

Saima Shahid

Lecturer, Plants, Photosynthesis and Soil Cluster, University of Sheffield

Contact Education

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2017	Ph.D., Plant Biology	The Pennsylvania State University, University Park, PA, USA
2009	M.S., Biochemistry and Molecular Biology	University of Dhaka, Dhaka, Bangladesh
2008	B.Sc., Biochemistry and Molecular Biology (Honors)	University of Dhaka, Dhaka, Bangladesh

Current Position

2024–	Lecturer	University of Sheffield, Sheffield, UK Plants, Photosynthesis and Soil Cluster, School of Biosciences
2024–	Adjunct Assistant Professor	Oklahoma State University, OK, USA Department of Plant Biology, Ecology, and Evolution

Previous Positions

2022–2024	Assistant Professor	Oklahoma State University, OK, USA Department of Plant Biology, Ecology, and Evolution
2019–2022	Simons Fellow, Life Sciences Research Foundation	Donald Danforth Plant Science Center
2018–2022	Postdoctoral Associate	Donald Danforth Plant Science Center, St Louis, MO, USA
2017–2018	Postdoctoral Associate	The Ohio State University, Columbus, OH, USA
2010–2011	Research Associate	University of Dhaka, Dhaka, Bangladesh
2010–2011	Molecular Biologist/Bioinformatician	Bangladesh Jute Research Institute, Dhaka, Bangladesh
2009	Research Associate	University of Dhaka, Dhaka, Bangladesh

Grants

2019–2022	Simons Fellow for the Life Sciences Research Foundation (fellowship: \$161,000, research grant: \$30,000)	Life Sciences Research Foundation
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Awards & Honors

2019–2022	Simons Fellow for the Life Sciences Research Foundation	Life Sciences Research Foundation
2019	Plantae Fellow	American Society of Plant Biologists
2018	Nominee, Northeastern Association of Graduate Schools doctoral dissertation award	The Pennsylvania State University
2014	J. Ben and Helen D. Hill Memorial Fund Award	The Pennsylvania State University
2011	Braddock Graduate Scholarship	The Pennsylvania State University
2011	Funds for Excellence in Graduate Recruiting Award	The Pennsylvania State University
2009	Scholarship for academic excellence in B.Sc. Honors	University of Dhaka

Publications

14 primary research articles, 4 invited reviews, 7 commentaries, 1 book chapter.

Total citations in [Google Scholar](#): 2,094 (as of March 2026)

19. Pavinato VAC, Penton-Michel EH, **Shahid S**, Wenger JA, Slotkin RK, Michel A (*under review at Molecular Ecology*) Adaptation to plant defense in an agricultural insect pest: Integrating genome scans and gene expression in the soybean aphid reveals multi-genic pathways.
18. Vanek A, Griffiths-Jones S, Meyers B, **Shahid S**, Axtell MJ (2025) miRScore: a rapid and precise microRNA validation tool. *PLoS computational biology* 21 (11), e1013663.
17. Bartz P, Grullón-Penkova I, Cavaleri M, Reed S, **Shahid S**, Wood T, Bachelot B (2025) Experimental Warming Alters N Cycle. *New Phytologist* 248(6), pp.2750-2763.
16. Liu P, Cuerda-Gil D, **Shahid S**, Slotkin RK (2022) The epigenetic control of the transposable element lifecycle in plant genomes and beyond. *Annual Review of Genetics* 56, 63-87. [review article]
15. **Shahid S**, Slotkin RK (2020) The current revolution in transposable element biology enabled by long-read sequencing. *Current Opinion in Plant biology* 54, 49-56. [review article]
14. Yates-Stewart AD, Daron J, Wijeratne S, **Shahid S**, Edgington HA, Slotkin RK, Michel A (2020) Soybean aphids adapted to host-plant resistance by down regulating putative effectors and up regulating transposable elements. *Insect Biochemistry and Molecular Biology* 121,103363.
13. Yang Z, Wafula EK, Kim G, **Shahid S**, McNeal JR, Ralph PE, Timilsena PR, Yu W, Kelly E, Zhang H, Person TN, Altman NS, Axtell MJ, Westwood JH, dePamphilis CW (2019) Stolen genes in parasitic plants: convergent horizontal transfer and crosstalk of mobile nucleic acids. *Nature Plants* 5(9), 991-1001.
12. Choudury S, **Shahid S**, Cuerda-Gil D, Panda K, Cullen A, Ashraf QUA, Sigman MJ, McCue AD, Slotkin RK (2019) The RNA export factor ALY1 enables genome-wide RNA-directed DNA methylation. *The Plant Cell* 31(4), 759-774.
Highlighted in: *The Plant Cell* 31(4), 753. DOI: 10.1105/tpc.19.00138
11. **Shahid S**, Kim G, Johnson NR, Wafula EK, Wang F, Coruh C, Bernal-Galeano V, Phifer T, dePamphilis CW, Westwood JH and Axtell MJ (2018) MicroRNAs from the parasitic plant *Cuscuta campestris* target host messenger RNAs. *Nature* 553, 82-85. [F1000 recommended article]
Highlighted in: *Nature Reviews Genetics* 19(3), 127. DOI: 10.1038/nrg.2018.3, *Molecular Plant* 1(3), 354-356. DOI: 10.1016/j.molp.2018.02.004, *Non-coding RNA investigation*, 2,44. DOI: 10.21037/ncr.2018.07.01
10. Islam MS, Saito JA, Emdad EM, Ahmed B, Islam MM, Halim A, Hossen QM, Hossain MZ, Ahmed R, Hossain MS, Kabir SM, Khan MS, Khan MM, Hasan R, Aktar N, Honi U, Islam R, Rashid MM, Wan X, Hou S, Haque T, Azam MS, Moosa MM, Elias SM, Hasan AM, Mahmood N, Shafiuddin M, **Shahid S** et al. (2017) Comparative genomics of two jute species and insight into fiber biogenesis. *Nature Plants* 3, 16223.
9. **Shahid S***, Begum R*, Razzaque S, Jesmin, Seraj ZI (2016) Variability in amylose content of Bangladeshi rice cultivars due to unique SNPs in Waxy allele. *Journal of Cereal Science* 71, 1-9. *Equal contributors
8. Coruh C, Cho SH, **Shahid S**, Liu Q, Wierzbicki A, Axtell MJ (2015) Comprehensive annotation of *Physcomitrella patens* small RNA loci reveals that the heterochromatic short interfering RNA pathway is largely conserved in land plants. *The Plant Cell* 27(8), 2148-2162.
7. Kwok CK, Ding Y, **Shahid S**, Assmann SM, Bevilacqua PC (2015) A stable RNA G-quadruplex within the 5'-UTR of *Arabidopsis thaliana* ATR mRNA inhibits translation. *Biochemical Journal* 467(1), 91-102.
6. Coruh C, **Shahid S**, Axtell MJ (2014) Seeing the forest for the trees: annotating small RNA producing genes in plants. *Current Opinion in Plant Biology* 18, 87-95. [review article]
5. **Shahid S**, Axtell MJ (2013) Identification and annotation of small RNA genes using ShortStack. *Methods* 67(1), 20-27. [review article]

4. *Amborella* Genome Project (including **Shahid S** and Axtell MJ) (2013) The *Amborella* genome and the evolution of flowering plants. *Science* 342(6165), 1241089. [*F1000 recommended article*]
Highlighted in: *Science* 342(6165), 1456-1457. DOI:10.1126/science.1248709
3. Azad A, **Shahid S**, Noman N, Lee H (2011) Prediction of plant promoters based on hexamers and random triplet pair analysis. *Algorithms for Molecular Biology* 6(1), 19.
2. Lisa LA, Elias SM, Rahman MS, **Shahid S**, Iwasaki T, Hasan AM, Kosuge K, Fukami Y, Seraj ZI (2011) Physiology and gene expression of the rice landrace Horkuch under salt stress. *Functional Plant Biology* 38(4), 282–292.
1. **Shahid S**, Elias SM, Biswas S, Seraj ZI (2010) READS—a resource for plant non-coding regulatory sequence analysis. *Plant Tissue Culture and Biotechnology* 20(2), 211–223.

Book Chapter & Commentaries

8. Seraj ZI, Elias SM, **Shahid S**, Haque T, Malo R, Shohan MUS (2022). Deciphering comparative and structural variation that regulates abiotic stress response. *Bioinformatics in agriculture* (pp. 561-586). Academic Press.
7. **Shahid S** (2022) Sorghum anthracnose resistance: One MITE to rule them all. *The Plant Cell*. DOI: 10.1093/pl-cell/koab316.
6. **Shahid S** (2021) Hunting for TEs: microRNAs switch targets in developing pollen. *The Plant Cell*. DOI: 10.1093/pl-cell/koab300.
5. **Shahid S** (2021) The making and unmaking of the silenced chromatin. *The Plant Cell* 33 (4), 786.
4. **Shahid S** (2020) A DNA methyl reader with an affinity for salt stress. *The Plant Cell* 32 (11), 3380.
3. **Shahid S** (2020) On UPF proteins, baking cookies, and the many targets of Nonsense-Mediated RNA Decay. *The Plant Cell* 32(9), 2665.
2. **Shahid S** (2020) The rules of attachment: REC8 Cohesin connects chromatin architecture and recombination machinery in meiosis. *The Plant Cell* 32(4), 808.
1. **Shahid S** (2020) To be or not to be pathogenic: Transcriptional reprogramming dictates a fungal pathogen's response to different hosts. *The Plant Cell* 32(2), 289.

Invited Talks

2026	Department of Biology, University of Oxford	Oxford, UK
2025	Norwich-Cambridge Science Symposium, Keynote speaker	University of Cambridge, UK
2025	Genetics Society Seed Plant Meeting	University of Durham, UK
2025	International Society of Parasitic Plants	Virtual seminar
2025	Department of Biology, University of York	York, UK
2024	20th Anniversary of Global Network of Bangladeshi Biotechnologists	Virtual seminar
2024	Barcelona RNA Club, Centre for Research in Agricultural Genomics	Virtual Seminar
2024	Department of Entomology and Plant Pathology, Oklahoma State University	Cancelled due to event conflict
2024	Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University	Ames, IA, USA
2023	Department of Biological Sciences, University of Alabama	Tuscaloosa, AL, USA
2023	Department of Ecology & Evolutionary Biology, University of Kansas	Lawrence, KS, USA
2023	The 33rd International Conference on Arabidopsis Research	Chiba, Japan
2023	The Sainsbury Laboratory, Norwich Research Park	Virtual seminar

2023	School of Biosciences, University of Sheffield	Virtual seminar
2023	Department of Biochemistry and Molecular Biology, Oklahoma State University	Stillwater, OK, USA
2022	Department of Plant and Soil Sciences, University of Delaware	Virtual seminar
2022	Department of Plant Biology, Ecology and Evolution, Oklahoma State University	Stillwater, OK, USA
2022	Department of Biology, George Mason University	Fairfax, VA, USA
2021	Department of Plant Biology, Carnegie Institution for Science	Virtual seminar
2021	Gregor Mendel Institute	Virtual seminar
2021	Department of Cell and Systems Biology, University of Toronto	Virtual seminar
2019	3rd Annual MU Plant Research Symposium	University of Missouri, Columbia, MO, USA
2019	3rd Annual Bioinformatics and Beers	Donald Danforth Plant Science Center, St. Louis, MO, USA
2017	14th World Congress of Parasitic Plants	Pacific grove, CA, USA
2017	Annual Meeting of Northeastern section of American Society of Plant Biologists	Yale University, New haven, CT, USA
2016	Annual Meeting of American Society of Plant Biologists	Austin, TX, USA
2014	Annual Meeting of American Society of Plant Biologists	Portland, OR, USA
2010	6th International Plant Tissue Culture and Biotechnology Conference	Dhaka, Bangladesh

Teaching

2025–	Instructor , BIS312: Capstone Research Project (8 students)	University of Sheffield
2024–	Guest lecturer , BIS214: The green planet (enrollment: 41 students)	University of Sheffield
2024–	Guest lecturer , BIS4104: The scientific cycle (11 students)	University of Sheffield
2024–2025	Instructor , BIS302: Literature review (9 students)	University of Sheffield
2024	Guest lecturer , PBIO 4463/5463: Plant Physiology (enrollment: 18 students)	Oklahoma State University
2023	Instructor , BIOL 3023: General Genetics (enrollment: 143 students)	Oklahoma State University
2023	Instructor , PBIO 1404: Introduction to Plant Biology (enrollment: 161 students)	Oklahoma State University
2022	Guest lecturer , PBIO 5110: Professional Development (enrollment: 3 students)	Oklahoma State University
2022	Guest lecturer , Biology 3041: Plant Biology & genetic engineering (~30 students)	Washington University in St Louis
2014	Instructor , Upward Bound Summer Academy (8 students)	The Pennsylvania State University

Upward Bound Summer Academy is a college preparation-focused program that helps low-income, first-generation, and underrepresented high-school students gain academic skills and motivation to continue their education beyond high school. As an instructor, I designed, wrote, and implemented a 7-day course focused on plant genomics, with hands-on lessons on using common bioinformatics tools for sequence analysis.

Mentoring

Supervision of Graduate Student Research

2025–	Deiniol Owen , Integrated M.S. student, University of Sheffield
2025–	Jen Crooks , Integrated M.S. student, University of Sheffield
2023–	Megan Adler , NSF Graduate Research fellow and M.S. student, Oklahoma State University

Graduate Student Thesis Committee Member

- 2023–2025 **Jorge Gabriel Orozco Gonzalez**, M.S. student, Plant Biology program, Oklahoma State University
- 2022–2024 **Parker Bartz**, M.S. student, Plant Biology program, Oklahoma State University
- 2022–2023 **Gina Errico**, M.S. student, Plant Biology program, Oklahoma State University
- 2022–2023 **Deepali Luthra**, Ph.D. student, Microbiology and Molecular Genetics program, Oklahoma State University

Supervision of Undergraduate Student Research

- 2023 **Jackson Grimes**, undergraduate student, Oklahoma State University
- 2023 **Amna Dar**, undergraduate student, Oklahoma State University
- 2023 **Elizabeth Brandt**, undergraduate student, Oklahoma State University
- 2023 **Zoe Hester**, undergraduate student, Oklahoma State University
- 2023 **Reese Jackson**, undergraduate student, Oklahoma State University
- 2011 **Proyash Roy**, undergraduate student, University of Dhaka Currently lecturer at Teesside University
- 2009–2010 **Tarana Sharmin**, undergraduate student, University of Dhaka Currently lecturer at the University of Dhaka
- 2009–2010 **Fahmida Zaman**, undergraduate student, University of Dhaka Currently graduate student at Mid Sweden University

Professional Development

- 2013 **Certificate for course in College Teaching, Schreyer Institute for Teaching Excellence** Pennsylvania State University

Professional Service

Editorial Board Membership

- 11/2023–
09/2019–12/2021 **Reviewing Editor, Frontiers in Plant Physiology**
Assistant Features Editor, The Plant Cell journal

Peer reviewer

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| The Plant Cell | Nucleic Acids Research | New Phytologist |
| Bioinformatics | BMC Genomics | Environmental Sciences Europe |
| Plant Physiology | Rice Science | Plants |

Service & Leadership Activities

- 10/2024– **Seminar co-lead, Plants, Photosynthesis and Soil Cluster** University of Sheffield
- 01/2024– **UKRI BBSRC Pool of Experts**
- 08/2022–02/2024 **OSU College of Arts & Sciences Faculty Council** Oklahoma State University
- 08/2022 **Moderator for “Plantae presents” webinar on the Biology of Plant Genomes**
- 01/2020–12/2020 **CSTM representative for the Seminar Committee** Donald Danforth Plant Science Center
- 08/2019–12/2019 **Member, Committee for Scientific Training & Mentoring (CSTM)** Donald Danforth Plant Science Center

Outreach

- 09/2025 **Panelist for Career workshop at Norwich-Cambridge Science Symposium**
- 12/2025 **Interview for ITV network special Christmas feature program on parasitic plants**
- 08/2023 **Co-organized 'Career jungle gym in a post-pandemic world' workshop at ASPB 2023**
- 03/2023 **Quanta magazine feature on transposable elements** ([Link to article](#))

- 08/2021 **Quanta magazine feature and podcast on parasitic plants** ([Link to article](#))
- 01/2019 **Raspberry Pi Jam at Donald Danforth Plant Science Center**
- 04/2017 **Girl Scout workshop with Graduate Women in Science (GWIS) State College**
- 02/2017 **Penn State 'Exploration U' outreach at Bald Eagle Area High School**
- 04/2016 **Girl Scout workshop with GWIS**
- 03/2016 **Penn State 'Exploration U' outreach with GWIS at Nittany Valley Charter School**
- 01/2016 **Penn State 'Expanding Your Horizons' outreach with GWIS**
- 11/2015 **Strawberry DNA isolation outreach for Nittany Valley Charter School**
- 09/2015 **Penn State Science U outreach with GWIS**
- 09/2014 **Penn State Science U outreach 'Think outside the Beaker'**

Society Memberships

The Genetics Society, The British Society of Plant Pathology, International Parasitic Plant Society