Tatsuya Inagaki, Ph.D.

Department of Entomology, Cornell University
129 Garden Avenue 2142 Comstock Hall
Ithaca, NY 14853
Mobile +1 (607) 262-6263
Email: ti224@cornell.edu (work) | inagaki5t@gmail.com (personal)
Website: https://tatsuyainagaki.wixsite.com/japanese

RESEARCH EXPERIENCE

2025 – Present Postdoctoral Fellow
Department of Entomology, Cornell University, Ithaca NY, US
Advised by Dr. Corrie Moreau

2023 – 2025 Research Fellow, Japan Society for the Promotion of Science
Department of Entomology, Cornell University, Ithaca NY, US
Advised by Dr. Corrie Moreau

2020 – 2023 Postdoctoral Research Fellow of the Japan Society for the Promotion of Science
School of Life Science and Technology, Tokyo Institute of Technology, Japan
Advised by Dr. Yuichi Hongoh

2018 – 2020 Doctoral Research Fellow of the Japan Society for the Promotion of Science
Graduate School of Agriculture, Kyoto University, Japan
Advised by Dr. Kenji Matsuura

EDUCATION

2017 – 2020 Doctor of Philosophy (Ph.D.)
Insect Ecology Lab, Graduate School of Agriculture, Kyoto University
Advised by Dr. Kenji Matsuura
Thesis title: Studies on novel functions and caste specificity of termite gut microbes

2015 – 2017 Master of Science (M.S.)
Insect Ecology Lab, Graduate School of Agriculture, Kyoto University
Advised by Dr. Kenji Matsuura

2011 – 2015 Bachelor of Science (B.S.)
Tropical Forest Resources and Environment Lab, Department of Forest and Biomaterials Science, Graduate School of Agriculture, Kyoto University
Advised by Dr. Kaoru Kitajima

GRANTS

2023 – 2025 Overseas Research Fellowship, Japan Society for Promotion of Science (JSPS). Maintenance allowance for: "The effect of symbiotic microbial community composition in termite gut on host fitness." ¥15,032,000 (≈ $101,000).

2020 – 2023 Postdoctoral Research Fellowship, Japan Society for Promotion of Science (JSPS). Project funding for: "Vertical Transmission Mechanism of Termite Gut Microbiota." ¥3,700,000 (≈ $25,000).

2022 Travel grant, Japanese Society of Applied Entomology and Zoology (JSAEZ). ¥250,000 (≈ $1,700).

2018 – 2020 Doctoral Research Fellowship, Japan Society for Promotion of Science (JSPS). Project funding for: "Effects of Microbiota on Environmental Microorganisms through Termite Hosts." ¥1,900,000 (≈ $13,000).

2018 The Kyoto University Foundation travel grants: ¥250,000 (≈ $1,700).

2018 Travel grant, Japanese section of the International Union for the Study of Social Insects (JIUSSI). ¥ 229,134 (≈ $1,550).

HONORS AND AWARDS

2024 Presentation Award for Young Scientists (The 27th International Congress of Entomology 2024)

2019 Best Presentation Award (Termite Course 2019)

2018 Best English Presentation Award (The 62nd Annual Meeting of the Society of Applied Entomology and Zoology)

2018 Best English Presentation Award (The 65th Annual Meeting of Ecological Society of Japan)

2017 Best Poster Award (The 64th Annual Meeting of Ecological Society of Japan)

PUBLICATIONS (*corresponding author; ¶equal contribution)

1. Nakashima M.¶, Mitaka Y.¶*, **Inagaki T.**, Matsuura K. (2024) An antifungal compound secreted by termite workers, phenylacetic acid, inhibits the growth of both termite egg-mimicking fungus and entomopathogenic fungi. *Insectes Sociaux* 71: 221-232. doi.org/10.1007/s00040-024-00966-3
2. **Inagaki T*.**, Igai K., Takahashi K., Hongoh Y. (2024) Transmission dynamics of symbiotic protist communities in the termite gut: association with host adult eclosion and dispersal. *Royal Society Open Science* 11: 231527. doi.org/10.1098/rsos.231527
3. Takahashi K.*, Kuwahara H., Horikawa Y., Izawa K., Kato D., **Inagaki T.**, Yuki M., Ohkuma M.,

Hongoh Y.* (2023) Emergence of putative energy parasites within Clostridia revealed by genome analysis of a novel endosymbiotic clade. *ISME Journal* 17: 1895–1906. doi.org/10.1038/s41396-023-01502-0

4. Takata M.*, Nagai S., **Inagaki T.**, Ohkubo Y., Tasaki E., Matsuura K. (2023) Heritable effects on caste determination and colony-level sex allocation in termites under field conditions. *iScience* 26: 3. doi.org/10.1016/j.isci.2023.106207
5. **Inagaki T.***, Nozaki T., Matsuura K. (2022) Rapid elimination of symbiotic intestinal protists during the neotenic differentiation in a subterranean termite, *Reticulitermes speratus*. *Insectes Sociaux* 69: 335-343. doi.org/10.1007/s00040-022-00877-1
6. Takata M.*, **Inagaki T.**, Ishibashi T., Tasaki E., Matsuura K. (2020) A non-invasive method for sexing first and second instar larvae of termites using external morphology. *Insectes Sociaux* 67: 487-493. doi.org/10.1007/s00040-020-00785-2
7. **Inagaki T.***, Yanagihara S., Fuchikawa T., Matsuura K. (2020) Gut microbial pulse provides nutrition for parental provisioning in incipient termite colonies. *Behavioral Ecology and Sociobiology* 74: 64. doi.org/10.1007/s00265-020-02843-y
8. Tasaki E., Komagata Y., **Inagaki T.**, Matsuura K.* (2020) Reproduction deep inside wood: a low O_2 and high CO_2 environment promotes egg production by termite queens. *Biology Letters* 16: 20200049. doi.org/10.1098/rsbl.2020.0049
9. **Inagaki T.***, Matsuura K. (2018) Extended mutualism between termites and gut microbes: Nutritional symbionts contribute to nest hygiene. *The Science of Nature* 105: 52. doi.org/10.1007/s00114-018-1580-y
10. **Inagaki T.***, Matsuura K. (2016) Colony-dependent sex differences in protozoan communities of the lower termite *Reticulitermes speratus* (Isoptera: Rhinotermitidae), *Ecological Research* 31: 749-755. doi.org/10.1007/s11284-016-1387-2

In preparation

- **Inagaki T.**, Shaffer J P., Zalamea C., Sarmiento C., Arnold A E., Izuno A., Kitajima K. Leaf disease, fungal endophytes, and juvenile performance of *Tachigali versicolor* vary with seedling density in a moist neotropical forest.

TEACHING EXPERIENCE

Lecture Series

2019 Introduction of microbiome analysis in R (4 lectures), Hongoh Lab, Tokyo Institute of Technology

Guest Lecture

2025 Chemical Ecology, Department of Ecology and Evolutionary Biology, Cornell University.

2024 Insect Biology, Department of Entomology, Cornell University.

2023 Social Animal Behavior: Arthropods to Apes, Department of Entomology, Cornell University.

Teaching Assistant

2016 – 2018 Lab course for undergraduate students at the Department of Agriculture, Kyoto University.
Task: Assisting the lab sections (behavioral assays of insects, chemical analysis, DNA extraction, PCR, gel electrophoresis); Designing experiments; Giving a lecture for statistical analysis of obtained results for following two courses; Course 1: Pheromone Communications in Termites, Course 2: Weevil-Wolbachia Symbiosis

Outreach

2023 – 2025 *Insectapalooza Festival*, Cornell University. Exhibition organization and educating public through interactive tabling about social insects.

2024 *American Indian Science and Engineering Society Regional Conference,* Cornell University. Organize and conduct lab tours for visiting Indigenous students interested in biological research.

2016 *Frontiers in Entomology*, The Kyoto University Museum. Commentary for special exhibition.

MENTORING EXPERIENCE

Graduate Students

Jan 2024 – Present Yareli Alvarez (Cornell University, Ecology and Evolutionary Biology)

Aug 2023 – Present Cheyenne Reuben-Thomas (Cornell University, Ecology and Evolutionary Biology)

Aug 2023 – Present Sylvana Ross (Cornell University, Entomology)

Aug 2023 – May 2025 Chloe Jelley (Cornell University, Entomology)

Aug 2023 – May 2025 Leland Graber (Cornell University, Entomology)

Apr 2021 – Mar 2023 Naoya Maruoka (Tokyo Institute of Technology, Life Science and Technology)

Apr 2020 – Mar 2023	Kazuki Takahashi (Tokyo Institute of Technology, Life Science and Technology)
Apr 2017 – Mar 2020	Natsumi Horiba (Kyoto University, Agriculture, M.S.)
Apr 2016 – Mar 2020	Wu Yao (Kyoto University, Agriculture)
Apr 2016 – Mar 2018	Yasuyuki Komagata (Kyoto University, Agriculture, M.S.)
Apr 2015 – Mar 2018	Saki Yanagihara (Kyoto University, Agriculture, M.S.)

Undergraduate Students

Nov 2025 – Present	Ren Kondo (Cornell University – Entomology major)
Sep 2025 – Present	Ivy Ng (Cornell University – Biological Sciences major)
Jan 2025 – Present	Sera Ko (Cornell University – Biological Sciences and Animal Science major)

High School Students

Jun 2024	Eduardo Guzman (summer intern)

FIELDWORK EXPERIENCE

2025	US: Portland, Oregon Collection of a termite species *Zootermopsis angusticollis*
2025	US: Ithaca, New York Collection of hackberry psyllids *Pachypsylla* spp.
2024, 2025	US: Monterey, California Collection of termite species *Zootermopsis angusticollis*, *Zootermopsis nevadensis*, *Reticulitermes hesperus*, *Incisitermes minor*
2023 – 2025	US: Ithaca, New York Collection of a termite species *Reticulitermes flavipes* and ant species *Aphaenogaster picea*, *Tapinoma sessile*, *Temnothorax longispinosus*, and *Camponotus pennsylvanicus*
2024	US: Tucson, Arizona Collection of termite species *Paraneotermes simplicicornis*, *Gnathamitermes perplexus*, and *Incisitermes minor*
2022	Japan: Kagoshima Collection of a termite species *Hodotermopsis sjostedti*
2019	US: College station, Texas Collection of a termite species *Reticulitermes flavipes*

2019 US: Fort Lauderdale, Florida

Collection of termite species *Reticulitermes virginicus*, *Reticulitermes flavipes*, and *Cryptotermes brevis*

2018 China: Wuhan

Collection of a termite species *Reticulitermes chinensis*

2016, 2021 Japan: Wakayama and Chiba

Collection of a termite species *Coptotermes formosanus*

2016 Japan: Okinawa

Collection of a termite species *Reticulitermes okinawanus*

2015 – 2020 Japan: Hyogo

Collection of a termite species *Zootermopsis nevadensis*

2015 – 2023 Japan: Kyoto, Nara, Shiga, Fukui, Tokyo, Chiba, Saitama, Kanagawa, Tochigi, and Nagano

Collection of a termite species *Reticulitermes speratus*

2014 Panama: Barro Colorado Island

Survey and collection of a Fabaceae tree *Tachigali versicolor* seedlings

SERVICE

Institutional Service

2024 – Present Diversity, Equity, Inclusion, Justice and Belonging (DEIJB) Working Group, Department of Ecology and Evolutionary Biology, Cornell University

Academic Community Service

2025 Student Competition Judge at Entomological Society of America Annual Meeting

Peer Review

Insectes Sociaux (4); Scientific reports; Journal of Pest Science; The Science of Nature (2); ISME Communications; Protist; Animal Microbiome (2); Ecology and Evolution (3), Neotropical Entomology

EDUCATIONAL DEVELOPMENT

Feb – Apr 2024 **Science Teaching Preparation and Practice**, Department of Ecology and Evolutionary Biology, Cornell University. Instructor: Justin St. Juliana. Course material workshop and discussion series, 14 sessions.

Oct – Nov 2024 **GET SET Course Design,** Center for Teaching Innovation, Cornell University. Develop learning outcomes and course syllabus from scratch, assessment of student learning, and peer review, 4 sessions.

PROFESSIONAL DEVELOPMENT

Jan 2024 **Introduction to Inclusive & Equity-Minded Mentoring and the FAIM Resource Center**. Led by DEIJB Working Group, Department of Ecology and Evolutionary Biology, Cornell University.

Jan 2024 **Inclusivity in Biology Annual Workshop Series**. Project Biodiversify, Cornell University. Inclusive teaching approaches for (dis)ability and LGBTQIA+ students, gendered terminology in plant science. (Offered a SafeZone Certification; https://thesafezoneproject.com/)

Jan – May 2024 **Diversity, Equity, and Inclusion in STEM: The Science Behind Bias Seminar**. Department of Entomology, Cornell University. Instructor: Corrie Moreau, Stella Hein. Reading paper related to the historical context of bias and exclusion in STEM and discussing actionable items to address those issues. 13 sessions.

PRESENTATIONS

Invited Talks

1. Ecology and Evolutionary Biology (EEB) Seminar Series. Cornell University, Ithaca, NY, US. Mar 2025.
2. Entomological Society of America Annual Meeting. Portland, Oregon, US. Nov 2025.
3. International Termite Course. Fort Lauderdale, Florida, US. Jun 2025.
4. The Social Insect Research Group (SIRG) Seminar. Arizona State University, Phoenix, AZ, US. Nov 2023.
5. The 60th Ezo Seminar. Hokkaido University, Virtual. Mar 2023.
6. The 44th Protist・Parasite・Evolution Seminar. Tokyo, Japan. Dec 2022.
7. Tohoku University Lab Seminar. Sendai, Japan. Nov 2021.
8. Harvard University Lab Seminar. Boston, Massachusetts, US. Jul 2019.
9. Texas University Lab Seminar. Austin, Texas, US. Jul 2019.
10. Texas A&M University Lab Seminar. College Station, Texas, US. Jul 2019.
11. Huazhong Agricultural University Lab Department Seminar. Wuhan, China. Sep 2018.

International/US Conferences, Symposia *(*Undergraduate Mentee)*

1. Ko S.*, **Inagaki T.**, Moreau C. Difference in nest bacteria between lifestyle-divergent termite species due to soil contact. 51st Annual Ecology & Evolutionary Biology Symposium, Cornell University. Dec 2025.
2. Ko S.*, **Inagaki T.**, Moreau C. Comparison of cuticle and nest bacteria between two termite species with different lifestyles. Cornell Institute of Host-Microbe Interactions and Disease (CIHMID) Symposium, Cornell University. Jul 2025.
3. **Inagaki T.** & Moreau C. Disrupting a long-standing symbiotic relationship: artificial manipulation of protist community composition in the termite gut and its effect on host traits. 27th International Congress of Entomology, Kyoto (Japan). Aug 2024. **Presentation Award**
4. **Inagaki T.** & Moreau C. Disrupting an intimate and long-standing symbiotic relationship: artificial manipulation of protist community composition in termite gut. 3rd Joint Congress on Evolutionary Biology, Montreal (Canada). Jul 2024. Oral Presentation
5. **Inagaki T.** Disrupting a long-standing symbiotic relationship: artificial manipulation of protist community composition in termite gut. 13th Annual Cornell Entomology Symposium, Ithaca NY (US). Jan 2024. Oral presentation
6. **Inagaki T.**, Igai K., Takahashi K., Hongoh Y. Dynamics of gut microbiota in termite associated with host's adult eclosion and dispersal. 10th International Symbiosis Society Congress, Lyon (France). Jul 2022. Poster presentation.
7. Takahashi K., Kuwahara H., Horikawa Y., **Inagaki T.**, Izawa K., Yuki M., Ohkuma M., Hongoh Y. Genome analysis of a novel endosymbiotic clade in Clostridia suggests the emergence of energy parasites within the predominant bacterial class in animal intestines. 10th International Symbiosis Society Congress, Lyon (France). Jul 2022. Poster presentation.
8. **Inagaki T.**, Igai K., Yanagihara S., Fuchikawa T., Hongoh Y., Matsuura K. Gut microbial pulse provides nutrition for parental provisioning to larvae during colony foundation in a termite. 26th International Congress of Entomology, Helsinki (Finland). Jul 2022. Poster presentation.
9. **Inagaki T.**, Igai K., Takahashi K., Hongoh Y. Dynamics of gut microbiota in termite during caste differentiation and vertical transmission. International Union for the Study of Social Insects (IUSSI), San Diego, California (US). Jul 2022.
10. Takata M., Nagai S., **Inagaki T.**, Ohkubo Y., Ishibashi T., Tasaki E., Matsuura K. Endogenous factors regulating offspring caste fate and colony-level sex allocation in termites. International Union for the Study of Social Insects (IUSSI), San Diego, California (US). Jul 2022.
11. **Inagaki T.** Royal-specific gut microbial community in termites. Termite Course 2019, Florida (US). Jun 2019. **Best Presentation Award**
12. **Inagaki T.**, Igai K., Hongoh Y., Matsuura K. Gut bacterial community of royal and non-royals in a subterranean termite, *Reticulitermes speratus*. Symposium of Behavioral Ecology —Social Insects and Beyond —. Kyoto (Japan) Feb 2019 Poster Presentation
13. **Inagaki T.**, Matsuura K. Extended symbiosis: gut microbes protect termite nests from

opportunistic microorganisms. International Union for the Study of Social Insects (IUSSI), Guaruja (Brazil). Aug 2018.

Japanese Conferences *(presented in English)*

1. **Inagaki T.**, Igai K., Hongoh Y., Matsuura K. Royal-specific gut microbiota in termites. The 68th Annual Meeting of the Ecological Society of Japan, Vitural. Mar 2021.
2. **Inagaki T.** & Matsuura K. Gut microbial pulse provides nutrition for parental provisioning in incipient termite colonies. The 35th Annual Meeting of the Society of Population Ecology, Kyoto (Japan). Sep 2019. Poster presentation.
3. **Inagaki T.** & Matsuura K. Termite gut symbionts contribute to nest hygiene. The 62nd Annual Meeting of the Japanese Society of Applied Entomology and Zoology, Kagoshima (Japan). Mar 2018. **English Presentation Award**
4. **Inagaki T.** & Matsuura K. Extended mutualism: termite gut symbionts contribute to nest hygiene. The 65th Annual Meeting of the Ecological Society of Japan, Hokkaido (Japan). Mar 2018. **English Presentation Award**

Japanese Conferences *(presented in Japanese)*

1. Takata M., Nagai S., **Inagaki T.**, Ohkubo Y., Tasaki E., Matsuura K. The 68th Annual Meeting of the Japanese Society of Applied Entomology and Zoology, Sendai. Mar 2024. Poster presentation.
2. **Inagaki T.**, Igai K., Takahashi K., Hongoh Y. The 67th Annual Meeting of the Japanese Society of Applied Entomology and Zoology, Sendai. Mar 2024.
3. Kobayashi K., Kuwahara K., Igai K., Takahashi K., **Inagaki T.**, Yoshioka T., Ohkuma M., Hongoh Y. The 35th annual meeting of Japanese society of Microbial Ecology, Hokkaido. Sep 2022. Poster presentation.
4. Takahashi K., Kuwahara K., Horikawa Y., **Inagaki T.**, Izawa K., Yuki H., Ohkuma M., Hongoh Y. The 16th Wakate Colosseum for Bacteriology, Hokkaido. Aug 2022., Poster presentation.
5. **Inagaki T.**, The 69th Annual Meeting of Ecological Society of Japan, Virtual. Mar 2022.
6. Takata M., Nagai S., **Inagaki T.**, Okubo Y., Tasaki E, Matsuura K., The 40th Annual Meeting of the Japan Ethological Society, Virtual. Sep 2021. Poster presentation.
7. **Inagaki T.**, Yanagihara S., Fuchikawa T., Matsuura K. The Annual Meeting of the Entomological Society of Japan, Virtual. Sep 2021.
8. **Inagaki T.**, Igai K., Hongoh Y. Matsuura K. Symbio 2021, Virtual. Oct 2020.
9. **Inagaki T.** Online Workshop for Social Insect Study, Virtual. Jul 2020.
10. Takata M., Nagai S., **Inagaki T.**, Tasaki E., Matsuura K. The 38th Annual Meeting of the Japan Ethological Society, Osaka. Nov 2019. Poster presentation.
11. **Inagaki T.** Unique-Kai, Kyoto. Aug 2019.

12. **Inagaki T.** & Matsuura K. Joint Conference of the Societies for Environmental Microbiology, Sendai. Aug 2017. Poster presentation.
13. **Inagaki T.** & Matsuura K. The 19th Annual Meeting of the Society of Evolutionary Studies, Kyoto. Aug 2017. Poster presentation.
14. **Inagaki T.**, Fuchikawa T., Matsuura K. The 64th Annual Meeting of the Ecological Society of Japan, Tokyo. Mar 2017. Poster presentation. **Best Presentation Award**
15. **Inagaki T.** & Matsuura K. General Meeting of Kinki Branch of Ecological Society of Japan, Osaka. Dec 2016.
16. **Inagaki T.** & Matsuura K. The 63rd Annual Meeting of the Ecological Society of Japan, Sendai. Mar 2016. Poster presentation.
17. **Inagaki T.**, Shaffer J., Arnold E., Zalamea C., Sarmiento C., Izuno A., Kitajima K. The 62nd Annual Meeting of the Ecological Society of Japan, Kagoshima. Mar 2015. Poster presentation.

SYMPOSIUM ORGANIZATION

2022 Exploring the intricacies of relationships between social insects and microorganisms, International Union for the Study of Social Insects (IUSSI), San Diego, California (US). Co-chair: Dr. Marielle Postava-Davignon, Dr. Hiroyuki Shimoji

2022 Dig deeper into animal–microbe symbioses, The 69th Annual Meeting of Ecological Society of Japan, Virtual. Co-chair: Dr. Hiroyuki Shimoji

LANGUAGE

Japanese (Fluent in reading, speaking and writing)

English (Fluent in reading, speaking and writing)

SOCIETY MEMBERSHIP

2025 – Present The Entomological Society of America

2024 – Present The Society for the Study of Evolution

2018 – Present The Japanese Section of The International Union for the Study of Social Insects

2018 – Present The Japanese Society of Applied Entomology & Zoology

2016 – Present The Ecological Society of Japan