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## EDUCATION

2009 Ph.D. University of Texas at Austin. *Ecology, Evolution, & Behavior*.

2002 B.S. University of Arizona. *Ecology & Evolutionary Biology*.

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## APPOINTMENTS

### Okinawa Institute of Science and Technology Graduate University

2020 - Professor, *Biodiversity and Biocomplexity Unit*  
2019 - Associate Ombudsperson  
2012 - 2020 Assistant Professor, *Biodiversity and Biocomplexity Unit*  
2011 - 2012 Visiting Assistant Professor

### Harvard University

2021 - 2022 Mary I. Bunting Fellow, Radcliffe Institute for Advanced Study

### University of Michigan

2012 - 2017 Visiting Assistant Prof., Dept. of Ecology and Evolutionary Bio., Museum of Zoology  
2009 - 2012 Postdoctoral Fellow - Michigan Society of Fellows  
Assistant Prof. (non tenure-track)- Dept. of Ecology and Evolutionary Biology

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## PUBLICATIONS

### Book

Sarnat, E., **Economo, E.P.** (2012) *The Ants of Fiji*. University of California Press.

## Preprints

- Warren, D.L., Kass, J.M., Casadei-Ferreira, A., **Economo, E.P.** (2022) Incorporating sampling bias into permutation tests for niche and distribution models. *bioRxiv*.
- Luo, Y., Taylor, A., Weigelt, P., Guénard, B., **Economo, E.P.**, Nowak, A. Inderjit, Kreft, H. (2022) Ant richness and environment shape the global distributions of ant-associated plants. *bioRxiv*.
- Wang, R., Kass, J.M., Galkowski, C., Garcia, F., Hamer, M.T., Radchenko, A., Salata, S.D., Schifani, E., Yusupov, Z.M., **Economo, E.P.**, Guénard, B. (2022) New biogeographic regionalization of West Palearctic ants revealed through novel integrative approaches. *bioRxiv*.
- French, C.M., Bertola, L.D., Carnaval, A.C., **Economo, E.P.**, Kass, J.M., Lohman, D.J., Marske, K.A., Meier, R., Overcast, I., Rominger, A.J., Staniczenko, P., Hickerson, M.J. Global determinants of the distribution of insect genetic diversity. *bioRxiv*.
- Wong, M., **Economo, E.P.**, Guénard, B.G. The global spread and invasion capacities of alien ants. *bioRxiv*.
- Frank, E.T., Kesner, L., Liberti, J., Helleu, Q., LeBoeuf, A., Dascalu, A., Milutinovic, B., Azuma, F., **Economo, E.P.**, Waridel, P., Engel, P., Schmitt, T., Keller, L. (2022) Infection signaling and antimicrobial wound care in a predatory ant. *bioRxiv*.
- Toulkeridou, E., Gutierrez, C. E., Baum, D., Doya, K., **Economo, E.P.** (2021) Automated segmentation of insect anatomy from micro-CT images using deep learning. *bioRxiv*.

## Published | In Press

114. Emerson, B.C., Borges, P.A.V., Cardoso, P., Convey, P., deWaard, J.R., **Economo, E.P.**, Gillespie, R., Kennedy, S., Krehenwinkel, H., Meier, R., Roderick, G., Strasberg, D., Thébaud, C., Traveset, A., Creedy, T.J., Meramveliotakis, E., Nogueras, V., Overcast, I., Morlon, H., Papadopoulou, A., Vogler, A.P., Arribas, P., Andújar, C. (*In Press*) Collective and harmonised high-throughput barcoding of insular arthropod biodiversity: toward a Genomic Observatories Network for islands. *Molecular Ecology*.
113. Liu, C., Fischer, G., Liu, Q., Peng, Y.Q., **Economo, E.P.**, Guénard, B. (*In Press*) Updating the taxonomy of the ant genus *Myrmecina* (Hymenoptera, Formicidae) in China with descriptions of four new species. *Zootaxa*.
112. Wepfer, P., Nakajima, Y., **Economo, E.P.**, Mitarai, S. (*In Press*) The oceanographic isolation of the Ogasawara Islands and genetic divergence in a reef-building coral. *J. of Biogeography*.
111. Wang, W., Soh, E.J.Y., Yong, G.W.J., Wong, M.K.L., Guénard, B.G., **Economo, E.P.**, Yamane, S. (2022) Remarkable diversity in a little red dot: a comprehensive checklist of known ant

- species in Singapore (Hymenoptera: Formicidae) with notes on ecology and taxonomy. *Asian Myrmecology* 15: 015006.
110. Kennedy, S., Calaor, J. Hans, J., Zurápiti, Y., Yoshimura, M., Choo, J., Andersen, J., Callagan, J., Roderick, G.K., Krehenwinkel, H.<sup>†</sup>, Rogers, H.<sup>†</sup>, Gillespie<sup>†</sup>, R.G., **Economo, E.P.**<sup>†</sup> (2022) Richness and resilience in the Pacific: DNA metabarcoding enables parallelized evaluation of biogeographic patterns. *Molecular Ecology*. <sup>†</sup>joint last authors
109. Kass, J., Guénard, B., Dudley, K., Jenkins, C.N., Azuma, F., Fisher, B.L., Parr, C.L., Gibb, H., Longino, J.T., Ward, P.S., Chao, A., Lubertazzi, D., Weiser, M., Jetz, W., Guralnick, R., Blatrix, R., Des Lauriers, J., Donoso, D., Georgiadis, C., Gomez, K., Hawkes, P., Johnson, R.A., Lattke, J., MacGown, J.A., Mackay, W., Robson, S., Sanders, N., Dunn, R.R., **Economo, E.P.** (2022) The global distribution of known and undiscovered ant biodiversity. *Science Advances* 8: eabp9908.
108. Arribas, P. Andújar, C., Bohmann, K., deWaard, J., **Economo, E.P.**, Elbrecht, V., Geisen, S., Goberna, M., Krehenwinkel, H., Novotny, V., Zinger, L., Creedy, T.J., Emmanouil Meramveliotakis, E., Noguerales, V., Overcast, I., Morlon, H., Papadopoulou, A., Vogler, A.P., Emerson, B.C. (2022) Toward global integration of biodiversity big data: a harmonised metabarcode data generation module for terrestrial arthropods. *GigaScience* 11: 1-12.
107. Parker, E., Jones, C., **Economo, E.P.**, Zapfe, K.L. Federman, S., Near, T.J. Dornburg, A. (2022) Pulsed extinction drives convergence in the adaptive radiation of Antarctic fishes. *The American Naturalist*.
106. Khalife, A., Peeters, C., **Economo, E.P.** (2022) Minute workers and large soldiers in the subterranean ant *Carebara perpusilla*: functional consequences of muscle allometry in the thorax. *Arthropod Structure & Development* 69: 101188.
105. Andrade-Silva, J., Baccaro, F.B., Prado, L.P., Warren, D.L., Kass, J., Guenard, B., **Economo, E.P.**, Silva, R.R. (2022) A large-scale assessment of ant diversity across the Brazilian Amazon Basin: integrating geographic, ecological, and morphological drivers of sampling bias. *Ecography* 16: e0695.
104. Gómez, K., Kouakou, L., Fischer, G., Hita-García, F., Katzke, J., **Economo, E.P.** (2022) *Pheidole klaman* sp. n.: A new addition from Ivory Coast to the Afrotropical pulchella species group (Hymenoptera: Formicidae: Myrmicinae). *Zookeys* 1104: 129-157.
103. Aibekova, L., Boudinot, B. E., Beutel, R.G., Richter, A., Keller, R.A., Hita Garcia, F., **Economo, E.P.** (2022) The skeletomuscular system of workers of the generalized ant genus *Formica* (Formicidae). *Insect Systematics and Diversity* 6: 2.
102. La Richeliere, F., Dunn, R., **Economo, E.P.**, Guénard, B., Sanders, N., Weiser, M., Abouheif, E., Lessard, J.P. (2022) Warm and arid regions of the world are hotspots of social complexity. *Proceedings of the Royal Society: B*. 289: 20211899.

101. Katzke, J. Puchenkov, P., Stark, H., **Economo, E.P.** (2022) A roadmap to reconstructing muscle architecture from CT data. *Integrative Organismal Biology* 4: obac001.
100. Takashina, N., Jenkins, C., Planck, M., **Economo, E.P.** (2022) Species-range size distributions: integrating the effects of speciation, transformation, and extinction. *Ecology and Evolution* 12: e8341.
99. Boudinot, B., Richter, A., Katzke, J., Keller, R., **Economo, E.P.**, Beutel, R., Yamamoto, S. (2022) Evidence for the evolution of eusociality in stem ants and a systematic revision of †*Gerontiformica* (Hymenoptera, Formicidae). *Zoological Journal of the Linnean Society* 195: 1355-1389.
98. Beutel, R., Friedrich, F., **Economo, E.P.** (2022) Patterns of morphological simplification and innovation in the megadiverse Holometabola (Insecta). *Cladistics* 38: 227-245.
97. Silva, R....(203 authors including **Economo, E.P.**)...Ribiero, M.A. (2021) ATLANTIC ANTS: a dataset of ants in Atlantic Forests of South America. *Ecology* 103: e03580.
96. Klunk, C.L., Argenta, M.A., Casadei-Ferreira, A., **Economo, E.P.**, Pie, M.R. (2021) Mandibular morphology, task specialization, and bite mechanics in *Pheidole* ants (Hymenoptera: Formicidae). *Journal of the Royal Society Interface* 18: 20210318.
95. Richter, A., Keller, R. A., Hita Garcia, F., Billen, J., Katzke, J., Boudinot, B. E., **Economo, E.P.\***, Beutel, R.G.\* (2021) Head anatomy of *Protanilla lini* (Leptanillinae, Formicidae, Hymenoptera) and a hypothesis of their mandibular movement. *Myrmecological News* 31: 85-114. \*joint supervision
94. Casadei-Ferreira, A., Friedman, N.R., **Economo, E.P.**, Pie, M.R., Feitosa, R.M. (2021) Head and mandible shapes are highly integrated yet represent two distinct modules within and among worker sub-castes of the ant genus *Pheidole*. *Ecology & Evolution* 11: 6104-6118.
93. Booher, D., Gibson, J., Liu, C., Longino, J.T., Fisher, B.L., Janda, M., Narula, N., Toulkeridou, E., Mikheyev, A.S., Suarez, A., **Economo, E.P.** (2021) Functional innovation promotes diversification of form in the evolution of an ultrafast trap-jaw mechanism in ants. *PLoS Biology* 19: e3001031.
92. Suzuki, Y., **Economo, E.P.** (2021) Dispersal network topology and spatial environmental autocorrelation mediate the balance of species sorting and mass effects in metacommunities. *Ecography* 44: 1-12.
91. Rosas-Mejia, M. Guénard, B. Aguilar-Méndez, M.J., Ghilardi, A., Vásquez-Bolaños, M., **Economo, E.P.**, Janda, M. (2021) Introduced ants (Formicidae: Hymenoptera) in Mexico – the first database of records. *Biological Invasions* 23: 1669-1680.

90. Ross, S.R.P.-J., Friedman, N.R., Yoshimura, M., Yoshida, T., Donohue, I., **Economo, E.P.** (2021) Utility of acoustic indices for ecological monitoring in complex sonic environments. *Ecological Indicators* 121: 107114.
89. Takashina, N., **Economo, E.P.** (2020) Developing generalized sampling schemes with known error properties: the case of a moving observer. *Ecography* 43: 1-14.
88. Casadei-Ferreira, A., **Economo, E.P.**, Feitosa, R.M. (2020) Revisions to the *Pheidole* (Hymenoptera, Formicidae) fauna of the Brazilian southern grasslands. *Revista Brasileira de Entomologia* 64: e20200068.
87. Peeters, C., Keller, R.A., Fischer, G., Khalife, A., **Economo, E.P.** (2020) The evolutionary loss of flight enabled the remarkable strength of ant workers. *Frontiers in Zoology* 17: 33.
86. Liu, C., Fischer, G., Hita Garcia, F., Yamane, S., Liu, Q., Peng, Y.Q., **Economo, E.P.**, Guénard, B., Pierce, N. E. (2020) Ants of the Hengduan mountains: a new altitudinal survey and updated checklist for Yunnan Province highlight an understudied insect biodiversity hotspot. *ZooKeys* 978: 1-171.
85. Dias, R.K.S., Guénard, B., **Economo, E.P.**, Akbar, S.A., Udayakantha, W.S., Wachkoo, A.A.A. (2020). The Ants (Hymenoptera: Formicidae) of Sri Lanka: A taxonomic research summary and updated checklist. *ZooKeys* 967: 1-142.
84. Dinets, V., Friedman, N., Yoshimura, M., Ogasawara, M., **Economo, E.P.** (2020) Acoustic detection of an unknown bat species in Okinawa. *Mammal Study* 45: 1-4.
83. Casadei-Ferreira, A., Fischer, G., **Economo, E.P.** (2020) Evidence for a thoracic crop in the workers of some *Pheidole* species (Formicidae: Myrmicinae). *Arthropod Structure & Development* 59: 100977.
82. Fischer, G., Friedman, N.R., Huang, J.P., Knowles, L.L., Mikheyev, A.S., Fisher, B.L., **Economo, E.P.** (2020) Socially parasitic ants evolve a mosaic of host-matching and parasitic morphological traits. *Current Biology* 30: 1-8.
81. Wepfer, P., Nakajima, Y., Radice, V., Toonen, R., Richards, Z., Ang, P., Sutthacheep, M., Chen, A., Sudek, M., Fujimura, A., Mikheyev, A.S., **Economo, E.P.\***, Mitarai, S.\* (2020) Evolutionary biogeography of the coral genus *Galaxea* across the Indo-Pacific ocean. *Molecular Phylogenetics and Evolution* 151: 106905. \*co-last author
80. Friedman, N.R., Lecroq-Bennett, B., Fischer, G., Sarnat, E.M., Huang, J.P., Knowles, L.L., **Economo, E.P.** (2020) Macroevolutionary integration and modularity of phenotypes within and across ant worker castes. *Ecology and Evolution* 10: 9371-9383.
79. Aoyama, Y., Yoshimura, M., Ogasawara, M., Suwabe M., **Economo E.P.** (2020) Potential economic impacts of invasion of the red imported fire ant in Okinawa, Japan. *Japanese Journal of Ecology* 70: 3-14. DOI: [https://doi.org/10.18960/seitai.70.1\\_3](https://doi.org/10.18960/seitai.70.1_3) [in Japanese, original

citation: 青山 夕貴子, 吉村 正志, 小笠原 昌子, 諏訪部 真友子, エコノモ P. エヴァン (2020) 沖縄県におけるヒアリの侵入・蔓延時に推定される経済的損失. 日本生態学会誌 70: 3-14.]

78. Miao, B.G., Peng, Y.Q., Yang, D.R., Kubota, Y., **Economo, E.P.**, Liu, C. (2020) Climate and land-use interactively shape butterfly diversity in tropical rainforest and savanna ecosystems of southwestern China. *Insect Science*.
77. Richter, A., Keller, R.A., Hita Garcia, F., Billen, J., **Economo, E.P.\***, Beutel, R.G.\* (2020) Comparative analysis of worker head anatomy of *Formica* and *Brachyponera* (Formicidae, Hymenoptera, Insecta). *Arthropod Systematics and Phylogeny* 78: 133-170. \*co-last author
76. Beutel, R.G., Richter, A., Keller, R., Hita Garcia, F., Matsumura, Y., **Economo, E.P.**, Gorb, S.N. (2020). Distal leg structures of the Aculeata (Hymenoptera): a comparative evolutionary study of *Sceliphron* (Sphecidae) and *Formica* (Formicidae). *Journal of Morphology* 281: 737-753.
75. Liu, C., Sarnat, E.M., Friedman, N., Hita Garcia, F., Booher, D., Mikheyev, A., **Economo, E.P.** (2020). Colonize, radiate, decline: unraveling the dynamics of island community assembly with Fijian trap-jaw ants. *Evolution* 74: 1082-1097.
74. Yoshimura, M., Suwabe, M., Ikeda, T., Ogasawara, M., **Economo, E.P.** (2020) Development and Implementation of a workshop on alien species and Red Imported Fire Ants (RIFA) for elementary school students. *Japanese Journal of Science Communication* 26: 39-56. (in Japanese, original citation: 吉村正志, 諏訪部真友子, 池田貴子, 小笠原昌子, エヴァン・エコノモ (2020) 小学生向け外来種&ヒアリ学習ワークショップの開発と実践. 科学技術コミュニケーション, 26: 39-56.)
73. Cicconardi, F., Gamisch, A., Krapf, P., Wagner, H. C., Nguyen, A. D., **Economo, E.P.**, Mikheyev, A. S., Guénard, B., Arthofer, W., Steiner, F.M., Schlick-Steiner, B.C. (2020) Strong diversifying and relaxed purifying selection are shifting the evolutionary equilibrium of the alpine ant *Tetramorium alpestre* (Insecta: Hymenoptera) genome. *Molecular Biology and Evolution* 37: 2211-2227.
72. Mao, Y., Qian, H., Shi, J., **Economo, E.P.** (2020) TREEasy: an automated workflow for the inference of gene trees, species trees, and phylonetworks from molecular sequences. *Molecular Ecology Resources* 20: 832-840.
71. Darwell, C., Fischer, G., Sarnat, E.M., Friedman, N., Liu, C., Baiao, G., Mikheyev, A.S., **Economo, E.P.** (2020) Genomic and phenomic analysis of island ant community assembly. *Molecular Ecology* 29: 1611-1627.
70. Guo, F., Guénard, B., **Economo, E.P.**, Deutsch, C., Bonebrake, T. (2020) Activity niches outperform thermal physiological limits in predicting global ant distributions. *Journal of Biogeography* 47: 829-842.

69. Wepfer, P., Nakajima, S., Hui, F., Mitarai, S.\*, **Economo, E.P.\*** (2020) The metacommunity ecology of coral-hosted symbionts (*Symbiodinaceae*). *Marine Ecology Progress Series* 633: 71-87. \*joint last author
68. Choo, J., Gill, B., Zuur, A., Zent, E., **Economo, E.P.** (2020) Impacts of an indigenous settlement on taxonomic and functional dung beetle diversity in the Venezuelan Amazon. *Biodiversity and Conservation* 29: 207-228.
67. Friedman, N.R., Miller, E., Ball, J., Kasuga, H., Remeš, V.\*, **Economo, E.P.\*** (2019) Evolution of a multifunctional trait: shared effects of foraging ecology and thermoregulation on beak morphology, with consequences for song evolution. *Proceedings of the Royal Society: Series B* 286: 20192474. \*joint last author
66. Hita Garcia, F., Lieberman, Z., Audisio, T., Liu, C., **Economo, E.P.** (2019) Revision of the cryptic and highly specialized ant genus *Discothyrea* (Hymenoptera: Formicidae) in the s with X-Ray microtomography and 3D cybertaxonomy. *Insect Systematics and Diversity* 3: 5.
65. Sarnat, E. M., Liu, C., Hita Garcia, F., Dudley, K., **Economo, E.P.** (2019) Ready Species One: exploring the use of augmented reality for biodiversity discovery with a technology-enhanced revision of Fijian *Strumigenys*. *Insect Systematics and Diversity* 3: 6.
64. Sharaf, M.R., Aldawood, A.S., **Economo, E.P.**, Wachkoo, A.A., Hita Garcia, F. (2019) Taxonomy of Arabian *Temnothorax* Mayr (Formicidae: Myrmicinae) with description of a new species enhanced by micro-CT next-generation morphology. *Scientific Reports* 9: 11009.
63. Friedman, N.R., Remes, V.R., **Economo, E.P.** (2019) A morphological integration perspective on the evolution of dimorphism in sexes and social insect castes. *Integrative and Comparative Biology* 59: 410-419.
62. Ross, S.R. Friedman, N.R., Janicki, J., **Economo, E.P.** (2019) A test of trophic and functional theories of island biogeography using the avifauna of a continental archipelago. *Journal of Animal Ecology* 88: 1392-1405.
61. Richter, A., Keller, R., Rosumek, F.B., **Economo, E.P.**, Hita Garcia, F., Beutel, R.G. (2019) The cephalic anatomy of the *Wasmannia affinis* (Formicidae, Hymenoptera, Insecta) worker caste and its evolutionary implications. *Arthropod Structure and Development* 49: 26-39.
60. **Economo, E.P.**, Huang, J.P., Fischer, G., Sarnat, E.M. Janda, M., Narula, N., Guénard, B., Longino, J., Knowles, L.L. (2019) Evolution of the latitudinal diversity gradient in the hyperdiverse ant genus *Pheidole*. *Global Ecology and Biogeography* 28: 456-470.
59. Takashina, N., Kusumoto, B., Kubota, Y., **Economo, E.P.** (2019) A geometric approach to scaling individual distributions to macroecological patterns. *Journal of Theoretical Biology* 461: 170-188.
58. Agavekar, G., Agashe, D., **Economo, E.P.** (2019) Dimensions of ant biodiversity on a tropical island. *Insect Conservation and Diversity* 12: 161-171.

57. Mao, Y. \*, **Economo, E.P.** \*, Satoh, N. \* (2018) The roles of introgression and climate change in the diversification and rise to dominance of *Acropora* corals. *Current Biology* 28: 3373-3382.  
\*corresponding
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55. Khalife, A., Keller, R.A., Billen, J., Hita Garcia, F., **Economo, E.P.**, Peeters, C. (2018) Skeletomuscular adaptations of head and legs of *Melissotarsus* ants for tunneling through living wood. *Frontiers in Zoology* 15: 30.
54. Barlow, J., Franca, F., Gardner, T.A., Hicks, C., Lennox, G., Berenguer, E., Castello, L., **Economo, E.P.**, Ferreira, J., Guénard, B., Leal, C.G., Isaac, V., Lees, A., Parr, C., Wilson, S., Young, P., Graham, N. (2018) The future of hyperdiverse tropical ecosystems. *Nature* 559: 517-526.
53. Iglesias, T.L., Warren, D.L., Dornburg, A., Wainwright, P.C., Schmitz, L., **Economo, E.P.** (2018) Eyes wide shut: The impact of dim-light vision on neural investment in marine teleosts. *Journal of Evolutionary Biology* 31: 1082-1092.
52. Staab, M., Hita Garcia, F., Liu, C., Xu, Z.H., **Economo, E.P.** (2018) Systematics of the ant genus *Proceratium* Roger (Hymenoptera, Formicidae, Proceratiinae) in China - with descriptions of three new species based on micro-CT enhanced next-generation morphology. *Zookeys* 770: 137-192.
51. **Economo, E.P.**\*, Narula, N., Friedman, N., Weiser, M., Guénard, B.\* (2018) Macroecology and macroevolution of the latitudinal diversity gradient in ants. *Nature Communications* 9: 1778.  
\*equal contribution
50. Matos-Maravi, P. Clouse, R. M., Sarnat, E. M., **Economo, E. P.**, LaPolla, J. S., Borovanska, M., Rabeling, C., Czekanski-Moir, J., Latumahina, F., Wilson, E. O., Janda, M. (2018) An ant genus-group (*Prenolepis*) illuminates the drivers of insect diversification in the Indo-Pacific. *Molecular Phylogenetics and Evolution* 123:16-25.
49. Seebens, H. ...48 authors including **Economo, E.P.**...Essl, F. (2018) Historical dynamics of emerging alien species, secondary invasions, and the pool of potential new alien species. *Proceedings of the National Academy of Sciences* 115: E2264-E2273.
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45. Hita Garcia, F., Fischer, G., Liu, C., Audisio, T., **Economo, E.P.** (2017) Next-generation morphological character discovery and evaluation: an X-ray micro-CT enhanced revision of the ant genus *Zasphinctus* Wheeler (Hymenoptera, Formicidae, Dorylinae) in the Afrotropics. *ZooKeys* 693: 33-93.
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41. Choo, J., Carasco, C., Alvarez-Loayza, P., Simpson, B., **Economo, E.P.** (2017) Life history traits influence the strength of distance- and density-dependence at different life stages of two Amazonian palms. *Annals of Botany* 120: 147-158.
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## Website:

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## PRESENTATIONS

### Invited Talks

2022 International Union Study of Social Insects Congress (symposium)  
2022 Concordia University, Department of Biology  
2022 McGill University, Department of Biology  
2022 Texas A&M University, Department of Entomology  
2022 University of Texas at Austin, Section of Integrative Biology  
2021 City College of New York, Department of Biology  
2021 UMass Lowell, Department of Biology  
2021 Yale University, Department of Ecology and Evolutionary Biology  
2021 EU-IUSSI annual meeting (Symposium)  
2019 Sorbonne University, Institute of Ecology and Environmental Sciences  
2019 University of Lausanne, Department of Ecology and Evolutionary Biology  
2019 Ecological Society of Japan (Symposium)  
2018 Taiwan Entomological Society (Keynote)  
2018 UC-Berkeley, Department of Environmental Science, Policy, and Management  
2017 Kyoto University, Asia Research Node Symposium  
2016 International Colloquium on Soil Zoology (Plenary)  
2016 International Congress of Entomology (Symposium)  
2016 Ludwig Maximilian University Munich (Ants 2016 Symposium)  
2015 University of Cambridge, Department of Zoology  
2015 Society of Population Ecology Meeting (Symposium)  
2014 Kyoto University, Evolutionary Community Ecology Symposium  
2013 Kyoto University, Symposium in honor of E.O. Wilson and the Kyoto Prize  
2013 University of the Ryukyus, Japan  
2012 Ecological Society of Japan Meeting (Symposium)  
2011 Society of Population Ecology Meeting (Symposium)  
2011 University of Alabama  
2011 Okinawa Institute of Science and Technology  
2011 University of Queensland  
2011 International Biogeography Society Meeting (Symposium)  
2010 University of British Columbia  
2010 Field Museum of Natural History  
2010 UM/SFI Complex Systems Symposium  
2004 University of New Mexico

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## GRANTS AND FELLOWSHIPS

- 2022- Research Grant Council Hong Kong. “A stage- and trait-based approach to understand global ant invasion patterns and invasion mechanisms” ( PI: B. Guénard, Co-I: E. Economo)
  - 2021-2024 Strategic Environmental Research and Development Program (\$2.9 million total) “Next Generation Biosecurity Monitoring of Invasive Alien Arthropod Species.” (~\$2.9 million total, (PI: G. Roderick, co-PI: Economo, E.)
  - 2021-2022 Radcliffe Fellowship, Radcliffe Institute of Advanced Study, Harvard University
  - 2019-2022 Japan Ministry of Environment Grant (~\$1 million), “Developing Countermeasures for Invasive Alien Species”
  - 2016-2019 Okinawa Prefectural Government Grant (~\$1.2 million), “Developing a system for fire ant surveillance, prevention, and control in Okinawa”.
  - 2017-2019 Japanese Society for the Promotion of Science, Grant-in-Aid of Research (Kakenhi, ~\$50K)
  - 2012-2017 National Science Foundation (DEB 1141989), Phylogenetic Systematics Economo, E. (PI), L. Knowles (co-PI). \$378,522. "Evolving hyperdiversity in phenotypic, ecological, and geographic networks: testing the taxon cycle and alternatives in Indo-Pacific *Pheidole*"
  - 2009-2012 Michigan Society of Fellows Postdoctoral Fellowship
  - 2009 Marion Elizabeth Eason Scholarship, University of Texas
  - 2005-2009 National Science Foundation Graduate Research Fellowship
  - 2004-2005 NSF IGERT Graduate Training Fellowship in Computational Phylogenetics
  - 2004 Santa Fe Institute Complex Systems Summer School
  - 2007 EEB Research Fellowship
  - 2006 EEB Research Fellowship
  - 2005 EEB Research Fellowship
  - 2003 University of Texas Dean's Excellence Preemptive Fellowship
  - 2004 NSF Graduate Research Fellowship Honorable Mention
  - 2001 Honors College Undergraduate Research Grant, U. of Arizona
  - 2001 Research Training Grant in the Analysis of Diversification, U. of Arizona
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## AWARDS AND HONORS

- 2019 Ecological Research Award (for one of top papers in *Ecological Research* in 2018)
  - 2017 Top ten new species for *Pheidole drogon* (given by ESF-SUNY)
  - 2016 Biodiversity Action Award (to OKEON project)
  - 2013 Presidential Award from American Society of Naturalists (For best paper published in *The American Naturalist* in 2012)
  - 2009 Nominated for Distinguished Dissertation Award, University of Texas
  - 2004 Teaching Award, School of Biological Sciences, University of Texas
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## CLASSROOM TEACHING

- 2019 B16 “Ecology & Evolution” Primary instructor, OIST, 9 students
- 2018 B16 “Ecology & Evolution” Primary instructor, OIST, 8 students
- 2018 A406, “Independent Study”, OIST, 1 student
- 2017 B16 “Ecology & Evolution” Primary instructor, OIST. 6 students
- 2016 B16 “Ecology & Evolution” Primary instructor, OIST, 5 students
- 2015 B16 “Ecology & Evolution” Primary instructor, OIST, 6 students
- 2014 A406 “Independent Study”, OIST, 1 student
- 2014 B16 “Ecology & Evolution” Primary instructor, OIST, 2 students
- 2013 A302 “Ecology & Evolution” Primary instructor, OIST, 5 students
- 2011 “EEB Senior Capstone”, primary instructor. U. of Michigan.
- 2011 “Insect Ecology & Evolution” (graduate seminar) primary instructor. U. of Michigan.
- 2010 “General Ecology”, primary instructor, U. of Michigan
- 2009 TA for “Ecology”, 2 guest lectures. U. of Texas at Austin.
- 2004 TA for “Ecology, Evolution and Society”, 3 guest lectures. U. of Texas at Austin. Won graduate teaching award from the School of Biological Sciences.

### Summer School:

- 2013 Co-organized “OIST Integrative Biology Course: Big Data in Biology”  
(<https://groups.oist.jp/oibc>)

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## MENTORSHIP

### OIST Postdoctoral Fellows & Staff Scientists

2012-2014 Benoit Guénard

2012-2014 Beatrice Lecroq-Bennett

2013-2018 Masashi Yoshimura

2015-2018 Clive Darwell

2014-2020 Georg Fischer

2015-2020 Nicholas Friedman

2016-present Francisco Hita Garcia

2017-2020 Nao Takashina (JSPS Fellow)

2018-2021 Susan Kennedy

2019-present Jamie Kass (JSPS fellow)

2021-present Larisa Kiselva

2021-2022 Nurit Eliash

2022-present Joshua Gibson (JSPS fellow)

### OIST PhD Student Thesis Supervision

2012-2018 Cong Liu

2013-2019 Patricia Wepfer (co-supervised)

2014-2019 Yafei Mao (co-supervised)

2015-2021 Yuka Suzuki

2016-2021 Evropi Toulkeridou (co-supervised)

2017-present Julian Katzke

2017-present Yazmin Zurita Gutierrez

2018-present Gaurav Agavekar

2018-present Lazzat Aibekova

2018-present Shubham Gautam

### **OIST PhD Rotation Students**

2012 Keita Ikegami	2017 Julian Katzke
2012 Cong Liu	2017 Otis Brunner
2013 Han Yan	2018 Yazmin Zurita Gutierrez
2013 Sandrine Burriel	2018 Shubham Gautam
2014 Yafei Mao	2018 Lazzat Aibekova
2014 Yuna Hattori	2018 Gaurav Agavekar
2014 Matti Krueger	2019 Mohamed Boubakour
2014 Margaret Brisbin	2019 Michael Izumiyama
2015 Jason Ball	2020 Kota Ishikawa
2015 Yuka Suzuki	2020 Masato Hirota
2016 Menglin Wang	2022 Tom Wifling
2016 Christopher Campbell	

### **OIST Research Interns and Visiting Research Students**

2012 Sandrine Burriel	2016 Victoria McGruer
2013 Patricia Wepfer	2016 Gaurav Agavekar
2013 Benjamin Blanchard	2016 Sam Ross
2013 Guilherme Baiao	2017 Adam Khalife
2014 Juliette Martin	2017 Tracy Audisio
2015 Brett Morgan	2018 Zachary Lieberman
2015 Julia Janicki	2018 Fumika Azuma
2015 Natalie Greenhalgh	2018 Alexandre Ferreira
2015 Matt Ziegler	2019 Kelvin Chen
2016 Haruka Kasuga	2019 Adrian Richter
2016 Aina Urano	2019 April Lamb
2016 Kotaro Fujiyoshi	2022 Lily Tashiro

### **OIST PhD Student Mentor**

(this is an advisory role for students to help plan curriculum, and get neutral advice outside their PhD lab)

Tomohito Wauke	Jekaterina Stemmere
Maki Kohata Thomas	Tracy Audisio
Christine Guzman	Stefano Pascarelli
Miles Desforges	

### **OIST PhD Thesis Committee Membership**

(not including my own PhD students, see above)

Qiong Huang	Menglin Wang
Tadashi Kazuno	Otis Brunner
Robert Campbell	Alexsandra Blizina
Agneesh Barua	Tracy Audisio

### **OIST-Supported Affiliated Researchers**

(Off-site researchers who have worked with our lab with OIST funding support)

2012-2020 Eli Sarnat  
2018 Roberto Keller



### **OIST Research Technicians**

2012 Adam Lazarus

2013-2014 John Deyrup

2013-2014 Nitish Narula

2015-2017 Julia Janicki

2014-2020 Kenneth Dudley

2018-present Fumika Azuma

2019-present Kosmas Deligkaris

2021-present Miyuki Suenaga

### **University of Michigan (2009-2012)**

Supervised eleven undergraduate research projects (6 students) for independent study credit or work study (through UROP).

### **University of Texas at Austin (2003-2009)**

Supervised 6 undergraduate students on undergraduate research

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## **ACADEMIC SERVICE AND LEADERSHIP**

### **OIST Faculty Committees**

#### **2022-present | Appointments and Promotions Committee**

This committee is positioned between hiring / promotion committees and executive leadership, to ensure that relevant procedures are followed and recommendations meet criteria.

#### **2021 | Tenure Review Committee**

Tenure review committee member for OIST faculty member.

#### **2021-present | Conference and Workshop Committee**

Responsible for selecting conferences and workshops to receive support from OIST and set policies for operations.

#### **2020 | Working Group on Procurement**

This is an *ad hoc* committee responsible for revising procurement regulations, particularly developing a response to some new regulations from the Japan Ministry of Finance.

#### **2019-present | OKEON Steering Committee**

Advise and manage OKEON project and Environmental Science Support section.

#### **2019 | Working Group on Travel Regulations**

This was an *ad hoc* committee responsible for revising travel regulations, I was asked by the faculty council to represent faculty concerns, and this led to substantial revision of travel rules.

#### **2018 | Perspective Council**

This was an *ad hoc* committee of extremely distinguished scientists (4 of the 6 Nobel laureates, chaired by Steven Chu (former Secretary of Energy, USA) tasked with planning the scientific direction of future growth / faculty hiring at OIST. I was one of 6 individuals chosen to represent the OIST faculty on this committee, where I particularly represented the fields of Ecology/Environment/Marine Science.

**2016 | Task Force on Rank and Tenure**

This was an *ad hoc* committee formed by the faculty to examine policies and procedures for tenure and promotion reviews. We made recommendations to the president which led to substantial policy changes.

**2016-2019 | Curriculum and Examinations Committee**

Standing committee responsible for curriculum and exam related issues for our PhD program, including setting policy, overseeing curriculum, overseeing proposal exams and final thesis defenses, approving granting of degrees, etc.

**2015-2021 | Human Subjects Research Review Committee (IRB)**

This committee oversees and approves all human subjects research at OIST. I was included on this committee particularly as a biostatistics expert.

**2013, 2014, 2018, 2019 | Faculty Search Committees**

I was a member of faculty search committees for Marine Science in 2013 and 2014, and for Ecology/Environment in 2018, and have been member of a target of opportunity search committee in 2019.

**2013-2022 | Gender Equality and Diversity Committee**

Promoting Gender Equality and Diversity on OIST campus, including promoting family-friendly environment, advising on tenure (e.g. stop-the-clock) policies, etc. I was a founding member of this committee.

**2013-present | Information Technology Service and Support Committee**

This committee oversees IT issues at OIST and advises the CIO, including email systems, phone systems, privacy and security policies, etc.

**2013-2015 | Faculty Council**

The main governance committee for OIST faculty, elected by faculty peers.

**2012-2013 | Admissions Committee**

Responsible for admissions to the OIST PhD program

**OIST Associate Ombudsperson (2019-present)**

In my role as Associate Ombudsperson for the campus I assist OIST members with conflict resolution issues including harassment complaints, employee issues, etc. I particularly handle cases where the primary Ombudsperson or their family members have a conflict of interest.

**Principal, OIST/Onna Children's School of Science (2019-present)**

I am one of two Principals and the sole OIST faculty representative on the executive committee of the Children's School of Science, a yearly summer science program we run in partnership with the local community (Onna village) that has included over 800 grade-school children over the years. The operations of the school are run by the OIST community relations section.

## **OKEON Churamori Project & Environmental Research Support Section**

Since 2015, I have led development of the Okinawa Environmental Observation Network (OKEON) Churamori Project. This project is designed to both further ecological science activities at OIST but also form partnerships with local communities in Okinawa. We established 24 long-term monitoring sites across the island, and in the process made partnerships with over 100 entities including high schools, local museums, local Universities, NGOs and government entities. In addition, we established an institutional Arthropod collection. This has been an important project for OIST's relationship with Okinawa, and generated a large amount of positive stories in the local and national media. I incubated a team in my lab that this year became a new research support section (Environmental Research Support Section) which supports any researcher in the OIST community doing field work.

### **Society Memberships**

*Ecological Society of America*  
*Entomological Society of America*  
*Ecological Society of Japan*  
*Society for the Study of Evolution*  
*American Society of Naturalists*

*Society of Systematic Biology*  
*Society of Integrative & Comparative Biology*  
*International Biogeography Society*  
*Japan Society of Mathematical Biology*  
*Inter. Union for the Study of Soc. Insects*

### **Subject/Associate Editor**

*The American Naturalist* (2021-present)  
*Current Research in Insect Science* (2020-present)  
*Journal of Biogeography* (2019-present)  
*Myrmecological News* (2017-present)

### **Peer Reviewer**

*American Journal of Botany*  
*Aquatic Ecology*  
*The American Naturalist*  
*Biodiversity Conservation*  
*Biological Invasions*  
*Biological Reviews*  
*Biology Letters*  
*Bulletin of Math. Biology*  
*Conservation Letters*  
*Current Biology*  
*Diversity and Distributions*

*Ecology*  
*Ecology Letters*  
*Ecography*  
*Functional Ecology*  
*Global Ecol. & Biogeogr.*  
*Journal of Biogeography*  
*Journal of Ecology*  
*J. of Environmental Manag.*  
*J. of Theoretical Biology*  
*Landscape Ecology*  
*Myrmecological News*

*Nat. Science Found. (USA)*  
*Nature Communications*  
*Oikos*  
*PLoS Biology*  
*PLoS ONE*  
*PLoS Comp. Biology*  
*PNAS*  
*Proc. Roy. Soc. B.*  
*Science Advances*  
*Swiss Nat. Science Found.*

### **Symposia and Workshops Organized**

- 2023 (upcoming): OIST Workshop on the Evolutionary Analysis of Morphology
- 2020: OIST Mini-symposium: Ant Biodiversity Data Synthesis- Present and Future
- 2019: SWARM2019: The 3<sup>rd</sup> International Symposium on Swarm Behavior and Bio-Inspired Robotics, co-lead organizer and local host (200 participants)

- 2018 OIST mini-symposium “Advances in imaging, quantifying, and understanding the evolution of ant phenotypes”
- 2017 OKEON Chura-Mori Project Symposium
- 2017 Ecological Society of Japan Meeting Symposium, “Big Data in Ecology and Evolution”
- 2015 East Asia Joint Symposium (EAJS) (co-organizer)
- 2014 Ecological Society of Japan, “Island Biogeography: Integrating Ecological and Evolutionary Perspectives”
- 2014 IUSSI “Island Biology of Social Insects.”

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## OTHER EMPLOYMENT

2002-2003 Research Technician, University of Arizona, Department of Ecology & Evolutionary Biology, lab of Brian J. Enquist.

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## OUTREACH

- 2019-present: co-Principal of OIST Children’s School of Science, a summer science school for local children in Okinawa
  - 2015-present: Founded and led OKEON (Okinawa Environmental Observation Network) Chura-Mori Project, a collaborative project between citizens and researchers in Okinawa (<http://okeon.unit.oist.jp>), which has involved hundreds of outreach events, media events, and museum exhibitions on biodiversity
  - 2012-present Numerous other outreach events by lab in Okinawa, Japan. List available here: <http://arilab.unit.oist.jp/category/outreach/>
  - 2015 Outreach lecture “Science Talks in English” series, Kyuyo High School, Okinawa, Japan
  - 2014 “The ways of the Ant” Outreach lecture, OIST Open Day
  - 2013 Biodiversity Exhibit Contributor, Okinawa Prefectural Museum, Japan
  - 2012 Biodiversity outreach event and lecture: Kunigami village, Okinawa
  - 2011 Contributor to “Umwelt: Subjective Worlds” art exhibition, The Gallery Project, Ann Arbor, MI.
  - 2010 Organized EEB/Biokids field trip for 80 Detroit elementary school students.
  - 2009 Outreach lecture, “The ways of the Ant”, *Science Under the Stars*.
  - 2009 Founded and organized *Science Under the Stars*, outreach lecture series, Austin, Texas. (still active: <http://scienceunderthestars.org/>)
  - 2008 Outreach Lecture: “The Ants of the Pacific.” Pacific Conf. of Theologists, Suva, Fiji
  - 2006-2008 Outreach activities on ants for schools: Matthews Elementary School, Austin, University of South Pacific open day, Hauta School, Solomon Islands.
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## REFERENCES

### **Naomi Pierce**

Hessel Professor  
Museum of Comparative Zoology  
Department of Organismic and Evolutionary  
Biology  
Harvard University  
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Relationship: Colleague and collaborator.

### **Rosemary Gillespie**

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Relationship: PhD Supervisor and collaborator

### **Andrew V. Suarez**

Professor and Head, Department of Ecology,  
Evolution, and Behavior  
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Relationship: Colleague and collaborator

### **Jonathan Dorfan**

President Emeritus  
Okinawa Institute of Science and Technology  
Graduate University  
Former Director, Stanford Linear Accelerator  
Laboratory  
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jdorfan@yahoo.com  
Relationship: Former President of OIST.