

**Curriculum Vitae**  
**James Francis Anthony Traniello**

**Professor of Biology**

Department of Biology  
Boston University  
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**Research Associate**

Harvard University, Museum of Comparative Zoology

**Editor-in-Chief**

*Behavioral Ecology and Sociobiology*

**Director**

Undergraduate Concentration in Behavioral Biology, Boston University

***Education***

1976-80      Ph.D., Organismal and Evolutionary Biology, Harvard University  
Dissertation Mentors: Bert Hölldobler, Edward O. Wilson, Robert E.  
Silberglie (deceased)  
1974-76      M.S., Entomology, University of Massachusetts, Amherst  
1974          B.A., Biology *cum laude*, Boston University

***Research***

Behavior, neurobiology, ecology, and evolution of invertebrates; social complexity, metabolism, gene expression, genomics, and brain evolution; behavioral development; caste and division of labor; senescence and aging; disease and sociality; social immunity; population genetics; biodiversity; community ecology; socioecology; foraging behavior; search strategy; chemical communication and defense

***Courses Taught***

Behavioral Biology / Ecology, Evolution, and Behavior (Principles of Biology I) / Sociobiology / Seminar in Behavioral Biology/ Animal Behavior / Insect Biology / Behavioral Ecology / Experimental Insect Sociobiology

***Recognition of Research, Mentoring, Advising, and Teaching***

Elected Fellow, American Association for the Advancement of Science, 2018

Elected Fellow, Animal Behavior Society, 2017

Outstanding Mentor Award, Undergraduate Research Opportunities Program, Boston University, 2018

Templeton Prize for Excellence in Student Advising, 2012. College of Arts and Sciences

Nominee, Undergraduate Academic Advising Award, Office of the Provost, 2018 (unable to pursue nomination due to sabbatical)

Outstanding Teaching Award, College Honors Program, 1996. College of Arts and Sciences

Departmental nominee, College of Arts and Sciences Teaching Excellence Award, 2001, 2003, 2011, 2012, 2016

Nominee and twice finalist, Metcalf Award for Teaching Excellence

### ***Academic Positions***

1981-present: Professor of Biology, Boston University (promotion to Associate Professor with tenure, 1987; promotion to Full Professor, 1994)

1981-present: Research Associate in Entomology, Museum of Comparative Zoology, Harvard University

1980-81 Lecturer on Biology, Harvard University. Courses taught: Biology 22, Ethology; Biology 241, The Social Insects (with E.O. Wilson)

1983-2002 Instructor, Harvard University Extension. Course taught: Animal Behavior

1987-2003 Director of Undergraduate Studies, Department of Biology, Boston University

2009-present Program Developer and Director, Concentration in Biology with Specialization in Behavioral Biology, Department of Biology, Boston University

1984-1986 Instructor, Boston University Metropolitan College. Courses taught: Principles of Biology I; Sociobiology

### ***Editorial Responsibilities***

Editor-in-Chief, *Behavioral Ecology and Sociobiology* (2011- present)

Associate Editor, *Behavioral Ecology and Sociobiology* (2006-2011)

Member, Advisory/Editorial Board, *Journal of Insect Behavior* (1998- present)

Member, Advisory/Editorial Board, *Ethology, Ecology and Evolution* (1996-present)

Member, Advisory/Editorial Board, *Journal of Insect Science* (2006-2011)

Member, Advisory/Editorial Board, *Psyche* (1985- 2011)

### ***Awards and Grants (past 20 years)***

### **Pending applications**

2020- 2023. Collaborative Research: Comparative neurobiological and genomic analysis of brain evolution in complex insect societies. (with CoPIs S. Mullen and C. Rabeling). \$681,118

### **Awarded**

2020-2023. National Science Foundation Collaborative Research: Brain Size, Metabolism, and Sociality in Ants. (with coPIs M. Muscedere, J. Harrison, and J. Waters) \$1,459,601

2020-2021. Genomic Science Institute, Boston University. Genomic analysis of brain evolution and complex social behavior: leveraging the power of single-cell RNA sequencing to understand functional neuroplasticity. (with CoPI S. Mullen). \$11,000

2014-2019. National Science Foundation. IOS-1354291 Collaborative Research: Collective intelligence and social brain evolution in ants. (with CoPIs W. Gronenberg and C. Moreau). \$1,440,000

2019-2022. Fondo Nacional de Desarrollo Científico, Tecnológico y de Innovación Tecnológica (FONDECYT). Evolutionary neurobiology of predatory ants: Diet, social complexity and brain evolution. (with Frank Azorsa PI). \$27,722

2019-2020. Verde Foundation. Evolutionary Biology Summer Workshop. \$15,000 (J. Finnerty, S. Mullen, F. Wasserman, J. Traniello, instructors)

2015-2018. Marie Skłodowska-Curie Cofund. Project 660976 Evolution of the social brain: how social complexity affects individual cognition in ants. (with co-sponsor Martin Giurfa, University of Toulouse). €246,668

2012-2015. National Institutes of Health/National Institute of Aging 50201113. Senescence, Neurodegeneration and Sensory/Motor Decline in a Social Invertebrate. \$89,099

2007-2013. National Science Foundation. IOB-0725013, 0724591. Behavioral Neuroscience Program. Social organization, behavioral development and functional neuroplasticity in the ant genus *Pheidole*. (with Wulfila Gronenberg, coPI) \$480,000. (plus annual Research Experiences for Undergraduates supplements, \$6000/award).

2012. National Science Foundation EAPSI OISE-1209967. Neural basis of individual behavior and collective action in a superorganism, the weaver ant. (Summer Institute Grant for doctoral student J. Frances Kamhi) \$8,300.00

2007-2010. Whitmire Microgen Corporation. Unrestricted grant in aid of research. \$30,000

2003-2004. Boston University SPRnG Grant. Neural correlates of aging, size, individual development and social plasticity in the ant *Pheidole dentata*. (with Christine Li and Kristen Harris, CoPIs). \$20,000

2001-2007. FMC Corporation. Unrestricted grant in aid of research. \$30,000

2001-2006. National Science Foundation. Animal Behavior Program. Social behavior, immunity and disease resistance in termites. (with R. Rosengaus, CoPI). \$290,744

### ***NSF Panelist***

2003, 2006, 2009, 2016

### ***Professional Society Memberships***

American Association for the Advancement of Science  
Animal Behavior Society  
International Society for Neuroethology  
International Union for the Study of Social Insects

### ***Invited Symposia and Seminars***

Symposium on Interindividual Differences in Social Insect Behavior, Entomological Society of America National Meeting, Hollywood, Florida, 1985  
Fondation Les Treilles Workshop, 1986: "From Individual Characteristics to Collective Organization: The Example of Social Insects." Salernes, France  
Fondation Les Treilles Workshop, 1996: Self-Organization in Insect Societies  
Symposium on Foraging Behavior, 10th International Congress of the IUSI, Munich, Germany, 1986  
Symposium on the Ecology of Learning, Animal Behavior Society Regional Meetings, Burlington, Vermont, 1986  
Keynote Speaker, Massachusetts Association of Science Teachers, Boston, MA, 1986  
Simmons College, 1987  
Student Symposium on Animal Behavior, Museum of Science, Boston, MA, 1987  
Amos Fortune Forum, Jaffrey, NH, 1987 (lectures in honor of the first freed slave in America)  
Michener Lecturer in Social Biology, University of Kansas, 1988  
Kansas State University, 1988  
Symposium on Invertebrate Behavior, Eastern Psychological Association, Boston, MA, 1989  
University of Massachusetts, Amherst, 1989  
Invited Symposium Speaker, Foraging Strategy in Social Insects, Termite Evolution, Caste Evolution, 11th International Congress of the IUSI, Bangalore, India, 1990  
Darwin Festival, Salem State College, Salem, MA, 1990  
University of New Hampshire, 1991  
Schnierla Symposium on Insect Behavior, Lawrence, Kansas, 1993

National Conference on Urban Entomology, 1994  
International Congress on Social Insect Biology (IUSI), Paris, 1994  
University of Cincinnati, 1997  
Cornell University, 1998  
International Congress on Social Insect Biology (IUSI), Adelaide, 1998  
International Conference on Social Learning, Naples, 1998  
University of Connecticut, 2000  
University of Massachusetts, Amherst, 2001  
Tufts University, 2002  
DARPA/DSO Endogenous Defense Workshop, Fairfax, Virginia, 2004  
International Congress of Entomology, Brisbane, Australia, 2004  
University of Arizona, 2005  
Cambridge Entomological Club, 2005  
University of Vermont, 2006  
International Congress of the IUSI, invited symposium speaker, 2006  
University of Utah, 2007  
University of Massachusetts, 2009  
University of Arizona, 2009  
Colorado State University, 2009  
Invited Instructor, the Ant Course, Portal, Arizona, 2009  
Invited Symposium Speaker, Celebration of the Social Insects, Entomological Society of  
America National Meeting, Indianapolis, Indiana, 2010  
Distinguished Speaker, Louisiana State University, 2010  
University of Illinois at Urbana-Champaign, 2010  
McGill University, 2012  
Invited Symposium Speaker, Social Networks, Entomological Society of America  
National Meeting, Knoxville, Tennessee, 2012  
University of Bonn, 2012  
Wesleyan University, 2013  
Arizona State University, 2013  
University of New Hampshire, 2013  
Symposium Coorganizer, Integrative Analysis of Division of Labor, International  
Congress of the IUSI, Cairns, Australia, 2014  
Invited speaker, International Neuroscience Doctoral Programme workshop,  
Champalimaud Neuroscience Programme, Lisbon, Portugal, 2014  
Tufts University, 2016  
Arizona State University Workshop on Brain Miniaturization, 2020  
Gutenberg Workshop on Aging in Social Insects, 2020

### ***Publications***

Traniello, J.F.A. 1977. Recruitment behavior, orientation, and the organization of foraging in the carpenter ant *Camponotus pennsylvanicus* DeGeer. Behav. Ecol. Sociobiol. 2: 61-79.

- Traniello, J.F.A. 1978. Caste in a primitive ant: absence of age polyethism in *Amblyopone*. *Science* 202: 770-772.
- Traniello, J.F.A. 1980a. Colony specificity in the trail pheromone of an ant. *Naturwissenschaften* 67: 360.
- Holldobler, B. and Traniello, J.F.A. 1980b. The pygidial gland and chemical recruitment communication in *Pachycondyla* (= *Termitopone*) *laevigata*. *J. Chem. Ecol.* 6: 883-893.
- Holldobler, B. and Traniello, J.F.A. 1980c. Tandem running pheromone in ponerine ants. *Naturwissenschaften* 67: 360.
- Traniello, J.F.A. 1981a. Enemy deterrence in the recruitment strategy of a termite: soldier-organized foraging in *Nasutitermes costalis*. *Proc. Nat. Acad. Sci. USA* 78: 1976-1979.
- Traniello, J.F.A. and Jayasuriya, A.K. 1981b. The sternal gland and recruitment communication in the primitive ant *Aneuretus simoni*. *Experientia* 37: 46.
- Traniello, J.F.A. and Jayasuriya, A.K. 1981c. Chemical communication in the primitive ant *Aneuretus simoni*: the role of the pygidial and sternal glands. *J. Chem. Ecol.* 7: 1023-1033.
- Adams, E.A. and Traniello, J.F.A. 1981d. Chemical interference competition in *Monomorium minimum*. *Oecologia* 51: 265-270.
- Levings, S.C. and Traniello, J.F.A. 1982a. Territoriality, nest dispersion, and community structure in ants. *Psyche* 88: 265-319.
- Traniello, J.F.A. 1982b. Population structure and social organization in *Amblyopone pallipes*. *Psyche* 89: 65-80.
- Traniello, J.F.A. 1982c. Recruitment and orientation components in a termite trail pheromone. *Naturwissenschaften* 69: 343-344.
- Traniello, J.F.A. 1983a. Social organization and foraging success in *Lasius neoniger* (Hymenoptera: Formicidae): behavioral and ecological aspects of recruitment communication. *Oecologia* 59: 94-100.
- Calabi, P., Traniello, J.F.A. and Werner, M. 1983b. Age polyethism: its occurrence in the ant *Pheidole hortensis* and some general consideration. *Psyche* 90: 395-412.
- Traniello, J.F.A., Fujita, M.S. and Bowen, R.V. 1984a. Ant foraging behavior: ambient temperature influences prey selection. *Behav. Ecol. Sociobiol.* 15: 65-68.

- Traniello, J.F.A. and Holldobler, B. 1984b. Chemical communication during tandem running in *Pachycondyla obscuricornis* (Hymenoptera: Formicidae). *J. Chem. Ecol.* 10: 783-794.
- Traniello, J.F.A., Thorne, B.L. and Prestwich, G.D. 1984c. Chemical composition and efficacy of the cephalic gland secretion of *Armitermes chagresi*. *J. Chem. Ecol.* 10: 531-543.
- Traniello, J.F.A. and Buser, C. 1985a. Chemical regulation of foraging in the Neotropical termite *Nasutitermes costalis*. *J. Chem. Ecol.* 11: 319-332.
- Traniello, J.F.A., Rosengaus, R.B. and Levy, C.K. 1985b. Single and double isotope labeling of social insect colonies: gamma-emitting radionuclides as individually identifiable markers. *Entom. exp. appl.* 38: 87-92.
- Leibensperger, L., Traniello, J.F.A. and Fraser, J. 1985c. Olfactory cues utilized by female *Gromphadorhina portentosa* (Dictyoptera: Blaberidae) during mate choice. *Ann. Ent. Soc. Am.* 78: 629-634.
- Buser, C., Calabi, P. and Traniello, J.F.A. 1985d. Polymorphism and division of labor in the Neotropical ant *Camponotus sericeiventris* Guerin. *Ann. Ent. Soc. Am.* 78: 221-228.
- Hall, P. and Traniello, J.F.A. 1985e. Behavioral bioassays of termite trail pheromones. Recruitment and orientation effects of cembrene-A in *Nasutitermes costalis* (Isoptera: Termitidae) and discussion of factors affecting termite response in experimental contexts. *J. Chem. Ecol.* 11: 1503-1573.
- Traniello, J.F.A. and Beshers, S.N. 1985f. Species-specific alarm/recruitment responses in a Neotropical termite. *Naturwissenschaften* 72: 491-492.
- Jayasuriya, A.K. and Traniello, J.F.A. 1985g. The biology of the primitive ant *Aneuretus simoni* (Emery). I: Distribution, abundance, colony structure, and foraging ecology. *Insectes Sociaux* 32: 363-374.
- Traniello, J.F.A. and Jayasuriya, A.K. 1986h. The biology of the primitive ant *Aneuretus simoni* (Emery). II: The social ethogram and division of labor. *Insectes Sociaux* 32: 375-388.
- Rosengaus, R.B., Traniello, J.F.A. and Levy, C.K. 1986i. Social transfer, elimination, and biological half-lives of gamma-emitting radionuclides in the termite *Reticulitermes flavipes*. *Z. ang. entom.* 101: 287-294.
- Traniello, J.F.A. and Levings, S.C. 1986j. Intra- and intercolony patterns of nest dispersion in the ant *Lasius neoniger*: correlations with territoriality and foraging ecology. *Oecologia* 69: 413-419.

- Traniello, J.F.A. 1987a. Individual and social modification of behavior in response to environmental factors. In: From Individual to Collective Behavior in Social Insects. (J.M. Pasteels and J.-L. Deneubourg, eds.).
- Traniello, J.F.A. 1987b. The evolution of individual and social strategies of foraging in the ant *Formica schaufussi*. pp. 511- 12. In: Chemistry and Biology of Social Insects. (J. Eder and H. Rembold, eds.). J. Peperny Verlag.
- Traniello, J.F.A. 1987c. Foraging strategies of social insects. pp. 499-500 In: Chemistry and Biology of Social Insects. (J. Eder and H. Rembold, eds.). J. Peperny Verlag.
- Beshers, S.N. and Traniello, J.F.A. 1987d. Determinants of social structure in the ant *Novomessor albisetosus*. Ibid, p. 133
- Calabi, P. and Traniello, J.F.A. 1987e. Ecological correlates of physical and age caste ratios in the ant *Pheidole dentata*. In: Chemistry and Biology of Social Insects. (J. Eder and H. Rembold, eds.). J. Peperny Verlag.
- Scott, M.P. and Traniello, J.F.A. 1987f. Behavioral cues trigger rapid ovarian development in the burying beetle *Nicrophorus tomentosus*. J. Insect Physiol. 33: 693-696.
- Traniello, J.F.A. 1987g. Comparative foraging ecology of North Temperate ants: the role of worker size and cooperative foraging in prey selection. Insectes Sociaux 34: 118-130.
- Scott, M.P., Traniello, J.F.A. and Fetherston, I.A. 1987. Competition between ants and burying beetles (*Nicrophorus spp.*) for prey: differences between northern and southern temperate sites. Psyche 94: 325-332.
- Traniello, J.F.A. 1988a. Variation in foraging behavior among workers of the ant *Formica schaufussi*: ecological correlates of search behavior and the modification of search pattern. pp. 91-112 In: Interindividual Behavioral Variability in Social Insects (R.L. Jeanne, ed.). Westview Press, Boulder, CO.
- Kozol, A.J., Scott, M.P. and Traniello, J.F.A. 1988b. The American burying beetle *Nicrophorus americanus*: Studies on the natural history of a declining species. Psyche 95: 167-176.
- Traniello, J.F.A. 1989a. Foraging strategies of ants. Ann. Rev. Entomol. 34: 191-210.
- Calabi, P. and Traniello, J.F.A. 1989b. Social organization in the ant *Pheidole dentata*: physical and age caste ratios lack ecological correlates. Behav. Ecol. Sociobiol. 24: 69-78.

- Traniello, J.F.A. 1989c. Chemical trail systems, orientation, and territoriality in the ant *Lasius neoniger*. *J. Insect Behavior*. 2: 339-354.
- Calabi, P. and Traniello, J.F.A. 1989d. Behavioral flexibility in the age castes of the ant *Pheidole dentata*. *J. Insect Behavior*. 2: 663-677.
- Scott, M.P. and Traniello, J.F.A. 1989e. Insect guardians of the underworld. *Natural History* (June) pp. 32-37.
- Scott, M.P. and Traniello, J.F.A. 1990a. Behavioral and ecological correlates of male and female parental care and reproductive success in burying beetles (*Nicrophorus spp.*). *Animal Behaviour* 39:274-283.
- Rosengaus, R. and Traniello, J.F.A. 1990b. Studies on the evolution of monogamy and eusociality in termites. pp. 31-32 in *Social Insects and the Environment* (G.K. Veeresh, B. Mallick and C.A. Viraktamath, eds.). Oxford and IBH Publishing Co.
- Beshers, S.N. and Traniello, J.F.A. 1990c. Colony demography and fitness in *Trachymyrmex septentrionalis*. *Ibid.*, pp. 340-341.
- Traniello, J.F.A., Beshers, S.N., Fourcassie, V., Loh, H.S. and Hennemann, L. 1990d. Search behavior in the ant *Formica schaufussi*: social organization and ecology of individual patterns. *Ibid.*, pp. 543-544.
- Fetherston, I., Scott, M.P. and Traniello, J.F.A. 1990e. Parental care in burying beetles: male and female roles and the organization of brood care behaviors. *Ethology* 85:177-190.
- Traniello, J.F.A., Fourcassie, V. and Graham, T. 1991a. Search behavior and foraging ecology of the ant *Formica schaufussi*: colony-level and individual patterns of organization. *Ethology, Ecology, and Evolution* 3:35-47.
- Traniello, J.F.A. and Beshers, S.N. 1991b. Size-pairing and polymorphism in the ant *Pogonomyrmex badius*: a test of the ecological release hypothesis. *Insectes Sociaux* 38:121-128.
- Rosengaus, R.B. and Traniello, J.F.A. 1991c. Biparental care in incipient colonies of the dampwood termite *Zootermopsis angusticollis*. *J. Insect Behav.* 4:633-647.
- Traniello, J.F.A. and Beshers, S.N. 1991d. Maximization of foraging efficiency and resource defense by cooperative retrieval in the ant *Formica schaufussi*. *Behav. Ecol. Sociobiol.* 29: 283-289.
- Fourcassie, V., Coughlin, D., and Traniello, J.F.A. 1992a. Fractal analysis of search behavior in ants. *Naturwissenschaften* 79: 87-89.

- Traniello, J.F.A., Kozol, A.J., and Fournier, M.A. 1992b. Resource-related spatial patterns of search in the ant *Formica schaufussi*: a field study. *Psyche* 99: 87-93.
- Fourcassie, V., and Traniello, J.F.A. 1993a. Effects of experience on food-searching behavior in the ant *Formica schaufussi* (Hymenoptera: Formicidae) *J. Insect Behav.* 6: 287-299.
- Rosengaus, R.B., and Traniello, J.F.A. 1993b. Temporal polyethism in incipient colonies of the termite *Zootermopsis angusticollis*: a single multiage caste. *J. Insect Behav.* 6: 237-252.
- Rosengaus, R.B., and Traniello, J.F.A. 1993c. Disease risk as a cost of outbreeding in the termite *Zootermopsis angusticollis*. *Proc. Natl. Acad. Sci. USA* 90: 6641-6645.
- Featherston, I., Scott, M.P., and Traniello, J.F.A. 1994a. Behavioral compensation for mate loss in the burying beetle *Nicrophorus orbicollis*. *Anim. Behav.* 47: 777-785.
- Traniello, J.F.A., and Robson, S.K. 1994b. Asymmetries in recruitment behavior and recruitment response in the ant *Formica schaufussi*. p. 148 in *Les Insectes Sociaux* (A. Lenoir, G. Arnold, and M. Lepage, eds.). Universite Paris Nord.
- Robson, S.K., and Traniello, J.F.A. 1994c. Cooperative prey retrieval in the ant *Formica schaufussi*: group behavior based upon individual complexity rather than simplicity. *IBID*, p. 233.
- Rosengaus, R.B., and Traniello, J.F.A. 1994d. Pathogens and termite population biology. *IBID*, p. 189.
- Fourcassie, V., and Traniello, J.F.A. 1994e. Food-searching behavior in the ant *Formica schaufussi* (Hymenoptera: Formicidae): response of naive foragers to protein and carbohydrate food. *Anim. Behav.* 48: 69-79.
- Beshers, S.N., and Traniello, J.F.A. 1994f. The adaptiveness of demographic distributions of colonies of the fungus-growing ant *Trachymyrmex septentrionalis*. *Ecology* 75: 763-775.
- Kozol, A.J., Traniello, J.F.A., and Williams, S. M. 1994g. Genetic variation in the endangered American burying beetle. *Ann. Entomol. Soc. Am.* 87: 928-935.
- Traniello, J.F.A., and Robson, S. 1995a. Trail and territorial pheromones in the social insects. Chapter 7 (pp 241-285) in: *Chemical Ecology of Insects, Vol. II* (W.J. Bell and R. Carde. eds).
- Fourcassie, V.J.L, and Traniello, J.F.A. 1995b. Ant search behavior analysis with a video frame grabber. *Insectes Sociaux* 42: 249-254.

- Ferster, B., and Traniello, J.F.A. 1995c. Polymorphism and foraging behavior in *Pogonomyrmex badius* (Hymenoptera: Formicidae): worker size, foraging distance, and load size associations. *Environmental Entomology* 24: 673-678.
- Robson, S.K., Lesniak, M.G., Kothandapani, R., Traniello, J.F.A., Thorne, B.L., and Fourcassie, V. 1995d. Nonrandom search geometry in subterranean termites. *Naturwissenschaften* 82: 526-528.
- Beshers, S.N., and Traniello, J.F.A. 1996a. Polyethism and the adaptiveness of worker size variation in the attine ant *Trachymyrmex septentrionalis*. *J. Insect Behavior* 9:61-84.
- Thorne, B.L., Russek-Cohen, B., Forschler, B., Breisch, N., and Traniello, J.F.A. 1996b. Evaluation of mark-release-recapture methods for estimating forager population size of subterranean termite colonies. *Env. Entomol.* 25: 939 - 951.
- Traniello, J.F.A. 1997a. Ecology, Colony Demography, and Social Organization in Ants. In: *Comparative Psychology of Invertebrates: The Field and Laboratory Study of Insect Behavior* (Greenberg, G. and Tobach, E., eds.). Garland Publishing, N.Y.
- Traniello, J.F.A., and Rosengaus, R.B. 1997b. Ecology, evolution, and division of labour in social insects. *Animal Behaviour* 53: 209-213.
- Traniello, J.F.A. 1997c. Olfaction and Chemical Communication. Chapter 18, pp. 167-186 in Glaser, J., ed., *Tested Studies for Laboratory Teaching*. Cornell Univ. Press, Ithaca, NY.
- Thorne, B.L., Breisch, N.L., and Traniello, J.F.A. 1997d. Incipient colony development in the subterranean termite *Reticulitermes flavipes* (Kollar) (Isoptera:Rhinotermitidae). *Sociobiology* 30: 145-159.
- Crosland, M.W.J., and Traniello, J.F.A. 1997e. Behavioral flexibility in division of labor in the lower termite *Reticulitermes fukiensis*. *Naturwissenschaften* 84: 208-211.
- Rosengaus, R.B. and Traniello, J.F.A. 1997f. Pathobiology and disease transmission in dampwood termites [*Zootermopsis angusticollis* (Isoptera: Termopsidae)] infected with the fungus *Metarhizium anisopliae*. *Sociobiology* 30: 185-195.
- Crosland, M.W.J., Lok, C.M., Wong, T.C., Shakarad, M., and J.F.A. Traniello. 1997 g. Division of labour in a lower termite: most tasks performed by older workers. *Animal Behaviour* 54: 999-1012.
- Crosland, M.W.J., and J.F.A. Traniello. 1998a. Studies of division of labour in termites using monocaste colonies. *Ethology* 104: 57-67.

Brown, J.J. and Traniello, J.F.A. 1998b. Regulation of brood care in the dimorphic castes of the ant *Pheidole morrisi* (Hymenoptera:Formicidae): effects of caste ratio, colony size and colony needs. *J. Insect Behav.* 11: 209-219.

Robson, S.K. and Traniello, J.F.A. 1998c. Resource assessment, recruitment behavior and the organization of cooperative foraging in the ant *Formica schaufussi*. *J. Insect Behav.* 11:1-22.

Rosengaus, R.B., Maxmen, A., Coates, L., and Traniello, J.F.A. 1998d. Disease resistance: a benefit of sociality in the dampwood termite *Zootermopsis angusticollis*. *Behav. Ecol. Sociobiol.* 44: 125-134.

Rosengaus, R.B., Guldin, M. R., and Traniello, J.F.A. 1998e. Inhibitory effect of fecal pellets on fungal spore germination in the dampwood termite *Zootermopsis angusticollis*. *J. Chem. Ecol.* 24: 1697-1706.

Thorne, B.L., Traniello, J.F.A., Adams, E.A. and Bulmer, M. 1999a. Reproductive organization of colonies of subterranean termites, *Reticulitermes*. *Ethology, Ecology and Behavior* 11: 149-169.

Rosengaus, R.B., Traniello, J.F.A., Chen, T. Lefebvre, M. and Karp, R.D. 1999b. Immunity in a social insect. *Naturwissenschaften* 86: 588-591.

Rosengaus, R.B., Lefebvre, M., Jordan, C., Traniello, J.F.A. 1999c. Pathogen alarm behavior in termites: a new form of communication in social insects. *Naturwissenschaften* 86: 544-548.

Robson, S.K., and Traniello, J.F.A. 1999d. Key individuals and the organization of labor in ants. pp. 239-259 in *Information Processing in Social Insects* (Detrain, C., Deneubourg, J.-L., and Pasteels, J.M., eds.) Birkhauser

Traniello, J.F.A. and Leuthold, R. 2000a. The Behavioral Ecology of Foraging in Termites. Chapter 7, pp. 141-168, in *Termites: Evolution, Sociality, Symbioses, Ecology*. (Abe, T., Higashi, T., and Bignell, D., Eds.) Kluwer Publishers, Dordrecht.

Rosengaus R.B., Lefebvre M.L., Traniello J.F.A . 2000b. Inhibition of fungal spore germination by *Nasutitermes*: evidence for a possible antiseptic role of soldier defensive secretions. *J. Chem. Ecol.* 26: 21- 39.

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### ***Editorials***

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### ***Commentaries***

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### ***Invited Symposium Organizer***

The Ecology of Communication, at Northeast Regional Meeting of the Animal Behavior Society, October 1982 (with F. Wasserman).

Foraging Strategies of Social Insects, at the 10th International Congress of the International Union for the Study of Social Insects, Munich, August 1986.

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Foraging Biology of Social Insects, at the 13th International Congress of the International Union for the Study of Social Insects, Adelaide, Australia, 1998. (with D. Gordon and B. Forschler).

Integrative Analysis of Division of Labor, at the 16th International Congress of the International Union for the Study of Social Insects, Cairns, Australia, 2014. (with Simon Robson).

### ***Abstracts and Presentations at Professional Meetings***

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Muratore, I.B., Goolsby, B., Fandozzi, E., Arganda-Carreras, S., Mullen, S.P., Traniello, J.F.A. 2018. Division of labor, neuroanatomy, and brain gene expression in fungus-growing ants. *Biology and Genomics of Social Insects*, Cold Spring Harbor Labs, N.Y.

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Goolsby, B., Muratore, I.B., Muscedere, M.L., Traniello, J.F.A. 2018. Neurobiological consequences of worker isolation in a eusocial insect. Undergraduate Research Opportunities Program Symposium, Boston University, October, 2018.

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### ***Manuscript and Research Proposal Review***

*Acta Oecologica Apidologie American Naturalist Animal Behaviour Annals of the Entomological Society of America American Midland Naturalist Behaviour Behavioral Ecology Behavioral Ecology and Sociobiology Biology Letters Biotropica Breviora Canadian Journal of Zoology Current Biology eLife Entomologia Experimentalis et Applicata Ecology Ecological Entomology Ecotropicos eLife Environmental Entomology Ethology, Ecology and Evolution Evolution Frontiers in Neuroscience Hormones and Behavior Insectes Sociaux Journal of Chemical Ecology Journal of Experimental Biology Journal of Insect Behavior Journal of the Kansas Entomological Society Journal of the New York Entomological Society Journal of Economic Entomology Journal of Insect Conservation Journal of Theoretical Biology Myrmecological News Natural History Nature Naturwissenschaften Oecologia PLoS Biology PLoS One PLoS Pathogens Proceedings of the Royal Society, Proceedings of the National Academy of Science, USA Psyche Science Scientific Reports*

Australian Research Grants Program Chinese University of Hong Kong  
City College of New York Guggenheim Foundation Harvard University Press  
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Smithsonian Institution Swiss National Science Foundation University of  
California Press University of Lagos Press (Nigeria) Universite Libre de Bruxelles  
Villum Foundation (Denmark) Whitehall Foundation

***Other Professional Consultation***

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Public Broadcasting Corporation  
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