

# Saima Shahid

Assistant Professor at Oklahoma State University

## Contact

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📅 Updated Dec 2023

## Education

2017	<b>Ph.D., Plant Biology</b>	The Pennsylvania State University, University Park
2009	<b>M.S., Biochemistry and Molecular Biology</b>	University of Dhaka
2008	<b>B.Sc., Biochemistry and Molecular Biology (Honors)</b>	University of Dhaka

## Current Position

2022 –	<b>Assistant Professor</b> Department of Plant Biology, Ecology, and Evolution	Oklahoma State University
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## Previous Positions

2019–2022	<b>Simons Fellow, Life Sciences Research Foundation</b>	Donald Danforth Plant Science Center
2018–2022	<b>Postdoctoral Associate</b>	Donald Danforth Plant Science Center
2017–2018	<b>Postdoctoral Associate</b>	The Ohio State University, Columbus
2010–2011	<b>Research Associate</b>	University of Dhaka
2010–2011	<b>Molecular Biologist/Bioinformatician</b>	Bangladesh Jute Research Institute
2009	<b>Research Associate</b>	University of Dhaka

## Grants

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

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

## Peer-reviewed Publications

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

Total citations in Google Scholar: 1,567 (as of Dec 2023)

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/ncri.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

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	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
2022	Department of Biology, George Mason University	Fairfax, VA
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
2019	3rd Annual Bioinformatics and Beers	Donald Danforth Plant Science Center, St. Louis, MO
2017	14th World Congress of Parasitic Plants	Pacific grove, CA
2017	Annual Meeting of Northeastern section of American Society of Plant Biologists	Yale University, New haven, CT
2016	Annual Meeting of American Society of Plant Biologists	Austin, TX
2014	Annual Meeting of American Society of Plant Biologists	Portland, OR
2010	6th International Plant Tissue Culture and Biotechnology Conference	Dhaka, Bangladesh

## Teaching

2023	<b>Instructor</b> , PBIO 1404: Introduction to Plant Biology (undergraduate course)	Oklahoma State University
2022	<b>Guest lecturer</b> , PBIO 5110: Professional Development (graduate course)	Oklahoma State University
2022	<b>Guest lecturer</b> , Biology 3041: Plant Biology & genetic engineering (undergraduate)	Washington University in St Louis
2014	<b>Instructor</b> , Upward Bound Summer Academy	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

2023– **Megan Adler**, M.S. student, Oklahoma State University

### Graduate Student Thesis Committee Member

2022– **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– **Reviewing Editor, Frontiers in Plant Physiology**  
 09/2019–12/2021 **Assistant Features Editor, The Plant Cell journal**

## Peer reviewer

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

## Service & Leadership Activities

08/2022–	<b>OSU College of Arts &amp; Sciences Faculty Council</b>	Oklahoma State University
08/2022	<b>Moderator for “Plantae presents” webinar on the Biology of Plant Genomes</b>	
01/2020–12/2020	<b>CSTM representative for the Seminar Committee</b>	Donald Danforth Plant Science Center
08/2019–12/2019	<b>Member, Committee for Scientific Training &amp; Mentoring (CSTM)</b>	Donald Danforth Plant Science Center

## Outreach

08/2023 **Co-organized 'Career jungle gym in a post-pandemic world' workshop at ASPB 2023**

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

American Society of Plant Biologists, International Parasitic Plant Society