

# Jonas Schlüter, DPhil

## Curriculum vitae

NYU Grossman School of Medicine  
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### Current Appointment

03/20 – now **Assistant Professor, Tenure Track, NYU Langone Health**, Institute for Systems Genetics, Department of Microbiology & Perlmutter Cancer Center, New York, NY

### Education & Training

#### Postdoctoral Training

12/15 – 03/20 **Research Scholar**, Memorial Sloan-Kettering Cancer Center, New York City, NY

05/14 – 05/15 **Independent Research Fellow**, Graduate University for Advanced Studies, Japan

#### Education

09/09 – 03/14 **Doctor of Philosophy**, Systems Biology, University of Oxford, Oxford, UK

08/07 – 09/08 **Master of Science**, Biotechnology, University of Westminster, London, UK

10/04 – 08/07 **Bachelor of Science**, Biosciences/Microbiology, WWU Münster, Germany

### Funding and Awards

Current: Grants & Awards  
(PI)

2021 **DP2 NIH/NIAID New Innovator Award**, DP2AI164318, The unleashed microbiome of cancer patients as a discovery platform for rational microbiome engineering  
· annual direct cost: \$300,000

(Co-I)

2022 **R01 NIH/NCI**, R01CA269617, A prospective evaluation of the gut microbiome as a mediator of lymphoma treatment outcome and systemic immunity  
· separate chart field to the Schlüter lab, annual direct cost \$164,220

Completed: Grants

2021 **Expand into Multiomics Grant, DNA Genotek & Diversigen**, #21-A0-00-1007598

Completed: Fellowships & Scholarships

2016 **Alexander von Humboldt Foundation Fellowship**, respectfully declined

2014 **JSPS Postdoctoral Fellowship**

2009 **Engineering & Physical Sciences Research Council UK PhD Scholarship**, via the University of Oxford Doctoral Training Centre

## Prizes & Honors

- 2014 **PhD thesis Commendation**, Head of Science Division, University of Oxford, formal recognition of an outstanding thesis
- 2008 **Clive Wyborn Prize**, University of Westminster, research thesis prize

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## Education activities

I am actively engaged in the Vilcek biomedical science graduate program.

### Predoctoral students supervised and/or mentored

Thesis students (\* indicates trainees with publications from the lab)

- 2022– Caichen Duan\*
- 2022– William Jogia
- 2021– Chenzhen “Lily” Zhang\*
- 2020-2022 Grant Hussey\*

### Postdoctoral students supervised and/or mentored

- 2023– Wataru Ebina, MD/PhD, Oncology Fellow
- 2022– Harsh Maan, PhD
- 2021– Fanny Matheis, MD/PhD, Helen Hay Whitney Fellow
- 2022-2023 Chengwei Peng, MD/PhD, Oncology Fellow

### Thesis Committees/Fellowship mentorship

- 2023– Toby Aicher, Thesis Committee
- 2023– Surya Aggarwal, NIH K-99 Applicant, NYU
- 2022– Chen Liao, NIH K-99 Applicant, MSKCC
- 2021– Greg Goldberg, NIH K-99 Fellow, NYU
- 2021– Joshua Wang, Thesis Committee
- 2020-2023 Cornwell MacIntosh, Thesis Committee

### Outreach mentoring

- 2023-08– Sophie Tanenbaum, High School Volunteer
- 2023-07– David Kim Shoemaker, High School Volunteer
- 2021 Shiney Chandraganti, NYU Tandon School of Engineering Volunteer

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## Professional activities

### Professional Memberships

- 10/22 – now **EMBL-EBI-EHA**, Faculty Member of the EHA-EMBL/EBI Computational Biology Training in Hematology program

### Recent Media Appearances

- 2022 **American Medical Association (live interview)**, How COVID-19 impacts gut health, <https://www.ama-assn.org/delivering-care/public-health/how-covid-19-impacts-gut-health-ken-cadwell-phd-jonas-schluter-phd>
- 2022 **The Guardian (feature article)**, Does exposure to cold and flu viruses weaken or strengthen the immune system?, <https://www.theguardian.com/science/2022/nov/19/does-exposure-to-cold-and-flu-viruses-weaken-or-strengthen-the-immune-system>
- 2022 **Forbes (article)**, Covid-19 Could Make People More Prone To Other Infections By Wreaking Havoc With Gut Bacteria, <https://www.forbes.com/sites/anuradhavaranas/2022/11/27/covid-19-could-make-people-more-prone-to-other-infections-by-wreaking-havoc-with-gut-bacteria/?sh=60fcd2b2944>
- 2021 **Frankfurter Allgemeine Zeitung (feature article)**, Wie das Virus die Darmflora verändert, <https://www.faz.net/aktuell/wissen/medizin-ernaehrung/corona-wie-das-virus-die-darmflora-veraendert-17508554.html>

#### Other Professional Positions

- 01/23 – now **Jona Health**, Chief Scientific Advisor, New York, NY
- 01/20 – now **Postbiotics Plus Research LLC**, Co-founder, Houston, TX
- 05/15–08/18 **CLAWS-JLM Ltd.**, Co-founder, CSO, Telford, UK

#### Other Professional Activities

- Journal reviewing Science, PNAS, Nature Medicine, Nature Microbiology, eLife, Nature Communications, ISME J, American Naturalist, PLoS Comp Bio, mBio, BMC Systems Biology, Scientific Advances
- Grant reviewing Chilean Research Council for Science and Technology (CONYCYTE), Israel Science Foundation (ISF)

### Conference presentations and invited talks

#### Invited talks

- 2022 **Global Engage Microbiome R&D and Business Collaboration Forum**, San Diego, The Gut Microbiota “Ecosystem on a Leash” Affects Immune Cell Dynamics in Humans
- 2021 **6th Microbiome Movement**, Drug Development Summit, The microbiome influences immune cell dynamics in humans
- 2021 **BrazWebinars**, Brazilian Webinars on Bioinformatics, The gut microbiota is associated with immune cell dynamics in humans
- 2020 **International Microbial Evolutionary Medicine Group**, Microbial Evolutionary Medicine seminar, The Unleashed Microbiome of Cancer Patients
- 2020 **Westpoint**, USMA Department of Mathematical Sciences Colloquium Medical Applications of Data Science, The Unleashed Microbiome of Cancer Patients
- 2019 **NIH, NIAID - Annual meeting on AMR**, The microbiota influences immune cell dynamics in humans
- 2018 **Departmental talk**, Salk Institute, The unleashed microbiome - How antibiotics and chemotherapy shape the microbiome in patients without immune system
- 2016 **Cemi Center**, The California Institute of Technology, Host-microbiome co-evolution
- 2016 **JSMB/SMB conference on Mathematical Biology**, Kyushu University, The ecology of the microbiome: Networks, competition and stability
- 2016 **Statistical and Computational Challenges in Microbiome Data Analysis**, Simons Foundation, New York, Network theory of the microbiome

- 2014 **Ryukoku Ecology Seminar**, *Ryukoku University*, The ecology of the microbiome: Networks, competition and stability
- 2014 **JSMB/SMB conference on Mathematical Biology**, *Osaka*, Dynamic systems theory of the microbiome
- Talks
- 2022 **International Society for Microbial Ecology-18**, *Lausanne, Switzerland*, The TaxUMAP algorithm aids causal microbiome inference
- 2019 **Faculty candidate talk**, *Nanyang Technological University*, Singapore, The microbiome affects circulatory immune cells in humans
- 2019 **Faculty candidate talk**, *NYU*, The microbiome as a driver of host phenotypes
- 2018 **NIH Consortium meeting**, *University of California*, The unleashed microbiome - How antibiotics and chemotherapy shape the microbiome in patients without immune system
- 2018 **ISME-17**, *Leipzig*, The unleashed microbiome - How antibiotics and chemotherapy shape the microbiome in patients without immune system
- 2017 **Faculty candidate talk**, *NYU*, Microbiome: An ecosystem on a leash
- 2016 **META Symposium**, *University of Oregon*, Host-Microbe Systems Biology: From Models to Medicine
- Posters
- 2022 **Keystone meeting “The Human Microbiome: Ecology and Evolution”**, *Banff, Canada*, Effective microbiome data visualization with TaxUMAP reveals gut-borne bacteremia associated ecology
- 2022 **CSHL meeting “Microbiome”**, *Cold Spring Harbor Laboratory*, The TaxUMAP atlas aids causal microbiome inference
- 2019 **CSHL meeting “Microbiome”**, *Cold Spring Harbor Laboratory*, The microbiota influences circulatory immune cell dynamics in humans
- 2017 **NIH Consortium meeting**, *University of Michigan*, Causal inference of host phenotypes from microbiome dynamics
- 2016 **ISME-16**, *Montreal*, The ecology of the microbiome: Networks, competition and stability
- 2014 **ISME-15**, *Seoul*, The evolution of quorum sensing as a measure of kinship
- 2013 **DTC conference**, *University of Oxford*, Selectivity amplification of host epithelial secretions
- 2012 **Wellcome Trust Conference: Exploring Human Host-Microbiome Interactions in Health and Disease**, *Cambridge UK*, Selectivity amplification of host secretions at the mucosal interface
- 2011 **DTC Systems Biology**, *Manchester*, Selectivity amplification of host epithelial secretions
- 2011 **Modelling and Microbiology**, *Edinburgh*, Selectivity amplification of host epithelial secretions  
**Best Poster Prize**
- 2011 **Nature Conference: Microbiota and mucosal immunology**, *San Francisco*, Selectivity amplification of host epithelial secretions

## Publications

My research has been cited over 3,700 times, and received international press coverage, for example in the L.A. Times, Frankfurter Allgemeine Zeitung (Germany) and by the BBC (UK). Full NCBI bibliography: [ncbi.nlm.nih.gov/myncbi/jonas.schluter.1/bibliography/public/](https://ncbi.nlm.nih.gov/myncbi/jonas.schluter.1/bibliography/public/)

First (\*) and/or corresponding (†) author

In print/accepted/under revision

- (1) Hussey, GA\*, Zhang, C, Sullivan, AP, **Schluter, J.**† The MTIST1.0 platform: a microbiome time series inference standardized test data set. *in revision at Front Microbiol.*

### Published

- (1) **Schluter, J.\*†**, et al. (2023). The TaxUMAP atlas: efficient display of large clinical microbiome data reveals ecological competition associated with protection against bacteremia. *Cell Host & Microbe* 31, 1126–1139.
- (2) Bernard-Raichon, L\*, Venzon, M\*, Klein, J\*, Axelrad, JE\*, Zhang, C\*, et al., **Schluter, J.**† (2022). Gut microbiome dysbiosis in antibiotic-treated COVID-19 patients is associated with microbial translocation and bacteremia. *Nature Communications* 13(5926).
- (3) Gago, J, et al. (2022). Pathogen species is associated with mortality in nosocomial bloodstream infection in patients with COVID-19. *Open Forum Infectious Diseases* 6(9), ofac083.
- (4) Smith, M, et al. (2022). Gut microbiome correlates of response and toxicity following anti-CD19 CAR T cell therapy. *Nature Medicine* 28(4), 713–723.
- (5) Yan, J, et al. (2022). A compilation of fecal microbiome shotgun metagenomics from hematopoietic cell transplantation patients. *Sci Data* 9(1), 1–12.
- (6) Andersen, SB, **Schluter, J.** (2021). A metagenomics approach to investigate microbiome sociobiology. *PNAS* 118(10), e2100934118.
- (7) Liao, C, et al., **Schluter, J.**†, Xavier†, JB (2021). Compilation of longitudinal microbiota data and hospitalome from hematopoietic cell transplantation patients. *Sci Data* 8(1), 1–12.
- (8) Diefenbach, CS, et al. (2021). Microbial dysbiosis is associated with aggressive histology and adverse clinical outcome in B-cell non-Hodgkin lymphoma. *Blood Advances* 5(5), 1194–1198.
- (9) **Schluter, J.\*†**, et al. (2020). The gut microbiota is associated with immune cell dynamics in humans. *Nature* 588, 303–307.
- (10) Markey, K, **Schluter, J.**, et al. (2020). Microbe-derived short chain fatty acids butyrate and propionate are associated with protection from chronic GVHD. *Blood* 136(1), 130–136.
- (11) Morjaria, S\*, **Schluter\*, J.**, et al. (2019). Antibiotic-induced shifts in fecal microbiota density and composition during hematopoietic stem cell transplantation. *Infect Immun.* 87(9), e00206–19, e00206–19, **F1000 recommended.**
- (12) Schulfer, AF\*, **Schluter\*, J.**, et al. (2019). The impact of early-life sub-therapeutic antibiotic treatment (STAT) on excessive weight is robust despite transfer of intestinal microbes. *ISME J* 13(5), 1280–1292.
- (13) Taur, Y, Coyte, K, **Schluter, J.**, et al. (2018). Reconstitution of the gut microbiota of antibiotic-treated patients by autologous fecal microbiota transplant. *Sci Transl Med* 10(460), eaap9489.
- (14) Lee, JR, et al. (2018). Gut microbiota dysbiosis and diarrhea in kidney transplant recipients. *Am J Transplant.*
- (15) Foster†, KR, **Schluter, J.**, Coyte, KZ, Rakoff-Nahoum†, S (2017). The evolution of the host microbiome as an ecosystem on a leash. *Nature* 548(7665), 43–51, **F1000 recommended.**

- (16) McLoughlin, K\*, **Schluter\***, J., Rakoff-Nahoum, S, Smith, AL, Foster<sup>†</sup>, KR (2016). Host Selection of Microbiota via Differential Adhesion. *Cell Host & Microbe* 19(4), 550–559.
- (17) **Schluter, J.**, Schoech, AP, Foster, KR, Mitrì<sup>†</sup>, S (2016). The Evolution of Quorum Sensing as a Mechanism to Infer Kinship. *PLoS Comput Biol* 12(4), e1004848.
- (18) Coyte, KZ\*, **Schluter\*<sup>†</sup>, J.**, Foster<sup>†</sup>, KR (2015). The ecology of the microbiome: Networks, competition, and stability. *Science* 350(6261), 663–666.
- (19) **Schluter, J.**, Nadell, CD, Bassler, BL, Foster<sup>†</sup>, KR (2015). Adhesion as a weapon in microbial competition. *ISME J* 9(1), 139–149, **F1000 recommended**.
- (20) Kim, W, Racimo, F, **Schluter, J.**, Levy, SB, Foster<sup>†</sup>, KR (2014). Importance of positioning for microbial evolution. *PNAS* 111(16), E1639–E1647, **F1000 recommended**.
- (21) **Schluter<sup>†</sup>, J.**, Foster<sup>†</sup>, KR (2012). The evolution of mutualism in gut microbiota via host epithelial selection. *PLoS Biology* 10(11), e1001424.
- (22) Raberg, M, et al. (2011). Versatile metabolic adaptations of *Ralstonia eutropha* H16 to a loss of PdhL, the E3 component of the pyruvate dehydrogenase complex. *Appl Env Microbiol* 77(7), 2254–2263.