THE SCHOOL FOR FIELD STUDIES
DIRECTED RESEARCH
SPRING 2023
AUSTRALIA

Are palms better host trees for epiphytic bryophytes than other trees in lowland tropical rainforests?
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Student authors: Samantha Kathleen Larson¹, Allison Elizabeth Janineh², Shea Alex Tyrrell³
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Bryophyte diversity in a remnant upland rainforest on the Atherton Tablelands, Queensland, Australia
Faculty advisor: Deborah Apgaua, David Tng
Student authors: Camilla J. Mancini¹, Zoe C. Strothkamp², Aidan T. Nelsen³
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Mangrove trees vary in epiphytic bryophyte species richness and composition
Faculty advisor: Deborah Apgaua, David Tng
Student authors: Jacqueline G. Booth¹, Ashley H. Butler², Kayla N. Engle³
1 University of Southern California, 2 Denison University, 3 Ohio State University

Shoot and leaf flammability of plants in North Queensland Australia
Faculty advisor: Deborah Apgaua, David Tng
Student authors: Audrey Crawford¹, Amy Marie Gaulke², Daniel Ire Kim², Owen Chen Tsunoda³
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Dung Beetles as indicators of endemic mammals for rainforest restoration in the Atherton Tablelands
Faculty advisor: Sigrid Heise-Pavlov
Student authors: Claudia Mabley¹, Jamie Loyst², Rachel Weiss³
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Assessing nocturnal lepidopteran species diversity in forests in different stages of restoration
Faculty advisor: Sigrid Heise-Pavlov
Student authors: Dan Gonzalez-Kosasky¹, Piper Deaser², Jimmy Coyle³
1 Amherst College, 2 Gonzaga University, 3 Boston University

Erosion control and prevention in the Tablelands: Recommendations and methods
Faculty advisor: Sigrid Heise-Pavlov
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1 Whitman College, 2 Grinnell College, 3 Connecticut College

Roadside vegetation management strategy in the Atherton Tablelands in far North Queensland, Australia
Faculty advisor: Sigrid Heise-Pavlov
Student authors: Rebecca Toomey¹, Shannon Doner², Catherine Bussani³, Grace Robinson⁴
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BHUTAN

Comparative analysis of BEVs and FCEVs: The future of automotive innovation in Bhutan
Faculty advisor: Dr. Kuenga Wangmo
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1 Colorado College, 2 Franklin University, 3 University of Minnesota, 4 Saint Michael’s College, 5 Hamilton College, 6 Skidmore College

The spatial, temporal, and behavioral activity patterns of large predators in the Bhutan Himalayas
Faculty advisor: Dr. Tshering Tempa
Student authors: Caitlyn Gardner¹, Faith Bugman², Joe Ravin³, Sam Takahashi⁴
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Assessing mammalian diversity and abundance across elevational gradient and forest types in Bhutan
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Assessing the economic viability of community forests: A case study from Paro Valley, Bhutan
Faculty advisor: Dr. Norbu Wangdi
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CAMBODIA

Water snakes in the Tonlé Sap Lake: Perceptions of water snake bycatch and trade in the late dry season in the Kampong Khleang Commune
Faculty advisor: Dr Megan English
Student authors: Meredith Dirkman¹, and Finola Bailey²
1 University of Michigan, 2 Whitman College

Fish abundance, diversity, morphology, and diets in Kampong Khleang Commune, Tonle Sap Lake, Cambodia
Faculty advisor: Dr Megan English
Student author: Graham Kelley¹
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Behavioral adaptations of semi-captive Asian elephants (*Elephas maximus*) at Kulen Elephant Forest, Cambodia: Impacts of human-elephant relationships  
Faculty advisor: Dr Megan English  
Student author: Divine Siam¹  
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Don’t be crass, eat some grass! Seasonal foraging behavior and activity budget of semi-captive Asian elephants (*Elephas maximus*) at Kulen Elephant Forest, Cambodia  
Faculty advisor: Dr Megan English  
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Small scale fisher-people, markets, and environmental degradation on the Tonle Sap  
Faculty advisor: Dr Tim Frewer  
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A Female Focused Study of the Precarious Position of Urban Recyclers in Siem Reap, Cambodia  
Faculty advisor: Dr Tim Frewer  
Student Authors: Karin Schroeder ¹  
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Changing Livelihood Diversification along the Tonle Sap Lake: A Case Study of Kampong Khleang Commune  
Faculty Advisor: Dr. Jean-Christophe Diepart  
Student Authors: Wren Murphy ¹ & Annie West ²  
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Participatory Guarantee Systems in Cambodia: Learning from the experience of smallholder farmers in the ECOFARM cooperative in Siem Reap province  
Faculty advisor: Jean-Christophe Diepart  
Student authors: Skylar Tempe ¹ and Amelia Scharin²  
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CHILE

Connecting theory to practice: an assessment of inland wetland conservation in Torres del Paine Biosphere Reserve  
Faculty advisor: Dr. María Rafaela Retamal Díaz  
Student authors: Jaden Golden¹, Richard Kinder¹,  
¹ University of San Francisco

Perceptions of marine wetland ecosystem services: impact of historical relationship of local stakeholders around Puerto Natales  
Faculty advisor: Dr. María Rafaela Retamal Díaz  
Student authors: Kathryn Kowal¹, Keathley Pinney Brown²  
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Can Human Intervention Lead to Conservation?: A Study in the Torres del Paine Biosphere Reserve
Faculty advisor: Dr. María Rafaela Retamal Díaz
Student authors: Emilee Shields
1 Point Loma Nazarene University

Fire restoration management and volunteer efforts: A comparative analysis between Yosemite National Park, USA and Torres del Paine National Park, Chile
Faculty advisors: Dr. María Rafaela Retamal Díaz (Primary advisor), Dr. Shaw Nozaki Lacy (Secondary advisor)
Student authors: Oliver Fedowicz, Vanessa Southgate
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Urbanization as both a threat and a management strategy for wetland conservation: Initial research and future implications for Estero Natales
Faculty advisor: Dr. María Rafaela Retamal Díaz
Student authors: John Bergin, Ruby Paarlberg
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Equilibrium line altitude through climate data analysis in Southern Patagonian, Chile: Glacial trends within the alpine glaciers of Cerro Tenerife
Faculty advisor: Dr. Francisco Javier Aguirre González
Student author: Elijah Lines
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Extreme events in Rio Paine, Lago Dickson, and Lago Paine located in Torres del Paine National Park, Chile
Faculty advisor: Dr. Francisco Javier Aguirre González
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Long-term precipitation, temperature, and wind trend analysis in Magallanes, Chile
Faculty advisor: Dr. Francisco Javier Aguirre González
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Assessing endorheic lagoon sensitivity to drought conditions in The Magallanes region of southern Chile
Faculty advisor: Dr. Francisco Javier Aguirre González
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Implementing an orographic precipitation model for Torres del Paine National Park, Chile
Faculty advisor: Dr. Francisco Javier Aguirre González
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Methods in estimating snow line elevations using remote sensing in the Tenerife and Cerro Mocho watersheds
Faculty advisor: Dr. Francisco Javier Aguirre González
Student authors: Sophia Patt¹, Madison Hinds², Eva Coleman³,
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Impacts of flashiness on fluvial macroinvertebrate morphology
Faculty advisor: Dr. Shaw Nozaki Lacy
Student authors: James Lucey (Virginia Lee Lucey)¹, Jacobi Stacy²
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Exploring geomorphological measurement methods: Field vs. Google Earth
Faculty advisor: Dr. Shaw Nozaki Lacy
Student authors: Sarah Hall¹, Margaret Morgan²,
¹ Connecticut College, 2 Macalester College

Drought indices in modeling macroinvertebrate species richness
Faculty advisor: Dr. Shaw Nozaki Lacy
Student authors: Jennifer Coseno¹, Francesca Rossi²,
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COSTA RICA

Evaluating local consumption and social solidarity economies: Verdes community currency initiative
Faculty advisor: Mary Little
Student authors and home schools: Eugenia Chow¹, Elizabeth Domina², Evan Li³,
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Developing a sustainable food purchasing policy: An assessment tool for the Monteverde Institute to enhance food security
Faculty advisor: Mary Little
Student authors and home schools: Chloë Lendi¹, Nathan Horlander², Tess Fitzhenry¹, Thea Henry⁴
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Effects of farm management practices on coffee productivity and water source protection in Atenas, Costa Rica
Faculty advisor: Milena Cambronero
Student authors: Grace Adams-Kollitz¹, Abel Cameron², Rosemary Kehoe³, Amelia Wallis⁴,
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Carbon sequestration and soil exposure in five agroforestry coffee farms in Atenas, Costa Rica
Faculty advisor: Milena Cambronero
Student authors: Madison Culcasi¹, Anna Lowe², Emily Marino³, Autumn Potts⁴
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Assessing the impacts of climate change on coffee growers in Atenas' watershed: Perceptions and adaptation strategies.
Faculty advisor: Milena Cambronero.
Student authors: Bianca Sanchez¹
1 Allegheny College

Sexual size dimorphism in wing area, weight, and beak length in 8 species of Costa Rican hummingbirds
Faculty advisor: Gerardo Avalos
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Does specific leaf area predict carbon sequestration in six species of palms?
Faculty advisor: Gerardo Avalos
Student authors: Sydney P. Barringer¹, Kaila J. Frazer², Hélène B.M. Le Gall³, Petra G. Rich⁴
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Ecological and evolutionary causes of morphological divergence of seven hummingbird clades
Faculty advisor: Gerardo Avalos
Student authors: Jillian Paquette¹
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Preliminary study of herpetofauna diversity and density in the premontane forest of Manú Center, Costa Rica
Faculty advisor: Víctor Acosta Chaves
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KENYA

Exploring the comparative advantage of conservation as a land use in the Amboseli Ecosystem
Faculty advisor: Dr. Richard Kiaka, Ph.D.
Student authors: Hanif Amanullah¹, Reece Pauling², Greta Bonomo³
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Habitat preference and feeding interactions among browsers, and the effect of community habitat interactions outside protected area in Amboseli ecosystem.
Faculty advisor: Jennifer Wanyingi
Student authors: Ebenezer Figueroa¹, Noelle Beswick², Cora Leonard³, Jaclyn Beaudoin⁴
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PANAMA

Understanding ecological loss in ocean-dependent communities in Bocas del Toro, Panama
Faculty advisor: Dr. Dinda P. Scott
Student authors: Vedaant Kuchhal¹, Abigail Garcia², Alexandra Lister-Penn³
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A lesson in anger management: causes of male aggression in the neotropical harvestmen species *Poecilaemula iching*
Faculty advisor: Rosannette Quesada
Student authors: Emma Baird¹, Lily McCarthy², Elena Uicker²
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The effect of leg sensilla impairment on homing in a Neotropical Harvestmen (*Arachnida, Opiliones*)
Faculty advisor: Rosannette Quesada
Student authors: Kristen Beach¹, Justine Goldblatt³, Ainsley Smith³, Sarah Synan⁴
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Using tourist values and satisfaction to guide management of a marine wildlife tourist area: An Importance-Performance Analysis of Starfish Beach, Bocas del Toro
Faculty advisor: Leon Mach
Student authors: Danielle Recco¹, Lila Potter², Ezra Fenner³
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Wildlife tourism and local stakeholder vulnerability at Starfish Beach, Bocas del Toro
Faculty advisor: Leon Mach
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Effects of *Acropora palmata* coral coverage on the community structure of fishes in Bocas del Toro, Caribbean Panama
Faculty advisor: Dagoberto E. Venera-Pontón
Student authors: Olivia Roberts¹, Sophia Turner², Hadley VandeVusse²
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Condition and spatial complexity of the reef-building coral *Acropora palmata* in the Bocas del Toro Archipelago
Faculty advisor: Dagoberto E. Venera-Pontón
Student authors: Kyra DeGroat¹, Hannah Orton²
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PERU

Examining stakeholders’ role in regional conservation area (RCA) management in Loreto, Peru
Faculty advisor: Pamela Montero Alvarez
Student authors: Kyla Alexander¹, Courtland Dorris²
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Examining partnerships and communities' participation: a case study of the Allpahuayo Mishana National Reserve, Loreto - Peru  
Faculty advisor: Pamela Montero Alvarez  
Student authors: Genesis Whitlock  
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Systematic review of the current sustainable coffee practices  
Faculty advisor: Pamela Montero Alvarez  
Student authors: Yuan Yuan  
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Comparison of herpetofauna diversity and abundance in a pond and forest habitat of the Peruvian Amazon  
Faculty advisor: Akira Armando Wong Sato  
Student authors: Ty H. Cutler, H. Lourdes Watson  
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Fruit parasitism in a Terra Firme broadleaf forest in the Loreto Region of the Peruvian Amazon  
Faculty advisor: Akira Armando Wong Sato  
Student authors: Amelia D. Cotins, Riley M. Kelly, Abigail L. McLane, Nneka J. Okolo  
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The road to birding - How three types of roads affect bird guilds in Western Amazonia  
Faculty advisor: Steven Sevillano Rios  
Student authors: Quinn Adams, Sydney Clayton, Elinor Everett, Haley Stark  
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Soundscape ecology: A comparison of acoustic qualities in farmland and primary forests in the Peruvian Amazon  
Faculty advisor: Steven Sevillano Rios  
Student authors: Kabir Menon  
1 Sewanee: The University of The South

TANZANIA

Datoga and Hadzabe adaptation strategies to climate change impacts in Lake Eyasi Basin, Tanzania  
Faculty advisor: John Mwamhanga  
Student authors: Caroline Allen, Amanda Bean, Daisy Burns, Keira Obert  
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Impacts of external factors on Hadzabe and Datoga traditional ecological practices of Lake Eyasi, Tanzania  
Faculty advisor: John Mwamhanga  
Student authors: Isabella Ciancio, Margaret McCurdy  
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Wildlife abundance, diversity, habitat selection and niche overlap in Randilen Wildlife Management Area, Northern Tanzania  
Faculty advisor: John Kiringe  
Student authors: Michael Cushing¹, Lucy Martin², Amelia McDermott³  
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Abundance, diversity, habitat selection, and niche overlap of wildlife and livestock in Randilen wildlife management area, Northern Tanzania  
Faculty advisor: John Kiringe  
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Assessment of open grassland ecological health in Randilen WMA  
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Environmental variables drive pollinators and plant-pollinator interactions in the Tarangire-Manyara ecosystem.  
Faculty advisor: Henry Njovu  
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Environmental drivers of native and non-native herbaceous flowering plants' abundance in the Tarangire-Manyara ecosystem  
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Student author: Rosalie Ross¹  
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Determinants of avian feeding guild diversity across the Tarangire-Manyara Ecosystem, Tanzania.  
Faculty advisor: Henry Njovu  
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Effects of elevation on Passeriformes morphology in the Tarangire-Manyara Ecosystem.  
Faculty advisor: Henry Njovu  
Student author: Emily Jones¹  
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Determinants of avian species and functional diversity across the Tarangire-Manyara Ecosystem, Tanzania.  
Faculty advisor: Henry Njovu  
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Population structure and dynamics of *Cardisoma guanhumi* in South Caicos  
Faculty advisor: William (Bill) F. Bigelow  
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Diet, shell drilling, and population density of *Octopus insularis* around South Caicos  
Faculty advisor: C.E. “Shades” O’Brien, Ph.D.  
Student authors: Emery Stobaugh¹  
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Species interactions and eyebar presence in *Octopus insularis* on South Caicos  
Faculty advisor: C.E. “Shades” O’Brien, Ph.D.  
Student authors: Torrey Wetzelberg¹ and Mahina Kameenui-Becker²  
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The behavior and substrate preference of the Nocturnal Caribbean Reef Octopus, *Octopus briareus*  
Faculty advisor: C.E. “Shades” O’Brien, Ph.D.  
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Impacts of artificial light and substrate use on the behavior and body patterning of *Callistoctopus furvus* in South Caicos  
Faculty advisor: C.E. “Shades” O’Brien, Ph.D.  
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An analysis of the prevalence and composition of microplastics in *Aliger gigas* from the area surrounding South Caicos, Turks and Caicos  
Faculty advisor: Kassandra Dudek, Ph.D.  
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The distribution of *Pterois miles* and *Pterois volitans* across habitat type and anthropogenic structures in South Caicos  
Faculty advisor: Kassandra Dudek, Ph.D.  
Student authors: Cassidy Beach¹, Lauren McDowell², Gwyn McLear³, and George Norris⁴  
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Taming the voracious lionfish (*Pterois* spp.): an exploration of depth, sex, and sexual maturity within and outside of aggregations in South Caicos  
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Reef Restoration on South Caicos
Faculty advisor: Heidi Hertler, Ph.D.
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