

*Curriculum Vitae*  
**Elizabeth Ann Gardner**  
University of Alabama at Birmingham  
Department of Justice Sciences  
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## **EDUCATION**

1998 Ph.D., Chemistry Michigan State University, East Lansing, MI  
Dr. Thomas J. Pinnavaia, advisor - "Layered Double Hydroxides: I. Synthesis  
by Design II. Catalysis by Intercalated Polyoxometalates"  
1993 B.S., Chemistry Pennsylvania State University, State College, PA  
1988-1990 Harrisburg Area Comm. College, Harrisburg,

## **PROFESSIONAL EXPERIENCE**

Fall 2013 - Associate Professor of Forensic Science  
University of Alabama at Birmingham  
Department of Justice Sciences

Fall 2007-2013 Assistant Professor of Forensic Science  
University of Alabama at Birmingham  
Department of Justice Sciences

Fall 2010 Visiting Faculty  
Universidad Autonoma de Ciudad Juarez  
Department of Forensic Science

2005 –2007 Consultant  
City of El Paso Police Department

Fall 2001 – 07 Assistant Professor of Inorganic Chemistry  
University of Texas at El Paso  
Department of Chemistry

Summer 2004 Visiting Assistant Professor  
Electrical and Computer Engineering  
Purdue University

Summer 2003 NASA Faculty Fellow  
White Sands Test Facility

1999-2001 Postdoctoral Associate Argonne National Laboratory

## RESEARCH INTERESTS

Analytic Methods for Determining Firing Distance  
LIBs Analysis of Trace Evidence, including Bullet Wipe and Clan Lab Residues  
Identification and Analysis of Emerging Drugs of Abuse  
Pretreatment of Fingerprints Prior to Cyanoacrylate Fuming  
Testing Clothing from Clandestine Labs for Methamphetamine and Precursors  
Trends in Drugs Contamination of Bank Notes

## REFEREED PUBLICATIONS (†=undergraduate, \*=graduate, ††= high school student)

- “Lead Density on a Target, A Significant Indicator of Firing Distance, but is it Reliable?” Beverly Cox, Shelly A. McGrath, Steven Harville, and Elizabeth A. Gardner, *Association of Firearms and Toolmarks Examiners Journal*, submitted Aug. 12, 2015.
- “Identification of 2-(ethylamino)-1-(4-methylphenyl)-1-pentanone (4-MEAP), a New “Legal High” Sold by an Internet Vendor as 4-Methyl Pentadron” Hamby, D., Burnett, A., Jablonsky, M., Twamley, B., Kavanagh, P. V. and Gardner, E. A. 2015, *Journal of Forensic Sciences*, 60: 721–726. doi: 10.1111/1556-4029.12712
- “The syntheses and characterization of nitracaine, methoxypiperamide and mephtetramine” John D. Power, Kenneth R. Scott, Elizabeth A. Gardner, Bronagh M. Curran McAteer, John E. O’Brien, Margaret Brehon, Brian Talbot and Pierce V. Kavanagh, *Drug Testing and Analysis*, Article first published online: 29 Jan 2014, DOI: 10.1002/dta.1616
- “Characterization of the pyrolysis products of methiopropamine” Emily D. Bouso, Elizabeth A. Gardner, John E. O’Brien, Brian Talbot and Pierce V. Kavanagh, *Drug Testing and Analysis*, Article first published online : 25 Oct 2013, DOI: 10.1002/dta.1571.
- "Identification of (2-aminopropyl)benzofuran (APB) phenyl ring positional isomers in Internet purchased products." Andrzej Stanczuk, † Noreen Morris, Elizabeth A. Gardner, Pierce V. Kavanagh, *Drug Testing and Analysis* 2013, 5(4):270-6.
- “Methamphetamine Contaminated Currency.” Brandon A. Fultz\*, Jessi Mann,\* and Elizabeth A. Gardner, *Microgram Journal*, 2012, 9(2):57-60.
- “Training Narcotics Custodians in Sampling Large Marijuana Seizures” Arturo Herrera, Martha Mendoza, Rafael Tamez, and Elizabeth A. Gardner, *Forensic Science Policy and Management*, 2011, 2:14–17.
- “Microcrystal Analysis of Cocaine Hydrochloride and Added Adulterants” Hannah C. Nelson, † Elizabeth A. Gardner, and Dan Matteo, *J. Forensic Sci*, 2011 56(3):736-40.
- “Sustainable Water and Energy in Gaza Strip” Lubna Hamdan, † Maryam Zarei†, Russell Chianelli, and Elizabeth Gardner, *Renewable Energy*, June 2008, 33(6):1137-46.
- “Particle-particle interactions of layered double hydroxide nanoparticles,” Jennifer A. Gursky,\* Sandra D. Blough,\* Cesar Luna, † Clarissa Gomez,\* Amber N. Luevano,\* and Elizabeth A. Gardner, *J. Amer. Chem. Soc.*, 2006, 128(26):8376-77.
- “Infrared spectra and conformational analysis of anti and gauche deuterated ethanol isotopomers,” Elizabeth Gardner, Andrew Nevarez, †† Manuel Garbalena, † and William C. Herndon, *J. of Molec. Struc.* 2006, 78(1-3):249-253.

## STUDENT PUBLICATIONS (†=undergraduate, \*=graduate student)

- “Testing of United States Currency for Controlled Substances” Jessi Mann\* and Elizabeth A. Gardner, *Inquire*, UAB's official journal of undergraduate research, 2013, 7:34.
- “Drugs of Abuse on Coated Paper and Polymer Currency,” Michael Longmire\* and Elizabeth Gardner, *Inquire*, UAB's official journal of undergraduate research, 2011.
- “Microcrystal Analysis of Cocaine Hydrochloride and Added Adulterants,” Altovise Broaden\* and Hannah Nelson, *Inquire*, UAB's official journal of undergraduate research, 2009
- “Cocaine Contamination of Currency in Birmingham Alabama,” Jeremy Felix\* and Elizabeth A. Gardner, *Inquire*, UAB's official journal of undergraduate research, 2008, 50-62.

## PRESENTATIONS (†=undergraduate, \*=graduate student, student presenter is in bold)

### Oral

- “Synthetic Drugs and Their Effects on Colleges and Universities” 2015 Alabama College and Universities Safety and Health Professional’s Conference, Elizabeth A. Gardner, UAB, Birmingham, AL. Aug. 12, 2015.
- “Lead Density on a Target, a Significant Indicator of Firing Distance, but is it Reliable?” Dr. Elizabeth Gardner, International Symposium on Forensic Science Error Management – Detection, Measurement and Mitigation, Arlington, VA, July 20-24, 2015.
- “LIBS Analysis of Bullet Wipe” Elizabeth A. Gardner, LIBS Symposium, Pitt Conn, March 17 – 21 2013 at the Pennsylvania Convention Center in Philadelphia, PA.
- “Forensic Science Research at the University of Alabama at Birmingham” Elizabeth A. Gardner, Jason Linville, and John J. Sloan III. Tennessee Valley Corridor Forensics Symposium, The Howard H. Baker Center for Public Policy, The University of Tennessee, Knoxville, Sept. 13, 2012.
- “Forensic Chemistry and Veterinary Science,” Elizabeth A. Gardner, XXI National Congress of Veterinary Pathology MÉXICO, Leon, Guanajuato, Mexico May 30 to June 1, 2012.
- “An Analysis of Legal Highs” **Geaneé B. Quinney**, † Melissa Toms,\* Elizabeth A. Gardner, UAB Graduate Student Research Days, February 22, 2012
- “Examining the Properties of Oil Spill Surface Residues by Thermogravimetric Analysis Combined with Fourier Transform Infrared Spectroscopy” Elizabeth Gardner, Gulf Coast Conference, Galveston TX, Aug. 11-13, 2011.
- “Exploring the Properties of Oil Spill Surface Residues by Thermogravimetric Analysis Combined with Fourier Transform Infrared Spectroscopy” Justin Lang, Elizabeth A. Gardner, Peter Muller, Gulf Coast Conference, Galveston TX, Aug. 11-13, 2011.
- “Statistical Methods for Determination of Sample Sizes: The Bayesian Method” Elizabeth A. Gardner, Shannon L. Crock, † 63<sup>rd</sup> Annual Scientific Meeting, Chicago, IL, Feb. 21-26, 2011.
- \*“Findings of the Examinations of Suspected Animal Cruelty Cases Submitted to the Birmingham Jefferson County Animal Control” **Ubcelio Martin-Orozco**, † Barbara Benhart, Elizabeth A. Gardner, 63<sup>rd</sup> Annual Scientific Meeting, Chicago, IL, Feb. 21-26, 2011.
- “Laser Induced Breakdown Spectroscopy (LIBS) of Bullet Wipe” Kristina Triutt†, Elizabeth A. Gardner, Consorcio de Universidades Mexicanas Para Quimica, Juarez, MX, Oct. 26, 2010.
- “Introducing forensic chemistry to the undergraduate curriculum,” Elizabeth A. Gardner, 239th ACS National Meeting Spring 2010, San Francisco, CA, March 21-25, 2010.
- “Microcrystal Analysis of Cocaine HCl with Adulterants,” **Hannah Nelson**, † Elizabeth A. Gardner, and Dan Matteo, 239th ACS National Meeting Spring 2010, San Francisco, CA, March 21-25, 2010.
- \*“The Binomial Distribution,” **Shannon Crock**† and Elizabeth A. Gardner, AAFS 62<sup>nd</sup> Annual Scientific Meeting, Seattle, WA Feb. 22-27, 2010.
- \*“Microcrystal Analysis of Cocaine HCl with Adulterants,” **Hannah Nelson**, † Elizabeth A Gardner, and Dan Matteo, AAFS 62<sup>nd</sup> Annual Scientific Meeting, Seattle, WA Feb. 22-27, 2010.
- “Introducing Forensic Chemistry to the Undergraduate Curriculum,” Elizabeth A. Gardner, Southwest Regional Meeting of the American Chemical Society, El Paso TX, Nov. 4-7, 2009.

- “Microcrystal Analysis of Cocaine Hydrochloride and Added Adulterants” Hannah Nelson, † Elizabeth A. Gardner, Dan Matteo, Southwest Regional Meeting of the American Chemical Society, El Paso TX, Nov. 4-7, 2009.
- “Microcrystal Analysis of Cocaine Hydrochloride and Added Adulterants” Hannah Nelson, † Elizabeth A. Gardner, Dan Matteo, Southern Association of Forensic Scientists, Orlando FL, Oct. 19-22, 2009.
- “Statistical Drug Sampling I: Training Narcotics Custodians in the Sampling of Large Marijuana Seizures” Elizabeth A. Gardner, Annual Meeting of the American Academy of Forensic Science, Denver, CO, February 16-21, 2009.
- “Issues in Ion Trap Mass Spectroscopy Analysis of Controlled Substances,” Elizabeth Gardner, Arturo Herrera, Martha Mendoza, Rafael Tamez, The 60th Southeastern Regional Meeting ACS Meeting, Nashville, TN November 12–15, 2008.
- \*“Do You Have Cocaine in your Possession?” **Rena Hammer**,\* UAB Undergraduate Expo, UAB, Birmingham AL, April 18, 2008

## INVITED COLLQUIA

- “Legal Highs” Elizabeth A. Gardner, Alabama State University, Montgomery, AL Sept. 30, 2015.
- “Legal Highs” Elizabeth A. Gardner, 2012 Inspiring Innovations Tour North America, 15-city, North American tour sponsored by PerkinElmer, Orlando FL, Nov. 8, 2012.
- “Legal Highs” Elizabeth A. Gardner, 2012 Inspiring Innovations Tour North America, 15-city, North American tour sponsored by PerkinElmer, Raleigh NC, Oct. 18, 2012.
- “Forensic Chemistry” Elizabeth A. Gardner, Alabama State University, Dept. of Physical Sciences, Montgomery AL, Sept. 12, 2012.
- “Forensic Chemistry: From Meth Tests to Tar Balls” Elizabeth A. Gardner, Center for Information Assurance and Joint Forensics Research (CIA|JFR) Feb. 23, 2012.
- “Laser Induced Breakdown Spectroscopy (LIBS) as a Presumptive Test for Trace Evidence” Elizabeth A. Gardner, Delaware State University, Dover, DE, Aug. 14, 2011.
- “Solving 21st Century Forensic Science Problems: New Methods and Analysis” Elizabeth Gardner, 2011 UAB Undergraduate Research Expo, April 22, 2011.
- “Educational Tips and Tricks” Elizabeth Gardner, invited speaker, Excellence in Teaching Seminars, Feb. 16, 2011, 411 HUC, UAB.
- “Research in Analytic Methods for Trace Evidence,” Elizabeth A. Gardner, Fort Valley State University, Fort Valley, GA, April 19, 2010.

## POSTER PRESENTATIONS (†=undergraduate, \*=graduate student, presenter is in bold)

- “Comparison of Enhancing Agents in Aged Eccrine and Eccrine/Sebaceous Prints Prior to Development by the Cyanoacrylate Fuming Method” Elizabeth A. Gardner, NIJ Impression Pattern and Trace Evidence Symposium, San Antonio TX, Aug. 24-27, 2015.
- “Gas Chromatography-Mass Spectroscopy Analysis of Synthol” Mary Susan Eley and Elizabeth A. Gardner, Alabama State Association of Forensic Sciences Annual Meeting, Callaway Gardens, GA, July 28-31, 2015.
- “Prescription drugs in erectile dysfunction drugs ordered online” Rachel Waymack and Elizabeth A. Gardner, Alabama State Association of Forensic Sciences Annual Meeting, Callaway Gardens, GA, July 28-31, 2015.
- “Lead Density on a Target, A Significant Indicator of Firing Distance, but is it Reliable?” Beverly Cox, Shelly McGrath, and Elizabeth A. Gardner, NIST Forensic Science Error Management International Forensics Symposium, Washington DC, July 20-24, 2015.
- “Detection of Bullet Wipe on Bones After Decomposition Using Laser Induced Breakdown Spectroscopy” Hannah Clause and Elizabeth A. Gardner, Alabama State Association of Forensic Sciences Annual Meeting, Callaway Gardens, GA, July 28-31, 2015.

- “Identification and Comparison of Illicit U.S.-Based Online Pharmacy Websites” Stacy Wolff and Elizabeth A. Gardner, Alabama State Association of Forensic Sciences Annual Meeting, Callaway Gardens, GA, July 28-31, 2015.
- “Pyrolysis products of 2-amino-1-(4-bromo-2,5-dimethoxyphenethyl)ethanone (bk-2C-B), an analog of 2,5-dimethoxy-4-bromophenethylamine” Kelly Texer, Pierce Kavanagh, and Elizabeth Gardner, 2014 Annual Meeting of the Southeastern Regional American Chemical Society, Nashville, TN, Oct. 15-19, 2014.
- “Distance Determination on Blood-Stained Evidence Using Atomic Absorption Spectroscopy” Beverly Cox and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Murfreesboro, TN, Aug. 12-15, 2014.
- “Pyrolysis products of 2-amino-1-(4-bromo-2,5-dimethoxyphenethyl)ethanone (bk-2C-B), an analog of 2,5-dimethoxy-4-bromophenethylamine” Kelly Texer, Pierce Kavanagh, and Elizabeth Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Murfreesboro, TN, Aug. Gatlinburg, TN, Aug. 12-15, 2014.
- “Analysis of Capegard for Capecitabine” Christopher DiBona and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Murfreesboro, TN, Aug. Gatlinburg, TN, Aug. 12-15, 2014.
- “4-MPD and NM-2-AI: Two New Legal Highs Being Offered by ‘Research Chemical’ Companies” Danielle Hamby, Pierce V. Kavanagh, and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Murfreesboro, TN, Aug. Gatlinburg, TN, Aug. 12-15, 2014.
- “Improving the Quantity of Latent Print Minutiae Developed with Cyanoacrylate Fuming: Comparison of Acid and Base Enhancing Agents” Samara Hunter and Elizabeth A. Gardner, Second Annual Tennessee Valley Corridor (TVC) Forensics Symposium, Murfreesboro, TN, October 29-30, 2013.
- “4-MPD and NM-2-AI: Two New Legal Highs Being Offered by ‘Research Chemical’ Companies” Danielle Hamby, Pierce V. Kavanagh, and Elizabeth A. Gardner, Second Annual Tennessee Valley Corridor (TVC) Forensics Symposium, Murfreesboro, TN, October 29-30, 2013.
- “Comparison of Enhancing Agents in Aged Clean and Oily Prints prior to Development by the Cyanoacrylate Fuming Method” Samara Hunter and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Orange Beach, AL, Aug. 20-23, 2013.
- “Volatile Organic Compounds of Bovine Decomposition” Melissa Johnson, Hood College, Maryland Andrew Eaton and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Orange Beach, AL, Aug. 20-23, 2013.
- “Enhancing Fingerprint Development Using a One-Step Method Instead of Two-Step Pre-treatment” Chelsea Tuttle, Quinnipiac University, Connecticut, Samara Hunter and Elizabeth A., Annual Meeting of the Alabama State Academy of Forensic Sciences, Orange Beach, AL, Aug. 20-23, 2013.
- “Pharmaceutical Spam (PharmSpam) and Prescription Drug Abuse” Megan Cullen, Brandi Jefferson, Gary Warner, and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Orange Beach, AL, Aug. 20-23, 2013.
- “Gas Chromatography-Mass Spectrometry for the Simultaneous Analysis of Ethylene Glycol and Glycolic Acid in Ethylene Glycol Poisoning” Seth Harrison and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Orange Beach, AL, Aug. 20-23, 2013.
- “Analysis of Volatile Organic Compounds Present in the Headspace of Soil Samples from Human Burial Sites” Andrew Eaton and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Orange Beach, AL, Aug. 20-23, 2013.
- “Comparison Study of Luminol and Luminol-based Preparations” Megan Cullen, Jason Linville, and Elizabeth A. Gardner, Annual Meeting of the Alabama State Academy of Forensic Sciences, Orange Beach, AL, Aug. 20-23, 2013.

- \*“Second and Third Generation Legal Highs” **Annessa Burnet**,\* Nicholas Culverhouse, Geaneé Quinney,\* Elizabeth A. Gardner, American Academy of Forensic Sciences (AAFS), 2013 Annual Meeting, Washington DC, February 18-23, 2013.
- “The Characterization of Bullet Wipe From Non-Lead Bullets Using Laser Induced Breakdown Spectroscopy” Elizabeth A. Gardner, Brittany Phillips, † AAFS 2013 Annual Meeting, Washington DC, February 18-23, 2013.
- \*“Characterization of Legal Highs and Their Pyrolysis Products” Pierce V. Kavanagh, , Elizabeth A. Gardner, **Emily D. Bouso**†, AAFS 2013 Annual Meeting, Washington DC, February 18-23, 2013.
- \*“Percentages of Bank Notes Testing Positive for Methamphetamine and Cocaine by State” Jessi A. Mann and Elizabeth A. Gardner, Alabama State Academy of Forensic Sciences Annual Meeting, Gulf Shores, AL Aug 7-10, 2012.
- \*“Methamphetamine Contaminated Currency” **Brandon Fultz**\* and Elizabeth A. Gardner Alabama State Academy of Forensic Sciences Annual Meeting, Gulf Shores, AL Aug 7-10, 2012.
- \*“The Characterization of Bullet Wipe Using Laser Induced Breakdown Spectroscopy” **Brittany Aho Phillips**, † Kristina Truitt†, and Elizabeth A. Gardner, Alabama State Academy of Forensic Sciences Annual Meeting, Gulf Shores, AL Aug 7-10, 2012.
- \*“Second and Third Generation Legal Highs” Annessa Burnet,\* **Nicholas C. Culverhouse**\*, Geaneé B. Quinney, † and Elizabeth A. Gardner, Alabama State Academy of Forensic Sciences Annual Meeting, Gulf Shores, AL Aug 7-10, 2012.
- \*“Characterization of Legal Highs and their Pyrolysis Products” **Emily Bouso**†, Pierce V. Kavanagh, and Elizabeth Gardner, Alabama State Academy of Forensic Sciences Annual Meeting, Gulf Shores, AL Aug 7-10, 2012.
- \*“Analysis and identification of five legal highs,” **Melissa Toms**\* and Elizabeth Gardner, 243rd American Chemical Society (ACS) National Meeting, San Diego, California, March 25-29, 2012.
- \*“Extraction of Cocaine and Other Chemicals from Mexican and Canadian Currency” **Michael Longmire**,\* Leah Douglas,\* Dhruv Patel,\* and Elizabeth A. Gardner, 2011 UAB Undergraduate Research Expo, April 22, 2011.
- \*“Detecting Traces of Cocaine on Foreign Banknotes” **Leah C. Douglas**\* and Elizabeth A. Gardner, 2011 Spring Annual Meeting of the American Chemical Society, Anaheim, CA, March 27-31, 2011
- \*“Developing a Method for Detecting Methamphetamine and Pseudoephedrine on Clothing Seized from Suspected Clandestine Labs” **Sarah J. Keasey**, † Kari Bowen, and Elizabeth A. Gardner, Young Forensic Scientists Forum, 63<sup>rd</sup> Annual Scientific Meeting, Chicago, IL, Feb. 21-26, 2011.
- “Laser Induced Breakdown Spectroscopy (LIBS): Characterization of Bullets, Gunshot Residue, and Bullet Wipe” Mitchell L. Rector, Kristina J. Truitt, † Elizabeth A. Gardner, AAFS 63<sup>rd</sup> Annual Scientific Meeting, Chicago, IL, Feb. 21-26, 2011.
- “Microcrystal tests of Cocaine with Levamisole and Sugar Added as Adulterants,” **Altovise Broaden**\* and Elizabeth A Gardner, AAFS 62<sup>nd</sup> Annual Scientific Meeting, Seattle, WA Feb. 22-27, 2010.
- “Microcrystal tests of Cocaine with Levamisole and Sugar Added as Adulterants,” **Altovise Broaden**† and Elizabeth A Gardner, Southern Association of Forensic Scientists, Orlando FL, Oct. 19-22, 2009.
- “Building a Microscope System for Glass and Fiber Analysis” Elizabeth A. Gardner and Hannah Nelson,† National Institute of Justice (NIJ) Trace Evidence Symposium, Clearwater Beach Fla., Aug. 3-7, 2009.
- \*“The Use of Laser Induced Breakdown Spectroscopy for the Analysis of Archaeological Samples” **Jeremy R. Felix**,\* Sharyn Jones, and Elizabeth A. Gardner, UAB 2009 Undergraduate Research EXPO, April 24, 2009.
- \*“Cocaine Contamination of Paper Currency in Birmingham Alabama.” **Jeremy R. Felix**,\* Rena L. Hammer,\* and Elizabeth A. Gardner, , Southern Regional Honors Conference, Saint Petersburg, Florida, March 26-28, 2009.

- \*“Cocaine Contamination of Paper Currency in Birmingham Alabama” **Jeremy R. Felix**,\* Elizabeth A. Gardner, Annual Meeting of the AAFS, Denver, CO, February 16-21, 2009.
- “The Properties of Colloidal Layered Double Hydroxides,” Elizabeth A Gardner, Luis Bonilla,\* Clarissa Gomez,\* Amber Luevano,\* Sandra Blough\*, and Jennifer Gursky,\* American Chemical Society Meeting & Exposition, Atlanta, GA USA, March 26 - 30, 2006.
- “Structure and Activity of met-hemoglobin Intercalated in a Layered Double Hydroxide,” V. K. Mudhivarthi, A. Bhambhani, E. Gardner, and C. V. Kumar, American Chemical Society Meeting & Exposition, Atlanta, GA, March 26 - 30, 2006.
- \*“Utilizing Metal Enhanced Fluorescence for Imaging Latent Fingerprints” Cesar Luna, † Amalia Vasquez,\* and Elizabeth Gardner, American Chemical Society Meeting, Washington DC, Aug. 28 to Sept. 1, 2005.

## CONFERENCE ACTIVITIES

- Organizer and Chair; Drugs of Abuse, UAB Cyber Summit, Birmingham, AL, Feb. 12-13, 2013.
- Organizer and Chair; Education in Forensic Chemistry, 239th ACS National Meeting Spring 2010, San Francisco, CA, March 21-25, 2010.
- Organizer and Chair; Research and Education in Forensic Chemistry, Southwest Regional Meeting of the American Chemical Society, El Paso TX, Nov. 4-7, 2009.

## RESEARCH STUDENTS MENTORED

- April 26-May 28, 2013: *To Trinity College, Dublin*  
Emily Bouso: Synthesis of proposed MPA Pyrolysis Products.
- Jan. 27-April 6, 2013: *From Trinity College, Dublin/Athlone Institute of Technology*  
Andrzej Stanczuk: Pyrolysis products of 5- and 6-APB
- June 21-Aug 6, 2011: *From Universidad Autonoma de Ciudad Juarez students*  
Pablo Angulo: Changes in the Crystal Morphology of adulterated Methamphetamine  
Ubicelio Orozco: Application of the Typology of Animal Abuse to Dogs from the Birmingham Jefferson County Animal Control Services (BJCACS) in Birmingham, Alabama

## COURSES TAUGHT (\* = GRADUATE COURSE)

- Forensic Science Lab I: Advanced Criminalistics  
Introduction to Forensic Science  
Elements of Forensic Science\*  
Forensic Science Seminar\*  
Cold Case Analysis  
Advanced Drug Chemistry and Toxicology\*  
Toxicology\*  
Criminalistics: An Overview

## AWARDS AND HONORS

- First Place Poster Presentation Award Winner, “A Sustainable Water and Energy In Gaza Strip”  
Maryam Zarei, Lubna Hamdan, Russell R. Chianelli, Elizabeth Gardner, 2010, Presented at Building Partnerships and Pathways to Address Engineering Grand Challenges Conference, February 8-10, 2010.
- Citizen Commendation Award for organizing and digitizing Homewood PD Cold Case, May 11, 2010
- COAcH Travel Award, ACS Annual Spring Meetings, 2003, 2005, 2008.
- Nanometer Scale Summer School, Washington State University, July 27-Aug3, 2003  
Analysis of foreign matter on biomedical gaskets by GC/Mass Spectroscopy  
Analysis of suspected cat hair

## **COMMUNITY SERVICE**

Workshop: "Fun Chemistry," Science Demonstration, Girls in Science, UAB, April 21, 2013.

Workshop: "Forensic Chemistry" Elizabeth A. Gardner and Eva Cartwright, "Girls in Science & Engineering Day" UAB 2012

Presentation: "Color Tests" Avondale Public Library Teen Summer Book Club, June 27, 2013.

Presentation: "Mentos and Diet Coke" Avondale Public Library Teen Summer Book Club, June 21, 2012.

Presentation: "Forensic Chemistry" Avondale Public Library Teen Summer Book Club, July 14, 2011.

## **PROFESSIONAL ASSOCIATION MEMBERSHIPS**

American Academy of Forensic Sciences

American Chemical Society