

# Yuki Haba, Ph.D.

Columbia University | Zuckerman Mind Brain Behavior Institute  
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## Education

Ph.D.	<b>Princeton University</b> Dissertation: Origin and evolutionary history of <i>Culex pipiens</i> complex mosquitoes Awarded Princeton Centennial Fellowship and Masason Foundation Fellowship	<b>Advisor: Carolyn (Lindy) McBride</b>	2023
M.A.	<b>Columbia University</b> 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	<b>Advisor: Dustin Rubenstein</b>	2017
B.A.	<b>The University of Tokyo</b>		2015

## Employment

Leon Levy Scholar	<b>Columbia University   Zuckerman Inst.</b> Leon Levy Scholar in Neuroscience, the New York Academy of Sciences and Leon Levy Foundation	<b>Advisor: Ishmail Abdus-Saboor</b>	2024 –
Postdoc	<b>Harvard University</b>	<b>Advisor: Hopi Hoekstra</b>	2023–24
Research Assistant	<b>Columbia University</b> Evolutionary genomics of PRDM9-directed recombination across vertebrates	<b>Advisor: Molly Przeworski</b>	2016–17
Visiting Scholar	<b>SOKENDAI</b> Development of a new phylogenetic comparative method to understand social evolution	<b>Advisor: Nobuyuki Kutsukake</b>	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* 390(6771):eady4515 ([bioRxiv](#))  
 Selected media coverage: [Nature](#), [The Independent](#), [New Scientist](#), [Phys.org](#), [Pour la Science](#), [Princeton University](#), [ScienceNews](#)
2. **Haba Y\***, McBride CS\*. (2022) Origin and status of *Culex pipiens* mosquito ecotypes. *Current Biology* 32:237–246.
3. **Haba Y\***<sup>+</sup>, Herbert R<sup>+</sup>, Yang L<sup>+</sup>. (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, Sari H, 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<sup>+</sup>, **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 Hideyo 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 <sup>th</sup> 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 Mentees*

Jerry Lyu	(2025)	Columbia undergraduate internship
Sheldon Garrick II	(2025)	Columbia/Fordham University undergraduate internship / HHMI SURP student
Aryan Jakhar	(2021-22)	Princeton EEB Scholar. IISER, India. Currently pursuing PhD at Brown University
Sean Crites	(2021-22)	Princeton EEB Honors thesis mentee
Lucia X. A. Caballero	(2020-21)	Princeton EEB Scholar. National University of Trujillo, Peru
Joevy Sum	(2020-21)	Princeton EEB Scholar. University of Nebraska-Lincoln
Vitor Dos Anjos	(2020)	Princeton summer internship, Swarthmore College
Alexandra Colón	(2019-20)	Princeton EEB Honors thesis mentee
Jaskiran Kaur	(2019-20)	Princeton EEB Honors thesis mentee
Alexandra Hohmann	(2018-19)	Princeton Neuroscience Honors thesis mentee

### *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	<a href="mailto:ia2458@columbia.edu">ia2458@columbia.edu</a>
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**Ph.D.**

Dr. Carolyn (Lindy) McBride*	Princeton University	<a href="mailto:esm7@princeton.edu">esm7@princeton.edu</a>
Dr. Molly Schumer	Stanford University	<a href="mailto:schumer@stanford.edu">schumer@stanford.edu</a>
Dr. Sarah Kocher	Princeton University	<a href="mailto:skocher@princeton.edu">skocher@princeton.edu</a>
Dr. Noah Rose	UC San Diego	<a href="mailto:nhrose@ucsd.edu">nhrose@ucsd.edu</a>

**M.A.**

Dr. Dustin Rubenstein*	Columbia University	<a href="mailto:dr2497@columbia.edu">dr2497@columbia.edu</a>
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**B.A.**

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