

Yuki Haba, Ph.D.

Columbia University | Zuckerman Mind Brain Behavior Institute
 Email: yh2778@columbia.edu Personal website: yukihaba.github.io
 X: @YukiHaba_ Bluesky: @yukihaba

Education

| | | | |
|-------|--|---|------|
| Ph.D. | Princeton University Dissertation: Origin and evolutionary history of <i>Culex pipiens</i> complex mosquitoes Awarded Princeton Centennial Fellowship and Masason Foundation Fellowship | Advisor: Carolyn (Lindy) McBride | 2023 |
| M.A. | Columbia University Master's thesis: The genomics of behavioral adaptation to photoperiodism in an Asian burying beetle Awarded Alfred Russel Wallace Prize for the best MA thesis | Advisor: Dustin Rubenstein | 2017 |
| B.A. | The University of Tokyo | | 2015 |

Employment

| | | | |
|--------------------|--|--------------------------------------|---------|
| Leon Levy Scholar | Columbia University Zuckerman Inst. Leon Levy Scholar in Neuroscience, the New York Academy of Sciences and Leon Levy Foundation | Advisor: Ishmail Abdus-Saboor | 2024 – |
| Postdoc | Harvard University | Advisor: Hopi Hoekstra | 2023–24 |
| Research Assistant | Columbia University Evolutionary genomics of PRDM9-directed recombination across vertebrates | Advisor: Molly Przeworski | 2016–17 |
| Visiting Scholar | SOKENDAI Development of a new phylogenetic comparative method to understand social evolution | Advisor: Nobuyuki Kutsukake | 2015 |

Publications ([Google Scholar](#)) *corresponding author(s) +equal contribution

Highlighted publications

1. **Haba Y***, PipPop Consortium, Korlević P, McAlister E, Lawniczak MKN, Schumer M, Rose NH, McBride CS*. (2025) Ancient origin of an urban belowground mosquito. *Science* 10.1126/science.ady4515 ([bioRxiv](#))
 Selected media coverages: [Nature](#), [The Independent](#), [New Scientist](#), [Phys.org](#), [Pour la Science](#)
2. **Haba Y***, McBride CS*. (2022) Origin and status of *Culex pipiens* mosquito ecotypes. *Current Biology* 32:237–246.
3. **Haba Y***⁺, Herbert R⁺, Yang L⁺. (2019) An undescribed relationship between the knobthorn tree (*Senegalia nigrescens*), ants, and a lac scale insect in South Africa. *African Journal of Ecology* 2019:00:1–4.
4. **Haba Y***, Kutsukake N*. (2019) A multivariate phylogenetic comparative method incorporating a flexible function between discrete and continuous traits. *Evolutionary Ecology* 33:751. ([bioRxiv](#))

Other publications

5. Hesson J, **Haba Y**, McBride CS, ..., Makunin A. (2025) A chromosomal reference genome sequence for the northern house mosquito, *Culex pipiens*, Linnaeus, 1758. *Wellcome Open Research* 10:107
6. Yang Q, Wang B, Lemey P, ... **Haba Y**, ..., Grenfell B. (2024) Synchrony of Bird Migration with Global Dispersal of Avian Influenza Reveals Exposed Bird Orders. *Nature Communications* 15, 1126. ([bioRxiv](#))
7. Ryazansky SS, Chen C, ..., **Haba Y**, ..., Sharakhova MV. (2024) The chromosome-scale genome assembly for the West Nile vector *Culex quinquefasciatus* uncovers patterns of genome evolution in mosquitoes. *BMC Biology* 22, 16
8. Arich S, **Haba Y**, Assaid N, Fritz ML, McBride CS, Weill M, Taki H, Sarih M, Labbé P. (2022) No association between habitat, autogeny, and genetics in Moroccan *Culex pipiens* populations. *Parasites & Vectors* 15, 405.
9. **Haba Y** & Kutsukake N. (2018) Social behavior in vertebrates. In Encyclopedia of Zoology, 1st Ed. Tokyo, Japan. Maruzen. (Book chapter in Japanese)
10. Baker Z, Schumer M⁺, **Haba Y**, Holland C, Rosenthal GG, Przeworski M. (2017) Repeated losses of PRDM9-directed recombination despite the conservation of PRDM9 across vertebrates. *eLife* 6:e24133.

Forthcoming

11. **Haba Y***, PipPop Consortium, Schumer M, Rose NH, McBride CS*. Evolutionary genomics of *Culex pipiens* complex mosquitoes.

Awards, Fellowships, and Grants

Awards & Fellowships

| | | |
|---|---|---------------|
| NY Nideyo Noguchi Memorial Scholarship | The New York Hideyo Noguchi Memorial Society | (2025) |
| Leon Levy Scholarship in Neuroscience | The New York Academy of Sciences and Leon Levy Foundation | (2025 - 2028) |
| W.D. Hamilton Award, Finalist/Runner-up | The Society for the Study of Evolution <i>top 3 out of 15 finalists</i> | (2024) |
| PIIRS Dissertation Fellowship | Princeton Institute for International and Regional Studies | (2022 - 2023) |
| Best Talk Prize in Evolution | Princeton-Columbia-Yale-Penn-Rutgers Inter-School Symposium | (2021) |
| Walbridge Fund Graduate Award | High Meadows Environmental Institute | (2021) |
| Rosemary Grant Advanced Award | The Society for the Study of Evolution | (2020) |
| Lewis and Clark Field Scholar | American Philosophical Society | (2019) |
| Honjo International Fellowship | Honjo International Scholarship Foundation | (2018 - 2023) |
| Centennial Fellowship | Princeton University <i>for the top incoming PhD students</i> | (2017 - 2022) |
| Masayoshi Son Fellowship | Masayoshi Son Foundation | (2017 - 2022) |
| Alfred Russel Wallace Prize | Columbia University <i>for the best MA Thesis</i> | (2017) |
| James Mills Peirce Fellowship | Harvard University <i>for the top incoming PhD students. dclnd.</i> | (2017) |
| Dean's Fellowship | Columbia University <i>for the top incoming PhD students. dclnd.</i> | (2017) |
| Recruitment Fellowship | U Texas at Austin <i>for the top incoming PhD students. dclnd.</i> | (2017) |
| Global Leadership Award | Friends of University of Tokyo Inc. | (2015) |

Grants

| | | |
|--------------------------------------|--|---------------|
| PacVec Training Grant | Pacific Southwest Center of Excellence | (2018 - 2019) |
| Masayoshi Son Research Grant | Masayoshi Son Foundation | (2017 - 2022) |
| PhD Seed Grant | Princeton University | (2018) |
| Sigma Xi Grant-in-Aid of Research | Sigma Xi | (2017) |
| Earth Institute Student Travel Grant | The Earth Institute | (2016) |
| E3B MA Grant | Columbia University | (2016) |
| E3B Travel Grant | Columbia University | (2016) |

Presentations

Invited Seminars

| | | | |
|---|------------------------|---------------------------------------|--------|
| Dept. Biology | Bard College | Host: Dr. Cathy Collins | (2025) |
| NYU Global Urban Summit / Dept Biol. | New York University | Host: Dr. Katie Schneider Paolantonio | (2025) |
| Dept. Evolution, Ecology, and Behavior | University of Illinois | Host: Dr. Becky Fuller | (2025) |
| Director-General Invited Seminar Series | NIBB, Okazaki | Host: Dr. Naoto Ueno | (2024) |
| Dept. Biology | Columbia University | Host: Dr. Molly Przeworski | (2024) |
| Zuckerman Mind Brain Behavior Inst. | Columbia University | Host: Dr. Ishmail Abdus-Saboor | (2023) |
| Dept. Organismic and Evolutionary Biol. | Harvard University | Host: Dr. Hopi Hoekstra | (2022) |
| Dept. Biology | Rockefeller University | Host: Dr. Li Zhao | (2022) |
| Dept. Biology | Rockefeller University | Host: Dr. Daniel Kronauer | (2022) |
| Dept. Biology | Stanford University | Host: Dr. Molly Schumer | (2022) |
| Dept. Entomology/Ecology & Evolution | Rutgers University | Host: Dr. Dina Fonseca | (2022) |
| Dept. Ecol. Evol. Organismal. Biol. | Kennesaw State Uni. | Host: Dr. Sarah Guindre-Parker | (2021) |
| Dept. Biology | Stanford University | Host: Dr. Erin Mordecai | (2021) |
| Dept. Applied Entomological Science | University of Tokyo | Host: Dr. Takashi Matsuo | (2017) |
| Atmosphere & Ocean Research Institute | University of Tokyo | Host: Dr. Susumu Yoshizawa | (2017) |
| Dept. Evolutionary Studies & Biosystems | SOKENDAI | Host: Dr. Nobuyuki Kutsukake | (2017) |

Conferences (§ - talk, ¶ - poster)

| | | |
|--|------------------------|--------|
| Evolution 2024 § <u>*W. D. Hamilton Award finalist talk, runner-up</u> (SSE) | Virtual | (2024) |
| Biology of Genomes 2024 § | Cold Spring Harbor, NY | (2024) |
| Mosquito Kolymbari Meeting §¶ | Crete, Greece | (2022) |
| Population, Evolutionary, and Quantitative Genetics Conference (PEQG) ¶ | Pacific Grove, CA | (2022) |
| Evolution 2021 § | Virtual | (2021) |
| Biology of Genomes 2021 ¶ | Virtual | (2021) |
| Princeton-Columbia-Yale-Penn-Rutgers Inter-School Symposium § | Virtual | (2021) |
| <u>*Best Talk Prize</u> in the Evolution section | | |
| Sahel Mosquito Network Meeting § | Virtual | (2021) |
| PacVec Annual Meeting § | Davis, CA | (2019) |
| SMBE 2018 (Society of Molecular Biology and Evolution) § | Yokohama, Japan | (2018) |
| Princeton-Columbia-Yale-Penn-Rutgers Inter-School Symposium § | Princeton, NJ | (2018) |
| NJ Mosquito Control Association § | Atlantic City, NJ | (2018) |
| Evolution 2017 (Society for the Study of Evolution) § | Portland, OR | (2017) |
| 18 th Annual meeting of Society of Evolutionary Studies, Japan ¶ | Tokyo, Japan | (2016) |
| Earth Institute Research Showcase ¶ | New York, NY | (2016) |
| The Japanese Society of Applied Entomology and Zoology ¶ | Yamagata, Japan | (2015) |

Mentorship and Teaching

Mentoring philosophy

Mentoring is one of the most important contributions a scientist could do to the society, and one of the greatest joys I see in my job. I leverage the beauty and complexity of life as an inspiration to help mentees become active and educated citizens who can think critically and challenge status quo when facts contradict it. I welcome and encourage students from all backgrounds regardless of nationality, gender, race, religion, or creed, to develop their own interest and motivation.

Undergraduate Honors Thesis Mentees

Sean Crites (2021-22) Princeton EEB “Investigating genetic underpinnings of host odor preference in *Culex pipiens*”
 Alexandra Colón (2019-20) Princeton EEB “A genetic analysis of host preference variation in *Culex pipiens* mosquitoes.”
 Jaskiran Kaur (2019-20) Princeton EEB “Olfaction based host preferences in *Culex pipiens* mosquitoes”
 Alexandra Hohmann (2018-19) Princeton Neuro “Comparing the Antennal Lobes of Two Forms of *Culex pipiens* Mosquito”

Princeton EEB Scholars Program Mentees

Aryan Jakhar (2021-22) IISER, India. Currently pursuing PhD at Brown University
 Lucia X. A. Caballero (2020-21) National University of Trujillo, Peru. Currently pursuing PhD at Lund University
 Joevy Sum (2020-21) University of Nebraska-Lincoln. Currently pursuing Master’s at Mass. General Brigham

Undergraduate Summer Internship Mentees

Sheldon Garrick II (2025) Fordham University (HHMI SURP student).
 Vitor Dos Anjos (2020) Swarthmore College. Currently pursuing PhD at Princeton University

XPLANE Mentor Program Mentees

Fang Chen (2021-23) University of Tokyo/U Michigan. Currently pursuing PhD at Virginia Tech
 Naoto Yamaguchi (2020-21) University of Tokyo. Currently pursuing PhD at U Washington St. Louis
 Yu Yu Phua (2020-21) University of Tokyo. Currently pursuing PhD at Caltech

International Scholar Mentees

Dr. Enas Ghallab (2022-23) Ain Shams University, Egypt. Trained for large scale genomic and bioinformatic analyses
 Adugna Belew (2022) Addis Ababa University, Ethiopia. Trained for molecular genetics methods to ID vectors

Teaching Assistantship / Guest lecture

Evolution (2021-2024) led by Profs. Molly Schumer and Dmitri Petrov, Stanford University.

Guest lecture “*Mechanistic Basis of Behavioral Evolution*” at the intro-level Evolutionary Biology undergraduate course.

Genomics in the Wild (2020) led by Profs. Julien Ayroles and Sarah Kocher, Princeton University.

A 3-week advanced (for juniors and seniors) field class in Mpala Research Center, Kenya, on the use of genomic tools to answer ecological and evolutionary questions. Helped coordinate the program including local field sampling, molecular experiments, and gave a lecture on genomic data analysis.

Neurogenetics and Evolution of Behavior (2018) led by Prof. Carolyn McBride, Princeton University.

An advanced (for juniors and seniors), discussion-based class on the recent publications of the genetics and neurobiology of behavioral evolution. Designed and led weekly review/discussion sessions.

Environmental Biology I (2016) led by Prof. Dustin Rubenstein, Columbia University.

An introductory course of biology for students from any backgrounds with emphasis on ecology and evolutionary biology. Led weekly review/discussion sessions, wrote and graded exams.

The Behavioral Biology of the Living Primates (2016) led by Prof. Marina Cords, Columbia University.

An introductory course of behavioral ecology, with emphasis on the behavioral ecology of primates. Designed and graded exams.

Outreach and Capacity Building

Mobile Mosquito Lab @ Martin Luther King Junior Middle School, Trenton, NJ (2023)

As the McBride lab, we designed a fun and informative program aimed at teaching local middle-school students basic biology of mosquitoes. Working with both English- and Spanish-speaking students, I took charge of a microscope module in which we compare *Aedes* and *Culex* mosquitoes and discuss their morphological and ecological differences.

EEB Scholars Program, Princeton University: Mentor (2020-2022)

Mentored students from underrepresented backgrounds and/or with limited resources to apply for Ecology and Evolutionary Biology graduate programs in the United States and Europe. Mentoring includes: 1-on-1 meetings to help clarify their research interests, essay writing and revisions, mock-interviews throughout the application season (from early fall to late winter the next year).

EEB Open House: Graduate Student Panelist (2021)

Participated as a graduate student panelist in the session with aims to demystify the application processes and life as a PhD student for the potential applicants to the Ecology and Evolutionary Biology PhD program at Princeton University.

Evolution 2021 Bilingual Mentoring Program: Mentor (2021)

Mentored a non-native mentee to help with translation, grammar, and spelling on presentation, provided presentation advice for recording, and advised the mentee on how to make the most of their participation in social events.

XPLANE: Founder and Board Member (2019-present)

Co-founded a Non-Profit Organization XPLANE funded by US Department of State and US Embassy in Tokyo. We designed and implemented a community-based knowledge platform for Japanese students who would like to apply for overseas graduate schools with limited resources. Currently a community of 2,500+ users. Website [here](#) (Japanese).

Reference *main advisors**Postdoc**

| | | |
|---------------------------|---------------------|--|
| Dr. Ishmail Abdus-Saboor* | Columbia University | ia2458@columbia.edu |
|---------------------------|---------------------|--|

Ph.D.

| | | |
|------------------------------|----------------------|--|
| Dr. Carolyn (Lindy) McBride* | Princeton University | esm7@princeton.edu |
| Dr. Molly Schumer | Stanford University | schumer@stanford.edu |
| Dr. Sarah Kocher | Princeton University | skocher@princeton.edu |
| Dr. Noah Rose | UC San Diego | nhrise@ucsd.edu |

M.A.

| | | |
|------------------------|-------------------------|--|
| Dr. Dustin Rubenstein* | Columbia University | dr2497@columbia.edu |
| Dr. Molly Przeworski | Columbia University | mp3284@columbia.edu |
| Dr. Sheng-Feng Shen | Academia Sinica, Taiwan | shensf@sinica.edu.tw |

B.A.

| | | |
|-------------------------|-------------------------|--|
| Dr. Nobuyuki Kutsukake* | SOKENDAI | kutsu@soken.ac.jp |
| Dr. Tadashi Miyashita | The University of Tokyo | tmiya@es.a.u-tokyo.ac.jp |
| Dr. Masakazu Shimada | The University of Tokyo | mshimada0707@gmail.com |