

# Yuki Haba

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## Education

Ph.D.	<b>Princeton University</b> Dissertation: Origin and evolutionary history of <i>Culex pipiens</i> complex mosquitoes Awarded Centennial Fellowship (Princeton) and Masason Fellowship (Masason Foundation)	<b>Advisor: Carolyn (Lindy) McBride</b>	2023
M.A.	<b>Columbia University</b> MA 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>	<b>Advisor: Tadashi Miyashita, Masakazu Shimada</b>	2015

## Employment

Postdoc	<b>Columbia University / HHMI</b>	<b>Advisor: Ishmail Abdus-Saboor</b>	2024 -
Postdoc	<b>Harvard University</b>	<b>Advisor: Hopi Hoekstra</b>	2023 - 24
Research Asst.	<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 analyze the evolution of sociality in African rodents	<b>Advisor: Nobuyuki Kutsukake</b>	2015

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

*Published or in press*

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. *bioRxiv* <https://www.biorxiv.org/content/10.1101/2025.01.26.634793>  
Media coverage: [Nature](#), [The Independent](#), [New Scientist](#), [Phys.org](#)
2. 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 (Open Access)
3. 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 (Open Access; [bioRxiv](#))
4. 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 (Open Access)
5. 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. (Open Access)
6. **Haba Y\***, McBride CS\*. (2022) Origin and status of *Culex pipiens* mosquito ecotypes. *Current Biology* 32:237–246. (Open Access)
7. **Haba Y\***, Kutsukake N\*. (2019) A multivariate phylogenetic comparative method incorporating a flexible function between discrete and continuous traits. *Evolutionary Ecology* 33:751. ([bioRxiv](#))
8. **Haba Y\***, 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.
9. **Haba Y** & Kutsukake N. (2018) Social behavior in vertebrates. In Encyclopedia of Zoology, 1st Ed. Tokyo, Japan. Maruzen. (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. (Open Access)

*Forthcoming*

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

## Awards, Fellowships, and Grants

### Awards & Fellowships

W.D. Hamilton Award, Runner-up	Society for the Studies 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	Society for the Studies 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 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 students. dclnd.</i>	(2017)
Dean's Fellowship	Columbia University	<i>for the top incoming students. dclnd.</i>	(2017)
Recruitment Fellowship	U Texas at Austin	<i>for the top incoming 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. Evolution, Ecology, and Behavior	University of Illinois	Host: Dr. Becky Fuller	(2025 exp.)
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 (lab seminar)	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 (SSE)</u>	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 Studies 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)

## Teaching and Mentorship

### *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*

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*

1. **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.
2. **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.
3. **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.
4. **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.
5. **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.

## Diversity, Equity, and Inclusion

### **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

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**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:csn7@princeton.edu">csn7@princeton.edu</a>
Dr. Molly Schumer	Stanford University	<a href="mailto:schumer@stanford.edu">schumer@stanford.edu</a>
Dr. Salah 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>
Dr. Molly Przeworski	Columbia University	<a href="mailto:mp3284@columbia.edu">mp3284@columbia.edu</a>
Dr. Sheng-Feng Shen	Academia Sinica, Taiwan	<a href="mailto:shensf@sinica.edu.tw">shensf@sinica.edu.tw</a>

**B.A.**

Dr. Nobuyuki Kutsukake*	SOKENDAI	<a href="mailto:kutsu@soken.ac.jp">kutsu@soken.ac.jp</a>
Dr. Tadashi Miyashita	The University of Tokyo	<a href="mailto:tmiya@es.a.u-tokyo.ac.jp">tmiya@es.a.u-tokyo.ac.jp</a>
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