 8th, Manchester, United Kingdom, July 4-8, 2005 (2006), 542-544.

ANION CONTROL IN HANFORD LEACHATES BY SOLID-LIQUID SEPARATION. Martin, L. R.; Routt, A. R.; Olsen, R. M.; Nash, K. L. . Recent Advances in Actinide Science, [Proceedings of the Actinide Conference, Actinides 2005], 8th, Manchester, United Kingdom, July 4-8, 2005 (2006), 539-541.

ALKALINE SEQUESTRANTS IN HANFORD TANK WASTE PROCESSING. Martin, L. R.; Witty, R. L. P.; Nash, K. L. Recent Advances in Actinide Science, [Proceedings of the Actinide Conference, Actinides 2005], 8th, Manchester, United Kingdom, July 4-8, 2005 (2006), 536-538.

KINETICS AND MECHANISM OF ACTINIDE COMPLEXATION BY POLYDENTATE LIGANDS. Nash, K. L.; Sullivan, J. C.; Jensen, M. P.; Hall, H.; Friese, J. I., Recent Advances in Actinide Science, [Proceedings of the Actinide Conference, Actinides 2005], 8th, Manchester, United Kingdom, July 4-8, 2005 (2006), 662-664

SOLVENT EXTRACTION OF ACTINIDES BY TETRAALKYLPYRIDINE-N-OXIDE-BIS PHOSPHINE OXIDE COMPLEXANTS. Nash, K. L.; Gannaz, B.; Lavallette, C.; Cote, G.; Borkowski, M.; Paine, R. T. Recent Advances in Actinide Science, [Proceedings of the Actinide Conference, Actinides 2005], 8th, Manchester, United Kingdom, July 4-8, 2005 (2006), 659-661.

OXIDATIVE LEACHING OF PLUTONIUM FROM SIMULATED HANFORD TANK-WASTE SLUDGES. Kenneth L. Nash, Marian Borkowski, Melissa Hancock, and Ivan Laszak, *Separation Science and Technology* (2005) 40, 1497-1512

KINETICS OF THE REACTION OF U(VI) WITH BENZENE-1,2-DIPHOSPHONIC ACID. H.Hall, J.C.Sullivan, P.G.Rickert, K.L.Nash, *Dalton Trans.* 2011–2016 (2005).

---

### **Kirk Peterson**

B. C. Shepler, A. D. Wright, N. B. Balabanov, and K. A. Peterson, *J. Phys. Chem. A* **111**, 11342 (2007).

---

### **Rob Ronald**

Whitaker, J. M.; Ronald, R. C. “Enantioselective Synthesis of (R)-Propylene Carbonate from Ethyl (S)-Lactate.” *Synthesis* (2009), *in press*.

---

### **James Satterlee**

A. Bidwai, M. Witt, M. Foshay, L. B. Vitello, J. D. Satterlee, J. E. Erman, “Cyanide Binding to Cytochrome *c* Peroxidase[H52L]”, *Biochemistry*, **42**, 10764-10771 (2003).

---

### **James Schenk**

Schenk, J.O., George, S.E., and Schumacher, P.D. (2003) What can be learned from studies of multisubstrate mechanisms of neuronal dopamine transport? *Eur. J. Pharmacol.* 479: 223-228.

---

### **Louis Scudiero**

Ayowale Ogunrinde, K. W. Hipps, and L. Scudiero\* *Langmuir* 2006, 22, 5697.

---

### **Nathalie Wall**

Interactions of Tc(IV) with humic substances. Mark Boggs, Wenming Dong, Travis Minton, Samuel Lomasney, Baohua Gu, and Nathalie A. Wall. *Environmental Science & Technology*. *Submitted.* (2010) Impact factor = 4.363, 5y impact factor = 8.102

---

### **Ming Xian**

Wang, H.; Shuhler, B. J.; Xian, M. Total synthesis of diospongins A and B. *Synlett* **2008**, *in press*.

Devarie, N.; Shuhler, B. J.; Wang, H.; Xian, M. “Solvent controlled C(sp<sup>2</sup>)–O silyl migration: the one-pot synthesis of 2,3-disubstituted thiophenes” *Org. Lett.* **2007**, 9, 4655.

Wang, H.; Shuhler, B. J. Xian, M. “A versatile strategy for the synthesis of 2,6-disubstituted dihydropyranones” *J. Org. Chem.* **2007**, 72, 4280.

Xian, M.; Shuhler, B. J. “Study of the synthesis of poecillanosine” *Tetrahedron Lett.* **2007**, 48, 1209.

---