

# Saima Shahid

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## EDUCATION

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2017	Ph.D., Plant Biology Penn State University, PA, USA Advisor: Dr. Michael Axtell
2009	M.S., Biochemistry and Molecular Biology University of Dhaka, Dhaka, Bangladesh Advisor: Dr. Zeba Seraj
2008	B.Sc. (Honors), Biochemistry and Molecular Biology University of Dhaka, Dhaka, Bangladesh

## POSITIONS

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08/2019 – present	Simons Fellow for the Life Science Research Foundation Donald Danforth Plant Science Center
08/2018 – present	Postdoctoral Associate, Donald Danforth Plant Science Center, MO, USA Advisor: Dr. R. Keith Slotkin
12/2017 – 07/2018	Postdoctoral Associate, The Ohio State University, OH, USA Advisor: Dr. R. Keith Slotkin
06/2010 – 07/2011	Research Associate, University of Dhaka, Bangladesh Principal Investigator: Dr. Zeba Seraj
01/2010 – 02/2011	Molecular Biologist/Bioinformatician, Jute Genome Project, Bangladesh Jute Research Institute, Dhaka, Bangladesh (collaboration with University of Dhaka and University of Hawai'i at Mānoa) Principal Investigator: Dr. Maqsudul Alam (University of Hawai'i at Mānoa)
06/2009 – 12/2009	Research Associate, University of Dhaka, Bangladesh Principal Investigator: Dr. Zeba Seraj

## GRANTS, AWARDS AND HONORS

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2019 - 2022	Simons Fellow of the Life Science Research Foundation (3-year fellowship: \$156,000, research grant: \$30,000)
2019	Best poster presentation, Donald Danforth Plant Science Center Annual Retreat

2019	ASPB Plantae Fellow
2018	Penn State Nominee for Northeastern Association of Graduate Schools doctoral dissertation award in Agricultural, Biological and Health Sciences
2014	J. Ben & Helen D. Hill Memorial Fund Award, Penn State University (\$1000)
2011	Braddock Graduate Scholarship, Penn State University (\$2500)
2011	Funds for Excellence in Graduate Recruiting Award, Penn State University (\$2500)
2009	Scholarship for academic excellence in B.Sc. Honors, University of Dhaka

### **Travel funding**

2019	CSTM summer travel award, Donald Danforth Plant Science Center (\$1000)
2017	Travel stipend, Huck Institutes of the Life Sciences, Penn State University (\$750)
2017	Department of Biology travel grant, Penn State University (\$250)
2013	Department of Biology travel grant, Penn State University (\$250)

## **PUBLICATIONS**

12 primary research articles, 3 invited reviews, 4 commentaries

**Google scholar:** <https://scholar.google.com/citations?user=lez4bclAAAAJ&hl=en>

Total citations (as of December 2020): 765

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**, Shommu NS, Jahan S, Roy S, Chowdhury A, Akhand AI, Nisho GM, Uddin KS, Rabeya T, Hoque SM, Snigdha AR, Mortoza S, Matin SA, Islam MK, Lashkar MZ, Zaman M, Yuryev A, Uddin MK, Rahman MS, Haque MS, Alam MM, Khan H, Alam M (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.

## Commentaries

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

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2019	3 <sup>rd</sup> Annual MU Plant Research Symposium, University of Missouri, Columbia, MO
2019	3 <sup>rd</sup> Annual Bioinformatics and Beers, Donald Danforth Plant Science Center, St. Louis, MO
2017	14 <sup>th</sup> 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 & Biotechnology Conference, Dhaka, Bangladesh

## CONTRIBUTED TALKS

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2017	Department of Molecular Genetics, Ohio State University, Columbus, OH
2015	Plant Biology Seminar, Penn State University, University Park, PA

## POSTER PRESENTATIONS

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2020	Annual Meeting of American Society of Plant Biologists [virtual meeting]
2019	Gordon Research Conference – Epigenetics, Holderness, NH
2019	Annual Science Retreat, Donald Danforth Plant Science Center, Potosi, MO
2017	Graduate Exhibition, Penn State University, University Park, PA
2015	Annual Meeting of American Society of Plant Biologists, Minneapolis, MN
2015	GWIS 94th Annual Meeting and Science Symposium, Penn State University, University Park, PA
2015	20 <sup>th</sup> Penn State Plant Biology Symposium, University Park, PA
2014	Bioinformatics and Genomics Retreat, Huck Institutes of the Life Sciences, Penn State University, University Park, PA
2013	Genome Informatics Meeting, Cold Spring Harbor Laboratory, NY

## TEACHING EXPERIENCE

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### ***Teaching Assistant, Biology Department, Penn State University***

2016	Biology 230W: Molecules and Cells (lab component)
2015	Biology 240W: Function and Development of Organisms (lab component)
2013	Biology 230W: Molecules and Cells (lab component)
2012	Biology 230W: Molecules and Cells (lab component)

### ***Instructor, Upward Bound Summer Academy, Penn State University***

2014	Designed, wrote, and implemented a 7-day course focused on plant genomics, with hands-on lessons on using common bioinformatics tools for sequence analysis. 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.
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## MENTORING EXPERIENCE

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2020	John Reddy Peasari, summer intern at the Danforth Center, MS student at the Saint Louis University
2019	Seth Edwards, graduate student at the University of Missouri
2011	Proyash Roy, undergraduate at the University of Dhaka (currently graduate student at the University of Warwick)
2010 – 2011	Sudip Biswas, MS student at the University of Dhaka (currently graduate student at the Texas A&M University)
2009 – 2010	Tarana Sharmin, undergraduate at the University of Dhaka (currently lecturer at the University of Dhaka)
2009 – 2010	Fahmida Zaman, undergraduate at the University of Dhaka (currently graduate student at the Mid Sweden University)

## SERVICE & OUTREACH

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08/2019 – 12/2019	Seminar speaker coordinator, Committee for Scientific Training and Mentoring, Danforth Plant Science Center
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### ***Editorial work***

09/2019 – present	Assistant Features Editor, <i>The Plant Cell</i> journal
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### ***Peer reviewer***

Nucleic Acids Research, Bioinformatics, Environmental Sciences Europe, BMC Genomics, New Phytologist, Rice Science

### ***Outreach***

01/2019	Volunteer	Raspberry Pi Jam at Donald Danforth Plant Science Center
04/2017	Organizer	Girl Scout workshop with Graduate Women in Science (GWIS)
02/2017	Organizer	State College Exploration U at Bald Eagle Area High School

04/2016	Organizer	Girl Scout workshop with GWIS
03/2016	Volunteer	State College Exploration U with GWIS at Nittany Valley Charter School
01/2016	Organizer	Penn State <i>'Expanding Your Horizons'</i> outreach with GWIS
11/2015	Organizer	Strawberry DNA isolation outreach for Nittany Valley Charter School
09/2015	Volunteer	Penn State Science U outreach with GWIS
09/2014	Volunteer	Penn State Science U outreach <i>'Think outside the Beaker'</i>

***Society Memberships***

American Society of Plant Biologists, Global Network of Bangladeshi Biotechnologists