

**Donald Anthony Perry**  
**University of Central Arkansas**  
**Department of Chemistry**  
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**EDUCATION:**

**4/2000: Ph.D.-Physical Chemistry**

University of California, Irvine, CA

Thesis title: "Effects of Surface Hydrogen on the Adsorption and Decomposition of Various C<sub>6</sub> Cyclic and C<sub>2</sub> Hydrocarbons on Pt(111): A UHV Surface Analytical Study."

**6/93: B.A.-Chemistry: University of Nevada, Las Vegas, NV**

**PROFESSIONAL EXPERIENCE:**

**6/14: Professor of Chemistry**

Department of Chemistry: University of Central Arkansas

**5/08-6/14: Associate Professor of Chemistry**

Department of Chemistry: University of Central Arkansas

**7/02-5/08: Assistant Professor of Chemistry**

Department of Chemistry: University of Central Arkansas

**8/00-7/02: Postdoctoral Position** Advisor: Professor Alan Campion

Department of Chemistry and Biochemistry: University of Texas, Austin, TX

**4/00-8/00: Summer Research Position** Advisor: Professor John Weaver

Department of Materials Science: University of Illinois, Champaign-Urbana, IL

**7/94-4/00: Graduate Research Assistant** Advisor: Professor John C. Hemminger

**1/94-7/94: Graduate Research Assistant** Advisor: Professor V.A. Apkarian

Department of Chemistry: University of California, Irvine, CA

**10/92-6/93: Undergraduate Researcher** Advisor: Professor Kathleen A. Robbins

Department of Chemistry: University of Nevada, Las Vegas, NV

**PUBLICATIONS:**

**Peer reviewed journal articles (undergraduate student researchers are underlined):**

**“Surface-Enhanced Infrared Absorption Spectroscopic Investigation of Benzamide Thin-Film Formation, Stability, and Catalysis on Gold and Silver Nanostructures”** Chen., T.; Borchers, R.L.; Perry, D.A. *Particulate Science and Technology: An International Journal* **2014**, *32*, 234-241.

**“Applications of Surface-enhanced Raman Scattering in Advanced Bio-medical technologies and Diagnostics”** Nima, Z.A.; Biswas, A.; Bayer, I.S.; Hardcastle F.D.; Perry, D.; Ghosh, A.; Dervishi, E.; Biris, A.S. *Drug Metabolism Reviews* doi: 10.3109/03602532.2013.873451.

**“Surface-Enhanced Infrared Absorption on Elongated Nickel Nanostructures”** Perry, D.A.; Borchers, R.L.; Golden, J.W.; Owen, A.R.; Price, A.S.; Henry, W.A.; Watanabe, F.; Biris, A.S. *Journal of Physical Chemistry Letters* **2013**, *4*, 3945-3949.

**“Surface-enhanced Infrared Absorption and Density Functional Theory Study of Dihydroxybenzene Isomer Adsorption on Silver Nanostructures”** Perry, D.A.; Razer, T.M.; Primm, K.M.; Chen, T.; Shamburger, J.B.; Golden, J.W.; Owen, A.R.; Price, A.S.; Borchers, R.L.; Parker, W.R. *Journal of Physical Chemistry C* **2013**, *117*, 8170-8179.

**“Evidence for Charge Transfer and Impact of Solvent Polar Properties on Aminobenzonitrile Adsorption on Silver Nanostructures”** Perry, D.A.; Cordova, J.S.; Schiefer, E.M.; Chen, T.; Razer, T.M. *Journal of Physical Chemistry C* **2012**, *116*, 4584-4593.

**“Solute-Solvent Halogen Bonding during Adsorption on Silver Nanostructures”** Perry, D.A.; Razer, T.M.; Cordova, J.S.; Schiefer, E.M.; Chen, T.; Primm, K.M.; Bonde, A.M.; Biris, A.S. *Journal of Colloid and Interface Science* **2012**, *376*, 239-244.

**“Characterization of Aminophenol Isomer Adsorption on Silver Nanostructures”** Perry, D.A.; Cordova, J.S.; Smith, L.G.; Son, H.J.; Biris, A.S. *Vibrational Spectroscopy* **2011**, *55*, 77-84.

**“C-H...O Hydrogen Bonding in a 4-fluorobenzoate Multilayer Induced by Silver Nanoparticles”** Perry, D.A.; Schiefer, E.M.; Cordova, J.S.; Bonde, A.M.; Razer, T.M.; Primm, K.A.; Chen, T.; Biris, A.S. *Chemical Physics Letters* **2011**, *511*, 348-350.

**“Adsorption Analysis of Nitrophenol Isomers on Silver Nanostructures by Surface Enhanced Spectroscopy”** Perry, D.A., Son, H.J.; Cordova, J.S.; Smith, L.G.; Biris, A.S. *Journal of Colloid and Interface Science* **2010**, *342*, 311-319.

**“Impact of Choice of Alkane Deposition Solvent on 4-fluorobenzoic Acid Layers Adsorbed on Silver Nanostructures”** Cordova, J.; Schiefer, E.; Bonde, A.; Razer, T.; Chen, T.; Perry, D. *Chemical Physics Letters* **2010**, *497*, 52-56.

**“SERS, SEIRA, TPD, and DFT Study of Cyanobenzoic Acid Isomer Film Growth on Silver Nanostructured Films and Powder”** Perry, D.A.; Cordova, J.S.; Spencer, W.D.; Smith, L.G.; Biris, A.S. *Journal of Physical Chemistry C* **2010**, *114*, 14953-14961.

**“Surface-enhanced Vibrational Investigation of Adsorbed Analgesics”** Smith, M.; Stambaugh, K.; Smith, L.; Son, H.; Garner, A.; Cordova, S.; Posey, K.; Perry, D.; Biris, A.S. *Vibrational Spectroscopy* **2009**, *49*, 288-297.

**“Surface-enhanced Spectroscopic Investigation of the Adsorption Properties of Hydroxybenzoic Acid Isomers onto Metallic Surfaces”** Perry, D.; Boucher, J.; Posey, K.; Cordova, S.; Smith, L.; Son, H.J.; Pandey, R.; Biris, A.S. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* **2009**, *74*, 104-112.

**“Study of Adsorption of Aminobenzoic Acid Isomers on Silver Nanostructures by Surface-Enhanced Infrared Spectroscopy”** Perry, D.A.; Cordova, J.S.; Smith, L.G.; Son, H.J.; Schiefer, E.M.; Dervishi, E.; Watanabe, F.; Biris, A.S., *Journal of Physical Chemistry C* **2009**, *113*, 18304-18311.

**"Surface-Enhanced Vibrational and TPD Study of Nitroaniline Isomers"** Posey, K.L.; Viegas, M.G.; Boucher, A.J.; Wang, C.; Stambaugh, K.R.; Smith, M.M.; Carpenter, B.G.; Bridges, B.L.; Baker, S.E.; *Journal of Physical Chemistry C*, **2007**, *111*, 12352-12360.

**" $\sigma$ -Bond Metathesis on a Surface: Dehydrogenation of Cyclohexane on Hydrogen-Saturated Pt(111)."** Perry, D.A.; Hemminger, J.C. *Journal of the American Chemical Society Communication* **2000**, *111*, 8079.

#### **GRANTS AND AWARDS:**

**March 2003-August 2003:** University Research Council Summer Stipend (\$2,600-PI)

**April 2003-June 2004:** University Research Council Faculty Research Grant (\$5,599-PI)

**April 2004-August 2004:** University Research Council Summer Stipend (\$2,600-PI)

**May 2004-June 2004:** UCA Student Research Fund Grant (\$920-PI)

**March 2005-March 2006:** NASA Research Infrastructure/Student Grant (\$7,500-PI)

**May 2005-June 2005:** UCA Student Research Fund Grant (\$900-PI)

**June 2005-June 2008:** NSF CCLI Grant "GC/MS in the Undergraduate Curriculum" (\$129,194-PI)

**December 2005-December 2006:** SURF Grant: "Investigation of Substituted Nitroaniline Isomers and Larger Macromolecules using Surface-enhanced Infrared Absorption (SEIRA)" (\$3,900-PI)

**March 2006-March 2007:** NASA Student Research Grant (\$4,000-PI)

**April 2006-June 2007:** University Research Council Faculty Research Grant (\$5,800-PI)

**April 2006-April 2007:** Arkansas Space Grant Consortium: Workforce Development Grant "Study of Lubricants on the Ball-Bearings of Spacecraft" (\$6,500-PI)

**August 2007-August 2009:** Small Business Administration (SBA) funded Innovation Technology Access Project (ITAP): "Surface-enhanced Vibrational Analysis of Nanofilms" (\$33,000-PI)

**November 2008-November 2009:** SURF grant: "Nanotechnological Investigation of Amino Acid Adsorption and Film Growth" (\$3,900-PI)

**July 2009-July 2013:** NSF MRI Grant: "MRI: Acquisition of UPLC-TQMS and MALDI-TOFMS" (\$577,986) (my research was in the grant although I was not a co-PI)

**July 2010-September 2013:** NSF RUI Grant: "Development of Organic and Biological Films on Vapor-deposited Metal Nanostructures" (\$131,611-PI)

**July 2013-July 2016:** NSF RUI Grant: "Investigation of Organic and Biological Multilayers Adsorbed on Elongated Metal Nanostructures" (95,000-PI)

#### **AFFILIATIONS:**

**1994-present:** Member of the American Chemical Society

**2002-present:** Member of the Mid-south Inorganic Chemists Association

#### **ORAL PRESENTATIONS:**

**"Solute-solvent Induced Halogen and C-H...O Hydrogen Bonding by Silver Nanostructures"** Oral presentation given at the "Nanoparticle Enhanced Spectroscopy" symposium at the 243<sup>rd</sup> National Meeting of the American Chemical Society in San Diego, CA on March 25, 2012.

**"Surface-enhanced Vibrational and Temperature-programmed Desorption Study of Halogenated Benzoic Acids Adsorbed on Silver Nanostructures"** Oral presentation given at the "Fluorine Related Nanoscience with Energy Applications" symposium at the 238<sup>th</sup> National meeting of the American Chemical Society in Washington, D.C. on August 15, 2009.

**"Surface-enhanced Vibrational Study of Adsorbed Analgesics"** Oral presentation given at the "Applications in Nanoscience Symposium" at the 237<sup>th</sup> National meeting of the American Chemical Society in Salt Lake City, UT on March 23, 2009.

**“Surface-enhanced Vibrational Study of Adsorbed Analgesics”** Oral presentation given at the “Nanotechnology Symposium” of the 64<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in Little Rock, AR on October 2, 2008.

**"Incorporating GCMS into an Undergraduate Teaching and Faculty-Mentored Student Research Curriculum: Part II"** Oral presentation given in the "NSF Catalyzed Innovations in the Undergraduate Curriculum" Section of the 234<sup>th</sup> Meeting the American Chemical Society in Boston, MA on August 20, 2007.

**"Incorporating GCMS into an Undergraduate Teaching and Faculty-Mentored Student Research Curriculum"** Oral presentation given in the "NSF Catalyzed Innovations in the Undergraduate Curriculum" Section of the 232<sup>nd</sup> Meeting the American Chemical Society in San Francisco, CA on September 14, 2006.

**"Introducing Quantum Mechanics to Undergraduates"** Oral presentation given at the Bi-annual Meeting of the Mid-South Inorganic Chemists Association (MICA) on March 5, 2005.

**"SEIRA Research with Undergraduates"** *Invited* oral presentation given at the IGERT Grant Writing Colloquium at the University of Arkansas at Little Rock on June 30, 2004.

**"Electronic and Vibrational Studies of Molecules Adsorbed on Solid Surfaces"** *Invited* oral presentation given at the Arkansas State University on October 20, 2003.

**"Interactions of C<sub>6</sub> Cyclic Hydrocarbons with Co-adsorbed Hydrogen on Pt(111)."** Oral presentation given at the 31<sup>st</sup> Annual American Vacuum Society Graduate Student Symposium, Orange, CA, on September 23, 1998.

#### **CONFERENCES AND WORKSHOPS ATTENDED (recent):**

- 245<sup>th</sup> Meeting of the American Chemical Society in New Orleans, LA on April 7-11, 2013.
- National Science Foundation Ethics in Research Workshop at the University of Central Arkansas in Conway, AR on June 5, 2012.
- 243<sup>rd</sup> Meeting of the American Chemical Society in San Diego, CA on March 24-29, 2012.
- Bi-annual Meeting of the Mid-South Inorganic Chemists Association (MICA) on October 8, 2011.
- 241<sup>st</sup> Meeting of the American Chemical Society in Anaheim, CA on March 27-30, 2011.
- ABET Workshop on curriculum assessment in Dallas, TX on February 19, 2011.
- 30<sup>th</sup> Annual Undergraduate Research Conference in Memphis, TN on February 26, 2010.
- 238<sup>th</sup> Meeting of the American Chemical Society in Washington, D.C. on August 15, 2009.
- 237<sup>th</sup> Meeting of the American Chemical Society in Salt Lake City, UT on March 23, 2009.
- 64<sup>th</sup> Southwest Meeting of the American Chemical Society in Little Rock, AR in October 2008
- 234<sup>th</sup> Meeting of the American Chemical Society in Boston, MA from August 19-23, 2007
- 232<sup>nd</sup> Meeting of the American Chemical Society in San Francisco, CA from September 10-14, 2006
- Annual NASA ASGC Meeting at Arkansas Tech. University on April 21, 2006
- Bi-annual Arkansas INBRE in Fayetteville, AR on February 24-25, 2006
- Bi-annual Meeting of the Mid-South Inorganic Chemists Association (MICA) on October 1, 2005
- 61<sup>st</sup> Southwest Meeting of the American Chemical Society in Memphis, TN in November 2005
- “Introduction to ion-trap mass spectrometry” held at Varian Inc. in Chicago, IL. from August 8-11, 2005
- Southeast Regional Meeting of the American Chemical Society in Memphis, TN on November 4, 2005.
- Gaussian Workshop held at the University of Alabama, Tuscaloosa on March 28-April 1, 2005
- Bi-annual Meeting of the Mid-South Inorganic Chemists Association (MICA) on March 5, 2005

- Attended the University of Memphis Undergraduate Research Conference on February 21, 2004
- Bi-annual Meeting of the Mid-South Inorganic Chemists Association (MICA) on March 15, 2003
- Bi-annual Meeting of the Mid-South Inorganic Chemists Association (MICA) on October 15, 2002

#### **OTHER SCOLARLY ACTIVITIES:**

- NSF CCLI Panel Reviewer in Washington, D.C. (2005)
- NSF Ad Hoc RUI Reviewer (2010)
- NSF Ad Hoc reviewer: Research Initiation Award Grant (2011)
- NSF Ad Hoc reviewer NSF Career Awards (2011, 2012)
- NSF Macromolecular, Supramolecular, and Nanochemistry Panel Reviewer in Washington D.C. (2011)
- NSF Ad Hoc reviewer: Macromolecular, Supramolecular, and Nanochemistry (2012)
- reviewer for the *Journal of Inorganic Chemistry* (2010)
- reviewer for the *Journal of Physical Chemistry* (2008, 2009, 2010, 2011, 2012, 2013, 2014)
- reviewer for *Vibrational Spectroscopy* (2009, 2010, 2011, 2012, 2013, 2014)
- reviewer for *Current Pharmaceutical Analysis* (2010)
- reviewer for *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* (2010, 2014)
- reviewer for the *Journal of Molecular Structure* (2010, 2011)
- reviewer for *Applied Spectroscopy* (2010, 2011, 2012)
- reviewer for the *Journal of Chemical Education* (2011)
- reviewer for the *International Journal of Environment and Waste Management* (2011)
- reviewer for *Journal of Hazardous Materials* (2011)
- reviewer for *Chemical Physics Letters* (2011, 2012)
- reviewer for the *Journal of Colloid and Interface Science* (2011)
- reviewer for *Langmuir* (2011)
- reviewer for the *Journal of Nanotechnology* (2012)
- reviewer for *Surface and Interface Analysis* (2013)
- reviewer for *Chemical Communications* (2013)
- reviewer for *Particulate Science and Technology* (2013)

#### **HIGHLIGHTS OF UNDERGRADUATE RESEARCH:**

To date I have had 35 students perform undergraduate research in my laboratory: Dan Edwards, Krystal Posey, Jacob Boucher, Bridgette Bridges, Mark Viegas, Chen Wang, Merritt Smith, Kaitlyn Stambaugh, Brittany Carpenter, Steve Baker, Nathan Shirley, Scott Cordova, Hye Jin Son, Ram Panday, Sean Oakley, Amanda Garner, Lauren Smith, Whitney Spencer, Liz Schiefer, Taylor Razer, TsungYen Chen, Mallory Roberson, Ashley Bonde, Katherine Primm, Jenna Shamburger, Reece Borchers, Aaron Owen, Adam Price, Jon Golden, Ryan Parker, Elyahb Kwizera, Kyle Barker, Caleb Denton, Brandon Wilde, and Taylor Huntington.

\*Liz Schiefer won an award for “Outstanding Undergraduate Research Presentation” for her presentation “Halogen Bonding Induced by Silver Nanostructures in 4-fluorobenzoate Ions” at the 30th Annual Undergraduate Research Conference in Memphis, TN on February 26, 2010. Liz competed with 47 other students from Illinois, Missouri, Florida, Georgia, Alabama, Arkansas, Tennessee, Louisiana, and Mississippi for the award.

#### **STUDENT POSTERS AND PRESENTATIONS (58 total):**

-“DFT Calculations to Model SERS and SEIRA” Oral presentation given by Kyle Barker at the UCA Chalk Talk on April 3, 2014.

-**“Surface-enhanced Infrared Absorption from Elongated Metal Nanostructures Formed by Oblique Angle Deposition”** Poster presentation given by Will Henry at the 247<sup>th</sup> Meeting of the American Chemical Society in Dallas, TX on March 21, 2014.

-**“Surface-enhanced Infrared Absorption from Elongated Metal Nanostructures Formed by Oblique Angle Deposition”** Oral presentation given by Will Henry at the 22<sup>nd</sup> Mid-South Inorganic Chemists Association Meeting (MICA) in Little Rock, AR on October 5, 2013.

-**“DFT simulations of glycine and alanine clusters”** poster presentation given by Aaron Owen at the “Undergraduate Poster Session” 245<sup>th</sup> Meeting of the American Chemical Society In New Orleans, LA on April 8, 2013.

-**“Growth of elongated silver, gold, and copper nanoparticles for applications in SEIRA”** poster presentation given by Jon Whitt Golden at the “Undergraduate Poster Session” 245<sup>th</sup> Meeting of the American Chemical Society In New Orleans, LA on April 8, 2013.

-**“Deposition of antibiotics on silver and gold nanostructures”** poster presentation given by Adam Price at the “Undergraduate Poster Session” 245<sup>th</sup> Meeting of the American Chemical Society In New Orleans, LA on April 8, 2013.

-**“Surface-enhanced infrared spectroscopy from elongated Ni nanostructures”** poster presentation given by Reece Borchers at the “Undergraduate Poster Session” 245<sup>th</sup> Meeting of the American Chemical Society In New Orleans, LA on April 8, 2013.

-**“DFT simulations of glycine and alanine clusters”** poster presentation given by Aaron Owen at the UCA CNSM Poster Session on April 19, 2013.

-**“Growth of elongated silver, gold, and copper nanoparticles for applications in SEIRA”** poster presentation given by Adam Price and William Henry at the UCA CNSM Poster Session on April 19, 2013.

-**“Deposition of antibiotics on silver and gold nanostructures”** poster presentation given by Adam Price and Elyahb Kwizera at the UCA CNSM Poster Session on April 19, 2013.

-**“Surface-enhanced infrared spectroscopy from elongated Ni nanostructures”** poster presentation given by Reece Borchers at the UCA CNSM Poster Session on April 19, 2013.

-**“Growth of Ni nanostructures at grazing angles”** Student oral presentation given by Aaron Owen and John Golden at the UCA Student Chalk Talk on July 13, 2012.

-**“Formation of gold nanoparticles and nanorods for applications in SERS and SEIRA”** poster presentation given by Katie Primm and Reece Borchers at the UCA CNSM Poster session on April 20, 2012.

-**“Impact of gold and silver nanostructures on adsorption characteristics of benzamide and its derivatives”** poster presentation given by TsungYen Chen and Aaron Owen at the UCA CNSM Poster session on April 20, 2012.

-**“Solute-Solvent induced halogen bonding by silver nanostructures”** poster presentation given by Jenna Shamburger, Adam Price, and Jon Whitt Golden at the UCA CNSM Poster session on April 20, 2012.

- “Impact of gold and silver nanostructures on adsorption characteristics of benzamide and its derivatives”** poster presentation given by TsungYen Chen at the “Undergraduate Poster Session” of the 243<sup>rd</sup> Meeting of the American Chemical Society in San Diego, CA on March 25, 2012.
- “ Formation of gold nanoparticles and nanorods for applications in SERS and SEIRA”** poster presentation given by Katie Primm at the “Undergraduate Poster Session” of the 243<sup>rd</sup> Meeting of the American Chemical Society in San Diego, CA on March 25, 2012.
- “Solute-Solvent induced halogen bonding by silver nanostructures”** poster presentation given by Jenna Shamburger at the “Undergraduate Poster Session” of the 243<sup>rd</sup> Meeting of the American Chemical Society in San Diego, CA on March 25, 2012.
- “Mass spectrometric applications in nanotechnology”** Student oral presentation given by Jenna Shamburger and Reece Borchert at the UCA Student Chalk Talk on February 21, 2012.
- “Synthesis of gold nanorods for plasmonic applications”** Student oral presentation given by Katie Primm at the 18<sup>th</sup> Meeting of the Mid-South Inorganic Chemists Association in Russellville, AR on October 8, 2011.
- “Multilayer halogen bonding induced by silver nanoparticles”** Student oral presentation given by Taylor Razer at the 18<sup>th</sup> Meeting of the Mid-South Inorganic Chemists Association in Russellville, AR on October 8, 2011.
- Catalysis of benzamides to benzonitriles by metal nanostructures”** Student oral presentation given by TsungYen Chen at the 18<sup>th</sup> Meeting of the Mid-South Inorganic Chemists Association in Russellville, AR on October 8, 2011.
- “Plasmonics of gold nanostructures”** Student oral presentation given by Katherine Primm at the UCA Student Chalk Talk on July 22, 2011.
- “ C-H...O hydrogen bonding of substituted benzoate ions with alkanes on silver nanostructures”** given by TsungYen Chen and Jenna Shamburger at the UCA College of Natural Sciences and Mathematics Poster Symposium on April 22, 2011.
- “ Halogen Bonding in a multilayer of 4-iodobenzoate ions with CCl<sub>4</sub> adsorbed on silver nanostructures”** given by Taylor Razer and Katie Primm at the UCA College of Natural Sciences and Mathematics Poster Symposium on April 22, 2011.
- “ C-H...O hydrogen bonding of substituted benzoate ions with alkanes on silver nanostructures”** poster presentation given by TsungYen Chen at the “Undergraduate Poster Session” of the 241<sup>st</sup> Meeting of the American Chemical Society in Anaheim, CA on March 27, 2011.
- “ Halogen Bonding in a multilayer of 4-iodobenzoate ions with CCl<sub>4</sub> adsorbed on silver nanostructures”** poster presentation given by Taylor Razer at the “Undergraduate Poster Session” of the 241<sup>st</sup> Meeting of the American Chemical Society in Anaheim, CA on March 27, 2011.
- “Quantifying *n*-heptane intercalation in 4-fluorobenzoate ion films on silver nanostructures”** Student oral presentation given by TsungYen Chen at the UCA Student Chalk Talk on October 14, 2010.

-**“CCl<sub>4</sub> halogen bonding in 4-iodobenzoate Ion Films Induced by Ag Nanostructures”** Student oral presentation given by Ashley Bonde and Taylor Razer at the UCA Student Chalk Talk on July 16, 2010.

-**“Intermolecular Attractions in Thin Halogenated Benzoic Acid Films Induced by Metal Nanostructures”** Student oral presentation given by Liz Schiefer at the UCA Student Chalk Talk on April 15, 2010.

-**“Surface-enhanced Vibrational, TPD, and DFT Study of Halogenated Benzoic Acids and Pesticides Adsorbed on Silver”** Student poster presentation given by Liz Schiefer, Scott Cordova, Ashley Bonde, Taylor Razer, and TsungYen Chen at the UCA College of Natural Sciences and Mathematics Poster Symposium on April 24, 2010.

-**“Surface-enhanced Vibrational, TPD, and DFT Study of Halogenated Benzoic Acids and Pesticides Adsorbed on Silver”** Student poster presentation given by Liz Schiefer at the “Undergraduate Poster Session” of the 239<sup>th</sup> Meeting of the American Chemical Society in San Francisco, CA on March 29, 2010.

-**“Halogen Bonding Induced by Silver Nanostructures in 4-fluorobenzoate Ions”** Student oral presentation given by Liz Schiefer at the 30<sup>th</sup> Annual Undergraduate Research Conference in Memphis, TN on February 26, 2010.

-**“Spectroscopy and Microscopy of Silver Nanostructure Materials”** Student poster presentation given by Scott Cordova at the 2<sup>nd</sup> Annual Arkansas Undergraduate Research Symposium in Little Rock, AR on October 2, 2009.

-**“Surface-enhanced Infrared Absorption (SEIRA) Investigation of Amino Acids Adsorbed on Silver Nanostructures”** Student poster presentation given by Scott Cordova at the “Undergraduate Poster Session” of the 238<sup>th</sup> Meeting of the American Chemical Society in Washington, D.C. on August 16, 2009.

-**“Applications in Nanotechnology”** Student oral presentation given by Liz Schiefer and Whitney Spencer at the UCA Student Chalk Talk in February, 2009.

-**“Surface-enhanced Vibrational Study of Adsorbed Analgesics”** Oral presentation given by Lauren Smith at the “Undergraduate Research Symposium” of the 64<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in Little Rock, AR on October 4, 2008.

-**“Surface-enhanced Vibrational Study of Aromatic Isomers”** Poster presentation given by Scott Cordova, Lauren Smith, Liz, Schiefer, Hye Jin Son, and Whitney Spencer at the “Undergraduate Poster Session” of the 64<sup>th</sup> Southwest Regional Meeting of the American Chemical Society in Little Rock, AR on October 2, 2008.

-**“Surface-enhanced Vibrational and TPD Spectroscopic Studies of Aromatic Isomers”** Student oral presentation given by Scott Cordova and Ram Pandey at the UCA Student Chalk Talk November, 2007.

-**“Surface-enhanced Infrared Absorption (SEIRA) and Surface-enhanced Raman Spectroscopy (SERS) Analysis of Various Aromatic Isomers”** Poster presentation given at the 234<sup>th</sup> Meeting of the American Chemical Society in Boston, MA on August 20, 2007.

- **“A Surface Science Investigation of the Adsorption Properties of the Active Ingredients in Three Common Painkillers: Aspirin (Acetylsalicylic acid), Tylenol (Acetamidophenol), and Motrin**



**(Ibuprofen)**" Student presentation given by Merritt Smith, Steve Baker, Hye-Jin Son, and Amanda Garner at the UCA Student Poster Symposium on April 20, 2007.

- **"Photolysis of the Pesticide Permethrin in Solution and Adsorbed on Surfaces: A Continuing Study in Environmental Chemistry Lab"** Student presentation given by Bridget Burkard, Stan Chivers, Michael Gray, Jeremy Mackey, Ram Pandey, and Drew Pendergraft at the UCA Student Poster Symposium on April 20, 2007.

- **"Surface-enhanced Vibrational and Mass Spectroscopic Investigation of Aromatic Isomers Adsorbed on Vacuum-evaporated Ag Films and Ag Powders"** Student presentation given by Brittany Carpenter, Jacob Boucher, Krissy Posey, Ram Pandey, Nathan Shirley, Scott Cordova, and Sean Oakley at the UCA Student Poster Symposium on April 20, 2007.

- **"Surface-enhanced Infrared Absorption (SEIRA) and Surface-enhanced Raman Spectroscopy (SERS) Analysis of the P-nitrobenzoate ion and the Ortho, Meta, and Para-nitroaniline Isomers"** Poster presentation given by Krystal Posey at the 232nd Meeting the American Chemical Society in San Francisco, CA on September 11, 2006.

-**" Surface-enhanced Infrared Absorption and Surface-enhanced Raman Spectroscopy Analysis of Para-nitrobenzoic Acid and Nitroaniline Isomers"** Student poster presentation given by Kaitlyn Stambaugh and Steve Baker at the Annual NASA ASGC Meeting at Arkansas Tech. University on April 21, 2006.

-**" Surface-enhanced Infrared Absorption and Surface-enhanced Raman Spectroscopy Analysis of Para-nitrobenzoic Acid and Nitroaniline Isomers"** Student poster presentation given by Chen Wang, Mark Viegas and Krissy Posey at the UCA Student Poster Symposium on April 21, 2006.

-**"SEIRA Analysis of Para-nitrobenzoic Acid and Nitroaniline Isomers"** Student poster presentation given by Jacob Boucher and Brittany Carpenter at the Arkansas INBRE at the University of Arkansas, Fayetteville on February 24, 2006.

-**"An Infrared NASA Collaboration"** Student oral presentation given by Jacob Boucher at Greenbrier High School in Greenbrier, AR on November 16, 2005.

-**"Investigation of Substituted Nitroaniline Isomers and Larger Macromolecules using Surface-enhanced Infrared Absorption (SEIRA)"** Student oral presentation given by Krissy Posey at the 61<sup>st</sup> Southwest Regional American Chemical Society in Memphis, TN on November 4, 2005.

-**"Infrared Studies on Al"** Student oral presentation given by Chen Wang and Mark Viegas at the UCA Student Chalk Talk on October 25, 2005.

-**"SEIRA Analysis of Nitroaniline Isomers"** Student oral presentation given by Merritt Smith and Kaitlyn Stambaugh at the Bi-annual Meeting of the Mid-South Inorganic Chemists Association (MICA) on October 1, 2005.

-**"Advances in SEIRA"** Student oral presentation given by Krissy Posey and Brittany Carpenter at the UCA Student Chalk Talk on July 22, 2005.

-**"SEIRA I: AFM and UV/VIS Characterization of Ag Films as Substrates for Surface-Enhanced Infrared Absorption (SEIRA) Spectroscopy"** Student poster presentation given by Jacob Boucher,

Bridgette Bridges, Merritt Smith, Crystal Posey, Kaitlyn Stambaugh, Mark Viegas, and Chen Wang at the UCA Student Poster Symposium on April 22, 2005.

-**"SEIRA II: Investigation of p-nitrobenzoic acid and o, m, p-nitroaniline"** Student poster presentation given by Jacob Boucher, Bridgette Bridges, Merritt Smith, Crystal Posey, Kaitlyn Stambaugh, Mark Viegas, and Chen Wang at the UCA Student Poster Symposium on April 22, 2005.

-**"FTIR, <sup>27</sup>MASNMR, and GC/MS Study of Al<sup>I</sup> Based Catalysts"** Student poster presentation given by Jacob Boucher, Bridgette Bridges, Merritt Smith, Crystal Posey, Kaitlyn Stambaugh, Mark Viegas, and Chen Wang at the UCA Student Poster Symposium on April 22, 2005.

- **"Surface-enhanced Infrared Absorption."** Student oral presentation given by Jacob Boucher and Bridgette Bridges at a UCA Student Chalk Talk on September 30, 2004.

-**"Oxidation of CO by Au on Highly Active Al<sub>2</sub>O<sub>3</sub> Support"** Contribution to a poster presented in collaboration with Dr. David Lindquist at the University of Arkansas, Little Rock at the 227th National Meeting of the American Chemical Society, Division of Inorganic Chemistry, Anaheim, CA, March 28-April 1, 2004.

### **COMMUNITY OUTREACH ACTIVITIES**

--Judge for the Arkansas Junior Academy of Science (Environmental Science Program) on April 11, 2014.

-Judge for the Arkansas Junior Academy of Science (Environmental Science Program) on March 26, 2013.

-Judge for the Arkansas Junior Academy of Science (Environmental Science Program) on April 1, 2012.

-Judge for the Arkansas Junior Academy of Science (Environmental Science Program) on April 2, 2011.

-Judge for the Arkansas Junior Academy of Science (Environmental Management) on April 5, 2010.

-Judge for the Arkansas State Science Fair (Environmental Management) at UCA on April 4, 2010.

-Judge for the Arkansas Junior Academy of Science (Earth and Space Science) on April 2009.

-Judge for the Arkansas State Science Fair (Environmental Management) at UCA on April 2009.

-Judge for the Arkansas Junior Academy of Science (Earth and Space Science) on April 5, 2008.

-Judge for the Arkansas State Science Fair (Environmental Management) at UCA on April 4, 2008.

-Judge for the Envirothon on November 5, 2007.

-Judge for the Arkansas Junior Academy of Science (Environmental Science) on March 31, 2007.

-Judge for the Arkansas State Science Fair (Biophysical Chemistry Section) at UCA on March 30, 2007.

-Judge for the Arkansas Junior Academy of Science (Environmental Science Program) on April 8, 2006.

-Judge for the Arkansas State Science Fair (Chemistry Section) at UCA on April 7, 2006.

-Judge for the Arkansas Junior Academy of Science (Environmental Science Program) on April 1, 2005.

-Judge for the Arkansas Junior Academy of Science (Environmental Science Program) on April 3, 2004.

-Presentation at Greenbrier High School titled "Issues in Environmental Science" on January 27, 2004.

### **COURSES TAUGHT:**

CHEM 1301- Chemistry Fundamentals

CHEM 1450-College Chemistry I

CHEM 1451-College Chemistry II

CHEM 4450-Physical Chemistry I (kinetics, quantum mechanics, spectroscopy, and lab)

CHEM 4351-Environmental Chemistry

CHEM 4152-Environmental Chemistry laboratory

