World Summit on Island Sustainability

GALAPAGOS SCIENCE CENTER

June 26 - 30, 2022 | San Cristobal Island, Galapagos, Ecuador

World Summit on Island Sustainability

GALAPAGOS SCIENCE CENTER

Ensuring Healthy Island Ecosystems for Future Generations

In 2022, the Galapagos Science Center (GSC) and the broader University of North Carolina at Chapel Hill (UNC) & Universidad San Francisco de Quito (USFQ) Galápagos Initiative will celebrate its 10th Anniversary.

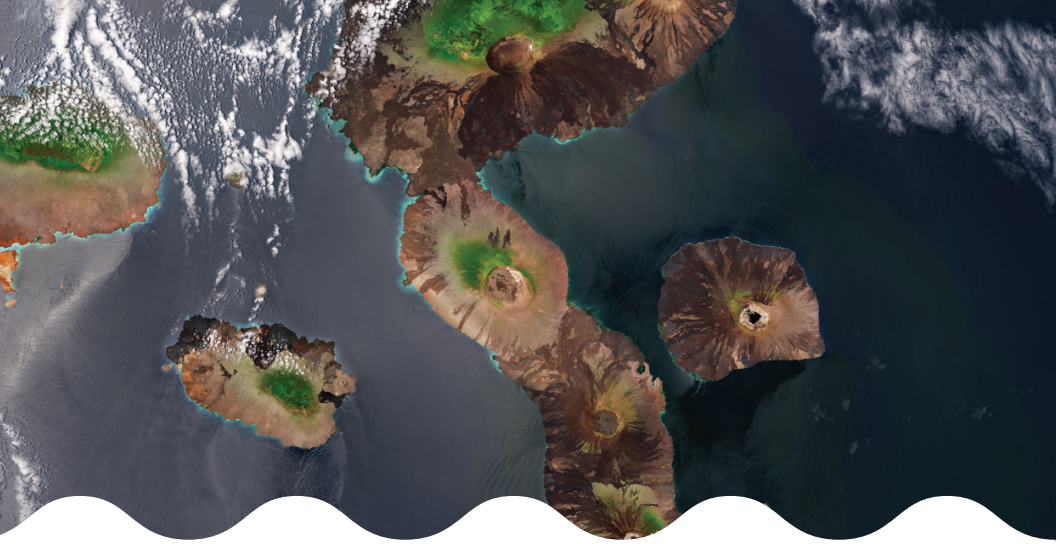
While the most obvious goal of organizing the World Summit on Island Sustainability is to celebrate the 10th Anniversary of the Initiative, we will also be addressing other goals through special opportunities.

We thank you for joining us on this mission to highlight multiple visions of a sustainable future for the Galápagos Islands and the other islands of the world. We cannot do this alone.

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

GSC GALAPAGOS SCIENCE CENTER USFQ | UNC-CHAPEL HILL

UNIVERSIDAD SAN FRANCISCO DE QUITO



Island Ecosystems: Challenges to Sustainability
(Papers from the World Summit, June 26-30, 2022, San Cristobal Island, Galapagos Archipelago of Ecuador; Springer Nature Publisher, Part of the Galapagos Book Series)

Stephen J. Walsh, Carlos F. Mena^, Jill Stewart*, Juan Pablo Munoz-Perez+, Guest Editors*
**University of North Carolina at Chapel Hill, ^Universidad San Francisco de Quito, +University of the Sunshine Coast*

***WELCOME** to the International Featured Speakers, Special Guests, and all Participants arriving on San Cristobal Island for the World Summit*

SUMMIT SCHEDULE

Sunday, June 26

7:45AM to 2:30PM

Morning & Afternoon
Boat Trip for **INVITED** International, Featured Speakers & Special Guests (new to the Galápagos Islands) to Cerro Brujo, San Cristobal Island with limited capacity.

Meet at the Fisherman Dock, adjacent to Golden Bay Hotel at 7:45AM. Lunch will be provided.

Research Guides: Juan Pablo Munoz-Perez & Daniela Alarcon-Ruales, Galápagos Science Center

Sunday, June 26

6:00PM **Welcoming Reception for All Participants**
Co-Chairs, Carlos Mena, Universidad San Francisco de Quito; Amanda Thompson & Steve Walsh, University of North Carolina at Chapel Hill

Proudly Sponsored by Celebrity Cruises (Fausto Arcos)

Location: USFQ GAIAS Terrace, across from Playa Mann

Remarks by USFQ & UNC Leadership:
***Diego Quiroga**, Rector, Universidad San Francisco de Quito*
***Andrea Encalada**, Vice-Rector, Universidad San Francisco de Quito*
***Kevin Guskiewicz**, Chancellor, University of North Carolina at Chapel Hill*
***Chris Clemens**, Provost, University of North Carolina at Chapel Hill*

Remarks by Ecuadorian Minister, Galápagos National Park & Celebrity Cruises:
***Niels Olsen**, Ecuadorian Ministry of Tourism*
***TBD** - Galápagos National Park*
***Fausto Arcos**, Associate Vice President & General Manager, Galápagos Celebrity Cruises*

Featured Remarks: ***Ashlan Cousteau***, EarthEcho International

Galápagos Consortium Signing Ceremony: UNC-Chapel Hill (Penny Gordon-Larsen, Vice Chancellor for Research); North Carolina State University (Jonathan Horowitz, Associate Vice Chancellor for Research); USFQ (Diego Quiroga, Rector)

Tours of the Galápagos Science Center, following the Welcoming Reception by GSC Staff

Monday, June 27

7:30AM **Registration**

8:30AM **Welcoming Remarks**
Chair, Steve Walsh, University of North Carolina at Chapel Hill

Cesar Zambrano, Dean of Research, Universidad San Francisco de Quito
Barbara Stephenson, Vice Provost for Global Affairs & Chief Global Officer, University of North Carolina at Chapel Hill
Penny Gordon-Larsen, Interim Vice Chancellor for Research, University of North Carolina at Chapel Hill

Challenges to Island Sustainability I: Paths Forward
Chair, Steve Walsh, University of North Carolina at Chapel Hill

Galápagos - The Next Generation
Monty Halls, Galápagos Conservation Trust

Invasive Species and Climate Change – Lessons from Pacific Islands
Laura Brewington, Arizona State University & the East-West Center, Honolulu, Hawaii

Harnessing Wind in Our Sails to Sustainable 2030
Austin Shelton, University of Guam

What We Learn from COVID in Galápagos: Innovation Challenges on Sustainability and Resilience
Norman Wray, Coordinator of the Galápagos Hub for Sustainability, Innovation & Resilience

15-MINUTE COFFEE BREAK: Group Photograph

10:20AM **Challenges to Island Sustainability II: Paths Forward**
Chair, Carlos Mena, Universidad San Francisco de Quito

Globalization & the Challenging Political Economy of Governing (and Researching) Islands in Contemporary Times
Juan Pablo Luna, Pontificia Universidad Católica de Chile

Island Digital Ecosystem Avatars (IDEA) Consortium Infrastructure for Democratic Ecological Action
Neil Davies, University of California – Berkeley, Gump South Pacific Research Station, Moorea, French Polynesia

Restoring Resilient Island Ecosystems: Lessons Learned from the Caribbean
Jennifer Daltry, Re:Wild, Austin, Texas and Fauna & Flora International, Cambridge, UK

On-the-Ground Solutions to Help People & Wildlife in a Changing Climate
Nikhil Advani, World Wildlife Fund

Monday, June 27

12:00PM to 1:20PM **LUNCH: On your own**

1:30PM **Island Ecosystems – Marine Sub-Systems I**
Chair, Sergio Navarrete, Pontificia Universidad Católica de Chile

Connecting MPA's in the Eastern Tropical Pacific: The Science & the First Steps
Alex Hearn, Universidad San Francisco de Quito/MigraMar; Randall Arauz, CREMA/MigraMar; Mariano Castro, Turtle Island Restoration Network; Eduardo Espinoza, Galápagos National Park; James Ketchum, Pelagios-Kakunja/MigraMar; A. Peter Klimley, University of California at Davis, MigraMar; Cesar Penaherrera-Palma, MigraMar; George Shillinger, Upwell/MigraMar; and Todd Steiner, Turtle Island Resoration Network, MigraMar

Sustainability Targets & Economic Benefits from Marine Protection in Islands: A Review for Galápagos & Other Archipelagos in the Pacific Ocean
Susana Cárdenas Díaz, María Virginia Gabela and Gunter K. Reck, Universidad San Francisco de Quito

Darwin & the Microbes: Investigating the Linkages between Ocean Physics, Carbon Cycling, & the Galápagos Microbiome
Adrian Marchetti, Scott Gifford, and Harvey Seim, University of North Carolina at Chapel Hill

Spatial Patterns of Upwelling at the Galápagos Influence Fish Assemblages & Environmental Records in the Otoliths of Fishes
Michael J Kingsford, James Cook University; Margarita Brandt, Universidad San Francisco de Quito; and Juan Manuel Alava, James Cook University and Universidad San Francisco de Quito

15-MINUTE COFFEE BREAK

Monday, June 27

3:05PM **Island Ecosystems – Terrestrial Sub-Systems I**
Chair, Xiao-Ming Liu, University of North Carolina at Chapel Hill

Environmental Sculpting of Genomes: Lessons from the Grasses of the Galápagos
Corbin D. Jones, University of North Carolina at Chapel Hill; Wenben Zhou, University of North Carolina at Chapel Hill; Carolina Armijos Fierro, Universidad San Francisco de Quito; Diego Urquia, University of North Carolina at Chapel Hill and Universidad San Francisco de Quito; Hugo Valdebenito & Maria de Lourdes Torres Proaño, Universidad San Francisco de Quito; and Alan Jones, University of North Carolina at Chapel Hill

Unraveling the Interactions between Endemic & Invasive Plant Species in the Galápagos Islands
Maria de Lourdes Torres, Universidad San Francisco de Quito; Leonie Moyle, Indiana University; and Todd Vision, University of North Carolina at Chapel Hill

Galápagos Land Snails & Environmental Sustainability
Stella de la Torre & Isabel Villarruel, Universidad San Francisco de Quito & Galápagos Science Center

Galápagos Petrels Conservation Helps Towards a Sustainable Future in the Archipelago
Leo Zurita-Arthos, Universidad San Francisco de Quito; Carolina Proaño, Independent Researcher; Jonathan Guillen, Naturalist Guide of Galápagos; and David Wiedenfeld, American Bird Conservancy

Incorporating Bird Song & Culture in Research & Management
Dominique Potvin, University of the Sunshine Coast

Tuesday, June 28

7:45AM **Registration**

8:30AM **Island Ecosystems – Social Sub-Systems I**
Chair, Don Hobart, University of North Carolina at Chapel Hill

Health Challenges in Small Island States: Human Health & Nutrition in Galápagos
Amanda Thompson, Jill Stewart, and Margaret Bentley, University of North Carolina at Chapel Hill; Jaime Ocampo and Enrique Teran, Universidad San Francisco de Quito; Valeria Ochoa, Universidad del Rosario

Human Dimension in the Galápagos Islands
Gina Chowa, Amanda Thompson, Cindy Fraga, Mimi Chapman, and Peggy Bentley, University of North Carolina at Chapel Hill

Water Quality in the Galápagos Islands: Linking Human & Environmental Health
Jill Stewart, Alyssa Grube, and Amanda Thompson, University of North Carolina at Chapel Hill; Valeria Ochoa-Herrera, Universidad del Rosario

Infectious Diseases in the Galápagos Islands: From a Paradise to an Isolation
Enrique Terán, Universidad San Francisco de Quito and Juan Ochoa, Ministerio de Salud Pública - San Cristobal, Galápagos

15-MINUTE COFFEE BREAK

Tuesday, June 28

10:15PM **Island Ecosystems – Marine Sub-Systems II**
Chair, Adrian Marchetti, University of North Carolina at Chapel Hill

Species-Specific Thermal Sensitivity in the Galápagos Marine Ecosystem: Predicting Warming Induced Changes in Composition & Function
Margarita Brandt, Universidad San Francisco de Quito; Nyssa J. Silbiger, California State University at Northridge; Isabel Silva Romero, Abel Valdivia, and John F. Bruno, University of North Carolina Chapel Hill

Trophic Web Structure and Ecosystem Attributes of the Galápagos Islands Shelf
Margorie Riofio-Lazo, Universidad San Francisco de Quito; Manuel J. Zetina-Rejón, Instituto Politécnico Nacional; Gunter Reck, Universidad San Francisco de Quito; Diego Páez-Rosas, Universidad San Francisco de Quito; Francisco Arreguín-Sánchez, Instituto Politécnico Nacional

Leaf to Reef: Generating Critical Knowledge to Support Resilience-Based Management of the Great Barrier Reef
Kathy Townsend, University of the Sunshine Coast

Our Transforming Coastal Marine Ecosystems: The Urgent Need for an Effective and Science-Based Conservation Network along the Southeastern Pacific
Sergio Navarrete, Pontificia Universidad Católica de Chile

12:00PM to 1:20PM **LUNCH: On your own**

12:15PM **Boat Trip to Cerro Brujo**
Two boats for 24-participants: **INVITED** International, Featured Speakers & Special Guests (new to the Galápagos Islands); lunch will be provided.

Meet at the Fisherman's Dock, adjacent to the Golden Bay Hotel

Research Guides: Juan Pablo Munoz-Perez and Daniela Alarcon-Ruales

1:20PM **Bus Trip to the Highlands**
Bus Travel to the Highlands for 29-participants: **INVITED** International, Featured Speakers & Special Guests (new to the Galápagos Islands) to the Highlands with limited capacity.

Meet at Galápagos Science Center; rain gear, sturdy shoes, water, swimsuit, and camera

Fieldtrip to the Agricultural Highlands, Hacienda Tranquila, Coffee Plantation, El Progresso, Tortoise Breeding Center & Puerto Chino

Research Guides: Diego Riveros-Iregui, University of North Carolina at Chapel Hill and Carlos Mena, Universidad San Francisco de Quito

Wednesday, June 29

7:45AM **Registration**

8:30AM **Island Ecosystems – Social Systems II**
Chair, Amanda Thompson, University of North Carolina at Chapel Hill

Long term Dynamics of Demographic Behavior after a Disaster: Evidence from Sumatra, Indonesia
Elizabeth Frankenberg, University of North Carolina at Chapel Hill; Cecep Sumantri, SurveyMETER, Indonesia; and Duncan Thomas, Duke University

Improvements in the Galápagos Health System: Telemedicine, Research, and Medical Assistants
Jaime Eduardo Ocampo Trujillo and María Emilia Menoscal Coello, Universidad San Francisco de Quito

Mapping of Galápagos' Environmental & Social Values
Andres Pazmino, Universidad San Francisco de Quito; Silvia Serrao-Neumann, University of Waikato; Darryl Low Choy, Griffith University

Visual Narratives of Land Use Change
Javier A. Arce-Nazario ans Francisco Laso, University of North Carolina at Chapel Hill

SARS-CoV-2 Variants in Galápagos & Ecuador During the Pandemic
Paúl Cárdenas, Belén Prado-Vivar, Mateo Carvajal, Erika Muñoz, Sully Marquez, Juan José Guadalupe, Mónica Becerra-Wong, Universidad San Francisco de Quito; Bernardo Gutierrez, Universidad San Francisco de Quito and the University of Oxford; Gabriel Morey-Leon, Universidad de Guayaquil; Juan Carlos Fernandez-Cadena, Laborataorio INTERLAB, Ecuador; Patricio Vega, ABG Galápagos; Gabriel Trueba, Universidad San Francisco de Quito; Michelle Grunauer, Universidad San Francisco de Quito and Hospital de los Valles, Quito; Verónica Barragán & Patricio Rojas-Silva, Universidad San Francisco de Quito; Derly Andrade-Molina, Universidad Ecuatoriana Espíritu Santo

15-MINUTE COFFEE BREAK

Wednesday, June 29

10:05AM **Island Ecosystems – Terrestrial Systems II**
Chair, Phil Page, University of North Carolina at Chapel Hill

Galápagos Barcode Project: Where Science & Local Communities Meet
Diana A. Pazmiño, Universidad San Francisco de Quito; Jaime A. Chaves, Universidad San Francisco de Quito & San Francisco State University; Diego A. Ortiz, James Cook University; Carlos Mena, Universidad San Francisco de Quito; Camille Bonneaud, Andy Russell, Tom Chaigneau, University of Exeter; Carolina Proaño, Universidad San Francisco de Quito; Alberto Velez, Agencia de Regulación y Control de la Bioseguridad y Cuarentena para Galápagos, Ecuador; Juan José Guadalupe, Susana Cárdenas, Antonio León, Pieter Van't Hof, Leonardo Zurita, Gonzalo Rivas, Andrea Encalada, and Lourdes Torres, Universidad San Francisco de Quito

Mapping the Shrinking Scalesia Forest and Blackberry Invasion in Galápagos
Carolina Carrión Klier & Heinke Jager, Charles Darwin Foundation; Danny Rueda & Christian Sevilla, GNPD

Microclimate is a Strong Predictor of the Native and Invasive Plant-Associated Soil Microbiota on San Cristobal Island, Galápagos Archipelago
Alexi Schoenborn, University of North Carolina at Chapel Hill

Chemical and Mineralogical Composition of Soils on San Cristobal Island, Galápagos Archipelago
Xiao-Ming Liu & Heather Hanna, University of North Carolina at Chapel Hill; Julia Barzyk, NC Army Research Office

Distributed Energy Systems for Sustainability on Islands: Opportunities & Research Priorities
Noah Kittner, University of North Carolina at Chapel Hill

Wednesday, June 29

12:00PM to 1:20PM **LUNCH: On your own**

1:30PM **Interdisciplinary Science: Conservation & Sustainability I**
Maria de Lourdes Torres, Universidad San Francisco de Quito

Ten Years of Wildlife Health & Conservation in the Galápagos, 2013-2022
Gregory Lewbart, North Carolina State University; Juan Pablo Munoz-Perez, University of the Sunshine Coast; Diego Paez & Carlos Valle, Universidad San Francisco de Quito; Daniela Alarcon Ruales, Galapagos Science Center; and Diane Deresienski, North Carolina State University

Galápagos Marine Apex Predators: Does Geographic Isolation Shield Them Against Global Pollution?
Carlos Valle & Laia Muñoz-Abril, Galapagos Science Center, Universidad San Francisco de Quito & University of South Alabama; Steven D. Emslie & Anna Zarn, University of North Carolina at Wilmington; Juan Pablo Muñoz-Perez, University of the Sunshine Coast

Science to Solutions in Galápagos: How Research, Community, NGO and Policy Actors are Coming Together to Improve Ocean Protection, Tackle Plastic Pollution, and Inspire Climate Action
Jen Jones, Galápagos Conservation Trust; and Tamara Galloway, University of Exeter

Cyberinfrastructure in Island Settings: Challenges & Opportunities
Rob Zelt, John McGee, and Phil Page, University of North Carolina at Chapel Hill

15-MINUTE COFFEE BREAK

Wednesday, June 29

2:35PM **Poster Presentations**
Chair, Jill Stewart, University of North Carolina at Chapel Hill

Whales and Dolphins of the Galápagos Archipelago: A Multidisciplinary Approach to the Understanding of the Most Common Cetacean Species in the Ecuadorian Whale Sanctuary
Daniela Alarcón-Ruales, Galapagos Science Center and the Universidad San Francisco de Quito; Judith Denkinger and Diana Pazmiño, Universidad San Francisco de Quito; Juan Pablo Muñoz-Perez, Galapagos Science Center and Universidad San Francisco de Quito; Diego Paez, Universidad San Francisco de Quito; and Kathy Townsend, University of the Sunshine Coast

Baseline Analysis of Plastic Pollution (PP) Issues within the Galápagos Archipelago
Juan Pablo Muñoz-Pérez, Universidad San Francisco de Quito & University of the Sunshine Coast; Gregory Lewbart, Universidad San Francisco de Quito & North Carolina State University; Alice Skehel, Universidad San Francisco de Quito & University of the Sunshine Coast; Daniela Alarcón-Ruales, Universidad San Francisco de Quito & University of the Sunshine Coast; Carlos A. Valle, Universidad San Francisco de Quito; Kathy A. Townsend, University of the Sunshine Coast

State of Water Quality in the Galápagos Islands: Challenges, Opportunities, & Household Preferences for Improved Water Services
Valeria Ochoa-Herrera, Universidad del Rosario; Jill Stewart and Amanda Thompson, University of North Carolina at Chapel Hill; Cristina Mateus and Diego Quiroga, Universidad San Francisco de Quito; Nejem Raheem, Emerson College; and William F. Vasquez, Fairfield University

Guam Green Growth Initiative
Thomas W. Krise & Austin J. Shelton, University of Guam

Development of Biomaterials through Valorising Abundant Shellfish, Marine, and Agricultural Waste in the Galápagos
Pilar Bolumburu & Charlene Smith, Materiom

Comida Sana: Strategies & Barriers to Healthy Eating in the Galápagos
Khristopher M. Nicholas, Margaret E. Bentley, Clare Barrington, and Amanda L. Thompson, University of North Carolina at Chapel Hill

Wednesday, June 29

Poster Presentations (Con't)

Chair, Jill Stewart, University of North Carolina at Chapel Hill

Drivers of Marine Protist Diversity and Connectivity in the Galápagos Archipelago

Prisca Lim & Harvey Seim, University of North Carolina at Chapel Hill; Oliva Torano, US Environmental Protection Agency; Erika Neave, John Moores University, Liverpool & Natural History Museum, London; Sehyeon Jang, Chonnam National University; Sara Haines & Scott Gifford, University of North Carolina at Chapel Hill; Natalie Cohen, University of Georgia; Carly Moreno, New York University, Abu Dhabi; Adrian Marchetti, University of North Carolina at Chapel Hill

Population Monitoring & Ecological Studies of the Galápagos Pinnipeds & their Management and Conservation

Diego Paez-Rosas, Universidad San Francisco de Quito; Jorge Torres, Galápagos National Park; and Marjorie Riofio-Lazo, Universidad San Francisco de Quito

Elucidating the Diet of Juvenile Sharks through DNA Analysis of Fecal Matter

Savannah Ryburn, University of North Carolina at Chapel Hill; Eldridge Wisely, University of Arizona; Alex Hearn, Universidad San Francisco de Quito; and John F. Bruno, University of North Carolina at Chapel Hill

Mapping Maternal Lineages of Sharks using Environmental DNA

Eldridge Wisely, University of Arizona; Savannah Ryburn, University of North Carolina at Chapel Hill; Alex Hearn, Universidad San Francisco de Quito; and John F. Bruno, University of North Carolina at Chapel Hill

Characterizing Thermal Tolerances & Sensitivities in Galápagos Cnidarians

Haley Capone, Isabel Silva Romero, John F. Bruno, University of North Carolina at Chapel Hill; Nyssa Silbiger, California State University at Northbridge; and Margarita Brandt, Universidad San Francisco de Quito

Restoring Darwin's Reefs: Pioneer Coral Gardening Initiatives in the Galápagos

Nicolás Dávalos, Universidad San Francisco de Quito; Jennifer Suárez, Galápagos National Park; John F. Bruno, University of North Carolina Chapel Hill; and Margarita Brandt, Universidad San Francisco de Quito

Wednesday, June 29

Poster Presentations

Chair, Jill Stewart, University of North Carolina at Chapel Hill

Trophic Interactions Mediated by Ecological Parameters in the Galápagos Upwelling System

Isabel Silva Romero, University of North Carolina at Chapel Hill; Margarita Brandt and David Fernández Garnica, Universidad San Francisco de Quito; Esteban Agudo-Adriani, University of North Carolina at Chapel Hill; Colleen B. Bove, Boston University; and John F. Bruno, University of North Carolina at Chapel Hill

Effect of Temperature on Ecological Interactions Using Galápagos as a Model System

Esteban Agudo-Adriani, John F. Bruno, and Isabel Silva Romero, University of North Carolina at Chapel Hill; Margarita Brandt, Universidad San Francisco de Quito

Differences in Soil Microbiome and Chemical Characterization in Four Islands of the Galápagos Archipelago

Dario Ramirez Villacis, Noelia Barriga-Medina, Lorena Benítez, Gonzalo Rivas-Torres, Universidad San Francisco de Quito; Jennifer Pett-Ridge, Lawrence Livermore National Laboratory; Antonio Leon Reyes, Universidad San Francisco de Quito & University of North Carolina at Chapel Hill

Exploring Fungal Pathogens to Control the Invasive Raspberry (Rubus niveus) from San Cristobal Island of Galápagos Archipelago

Noelia Barriga-Medina, Universidad San Francisco de Quito; Tia Decker, Universidad San Francisco de Quito & University of North Carolina at Chapel Hill; Dario X. Ramirez-Villacis, Andrés E. León-Reyes, Universidad San Francisco de Quito; Valerie Dong & Catherine Worley, Universidad San Francisco de Quito & University of North Carolina at Chapel Hill; Carlos Ruales, Universidad San Francisco de Quito; Antonio Leon-Reyes, Universidad San Francisco de Quito & University of North Carolina at Chapel Hill

Thursday, June 30

7:45AM **Registration**

8:30AM **Interdisciplinary Science: Conservation & Sustainability II**
Chair, Javier Arce-Nazario, University of North Carolina at Chapel Hill

The Galápagos Islands and the Fight Against Climate Change: Interdisciplinary Ocean and Atmospheric Research
William Vizuete, Tessa Szalkowski, Adrian Marchetti, Tianqu Cui, Karsten Baumann, University of North Carolina at Chapel Hill; Ryan Schmedding, McGill University; Zhenfa Zhang, Avram Gold, Jason D. Surratt, Jackson Seymore, University of North Carolina at Chapel Hill; and Andrew Babbin, Massachusetts Institute of Technology

Establishing Comparable Health Baselines for Marine Turtle Populations
Caitlin Elizabeth Smith, Ben Gilby, Juan Pablo Muñoz-Pérez, University of the Sunshine Coast; Jason van de Merwe, Griffith University; Kathy A. Townsend, University of the Sunshine Coast

The Role for Scientific Collections & Public Museums in Island Conservation
Jack Dumbacher, Rayna Bell, and Lauren Esposito, California Academy of Sciences

The Museum Effect: Platforms for Advocacy, Sustainability, & Conservation in Constrained Environments
Eric Dorfman, North Carolina Museum of Natural Sciences

15-MINUTE COFFEE BREAK

10:05AM **Interdisciplinary Science: Conservation & Sustainability III**
Chair, Valeria Ochoa-Herrera, Universidad del Rosario

Enhancing Sustainability of Wildlife Tourism in Galápagos
Gunter Reck, Universidad San Francisco de Quito

Integrating Science and Sustainability in Galápagos Cruise Tourism
Ellen Prager, Earth2Ocean, Inc.

Community Engagement in the Galápagos Islands
Manolo Yepez, Puerto Baquerizo Moreno, San Cristobal Island, Galápagos

Galápagos Futures
Diego Quiroga, Universidad San Francisco de Quito

12:00PM to 1:20PM **LUNCH: On your own**

Thursday, June 30

1:30PM **PANEL DISCUSSION & CONVERSATION: Island Sustainability, Paths Forward**

Chair, Diego Riveros-Iregui, University of North Carolina at Chapel Hill

Nikhil Advani
World Wildlife Fund

Neil Davies
Gump South Pacific Research Station, Moorea, French Polynesia

Jennifer Daltry
Re:Wild

Austin Shelton
University of Guam

Laura Brewington
East-West Center, Honolulu, Hawaii

15-MINUTE COFFEE BREAK

BREAK-OUT SESSIONS/DISCUSSIONS: Sustainable Island Ecosystems, Galápagos & Beyond

Chair, Carlos Mena, Universidad San Francisco de Quito and Steve Walsh, University of North Carolina at Chapel Hill

45-minute group breakout; 5-minute group reports; open discussion

GROUP 1: Sustainable Agriculture & Food Security
Co-Chairs, Carlos Mena, Universidad San Francisco de Quito and Javier Arce-Nazario, University of North Carolina at Chapel Hill

GROUP 2: Sustainable Fisheries
Co-Chairs, Alex Hearn, Universidad San Francisco de Quito and Juan Pablo Munoz-Perez, University of the Sunshine Coast

GROUP 3: Sustainable Tourism
Co-Chairs, Susana Cardenas and Gunter Reck, Universidad San Francisco de Quito

GROUP 4: One Health: People, Organisms & Environment
Co-Chairs, Jaime Eduardo Ocampo Trujillo, Universidad San Francisco de Quito and Jill Stewart, University of North Carolina at Chapel Hill

Draft Outline of a World Summit "Communique" on Island Sustainability
Carlos Mena, Universidad San Francisco de Quito; Amanda Thompson and Steve Walsh, University of North Carolina at Chapel Hill

Concluding Comments: GSC Directors
Carlos Mena, Universidad San Francisco de Quito; Amanda Thompson and Steve Walsh, University of North Carolina at Chapel Hill

6:00PM **Reception & Closing Ceremony**
Chair, Carlos Mena, Universidad San Francisco de Quito and Steve Walsh, Amanda Thompson, and Diego Riveros-Iregui, University of North Carolina at Chapel Hill

Location: USFQ Galápagos Campus (GAIAS) terrace and the Galápagos Science Center

Comments on the World Summit & the corresponding Book with Springer Nature
Chair, Carlos Mena, Universidad San Francisco de Quito and Steve Walsh, Amanda Thompson, and Juan Pablo Muñoz, University of North Carolina at Chapel Hill

Special Thanks & Concluding Comments

FEATURED SPEAKERS

Nikhil Advani

World Wildlife Fund

Dr. Nikhil Advani's role at WWF is at the intersection of communities, wildlife and the varied threats they face, from climate change to the global COVID-19 pandemic. Most recently, he is leading a GEF project focused on how COVID-19 is affecting nature-based tourism in eastern and southern Africa, which seeks to connect funders to communities most affected by the crisis (African Nature-Based Tourism Platform).

Other projects under Nikhil's portfolio focus on better understanding how wildlife and rural communities are being affected by changes in weather and climate, and developing and implementing solutions to help them adapt. These include an initiative to gather data and implement climate adaptation projects for rural communities (WWF Climate Crowd), a Wildlife and Climate assessment series to research species vulnerability to climate change, creation of a Wildlife Adaptation Innovation Fund to help at risk species adapt to climate change, and he is a member of the IUCN SSC Climate Change Specialist Group. In 2019 he was awarded the Emerging Leader Award by The College of Natural Sciences at The University of Texas at Austin, and currently serves on their advisory council.

Nikhil was born and brought up in Kenya, and went on to pursue his bachelor's degree and Ph.D. at The University of Texas at Austin. His thesis focused on gaining a better mechanistic understanding of species response to climate change, using the Glanville Fritillary butterfly as a model species. He then worked for the Nature Conservancy in Texas, prior to joining WWF in 2013.

Laura Brewington

Pacific Regional Integrated Sciences and Assessments (RISA) Center

Dr. Laura Brewington is the Co-Director of the Hawai'i-based Pacific Regional Integrated Sciences and Assessments (RISA) Center at Arizona State University's Global Futures Lab, which specializes in stakeholder-driven, policy-oriented research to support climate adaptation in the Pacific Islands region. She is also a Research Fellow at the East-West Center in Honolulu, Hawai'i, and the Lead Investigator of the Pacific Islands Climate, Health, and Migration project.

Dr. Brewington co-founded the Pacific Regional Invasive Species and Climate Change (RISCC) management network and is a member of the Pacific Invasives Partnership, promoting a coordinated regional approach to international biosecurity, sustainability, and natural resources management. Before moving to Hawai'i, she held a quarantine and biosecurity fellowship with WildAid, an international marine-conservation NGO, where she coordinated a comprehensive evaluation of the quarantine chain in the Galápagos Islands of Ecuador.

Dr. Brewington completed a post-doctoral fellowship with the Center for Galápagos Studies at the University of North Carolina–Chapel Hill. She received her Ph.D. in Geography from the University of North Carolina at Chapel Hill based on her research on agriculture, invasive species, and conservation in the Galápagos.

FEATURED SPEAKERS

Ashlan Cousteau

EarthEcho International

Journalist and Explorer Ashlan Gorse Cousteau travels the world in search of stories that captivate and inspire. As a host, speaker, author and filmmaker, Cousteau uses the power of entertainment to save the world.

For the last decade, Ashlan has worked with EarthEcho International to build a global youth movement to protect and restore our ocean planet.

Ashlan's first book Oceans for Dummies (Wiley Publishing) is a fun and easy to understand book explaining the entire ocean; its ecosystems, history, climate, currents, species and more, February 2021.

Ashlan was the co-star of Travel Channel's award-winning series, Caribbean Pirate Treasure for three seasons. Her documentary, Nuclear Sharks, for Discovery Channel's Shark Week 2016 premiered as the #1 rated show across all cable programming.

For over a decade, Ashlan worked as an on-camera correspondent and co-host for Emmy award winning entertainment shows E! News and Entertainment Tonight.

Cousteau's endeavors go beyond the small screen. Ashlan traveled to Antarctica to be a headlining speaker at TedxScottBase. She has served as host for the United Nations Convention on Biological Diversity and was selected by former Vice-President Al Gore to be the opening anchor for 24Hours of Reality. She is a voice for environmental issues on Capitol Hill through events, and briefings and serves on the advisory board of WWF, Ocean Unite and the Environmental Media Association.

Ashlan graduated from the prestigious School of Journalism at the University of North Carolina at Chapel Hill. She lives in Los Angeles with her husband, daughter, rescue dog, and two chickens and has explored all seven continents.

Jenny Daltry

Re:wild

Dr. Jenny Daltry works chiefly on the restoration of island ecosystems and recovery of endangered species. As Caribbean Alliance Director for Re:wild and Fauna & Flora International (FFI), Jenny supports civil society groups and governments throughout the Caribbean to develop practical solutions to this region's exceptionally high rate of biodiversity loss.

Though perhaps best known for leading programs to save critically threatened reptiles, including Siamese crocodiles and Antiguan racers, Jenny has worked on a wide variety of animals and plants in over 30 countries. She began as a volunteer, working in zoos and supporting research and conservation in India's Andaman and Nicobar Islands. Her doctoral research took her to Southeast Asia, where she studied the ecology of venomous snakes before embarking on biodiversity inventories and working with Indigenous communities to preserve critical habitats and improve livelihoods. She received a knighthood for her services to Cambodia in 2010.

Jenny's interest in ecosystem restoration began in 1995 upon seeing the devastating impacts that non-native rats have on Caribbean biodiversity. Since then, she has led projects to eradicate harmful invasive animals and plants from 30 islands, successfully catalysing the rapid recovery of native species and ecosystems. Jenny is particularly interested in how restoring healthy, functioning island ecosystems, both inside and outside of protected areas, can strengthen the resilience of people and wildlife to climate change.

She is an active member of six IUCN SSC Specialist Groups and a National Geographic Emerging Explorer.

FEATURED SPEAKERS

Neil Davies

Gump South Pacific Research Station

Neil Davies is Director of the University of California's Gump South Pacific Research Station on Moorea (French Polynesia) and Research Affiliate at the Berkeley Institute for Data Science. He is a founding director of Tetiaroa Society and Vice President of the Blue Climate Initiative, a flagship program of the UN Decade of Ocean Science for Sustainable Development.

Davies graduated in Zoology from the University of Oxford and has a PhD in Genetics from University College London. He helped develop the field of biodiversity genomics by leading the first DNA sequencing of an entire tropical ecosystem and initiating a global network of genomic observatories. He is co-author of the book "Biocode: The New Age of Genomics" (Oxford University Press, 2015) and serves on the board of the Genomic Standards Consortium.

With colleagues from the University of California, ETH Zurich, France's CNRS, and Oxford University, Davies launched the Island Digital Ecosystem Avatar (IDEA) Consortium in 2013. Digital avatars are sustainability simulators of social-ecological systems, modeling feedbacks between climate, environment, biodiversity, and human activities across coupled marine–terrestrial landscapes. To further these efforts, Davies co-founded EvolutionXD in 2018, a San Francisco-based company leveraging blockchain technology to promote scientific data sharing and advance community data trusts.

Davies continues to work on how place-based data and holistic computational models of place – particularly islands – can promote social equity and environmental justice. The overarching goal of his research is to help establish the Infrastructure for Democratic Ecological Action that is needed to address society's wickedest problems.

Monty Halls

Galápagos Conservation Trust

Monty Halls is President of the Galápagos Conservation Trust (GCT), and has a relationship with the islands that spans two decades. He first visited the Galápagos in 2000, to make a film about the Galápagos penguin, and has since participated in numerous conservation initiatives through the work of the GCT. Prior to the pandemic, Monty and his family lived on Santa Cruz, then Isabela, in order to tell the story of the balance between community and tourist pressures, and the ecosystem of the islands. The two resultant series "My Family and the Galápagos" have been viewed globally. Monty is passionate about community initiatives, and empowering the next generation to engage with the conservation challenges ahead. He firmly believes that in this area – as in so many others – Galápagos can lead the way.

Mike Kingsford

James Cook University

Mike is a Distinguished Professor in the Marine Biology and Aquaculture group of the College of Science and Engineering at James Cook University (JCU), Australia. He has published extensively on the ecology of reef fishes, biological oceanography, climate change and jellyfishes. In total he has 210 publications including three major books, 36 chapters in books, 161 refereed publications and nine refereed proceedings.

Mike has been a Chief Investigator with the ARC Centre of Excellence for Innovative Coral Reef Studies. A major focus of his research has been on reef fish ecology and demography, connectivity of reef fish populations, the ecology and behavior of larval fishes, the utility of Marine Protected Areas, and environmental records in corals and fishes. He has 40 years of research experience of studying fishes in temperate and tropical regions of Australia and other parts of the world. Over the last seven years he has worked at the Galapagos in collaboration with colleagues from USFQ. The focus of this research has been on detecting environmental signals and patterns of growth in fish that reflect upwelling conditions. Further, how upwelling affects patterns of abundance and biomass of herbivorous fishes.

Juan Pablo Luna

Gump South Pacific Research Station

Juan Pablo Luna is Professor of Political Science at the Pontificia Universidad Católica de Chile. He received a Ph.D. in Political Science from the University of North Carolina at Chapel Hill.

He is the author of *Segmented Representation. Political Party Strategies in Unequal Democracies* (Oxford University Press, 2014), and has co-authored *Latin American Party Systems* (Cambridge University Press, 2010) and *Latin American Politics and Society. A Comparative Historical Perspective* (Cambridge University Press, 2022). He also co-edited *The Resilience of the Latin American Right* (Johns Hopkins University, 2014) and *Diminished Parties* (Cambridge University Press 2022). His work focuses on political representation, state capacity, and organized crime.

FEATURED SPEAKERS

Sergio Navarrete

Pontificia Universidad Católica de Chile

Sergio A. Navarrete is the Director of the Estación Costera de Investigaciones Marinas of Pontificia Universidad Católica de Chile at Las Cruces and is also Professor at the school of Biological Sciences. He received his undergraduate in Marine Biology from Universidad de Concepción, Chile, his Ph.D. from Oregon State University at Corvallis, Oregon, and postdoctoral studies from University of California Santa Barbara, USA.

Sergio's research attempts to address some of the critical issues faced by costal marine ecosystems in the Anthropocene era through establishing far-reaching, interdisciplinary research programs at the interfaces of marine ecology, oceanography, coastal engineering and modeling. He is the Director of Las Cruces Marine Reserve, one of the oldest in the region, which together with a spatially extensive monitoring program provides a strong baseline to assess the undergoing transformations suffered by coastal ecosystems. He has led large international and national collaborative initiatives to foster long-term research on global change, marine protected areas, and ocean observing systems and currently is associated to four interdisciplinary research centers.

Austin Shelton

University of Guam Center for Island Sustainability and Sea Grant

Dr. Austin Shelton is a native of Guam who grew up observing environmental degradation and was inspired to become a marine and environmental scientist. He now serves as an assistant professor and the Director of the University of Guam Center for Island Sustainability and Sea Grant.

Shelton is an Obama Leader and one of 50 Under 40: Emerging Leaders in the Government of Guam. Shelton works to revive island ecosystems and advance the 17 United Nations Sustainable Development Goals. He co-chairs the steering committee of Guam Green Growth, the island's most comprehensive public-private partnership ever created to achieve a sustainable future. The initiative earned the University of Guam the 2021 Excellence and Innovation Award in Sustainability and Sustainable Development from the American Association of State Colleges and Universities.

Shelton also collaborates regionally and internationally as a trustee of the Micronesia Conservation Trust; steering committee member of the Local2030 Islands Network; and representative to the Global Island Partnership (GLISPA), Secretariat of the Pacific Regional Environment Programme (SPREP), and National Sea Grant Association. Shelton earned a B.S. degree in marine biology from Hawai`i Pacific University and both an M.S. and Ph.D. in zoology with a specialization in marine biology from the University of Hawai`i at Mānoa.

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