Ecological Society of America announces 2019 award recipients

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For Immediate Release

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The Ecological Society of America (ESA) will present the 2019 awards recognizing outstanding contributions to ecology in new discoveries, teaching, sustainability, diversity, and lifelong commitment to the profession during the Society's Annual Meeting in Louisville, Ky. The awards ceremony will take place during the Scientific Plenary, Monday, August 12, at 8 AM in Ballroom C in the Kentucky International Convention Center. Learn more about ESA awards on the home website.

Eminent Ecologist Award: Robert D. Holt

The Eminent Ecologist Award honors a senior ecologist for an outstanding body of ecological work or sustained ecological contributions of extraordinary merit.

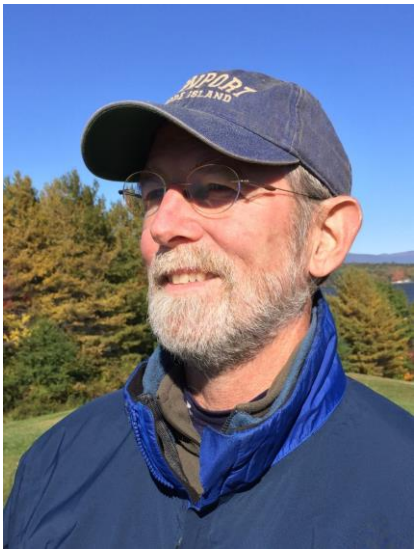
Dr. Robert D. Holt – Eminent Scholar in Biology and Arthur R. Marshall, Jr., Chair in Ecology at the University of Florida – is the recipient of the 2019 Eminent Ecologist Award. His contributions over the past 40 years offer major conceptual advances into the dynamics of how species interact and their ecological and evolutionary consequences of such interactions. The hallmark of his work is the use of relatively simple models to explore common but complex phenomena in nature.

In his very first paper while still a graduate student, Holt challenges the prevailing wisdom that competition for shared resources is the predominant interaction that structures biological communities by demonstrating that a shared predator can cause identical outcomes via the mechanism he terms apparent competition. He continues to challenge this view by pioneering analyses of other food web configurations, which he terms community modules, including food webs that include multiple species in multiple trophic levels and predators that compete for resources with their prey. Additionally, Holt also champions the investigation of pathogens in influencing community structure. In all of these areas, Holt has authored foundational papers that challenge the conventional wisdom, and continues their development into ever richer complexity.

Holt's analyses and thinking are not confined to the purely ecological. He also explores the consequences of these population and food web processes for the adaptation of interacting species and how that adaptation further shapes communities. He has authored seminal papers on the evolution of dispersal and habitat choice, the dynamics of adaptation for species with complex life cycles, and the potential for sink populations to evolve into source populations (i.e., evolutionary rescue). All this work infuses ecological realism and spatial thinking into theories of natural selection.

Throughout his career, Holt has also been a generous mentor and collaborator. The number of people with whom he has collaborated on ideas and papers is legion, and all tell of an exciting exchange and development of ideas with someone who truly valued the interaction. He has been particularly generous with graduate students, post-doctoral associates and junior faculty, many of whom recount striking up fruitful and long-lasting collaborations with him upon their first meeting. Holt's career exemplifies that great science and great friendship can go hand-in-hand.

Distinguished Service Citation: Charles D. Canham



The Distinguished Service Citation recognizes long and distinguished volunteer service to ESA, the scientific community, and the larger purpose of ecology in the public welfare.

Dr. Charles D. Canham, Senior Scientist at the Cary Institute of Ecosystem Studies, exhibits distinguished volunteer service to the ESA, to the larger scientific community, and to the larger purpose of ecology. His strong support of the ESA emphasizes his generosity and commitment to the Society over many years. Dr. Canham thinks deeply about safeguarding and enhancing ESA as an institution for future generations of ecologists. Many ESA members are committed to service, but Canham's deep, transformative contributions are making lasting improvements contributing to the long-term success of the society.

In his service to ESA, Canham is unfailingly generous in discussion and listening carefully to all points of view. He provided astute guidance as a member of the editorial board for three of ESA journals: *Ecology*, *Ecological Monographs*, and *Frontiers in Ecology and the Environment*. While preserving the high standards set by the journals, Canham always maintains the respectful, thorough, and constructive input that authors appreciate, regardless of the fate of their manuscripts. Additionally, Canham also served ESA through section leadership (Secretary, Vice-chair and Chair of the Vegetation Section) and as a two-term Secretary on the Governing Board where his institutional knowledge was invaluable during major Society transitions While Secretary, he was always willing to try new ways to help ESA thrive and grow.

Canham also has great impact as an ecologist, with over 12,000 citations of his work. One of his major scientific contributions is re-envisioning the growth strategies of tree seedlings and saplings in the forest understory. Prior to his work, the paradigm was that shade-tolerant species had evolved to "grow," albeit slowly, under low light. Through a combination of detailed measurement and elegant modeling, he demonstrates that that natural selection favors "survival" until the next canopy opening rather than growth in the shade. The premium is on survival. This paradigm shift caused a reevaluation of the drivers of tree demography and forest responses to disturbance. His two top papers on modeling and measuring light in the understory and sapling responses have been cited over thirteen hundred times.

Beyond ESA, Canham devotes much effort to causes that advance conservation. He has been a very active member on nonprofit boards of directors for organizations that have on-the-ground impact. Among others, these include the Adirondack Council, Adirondack Land Trust, Adirondack Chapter of the Nature Conservancy, and Hudsonia.

Eugene P. Odum Award for Excellence in Ecology Education: Ricardo Rozzi

Odum Award recipients demonstrate their ability to relate basic ecological principles to human affairs through teaching, outreach, and mentoring activities.

Dr. Ricardo Rozzi, Professor at the University of North Texas, is a giant in the field of biocultural conservation and has pioneered innovative methods of teaching the integration of philosophy and ecology. He teaches and mentors students across all levels, starting from preschool, K-12 groups, undergraduate and graduate students, as well as informal adult education. Rozzi clearly takes the approach of getting the greatest knowledge of ecology to the greatest number of people and in so doing, making large-scale conservation impact. He holds multiple professor, researcher, and director appointments across institutions in both Chile and the U.S. His work as well as his approach to education focuses on the inclusion of diverse audiences, championing cultural and socio-economic issues in Latin America.

Rozzi is a thought leader in ecological conservation in theory and in practice. He has authored more than 25 books, more than 150 referred journal articles, and over 50 book chapters, both in English and in Spanish. Beyond creating globally recognized education programs – such as Field Environmental Philosophy – and novel teaching activities – such as Ecotourism with a Hand Lens – Rozzi also engages with governmental policies and the media to build bridges for international approaches to ecological education.

Commitment to Human Diversity in Ecology Award: Maria N. Miriti

ESA's Commitment to Human Diversity in Ecology award recognizes long-standing contributions of an individual towards increasing the diversity of future ecologists through mentoring, teaching, or outreach.

Dr. Maria Miriti, Associate Professor of plant ecology at Ohio State University (OSU), is an expert on the population and community dynamics of desert perennials of the Colorado Desert in California. Miriti is a pioneer in strategic development of programs to enhance human diversity of environmental professionals, through targeted recruitment and mentoring of undergraduate and graduate students in the sciences, and through development of unique curricular programs that increase understanding and interest in environmental careers in middle school students and facilitate bridges from high school to college programs.

Miriti organizes faculty and students in innovative programs to introduce local minority high school students to the wonders of STEM programs at OSU. She has led "dissertation bootcamp" programs for minority graduate students at OSU, and is proactive in hosting scientists from underrepresented groups to present departmental seminars. Most recently she broadened her ecology education outreach efforts to middle school minority students by obtaining funding to implement and direct a community garden project that teaches area students the connections between plant science and healthy food production methods.

Miriti chairs the OSU department's diversity committee, providing leadership in discussion of departmental climate and curricular improvements to increase retention of graduate students from underrepresented groups. Moreover, OSU recently appointed her as Chair of the Council on Academic Affairs at OSU, solidifying her status as a leader among academics at the university and providing her with a broader platform to discuss the importance of human diversity in enhancing the science profession.

Robert H. Whittaker Distinguished Ecologist Award: Jingyun Fang

The Whittaker Award recognizes an ecologist with an earned doctorate and an outstanding record of contributions in ecology who is not a U.S. citizen and who resides outside the United States.

Dr. Jingyun Fang – a Cheung Kong Scholar, Professor, and Chair of the Department of Ecology, College of Urban and Environmental Sciences at Peking University – is one of the most renowned ecologists in China. During his career, Fang has played pivotal roles in the advancement of ecology, in informing national and international policy, and in building a scientific community of ecologists in China. He makes significant contributions to the understanding of carbon cycling, biodiversity, remote sensing, and plant stoichiometry. Fang has published 7 books and over 370 peer-reviewed papers, including key papers in Science, Nature, and PNAS. His work uses environmental and anthropogenic gradients at local and national scales – conceptually similar to Whittaker's classical gradient studies – to markedly influence the understanding of the variation in and controls over diversity, carbon cycling, and ecosystem services. His body of work advances numerous concepts that Whittaker pioneered, and also establishes new standards of scientific rigor that were impossible in Whittaker's time.

W.S. Cooper Award: Songlin Fei, Johanna M. Desprez, Kevin M. Potter, Insu Jo, Jonathan A. Knott, and Christopher M. Oswalt

The Cooper Award honors the authors of an outstanding publication in the field of geobotany, physiographic ecology, plant succession, or the distribution of plants along environmental gradients. William S. Cooper was a pioneer of physiographic ecology and geobotany, with a particular interest in the influence of historical factors – such as glaciations and climate history – on the pattern of contemporary plant communities across platforms.

Understanding how species change their distributions in response to climate change is a fundamental question in ecology, but our understanding is hampered because impacts are often species-specific and influenced by non-climatic factors. Fei and his team shed new light on this problem with an impressive dataset of repeat measurements taken of 86 tree species across the eastern U.S. from 1980 to 2015. They not only find that trees are shifting their ranges in response to recent climate change, but that the nature of those shifts is influenced by species traits and evolutionary history. Fei and colleagues find that angiosperms (e.g., include hardwood, broad-leaved deciduous trees) have primarily shifted westward in recent decades, while gymnosperms (e.g., softwood conifers) have primarily shifted northward. Importantly, they find that precipitation has so far played a stronger role than temperature in driving these observed range shifts. Overall, this paper represents an important advancement in the understanding of the complexities of climate change impacts on species ranges, and highlights the importance of disentangling the different climatic drivers of range shifts.

- Fei, Songlin, et al. 2017. Divergence of species responses to climate change. *Sciences Advances*, Vol. 3, no. 5; DOI: 10.1126/sciadv.160305

George Mercer Award: Jesmer, Brett R., Merkle, Jerod A., Goheen, Jacob R., Aikens, Ellen O., Beck, Jeffrey L., Courtemanch, Alyson B., Hurley, Mark A., McWhirter, Douglas E., Miyasaki, Hollie M., Monteith, Kevin L., and Kauffman, Matthew J.

The Mercer Award recognizes an outstanding, recently-published, ecological research paper by young scientists.

Conditions in nature are better in different areas at different times, and many animals migrate to track resources. But how do they figure out where to go and when to go there, especially when that requires traversing vast distances? Jesmer and colleagues compared migration of historical and translocated populations of bighorn sheep and moose, demonstrating that ungulate migration is inherited culturally rather than genetically. This creative and interdisciplinary work represents a strong collaboration between researchers in academia and wildlife managers from state agencies, demonstrating that behavioral ecology provides an important foundation for pressing ecological and management questions.

- Jesmer, Brett R., et al. 2018. Is ungulate migration culturally transmitted? Evidence of social learning from translocated animals. *Science* 361:1023-1025. doi: 10.1126/science.aat0985

Sustainability Science Award: McPhearson, T., S.T.A. Pickett, N.R. Grimm, J. Niemela, M. Alberti, T. Elmqvist, C. Weber, D. Haase, J. Breuste, and S. Qureshi

The Sustainability Science Award recognizes the authors of the scholarly work that makes the greatest contribution to the emerging science of ecosystem and regional sustainability through the integration of ecological and social sciences.

McPhearson and colleagues provide an international perspective on how ecological research focused on urban areas can improve sustainability. Urban areas are expected to be highly at risk from global environmental changes and this article highlights the need for a conceptual synthesis that allows urban residents to make better decisions concerning their environment and the social relations within it.

The paper is also quoted and highlighted in the 2018 NSF report titled 'Sustainable Urban Systems: Articulating a Long-term Research Agenda.' Because it articulates a multi-faceted research agenda for both social scientists and ecologists, the paper will continue to have impacts in advancing the scholarship around urban resilience and sustainability.

- McPhearson, T., et al. 2016. Advancing urban ecology towards a science of cities. *Bioscience* 66: 198-212, doi:10.1093/biosci/biw002

Innovation in Sustainability Science Award: Bennett, E.M., M. Solan, R. Biggs, T. McPhearson, A.V. Norström, P. Olsson, L., Pereira, G.D. Peterson, C. Raudsepp-Hearne, F. Biermann, S.R. Carpenter, E.C. Ellis, T. Hichert, V. Galaz, M. Lahsen, M. Milkoreit, B. Martin López, K.A. Nicholas, R., Preiser, G. Vince, J.M. Vervoort, and J. Xu.

The Innovation in Sustainability Science Award recognizes the authors of a peer-reviewed paper published in the past five years exemplifying leading-edge work on solution pathways to sustainability challenges.

Bennett and colleagues provide compelling examples drawn from around the globe of concrete ways to improve sustainability and resilience through environmental innovations, reconfigurations of social-ecological relationships, and effective engagement with local stakeholders. The authors represent a diverse mix of institutions distributed in North America, South America, Africa, Asia, and Europe. The publication calls attention not only to world-wide 'seeds of hope' for a brighter future, but also to continuing efforts to glean knowledge and experiences that will foster a healthier planet and a higher quality of life for its inhabitants. Their work highlights the types of changes that can be implemented to improve sustainability, resilience, and quality of life in rural and urban area.

- Bennet, E.M., et al. 2016. Bright spots: seeds of a good Anthropocene. *Frontiers in Ecology and the Environment*. 14: 441-448, doi:10.1002/fee.1309a