

John W. Stone

Professional Address
Department of Chemistry
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Education

- Research Associate, Vanderbilt University, 2010-2011
- Postdoctoral Fellow, Vanderbilt Medical Center/Vanderbilt University, 2008-2010
- Ph.D., Chemistry (Nanotechnology), University of South Carolina, 2008
- M.S., Chemistry, University of South Carolina, 2006
- B.S., Chemistry, Armstrong Atlantic State University, 2002

Work

- Assistant Professor of Chemistry, Georgia Southern University (2013-present)
- Temporary Assistant Professor of Chemistry, Armstrong Atlantic State University (2011-2013)

Research Experience

- Armstrong Atlantic State University (PI)
Assistant Professor
Surface functionalized gold nanorods as targeted contrast imaging and therapeutic agents (Cancer Driven).
- Vanderbilt University (October 2010-July 2011)
Research Associate under the direction of Drs. David Wright and David Cliffel
Phase-changing metal:oxide nanostructures for the detection of TNT vapor. Gold nanorod-hairpin conjugates for the selective detection of RSV.
- Vanderbilt Medical Center/Vanderbilt University (July 2008-October 2010)
Postdoctoral Research Fellow under the direction of Drs. David Wright and James Crowe
Protein coated gold nanorods as a viable vaccine and inhibitor against respiratory syncytial virus infection.
- University of South Carolina (December 2005 to June 2008)
Graduate Research Assistant under the direction of Dr. Catherine J. Murphy
Synthesis and characterization of metallic nanoparticles and their use in applications as sensors, biological tracking devices and photothermal agents.
- University of South Carolina (June 2002- November 2005)
Graduate Research Assistant under the direction of Professor Hans-Conrad zur Loye
Synthesis of layered inorganic materials and preparation of polymer nanocomposites; characterized by powder X-ray diffraction (XRD), transmission electron microscopy (TEM), and thermogravimetric analysis (TGA).
- Armstrong Atlantic State University (September 2000 to May 2002)
Undergraduate Research under the direction of Dr. Will Lynch and Dr. Delana Nivens
Study of Quercetin 2,3-dioxygenase (QDO); characterization by gas chromatography/mass spectroscopy (GSMS), ultra violet visible spectroscopy (UV-vis), and fluorescence spectroscopy.
- Skidaway Oceanographic Institute (May 2001 to August 2001)
Undergraduate Research under the direction of Mrs. Debbie Wells
Trace metal analysis of oyster tissue and sediment following sample preparation by digestion and hydrofluoric acid treatment; analysis by mass spectroscopy (MS) and atomic adsorption.

Teaching Assistant

- Teaching assistant, general chemistry, at the University of South Carolina, August 2002-April 2003

Faculty Teaching Responsibilities

- General Chemistry
- Analytical Chemistry
- General Chemistry Lab
- Analytical Chemistry Lab
- Inorganic Lab

Instrumentation Experience

- Ultraviolet-visible Spectroscopy
- Transmission and Scanning Electron Microscopy
- Fluorescence Spectroscopy
- Zeta Potential and Dynamic Light Scattering Analyses
- Thermogravimetric Analysis
- Infrared and Raman Spectroscopy
- Confocal Microscopy
- Atomic Absorption Spectroscopy
- Proton Nuclear Magnetic Resonance
- Circular Dichroism
- Mass Spectrometry
- Gas Chromatography-Mass Spectrometry
- Powder X-ray Diffraction
- Inductively Coupled Plasma-Mass Spectroscopy

Honors and Awards

- Recipient James E. Copenhaver Scholar, 2002
- Vice President of Students for Advancement of the Chemical Sciences, 2003-2004
- Recipient Postdoctoral Enhancement Award, 2008
- Recipient NIH Training Grant Position, 2008-2010

Grants

- Internal Research and Scholarship Grant: *Photothermal Lysis of Respiratory Syncytial Virus Using Gold Nanorods* - **Funded, \$865**
- Pilot Grant, GSU: Assessment of Toxicity and Biodistribution of Gold Nanorods as it pertains to Cancer Therapeutics- **Funded, \$5,000**
- NIH (R15 Area) Grant: Polymer-coated Gold Nanorods for Controlled Photothermal and Chemo Therapies- Pending, \$300,000 Direct.

Professional Service

- Society for the Advancement of the Chemical Sciences (USC chemistry graduate student group), Vice President, August 2003-May 2004
- Department Representative-graduate recruiting

Committees Served

- General Chemistry Committee
- Open House Committee

Publications

- Canonico-May, S.; Beavers, K.R.; Melvin, M.; Alkilany, A.; Duvall, C.; Stone, J.W. "Efficient Conversion of HAuCl_4 into Gold Nanorods: A Re-seeding Approach." In preparation.
- Bruschi-Richardson, L.; Sanpui, P.; Arize, M.E.; Kahn, I.; Schiertz, A.; Ferguson, L.; Stone, J.W.; Murphy, C.J.; Saleh, N.B.; Sabo-Attwood, T. "Activation of Toll-like Receptor 2 by Pristine Single-Walled Carbon Nanotubes." Submitted to *Particle and Fibre Toxicology*.
- Stone, J.W.; Harry R.; Hendley, O.; Wright, D.W. DNA Hairpin Oligonucleotides as a Profiling Probe for Detection of Tyrosinase mRNA. Book Chapter in *Nanobiotechnology Protocols*. **2013**, 1026, 2nd Ed., Chapter 9.
- Sabo-Attwood, T.; Unrine, J. M.; Stone, J. W.; Murphy, C. J.; Ghoshroy, S.; Bloom, D.; Bertsch, P.; Newman, L. "Plant Uptake, Distribution and Toxicity of Gold Nanoparticles." *Nanotoxicology* **2011**, 1-8.
- Stone, J.W.; Crowe, J. Invited Research Highlight Contribution. Accepted, *Nanomedicine*
- Stone, J.W.; Wright, D., Crowe, J. "Protein Coated Gold Nanorods as an Inhibitor against Respiratory Syncytial Virus." In preparation.
- Stone, J.W.; Jackson, S.; Wright, D. "Biological Application of Gold Nanorods." Invited Review, *WIREs: Nanomedicine and Nanobiotechnology* **2011**, 3, 100-109.
- Stone, J.W.; Walker, J.; Thornburg, N.; Wright, D.; Crowe, J. "Protein Coated Gold Nanorod Vaccines." *Nanotechnology* **2013**, 24.
- Wilson, C.; Stone, J.W.; Fowlkes, V.; Morales, M.O.; Murphy, C.J.; Baxter, S.C.; Goldsmith, E.C. "Collagen Receptors and the Age-Dependent Contraction of Type I Collagen Substrates by Cardiac Fibroblasts." Accepted, *Microscopy and Microanalysis*.
- Murphy, C.J.; Gole, A.M.; Stone, J.W.; Sisco, P.N.; Alkilany, A.; Goldsmith, E.C.; Baxter, S.C. "Gold Nanoparticles in Biology: Beyond Toxicity to Cellular Imaging." *Accounts of Chemical Research* **2008**, 41, 1721-1730.
- Murphy, C.J.; Gole, A.M.; Hunyadi, S.E.; Stone, J.W.; Sisco, P. N.; Alkilany, A.; Kinard, B.E.; Hankins, P. "Chemical Sensing and Imaging with Metallic Nanorods." *Chemical Communications* **2008**, 5, 544-557.
- Norman, S.; Stone, J.W.; Gole, A.; Murphy, C.J.; Sabo-Attwood, T. "Targeted Photothermal Lysis of the Pathogenic Bacteria, *Pseudomonas aeruginosa*, Using Gold Nanorods." *Nano Letters* **2008**, 8, 302-306.
- Gole, A.; Stone, J.W.; Gemmill W. R.; zur Loye H-C.; Murphy, C.J. "Iron Oxide Coated Gold Nanorods: Synthesis Characterization and Manipulation." *Langmuir* **2008**, 24, 6232-6237.
- Stone, J.W.; Sisco, P.N.; Goldsmith, E.C.; Baxter, S.C.; Murphy, C.J. "Using Gold Nanorods to Probe Cell-Induced Collagen Deformation." *Nano Letters* **2007**, 7, 116-119. (Cover Article)
- Stone, J.W.; Smith, M.; zur Loye, H. -C. "Single Crystals of Calcium and Strontium Phenylphosphonate Grown via Hydrothermal Crystallization." *Journal of Chemical Crystallography* **2007**, 37, 103-108.

Presentations

- **Stone, J.W.**; Canonico-May, S.; Melvin, M.; Beavers, K.R.; Duvall, C. Increased Conversion of $\text{H}(\text{AuCl}_4)$ into Gold Nanorods. Oral Presentation given at SERMACS, Atlanta, Fall 2013.
- **Stone, J.W.** Gold Nanorods: Their Properties and Applications as Therapeutic Agents. *Invited Seminar given at the University of Miami, Department of Chemistry*. Fall 2013.
- **Stone, J.W.**; Adams, N.; Wright, D.W. Protein Coated Gold Nanorods as Inhibitors Against Respiratory Syncytial Virus. Oral Presentation given at SERMACS, Raleigh, NC, Fall 2012.

- **Stone, J.W.** Phase-Changing Metal::Oxide Nanostructures for the Detection of TNT Vapor. Oral presentation given at the DTRA conference, Orlando FL, Fall 2010.
- **Stone, J.W.;** Thornburg, N.; Walker, J.; Jackson, S.R.; Crowe, J.E.; Wright, D.W. Respiratory Syncytial Virus: A Nanotechnology Driven Approach Toward Vaccine Development. Poster presentation given at the VICB conference at Vanderbilt University, Nashville, TN, Summer 2010.
- **Stone, J.W.;** Norman, R.S.; Gole, A.; Murphy, C.J.; Sabo-Attwood, T.L. Targeted Photothermal Lysis of the Pathogenic Bacteria, *Pseudomonas aeruginosa*, Using Gold Nanorods. Poster Presentation given at the MRS meeting, Boston, MA, Fall 2007.
- **Stone, J.W.;** Fei, D.; Hansen, T.J.; Liu, C.; Perkins, D.P.; Ploehn, J.; Rajeev, R.S.; Scrivens, W.; zur Loye, H. –C. Phosphonate Containing Polymer Nanocomposites. Poster presentation, 2005.
- **Stone, J.W.;** Fei, D.; Hansen, T.J.; Liu, C.; Perkins, D.P.; Ploehn, J.; Rajeev, R.S.; Scrivens, W.; zur Loye, H. –C. Phosphonate Containing Polymer Nanocomposites. Seminar given at the South Regional Meeting of the American Chemical Society, Raleigh, NC, 2004.
- **Stone, J.W.;** Fei, D.; Hansen, T.J.; Liu, C.; Perkins, D.P.; Ploehn, J.; Rajeev, R.S.; Scrivens, W.; zur Loye, H. –C. Phosphonate Containing Polymer Nanocomposites. Seminar given at the International Conference on Composites or Nano Engineering, ICCE, Hilton Head Island, SC, July, 2003.
- **Stone, J.W.;** zur Loye, H. –C. Synthesis of Nanoparticles Starting from Metal Salts via a Critical Temperature and Pressure Environment. Poster presentation at the 54th South Regional Meeting of the American Chemical Society, Charleston, SC, November, 2002.
- **Stone, J.W.;** Surface, J.L.; Lynch, W.; A New Model System for the Study of Quercetin Dioxygenase. Poster presentation at the 223rd American Chemical Society national meeting, Orlando Florida, April 2002.

Patent

- zur Loye, Hans-Conrad; Hansen, Tara Joy; **Stone, John**; Zhang, Baolong. “Polymer Composites Containing Exfoliated Phosphonate or Synthetic Oxide Particles. Awarded 2011.

Past Researchers Mentored

- Ian Baird 2006, Brain Kinard 2006-2008, Nidhi Kumar 2006, Jennifer Snipes 2006, Raleigh Dale 2007, Heather Jenkins 2007, Oliver Gothe 2007-2008, Jonathan Walker 2009, Amanda Rape 2009, Owen Hendley 2010-2011, Travis Meyer 2011-2012, Delia Singleton 2011-Present, Jared Wagenaar 2011-2013, Jessica Van Antwerp 2011-2012, Meredith Smoake 2012-2013.

