

## Evan P. Economo

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

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

+81 098-982-3328  
 economo@oist.jp  
 Citizenship: USA, Canada

### EDUCATION

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

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

### APPOINTMENTS

#### Okinawa Institute of Science and Technology Graduate University

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

#### 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.M., & **Economo, E.P.** (2012). *The Ants of Fiji*. University of California Press. (400 pages)

## Journal Articles

### Published | In Press

95. Richter, A., Keller, R. A., Hita Garcia, F., Billen, J., Katzke, J., Boudinot, B. E., **Economo, E.P.\***, Beutel, R.G.\* (*In Press*) Head anatomy of *Protanilla lini* (Leptanillinae, Formicidae, Hymenoptera) and a hypothesis of their mandibular movement. *Myrmecological News*. \*joint supervision
94. Casadei-Ferreira, A., Friedman, N.R., **Economo, E.P.**, Pie, M.R., Feitosa, R.M., (*In Press*) 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*.
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*.
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](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-assembly 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.
31. Liu, C., Guénard, B., Blanchard, B., Peng, Y., **Economo, E.P.** (2016) Reorganization of taxonomic, functional, and phylogenetic ant biodiversity patterns after conversion to rubber plantation. *Ecological Monographs* 86: 215-227.
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

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

### **Contributed Talks**

2019 Society for Island Biology Meeting  
 2019 International Biogeography Society Meeting  
 2017 Ecological Society of Japan Annual Meeting  
 2016 Ecological Society of Japan Annual Meeting  
 2015 East Asia Joint Symposium  
 2015 Ecological Society of Japan Annual Meeting  
 2014 International Union for the Study of Social Insects International Congress  
 2014 Ecological Society of Japan Annual Meeting  
 2013 Society for the Study of Evolution Annual Meeting  
 2012 International Congress of Entomology  
 2011 Ecological Society of America Annual Meeting  
 2011 International Biogeography Society Meeting  
 2010 Ecological Society of America Annual Meeting  
 2009 Encyclopedia of Life Biodiversity Synthesis Meeting, Fiji  
 2007 Ecological Society of America Annual Meeting  
 2003 Ecological Society of America Annual Meeting  
 2002 Ecological Society of America Annual Meeting

---

### **GRANTS AND FELLOWSHIPS**

- 2019-2022 Japan Ministry of Environment Grant (~\$1 million), “Developing Countermeasures for 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
  - 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
- 

## AWARDS AND HONORS

- 2019 Ecological Research Award (for best paper in *Ecological Research*)
  - 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
- 

## CLASSROOM TEACHING

- 2013- 2019 “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 Postdoctoral Fellows**

Clive Darwell  
 Georg Fischer  
 Benoit Guénard  
 Nicholas Friedman  
 Francisco Hita Garcia  
 Jamie Kass  
 Susan Kennedy  
 Beatrice Lecroq  
 Nao Takashina  
 Masashi Yoshimura

Han Yan  
 Lazzat Aibekova  
 Shubham Gautum  
 Gaurav Agavekar

**OIST Research Interns****(undergrad or MS level, 3-6 mo. projects)**

Gaurav Agavekar  
 Fumika Azuma  
 Guilherme Baiao  
 Benjamin Blanchard  
 Sandrine Burriel

**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

**OIST Research Interns (cont'd)**

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

**OIST PhD Students****(Rotation project)**

Jason Ball  
 Sandrine Burriel  
 Christopher Campbell  
 Yuna Hattori  
 Keita Ikegami  
 Matti Krueger  
 Yafei Mao  
 Menglin Wang

**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

## **OTHER EMPLOYMENT**

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

## **ACADEMIC SERVICE**

### **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 and Comparative Biology*

*International Biogeography Society*

*Japan Society of Mathematical Biology*

*International Union for the Study of Social Insects*

### **Subject/Associate Editor**

*Myrmecological News* (2017-present)

*Journal of Biogeography* (2019-present)

*Current Research in Insect Science* (2020-present)

### **OIST Faculty Committees**

- Faculty Council (elected)
- Gender Equality Committee
- Information Technology Service and Support Committee
- Admissions Committee
- Faculty Search Committee (x 4 times)
- Human Subjects Research (IRB)
- Curriculum and Examinations Committee
- Prospective Council
- Working Group on Tenure Review

### **Peer Reviewer**

*American Journal of Botany*

*Aquatic Ecology*

*The American Naturalist*

*Biodiversity Conservation*

*Biological Invasions*

*Biological Reviews*

*Biology Letters*

*Bulletin of Mathematical Biology*

*Conservation Letters*

*Current Biology*

*Diversity and Distributions*

*Ecology*

*Ecology Letters*  
*Ecography*  
*Functional Ecology*  
*Global Ecology & Biogeography*  
*Journal of Biogeography*  
*Journal of Ecology*  
*Journal of Environmental Management*  
*Journal of Theoretical Biology*  
*Landscape Ecology*

*Myrmecological News*  
*National Science Foundation (USA)*  
*Nature Communications*  
*Oikos*  
*PLoS ONE*  
*PLoS Computational Biology*  
*PNAS*  
*Proceedings of the Royal Society Series B*  
*Swiss National Science Foundation*

### **Symposia and Workshops Organized**

- 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
- 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.”

---

## OUTREACH

- 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 and media events
- 2012-2017 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 Conference 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.