

Austin Mast, Ph.D.

What do you feel are the major concerns facing the citizen science community?

What an exciting time to be practicing citizen science. We have a new Citizen Science Association with a new *Citizen Science* journal, and the U.S. federal government has embraced citizen science with plans for a Citizen Science Day and a new focus on citizen science at federal agencies. Wow! Thank you to everyone who has brought about these and the many other exciting developments in our community of practice.

My personal passion in this exciting growth space is outreach and training, especially to professional scientists and those cohorts that will come after us. We should work towards a future where the Citizen Science Association has a booth at every major professional science meeting to broadcast our innovations and promulgate best practices to professional scientists, and, conversely, every major professional science organization has a booth at the Citizen Science Association Conference because citizen scientists are viewed as critical partners in advancing the science of their members. The CSA could start towards this future by perhaps creating a professional organization ambassador program in which members of professional societies within the CSA membership identify opportunities for collaboration and create outreach materials.

We should also work towards a future where a Citizen Science class is a required course in most science graduate programs. Libby Ellwood and I co-taught a graduate-level Citizen Science class in Spring 2015, and we could not find another example of the course online at the time. Citizen science should be widely viewed as an essential tool in the toolkit of our next generation of professional scientists. Genuine science outcomes in citizen science projects require strong buy-in from professional scientists, their professional organizations, and science funding agencies. The CSA could start towards this future by aggregating resources for citizen science graduate classes, providing small grants for the development of the course within different disciplines, and starting a working group on the topic.

In summary, I am concerned that we aren't doing enough to demystify citizen science for professional scientists and help them see its considerable potential for them and those that will follow them. Outreach and training for professional scientists—we need more of it.

What skills and what types of experience would you bring to the CSA board?

(1) I serve on the Executive Committee of iDigBio, NSF's National Resource for Advancing Digitization of Biodiversity Research Collections, and manage its citizen science portfolio. This involves organizing workshops and hackathons for the establishment of best practices, standards, and cyberinfrastructure for citizen science in this domain; (2) I already serve on the council of a professional organization as Treasurer and was recently invited to continue in that role for a second term; (3) I recently ended a position on the editorial board of the pre-eminent journal in my field and have experience overseeing the budget of two journals through my Treasurer appointment; (4) I have spoken on the topic of citizen science to fellow professional scientists, K12 teachers, US Congressional staffers, federal agency personnel, and the popular media; (5) I am a founding co-organizer of the annual, global WeDigBio citizen science event; (6) I co-developed a Citizen Science graduate course that can serve as a model for others; (7) I am a professional scientist with a very productive and well funded research lab with publications specifically on the topic of citizen science; (8) I am deeply committed to the vision, mission, and goals of the CSA and the success of its membership; and (9) I am a citizen scientist.

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Short C.V. with selection of recent relevant activities

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EDUCATION

Postdoctoral Scholar, 2000–3, Institute of Systematic Botany, University of Zürich, Switzerland.

Ph.D., 2000, Department of Botany, University of Wisconsin-Madison.

B.Sc., 1994, Department of Biological Science, Messiah College, Grantham, PA.

ACADEMIC APPOINTMENTS

Professor, 2016 onward, Department of Biological Science, Florida State University (Associate Professor, 2009–2016; Assistant Professor, 2003–9).

Director, 2003–present, Robert K. Godfrey Herbarium, Florida State University.

Associate Director, 2014–present, Institute for Digital Information & Scientific Communication, Florida State University.

RESEARCH AND PROFESSIONAL SOCIETY APPOINTMENTS

Executive Committee Member, 2014–present, iDigBio, NSF's National Resource for Advancing Digitization of Biodiversity Research Collections.

Co-Chair, 2010–present, iDigBio's Three Citizen Science Working Groups.

Steering Committee Member, 2012–present, Zooniverse's Notes from Nature Citizen Science Platform.

Treasurer, 2013–present, American Society of Plant Taxonomists, \$1 million in assets.

Associate Editor, 2013–2015, *Systematic Biology*.

TEACHING

Citizen Science (grad. student course), Plants and Society (undergrad. course), Field Botany (undergrad. course), Eukaryotic Diversity (undergrad. course).

Mentoring, Postdoctoral Scholars (1 current), Ph.D. students (3 current), Undergraduate Interns (4 current).

WORKSHOP AND HACKATHON ORGANIZATION (EACH >20 PARTICIPANTS)

Co-organizer, 2016, Worldwide Engagement for Digitizing Biocollections (WeDigBio) 2016 Event Planning Workshop, University of Florida, Gainesville, FL.

Co-organizer, 2015, Worldwide Engagement for Digitizing Biocollections (WeDigBio) 2015 Event Planning Workshop, Smithsonian Institution, Washington, D.C.

Co-organizer, 2014, CITStitch Hackathon: Building Interoperability to Enable Public Participation in Digitization of Biodiversity Research Specimens, University of Florida, Gainesville, FL.

Co-organizer, 2013, CITSCribes Hackathon: Enabling Public Participation in the Transcription of Biodiversity Research Specimen Labels, University of Florida, Gainesville, FL.

Co-organizer, 2012, iDigBio's Public Participation in Digitization of Biodiversity Specimens Workshop, University of Florida, Gainesville, FL.

EVENT ORGANIZATION

Founding Co-Organizer, 2015–present, annual Worldwide Engagement for Digitizing Biocollections (WeDigBio) Event, the 4-day 2015 event involved thousands of participants from >50 countries.

Co-organizer, 2014 onward, Robert K. Godfrey Herbarium's 1-day Digitization Blitzes, a series of 7 events so far, involving participants in both informal and formal education settings.

TALKS AND MEDIA INTERVIEWS

Mast, A. Dec. 2015. Crowdsourcing Collection Digitization: Solving a Science Problem and Improving STEM Literacy. U.S. Congressional Briefing by the Natural Science Collections Alliance, U.S. Capitol, Washington, D.C.

Mast, A. Dec. 2015. Making it count: Citizen Science Activities in the Classroom Contribute to our Understanding of Biodiversity. FCR-STEM 2015 Conference for Florida's K-12 STEM Teachers, Orlando, FL.

Mast, A. May 2015. WeDigBio—Public Participation in Digitization of Natural History Collections Hits its Stride. Plenary talk at 2015 Society for the Preservation of Natural History Collections Conference, Gainesville, FL.

Mast, A. interview by S. Jastrzebski. March 2014. Evolved Science: Crowds Can Catalog Bugs Faster. National Public Radio's All Tech Considered, aired during NPR's afternoon news show All Things Considered.

SOFTWARE AND MOBILE APP DEVELOPMENT

Basham, A., and Mast, A. 2016. *Libraries of Life Augmented Reality IOS App, Version 2.0*. Apple App Store.

Mast, A., Ellwood, E., Bruhn, R., Spinks, J., and Riccardi, G. 2014–present. *Biospex Beta, iDigBio's Public Participation in Digitization Management System*, www.biospex.org.

PUBLICATIONS

Ellwood, E.*, Nelson, G., Bart, H. L., Jr., Dosey, M. H., Jue, D., Mann, J., Rios, N., and Mast, A. in press. Mapping Life—Quality Assessment of Novice vs. Expert Georeferencers. *Citizen Science: Theory and Practice*, 23 pages.

Matsunaga, A., Mast, A., and Fortes, J. A. B. 2016. Workforce-efficient Consensus in Crowdsourced Transcription of Biocollections Information. *Future Generation Computer Systems* 56: 526–536.

Ellwood, E.*, Dunckel, B., Flemons, P., Guralnick, R., Nelson, G., Newman, G., Newman, S., Paul, D., Riccardi, G., Rios, N., Seltmann, K. C., and Mast, A. 2015. Accelerating Digitization of Biodiversity Research Specimens through Online Public Participation. *BioScience*, 65: 383–396. (Cover Story)

*E. Ellwood is a postdoctoral scholar in my lab.