

Tarsha Eason, Systems Engineer in EPA's National Risk Management Research Laboratory

Air and Energy Management Division

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Area of expertise: Systems engineering, resilience and sustainability science with a specific focus on linked human and natural systems; Research involves exploring and developing: analytical approaches for assessing spatial and temporal patterns in data, leading indicators of critical transitions in complex, integrated systems and statistical methods to examine salivary antibodies as biomarkers of exposure to environmental pathogens. This work facilitates the development of unique insights and solutions to emerging problems related to the management of social-ecological systems, ecological thresholds, exposure science and public health.

Select publications:

Chuang, W. C., Garmestani, A.S., **Eason, T.**, Spanbauer, T. S., Fried-Petersen, H. B., Roberts, C.P., Sundstrom, S., Burnett, J.L., Angeler, D.G., Chaffin, B.C., Gunderson, L. Twidwell, D. and Allen, C.R. (2018). [Enhancing Quantitative Approaches for Assessing Community Resilience](#), Journal of Environmental Management, 213, 353-362.

Augustine, S.J.A., Simmons, K. J., **Eason, T.**, Curioso, C., Griffin, S. M., Wade, T., Dufour, A. Fout, S., Grimm, A., Oshima, K.O., Sams, E. A., See, M. J., and Wymer, L. (2017). [Immunoprevalence to Six Waterborne Pathogens in Beachgoers at Boquerón Beach, Puerto Rico: Application of a Microsphere-Based Salivary Antibody Multiplex Immunoassay](#), Frontiers in Public Health, 5, 84.

Sundstrom, S., **Eason, T.**, Nelson, J., Angler, D., Allen, C., Barichiev, C., Garmestani, A. S., Graham, N., Granholm, D., Gunderson, L., Knutson, M., Nash, K., Nyström M., Spanbauer, T. and Stow, C. A. (2017). [Detecting spatial regimes in ecosystems](#), Ecology Letters, 20(1), 19-32.

Eason, T., Garmestani, A. S., Stow, C. A., Rojo, C., Alvarez-Cobelas, M., Cabezas, H. (2016). [Managing for resilience: an information theory-based approach to assessing ecosystems](#). Journal of Applied Ecology. doi: 10.1111/1365-2664.12597

Augustine, S.A.J., Simmons, K.J, **Eason, T.**, Griffin, S. M., Curioso, C., Wymer, L. J., Fout G. S., Grimm, A. C., Oshima, K. H., Wade, T. J. (2015). [Statistical approaches to developing a multiplex immunoassay for determining human exposure to environmental pathogens](#), Journal of Immunological Methods, 425, 1-9.

Eason, T., Garmestani, A.S. and Cabezas, H. (2014). [Managing for resilience: early detection of regime shifts in complex systems](#), Clean Technologies and Environmental Policy, 16(4): 773-783, DOI: 10.1007/s10098-013-0687-2.

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Education:

- Ph.D., Florida A&M University, Tallahassee, FL; Industrial and Manufacturing Engineering, 2006
- M.S., Florida A&M University, Tallahassee, FL; Industrial Engineering, 1998
- B.S., Florida A&M University, Tallahassee, FL; Electrical Engineering, 1996

Professional Experience:

- Systems Engineer (Physical Scientist), National Risk Management Research Laboratory, US EPA, 2010-present
- Acting Branch Chief (Supervisory Physical Scientist) of the Clean Processes Branch, National Risk Management Research Laboratory, US EPA, 2013-2013
- Environmental Engineer (Federal Postdoctoral Associate), US EPA, 2008-2010
- Associate Director of Program Operations, Research Center for Cutting-Edge Technologies, Florida A&M University-Florida State University College of Engineering (FAMU-FSU COE), Tallahassee, FL, 2005-2008
- Consultant, Benedict Engineering, Tallahassee, Florida, 2006-2006
- Program Coordinator, Research Center for Cutting-Edge Technologies, FAMU-FSU COE, Tallahassee, FL, 2002-2005

Workgroup/Project Leads

- Associate Editor, Ecology and Society, 2015-present
- Co-Task Lead, SHC 2.64.2: Indicators for Community and Ecological Resilience, Safe and Healthy Community Research Program, 2014-present
- Team member, SHC 2.64.1: State of the Practice for Environmental Indicators, Safe and Healthy Community Research Program, 2014-present
- Mentor, ORISE and NRC postdoctoral associates, 2011-present
- Treasurer, Cincinnati FAMU Alumni Association, 2012-2015
- Member, USGS Powell Center workgroup on *Managing for Resilience in the Face of Global Change*, 2012-2014
- Task Lead, SHC 1.2.2.1: Inventory of sustainability indicators, Safe and Healthy Community Research Program, 2011 – 2014
- Review Panel Member, USDA AFRI NIFA Fellowships Grant Program, 2014
- Member, Institute for Operations Research and the Management 2012-2014
- Member, International Centre for Sustainable Development of Energy, Water and Environment Systems, 2012-2014
- Manager and Moderator, NRMRL LCA Applications Webinar Series, 2010-2011

Awards and Honors

- EPA Bronze Medal for Commendable Service: Report on the Environment (ROE), 2016
- EPA ORD Science Award, 2011
- EPA Region 8 Sustainability Award 2011
- EPA NRMRL Goal 3 Award – Collaboration, 2011
- EPA STAR Fellow