Curriculum vitae

• Personal information: Dr. Akbar Adjie Pratama

Current position: Joint-Postdoctoral researcher, Friedrich-Schiller-Universität Jena, and The Ohio State University

Contact: +49 174 179 8905 | <u>akbar.adjie.pratama@uni-jena@de</u> | <u>pratama.3@osu.edu</u> | <u>Google Scholar</u> | <u>Linkedin</u> | <u>ResearchGate</u> | <u>The Ohio State University</u> (web) | <u>Friedrich Schiller University Jena</u> (web) | <u>ISME ECSM</u> (web) | <u>Personal</u> (web)

• *Education and professional experiences:*

2023 - now	Joint-postdoctoral researcher @ Friedrich-Schiller-Universität Jena and The Ohio State
	University PI: Prof. Kirsten Küsel and Prof. Matthew B. Sullivan
2019 - 2023	Postdoctoral researcher @ The Ohio State University, USA PI: Prof. Matthew B. Sullivan
2018 - 2019	Research fellow @ University of Groningen, The Netherlands PI: Prof. Jan Dirk van Elsas
2014 - 2018	Ph.D. @ University of Groningen, The Netherlands PI: Prof. Jan Dirk van Elsas
2011 - 2013	M.Sc. Biotechnology @ Asia University (亞洲大學), Taiwan PI: Prof. Tsung-Chi Chen
2005 - 2010	B. Sc. Biology @ IPB University, Indonesia PI: Prof. Triadiati

Grants and Scholarships:

2024	MicroVerse Flexible Grant – DFG (€7,000)
2019 - 2022	US Department of Energy (DOE) - #248445 (Helped secured the grant; ~\$ 3M for three years)
2014 - 2018	The Indonesia Endowment Fund for Education for Doctoral study (all expenses for 4 years;
	>€70K - 100K)
2011 - 2013	Scholarship for a master's program, Taiwan (2 years full grant, all expenses covered)
2010	Scholarships for overseas aid from the Indonesian Ministry of Education (USD 900)

• Awards:

2024	Travel grant, Viruses of Microbes, Australia (AU \$1,000)
2019	Travel grant for viromics workshop, Ohio State University, USA (USD 1,200)
2018	Travel award for ISME17 Leipzig, 17th international symposium and microbial ecology,
	Germany (€ 300)
2018	The Indonesia Endowment Fund for Education for Doctoral study, publication awards (~USD
	3,000)
2018	Accommodation award (six night) for European molecular of biology organization: Virus of
	Microbe conference in Wrocław, Poland
2017	Travel grant for viromics workshop, Ohio State University, USA (USD 1,000)

• *Consortium-scale interdisciplinary science experiences:*

2023 – now **Balance of the MicroVerse cluster** funded by the German Research Foundation (DFG)

This project aims to provide the scientific basis for understanding microbial balance from the molecular to the ecosystem level. We ultimately aim to develop technologies that allow for targeted interventions to maintain or restore microbial balance. This project involved >140 scientists.

Role: Joint postdoctoral researcher

PIs: Kirsten Küsel and Matthew B. Sullivan

Outcome: see publications 18

2018 - 2023 EMergent Ecosystem Responses to ChanGE (EMERGE)

Interdisciplinary project funded by the National Science Foundation (NSF). The project aims to understand ecosystem-climate feedback in Stordalen Mire, a thawing permafrost peatland in arctic Sweden. This project includes 14 institutions and a total of ~100 Scientists.

Role: Postdoctoral researcher, coordinator of the Research Activity team (RA3) meetings

PIs: Matthew B. Sullivan and Virginia Rich *Outcome*: see publication 11, 12, and 17

2018 - 2023 Virus Soil (VirSoil) Department of Energy funded project

The US Department of Energy funded the project with the main objective of developing paradigms and tools to better understand the role of viruses in soil ecology, focusing on a

specific permafrost thaw gradient, and providing foundational resources for future research in this field. This project includes scientists across the US (The Ohio State Uni, Uni Arizona, Case Western Uni, Ashland Uni), US national Lab (Lawrence Berkeley National Lab, Oak Ridge National Lab), Canada (Université Laval Canada), and England (University of Exeter). *Role*: Postdoctoral researcher, helped secure the grant (#248445)

PI: Matthew B. Sullivan

Outcome: see publications 11, 12, and 16

2020-2022 <u>Tara Ocean Consortium</u>

This project aims to advance knowledge about the Ocean and raise awareness of its vital importance among the general public, young people, and decision-makers. Further, it protects the Ocean and marine biodiversity to guarantee the habitability of planet Earth.

Role: I helped in Tara Ocean RNA virus projects

PI: Matthew B. Sullivan

Outcome: see publications 13, and 14

• *Publications*: 18 publications, 2425 citations, H-index: 16 according to <u>Google Scholar</u> (last accessed 4 Oct 25)

Peered-review

- [18] OM Pérez-Carrascal, AA Pratama, MB Sullivan, K Küsel. <u>Unveiling plasmid diversity and functionality in pristine groundwater</u>. 2025. *Environ. Microbiome*. 20(1): 1-21.
- 2024 [17] CL Sun*, AA Pratama*, MC Gazitúa, D Cronin, BB McGivern, JM Wainaina, DR Vik, AA Zayed, B Bolduc, IsoGenie Project Field Teams 2010-2017, the IsoGenie and EMERGE Projects Coordinators, KC Wrighton, VI Rich, MB Sullivan. Virus ecology and 7-year temporal dynamics across a permafrost thaw gradient. Environ. Microbiol. 26(8): e16665 | *contributed equally
- 2023 [16] Interrogating the viral dark matter of the rumen ecosystem with a global virome database M Yan†, AA Pratama, S Somasundaram, Z Li, Y Jiang, M Sullivan, and Z Yu. Nat. Comm. 14:5254. †former graduate student

Media coverage: Center of Microbiome Science Ohio State University

- 2023 [15] MArVDv2: a machine learning enhanced means for archaeal virus identification from metagenomic data
 - D Vik, B Bolduc, S Roux, MC Gazitúa, C Sun, AA Pratama, M Krupovic, MB. Sullivan. ISME Comm. 3: 87
- 2022 [14] Diversity and ecological footprint of Global Ocean RNA viruses,
 - G Dominguez-Huerta*, AA Zayed*, JM Wainaina, J Guo, F Tian, AA Pratama, B Bolduc, M Mohssen, O Zablocki, E Pelletier, E Delage, A Alberti, JM Aury, Q Carradec, C da Silva, K Labadie, J Poulain, Tara Oceans Coordinators, C Bowler, D Eveillard, L Guidi, E Karsenti, JH Kuhn, H Ogata, P Wincker, A Culley, S Chaffron, and MB Sullivan. *Science* 6598 (376): 1202-1208 | *contributed equally.

Media coverage: <u>The Ohio State News</u>, <u>News medical</u>, <u>Science daily</u>

[13] Cryptic and abundant marine viruses at the evolutionary origins of Earth's RNA virome

AA Zayed*, JM Wainaina*, G Dominguez-Huerta*, E Pelletier, J Guo, M Mohssen, F Tian, AA

Pratama, B Bolduc, O Zablocki, D Cronin, L Solden, E Delage, A Alberti, JM Aury, Q Carradec,
C da Silva, K Labadie, J Poulain, HJ Ruscheweyh, G Salazar, E Shatoff, Tara Oceans
Coordinators, R Bundschuh, K Fredrick, LS Kubatko, S Chaffron, AI Culley, S Sunagawa, JH
Kuhn, P Wincker, MB Sullivan. Science 6589 (376): 156-162 | *contributed equally.

Media coverages: Science highlight: The Conversation and The Scientist

- 2021 [12] Expanding standards in viromics: in silico evaluation of dsDNA viral genome identification, classification, and auxiliary metabolic gene curation
 - **AA Pratama**, B Bolduc, AA Zayed, ZP Zhong, J Guo, DR Vik, MC Gazitúa, JM Wainaina, S Roux and MB Sullivan *PeerJ* 9: e11447
 - Top 5 most viewed Bioinformatics, Microbiology and Virology article published in 2021 in PeerJ journal
- 2021 [11] <u>VirSorter2: a multi-classifier, expert-guided approach to detect diverse DNA and RNA viruses</u>

J Guo, B Bolduc, AA Zayed, A Varsani, G Dominguez-Huerta, TO Delmont, AA Pratama, MC Gazitúa, D Vik, MB Sullivan, S Roux *Microbiome* 9 (1): 1-13

2020 [10] The role of rhizosphere bacteriophages in plant health

AA Pratama, J Terpstra†, ALM de Oliveria, JF Salles *Trends in Microbiology*, 28 (9): 709-718; †former Master student

Media coverage: Phys.org and EurekAlert! AAAS

[9] <u>Delineation of a subgroup of the Genus Paraburkholderia, including *P. terrae* DSM 17804T, *P. hospita* DSM 17164T, and four soil-isolated fungiphiles, reveals remarkable genomic and ecological features - proposal for the definition of a *P. hospita* species cluster</u>

AA Pratama, DJ Jiménez, Q Chen, B Bunk, C Spröer, J Overmann, JD van Elsas *Genome Biology* and Evolution, 12 (4): 325–344

2019 [8] Gene mobility in microbiomes of the mycosphere and mycorrhizosphere-role of plasmids and bacteriophages

AA Pratama and JD van Elsas. FEMS microbiology ecology (2019) 95 (5): fiz053

2019 [7] The viruses in soil-potential roles, activities, and impacts

AA Pratama and JD van Elsas. Modern soil microbiology (third edition). Tylor&Francis: New York

2019 [6] Microbial interactions in soil

JD van Elsas, **AA Pratama**, WL de Araujoand JT Trevors. Modern soil microbiology (third edition). Tylor&Francis: New York

2018 [5] The 'neglected' soil virome-potential role and impact

AA Pratama, JD van Elsas Trends in Microbiology 26 (8): 649-662

Most tweeted article in Trends in Microbiology journal in January 2018

2018 [4] Evolutionary history of bacteriophages in the genus Paraburkholderia

AA Pratama, MC De Mares, JD Van Elsas Frontiers in microbiology 9: 835

2017 [3] <u>Draft genome sequences of three fungal-interactive *Paraburkholderia terrae* strains, BS007, BS110 and BS437</u>

AA Pratama, IU Haq, R Nazir, MC De Mares, JD van Elsas *Standards in genomic sciences* 12 (1): 1-14

2017 [2] A novel inducible prophage from the mycosphere inhabitant *Paraburkholderia terrae* BS437 AA Pratama, JD van Elsas *Scientific reports* 7 (1): 1-14

2016 [1] The significance of mutualistic phages for bacterial ecology and evolution

N Obeng†, AA Pratama, JD van Elsas Trends in microbiology 24 (6): 440-449. †former Master student

Under review and in preparation:

- a) RNA virus ecogenomics along the Arctic permafrost thawing gradient. AA Pratama*, G Dominguez-Huerta*, AA Zayed, B Bolduc, F Tian, JM Wainaina, J Guo, L Solden and MB. Sullivan. In prep *contributed equally
- b) Mobile genetic elements that shape microbial diversity and functions in thawing permafrost soils. J Guo, S Aroney, G Dominguez-Huerta, D Smith, D Vik, C Owusu Ansah, AA Pratama, S Solonenko, F Tian, C Howard-Varona, Z Zhong, A Fofana, G Smith, SB Hodgkins, D Cronin, EMERGE Field Teams 2010-2019, EMERGE Coordinators, BJ Woodcroft, GW Tyson, VI Rich, MB Sullivan, S Roux, SC Bagby. 2025. Under review in *Nat. Microbiol.*
- c) Hidden viral players: Diversity and ecological roles of viruses in groundwater microbiomes. AA Pratama, O Pérez-Carrascal, MB Sullivan, and K Küsel. 2025. <u>Under review in Nat. Comm.</u>
- d) Growth of Candidate Phyla Radiation bacteria in groundwater incubations reveals widespread adaptations to oxic conditions. E Gabashvili, K Küsel, AA Pratama, H Wang, M Taubert. 2025. <u>Under review in Microbiome</u>

Presentations:

- 2024 Invited talks, Naturalis Biodiversity Center, Leiden, The Netherlands
- 2024 Invited talks, The Association for General and Applied Microbiology (VAAM), AquaDiva, Germany
- 2024 *Invited talk*, Max Planck Institute for Evolutionary Anthropology; European Bioinformatics Center, Jena
- 2023 Co-chairing one session, Virus bioinformatics workshop, Jena, Germany

- 2023 Selected talk, US Department of Energy, 2023 Biological Systems Science Division Genomic Science Program (GSP) Annual Principal Investigator (PI) meeting
- 2022 Invited Talk, Viromics workshop, The Ohio State University
- 2018 *Invited Talk*, Netherlands Institute of Ecology (NIOO-KNAW)
- 2018 *Invited Talk*, University of Groningen, Department of Genetics, and Groningen Institute for Evolutionary Life Science (GELIFES)

• <u>Teaching experiences:</u>

- 2022 Teaching assistant, Microbiome Science, The Ohio State University, USA
 - As a teaching assistant, I mentor assiduously and engage in active learning to discuss cutting-edge scientific topics in microbiomes. For 1 semester, ~ 10 -15 graduate-level student
- 2020 Teaching assistant, Microbiome informatics, The Ohio State University, USA
 - As a teaching assistant, I mentored and helped students with how to use bioinformatic tools to analyze meta-omics data, and for their final assignment, I helped them develop their research ideas. For 1 semester, ~10-15 graduate-level student
- Giving a lecture about my Ph.D. research to a graduate-level student (~10 students) and the general theory of halobionts

• Mentoring:

I have had the privilege of mentoring and supervising both undergraduate and graduate students, guiding them through engaging research projects, fostering their academic growth, and nurturing their passion for scientific inquiry.

Graduate

- Carlos Owusu-Ansah @ Ohio State Uni | Developing an approach to identify novel cyanophages | Currently a PhD candidate at The Ohio State Uni.
- John van Dusen @ Ohio State Uni | Worked on Cyanophage project | Currently a PhD candidate at The Ohio State Uni.
- Jurre Terpstra @ Uni.Groningen | Published together (see #10) | Currently working in industry
- Nancy Obeng (top master program) @ Uni. Groningen | Published together (see #1) | Currently a postdoctoral fellow in Christian-Albrechts-Universität zu Kiel,

Undergraduate -

- Minh Pham from Kenyon College | Summer research experience program, OHIO 5-OSU SURE | Worked with cyanophages project | Currently conducting clinical research at Nationwide Children's Hospital
- Romik Ghosh @ Ohio State Uni. | Worked with cyanophages project | Currently working at Amazon Web Services (AWS)
- Cole Bagozzi from Denison Uni. Ohio | Worked with cyanophages project | Currently a data engineering
- Ties Ausman @ Uni. Groningen| worked on soil phage project | Currently a lecturer at Hanzehogeschool Groningen, The Netherlands
- Luna M. van der Loos @ Uni. Groningen | worked on soil phages project | Currently a PhD candidate at Uni. Leuven, Belgium

• Additional professional training

2020, 2021, The National Science Foundation (NSF) - funded EMergent Ecosystem Responses to ChanGE (EMERGE).

Through the NSF-funded EMERGE project, I've undergone multi-year workshops and trainings, including summer and winter courses, and engaged in career development while collaborating with scientists worldwide, exploring emergent ecosystem responses to environmental change

2020 VirSoil

Through the DOE-funded VirSoil project, I've engaged in specialized training and collaborative research with scientists from the US, Canada, and England, focusing on soil viruses.

2017, 2019, Viromics workshop

Having been engaged in Ohio State University's Viromics workshop for multiple years, I was honored to be invited as a speaker in 2022. This international event offers cutting-edge training in virus metagenomics and ecology analysis to participants worldwide

• <u>Professional services and societies:</u>

- a) Conference volunteer: Kalvi 2014, Bogor, Indonesia; European Society of Evolutionary Biology Congress, Groningen, The Netherlands; Viromic Workshop, Columbus, Ohio (multiple years) | Mikrobiokosmos & CEESME 2025, Thesseloniki, Greece
- b) Manuscript review: ISME J, mSystem, viruses, Nature Communication

• Outreach activities:

As a scientist, I also committed my time to engaging the community with interactive activities and presentations that bring the wonders of science to the general public.

- a) Current member of <u>ISME ECSC</u> (early career scientist committee)
- b) COSI Center of Science and Industry, USA (2022). The largest STEM event in the nation. COSI is the #1 science museum in the United States (2020) by USA Today. At the COSI Science Festival, our lab had the exciting opportunity to educate young minds about the fascinating world of viruses and their crucial roles in the ecosystem. We interactively engaged children by helping them build their phage toys, fostering a deeper understanding of this tiny but mighty entity and its impact on Earth.
- c) URGE (Unlearning Racism in Geoscience) pod, The Ohio State University, USA. We're partnering with the Ohio State University's microbiology department and the Office of Diversity and Inclusion to implement an eight-session curriculum for geoscientists, focused on improving AJEDI (Accessibility, Justice, Equity, Diversity, and Inclusion) in both workplace and community settings.
- d) IPB University, Indonesia: Alumni sharing talk. In our Alumni Sharing Talk, I shared my journey from biology major to conducting cutting-edge research at a prestigious university abroad, inspiring current students with insights into academic careers and scientific exploration.
- e) Long Life Contribution Program, Indonesia: Community service to the underprivileged areas in the suburban area of Indonesia. In suburban Indonesia, I conducted surveys on demographics and health, offered donations, and helped build a vital water source and public toilet to support underprivileged communities.