Evan P. Economo, Ph.D.

Professor
Biodiversity and Biocomplexity Unit (http://arilab.unit.oist.jp/)
Okinawa Institute of Science and Technology Graduate University

2021-2022 Mary I. Bunting Fellow
Radcliffe Institute of Advanced Study
Harvard University

1919-1 Tancha
Onna-son
Okinawa, 904-0495
JAPAN

+1 (617) 386-6669 (US)
+81 (098) 982-3328 (JP)
evaneconomo@gmail.com
Citizenship: USA, Canada

EDUCATION

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

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

Other Training: 2004 Santa Fe Institute Complex Systems Summer School
2005 California Academy of Sciences Ant Course

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 Institute 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

PUBLICATIONS

Book

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

Journal Articles

100. Takashina, N., Jenkins, C., Planck, M., Economo, E.P. (*In Press*) Species-range size distributions: integrating the effects of speciation, transformation, and extinction. *Ecology and Evolution.*

99. Boudinot, B., Richter, A., Katzke, J., Keller, R., **Economo, E.P.**, Beutel, R., Yamamoto, S. (*In Press*) Evidence for the evolution of eusociality in stem ants and a systematic revision of †*Gerontoformica* (Hymenoptera, Formicidae). *Zoological Journal of the Linnean Society*.

98. 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*.

97. Beutel, R., Friedrich, F., **Economo, E.P.** (2021) Patterns of morphological simplification and innovation in the megadiverse Holometabola (Insecta). *Cladistics*.

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*.

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*.

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 [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

56. Moser, D., Lenzer, B., Weigelt, P., Dawson, W., Kreft, H., Pergl, J., Pysek, P., van Kleunen, M., Winter, M., Capinha, C., Cassey, P., Dullinger, S., **Economo, E.P.**, Garcia-Diaz, P., Guénard, B., Maurel, N., Seebens, H., Stein, A., Essl, F. (2018) Remoteness promotes biological invasions on islands worldwide. *Proceedings of the National Academy of Sciences* 115: 9270-9275.

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.

48. Liu, C., Dudley, K., Xu, Z., **Economo, E.P.** (2018) Mountain metacommunities: climate and spatial connectivity shape ant diversity in a complex landscape. *Ecography* 41: 101-112.

47. Ross, S., Friedman, N.R., Dudley, K., Yoshimura, M., **Economo, E.P.** (2018) Listening to ecosystems: data-rich acoustic monitoring through landscape-scale sensor networks. *Ecological Research* 33: 135-147.

46. Agavekar, G., Hita Garcia, F., **Economo, E.P.** (2017) Taxonomic overview of the hyperdiverse ant genus *Tetramorium* Mayr (Hymenoptera, Formicidae) in India with descriptions and X-ray microtomography of two new species from the Andaman Islands *PeerJ* 5: e3800

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.

44. Sarnat, E.M., Friedman, N.R., Fischer, G., Lecroq, B., **Economo, E.P.** (2017) Rise of the spiny ants: diversification, ecology, and function of extreme traits in the hyperdiverse genus *Pheidole. Biological Journal of the Linnean Society* 122: 514-538.

43. Friedman, N., Harmáčková, L., **Economo, E.P**, Remeš, V. (2017) Smaller beaks for colder winters: thermoregulation drives beak size evolution in Australian songbirds. *Evolution* 71: 2120-2129.

42. Dawson, W., Moser, D., van Kleunen, M., Kreft, H., Pergl, J., Pysek, P., Weigelt, P., Winter, M., Lenzer, B., Blackburn, T., Dyer, E., Cassey, P., Scrivens, S., **Economo, E.P.**, Guénard, B., Capinha, C., Seebens, H., Nentwig, W., Berthou, E., Casal, C., Essl, F. (2017) Global hotspots and correlates of alien species richness across taxonomic groups. *Nature Ecology and Evolution* 1: 0186.

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.

40. Hita Garcia, F., Fischer, G., Liu, C., Audisio, T.L., Alpert, G.D., Fisher, B.L., **Economo, E.P**. (2017) X-ray microtomography for ant taxonomy: an exploration and case study of two new *Terataner* (Hymenoptera, Formicidae, Myrmicinae) species from Madagascar. *PLoS ONE* 12(3): e0172641.

39. Guénard, B., Weiser, M., Gomez, K., Narula, N., **Economo, E.P.** (2017) The Global Ant Biodiversity Informatics (GABI) database: a synthesis of ant species geographic distributions. *Myrmecological News* 24: 83-89.

38. **Economo, E.P.,** Janda, M., Guénard, B., Sarnat, E.M. (2017) Assembling a species-area curve through colonization, speciation, and human-mediated introduction. *Journal of Biogeography* 44: 1088-1097.

37. Lasky, J., Keitt, T.H., Weeks, B., **Economo, E.P.*** (2017) A hierarchical model of whole-assemblage island biogeography. *Ecography* 39: 982-990. *corresponding

36. Jaitrong, W., Guénard, B., **Economo, E.P.**, Buddhakala, N., Yamane, S. (2016) A checklist of known ant species of Laos (Hymenoptera: Formicidae). *Asian Myrmecology* 8: 1-32.

35. Fischer, G., Sarnat, E.M., **Economo, E.P.** (2016) Revision and microtomography of the *Pheidole knowlesi* group, an endemic ant radiation from Fiji (Hymenoptera, Formicidae, Myrmicinae). *PLoS ONE* 11(7): e0158544.

34. Sarnat, E.M., Fischer, G., **Economo, E.P.** (2016) Inordinate spinescence: taxonomic revision and microtomography of the *Pheidole cervicornis* group (Hymenoptera: Formicidae). *PLoS ONE* 11(7): e0156709.

33. Sukumaran, J., **Economo, E. P**., Knowles, L.L. (2016) Machine learning biogeographic processes from biotic pattern: a trait-driven dispersal and diversification model with model-choice by simulation-trained discriminant analysis of Principal Components Classification. *Systematic Biology* 65: 525-545.

32. Wepfer, P., Guénard, B., **Economo, E.P.** (2016) Influences of climate and historical land connectivity on ant beta diversity in East Asia. *Journal of Biogeography* 43: 2311-2321.

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30. **Economo, E.P.,** Hong, L., Page, S.E.* (2016) Social structure, endogenous diversity, and collective accuracy. *Journal of Economic Behavior and Organization* 125: 212-231. (*corresponding)

29. Janicki, J., Narula, N., Ziegler, M., Guénard, B. **Economo, E.P.*** (2016) Visualizing and interacting with large-volume biodiversity data using client-server web-mapping applications: The design and implementation of antmaps.org. *Ecological Informatics* 32: 185-193. *corresponding

28. Bharti, H., Guénard, B., Bharti, M., **Economo, E.P.** (2016) An updated checklist of the ants (Hymenoptera: Formicidae) of India with their specific distributions in Indian states. *ZooKeys* 551: 1-83.

27. Sarnat, E.M., Fischer, G., Guénard, B., **Economo, E.P.** (2015) Introduced *Pheidole* of the world: taxonomy, distribution, and biology. *ZooKeys* 543: 1-109.

26. Liu, C., Fischer, G., **Economo, E.P.** (2015). A rare ant on Samoa: first record of the cryptic subfamily Proceratiinae (Hymenoptera, Formicidae) and description of a new *Proceratium* Roger species. *Journal of Hymenoptera Research,* 46: 35-44.

25. Guénard, B., & **Economo, E.P**. (2015). Additions to the checklist of the ants (Hymenoptera: Formicidae) of Peru. *Zootaxa* 4040 (2): 225-235.

24. Fischer, G., Azorsa, F., Hita Garcia, F., Mikheyev, A.S., **Economo, E.P.** (2015). Two new phragmotic ant species from Africa: morphology and next-generation sequencing solve a caste association problem in the genus *Carebara* Westwood. *ZooKeys* 525: 77-105.

23. Guénard, B., Perrichiot, V., **Economo, E.P.** (2015). Integration of global fossil and modern biodiversity data reveals dynamism and stasis in ant macroecological patterns. *Journal of Biogeography*. 42: 2302-2312.

22. **Economo, E.P.,** Sarnat, E.M., Janda, M., Clouse, R., Klimov, P., Fischer, G., Blanchard, B.D., Ramirez, L.N., Andersen, A., Berman, M., Guénard, B., Lucky, A., Rabeling, C., Wilson, E.O., Knowles, L.L. (2015). Breaking out of biogeographic modules: range expansion and taxon cycles in Indo-Pacific *Pheidole*. *Journal of Biogeography* 42: 2289-2301.

21. Triantis, K.* **Economo, E.P.***, Guilhammon, F., Ricklefs, R. (2015). Diversity regulation at the macro-scales: the case of Oceanic archipelagoes. *Global Ecology & Biogeography* 24: 594-605. **equally contributing corresponding authors*

20. Liu, C., Hita Garcia, F., Peng, Y., **Economo, E.P.** (2015). *Aenictus yangi* sp. n. – a new species of the *A. ceylonicus* species group (Hymenoptera: Formicidae: Dorylinae) from Yunnan, China. *Journal of Hymenoptera Research*. 42: 33-45.

19. Liu, C., Guénard, B., Hita Garcia, F., Yamane, S., Blanchard, B., Yang, D.R., **Economo, E.P.** (2015). New records of ant species from Yunnan, China. *ZooKeys* 477: 17-78.

18. Hita Garcia, F., Sarnat, E.M., **Economo, E.P.** (2015). Revision of the ant genus *Proceratium* Roger (Hymenoptera, Proceratiinae) in Fiji. *ZooKeys* 475: 97-112.

17. **Economo, E.P.,** Klimov, P., Sarnat, E., Guénard, B., Weiser, M.D., Lecroq, B., Knowles, L.L. (2015). Global phylogenetic structure of the hyperdiverse ant genus *Pheidole* reveals the repeated evolution of macroecological patterns. *Proceedings of the Royal Society of London Series B*: *Biological Sciences* 282: 20141416.

16. Clouse, R. M., Janda, M., Blanchard, B., Sharma, P., Hoffmann, B.D., Andersen, A.N., Czekanski-Moir, J.E., Krushelnycky, P., Rabeling, C., Wilson, E.O., **Economo, E.P.**, Sarnat, E.M., General, D.M., Alpert, G.D., Wheeler, W.C. (2015) Molecular phylogeny of Indo-Pacific carpenter ants (Hymenoptera: Formicidae, *Camponotus*) reveals waves of dispersal and colonization from diverse source areas. *Cladistics*. 31(4): 424–437

15. Sarnat, E.M., Rabeling, C. **Economo, E.P.**, Wilson, E.O. (2014). First record of a species from the New World *Pheidole flavens*-complex (Hymenoptera: Formicidae) introduced to the southwestern Pacific. *BioInvasions Records.* 3: 301-307.

14. Tin, M.Y., **Economo, E.P.**, Mikheyev, A.S. (2014). Sequencing degraded DNA from non-destructively sampled museum specimens for RAD-tagging and low-coverage shotgun phylogenetics. *PLoS ONE* 9(5): e96793.

13. Guénard, B., Blanchard, B.D., Liu, C., Yang, D., **Economo, E.P.** (2013). Rediscovery of the rare ant genus *Bannapone* (Hymenoptera: Formicidae: Amblyoponinae) and description of the worker caste. *Zootaxa* 3734: 371-379.

12. Sarnat, E.M., **Economo, E.P.** (2013). *Pristomyrmex tsujii* sp. n. and *P. mandibularis* Mann (Hymenoptera: Formicidae). *ZooKeys* (340): 43-61.

10. Sarnat, E.M., Blanchard, B.D., Guénard, Fasi, J., **Economo, E.P.** (2013). Checklist of the ants (Hymenoptera: Formicidae) of the Solomon Islands with new records from Makira Island. *ZooKeys* 257: 47-88.

9. **Economo, E.P.**, & Sarnat, E.M. (2012). Revisiting the ants of Melanesia and the taxon cycle: historical and human mediated invasions of a tropical archipelago. *The American Naturalist* 180 : E1-E16. (*Presidential award from ASN for best paper of 2012 in Am. Nat.*)

8. **Economo, E.P.** (2011). Biodiversity conservation in metacommunity networks: linking pattern and persistence. *The American Naturalist* 177: E167-180. (*highlighted by Faculty of 1000*)

7. Leibold, M., **Economo, E.P.**, Peres-Neto, P. (2010). Metacommunity Phylogenetics: Separating the roles of environmental filters and historical biogeography. *Ecology Letters* 13: 1290-1299.

6. **Economo, E. P.**, & Keitt, T.H. (2010). Network isolation and local diversity in neutral metacommunities. *Oikos* 119: 1355-1363.

5. Cowperthwaite, M., **Economo, E.P.**, Harcombe W., Miller, E., Meyers, L.A. (2008). The ascent of the abundant: How mutational networks constrain evolution. *PLoS Computational Biology* 4: e1000110.

4. **Economo, E. P.**, & Keitt, T.H. (2008). Species diversity in neutral metacommunities: a network approach. *Ecology Letters* 11: 52-62. (*highlighted by Faculty of 1000*)

3. Enquist, B. J., Kerkhoff, A.J., Huxman, T.E., and **Economo, E.P.** (2007). Adaptive differences in plant physiology and ecosystem paradoxes: insights from metabolic scaling theory. *Global Change Biology* 13: 591-609.

2. **Economo, E.P.**, Andrew J. Kerkhoff, Brian J. Enquist. (2005) Allometric growth, life history invariants, and population energetics. *Ecology Letters* 8: 353-360.

1. Enquist, B.J., **Economo, E.P.**, Huxman, T.E., Allen, A.P., Ignace, D.D., Gillooly, J. (2003). Scaling metabolism from organisms to ecosystems. *Nature* 423: 639-642.

Website:

antmaps.org. **Economo, E.P.,** Guénard, B., Janicki, J., Ziegler, M., Narula, N. Published online July, 2015.

PRESENTATIONS

Invited Talks

2022 McGill University, Department of Biology (Planned)
2022 Texas A&M University, Department of Entomology (Planned)
2022 University of Texas at Austin, Section of Integrative Biology (Planned)
2021 City College of New York, Department of Biology (Planned)
2021 UMass Lowell, Department of Biology (Planned)
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

GRANTS AND FELLOWSHIPS

- 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 Japanese Society for the Prom. of Science, Grant-in-Aid of Research (Kakenhi, ~$40K)
- 2012-2017 Economo, E. (PI), L. Knowles (co-PI). National Science Foundation (DEB 1141989), Phylogenetic Systematics. $378,522. "Evolving hyperdiversity in phenotypic, ecological, and geographic networks: testing the taxon cycle and alternatives in Indo-Pacific *Pheidole*"
- 2009 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 best paper in *Ecological Research*)
- 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

- 2013- 2020 "Ecology & Evolution" (graduate course, held yearly) primary instructor. Okinawa Institute of Science & Technology Graduate University
- 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)

MENTORSHIP

OIST Postdocs and Staff Scientists
Clive Darwell
Georg Fischer
Benoit Guénard
Nicholas Friedman
Francisco Hita Garcia
Jamie Kass
Susan Kennedy
Beatrice Lecroq
Nao Takashina
Masashi Yoshimura
Larisa Kiselva
Nurit Eliash

OIST Research Technicians and Administrators
Nitish Narula
Fumika Azuma
Julia Janicki
Kenneth Dudley
Kosmas Deligkaris
John Deyrup
Chisa Oshiro
Adam Lazarus
Hitomi Shinzato

OIST PhD Students
(Thesis supervision)
Gaurav Agavekar
Julian Katzke
Cong Liu (completed 2018)
Yafei Mao (co-supervised, completed 2019)
Patricia Wepfer (co-supervised, completed 2019)
Yuka Suzuki
Evropi Toulkeridou
Yazmin Zurita-Gutierrez
Lazzat Aibekova
Shubham Gautam

University of Texas at Austin (2003-2009)
Supervised 6 undergraduate students on undergraduate research

OIST PhD Students
(Rotation project)
Jason Ball
Sandrine Burriel
Christopher Campbell
Yuna Hattori
Keita Ikegami
Matti Krueger
Yafei Mao
Menglin Wang
Han Yan
Lazzat Aibekova
Shubham Gautam
Gaurav Agavekar

OIST Research Interns
(undergrad or MS level, 3-6 mo. projects)
Gaurav Agavekar
Fumika Azuma
Guilherme Baiao
Benjamin Blanchard
Sandrine Burriel
Kotaro Fujiyoshi
Natali Greenhalgh
Osamu Horiguchi
Julia Janicki
Haruka Kasuga
Adam Khalife
Juliette Martin
Victoria McGruer
Brett Morgan
Sam Ross
Adrian Richter
Aina Urano
Patricia Wepfer

University of Michigan (2009-2012)
Supervised eleven undergraduate research projects (6 students) for independent study credit or work study (through UROP).

ACADEMIC SERVICE

OIST Faculty Committees

- Faculty Council (elected)
- Gender Equality, Diversity, and Inclusion Committee (founding member)
- Information Technology Service and Support Committee
- Graduate Admissions Committee
- Faculty Search Committee (x 4 times)
- Human Subjects Research Review (IRB)
- Curriculum and Examinations Committee
- Perspective Council
- Working Group on Tenure Review
- Strategic Planning Task Force
- Conference and Workshop Committee

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 ONE
PLoS Comp. Biology
PNAS
Proc. Roy. Soc. B.
Science Advances
Swiss Nat. Science Found.
UK Research and Innovation

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 3rd 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, "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."

OTHER EMPLOYMENT

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

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 "Umvelt: 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.

REFERENCES

Naomi Pierce
Hessel Professor
Museum of Comparative Zoology
Department of Organismic and Evolutionary Biology
Harvard University
(617) 495-2576
naomi.pierce@gmail.com
Relationship: Colleague and collaborator.

Rosemary Gillespie
Schlinger Professor
Department of Environmental Science, Policy, and Management
Director, Essig Museum of Entomology
University of California-Berkeley
(510) 642-3445
gillespie@berkeley.edu
Relationship: Colleague and collaborator.

Timothy H. Keitt
Professor
Department of Integrative Biology
University of Texas at Austin
(512) 471-5004
tkeitt@utexas.edu
Relationship: PhD Supervisor and collaborator

Andrew V. Suarez
Professor and Head, Department of Ecology, Evolution, and Behavior
Professor, Department of Entomology
University of Illinois
(217) 244-6631
suarez2@illinois.edu
Relationship: Colleague and collaborator

Jonathan Dorfan
President Emeritus
Okinawa Institute of Science and Technology Graduate University
Former Director, Stanford Linear Accelerator Laboratory
(650) 575-9063
jdorfan@yahoo.com
Relationship: Former President of OIST familiar with my university service and admin experience.