

ANNA CRISTINA S. SAMIA

Case Western Reserve University
Department of Chemistry
10900 Euclid Avenue, Cleveland, OH 44106-7078

Phone: (216) 368-3852
Email: anna.samia@case.edu
<http://caslabs.case.edu/samia>

PROFESSIONAL PREPARATION

University of the Philippines – Diliman	B.S. Chemistry	1996
Georgia Institute of Technology	Ph.D. Inorganic/Analytical Chemistry	2002
<i>Thesis: Design and Control of the Superparamagnetic Properties of Cobalt-based Spinel Ferrite Nanoparticles; Advisor: Prof. Z. John Zhang</i>		
Case Western Reserve University	Postdoc, Department of Chemistry	2002-2003
Argonne National Laboratory	Postdoc, Materials Science Division	2003-2005
Case Western Reserve University	Postdoc, School of Medicine	2005-2010

APPOINTMENTS

8/2010-present	Assistant Professor Department of Chemistry, Case Western Reserve University, Cleveland, OH
2005-2010	Postdoctoral Research Associate with Prof. Pamela B. Davis Department of Pediatric Pulmonology, School of Medicine, Case Western Reserve University, Cleveland, OH
2003-2005	Postdoctoral Research Associate with Dr. Xiao-Min Lin Materials Science Division, Argonne National Laboratory, Argonne, IL
2002-2003	Postdoctoral Scholar with Prof. Clemens Burda Center for Chemical Dynamics and Nanomaterials Research, Department of Chemistry, Case Western Reserve University, Cleveland, OH
1998-2002	Research Assistant , School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA
1996-1998	Laboratory Instructor , Institute of Chemistry, University of the Philippines-Diliman, Quezon City, PHILIPPINES

PROFESSIONAL AFFILIATIONS

- Member of the American Chemical Society
- Member of the Materials Research Society
- Member of the Philippine Environmental Mutagen Society
- Member of the Phi Kappa Phi Honor Society
- Elected Member of the Philippine-American Academy of Science and Engineering

HONORS AND AWARDS

- 2015 Prof. Joseph Wang Nanomaterials Award
- University Center for Innovation in Teaching and Education (UCITE) Mentor Fellow 2014
- Glennan Fellowship 2013 (CWRU Pedagogical Award)
- NSF CAREER Award 2013
- Nominated for the Diekhoff Excellence in Graduate Mentoring Award AY 2012, 2014 & 2015
- Molecular Design Institute Graduate Fellowship (1999)
- University of the Philippines (1996) – *Magna Cum Laude*
- Philippines Department of Science and Technology Scholar (1992-1996)
- Quezon City Government Scholar (1992-1996)
- Quezon City Science High School (1992) – Salutatorian

START-UP COMPANY

- Co-Founder/Owner of BioCase Diagnostic LLC (with Prof. C.C. Liu, Chemical Engineering; Prof. C. Thompson, School of Medicine; and Prof. M. Cooney, University Hospitals)

RESEARCH AND SCHOLARSHIP

Publications:

Notes: The * symbol denotes corresponding authorship and *IF* stands for impact factor.

Independent Peer-Reviewed Publications at CWRU

- 16) Burke, D.J.; Pietrasiak, N.; Situ, S.F.; Abenojar, E.C.; Porche, M.; Kraj, P.; Lakliang, Y.; **Samia, A.C.S.*** "Iron Oxide and Titanium Oxide Nanoparticle Effects on Plant Performance and Root Associated Microbes," *International Journal of Molecular Sciences* (2015), 16, 23630-23650, *IF* 2.9
- 15) Janyasupab, M.; Lee, Y.-H.; Zhang, Y.; Liu, C.; Cai, J.; Popa, A.; **Samia, A.C.S.***; Wang, K.; Xu, J.; Hu, C.-C.; Wendt, M.; Schiemann, B.; Thompson, C.; Yen, Y.; Schiemann, W.; Liu, C. C. "Detection of Lysyl Oxidase-Like 2 (LOXL2), a Biomarker of Metastasis from Breast Cancers Using Human Blood Samples" *Recent Patents on Biomarkers* (2015), 5, 1. *Author contributions:* T.C, Y.Y, S.ACS, S.W and L.C-C designed the experiments and wrote the paper; J.M, L.Y-H, Z.Y,L.C, P.A, W.K performed the electrochemical sensing experiments; Xu.J,H.C-C, W.M, and S.B collected and processed biological fluid samples; S.W and T.C overlooked sample collection and medical record verification; S.ACS, and L.C-C guided the electrochemical assay development for LOXL2; L.C-C designed sensor and overlooked sensor fabrication.
- 14) Popa, A.; **Samia, A.C.S.*** "Shape and Carbon Matrix Effects on the Electrochemical Sensing Performance of Hollow Metal Nanostructures," *Science Letters Journal* (2015), 4(200), 1-7.
- 13) Popa, A.; Abenojar, E.C.; Vianna, A.; Buenviaje, C.Y.A.; Yang, J.; Pascual, C.; **Samia, A.C.S.*** "Fabrication of Metal Nanoparticle – Modified Screen Printed Carbon Electrodes for the Evaluation of Hydrogen Peroxide Content in Teeth Whitening Strips," *Journal of Chemical Education* (2015), 92(11), 1913–1917, *IF* 1.1
- 12) Bauer, L.M.; Shu, S.F.; Griswold, M.A.; **Samia, A.C.S.*** "Magnetic Particle Imaging Tracers: State-of-the-Art and Future Directions," *Journal of Physical Chemistry Letters* (2015), 6, 2509-2517, **Selected as Cover Article**, *IF* 6.7
- 11) Situ, S. F.; **Samia, A.C.S.*** "Highly Efficient Antibacterial Iron Oxide@Carbon Nanochains from Wüstite Precursor Nanoparticles," *ACS Applied Materials & Interfaces* (2014), 6(22), 20154–20163. *IF* 5.9
- 10) Burke, D.J.; Zhu, S.; Pablico-Lansigan, M.P.; Hewins, C.R.; **Samia, A.C.S.*** "Titanium Oxide Nanoparticle Effects on Soil Microbial Communities and Plant Performance," *Biology and Fertility of Soils* (2014), 50, 1169-1173. *IF* 3.4
- 9) Popa, A.; **Samia, A.C.S.*** "Effect of Metal Precursor on the Growth and Electrochemical Sensing Properties of Pt-Ag Nanoboxes," *Chemical Communications* (2014), 50(55), 7295-7298. *IF* 6.7
- 8) Lu, F.; Popa, A.; Zhou, S.; Zhu, J.-J.; **Samia, A.C.S.*** "Iron Oxide-Loaded Hollow Mesoporous Silica Nanocapsules for Controlled Drug Release and Hyperthermia," *Chemical Communications* (2013), 49, 11436-11438. *IF* 6.7
- 7) Popa, A.; Li, J.; **Samia, A.C.S.*** "Hybrid Pt Nanobox/Carbon Nanotube Composites for the Ultrasensitive Detection of Toxic Gases," *Small* (2013), 9(23), 3928-3933. *IF* 7.5
- 6) Pablico-Lansigan, M.; Situ, S.F.; **Samia, A.C.S.*** "Magnetic Particle Imaging: Advancements and Perspectives for Real-Time In Vivo Monitoring and Image-Guided Therapy," *Nanoscale* (2013), 5(10), 4040-4055. **Feature Article**, *IF* 6.7
- 5) Lin, P.-Y.; Cheng, K.-L.; McGuffin-Cawley, J.D.; Shie, F.-S.; **Samia, A.C.S.**; Gupta, S.; Cooney, M.; Thompson, C.T.; Liu, C.-C. "Detection of Alpha-Methyl-CoA Racemase (AMACR), Using a Biomarker of Prostate Cancer in Patient Blood Samples Using a Nanoparticle Electrochemical Biosensor," *Biosensors* (2012), 2(4), 377-387. *Author contributions:* C.M, T.CT, **S.ACS**, and L.C-C designed the experiments and wrote the paper; L.P-Y, C.KL, S.FS performed the electrochemical sensing experiments; G.S collected and processed biological fluid samples; C.M and T.CT overlooked the biological fluid sample collection and medical record verification; **S.ACS**, and L.C-C guided the electrochemical measurements and nanoparticle synthesis; L.C-C and M-C.JD designed sensor and overlooked sensor fabrication.
- 4) Ji, Y.; Zhang, M.; Cui, J.; Lin, K.C.; Zheng, H.; Zhu, J.; **Samia, A.C.S.*** "Highly-ordered TiO₂ Nanotube Arrays with Double-Walled and Bamboo-Type Structures for Dye-Sensitized Solar Cells," *Nano Energy* (2012), 1, 796-804. *IF* 10.2
- 3) Feng, Z.; Zhu, S.; Martins de Godoi, D.R.; **Samia, A.C.S.**; Scherson, D. "Adsorption of Cd²⁺ on Carboxyl-Terminated Superparamagnetic Iron Oxide Nanoparticles," *Analytical Chemistry*

- (2012), 84, 3764-3770. *Author contributions:* F.Z, **S.ACS**, and S.D designed the experiments and wrote the paper; F.Z, Z.S, M.DR performed the experiments; **S.ACS** guided the magnetic nanoparticle synthesis and surface modifications; S.D supervised the electrochemistry experiments.
- 2) Janyasupab, M.; Liu, C.-W.; Zhang, Y.; Wang, K.-W.; Xu, J.; **Samia, A.C.S**; Liu, C.-C. "Bimetallic Platinum Based Catalysts for Biosensors and Energy Storage Applications," *Current Topics in Electrochemistry* (2011), 16, 93-112. **Review Article**.
 - 1) Ji, Y.; Lin, K.-C.; Zheng, H.; Zhu, J.-J.; **Samia, A.C.S.*** "Fabrication of Double-walled TiO₂ Nanotubes with Bamboo Morphology via One-Step Alternating Voltage Anodization," *Electrochemical Communications* (2011), 13(9), 1013-1015. *IF 4.3*

Book Chapter (Published at CWRU)

- 1) Popa, A.; **Samia, A.C.S.*** (2014). "Functional Inorganic Nanomaterials" **Book Chapter** in the 2015 McGraw-Hill Yearbook of Science & Technology, Blumel, D. (Ed), pp. 115-118, New York, NY: McGraw Hill Education. ISBN: 9780071835763.

Post- and Pre-doctoral Peer-Reviewed Publications

- 26) Yu, C.; **Samia, A.C.S.**; Li, J.; Kenney, M.E.; Resnick, A.; Burda, C. "Delivery and Efficiency of a Cancer Drug as a Function of the Bond to the Gold Nanoparticle Surface," *Langmuir* (2010)," 6(4), 2248–2255.
- 25) Yu, C.; **Samia, A.C.S.**; Meyers, J.D.; Panagopolus, I.; Fei, B.; Burda, C. "Highly Efficient Drug Delivery with Gold Nanoparticle Vectors for *in Vivo* Photodynamic Therapy of Cancer," *Journal of the American Chemical Society* (2008), 130 (32), 10643-10647.
- 24) Clouser, S.; **Samia, A.C.S.**; Novak, E.; Aldred, J.; Burda, C. "Visible-Light Photodegradation of Higher Molecular Weight Organics on N-doped TiO₂ Nanostructured Thin Films," *Topics in Catalysis* (2008), 47(1-2), 42-48.
- 23) Dayal, S.; Li, J.; Li, Y.-S.; Wu, H.; **Samia, A.C.S.**; Kenney, M.E.; Burda, C. "Effect of the Functionalization of the Axial Phthalocyanine Ligands on the Energy Transfer in QD-based Donor-Acceptor Pairs," *Photochemistry and Photobiology* (2008), 84(1), 243-249.
- 22) Dayal, S.; Lou, Y.; **Samia, A.C.S.**; Berlin, J.C.; Kenney, M.E.; Burda, C. "Observation of Non-Förster Type Energy Transfer Behavior in Quantum Dot-Phthalocyanine Conjugate," *Journal of the American Chemical Society* (2006), 128(43), 13974-13975.
- 21) **Samia, A.C.S.**; Schlueter, J.A.; Jiang, J.S.; Bader, S.D.; Qin, C.J.; Lin, X.M. "Effect of Ligand-Metal Interactions on the Growth of Transition Metal and Alloy Nanoparticles," *Chemistry of Materials* (2006), 18, 5203-5212.
- 20) **Samia, A.C.S.**; Dayal, S.; Burda, C. "Quantum Dot Based Energy Transfer: Perspectives and Potential Applications in Photodynamic Therapy," *Photochemistry and Photobiology* (2006), 82(3), 617-625.
- 19) Lin, X.M.; **Samia, A.C.S.** "Synthesis, Assembly and Physical Properties of Magnetic Nanoparticles," *Journal of Magnetism and Magnetic Materials* (2006), 305(1), 100-109.
- 18) Qiu, X.; Lou, Y.; **Samia, A.C.S.**; Devadoss, A.; Burgess, J.D.; Dayal, S.; Burda, C. "PbTe Nanorods by Sonochemistry," *Angewandte Chemie International Edition* (2005), 44(36), 5855-5857.
- 17) **Samia, A.C.S.**; Hyzer, K.; Jin, Q.J.; Schlueter, J.A.; Jiang, S.; Bader, S.; Lin, X.M. "Ligand Effects on the Growth and Digestion of Co Nanocrystals," *Journal of the American Chemical Society* (2005), 127(12), 4126-4127.
- 15) Chen, X.; **Samia, A.C.S.**; Lou, Y.; Burda, C. "Investigation of the Crystallization Process in 2 nm CdSe Quantum Dots," *Journal of the American Chemical Society* (2005), 127(12), 4372-4375.
- 14) Chen, X.; Lou, Y.; **Samia, A.C.S.**; Burda, C.; Gole, J.L. "Formation of Oxynitride as the Photocatalytic Enhancing Site in Nitrogen-Doped Titania Nanocatalysts: Comparison to a Commercial Nanopowder," *Advanced Functional Materials* (2005), 15(1), 41-49.
- 13) Anderson, R.M.; Vestal, C.R.; **Samia, A.C.S.**; Zhang, Z.J. "Faraday Rotation in Co_{0.85}Zn_{0.15}Fe₂O₄ Spinel Ferrite Nanoparticulate Films under Low Applied Fields," *Applied Physics Letters* (2004), 84(16), 3115-3117.
- 12) **Samia, A.C.S.**; Lou, Y.; Senter, R.; Coffer, J.L.; Burda, C. "Effect of Erbium-dopant Architecture on the Non-radiative Carrier Relaxations in Silicon Nanoparticles," *Journal of Chemical Physics* (2004), 120(18), 8716-8723.
- 11) **Samia, A.C.S.**; Cody, J.; Fahrni, C.; Burda, C. "The Effect of Ligand Constraints on the Metal-to-Ligand Charge-Transfer Relaxation Dynamics of Copper (I)-Phenanthroline Complexes: A

- Comparative Study by Femtosecond Time-Resolved Spectroscopy," *Journal of Physical Chemistry B* (2004), 108(2), 563-569.
- 10) **Samia, A.C.S.**; Chen, X.; Burda, C. "Semiconductor Quantum Dots for Photodynamic Therapy," *Journal of the American Chemical Society* (2003), 125(51), 15736-15737.
 - 9) Morris, R.; Azizuddin, K.; Kenny, M.; **Samia, A.C.S.**; Burda, C.; Oleinick, N. "Fluorescence Resonance Energy Transfer Reveals the Binding Site of a Photosensitizer for Photodynamic Therapy," *Cancer Research* (2003), 63(17), 5194-5197.
 - 8) Burda, C.; Lou, Y.; Chen, X.; **Samia, A.C.S.**; Stout, J.; Gole, J.L. "Enhanced Nitrogen Doping in TiO₂ Nanoparticles," *Nano Letters* (2003), 3(8), 1049-1051.
 - 7) Chen, X.; Lou, Y.; **Samia, A.C.S.**; Burda, C. "Coherency Strain Effects on the Optical Response of Core/Shell Heteronanostructures," *Nano Letters* (2003), 3(6), 799-803.
 - 6) Lou, Y.; **Samia, A.C.S.**; Cowen, J.; Banger, K.; Chen, X.; Lee, H.; and Burda, C.; "Evaluation of the Photoinduced Electron Relaxation Dynamics of Cu_{1.8}S Quantum Dots," *Physical Chemistry Chemical Physics* (2003), 5(6), 1091-1095.
 - 5) Lou, Y.; Chen, X.; **Samia, A.C.S.**; Burda, C. "Femtosecond Spectroscopic Investigation of the Carrier Lifetimes in Digenite Quantum Dots and Discrimination of the Electron and Hole Dynamics via Ultrafast Interfacial Electron Transfer," *Journal of Physical Chemistry B* (2003), 107(45), 12431-12437.
 - 4) Burda, C.; **Samia, A.C.S.**; Hathcock, D.; Huang, H.; Yang, S. "Experimental Evidence for the Photoisomerization of Higher Fullerenes," *Journal of the American Chemical Society* (2002), 124(42), 12400-12401.
 - 3) Rondinone, A.J.; **Samia, A.C.S.**; Zhang, Z.J. "A Chemometric Approach for Predicting the Size of Magnetic Spinel Ferrite Nanoparticles from the Synthesis Conditions," *Journal of Physical Chemistry B* (2000), 104(33), 7919-7922.
 - 2) Rondinone, A.J.; **Samia, A.C.S.**; Zhang, Z.J. "Characterizing the Magnetic Anisotropy Constant of Spinel Cobalt Ferrite Nanoparticles," *Applied Physics Letters* (2000), 76(24), 3624-3626.
 - 1) Rondinone, A.J.; **Samia, A.C.S.**; Zhang, Z.J. "Superparamagnetic Relaxation and Magnetic Anisotropy Energy Distribution in CoFe₂O₄ Spinel Ferrite Nanocrystallites," *Journal of Physical Chemistry B* (1999), 103(33), 6876-6880.

Book Chapter (Post- and Pre-doctoral)

- 1) **Samia, A.C.S.**; Lin, X.M. "Self-assembled Structures," *Dekker Encyclopedia of Nanoscience and Nanotechnology* (2005), July 18, 1-14.

Invited Seminars and Conference Presentations:

- 32) "Nanostructured Metals for Biomedical and Environmental Applications," *Invited Seminar*, Liquid Crystal Institute, Kent State University, Kent, OH, November 18, **2015**.
- 31) "Tailoring the Magnetic Properties of Iron Oxide Nanocomposites for Antibacterial Applications," *Invited Talk*, BioMagnetic Particles Meeting, Telluride, CO, June 23-26, **2015**.
- 30) "Magnetic Nanocomposites: Design, Fabrication and Applications in Water Remediation," *Invited Talk*, 2015 ACS Joint Great Lakes Central Regional Meeting, Grand Rapids, MI, May 27-30, **2015**.
- 29) "Nanostructured Magnets for Biomedical Applications," *Invited Seminar*, Department of Physics, Carnegie Mellon University, Pittsburgh, PA, April 16, **2015**.
- 28) "A New Hydrothermal Approach for the Fabrication of Iron Oxide@Carbon Nanochains," *Talk*, 2015 MRS Spring Meeting & Exhibit, San Francisco, CA, April 10, **2015**.
- 27) "Nanostructured Metals for Biomedical and Environmental Applications," *Invited Seminar*, Department of Chemistry and Biochemistry, University of Toledo, Toledo, OH, March 2, **2015**.
- 26) "Nanostructured Metals for Sensing and Imaging Applications," *Invited Seminar*, Department of Chemistry, John Carroll University, University Heights, OH, February 11, **2015**.
- 25) "Fabrication of Novel Titania Nanostructures for Energy Applications," *Invited Talk*, Light-Driven Processes in Bio-Inspired Materials Meeting, Houston, TX, December 14-16, **2014**.
- 24) "Optimization of Magnetic Nanoparticle Tracers for MPI," *Invited Talk*, Department of Electrical Engineering and Computer Science, University of California - Berkeley, Berkeley, CA, December 11, **2014**.
- 23) "Nanostructured Metals for Sensing and Imaging Applications," *Invited Seminar*, Department of Chemical and Biomolecular Engineering, University of Akron, Akron, OH, October 16, **2014**.

- 22) "Chemical Design of Nanoprobes for In Vivo Imaging of Drug Delivery," *Invited Talk*, Department of Biomedical Engineering, CWRU, Cleveland, OH, October 12, **2014**.
- 21) "Collaborative and Exchange Program between CWRU and Universities in Hanoi, Vietnam," *Invited Talk*, Center for International Affairs, CWRU, Cleveland, OH, September 25, **2014**.
- 20) "Nanocomposite Coatings for Improved Orthopaedic Implant Performance," *Invited Seminar*, Cleveland Clinic Foundation, Cleveland, OH, September 10, **2014**.
- 19) "Teaching Analytical Chemistry on the Nanometer Scale," 2014 Glennan Fellows Presentation, *Talk*, Case Western Reserve University, OH, April 17, **2014**.
- 18) "Hybrid Iron Oxide@Carbon Nanochains as Highly Efficient Antibacterial Agent," *Talk*, 247th ACS National Meeting & Exposition, Dallas, TX, March 16-20, **2014**.
- 17) "Synthesis and Environmental Applications of Nanostructured Metals and Magnetic Oxides," *Invited Talk*, Nanoworkshop at Beijing University of Technology, China, December 9-11, **2013**.
- 16) "Functional Nanomaterials," *Invited Talk and Lecture Series*, 1st International Workshop on Nanomaterials and Applications, Center for Nanomaterials, Hanoi National University of Education, Hanoi, Vietnam, June 10-12, **2013**.
- 15) "Nanostructured Metals for Sensing and Imaging Applications," *Invited Seminar*, Department of Chemistry, University of Buffalo, Buffalo, NY, April 24, **2013**.
- 14) "Gas Sensing Using Hybrid Metal Nanostructure/Carbon Nanotube Composites," *Talk*, 2013 MRS Spring Meeting & Exhibit, San Francisco, CA, April 4, **2013**.
- 13) "Magnetic Particle Spectroscopy of Magnetite – Polyethylene Nanocomposite Films: A Novel Sample for MPI Tracer Design," 2013 International Workshop on Magnetic Particle Imaging, *Talk*, University of California – Berkeley, Berkeley, CA, March 24, **2013**.
- 12) "Nanostructured Metals for Sensing and Imaging Applications," Surface, Colloids, and Nanomaterials 2012 and a Joint University of the Philippines – Case Western Reserve University Symposium, *Invited Talk*, University of the Philippines – Diliman, Quezon City, Philippines, December 10-12, **2012**.
- 11) "Nanostructured Metals for Sensing and Imaging Applications," *Invited Seminar*, Department of Chemistry, University of Miami, Coral Gables, FL, October 18, **2012**.
- 10) "Environmental Applications of Iron Oxide Nanomagnets," *Invited Talk*, 244th ACS National Meeting, Philadelphia, PA, August 19, **2012**.
- 9) "Magnetic Hybrid Materials for Imaging and Sensor Applications," *Invited Talk*, ACS Mid-Atlantic Meeting, Baltimore, MD, May 31, **2012**.
- 8) "pH-Controlled Adsorption of Cd Ions on Carboxyl-Terminated Superparamagnetic Iron Oxide Nanoparticles," *Talk*, 9th International Magnetic Carriers Meeting, Minneapolis, MN, May 25, **2012**.
- 7) "Magnetic Hybrid Materials for Sensor and Imaging Applications," *Talk*, 32nd PAASE Conference, Houston, TX, May 4, **2012**.
- 6) "Hybrid Magneto-Opto-Electrochemical Nanoparticles for Biosensing Applications," *Talk*, Fast Track NASA-UH Meeting, Cleveland, OH April 26, **2012**.
- 5) "Nanostructured Metals for Sensor and Imaging Applications," *Invited Seminar*, Department of Chemistry, Western Michigan University, April 13, **2012**.
- 4) "Nanostructured Alloys for Energy and Bioanalytical Applications," *Invited Seminar*, Department of Chemistry, Georgetown University, Washington, DC, March 29, **2012**.
- 3) "Nanostructured Metals for Sensing and Imaging Applications," *Invited Seminar*, School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA, March 12, **2012**.
- 2) "Chemical Design of Magnetic Nanomaterials," *Invited Seminar*, CWRU – Department of Physics, Cleveland, OH, November **2010**.
- 1) "Chemical Design of Nanoprobes for In Vivo Imaging of Gene Delivery," *Invited Seminar*, CWRU- Department of Biomedical Engineering, Cleveland, OH, September **2010**.

Workshops Attended:

- 9) Team Science Workshop, *Invited Participant*, Case Western Reserve University, Cleveland, OH, February 17, **2014**.
- 8) "Study and Development Nanoparticle Based Imaging Technologies," *Discussion Leader*, CLiPs Workshop on Polymeric Biosystems in Cleveland, Case Western Reserve University, Cleveland, OH, January 30, **2014**.
- 7) Northeast Ohio Musculoskeletal Research Retreat, *Invited Participant*, Sheep Barn – Case Western Reserve University, Cleveland, OH, April 6, **2013**.

- 6) International Dual-Career Network Conference, *Invited Panelist*, Worcester, MA, June 4, **2012**.
- 5) NASA Faculty Forum with NASA Chief Officer, *Participant*, Case Western Reserve University, Cleveland, OH, April 11, **2012**.
- 4) To Tenure and Beyond NSF Workshop, *Selected Participant*, Case Western Reserve University, February **2012**.
- 3) To Tenure and Beyond NSF Workshop, *Selected Participant*, Case Western Reserve University, September and November **2011**.
- 2) Zing Nanomaterials Conference, Xcaret, Mexico, November **2011**.
- 1) Gordon Conference in Environmental Nanotechnology, Waterville Valley, NH, May **2011**.

Student Oral and Poster Presentations:

- 24) "Synthesis and Characterization of Hybrid Magnetic-Plasmonic Nanoparticles," *Poster Presentation (M. Templeman)* ACS Project SEED Poster Session, Case Western Reserve University, Cleveland, OH, July 31, **2015**.
- 23). "Hydrothermal Carbonization of Hybrid Magnetic Iron Oxide@Carbon Nanochains Using Simple Carbohydrates as Carbon Sources" *Poster Presentation (P. Kraj)*, 2015 Intersections Summer Poster Session, Case Western Reserve, Cleveland, OH, July 31, **2015**.
- 22) "Magnetic and Mechanical Properties of Polyethylene – Iron Oxide Nanocomposites," *Poster Presentation (S. Situ)*, 2015 ACS Joint Great Lakes Central Regional Meeting, Grand Rapids, MI, May 27-30, **2015**.
- 21) "Magnetic and Mechanical Properties of Polyethylene – Iron Oxide Nanocomposites," *Poster Presentation (S. Situ)*, 2015 ACS Joint Great Lakes Central Regional Meeting, Grand Rapids, MI, May 27-30, **2015**.
- 20) "Magnetic Nanochain Fabrication through Click Chemistry," *Poster Presentation, Awarded 1st Place (E. Abenojar)*, Research ShowCase, Cleveland, OH, April 17, **2015**.
- 19) "Study and Control of the Magnetic and Mechanical Properties of Polyethylene – Iron Oxide Nanocomposites," *Oral Presentation (S. Situ)*, 2015 MRS Spring Meeting & Exhibit, San Francisco, CA, April 7, **2015**.
- 18) "Magnetic Ultra High Molecular Weight Polyethylene Nanocomposites for Hyperthermia," *Poster Presentation (A. Popa)*, 2015 MRS Spring Meeting & Exhibit, San Francisco, CA, April 7, **2015**.
- 17) "Size and Matrix Effects on the AC Magnetic Field Induced Heating of Iron Oxide Nanoparticles," *Poster Presentation (V. Lam)* ACS – SEED Poster Session, Case Western Reserve University, Cleveland, OH, August 1, **2014**.
- 16) "Hybrid Metal Nanobox/Carbon Composites for Environmental and Biomedical Sensing Applications," *Oral Presentation (A. Popa)*, 247th ACS National Meeting & Exposition, Dallas, TX, March 16-20, **2014**.
- 15) "Synthesis and Hyperthermia Application of Superparamagnetic Iron Oxide Nanoparticles," *Poster Presentation (V. Lam)* ACS – SEED Poster Session, Case Western Reserve University, Cleveland, OH, August 9, **2013**.
- 14) "Hybrid Nanomaterials for Water Treatment and Gas Sensing," *Poster Presentation (A. Popa)*, NASA Technology on the Hill, Washington, DC, July 23, **2013**.
- 13) "Synthesis and Application of Platinum Nanoboxes in Gas Sensing," *Poster Presentation (A. Popa)*, Research ShowCase, Case Western Reserve University, Cleveland, OH, April 12, **2013**.
- 12) "Magnetic Particle Spectroscopy: Applications in Magnetic Nanoparticle Design and Detection," *Poster Presentation (L. Bauer)*, Research ShowCase, Case Western Reserve University, Cleveland, OH, April 12, **2013**.
- 11) "Fabrication and Investigation of the Magneto-mechanical Properties of Polyethylene-Magnetite Nanocomposites," *Poster Presentation (S. Situ)*, Research ShowCase, Case Western Reserve University, Cleveland, OH, April 12, **2013**.
- 10) "Ultra-High Molecular Weight Polyethylene – Magnetite Nanocomposite: A Model System for *In Situ* Wear Debris Monitoring via Magnetic Particle Imaging (MPI)," *Poster Presentation (M. Pablico-Lansigan)*, ACS 245th National Meeting, New Orleans, LA, April 7(Nanoscience Session) and 8(SciMix Session), **2013**.
- 9) NASA Technology Days, Cleveland, OH, *Poster Presentation (A. Popa)*, November 28-20, **2012**.

- 8) "Synthesis and Characterization of Au/Ag/Pt Multi-Shell Nanoparticles," *Poster Presentation (J. De La Pena)* ACS – SEED/CLiPs Poster Session, Akron University, Akron, OH, August 2, **2012**.
- 7) NASA Ames Research Center, Moffett Field, CA, *Oral Presentation (A. Popa)*, July 12, **2012**.
- 6) "Synthesis and Characterization of Hybrid Magnetic-Plasmonic Nanoparticles," 9th International Magnetic Carriers Meeting, Minneapolis, MN, *Poster Presentation (A. Popa)*, May 22-26, **2012**.
- 5) "Multifunctional Magnetic Hydrogels as Cancer Nanotheranostic Agents," 9th International Magnetic Carriers Meeting, Minneapolis, MN, *Poster Presentation (M. Pablico)*, May 22-26, **2012**.
- 4) NASA-NSTRF Meeting, Case Western Reserve University, Cleveland, OH, *Poster Presentation (A. Popa)*, April 11, **2012**.
- 3) NASA Ames Research Center, Moffett Field, CA, *Oral Presentation (A. Popa)*, January 25-27, **2012**.
- 2) "Synthesis of High Energy Density Magnetic Nanorods and Nanowires," East Dominion Ohio, *Oral Presentation (K. Wahlgren)*, Cleveland, OH, July 28, **2011**.
- 1) "Engineering Iron Oxide Nanomagnets for Optimal Magnetic Imaging Contrast Enhancement and Hyperthermia," *Oral Presentation (S. Zhu)*, John Carroll University – ACS-SAS Meeting, Cleveland, OH, June **2011**.

Post- and Pre-doctoral Presentations:

- 17) "Fluorescent Nanocrystals for Gene Delivery Monitoring," *Talk*, American Photobiology Society Meeting, Burlingame, CA, June **2008**.
- 16) "Monitoring of Gene Therapeutic Agents Using Tunable Fluorescent Quantum Dots," *Poster*, ShowCASE, Case Western Reserve University, Cleveland, OH, April **2007**.
- 15) "Quantum Dots as Photosensitizer for PDT Reagents," *Poster*, International Symposium on Bio-inspired Synthesis and Materials - From Organic Templates to Functional Nanoscale Structures, Ringberg Conference, Germany, October 11-14, **2006**.
- 14) "Surfactant Effects on the Growth of Magnetic Nanocrystals," *Talk*, American Physical Society (APS) Meeting, Los Angeles, CA, March 21-25, **2005**.
- 13) "Core-Shell Exchange Spring Nanomagnets," *Poster*, Argonne National Laboratory, Argonne, IL, January 27-28, **2005**.
- 12) "Surfactant Effects on the Growth of Magnetic Nanoparticles: Towards Core-Shell Nanomagnets," *Poster*, AVS Magnetic Interface and Nanostructure Division, Anaheim, CA, November 14-19, **2004**.
- 11) "Nanomagnetism at the Center for Nanoscale Materials (CNM) at Argonne," *Poster*, Department of Energy NanoSummit, Washington, DC, June 23-24, **2004**.
- 10) "Nanocrystal-Antibody Conjugates for Breast Cancer Imaging," *Poster*, Physical Chemistry at the Nanoscale Summer School, Washington State University, Pullman, WA, July 27-August 3, **2003**.
- 9) "Nanocrystal-Antibody Conjugates for Near-IR Imaging of Breast Cancer," *Poster*, ShowCASE, Case Western Reserve University, Cleveland, OH, April **2003**.
- 8) "New Methods for the Early Detection and Diagnosis of Breast Cancer," *Invited Talk*, American Cancer Society-Bingo for a Cure, Boardman, OH, October, 17, **2002**.
- 7) "Design and Control of the Superparamagnetic Properties of Cobalt Spinel Ferrite Nanoparticles for Biomedical Application," *Poster*, PITTCON **2002**, New Orleans, Louisiana.
- 6) "Synthesis and Superparamagnetic Properties of Core-Shell Co Ferrite Nanoparticles," *Talk*, SE Regional Meeting, September 23-26, **2001**, Savannah, GA.
- 5) "Effect of Zn Addition on the Superparamagnetic Properties of Co Ferrite Nanoparticles," *Poster*, 52nd SE/56th SW Combined Regional Meeting of the American Chemical Society, December 6-8, **2000**, New Orleans, Louisiana.
- 4) "Effect of Cation Distribution on the Superparamagnetic Properties of Co Spinel Ferrite Nanoparticles," *Poster*, National Symposium on Nanostructures, November 19, **1999**, Atlanta, GA.
- 3) "Design and Control of the Superparamagnetic Properties of Spinel Ferrite Nanoparticles," *Invited Talk*, November **1999**, University of Hamburg, Germany.
- 2) "Effect of Cation Distribution on the Superparamagnetic Properties of Co Ferrite Nanoparticles," *Poster*, **1999**, Molecular Design Institute, Poster Session, Atlanta, GA.

- 1) BRAINS ALL-UP Faculty Chemistry Boards Review, *Invited Talk*, July 17, **1997**, Manila, Philippines.

Funding and Proposal Writing Activities:

Funded Proposals:

Note: The symbols *TC* and *DC* denote total cost and direct cost, respectively.

- 1) *Title:* CAREER- Magnetic Imaging Guided Composite Materials Development
Role: PI
Agency: NSF - DMR
Period: 02/01/2013 – 01/31/2018
Amount: \$600,000 *TC* (100 % Samia)
- 2) *Title:* Development of Magnetic-Plasmonic Nanoparticle Sensors for the Apprehension, Removal and Treatment (ART) of Microbial Contamination in Water
Role: PI
Agency: NASA – Graduate Student Fellowship
Period: 08/01/2011 – 07/31/2015
Amount: \$268,000 *DC* (100 % Samia)
- 3) *Title:* Controlled Assembly of Core-Shell Viral Nanoparticles for Image Guided Therapy
Role: PI (co-PI N. Steinmetz, Biomedical Engineering)
Agency: CWRU – Provost, Interdisciplinary Alliance Grants
Period: 08/01/2011 – 07/31/2013
Amount: \$50,000 *DC* (50 % Samia)
- 4) *Title:* Monitoring Implant Degradation Using Magnetic Particle Imaging
Role: PI (co-PIs R. Brown, Physics and M. Griswold, Radiology)
Agency: CWRU – IAM, Imaging for Biomaterials Development
Period: 08/01/2011 – 12/31/2013
Amount: \$25,000 *DC* (50 % Samia)
- 5) *Title:* LOXL2 Biosensors: Novel Instruments to Detect the Development, Metastatic Progression, and Recurrence of Triple-Negative Breast Cancers
Role: co-I (PI: W. Scheimann, General Medical Sciences-Oncology)
Agency: CWRU – CTSC/Coulter Pilot Grant
Period: 08/01/2012 – 07/31/2013
Amount: \$25,000 *DC* (25 % Samia)
- 6) *Title:* Collaborative and Exchange Program between Case Western Reserve University and the University of the Philippines
Role: PI (co-PI R. Advincula, Macromolecular Sciences and Engineering)
Agency: CWRU – Center for International Affairs
Period: 08/01/2012 – 07/31/2013
Amount: \$5,000 *DC* (50 % Samia)
- 7) *Title:* Evaluation of Alpha-Methylacyl-CoA Racemase (AMACR) as a Non-Invasive Diagnostic Biomarker for Prostate Cancer
Role: Co-I (PI: M. Cooney, University Hospitals & Department of Oncology –School of Medicine)
Agency: Clinical & Translation Science Collaborative (CTSC) – Pilot Grant (NIH)
Period: 06/01/2013 – 05/31/2014
Amount: \$41,000 *DC* (25 % Samia)
- 8) *Title:* Teaching Analytical Chemistry at the Nanometer Scale
Role: PI
Agency: UCITE – Glennan Fellowship
Period: 07/01/2013 – 08/31/2014
Amount: \$6,500 *DC* (100 % Samia)
- 9) *Title:* Collaborative and Exchange Program between Case Western Reserve University and Hanoi National University of Education (HNUE)
Role: co-PI (PI: C. Burda, Chemistry)
Agency: CWRU – Center for International Affairs
Period: 08/01/2013 – 07/31/2014
Amount: \$7,500 *DC* (50 % Samia)

Current Pending Proposals:

- 1) *Title:* Innovative Building Envelop Materials with Light-Driven Autogenous Environmental Cleaning
Role: co-PI (PI: X. Yu, Civil Engineering)
Agency: NSF-CMMI
Period: 05/01/2016 – 04/30/2019
Amount: \$410,787 (50 % Samia)
- 2) *Title:* Hollow Metal Nanostructures for Enhanced Electrochemical Sensing of Blood-Based Cancer Biomarker
Role: PI (co-PI: C.C. Liu, Chemical and Biomolecular Engineering)
Agency: NSF-CBET
Period: 07/01/2016 – 06/30/2019
Amount: \$387,178 (50 % Samia)
- 3) *Title:* Radio Frequency Field Activatable Thermosetting Hydrogel for use in Biofilm Treatment in Implants
Role: PI (co-PI: S. Frangiamore and C. Higuera, Orthopedic Surgery, Cleveland Clinic)
Agency: Cleveland Clinic Foundation
Period: 01/01/2016 – 12/31/2016
Amount: \$30,000 (100 % Samia)

Proposals Submitted but Not Funded:

- 1) *Title:* Investigation of the Hydrogen Generation on Photodeposited Nanoalloys Supported on Bamboo-Type Titania Nanotubes
Role: PI
Agency: ACS-PRF
Period: 08/01/2011 – 07/31/2013
Amount: \$100,000 (100% Samia)
- 2) *Title:* Assessing the Clinical Utility of an Electrochemical Biosensor in the Detection of Aggressive Prostate Cancer
Role: co-PI (PI: C. Thompson, School of Medicine)
Agency: NIH/NCI – R21
Period: 01/01/2013 – 12/31/2015
Amount: \$375,000 (50 % Samia)
- 3) *Title:* *In Situ* Remediation of Perfluoroalkyl Contaminated Groundwater Using Fe(0)-Based Nanomaterials
Role: co-PI (PI: K. Rhoads, Chemical and Biomolecular Engineering)
Agency: DOD
Period: 07/01/2013 – 06/30/2014
Amount: \$150,000 (50 % Samia)
- 4) *Title:* GOALI: Innovative Broadband Photocatalytic Cement Composites
Role: co-PI (PI: X. Yu, Civil Engineering)
Agency: NSF
Period: 08/01/2013 – 07/31/2016
Amount: \$360,000 (50 % Samia)
- 5) *Title:* Electrochemical Biosensing of a Prostate Cancer Specific Biomarker with Bimetallic Nanocatalysts
Role: PI (co-PI: C.C. Liu, Chemical and Biomolecular Engineering)
Agency: NSF
Period: 07/01/2013 – 06/30/2016
Amount: \$350,000 (50 % Samia)
- 6) *Title:* Fate and Effects of Nanoparticles on Plants and Associated Soil Microbial Communities
Role: co-PI (PI: D. Burke, Holden Arboretum)
Agency: USDA
Period: 07/01/2013 – 06/30/2014; *Amount:* \$600,000 (50 % Samia)

- 7) *Title:* Hollow Metal Nanostructures for Enhanced Electrochemical Sensing of Blood-Based Cancer Biomarker
Role: PI (co-PI: C.C. Liu, Chemical and Biomolecular Engineering)
Agency: NSF-CBET
Period: 07/01/2015 – 06/30/2018
Amount: \$361,512 (50 % Samia)
- 8) *Title:* Innovative Broadband Photocatalytic Nanofiber Composites for the Autogenous Cleaning of Building Environment
Role: co-PI (PI: X. Yu, Civil Engineering)
Agency: NSF-CMMI
Period: 07/01/2015 – 06/30/2018
Amount: \$417,474 (50 % Samia)
- 9) *Title:* Minimally-invasive Stimulation of the Superficial Peroneal Nerve to Suppress Systemic Inflammation and Immune System Activation
Role: co-PI (PI: M. J. Decker, School of Nursing)
Agency: DARPA
Period: 08/01/2015 – 07/31/2019
Amount: \$ 7.5 M (15 % Samia)

TEACHING AND MENTORING

Courses Taught:

- **CHEM 304:** Quantitative Analytical Chemistry (4 credit hours) – Fall 2002 (Substitute Lecturer for D. Scherson), Fall 2010 (Team Teaching w/ J. Burgess)
- **CHEM 506:** Functional Nanomaterials for Energy & Biomedical Applications (3 credit hrs) – Spring 2011, Spring 2012
- **CHEM 111:** Principles of Chemistry for Engineers (4 credit hours) – Spring 2012 (Team Teaching w/ J. Burgess)
- **CHEM 310:** Foundations of Analytical Chemistry (3 credit hours) – Fall 2012, Fall 2013, Fall 2014, Fall 2015
- **CHEM 341/441:** Functional Nanomaterials (3 credit hours) – Spring 2013, Spring 2014, Spring 2015

Student Advisees:

Postdoc

- 1) Dr. Michele Pablico-Lansigan (December 2011 – June 2013) Currently working as a chemistry lecturer at the American University in Washington, DC.

Ph.D. Student (Graduated)

- 1) Dr. Adriana Popa (Ph.D. Chemistry, date started 12/2010; Defended 3/2015, **Awarded the Charles F. Maberry Best Thesis in Chemistry**) Currently working as a Research Chemist in Sherwin Williams, Cleveland, OH.

Ph.D. Students (Current)

- 1) Ms. Shu F. Situ (Ph.D. Chemistry, date started 12/2011)
- 2) Mr. Eric Abenojar (Ph.D. Chemistry, date started 12/2012)
- 3) Ms. Monica Lugo-Navaretto (Ph.D. Chemistry, date started 12/2015)
- 4) Mr. Sameera Wickramasinghe (Ph.D. Chemistry, date started 12/2015)

Co-Supervised Ph.D. Students

- 1) Dr. Keng-Chu Lin (Ph.D. Materials Science and Engineering; 2010-2011, Graduated in 2012)
- 2) Dr. Yajun Yi (Ph.D. Chemistry from Nanjing University, CHINA; exchange student in the lab from 2010-2011; Graduated in 2012)
- 3) Mr. Feng Lu (Ph.D. Chemistry from Nanjing University, CHINA; exchange student in the lab from 2012-2013)

M.S. Students

- 1) Mr. Shun Zhu (M.S. Materials Science and Engineering with Thesis; 2010-2011; Graduated in 12/2011). Currently working in GuangZhou Railway Corporation, CHINA.
- 2) Mr. John Flikkema (M.S. Chemistry; 2012-2013; Graduated 01/2013) Currently working as a chemist in PPG Industries, Cleveland, OH.

- 3) Ms. Shuang Qin (M.S. Chemistry; 2012-2013; Graduated 05/2013) Currently working as a chemist in Avery Dennison in Cleveland, OH.
- 4) Mr. Jiahua Yang (M.S. Chemistry; 2013-2014; Graduated 05/2014) Currently working as a chemist in Johnson & Johnson in Beijing, CHINA.
- 5) Ms. Zhao Yu (M.S. Chemistry; 2013-2014; Graduated 05/2014) Ph.D. student at University of Cincinnati.
- 6) Mr. Chun-Der Lee (M.S. Chemistry; 2014; Graduated 12/2014) Ph.D. student at Ohio State University.
- 7) Mr. Yutthana Lakliang (M.S. Chemistry; Summer 2015-present)
- 8) Ms. Chuhang Chen (M.S. Chemistry; Fall 2015-present)

Ph.D. Thesis Committee Participation

- 1) Ms. Metini Janyasupab (2013, Chemical Engineering, Advisor: Prof. C.C. Liu)
- 2) Mr. Chang-Jung Hsueh (2013, Chemical Engineering, Advisor: Prof. C.C. Liu)
- 3) Mr. Yong Wu (2013, Physics, Advisor: Prof. R. Brown)
- 4) Ms. Wasana Senevirathna (2014, Chemistry, Advisor: Prof. G. Sauve)
- 5) Ms. Cassie Daddario (2015, Chemistry, Advisor: Prof. G. Sauve)
- 6) Ms. Jing Li (2015, Chemistry, Advisor: Prof. D. Scherson)

Undergraduate Students (Research Advisees)

- 1) Ms. Kara Wahlgreen (B.A. Chemistry, 2010-2011) Currently studying M.S. in Anesthesiology Assistant at the School of Medicine in CWRU.
- 2) Mr. Hirsh Pujara (B.A. Chemistry, 2010-2012) Currently studying at the Simon Business School in the University of Rochester, NY.
- 3) Mr. Steven Wu (B.S. Chemistry, 2011-2012) Currently studying M.S. in Chemistry in San Jose State University.
- 4) Ms. Amy Coe (B.S. Chemistry, 2011-2013) Currently studying at the College of Pharmacy in Ohio State University.
- 5) Mr. Raymond De Guzman (B.S Biochemistry, Fall 2012) Currently studying Medical School at the University of Toledo.
- 6) Ms. Angela Crise (B.S. Chemistry, 2012-2013) Currently working as a development chemist at Hentzen Coatings in Milwaukee, WI.
- 7) Ms. Seung Yeon Bae (B.S. Chemistry, Fall 2014) Currently studying at the School of Dental Medicine at CWRU.
- 8) Ms. Ava Kotvas (B.S. Chemistry, 2013-2014) Currently a senior student.
- 9) Ms. Czar Beunviaje (B.S. Chemistry student from the University of the Philippines – Diliman, exchange student in the lab in Summer 2014) Currently a senior student.
- 10) Mr. Adam Vianna (B.S. Chemistry, 2014 – present) Currently a junior student.
- 11) Ms. Tricia Conti (B.S. Chemistry, 2014 – present) Currently a senior student.
- 12) Ms. Aria Bredt (B.S. Chemistry, 2014 – present) Currently a junior student.
- 13) Mr. Pawel Kraj (B.S. Chemistry, Summer 2015) NSF-REU student from Mercer University in GA.

Undergraduate Students (Academic Advisees)

- 1) Mr. Edward Blake (B.A. Chemistry, 2011-2015)
- 2) Ms. Tricia Conti (B.A. Chemistry, 2011-2015)
- 3) Ms. Selina Dziewic (B.A. Chemistry, 2011-2015)
- 4) Ms. Sophia Herzog (B.A. Chemistry, 2011-2015)
- 5) Mr. Gregory Hsu (B.A. Chemistry, 2011-2015)
- 6) Mr. Malcolm Jefferson (B.A. Chemistry, 2011-2015)
- 7) Ms. Monica Kane (B.A. Chemistry, 2011-2015)
- 8) Ms. Melissa Liu (B.A. Chemistry, 2011-2015)
- 9) Ms. Erin Reynolds (B.A. Chemistry, 2011-2015)
- 10) Mr. Ian Taylor (B.A. Chemistry, 2011-2015)
- 11) Ms. Tara Tran (B.A. Chemistry, 2014-present)

High School Students

- 1) Margareth McConnell (Protégé Program, Laurel High School, Summer 2011) Currently a B.S. Electrical Engineering & Computer Science student at Ohio State University.
- 2) Lilly Faulk (Shadowing Program, West Geauga High School, Summer 2012) Currently a B.S. Biology student at CWRU.

- 3) Maryam Bagheri (Shadowing Program, Cleveland Heights High School, Summer 2012)
- 4) Julie dela Pena (ACS SEED Program, Max Hayes High School, Summer 2012)
- 5) Jessie Anderson (Protégé Program, Laurel High School, Summer 2013) Currently an undergraduate student at Dartmouth College.
- 6) Rebecca (Rong) Kuang (Shadowing Program, Beachwood High School, Summers 2013 and 2014) Currently an undergraduate student at the University of Chicago.
- 7) Vy Lam (ACS SEED Program, John Hay Campus, Summers 2013 and 2014)
- 8) Gani Perez (Hudson High School, Summer 2013)
- 9) Tim Situ (Huron High School, Summers 2013 and 2014)
- 10) Yichen Li (Shadowing Program, Andrew Osborne Academy, Summer 2014)
- 11) Sofia Yi (Protégé Program, Laurel High School, Summer 2014)
- 12) Megan Zhao (Shadowing Program, Hudson High School, Summer 2014)
- 13) Sofia Cochran (Protégé Program, Laurel High School, Summer 2015)
- 14) Mia Templeman (ACS SEED Program, John Hay Campus, Summer 2015)

Other Mentoring Activities:

- 1) Faculty mentor to a graduate student in Biomedical Engineering as part of the WISER (Women in Science and Engineering Roundtable) program at CWRU.
- 2) Faculty mentor and laboratory host to the "Introduce a Girl to Science Day" WISER program at CWRU.
- 3) Director and faculty adviser of the Women in Chemistry @ CWRU (WIC@CWRU) association.
- 4) Faculty mentor and laboratory host for the Protégé Program at Laurel School.
- 5) Faculty mentor and laboratory host for the Shadowing High School Program in the Cleveland Municipal School District.
- 6) Faculty mentor and laboratory host for the ACS SEED Project.
- 7) Faculty adviser of the Filipino Student Association at CWRU.
- 8) Director and faculty adviser of the "Cleveland Traveling Magnetism Show".

PROFESSIONAL SERVICE

Service to the Department and University

- Member of the Chemistry Executive Committee (Spring 2015)
- Member of the Chemistry Graduate Recruiting Committee (2010 – present)
- Member of the Chemistry Undergraduate Recruiting Committee (2010 – present)
- Member of the Analytical Chemistry Foundations Course Committee (Developed Modified Chem 310)
- Developed the Functional Nanomaterials Course (Chem 341/441)
- Director of the Women in Chemistry @ CWRU professional development workshop series (2013 – present)
- Co-organizer of the "Magnetism in Medicine" Chemistry Frontiers Seminar Series for Fall 2012
- Member of the Chemistry Department "Green Team" who assists in reviewing grant applications of colleagues in the department
- Member of the Alpha Chi Sigma Chemistry Fraternity (2010 – present)
- Chemistry Representative at the College of Arts and Science Open House and have Conducted Prospective Student Family Tours during Open House (2010 – present)
- Faculty Panel on How to Write A Successful NSF CAREER Proposal (2013)
- Member of the Case Center for Imaging Research
- Member of the Institute for Advanced Materials at CWRU
- Faculty Advisor to the Filipino Student Association at CWRU (2014 – present)
- Faculty mentor to WISER at CWRU (2010 – present)
- Faculty mentor and host to ACS SEED Research Program High School Student (2011 – present)
- Laboratory host to the "Introduce a Girl to Science Day" WISER program at CWRU (2010 – present)
- Traveled to the University of the Philippines (UP) to establish a student/faculty exchange collaborative program between UP and CWRU (2012)
- Traveled to Hanoi National University of Education, the Vietnam Academy of Science and Technology, and the Vietnam National University to establish and memorandum of agreement between these Vietnam Universities and CWRU (2013)

- Traveled to Beijing University of Technology to establish collaboration with CWRU (2013)

Service to the Outside Academic Community

- Editorial Board Member of the International Journal of Molecular Sciences (2015-present)
- Editorial Board Member of the International Journal of Magnetic Particle Imaging (2015-present)
- Editorial Board Member of Scientific Reports (2015 – present)
- Editorial Board Member of Science Letters Journal, Nanoscience and Nanotechnology Section (2014 – present)
- Editorial Board Member of the Journal of Pharmaceutics (2013 – present)
- International Advisory Board Member of Kimika (2013 – present)
- Member of the American Chemical Society Morley Award Committee (2012 – 2015)
- Member of the Program Committee for the International Workshop in Magnetic Particle Imaging (2013 – 2015)
- Director of the Cleveland Traveling Magnetism Show
- Reviewer of NSF (CBET, DMT, SBIR) and ACS PRF Grants
- Active reviewer of several scientific journals including: the Journal of the American Chemical Society, Langmuir, Journal of Colloid and Polymer Science, Electrochemistry Communications, Chemistry of Materials, IEEE Medical Imaging, IEEE Transactions on Magnetics, Nanoscale, Advanced Materials, Advanced Functional Materials, Chemical Communications, PLoS One, ACS Applied Materials & Interfaces, Journal of Physical Chemistry Letters, Journal of Physical Chemistry C, ACTA Biomaterialia, Journal of Materials Chemistry B, Analytical Chemistry
- Guest Editor with Prof. Y. Bao for the International Journal of Molecular Science on the “Developmental and Reproductive Toxicity of Iron Oxide Nanoparticles”
- Advisory Board Member for the functional Magnetic Particle Imaging (fMPI) Obama BRAIN Initiative R24 Grant

International Conferences Co-organized and Co-chaired

- 2015 MRS Spring Meeting & Exhibit, *Co-organizer and Session Chair of Symposium Q: Externally Actuated Responsive Nanomaterials – Design, Synthesis, Applications and Challenges*, San Francisco, CA, April 7-8, 2015.
- 2015 International Workshop on Magnetic Particle Imaging, *Member of the Program Committee* (Nanoparticle Tracers and Applications), Istanbul, Turkey March 26-28, 2015.
- 247th ACS National Meeting & Exposition, *Co-organizer and Session Chair of Symposium on Multicomponent Functional Nanomaterials: Development and Applications; Division of Colloid & Surface Chemistry*, March 16-20, 2014 in Dallas, TX
- 2013 MRS Spring Meeting & Exhibit, *Co-organizer and Session Chair of Symposium N: Nanomaterials in the Sub-nanometer Range*, San Francisco, CA, April 2-3, 2013.
- 2013 International Workshop on Magnetic Particle Imaging, *Member of the Program Committee and Session Chair* (Nanoparticle Tracers and Applications), University of California – Berkeley, Berkeley, CA, March 23-24, 2013.

COLLABORATORS

Case Western Reserve University:

Prof. Rigoberto C. Advincula (Macromolecular Science and Engineering)
 Prof. Robert W. Brown (Physics)
 Prof. Matthew M. Cooney (University Hospitals & School of Medicine – Hematology and Oncology)
 Prof. Michael J. Decker (Nursing)
 Prof. Mark A. Griswold (School of Medicine – Radiology)
 Prof. Umut Gurkan (Mechanical and Aerospace Engineering)
 Prof. LaShanda Korley (Macromolecular Science and Engineering)
 Prof. Chung-Chiun Liu (Chemical and Biomolecular Engineering)
 Prof. Jaoa Maia (Macromolecular Science and Engineering)
 Prof. Kurt R. Rhoads (Civil Engineering)
 Prof. Daniel A. Scherson (Chemistry)
 Prof. William P. Schieman (Case Comprehensive Cancer Center)
 Prof. Nicole F. Steinmetz (Biomedical Engineering)

Prof. Cheryl L. Thompson (School of Medicine – Family Medicine)
Prof. Xiong “Bill” Yu (Civil Engineering)

Outside Case Western Reserve University:

Dr. David J. Burke (Holden Arboretum – Biology)

Prof. Yumi Ijiri (Oberlin College – Physics)

Dr. Jing Li (NASA Ames Research Center)

Dr. Salvatore Frangiamore (Cleveland Clinic – Orthopedic Surgery)

Prof. Jun-Jie Zhu (Nanjing University, China – Chemistry)