

Max Aaron Beck Haase, PhD

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Research focus: Genome evolution, kinetochore–centromere interfaces, synthetic chromatin, non-model yeasts.

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Research Positions

Dec 2023–present	Max Planck Institute for Molecular Physiology, Postdoctoral Researcher
Apr–Oct 2023	NYU Langone Health, Postdoctoral Researcher
2017–23	NYU Langone Health, Graduate Assistant
2015–17	University of Wisconsin - Madison, Undergraduate Worker

Education & Training

Dec 2023–present	Postdoctoral Fellow at Max Planck Institute of Molecular Physiology, Dortmund (DE) Advisor: Prof Andrea Musacchio
2017–23	PhD in Cell Biology, New York University, New York (US) Advisor: Prof Jef D. Boeke
2013–17	BSc in Evolutionary Biology, University of Wisconsin (Graduated with Distinction), Madison (US) Advisor: Prof Chris Todd Hittinger

Funding and Support

2025–27	MSCA Postdoctoral Fellowship 2024 (CENStruK: 101206234)
2018–20	NIH Genome Integrity Training Grant (T32GM115313)

Publications

equal authorship = *, corresponding author = @

Selected publications

1. **Haase MAB**@, Lazar-Stefanita L, Baudry L, Wudzinska A, Zhou X, Rokas A, Hittinger CT, Pfander B, Musacchio A, Boeke JD@. Ancient co-option of LTR retrotransposons as yeast centromeres. *Nature*, 2026 (*bioRxiv*)
2. Santarossa CC, Li Y, Yousef S, Hasdemir HS, Rodriguez CC, **Haase MAB**, Baek M, Coudray N, Pavék JG, Focke KN, Silverberg AL, Bautista C, Yeh J, Marty M, Baker D, Tajkhorshid E, Ekiert DC@, Bhabha G@. LetA defines a structurally distinct transporter family. *Nature*, 2026 (*bioRxiv*)
3. **Haase MAB**@, Steenwyk JL, Boeke JD. Gene loss and cis-regulatory novelty shaped core histone gene evolution in the apiculate yeast *Hanseniaspora uvarum*. *Genetics*, 2024 (*bioRxiv*)
4. Ólafsson G@, **Haase MAB**, Boeke JD@. Humanization reveals pervasive incompatibility of yeast and human kinetochore components G3: *Genes Genomes Genetics*, 2024
5. **Haase MAB**, Ólafsson G*, Flores RL*, Boakye-Ansah E, Zelter A, Dickinson MS, Lazar-Stefanita L, Truong DM, Asbury CL, Davis TN, Boeke JD@. DASH/Dam1 complex mutants stabilize ploidy in histone-humanized yeast by weakening kinetochore-microtubule attachments. *EMBO Journal*, 2023 (*bioRxiv*)
6. Shen X*, Oplente DA*, Kominek J*, Zhou X*, Steenwyk J, Buh KV, **Haase MAB**, Wisecaver JH, Wang M, Doering DT, Boudouris JT, Schneider RM, Langdon QK, Ohkuma M, Endoh R, Takashima M, Manabe R, Cadez N, Libkind D, Rosa CA, DeVirgilio J, Hulfachor AB, Groenewald M, Kurtzman CP@, Hittinger CT@, Rokas A@. and mode of genome evolution in the budding yeast subphylum. *Cell*, 2018

Journal Articles

1. **Haase MAB**[@], Lazar-Stefanita L, Baudry L, Wudzinska A, Zhou X, Rokas A, Hittinger CT, Pfander B, Musacchio A, Boeke JD[@]. Ancient co-option of LTR retrotransposons as yeast centromeres. *Nature*, 2026 ([bioRxiv](#))
2. Santarossa CC, Li Y, Yousef S, Hasdemir HS, Rodriguez CC, **Haase MAB**, Baek M, Coudray N, Pavék JG, Focke KN, Silverberg AL, Bautista C, Yeh J, Marty M, Baker D, Tajkhorshid E, Ekiert DC[@], Bhabha G[@]. LetA defines a structurally distinct transporter family. *Nature*, 2026 ([bioRxiv](#))
3. Bajgain Y, Langdon QK, Krien CM, Jarzyna M, Buh KV, **Haase MAB**, Pasles A, Wolters JF, Groenewald M, Hittinger CT[@], Oplente DA[@] Taxogenomic Analysis of a Novel Yeast Species, *Lachancea rosae* ap. nov. f.a., Isolated From the Wild Rose *Rosa californica* *Yeast*, 2025
4. Goldberg GW[@], Kogenaru M, Keegan S^{*}, **Haase MAB**^{*}, Kagermazova L, Onyebeke K, Arias MA, Adams S, Fenyö D, Noyes MB[@], and Boeke JD[@] Engineered transcription-associated Cas9 targeting in eukaryotic cells. *Nature Communications*, 2024 ([bioRxiv](#))
5. **Haase MAB**, Lazar-Stefanita L, Ólafsson G, Wudzinska A, Shen MJ, Truong DM, Boeke JD[@]. macroH2A1 drives nucleosome dephasing and genome instability in histone humanized yeast. *Cell Reports*, 2024 ([bioRxiv](#))
6. Oplente DA^{*}, LaBella AL^{*}, Harrison MC, Wolters JF, Liu C, Kominek J, Steenwyk JL, Stoneman HR, VanDenAvond J, Miller CR, Langdon QK, Silva M, Gonçalves C, Ubbelohde EJ, Li Y, Buh KV, Jarzyna M, **Haase MAB**, Rosa CA, Čadež N, Libkind D, DeVirgilio JH, Hulfachor AB, Kurtzman CP, Sampaio JP, Gonçalves P, Zhou X, Shen XX, Groenewald M, Rokas A[@], Hittinger CT[@]. Genomic factors shape carbon and nitrogen metabolic niche breadth across Saccharomycotina yeasts. *Science*, 2024 ([bioRxiv](#))
7. **Haase MAB**[@], Steenwyk JL, Boeke JD. Gene loss and cis-regulatory novelty shaped core histone gene evolution in the apiculate yeast *Hanseniaspora uvarum*. *Genetics*, 2024 ([bioRxiv](#))
8. Ólafsson G[@], **Haase MAB**, Boeke JD[@]. Humanization reveals pervasive incompatibility of yeast and human kinetochore components G3: *Genes Genomes Genetics*, 2024
9. Lauer SL^{*}, Luo J^{*}, Lazar-Stefanita L, Zhang W, McCulloch LM, Fanfani V, Lobzaev E, **Haase MAB**, Easo N, Zhao Y, Yu F, Cai J, The Build-A-Genome class, Bader JS, Stracquadanio G, Boeke JD[@]. Context-dependent neocentromere activity in synthetic yeast chromosome VIII. *Cell Genomics*, 2023
10. Zhang W, Lazar-Stefanita L, Yamashita H, Shen MJ, Mitchell LA, Kurasawa H, Lobzaev E, Fanfani F, **Haase MAB**, Sun X, [...], Boeke JD[@]. Manipulating the 3D organization of the largest synthetic yeast chromosome. *Molecular Cell*, 2023 ([bioRxiv](#))
11. Oplente DA[@], Langdon QK, Jarzyna M, Buh KV, **Haase MAB**, Groenewald M, Hittinger CT[@]. Taxogenomic analysis of a novel yeast species isolated from soil, *Pichia galeolata* sp. nov. *Yeast*, 2023
12. MacRae MR^{*}, Puvanendran D^{*}, **Haase MAB**, Coudray N, Kolich L, Lam C, Baek M, Bhabha G[@], Ekiert DC[@]. Protein-protein interactions in the Mla lipid transport system probed by computational structure prediction and deep mutational scanning. *Journal of Biological Chemistry*, 2023 ([bioRxiv](#))
13. Lazar-Stefanita L, Luo J, **Haase MAB**, Zhang W, Boeke JD[@]. Two differentially stable rDNA loci coexist on the same chromosome and form a single nucleolus. *PNAS*, 2023 ([bioRxiv](#))
14. **Haase MAB**, Ólafsson G^{*}, Flores RL^{*}, Boakye-Ansah E, Zelter A, Dickinson MS, Lazar-Stefanita L, Truong DM, Asbury CL, Davis TN, Boeke JD[@]. DASH/Dam1 complex mutants stabilize ploidy in histone-humanized yeast by weakening kinetochore-microtubule attachments. *EMBO Journal*, 2023 ([bioRxiv](#))
15. Spurley WJ, Fisher KJ, Langdon QK, Buh KV, Jarzyna M, **Haase MAB**, Moriarty RV, Rodriguez D, Sheddan A, Wright S, Sorlie L, Hulfachor AB, Oplente DA, Hittinger CT[@]. Substrate, temperature, and geographical patterns among nearly 2,000 natural yeast isolates. *Yeast*, 2021 ([bioRxiv](#))
16. O'Brien CE, Oliveira-Pacheco J, Cinnéide EO, **Haase MAB**, Hittinger CT, Rogers TR, Zaragoza O, Bond U, Butler G[@]. Population genomics of the pathogenic yeast *Candida tropicalis* identifies hybrid isolates in environmental samples. *PLOS Pathogens*, 2021 ([bioRxiv](#))

17. **Haase MAB***, Kominek J*, Opulente DA, Shen X, LaBella AL, Zhou X, DeVirgilio J, Hulfachor AB, Kurtzman CP, Rokas A, Hittinger CT[®]. Repeated horizontal gene transfer of GALactose metabolism genes violates Dollo's law of irreversible loss. *Genetics*, 2021 ([bioRxiv](#))
18. Dharampal PS, Diaz-Garcia L, **Haase MAB**, Zalapa J, Currie CR, Hittinger CT, Steffan SA[®]. Microbial Diversity Associated with the Pollen Stores of Captive-Bred Bumble Bee Colonies. *Insects*, 2020
19. **Haase MAB**, Truong DM, Boeke JD[®]. Superloser: a plasmid shuffling vector for *Saccharomyces cerevisiae* with exceedingly low background. *G3: Genes Genomes Genetics*, 2019 ([bioRxiv](#))
20. Opulente DA, Langdon QK, Buh KV, **Haase MAB**, Sylvester K, Moriarty RV, Jarzyna M, Considine SL, Schneider RM, Hittinger CT[®]. Pathogenic budding yeast Isolated outside of clinical settings. *FEMS Yeast Research*, 2019 ([bioRxiv](#))
21. Shen X*, Opulente DA*, Kominek J*, Zhou X*, Steenwyk J, Buh KV, **Haase MAB**, Wisecaver JH, Wang M, Doering DT, Boudouris JT, Schneider RM, Langdon QK, Ohkuma M, Endoh R, Takashima M, Manabe R, Cadez N, Libkind D, Rosa CA, DeVirgilio J, Hulfachor AB, Groenewald M, Kurtzman CP[®], Hittinger CT[®], Rokas A[®]. Tempo and mode of genome evolution in the budding yeast subphylum. *Cell*, 2018
22. **Haase MAB**, Kominek J, Langdon QK, Kurtzman CP, Hittinger CT[®]. Genome sequence and physiological analysis of *Yamadazyma laniorum* f.a. sp. nov. and a reevaluation of the apocryphal xylose fermentation of its sister species, *Candida tenuis*. *FEMS Yeast Research*, 2017

Preprints & Works in Preparation

1. Lazar-Stefanita L, **Haase MAB**, Boeke JD[®]. *Humanized nucleosomes reshape replication initiation and rDNA/nucleolar integrity in yeast*. *bioRxiv*, 2023. doi.org/10.1101/2023.05.06.539710
2. De Ioannes P*, Whedon SD*, **Haase MAB**, Wang ZA, Nam E, Waterbury A, Camellato BR, Lee R, Valencia-Sánchez MI, Boeke JD, Cole PA[®], Armache KJ[®]. *Structural Basis of Cooperative COMPASS Activation by Histone Acetylation and Ubiquitination*. In Revision

Thesis

1. **Haase MAB**. *Direct Functional Studies of Human Chromatin Using Histone Replacement in Saccharomyces cerevisiae*. PhD thesis, New York University. 2023

Talks & Conferences

July 2025 (Oral)	International Conference on Yeast Genetics and Molecular Biology (Paris, FR).
Oct. 2023 (Oral)	Fragile Nucleosome Seminar (virtual).
Oct. 2023 (Oral)	Max Planck Institute of Molecular Physiology Seminar (Dortmund, DE).
Aug. 2023 (Oral)	Gordon Research Conference: Epigenetics (Holderness, USA).
Apr. 2023 (Oral)	Institut Curie Seminar (virtual).
July 2022 (Oral)	Gordon Research Seminar: Regulating Centromere Function Through Structure (Vermont, USA).
May 2022 (Oral)	EMBO Workshop: Evolutionary approaches to research in chromatin (Aarhus, DK).
Aug. 2021 (Poster)	International Conference on Yeast Genetics and Molecular Biology (virtual).
Oct. 2019 (Poster)	Yeast Research: Origins, Insights, Breakthroughs, CSHL. (New York, USA).
Sept. 2019 (Oral)	ISG nano seminar, NYU Langone Medical Center (New York, USA).
June 2019 (Poster)	Synthetic Biology: Engineering, Evolution (New York, USA).
July 2018 (Poster)	Gordon Research Conference - Chromatin Structure and Function (Maine, USA.).
May 2017 (Poster)	Undergraduate Symposium, University of Wisconsin – Madison (Wisconsin, USA).
May 2016 (Poster)	Genetics Society of America, The Allied Genetics Conference (Florida, USA).

Awards

2024	NYU University-Wide Outstanding Dissertation Award
2022	Vilcek Institute of Graduate Biomedical Sciences Travel Grant
2019	Vilcek Institute of Graduate Biomedical Sciences Travel Grant Special MacCracken Award
2018	NYU Dean's Student Travel Grant Vilcek Institute of Graduate Biomedical Sciences Travel Grant
2017	University of Wisconsin Bookstore Academic Excellence Award
2016	Hilldale Undergraduate Research Fellowship Laboratory of Genetics Undergraduate Award Genetics Society of America Undergraduate Travel Award

Students Mentored

Masters: Maria Bahamon (2021—2023), Kristina Bunda (2025–2026)

High School: Lohann Excoffon (2020—2022)

Professional Membership & Service

Member: Genetics Society of America (GSA)

Reviewer: Genome Research, Review Commons, Science Advances, Scientific Reports

Organizer: Gordon Research Seminar 2023: Epigenetics Mechanisms

References

Postdoctoral advisor

Dr. Andrea Musacchio

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Ph.D. advisor

Dr. Jef D. Boeke

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Undergraduate advisor

Dr. Chris Todd Hittinger

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