

CITIZEN SCIENCE 2015

THE INAUGURAL CONFERENCE OF
THE CITIZEN SCIENCE ASSOCIATION

February 11 and 12, 2015
San Jose, California USA



CITIZEN SCIENCE ASSOCIATION

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CITIZEN SCIENCE 2015 CONFERENCE

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Presenting authors' names are listed in bold type

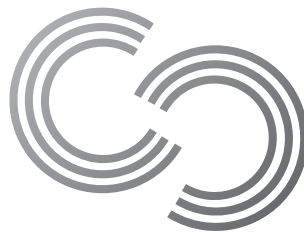
Affiliations are US-based unless otherwise indicated

Visit the CitSci2015 website to find abstracts for every Talk, Speed Talk, Story Presentation, Poster, Panel, and Symposium

<http://citizenscienceassociation.org/conference/>

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CITIZEN SCIENCE
ASSOCIATION

On behalf of the outgoing Steering Committee and the new Board of Directors of the Citizen Science Association (CSA), I am delighted to welcome you to the Citizen Science 2015 Conference, being held as a pre-conference to the AAAS Annual Meeting, and thank you for participating in this landmark event. Your contributions make citizen science a dynamic, diverse, and exciting field of practice, one that is truly changing how science and learning happen.

This gathering represents the first conference of the CSA, and is the next big achievement in a grassroots effort that you – the citizen science community – have been growing over the past several years. You asked for more opportunities to communicate and connect, and here we are together – people from diverse disciplines and from across the world – to discuss the leading edges in our field, and how we as citizen science researchers, educators, and practitioners can best contribute to improving science, learning, and society.

The CSA itself is a product of your energy, work, and ambitions. Your comments at a series of workshops, on surveys, and at the PPSR 2012 conference set the CSA in motion and laid the foundation for its mission, vision, and goals. Your sustained support and engagement will ensure that we will grow and succeed as a community.

The CSA now has over 3,000 members! We are holding our first conference, have launched a new peer-reviewed journal (*Citizen Science: Theory and Practice*), and will soon be launching a new website, an updated version of CitizenScience.org, which will allow us to continue our conversations online. We are also growing partnerships with regional citizen science associations, including the European Citizen Science Association and Citizen Science Network Australia. All of this reflects our effort to help you make your work more fulfilling and effective.

We are excited about the rapid growth, visibility, and impact of citizen science across the globe, and look forward to supporting progress and maturity within the field for many years to come.

Our goals for the conference are to enhance communication, collaboration, and innovation in this field of extreme interdisciplinarity. However, we think those goals understate the energy that will flow and outcomes that will result. Our engagement with each other here in San Jose will carry forward and inspire into the days, months, and years that follow.

Thank you for all your work and dynamism! It is exciting to think about where we can go and the positive impacts we are already having on science, learning, and society, impacts that are sure to increase in the future!

Sincerely,



Abe Miller-Rushing

Past Chair of the CSA Steering Committee



- | | |
|----------------|--|
| Vision | A world where people understand, value, and participate in science |
| Mission | Advance citizen science through communication, coordination, and education |
| Goals | The Citizen Science Association actively works to: <ul style="list-style-type: none">• Establish a global community of practice for citizen science• Advance the field of citizen science through innovation and collaboration• Promote the value and impact of citizen science• Provide access to tools and resources that further best practice• Support communication and professional development services• Foster diversity and inclusion within the field |

CITIZEN SCIENCE 2015 CONFERENCE

KEYNOTE ADDRESSES CS2015

Wednesday, February 11 | 8:45–9:45am | Ballroom 220B

Chris Filardi, Ph.D. *Director, Pacific Programs, Center for Biodiversity and Conservation,
American Museum of Natural History*

A Place in the World – Science, Society, and Reframing the Questions We Ask

The interplay between science and broader society is central to modern life. Citizen science is a natural upshot of this reality. From mariner input into early wind charts that revolutionized trans-oceanic travel, to the Christmas Bird Count or crowd-sourcing of sight records for imperiled species, relationships between societal needs and public participation in the scientific process have not only improved understanding of the world around us, but have also expanded the impact of science on our lives. The history of citizen science suggests we can do more. In a variety of contexts, broadening the process of how scientific questions are framed, and expanding who is involved in the framing, is transforming how we do science. Through a series of brief vignettes, this presentation will explore the potential impacts on society of broader public participation in the full life cycle of scientific inquiry – from framing questions and guiding data collection, to analyzing and communicating new knowledge. It is my hope to inspire active dialogue, during the conference and beyond, on the evolving role of citizen science in society.

Dr. Chris Filardi has a long history of conservation practice across the tropical Pacific and western North America, combining natural history, biodiversity research, and partnership with indigenous or local people. His work directing the Center for Biodiversity and Conservation's Pacific Programs focuses on integrating research, mentorship, and direct conservation action to inspire large-landscape and marine conservation in partnership with place-based communities.

Thursday, February 12 | 4:10–5:10pm | Ballroom 220B

Amy Robinson *Executive Director, EyeWire*

EyeWire: Why Do Gamers Enjoy Mapping the Brain?

Citizen Science revolves around community – our collective discoveries wouldn't be possible without millions of passionate participants around the world. How does this happen? EyeWire, a game to map the brain played by over 160,000 people, places great emphasis on and interacts regularly with its highly active player base. Amy Robinson, EyeWire's Creative Director, will share several key short stories about the growth and development of this community. We will dive into spectacular successes and stunning failures, exposing best practices for crowdsourcing science with community and design in mind.

Amy Robinson is a crowdsourcer. She is the Executive Director of EyeWire, a game to map the brain from MIT and Princeton University played by over 160,000 people worldwide. In EyeWire, gamers solve 3D puzzles that map out neurons, allowing neuroscientists to chart synaptic connections among neurons and thus begin to decipher the mysteries of how we see. EyeWire is the first of many games to map the brain. Amy was recently named to the 2015 *Forbes* 30 Under 30 List in the games category. She is a longtime TEDster and founded the TEDx Music Project, a collection of the best live music from TEDx events around the world.

Agenda—Day One at a Glance

7:30-8:30	REGISTRATION AND COFFEE/ POSTER SET UP / AV UPLOAD							
Ballrooms 220B and 220C								
8:30-8:45		WELCOME AND INTRODUCTION						
8:45-9:45		KEYNOTE: CHRIS FILARDI						
	CONCURRENT SESSIONS							
	LL20A	LL20B	LL20C	LL20D	230A	230B	230C	
9:55-11:15		1A SYMPOSIUM - Education & Lifelong Learning	1B PANEL - Broadening Engagement/ Diversity/ Inclusion	1C TALKS - Research/ Evaluation of CS Experience	1D PANEL - Broadening Engagement/ Diversity/ Inclusion	1E TALKS - Best Practices	1F TALKS - Education & Lifelong Learning	1G TALKS - Tackling Grand Challenges
11:15-11:45	COFFEE							
11:50-1:10		2A SYMPOSIUM - Research/ Evaluation of CS Experience	2B STORY PRESENTATIONS - Across Conference Themes	2C TALKS - Education & Lifelong Learning	2D PANEL - Tackling Grand Challenges	2E TALKS - Best Practices	2F TALKS - Broadening Engagement/ Diversity/ Inclusion	2G TALKS - Tackling Grand Challenges
1:10-2:30	LUNCH							
2:40-4:00		3A SPEED TALKS - Across Conference Themes	3B STORY PRESENTATIONS - Across Conference Themes	3C TALKS - Tackling Grand Challenges	3D PANEL - Tackling Grand Challenges	3E TALKS - Best Practices	3F SYMPOSIUM - Tackling Grand Challenges	3G TALKS - Tackling Grand Challenges
4:10-5:30		4A SYMPOSIUM - Tackling Grand Challenges	4B STORY PRESENTATIONS - Across Conference Themes	4C TALKS - Research/ Evaluation of CS Experience	4D PANEL - Education & Lifelong Learning Connections	4E TALKS - Digital Opportunities/ Challenges	4F TALKS - Tackling Grand Challenges	4G TALKS - Tackling Grand Challenges
Ballrooms 220B and 220C								
5:30-7:30		POSTER SESSION and RECEPTION						
5:30-8:30		HACKFEST: Creating interoperability between projects, communities, and data						

Agenda—Day Two at a Glance

7:10-8:10	COFFEE - MEET AND GREET CSA BOARD						
	CONCURRENT SESSIONS						
	210ABEF	Ballroom 220B	Ballroom 220C	LL20A	LL20B	LL20C	LL20D
8:10-9:30		5A SYMPOSIUM - Broadening Engagement to Foster Diversity & Inclusion	5B TALKS - Best Practices	5C TALKS - Tackling Grand Challenges	5D STORY PRESENTATIONS - Across Conference Themes	5E TALKS - Education & Lifelong Learning Connections	5F TALKS - Digital Opportunities/Challenges
9:40-11:00		6A TALKS - Broadening Engagement/ Diversity/ Inclusion	Keep Open for Open-Format Set Up	6C SPEED TALKS - Across Conference Themes	6D STORY PRESENTATIONS - Across Conference Themes	6E SYMPOSIUM - Digital Opportunities/Challenges 9:40-11:40	6F PANEL - Tackling Grand Challenges
11:00-12:00		7A OPEN-FORMAT SESSION with refreshments 11:00-12:50	7B OPEN-FORMAT SESSION with refreshments 11:00-12:50				
11:20-12:40			7BB BIOBLITZ: DOWNTOWN SAN JOSE 11:20-2:20	7C PANEL - Digital Opportunities/Challenges 11:20-12:40	7D SYMPOSIUM - Best Practices 11:20-12:40		7F PANEL - Broadening Engagement/ Diversity/ Inclusion 11:20-12:40
1:00-2:30	8AAAS PANEL - Public Engagement (Ticketed)	8A PANEL - Education & Lifelong Learning	8B SYMPOSIUM - Digital Opportunities/Challenges and Best Practices 1:00-4:00	8C SYMPOSIUM - Broadening Engagement/ Diversity/ Inclusion 1:00-4:00	8D SYMPOSIUM - Research/ Evaluation of CS Experience	8E SYMPOSIUM - Best Practices	8F PANEL - Best Practices
2:40-4:00		9A PANEL - Research/ Evaluation of CS Experience			9D SYMPOSIUM - Broadening Engagement/ Diversity/ Inclusion	9E SYMPOSIUM - Broadening Engagement/ Diversity/ Inclusion	9F SYMPOSIUM - Best Practices
4:10-5:10		KEYNOTE: AMY ROBINSON					
5:10-5:30		CLOSING SESSION					
5:30		ADJOURN					

7:30–8:30am Lobby	Registration and Coffee Poster Setup AV Upload	
8:30–8:45am Ballroom 220B	Welcome and Introduction	Rick Bonney , Cornell Lab of Ornithology, Cornell University – CSA Board Lila Higgins , Natural History Museum, Los Angeles – CS2015 Co-Chair Alison Young , California Academy of Science – CS2015 Co-Chair
<i>Keynote Address</i>		
8:45–9:45am Ballroom 220B	A Place in the World–Science, Society, and Reframing the Questions We Ask	Chris Filardi , Director of Pacific Programs, Center for Biodiversity and Conservation, American Museum of Natural History
Session 1A	<i>Symposium: Making Education and Lifelong Learning Connections</i>	
9:55–11:15am Lower Level 20A	Developing a Framework for Citizen Science in Education – Join the Conversation!	Sarah Kirn (Session Chair), Gulf of Maine Research Institute; Ryan Collay , Oregon State University SMILE Program; Mary Ford , National Geographic Society; Sandra Henderson , Project BudBurst and Citizen Science Academy; Nancy Trautmann , Cornell Lab of Ornithology, Cornell University
Session 1B	<i>Panel: Broadening Engagement to Foster Diversity and Inclusion</i>	
9:55–11:15am Lower Level 20B	Creating a Welcoming, Inclusive, Diverse and Just Citizen Science Association	Tim Vargo (Session Chair), Manager of Research and Citizen Science, Urban Ecology Center; Rajul Pandya , Thriving Earth Exchange, American Geophysical Union; Monica Ramirez-Andreotta , Assistant Professor, Soil, Water and Environmental Science, University of Arizona; Linda Silka , Director, Margaret Chase Policy Center, University of Maine
Session 1C	<i>Talks: Research on and Evaluation of the Citizen Science Experience</i>	
9:55–11:15am Lower Level 20C	Unpacking What It Means to Be a Citizen Scientist: Toward a Shared Understanding for Defining and Measuring Engagement	Tina Phillips , Cornell Lab of Ornithology, Cornell University; Heidi Ballard, University of California, Davis; Jody Enck and Rick Bonney, Cornell Lab of Ornithology, Cornell University
	Tracking the Flu: Motivation and Understanding of a Community of Flu-Reporters	Anne Land-Zandstra , Leiden University, The Netherlands
	How Does Participation Matter? Participation, Empowerment and Development of Science Identity	Heidi Ballard and Lina Yamashita, University of California, Davis; Tina Phillips and Rick Bonney, Cornell Lab of Ornithology, Cornell University
	Measuring Participant Engagement in Short-Duration Citizen Science Events Such as Specimen Collection in National Parks	Bill Zoellick and Hannah Webber, Schoodic Institute at Acadia National Park; Abe Miller-Rushing and Michael Marion, National Park Service
	CosmoQuest: Motivations & Needs of Citizen Scientists	Georgia Bracey , Southern Illinois University Edwardsville; Nicole Gugliucci, Justine Breedon, Houston Southard, and Pamela Gay, Southern Illinois University Edwardsville
Session 1D	<i>Panel: Broadening Engagement to Foster Diversity and Inclusion</i>	
9:55–11:15am Lower Level 20D	Re-Imagining Citizen Science for Knowledge Justice—A Dialogue	Angela Guimarães , Pereira European Commission; Eric Holt-Gimenez, Food First, US; Alan Irwin , Copenhagen Business School, Denmark; Erinma Ochu , Wellcome Trust/Manchester University, UK; Cindy Regalado , University College, London, UK; Tom Wakeford (Session Chair), Coventry University, UK

Session 1E*Talks: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs*9:55–11:15am
230A**Seventeen Years of Measuring Rain – Experiences from Community Collaborative Rain, Hail and Snow Network****Nolan Doesken**, Henry Reges, Zach Schwalbe, Julian Turner, and Noah Newman, *Colorado State University/CoCoRaHS*; Anthony Bergantino, *University of Wyoming/CoCoRaHS***How Much Is Too Much? Lessons in Realistic Volunteer Expectations from the Front Range Pika Project****Amy Masching**, *Denver Zoological Foundation*; Megan Mueller, *Rocky Mountain Wild*; Brian Fauver, *Denver Zoological Foundation***Keeping Citizen Scientists Interested: The Importance of Task Workflow Design****James Sprinks**, Robert Houghton, Steven Bamford, and Jeremy Morley, *University of Nottingham, UK***Taking Citizen Science to New Heights in Africa: Lessons from the Animal Demography Unit, UCT****Sally Hofmeyr**, *University of Cape Town, South Africa***Data Campaigns for Sustaining Engagement in Long-Term Citizen Science****Robyn Bailey** and David Bonter, *Cornell Lab of Ornithology*; **Caren Cooper**, *North Carolina Museum of Natural Science***Session 1F***Talks: Making Education and Lifelong Learning Connections*9:55–11:15am
230B**Young Citizen Scientists Track Eastern Box Turtles at the Lake Raleigh Area****Juliana Thomas**, *Exploris Middle School***Citizen Science in Schools: Addressing Challenges and Maximising Impact****Lucy Robinson**, John Tweddle, Anne Jungblut, and Jade-Lauren Cawthray, *Natural History Museum London***Students Discover: What Emerges When Scientists and Teachers Co-Create Citizen Science?****Julie Urban** and Holly Menninger, *North Carolina Museum of Natural Sciences (NCSU)*; Susan Parry, *Kenan Fellows Institute, NCSU*; Jeni Corn, *Friday Institute for Educational Innovation, NCSU*; Liz Baird and Rob Dunn, *NCSU***Bringing Citizen Science into the Classroom with NOVA Labs****Ralph Bouquet**, *NOVA (WGBH)***Mosquito Projects Enable Students to Conduct Research Investigations and Positively Impact Communities****Elena Sparrow**, *University of Alaska Fairbanks*; Rebecca Boger, *Brooklyn College, City University of New York*; Mullica Jaroensutasinee and Krisanadej Jaroensutasinee, *Walailak University, Thailand*; Siriwan Wongkoon, *Prince of Songkla University, Surat Thani Campus, Thailand***Session 1G***Talks: Tackling Grand Challenges and Everyday Problems with Citizen Science*9:55–11:15am
230C**Digitizing Landscapes: Sensors, Satellites, & You!****Julia Kumari Drapkin**, *iSeeChange*; and Lily Bui, *Massachusetts Institute of Technology***CO₂ Monitoring in High-Definition****Alexis Shusterman** and Virginia Teige, *University of California, Berkeley*; David Holstius, *Bay Area Air Quality Management District*; Catherine Newman, *catkaynew.com*; Alex Turner, *Harvard University*; Ronald Cohen, *UC Berkeley***The Air Sensor Citizen Science Toolbox: A Collaboration in Community Air Quality Monitoring and Mapping****Amanda Kaufman**, *ORISE Fellow hosted by US EPA Air, Climate, and Energy Research Program*; Ron Williams and Timothy Barzyk, *US EPA National Exposure Research Laboratory, Research Triangle Park, North Carolina*; Marie O'Shea, Anhthu Hoang, and Patricia Sheridan, *US EPA Region 2, New York, NY*; Molly Greenberg, *Ironbound Community Corporation, Newark, NJ***The North Fork Valley Air Monitoring Project: Citizen Science Meets Project-Based Learning Using Next-Generation Air Quality Monitors in Colorado****Katya Hafich**, Ashley Collier, and Michael Hannigan, *University of Colorado, Boulder (UCB)*; Sarah Sauter, *Western Slope Conservation Center*; Ben Graves, *Delta High School*; Joanna Gordon, *UCB***Citizen Sensing, Monitoring Air Pollution and Building the Frackbox****Helen Pritchard**, Jennifer Gabrys, Helen Pritchard, Tom Keene, and Nerea Calvillo, *Goldsmiths, University of London, UK*

11:15–11:45am **Coffee Break**
Lobby

Session 2A *Symposium – Research and Evaluation on the Citizen Science Experience*

11:50am–1:10pm **Modeling with Citizen Scientists: Using Community-Based Modeling Tools to Develop Citizen-Science Projects Resulting in Resource Management Outcomes**
Lower Level 20A
Daniel Betz and **Rebecca Jordan** (Session Chair), *Rutgers University*; **Steven Gray**, *University of Massachusetts*; **David Mellor** and **Alycia Crall**, *Virginia Tech*; **Greg Newman**, *Colorado State University*;

Session 2B *Story Presentations across Conference Themes*
Session Chair: **Linda Silka**, *Director, Margaret Chase Policy Center, University of Maine*

11:50am–1:10pm **A Quest to Build Capacity for Science-Based Restoration within a Tribal Community**
Lower Level 20B
Jonathan Long, *USDA Forest Service PSW Research Station*

Stories of Intercultural Collaborations: Tribal Nations and The Lost Ladybug Project
Leslie Allee, *Rebecca Smyth*, and *John Losey*, *Lost Ladybug Project, Cornell University*

The Role of Youth-Based Citizen Science in Improving Overall Community Health: Individual and Family Relationships with Citizen Science
Kevin Cuff, *Humberto Bracho*, and *Tony Marks-Block*, *East Bay Academy for Young Scientists*, and *Lawrence Hall of Science, University of California, Berkeley*; **Allan Ahumada** and **Shiela Ahumada**, *East Bay Academy for Young Scientists*; **Eliot Ahumada**, *University of California, Berkeley*

Session 2C *Talks: Making Education and Lifelong Learning Connections*

11:50am–1:10pm **Sensing the Environment: Environmental Sensor Outreach in the Classroom**
Lower Level 20C
Rachel McIntosh-Kastrinsky, *Association of Schools and Programs of Public Health (ASPPH)/US Environmental Protection Agency*

Pepperwood's TeenNat – Diverse Youth Contributing to Conservation Science
Sandi Funke, *Michelle Halbur*, *Nicole Barden*, *Celeste Dodge*, *Jesse Robinson*, and *Lisa Micheli*, *Pepperwood Preserve*

Citizen Science HackLabs: A Teen Programming Collaboration between the Adler Planetarium and Shedd Aquarium
Kelly Sutphin-Borden, *Adler Planetarium*; **Wade Berger**, *Shedd Aquarium*; **Laura Whyte**, **Jennifer Bundy**, and **Nathalie Rayter**, *Adler Planetarium*

Driven to Discover: Using Citizen Science as a Springboard into Science Investigations
Andrea Lorek Strauss, *University of Minnesota Extension*; **Rob Blair** and **Katie-Lyn Bunney**, *University of Minnesota*

Citizen Science Camera Trapping as a Gateway to Mammal Ecology and STEM Careers
Stephanie Schuttler, *North Carolina Museum of Natural Sciences*; **Kelsie Armentrout**, *Hilburn Academy*; **David Glenn**, *Burgaw Middle School*; **Dayson Pasion**, *Graham Middle School*

Session 2D *Panel: Tackling Grand Challenges and Everyday Problems with Citizen Science*

11:50am–1:10pm **The Crowd & The Cloud – Using Broadcast and Social Media to Advance and Support Citizen Science**
Lower Level 220D
Geoff Haines-Stiles (Session Chair), *PI, THE CROWD & THE CLOUD*; **Waleed Abdalati**, *CIRES, University of Colorado Boulder*, and *Host, CROWD & CLOUD*; **Erna Akuginow**, *Passport to Knowledge/GHSPi*; **Darlene Cavalier**, *SciStarter*, *Science Cheerleader*, *Arizona State University*, *Discover Magazine*; **Rajul Pandya**, *Thriving Earth Exchange*, *American Geophysical Union*; **Alexis de Belloy**, *Skoll Global Threats Fund*

Session 2E *Talks: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs*

11:50am–1:10pm **Evaluating the Use of Citizen Science Data for Detecting Trends in Climate-Sensitive Wildlife**
230A
Jami Belt, *Glacier National Park*, *Crown of the Continent Research Learning Center*

Supporting Quality Assurance for Citizen Science Observations of Plants and Animals

Clemens Jacobs and Alexander Zipf, *Heidelberg University, Germany*

The Impact of Intellectual Property Law on Access to, Dissemination and Use of Citizen Science Research

Teresa Scassa and Haewon Chung, *University of Ottawa, Canada*

Keeping It Real: Managing Citizen Monitoring Programs for the Collection of Actionable Data Concerning Water Quality and Watershed Management

Erick Burres, *Clean Water Team*

Identifying Sevengill Sharks in San Diego with Wildbook

Barbara Lloyd and Michael Bear, *Ocean Sanctuaries.org*; Jason Holmberg, <http://www.wildme.org/wordpress/>

Session 2F

Talks: Broadening Engagement to Foster Diversity and Inclusion

11:50am-1:10pm
230B

Biodiversity PEEK: For Global Citizen Scientists

Stephanie “Jo” Bowman and Paul Hamilton, *The Biodiversity Group*

Blended Engagement with Natural History: Building iSpot’s Citizen Science Community

Janice Ansine, *The Open University, UK*

Science of the City: From the Street to the Lab

Ramon Sangüesa (Director of Research), and Irene Lapuente (Director), *La Mandarina de Newton SL, Barcelona, Spain*

Collaborative Sustainability Science: An Example from Barbuda

Rebecca Boger and Sophia Perdikaris, *Brooklyn College, CUNY*; Jen-I Costosa, *CUNY Graduate Center*; John Mussington, *Barbuda Research Complex, Antigua and Barbuda*

Birds Hitting Buildings: Herding Scientists, Architects, and Birdwatchers Towards the Same Goal

Sami Nichols and Rob Blair, *University of Minnesota*

Session 2G

Talks: Tackling Grand Challenges and Everyday Problems with Citizen Science

11:50am-1:10pm
230C

Engaging Citizens for Biodiversity Exploration: A Case Study in the Bay of Biscay Based on Family Photographs

Eduardo Dopico and Eva Garcia-Vazquez, *University of Oviedo, Spain*; Ricardo Fernandez, *Consejería de Educacion, Asturias, Spain*

Using Citizen Science to Evaluate the Cultural Value of Biodiversity

Gianfranco Gliozzo, *Extreme Citizen Science (ExCiteS) Research Group, University College London (UCL), UK*; Elizabeth Boakes, *Faculty of Life Sciences, UCL*; David Roy, *CEH, Centre for Ecology and Hydrology, Oxford*; Muki Haklay, *ExCiteS, UCL*; Chloe Smith, *Greenspace Information for Greater London, UK*

Combining Citizen Science and DNA-Assisted Species Identification to Enable “A New Kind of Ecology”

Karen James, *MDI Biological Laboratory*

Beyond Transcription: Realising the Research Potential of Museum Specimens through Citizen Science

John Tweddle, Mark Spencer, and Lucy Robinson, *Natural History Museum, London, UK*

Acting Locally and Thinking Globally: Building Regional Community around Citizen Science to Broaden Impacts and to Create a Scalable Model

Alison Young and Rebecca Johnson, *California Academy of Sciences*

1:10-2:30pm
Ballrooms
220B and 220C

Networking Lunch

Session 3A		<i>Speed Talks: Across Conference Themes</i>
2:40–4:00pm Lower Level 20A	Indigenous Peoples as Citizen Scientists	Simon Lambert , <i>Lincoln University, New Zealand</i>
	Park User Characterization for Increasing and Insight into Citizen Engagement	Daniel Clark , <i>Rutgers University</i>
	Citizen Science: Potential to Breathe New Life into a Costa Rican National Park	Tera Dornfeld , <i>University of California, Irvine</i>
	The Dornsife Center for Neighborhood Partnerships: Building a Framework for Collaborative Inquiry	Jennifer Britton , <i>Drexel University</i>
	Engaging a Diversity of Citizen Scientists around Urban Trees in Greater Los Angeles	Mark Chandler and Gitte Venicx , <i>Earthwatch Institute</i> ; Darrel Jenerette and Sheri Shiflett , <i>University of California Riverside</i>
	Mad Evaluation: Strategies and Lessons Learned in the Daunting World of Evaluation for Youth-Based Programs	Amy Dean , <i>Farallones Marine Sanctuary Association</i>
	Who Generates Better Data: Group Members, or Individual Participants?	Theresa Crimmins , Alyssa Rosemartin , and Lorianne Barnett , <i>USA National Phenology Network</i>
Session 3B		<i>Presentations across Conference Themes</i> Session Chair: Linda Silka , <i>Director, Margaret Chase Policy Center, University of Maine</i>
2:40–4:00pm Lower Level 20B	Monarch Citizen Science with Middle Schoolers: A Graduate Student Perspective	Kelly Nail , <i>University of Minnesota Conservation Biology Graduate Program</i>
	Decoding NAture: Balancing Student Participation and Cutting-Edge Research	Della Hopkins , <i>Natural History Museum, London, UK</i>
	Determining the Willingness to Pay for Ecosystem Service Restoration: A High School Citizen Science Project	Kristina Nicosia , <i>West-Windsor Plainsboro School District</i>
Session 3C		<i>Talks: Tackling Grand Challenges and Everyday Problems with Citizen Science</i>
2:40–4:00pm Lower Level 20C	Demographic Modeling of Citizen Science Data Informs Habitat Preferences and Population Dynamics of Recovering Fishes	James Thorson , <i>Fisheries Resource and Monitoring Division, NWFSC, NMFS, NOAA</i> ; Mark Scheuerell , <i>Fish Ecology, NWFSC, NMFS, NOAA</i> ; Brice Semmens , <i>University of California, San Diego</i> ; Christy Pattengill-Semmens , <i>Reef Environmental Education Foundation (REEF)</i>
	Commercial Fishermen are Citizen Scientists: Southeast Alaska Sperm Whale Avoidance Project (SEASWAP): Successful Long-Term Science Collaboration to Study Sperm Whale and Fishing Interactions in Alaskan waters	Victoria O'Connell , <i>Sitka Sound Science Center</i> ; Jan Straley , <i>University of Alaska Southeast</i> ; Aaron Thode , <i>Scripps Institution of Oceanography</i> ; Linda Behnken and Dan Falvey , <i>Alaska Longline Fishermen's Association</i> ; Lauren Wild , <i>lwild@sitkascience.org</i> ; Joe Liddle , <i>University of Alaska</i>
	Citizen Scientists and Ocean Conservation – Collaboration for Success	Nicole Crane , <i>Cabrillo College</i> ; Giacomo Bernardi , <i>University of California Santa Cruz</i> ; Kristin Precoda , <i>Oceanic Society</i> ; John Rulmal , <i>Ulithi Falalop Community Action Program</i> ; Michelle Paddack , <i>Santa Barbara City College</i>
	Reinventing Fisheries Management in the Western Atlantic: Involving Fishers in Prediction, Verification, Monitoring and Protection of Spawning Aggregations	William Heyman , <i>LGL Ecological Research Associates, Inc.</i>

Young Marine Explorers: A Case Study in Capacity Building through Conservation**Nikita Shiel-Rolle**, *Young Marine Explorers*; Kathleen Sullivan Sealey, *University of Miami***Session 3D***Panel: Tackling Grand Challenges and Everyday Problems with Citizen Science*2:40–4:00pm
Lower Level
20D**Biomedical Citizen Science: Emerging Opportunities and Unique Challenges NIH Citizen Science Working Group (National Institutes of Health)****Jennifer Couch** (Session Chair), *National Cancer Institute*; **Sandra Soo-jin Lee** and **Markus Covert**, *Stanford University*; **Benjamin M. Good**, *The Scripps Research Institute*; **Henry Herrera**, *President & CEO of the Center for Popular Research, Education & Policy***Session 3E***Talks: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs*2:40–4:00pm
230A**Plants of Concern: Citizen Scientists Monitoring Rare Plants in the Chicago Region****Rachel Goad**, *Plants of Concern, Chicago Botanic Garden***NEOSEC—A Regional Approach to Citizen Science in New England****Heather Deschenes** and Sarah Bursky, *New England Aquarium***Collaborative Ecological Observation: Issues in Moving from Social Media to Research Data****Te-En Lin**, Chih-Yun Chen, and Yu-Kai Chen, *Taiwan Endemic Species Research Institute*; **Tyng-Ruey**, *Chuang Academia Sinica*; Dong-Po Deng, *Academia Sinica*; Cheng-Hsin, *Hsu Academia Sinica*; Lucien C.-H., *Lin Academia Sinica*; Guan-Shuo, *Mai Academia Sinica*; Kwang-Tsao, *Shao Academia Sinica*; Mei-Hsueh Wang, *Academia Sinica, Taiwan***Opening up the Zooniverse : Building a Scalable Platform for Online Citizen Science****Chris Lintott**, *University of Oxford, UK***CosmoQuest: Using Social Media to Tie Community Together****Nicole Gugliucci**, Pamela Gay, and Houston Southard, *Southern Illinois University Edwardsville***Session 3F***Symposium: Tackling Grand Challenges and Everyday Problems with Citizen Science*2:40–4:00pm
230B**eBird: Identifying Challenges and Finding Solutions for Engaging a Global Public in Citizen Science****Steve Kelling** (Session Chair), *Cornell Lab of Ornithology, Cornell University*; **Mark Reynolds**, *The Nature Conservancy*; **Brian Sullivan**, **Chris Wood**, and **Rick Bonney**, *Cornell Lab of Ornithology***Session 3C***Talks: Tackling Grand Challenges and Everyday Problems with Citizen Science*2:40–4:00pm
230C**Space Warps: Crowd-Sourcing the Discovery of Gravitational Lenses****Phil Marshall**, *KIPAC / SLAC / Stanford University***Adopt a Pixel: Supporting Geospatial Career Development and Federal Remote Sensing****Jeannie Allen** and Ginger Butcher, *Sigma Space Corp. at NASA***How Innovative Mobile and Web-Mapping Technologies Are Empowering Local Communities and Transforming Chimpanzee Conservation in Africa****Lilian Pintea**, *The Jane Goodall Institute*; Tanya Birch, *Google Earth Outreach*; Jovin Lwehabura, *The Jane Goodall Institute (Tanzania)*; Timothy Akugizibwe, *The Jane Goodall Institute (Uganda)*; Yaw Anokwa, *Nafundi LLC***From the Ground to the Cloud: Groundtruthing Environmental Change**Tanya Birch, *Google Earth Outreach*; **Christiaan Adams**, *Google Inc.*; Yaw Anokwa, *Nafundi LLC***Public Lab: Open and Cooperative Structures for Community-Based Environmental Health Monitoring****Shannon Dosemagen**, *Public Laboratory for Open Technology and Science*

Session 4A	<i>Symposium: Tackling Grand Challenges and Everyday Problems with Citizen Science</i>	
4:10–5:30pm Lower Level 20A	DIY Aerial Photography: Civic Science and Small Data for Public Participation and Action	Shannon Dosemagen (Session Chair), <i>Public Laboratory for Open Technology and Science</i> ; Hagit Keysar, <i>Ben Gurion University, Israel</i> ; Scott Eustis, <i>Gulf Restoration Network</i> ; Lila Higgins, <i>Natural History Museum of Los Angeles County</i> ; Maria Del C Lamadrid, <i>LA-Más and Art Center/UNICEF's Tech4Dev in the Innovation Lab, Uganda</i>
Session 4B	<i>Story Presentations across Conference Themes</i> Session Chair: Linda Silka , Director, <i>Margaret Chase Policy Center, University of Maine</i>	
4:10–5:30pm Lower Level 20B	Open Source Your Citizen Science Project!	Jason Holmberg , http://www.wildme.org/wordpress/ ; Jon Van Oast, <i>Wild Me</i>
	The Challenges with Training Outdoor Enthusiasts Online	David Mellor , <i>Virginia Tech</i> ; Rebecca Jordan, <i>Rutgers University</i> ; Stephen Gray, <i>University of Massachusetts</i> ; Greg Newman, <i>Colorado State University</i> ; Cindy Hmelo-Silver, <i>Indiana University</i>
	Funding Curiosity: Kickstarter, OpenExplorer and the Future of Grant Funding	David Lang , <i>OpenROV</i>
Session 4C	<i>Talks: Research on and Evaluation of the Citizen Science Experience</i>	
4:10–5:30pm Lower Level 20C	How the Sausage Is Made: When Public Participation in Science Leads to Decreased Trust of Scientific Assessment	Stephen Gray , <i>University of Massachusetts</i>
	Citizen Science Learning and Epistemology in Socio-Ecologically Oriented Projects	Rebecca Jordan and Amanda Sorensen, <i>Rutgers University</i>
	Promoting Rigorous Citizen Science: Evaluating the Learning Impact of the Coastal Observation and Seabird Survey Team (COASST)	Cynthia Char , <i>Char Associates</i>
	Audience Matters: The Role of Outside Audiences on Youth Experiences in Citizen Science Projects	Emily Harris , Heidi Ballard, and Colin Dixon, <i>University of California, Davis</i>
	Viewing Wildlife Images through Citizen Science: Impact on the Anxiety Levels of Military Veterans with Varying Levels of PTSD	Scott Smedley , Nicole Evancha, and Kathrynne Marinchak, <i>Trinity College, Hartford</i> ; Lisa Nisbet, <i>Trent University</i>
Session 4D	<i>Panel: Making Education and Lifelong Learning Connections</i>	
4:10–5:30pm Lower Level 20D	Aligning Next Generation Science Standards to Citizen Science	Darlene Cavalier (Session Chair), <i>SciStarter, Science Cheerleader, Arizona State University, Discover Magazine</i> ; Andrew Collins , <i>School of Ants</i> ; Leonora Shell , <i>North Carolina State University</i> ; Kristian Breton , <i>New York Academy of Sciences</i> ; Sandra Henderson , <i>Project BudBurst and Citizen Science Academy</i> ; Jennifer Fee , <i>Cornell Lab of Ornithology, Cornell University</i>
Session 4E	<i>Talks: Digital Opportunities and Challenges in Citizen Science</i>	
4:10–5:30pm 230A	Crowdsourcing Names for Organisms with iSpotnature.org	Jonathan Silvertown , <i>University of Edinburgh, Scotland</i> ; Martin Harvey, <i>The Open University</i>
	Building a Historical Baseline for Biodiversity with iDigBio's Biospex Public Participation Management System	Austin Mast , Robert Bruhn, Jeremy Spinks, and Greg Riccardi, <i>iDigBio/Florida State University</i>

Texas' Citizen Scientist Approach to Early Detection of Invasive Species

Justin Bush, *University of Texas at Austin*

Public Participation in Observational and Experimental Science: Two Tales from iNaturalist.org

Scott Loarie, *iNaturalist.org (California Academy of Sciences)*

Session 4F

Talks: Tackling Grand Challenges and Everyday Problems with Citizen Science

4:10–5:30pm
230B

FreshWater Watch: Citizen Scientists Monitoring the Global Freshwater System

Diana Eddowes, Steven Loiselle, Charlotte Hall, Neil Bailey, and Malcolm Bradbrook, *Earthwatch Institute*

White Paper on Citizen Science for Europe: Outcomes of the Participatory Policy Making Process

Fermin Serrano Sanz, *Institute for Biocomputation and Complex Physics Systems of the University of Zaragoza, Ibercivis Foundation*

Turtle Sense: An Open Software and Hardware Citizen Science Project to Monitor Sea Turtle Nests

Samuel Wantman, *NerdsWithoutBorders.net*; Thomas Zimmerman, *IBM Research*; David Hermeyer and Charles Wade, *NerdsWithoutBorders.net*; Eric Kaplan, *Hatteras Island Ocean Center*; Britta Muiznieks, *National Park Service*

Role of General Aviation in Promoting Citizen Science: A Pilot Study of Water Quality Monitoring in Western Lake Erie

Rafat Ansari, *NASA*

Session 4G

Talks: Tackling Grand Challenges and Everyday Problems with Citizen Science

4:10–5:30pm
230C

A Novel Model of Citizen Science to Build Health Literacy within Our Community

Nicole Garneau, *Denver Museum of Nature & Science*

Bee-Path: Experiments on Human Mobility

Josep Perelló, Mario Gutiérrez-Roig, Oleguer Sagarra, and Albert Díaz-Guilera, *Universitat de Barcelona, Spain*; Aitana Oltra, Frederic Bartumeus, and John Palmer, *Consejo Superior de Investigaciones Científicas, Spain*

Participant Emotion in a Knowledge Gap: Managing Native and Non-Native Songbirds in a Residential Landscape

Caren Cooper, *North Carolina Museum of Natural Science*; Lincoln Larson, *Clemson University*; Mark Hauber, *Hunter College*

Tackling Societal Challenges in the South: Challenges and Opportunities for Engaged Scholars in the North

Maria Brunette, *University of Massachusetts, Lowell*

Building a Massive Biomedical Knowledge Graph with Citizen Science

Benjamin Good, Max Nanis, Ginger Tsueng, Chunlei Wu, and Andrew Su, *The Scripps Research Institute*; Josh Peay, *Southbird Studios*

5:30–7:30pm
Ballrooms 220B and 220C

Poster Session / Reception

See CS2015 Poster Session Program for a list of Posters, and <http://citizenscienceassociation.org/conference/> to read the abstracts

5:30–8:30pm
Ballrooms 220B and 220C

HackFest: Creating Interoperability between Projects, Communities, and Data

Darlene Cavalier (Session Chair), *SciStarter, Science Cheerleader, Arizona State University, Discover Magazine*; Steve Gano, *SciStarter*; Greg Newman, *Colorado State University and SciStarter*; Caren Cooper, *North Carolina Museum of Natural Sciences*

7:10–8:10am Coffee / Meet & Greet CSA Board Members
Lobby

Session 5A *Symposium: Broadening Engagement to Foster Diversity and Inclusion*

8:10–9:30am Linking Citizen Science and Indigenous Knowledge: An Avenue to Sustainable Development
Ballroom 220B

Michalis Vitos (Session Chair), *University College London, UK*; **Dawn Wright, ESRI**; **Sam Sudar**, *University of Washington*

Session 5B *Talks: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs*

8:10–9:30am Making Citizen Science Sustainable for Your Organization
Ballroom 220C

Jamie Elizabeth Montague and **Chrissy McLean**, *Port Townsend Marine Science Center*

Lessons in Citizen Science from the Evolution of whaleshark.org

Jason Holmberg, <http://www.wildme.org>; **Zaven Arzoumanian** and **Jake Levenson**, *Wild Me*

The Evolution of Volunteer Science in the USGS National Geospatial Program

Elizabeth McCartney, *U.S. Geological Survey*

Partnering for Amphibian Monitoring: Involving Zoo Audiences in Collecting Data on Local Wildlife

Katie Remine and **Jenny Mears**, *Woodland Park Zoo*; **Chris Anderson**, *Washington Department of Fish and Wildlife*

Citizen Scientists Count! Does It Matter Who Is in Charge?

Colleen Wisniewski, *Reef Check Foundation*; **Dirk Burcham**, *Volunteer, Aquarium of the Pacific*

Session 5C *Talks: Tackling Grand Challenges and Everyday Problems with Citizen Science*

8:10–9:30am Recent Applications of Continental-Scale Phenology Data for Science, Conservation and Resource Management
Lower Level 20A

Jake Weltzin, *U.S. Geological Survey*

Privacy in Citizen Science: An Emerging Concern for Research & Practice

Anne Bowser, **Katie Shilton**, and **Jennifer Preece**, *University of Maryland, College Park*

A Citizen-Army for Science: Quantifying the Contributions of Citizen Science to Our Understanding of Monarch Biology and Conservation

Karen Oberhauser, *University of Minnesota*; **Leslie Ries**, *University of Maryland*

eMammal Citizen Science Camera Trapping—Collecting Big Data to Answer Wildlife Questions

Roland Kays, *North Carolina Museum of Natural Sciences & NC State University*; **Robert Costello**, *Smithsonian National Museum of Natural History, Washington, DC*; **Tavis Forrester**, *Smithsonian Conservation Biology Institute, Front Royal, VA*; **Joshua Millsbaugh**, *Department of Fisheries and Wildlife Sciences, University of Missouri, Columbia, MO*; **Tony X. Han**, *Department of Electrical and Computer Engineering Department, University of Missouri, Columbia, MO*

Session 5D *Story Presentations across Conference Themes*
Session Chair: **Linda Silka**, Director, *Margaret Chase Policy Center, University of Maine*

8:10–9:30am The Bees' Needs: The Costs and Benefits of Being Popular
Lower Level 20B

Alexandra Rose, *University of Colorado*; **Virginia Scott**, *University of Colorado Museum of Natural History*

Getting Dirty with Citizen Science: Lessons Learned from Engaging the Public in Hands-On Citizen Science at a Museum Field Station

Christine Goforth, *North Carolina Museum of Natural Sciences*

Citizen Science in Minnesota Waters: Lessons Learned from 17 Years in the Trenches

Laurie Sovell, Louise Hotka, and Shannon Martin, *Minnesota Pollution Control Agency*

Session 5E

Talks: Making Education and Lifelong Learning Connections

8:10–9:30am
Lower Level
20C

Overcoming the Taxonomic ID Bottleneck in Water Quality Biomonitoring Using a Dynamic Online Visual Resource

Marti Louw, *University of Pittsburgh Center for Learning in Out-of-School Environments*; Camellia Sanford Rockman, *et al*

Educational Interventions in Zooniverse Projects

Julie Feldt, Laura Whyte, and Kelly Sutphin-Borden, *Adler Planetarium*

Lifelong Learning as an Incentive for Citizen Engagement in Environmental Actions

Eva Garcia-Vazquez, *University of Oviedo, Spain*; Alba Ardura, *University of Perpignan, France*; Yaisel J. Borrell, Laura Miralles, and Eduardo Dopico, *University of Oviedo*

Keeping It Real — Empowering Youth in Science through Water Quality Monitoring

Biret Adden, *Children's Discovery Museum*

Grassroots Citizen Science at the End of the World: Balancing Barriers and Opportunities in New Zealand

Monica Peters, Professor David Hamilton, and Dr. Chris Eames, *University of Waikato*

Session 5F

Talks: Digital Opportunities and Challenges in Citizen Science

8:10–9:30am
Lower Level
20D

Aurorasaurus: Crowdsourced Citizen Space Weather Science

Andrea Tapia and **Nicolas Lalone**, *Penn State University*; Elizabeth MacDonald, *NASA*; Michelle Hall, *Science Education Solutions*

CitSci.org: A Comprehensive Citizen Science Support Platform

Greg Newman and Russell Scarpino, *Colorado State University (CSU)/CitSci.org*; Alycia Crall, *Virginia Tech*; Jim Graham, *Humboldt State University*; Nicole Kaplan, Stacy Lynn, and Melinda Laituri, *CSU*

The Challenges and Benefits of Aging Citizen Scientists: Looking Ahead to the Next Thirty Years of Loon Counting in Maine

Susan Gallo, *Maine Audubon*

WyoBio Citizen Science Program as a Platform for Innovative Programming, Database Design and Longevity of Data

Teal Wyckoff, *University of Wyoming, Wyoming Geographic Information Science Center*; Brenna Marsicek and Dorothy Tuthill, *University of Wyoming Biodiversity Institute*

Leveraging Technologies to Empower Citizen Science and Public Involvement with Water Quality, Biological and Environmental Monitoring

Maria Gonzalez, *Clean Water Team*

Session 6A*Talks: Broadening Engagement to Foster Diversity and Inclusion*9:40–11:00am
Ballroom 220B**Developing Partnerships, Giving Voice to Kyrgyz and Tibetan Herders: Empowerment of Under-Represented Societies through Citizen Science****Marc Foggin** and Christian Hergarten, *University of Central Asia, Kyrgyzstan***Telling Stories: The Role of Science Narratives as Tools for Social Change****Erin Robinson**, *Canisius College*; Erin Heaney, *Clean Air Coalition of WNY***Combining Citizen Science with Participatory Research Approaches: A Progress Report on the Use of Participatory Mapping Strategies for Small-Holder Farmer Exploration of Land Access in the California Central Coast****Adam Calo**, Kathryn de Master, and Amber Sciligo, *University of California, Berkeley, Environmental Science, Policy, and Management (ESPM)*; Tapan Parikh, *UC Berkeley, School of Information*; Maggi Kelly, *UC Berkeley ESPM*; Darin Jensen, *UC Berkeley, Department of Geography*; Sarah van Wart, *UC Berkeley, School of Information***Thinking about the “Citizen” in Citizen Science****Brittany Davis**, *Allegheny College***Increasing Participation in Regional Vision through Student-Led Engagement****Alexander Sun** and Emma Sun, *Envision Utah Youth Council*; Lisa Sun, *Envision Utah/Brigham Young University Law School***Session 6C***Speed Talks: Across Conference Themes*9:40–11:00am
Lower Level
20A**Supporting Global Citizen Science with a Mixed Media Informatics Framework****Kevin Smith** and Laura Read, *Tufts University*; Fernando Salas, *University of Texas at Austin***Engagement of Citizen Scientists—The Underutilized Tool in Our Monitoring Tool Box****Jana Newman** and Natalie Sexton, *US Fish and Wildlife Service***Linking Ground-Based Volunteer Observations with Moderate-Resolution Satellite Observations of Phenology****Cathlyn Stylinski**, Kavya Pradhan, and Andrew Elmore, *University of Maryland Center for Environmental Science***Is Citizen Science Worth It: Identifying Natural Resource Managers’ Values through Cost Benefit Analysis****Brian Fauver** and Greg Newman, *Colorado State University*; Amy Masching, *Denver Zoological Association*; Megan Mueller, *Rocky Mountain Wild***Data Visualizations as Critical Feedback Mechanisms for Participants: A Brief Look at How to Create Good Ones****Rhiannon Crain** and Kevin Ripka, *Cornell Lab of Ornithology, Cornell University***COASST—Creating Successful Educational Outcomes through Positive Personal Connections****Erika Frost**, Julia Parrish, and Jane Dolliver, *Coastal Observation and Seabird Survey Team (COASST)***The Vanishing Firefly Project: An Interdisciplinary, Student-Driven Citizen Science Project****Michelle Cook** and Renee Lyons, *Clemson University***Session 6D***Story Presentations across Conference Themes*Session Chair: **Linda Silka**, Director, *Margaret Chase Policy Center, University of Maine*9:40–11:00am
Lower Level
20B**Equity, Diversity, and Inclusion: Understanding Perceptions of Success****Karen Purcell**, *Cornell Lab of Ornithology, Cornell University***Chicago Wildlife Watch: Diversifying Zooniverse Volunteers?****Laura Whyte**, *Adler Planetarium*; Seth Magle, *Lincoln Park Zoo*

"Tuesday Chewsday!" Active Recruitment of Citizen Scientists for a Rodent Monitoring Project in New Zealand

Heidy Kikillus, *Victoria University of Wellington, New Zealand*

Session 6E

Symposium: Digital Opportunities and Challenges in Citizen Science

9:40-11:40am
Lower Level
20C

Human-Centered Technologies for Citizen Science

Andrea Wiggins (Session Chair), Anne Bowser, Yurong He, and Jenny Preece, *University of Maryland*; Michalis Vitos, Muki Haklay, and Charlene Jennet, *University College London*; Matt Germonprez, *University of Nebraska Omaha*; Jen Hammock, *Smithsonian Institution*; S. Andrew Sheppard, *University Minnesota and Houston Engineering, Inc.*; Stuart Lynn, *Adler Planetarium and Zooniverse*; Kevin Crowston, *Syracuse University*; Carl Lagoze, *University of Michigan*

Session 6F

Panel: Tackling Grand Challenges and Everyday Problems with Citizen Science

9:40-11:00am
Lower Level
20D

Furthering Science and Public Engagement: Natural History Museums as Centers to Develop and Promote Citizen Science

John Tweddle (Session Chair), *Natural History Museum London*; Heidi Ballard, *University of California, Davis*; Lila Higgins, *Natural History Museum of Los Angeles County*; Alison Young, *California Academy of Sciences*; Christine Goforth, *North Carolina Museum of Natural Sciences*

Session 7AB

11:00am-12:50pm
Ballrooms
220B and 220C

Open-Format Session

Session 7BB

11:20am-2:20pm
Ballroom 220C

BioBlitz: Downtown San Jose

Rebecca Johnson, *California Academy of Sciences*

Session 7C

Panel: Digital Opportunities and Challenges in Citizen Science

11:20am-12:40pm
Lower Level
20A

Citizen Science and Disasters: The Case of OpenStreetMap

Robert Soden (Session Chair), *University of Colorado, Boulder*; Mikel Maron, *Humanitarian OpenStreetMap Team*; Dale Kunce, *American Red Cross*; Nama Budhathoki, *Kathmandu Living Labs*; Lea Shanley, *University of Wisconsin-Madison*

Session 7D

Symposium: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs

11:20am-12:40pm
Lower Level
20B

Using a Citizen Science Approach to Change the Face of Environmental Public Health Research

Monica Ramirez-Andreotta (Session Chair), *University of Arizona*; Sara Wylie, *Northeastern University*; Liam O'Fallon, *National Institutes of Health/National Institute of Environmental Health Sciences*; Elizabeth Yeampierre, *Lawyer, Community Activist*

Session 7F

Panel: Broadening Engagement to Foster Diversity and Inclusion

11:20am-12:40pm
Lower Level
20D

Diverse Perspectives on Youth-Based Citizen Science: Experiences and Lessons Learned from Work with Young Scientists

Colin Dixon (Session Chair), *University of California, Davis*; Abby Nickels, *LIMPETS, Farallones Marine Sanctuary Association*; Katie Levedahl and Neal Ramus, *California Academy of Sciences*; Kathy Soave, *The Branson School*; Humberto Bracho, *East Bay Academy for Young Scientists, Lawrence Hall of Sciences, UC Berkeley*; Kevin Cuff, *East Bay Academy for Young Scientists, Lawrence Hall of Sciences, UC Berkeley*; Emil Harris, *UC Davis*; Kim Zhen, Megan Torio, and Victor Rios, *East Bay Academy for Young Scientists*; Frankie Gerraty and Alina Rainsford, *Sustainable Seas Monitoring Project*; Jose McDevitt-Hickey and Andrew Le, *Careers in Science, California Academy of Sciences*

12:00-1:00pm

Lunch Break

Session 8AAS	<i>Panel: Communicating Science</i>	
1:00–2:30pm 210ABEF	Public Engagement for Scientists: Realities, Risks, and Rewards * * Pre-registration. You must be on the list in order to attend.	Bruce V. Lewenstein (Session Chair), <i>Cornell University</i> ; Elizabeth Babcock , <i>California Academy of Sciences</i> ; Heidi Ballard , <i>University of California, Davis</i> ; Anthony Dudo , <i>University of Texas at Austin</i> ; Nalini M. Nadkarni , <i>University of Utah</i>
Session 8A	<i>Panel: Making Education and Lifelong Learning Connections</i>	
1:00–2:30pm Ballroom 220B	Natural Resource Volunteers and Citizen Science: Bringing Together a Community of Practice	Michelle Prysby (Session Chair) and Alycia Crall , <i>Virginia Master Naturalist Program, Virginia Tech</i> ; Michelle Haggerty , <i>Texas Master Naturalist Program, Texas Parks and Wildlife</i> ; Mark Larese-Casanova , <i>Utah Master Naturalist Program, Utah State University</i> ; Adina Merenlender , <i>University of California Naturalist Program, University of California–Berkeley</i> ; Karen Oberhauser , <i>Minnesota Master Naturalist Program, University of Minnesota</i> ; Marilyn Smith , <i>StreamWatch</i>
Session 8B	<i>Symposium – Digital Opportunities and Challenges in Citizen Science and Challenges and Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs</i>	
1:00–4:00pm Ballroom 220C	Data Quality Practice in Citizen Science: Calibrating a New Kind of Instrument	Yurong He (Session Chair), <i>University of Maryland (UM), College Park</i> ; Todd Suomela , <i>University of Alberta</i> ; Andrea Wiggins , <i>UM</i> ; Karen Martin , <i>Pepperdine University</i> ; Steve Kelling , <i>Cornell Lab of Ornithology</i> ; Hillary Burgess and Kate Starbird , <i>University of Washington</i> ; Stuart Lynn , <i>Zooniverse.org</i> ; Heejun Kim , <i>University of North Carolina at Chapel Hill</i> ; Kristin Stepenuck , <i>University of Wisconsin Extension</i> ; Ed Washburn , <i>US Environmental Protection Agency</i> ; Julian Turner , <i>Colorado State University/CoCoRaHS</i>
Session 8C	<i>Symposium: Broadening Engagement to Foster Diversity and Inclusion</i>	
1:00–4:00pm Lower Level 20A	Supporting Multi-Scale Citizen Science: Leveraging the Local, Addressing the Global	Mark Chandler (Session Co-Chair), <i>Earthwatch Institute</i> ; Russell Scarpino (Session Co-Chair), <i>CitSci.org</i> ; Abe Miller-Rushing , <i>National Park Service</i> ; Lila Higgins , <i>Natural History Museum of Los Angeles County</i> ; Greg Newman , <i>Colorado State University</i>
Session 8D	<i>Symposium: Research on and Evaluation of the Citizen Science Experience</i>	
1:00–2:30pm Lower Level 20B	Engaging Citizen Scientists in Emerging Environmental Threats & Disasters	Aubrey Miller (Session Chair), <i>National Institutes of Health/National Institute of Environmental Health Sciences (NIH/NIEHS)</i> ; Liam O’Fallon and Chip Hughes , <i>NIH/NIEHS</i> ; Kim Anderson , <i>Oregon State University</i> ; Erin Haynes , <i>University of Cincinnati/College of Medicine</i>
Session 8E	<i>Symposium: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs</i>	
1:00–2:30pm Lower Level 20C	Ethical Dimensions of Citizen Science Research	Caren Cooper (Session Chair), <i>North Carolina Museum of Natural Science</i> ; Lea Shanley , <i>University of Wisconsin–Madison</i> ; Anne Bowser , <i>Woodrow Wilson Center</i> ; Holly Menninger , <i>North Carolina State University</i> ; Madhusudan Katti , <i>California State University, Fresno</i> ; Janet Stemwedel , <i>San Jose State University</i> ; Dianne Quigley , <i>The Northeast Ethics Education Partnership</i>
Session 8F	<i>Panel: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs</i>	
1:00–2:30pm Lower Level 20D	MPA Watch: The Evolution of a Locally-Based Citizen Science Monitoring Program into a Statewide Network	Ryan Meyer (Session Chair), <i>Ocean Science Trust</i> ; Dana Murray , <i>Heal the Bay</i> ; Jeanee Natov , <i>Otter Project</i> ; Zach Plopper and Diane Castaneda , <i>Wildcoast</i> ; Tom Ford , <i>Santa Monica Bay Restoration Foundation</i> ; Aaron McGregor , <i>California Ocean Science Trust</i>

Session 9A		Panel: Research on and Evaluation of the Citizen Science Experience	
2:40–4:00pm Ballroom 220B	The Brave New World of Citizen Science: Reflecting Critically on Notions of Citizenship in Citizen Science	Eugenia Rodrigues (Session Chair), University of Edinburgh, UK; Erinma Ochu, University of Manchester, UK; Shannon Dosemagen, Public Lab for Open Technology and Science; Esther Turnhout, Wageningen University, the Netherlands; Rick Hall, Ignite!, UK	
Session 9D		Symposium: Broadening Engagement to Foster Diversity and Inclusion	
2:40–4:00pm Lower Level 20B	Pathways to Balance and Partnership: Advancing Equity, Inclusion, and Local Relevance in Citizen Science	Rajul Pandya (Session Chair), Thriving Earth Exchange, AGU; Rose Eitemiller; Patricia Iwasaki, Taking Neighborhood Health to Heart; Jonathan Long, USDA Forest Service; Mónica Ramírez-Andreotta, University of Arizona; Daniela Soleri, University of California Santa Barbara	
Session 9E		Symposium: Broadening Engagement to Foster Diversity and Inclusion	
2:40–4:00pm Lower Level 20C	Citizen Microbiology: Engaging the Public in the Study of Invisible Life	Holly Menninger (Session Chair), North Carolina State University; David Coil, MicroBEnet, University of California, Davis; Jenna Lang, Project MERCCURI, UC Davis; Daniel McDonald, American Gut Project, Colorado University, Boulder; Bethany Dixon, Western Sierra Collegiate Academy; Sally James, Freelance Science Writer; Patrik D’Haeseleer, BioCurious and Counter Culture Labs	
Session 9F		Symposium: Best Practices for Designing, Implementing, and Managing Citizen Science Projects and Programs	
2:40–4:00pm Lower Level 20D	Our Ancestors Are in the Water, Land, and Air: Using an Integrative Approach of Indigenous and Western Research Methods for Community-Based Participatory Environment and Health Research	Heather Castleden (Session Chair), Associate Professor, Queen’s University, Ontario, Canada; Sheila Francis, Community Research Partner, Pictou Landing First Nation, Nova Scotia, Canada; Diana Lewis-Campbell, Ph.D Candidate, Dalhousie University; Kim Strickland and Colleen Denny, Community Research Associates, Pictou Landing First Nation, Nova Scotia, Canada	
Keynote Address			
4:10–5:10pm Ballroom 220B	EyeWire: Why Do Gamers Enjoy Mapping the Brain?	Amy Robinson, Executive Director, EyeWire	
5:10–5:30pm Ballroom 220B	Closing Session	CSA Board Members	

ACKNOWLEDGEMENTS

Many people volunteered hundreds of hours—across numerous time zones and over many months—to develop the CS2105 Conference program, foster diversity and inclusion, communicate effectively, fundraise, and plan for this exciting event. We thank them all for their invaluable time and effort.

Citizen Science 2015 Conference Advisory Group

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Schoodic Institute serves as the organizational home for the Citizen Science Association. Schoodic Institute at Acadia National Park is a 501(c)(3) non-profit organization committed to guiding present and future generations to greater understanding and respect for nature by providing research and learning opportunities through its outstanding Acadia National Park setting, unique coastal Maine facilities, and innovative partnership programs. For more information on the Schoodic Institute, please visit SchoodicInstitute.org.

Special thanks to **Mark Berry**, President and CEO, for support of the CSA and the CS2015 Conference.

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