Kim A. Medley

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Appointments

2018-	Biodiversity Fellow, Living Earth Collaborative, Washington University
2016-	Director, Tyson Research Center, Washington University in St. Louis
2014-2015	Interim Director, Tyson Research Center, Washington University in St. Louis
2013	Associate Director, Tyson Research Center, Washington University in St. Louis
2012-2013	Post-doctoral Research Associate, University of Colorado at Boulder
2006-2012	Graduate Research Assistant, University of Central Florida
2004-2006	Research Specialist, Missouri State University

Education

2006-2012 Ph.D., University of Central Florida
Dissertation: "*Gene flow and adaptive evolution during invasion: can human-mediated dispersal facilitate local adaptation and range expansion?"*
Awarded Outstanding Dissertation 2012-UCF College of Sciences
Advisor: Dr. David G. Jenkins

2002-2004 M.S., Missouri State University
Thesis: "*Hydrology and local environmental factors influencing zooplankton communities in floodplain ponds*" Advisor: Dr. John E. Havel

1990-1995 B.A., Drury University
Thesis: "*Foraging ecology and bear use of high-elevation insect-aggregation sites*" Advisors: Drs. Stephen R. Jones and Don White, Jr.

Peer-reviewed publications

Under review:

Westby, K.M. and K.A. Medley. Invasive species reduces parasite prevalence and ameliorates negative environmental effects on parasitism in a native mosquito.

In prep:

Sweetman, B.M.*, K.M. Westby, S.A. Adalsteinsson, E.G. Biro, and K.A. Medley. Larval food source affects both host and parasite development.

Medley, K.A., K.M. Westby, E.G. Biro, and D.G. Jenkins. Rapid adaptation to winter by the invasive Asian tiger mosquito, *Aedes albopictus*.

Published:

Costanzo, K., K.M. Westby, and K.A. Medley. 2018. Genetic and environmental influences on the size-fecundity relationship in Aedes albopictus: Impacts on population growth estimates? *PLoS One*.

VanHorn, T.*, S.A. Adalsteinsson, K. Westby, E. Biro, J. Myers, M. Spasojevic, M. Walton, and K.A. Medley. 2018. Landscape physiognomy predicts abundance of the Lone Star tick, *Amblyomma americanum* Linneaus, in Ozark Forests. *Journal of Medical Entomology*.

Medley, K.A., E.H. Boughton, D.G. Jenkins, J.E. Fauth, P.J. Bohlen, and P.F. Quintana-Ascencio. 2015. Intense ranchland management tips the balance of regional and local factors affecting wetland community structure. *Agriculture, Ecosystems, & the Environment* 212:204-244.

Medley, K.A., Jenkins, D.G. and E.A. Hoffman, E.A. 2014. Human-aided and natural dispersal drive gene flow across the range of an invasive mosquito. *Molecular Ecology* 24 (2):284-295.

Reeves, M., Medley, K.A., Pinkney, F., Holyoak, M., Johnson, P.T.J., and M. Lannoo. 2013. Local hotspots drive continental geography of amphibian abnormalities. *PLoS One* 8:e77467.

Nuñez, M.A., and K.A. Medley. 2011. Pine invasion: climate predicts its success, something else predicts its failure. *Diversity and Distributions* 14(4):701-713.

May, S.E., Medley, K.A., Johnson, S.A., and E.A. Hoffman. 2011. Combining genetic structure and ecological niche modeling to establish units of conservation: A case study of an imperiled salamander. *Biological Conservation* 144:1441-1450.

Chick, J.H., Levchuk, A.P., Medley, K.A., and J.E. Havel. 2010. Underestimation of rotifer abundance a much greater problem than previously appreciated. *Limnology and Oceanography: Methods* 8:79-87.

Medley, K. A. 2010. Niche shifts during the global invasion of the Asian tiger mosquito, *Aedes albopictus* (Skuse), revealed by reciprocal distribution models. *Global Ecology and Biogeography* 19:122-133.

Havel, J.E., Medley, K.A., Dickerson, K.R., Angradi, T.R., Bolgrien, D.W., Bukaveckas, P.A., and T.M. Jicha. 2009. Effect of main-stem dams on zooplankton communities in the Missouri River (USA). *Hydrobiologia* 628:121-135.

Dickerson, K.D., Medley, K.A., and J.E. Havel. 2009. Spatial variation in zooplankton community structure is related to hydrologic flow units in the Missouri River, USA. *River Research and Applications* 25:1-14.

Medley, K.A. and J.E. Havel. 2007. Hydrology and local environmental factors influencing zooplankton communities in floodplain ponds. *Wetlands* 27:864-872.

Havel, J.E. and K.A. Medley. 2006. Biological invasions across spatial scales: local, regional, and intercontinental dispersal by the exotic cladoceran, *Daphnia lumholtzi* Sars. *Biological*

Invasions 8:459-473.

Mathis, A., Schmidt, D.W., and K.A. Medley. 2000. The influence of residency status on agonistic behavior of male and female Ozark zigzag salamander *Plethodon angusticlavius*. *American Midland Naturalist* 143:245-249.

***Under revision*:**

Jenkins, D.G., K.A. Medley, and J.E. Fauth. The native range side of the invasion theory coin, tested with the eastern mosquitofish, *Gambusia holbrooki*.

Book content

Medley, K.A. An Introduction to Multivariate Analysis, *in* Havel, J.E. and R.E. Hampton, Introductory Biological Statistics, 3rd ed., Waveland Press, Illinois, USA.

Jenkins, D.G., K.A. Medley, and R.B. Franklin. 2011. Microcrobes as a test of biogeographic principles. Pages 309-323 *in* D. Fontaneto, ed. Biogeography of Microscopic Organisms: Is Everything Small Everywhere? Cambridge University Press, Cambridge, UK.

Invited presentations

2018 Webster Groves Presbyterian Church. "Streambank restoration of LaBarque Creek."

2018 Washington University in St. Louis, Living Earth Collaborative Seminar Series. "City mosquito, country mosquito: ecology and evolution in the Anthropocene."

2017 National Great Rivers Research and Education Center, November 2018. "Ecology and evolution of disease vectors: combining basic and applied approaches."

2017 Yale University, New Haven, CT, April 2017. "From Genes to Species Ranges: Multi-scale eco-evo approaches to understanding vectors of disease."

2016 Illinois State University, Normal, IL, February 2016. "From Genes to Species Ranges: Multi-scale ecological approaches to understanding vectors of disease."

2016 Washington University in St. Louis, EEPB group, March 2016. "From Genes to Species Ranges: Multi-scale ecological approaches to understanding vectors of disease."

2016 University of Southern Illinois, Edwardsville, March 2016. "From Genes to Species Ranges: Multi-scale ecological approaches to understanding vectors of disease."

Contributed presentations (recent)

Beckermann, A., K.M. Westby, S. Adalsteinsson, and K.A. Medley. Native mosquito's vulnerability to predation is reduced in the presence of invasive mosquito. Entomology Society Annual Meeting (2018)

Westby, K.M., S. Adalsteinsson, E. Biro, and K.A. Medley. Larval Aedes albopictus populations

along an urban to rural gradient in St. Louis, MO: Are abundance patterns related to differences in larval habitat quality by land-use type? Entomology Society Annual Meeting (2018)

Costanzo, K, K.M. Westby, and K.A. Medley. Environmental and genetic influences on the size-fecundity relationship in Aedes albopictus. Florida Medical Entomology Lab worship on mosquito ecology and evolution (2017)

Westby, K.M.* and K.A.Medley. Interactive effects of species invasion and habitat quality on parasite prevalence: evidence of a dilution effect. Ecological Society of America Annual Meeting, Ft. Lauderdale, USA (2016)

Medley, K.A.* and P.T.J. Johnson. Seasonality and host richness drive continental distribution of a highly pathogenic amphibian parasite. International Biogeography Society Bi-Annual Meeting, Miami, USA (2013)

Medley, K.A., Jenkins, D.G.* and E.A. Hoffman. Range-wide landscape genetics reveal human-aided invasion patterns. International Biogeography Society Bi-Annual Meeting, Heraklion Crete, Greece (2011)

Medley, K.A.*, Boughton, E.H., Jenkins, D.G., Quintana-Ascencio, P.F., Fauth, J.E., and P.Bohlen. Land-use effects on wetland communities in an agricultural landscape. Ecological Society of America Annual Meeting, Pittsburgh, PA (2010)

Johnson, S.E.*, K.A. Medley, S.A. Johnson, and E.A. Hoffman. Combining ecological and genetic methods to assess conservation units in an imperiled salamander. Southeastern Ecology and Evolution Conference, GA (2010)

Johnson, S.E.*, K.A. Medley, S.A. Johnson, and E.A. Hoffman. Combining ecological and genetic methods to assess conservation units in an imperiled salamander. University of Central Florida Graduate forum (2010)

*****Presenter

Press

LaBarque creek restoration: Engineered streambank restoration (Nine Network), Streambank restoration—1 year later (Nine Network)

Lone star tick: Researchers say tick numbers related to local terrain, St. Louis Public Radio

Frog abnormalities: *The Good and Bad News about Frog Abnormalities*

Asian tiger mosquito: *Hot on the trail of the Asian tiger mosquito; Outmaneuvering mosquitoes; Online discussion*

Funding

2017 National Science Foundation, DEB (full proposal): "Evolution in the metropolis: integrating human-altered gene flow into models of local adaptation". Pending.

2008-2015 National Science Foundation, Informal Science Education ($1,596,017): "Making natural connections: an authentic field research collaboration." Kim A. Medley (PI) and Peter Raven (co-PI).

2013-2014 National Science Foundation, Field Stations and Marine Labs, ($350,003): "Outdoor research garden and rainwater collection system at Tyson Research Center." Barbara Schaal (PI) and Kim A. Medley (co-PI).

Teaching

2015-2016	Urban Ecosystem Principles Integration, WU
2014	Interdisciplinary Ecosystem Principles Integration-Seminar, WU
2012-2013	*Seminar*: Pathogens, parasites, and disease; University of Colorado
2006-2012	*Teaching Assistant and Head TA*, University of Central Florida Introductory Biology laboratory
2003-2006	*Seminar*: GIS tools for ecologists, Missouri State University
2004-2005	*Workshop*: Techniques for identifying zooplankton, Missouri State University

Mentoring

Postdocs:

2015-	Katie Westby, WashU
2016-2017	Solny Adalsteinsson, WashU

Graduate students:

2017-	Evlyn Pless, Yale University (Jeffrety Powell, Adelgisa Caccone,)
2016-	Kris McIntire, Illinois State University (Steve Juliano)

Undergraduate students:

2018	Andrew White, Tejiri Agbigbe, WashU
2017	Hanna Peterman, Leslie Sterling, WashU
2015-2016	Brenden Sweetman, Thomas VanHorn, WashU
2014	Amanda Kalupa, Eleanor Moen, Anna Darling, Tyson Summer Fellows
2012-2013	Kelly King (Undergraduate Honors Thesis), Ian Buller (M.S.), CU
2010-2012	Rebecca François (Undergraduate Honors Thesis), University of Central Florida

K-12 youth:

2018	Sabreena Leach, Tullaia Powell, Collegiate School of Medicine and Bioscience
2017	Delilah Sayer, Rockwood Summit High School
2016	Lexie Beckerman, Delilah Sayer, Omair Habib, Bayley Saylor
2015	Lexie Beckerman, Eureka High School; Jolena Pang, Clayton High School
2009	Shelouise Seran (Middle School Science Fair), Avalon Middle School

Outreach

2014-2018	Tyson Environmental Research Fellows-Mentor
2009-2011	Science Fair Judge. Avalon Middle School, Orlando, FL.
2005-2006	Speaker. Expanding Your Horizons Workshop for Middle School Girls
2004-2005	Science Fair Judge. Ozarks Science and Engineering Fair. Missouri State University

Other Appointments

2018	Advisory Board, Ozark Research Field Station, Missouri S&T University
2017-present	Steering Committee, Washington University Climate Change Program
2016-present	Steering Committee, Washington University Environmental Studies Program
2007-2008	Secretary, Biology Graduate Student Association, University of Central Florida
2007	Organizational committee, Southeast Ecology and Evolution Conference
2004	Organizational committee, Great Plains Limnologists Conference

Awards, Fellowships

- Excellence in Graduate Research Award, University of Central Florida, 2013.
- International Biogeography Society Travel Award, 2009.
- Graduate research assistantship, UCF, 2007, 2009, 2010.
- Graduate teaching assistantship, UCF, 2006, 2008, 2009.
- Graduate research assistantship, MSU, 2002-2004.
- Topping Fellowship, Missouri State University, 2004.
- Ball Chemistry Award, Drury University, 1992.

Professional References

Dr. Barbara Schaal
Dean of the Faculty of Arts and Sciences
Mary-Dell Chilton Distinguished Professor of Biology
Washington University in St. Louis

Dr. Peter H. Raven
President Emeritus, Missouri Botanical Garden
George Engelmann Professor Emeritus of Botany
Washington University in St. Louis

Dr. David G. Jenkins
Professor & James and Annie Ying Eminent Scholar, Department of Biology
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