

Dr. Roger A. Sauterer

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Biology
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Education

Postdoctoral Research Associate, Albert Einstein College of Medicine, 1993.
Major: Cell Biology - Cytoskeletal Regulation

PHD, State University of New York - Stony Brook, 1988.
Major: Cell Biology
Dissertation Title: Assembly of small nuclear ribonucleoproteins (SnRNPs) in the cytoplasm of mammalian cells

BA, Oberlin College, 1979.
Major: Biology

Work History

Academic - Post-Secondary

Associate Professor, Jacksonville State University. (October 1998 - Present).

Professional Memberships

Society for Environmental Toxicology and Chemistry (SETAC). (July 2012 - July 2013).

President (March 2012 - March 2013), Vice-President (March 2011 - March 2012), Society for Environmental Toxicology and Chemistry - Southeast Chapter. (April 2005 - May 2013).

Association of Southeastern Biologists. (August 1994 - May 2013).

American Association for the Advancement of Science. (September 1988 - May 2013).

National Association of Biology Teachers. (September 2011 - September 2012).

RESEARCH

Published Intellectual Contributions

Recent Refereed Journal Articles

Sauterer, R. A. (2017). Inquiry-based laboratory experiences using ecosystem microcosms. *American Biology Teacher*, 79(6), 466-472. abt.ucpress.edu

Williams, J. R., Rayburn, J. R., Cline, G. R., Sauterer, R. A., Friedman, M. (2015). Effect of Allyl Isothiocyanate on Developmental Toxicity in Exposed *Xenopus laevis* Embryos. *Toxicology Reports*, 2, 222-227. doi:10.1016/j.toxrep.2014.12.005

Williams, J. R., Rayburn, J. R., Cline, G. R., Sauterer, R. A., Friedman, M. (2014). The Potential Protective Effect of LCysteine against the Toxicity of Acrylamide and Furan in Exposed

Xenopus laevis Embryos: An Interaction Study. *Journal of Agricultural and Food Chemistry*, 62(31), 7927-7938. [://dx.doi.org/10.1021/jf5013743](https://doi.org/10.1021/jf5013743)

Sauterer, R. A., Rayburn, J. R. (2012). Introducing environmental toxicology in instructional labs: The use of a modified amphibian developmental toxicity assay to support inquiry-based student projects. *The American Biology Teacher*, 74(7), 496-502.

Sauterer, R. A. (2011). From backwater to center stage: Using electronegativity as a central concept for understanding chemical principals in biology classes. *American Biology Teacher*, 73(8), 480-483. ucpressjournals.com

Recent Presentations Given

Harris, S. (Author & Presenter), Meera, S. (Author & Presenter), Thompson, D. (Author & Presenter), Chappell, V. (Author), Brewer, L. (Author), Sauterer, R. A. (Author), Association of Southeastern Biologists 79th Annual Meeting, "a rapid, high-yield method for obtaining cauliflower protoplasts for cell fractionation," Association of Southeastern Biologists, Myrtle Beach, SC. (March 30, 2018).

Chapell, V. (Author & Presenter), Brewer, L. (Author), Harris, S. (Author), Meera, S. (Author), Thompson, D. (Author), Sauterer, R. (Author), Association of Southeastern Biologists 79th Annual Meeting, "Investigating histone binding and histone-induced cytochrome C release in cauliflower," Association of Southeastern Biologists, Myrtle Beach, SC. (March 30, 2018).

Brewer, L. (Author & Presenter), Harris, S. (Author), Meera, S. (Author), Thompson, D. (Author), Chapell, V. (Author), Sauterer, R. A. (Author), Association of Southeastern Biologists 79th Annual Meeting, "Investigation of histone binding and histone-induced cytochrome C releastefrom mitochondria in yeast," Association of Southeastern Biologists, Myrtle Beach, SC. (March 30, 2018).

Sauterer, R. A., Association of Southeastern Biologists 79th Annual Meeting, "Integration of Earth-Life interactions in introductory biology courses," Association of Southeastern Biologists, Myrtle Beach, SC. (March 29, 2018).

Sauterer, R. A. (Author & Presenter), Brewer, L. (Author), Chappell, V. (Author), Association of southeastern Biologists, "Histone-mediated cytochrome C release from mitochondria: a process conserved across Eukarya?," Montgomery, AL. (March 31, 2017).

Roger, S. (Author & Presenter), Association of Southeastern Biologists, "Using "Ecosystem Jars" to support inquiry-based student experiments.," Association of Southeastern Biologists, Concord, NC. (April 2, 2016).

Sauterer, R. A. (Author & Presenter), Major, L. A. (Author), Association of Southeastern Biologists Annual Meeting, "Hi9stone-Induced Cytochrome C Release From Mitochondria: A Broadly Conserved Process?," Association of Southeastern Biologists, Chattanooga, TN. (April 3, 2015).

Contracts, Grants and Sponsored Research

Grant

Roger, S. A. (Principal), "Histone-induced cytochrome c release from mitochondria in angiosperms and yeast: an evolutionarily conserved process?," Sponsored by National Science Foundation, Federal, \$603,390.00. (June 1, 2016 - June 1, 2019). NOT FUNDED

Research Currently in Progress

"Effects of Histones on plant and yeast mitochondrial permeabilization"

Histones are the major nuclear proteins that organize DNA and play critical roles in regulating transcription. When histones get out of the nucleus and into the cytoplasm, often caused by nuclear or DNA damage, they may have effects on cell death mechanisms. Histones, especially histone H1 have been shown to bind specifically to mitochondria and induce permeabilization and leakage of cytochrome C and other proteins that induce apoptosis in mammalian cells. Previous research in our lab provides preliminary evidence that plant histones (at least H3) bind to plant mitochondria and induces cytochrome C release, suggesting that histone-mitochondrial binding and cytochrome C release from the mitochondria is a generalized mechanism and not just specific to animals. We hypothesize that histone-mitochondrial binding and release of cytochrome C is a mechanism for detecting DNA or nuclear damage that is conserved across a wide range of eukaryotes. Our current research is investigating the histone-mitochondrial interaction in more detail in angiosperm plants and in the unicellular fungus, brewer's yeast. Future plans include investigation of this potential mechanism in other eukaryotes such as in cultured protists or algae.