

EDUCATION

2025	University of California, Berkeley	Ph.D.	Microbiology with Designated Emphasis in Computational & Genomic Biology
2017	University of California, Berkeley	B.S.	Bioengineering
2015	Diablo Valley College, Pleasant Hill		Bioengineering

EXPERIENCE

2025.06 – Present	Postdoctoral researcher, University of California, Berkeley Advisor: Dr. Ksenia Krasileva
2017.09 – 2020.08	Research assistant, Innovative Genomics Institute, Berkeley Advisor: Dr. Brian Staskawicz

PEER-REVIEWED PUBLICATION

2025	Sutherland, CA, Danielle SM, Seong K , Wei W, and Krasileva KV. The Resistance Awakens: Diversity at the DNA, RNA, and protein levels informs engineering of plant immune receptors from Arabidopsis to crops. 2025. <i>The Plant Cell</i> .
2024	Thynne, E., Ali, H., Seong, K. , Abukhalaf, M., Guerreiro, M.A., Flores-Nunez, V.M., Hansen, R., Bergues, A., Salman, M.J., Rudd, J.J. and Kanyuka, K., 2024. An array of <i>Zymoseptoria tritici</i> effectors suppress plant immune responses. <i>Molecular Plant Pathology</i> , 25(10), p.e13500.
2024	Ortega, A., Seong, K. , Schultink, A., de Toledo Thomazella, D.P., Seo, E., Zhang, E., Pham, J., Cho, M.J., Dahlbeck, D., Warren, J. and Minsavage, G.V., 2024. CRISPR/Cas9-mediated editing of Bs5 and Bs5L in tomato leads to resistance against Xanthomonas. <i>Plant Biotechnology Journal</i> , 22(10), p.2785.
2024	Tang, Y., Yang, X., Huang, A., Seong, K. , Ye, M., Li, M., Zhao, Q., Krasileva, K. and Gu, Y., 2024. Proxiome assembly of the plant nuclear pore reveals an essential hub for gene expression regulation. <i>Nature Plants</i> , 10(6), pp.1005-1017.
2024	Schuster, M., Schweizer, G., Reissmann, S., Happel, P., Aßmann, D., Rössel, N., ... , Seong, K. , Krasileva, K. and Kahmann, R. (2024). Novel secreted effectors conserved among smut fungi contribute to the virulence of <i>Ustilago maydis</i> . <i>Molecular Plant-Microbe Interactions</i> , 37(3), 250-263.
2023	Karavolias, N.G., Patel-Tupper, D., Seong, K. , Tjahjadi, M., Gueorguieva, G.A., Tanaka, J., Gallegos Cruz, A., Lieberman, S., Litvak, L., Dahlbeck, D. and Cho, M.J., Paralog editing tunes rice stomatal density to maintain photosynthesis and improve drought tolerance. <i>Plant Physiology</i> , 192(2), pp.1168-1182.
2023	Tamborski, J., Seong, K. , Liu, F., Staskawicz, B. and Krasileva, K., Altering specificity and auto activity of plant immune receptors Sr33 and Sr50 via a rational engineering approach. <i>Molecular Plant-Microbe Interactions</i> , (ja).
2023	Seong, K. and Krasileva, K.V., Prediction of effector protein structures from fungal phytopathogens enables evolutionary analyses. <i>Nature Microbiology</i> , 8(1), pp.174-187.
2022	Steindorff, A.S., Seong, K. , Carver, A., Calhoun, S., Fischer, M.S., Stillman, K., Liu, H., Drula, E., Henrissat, B., Simpson, H.J. and Schilling, J.S., Diversity of genomic adaptations to the post-fire environment in Pezizales fungi points to crosstalk between charcoal tolerance and sexual development. <i>New Phytologist</i> , 236(3), pp.1154-1167.
2021	Seong, K. and Krasileva, K.V., Computational structural genomics unravels common folds and novel families in the secretome of fungal phytopathogen <i>Magnaporthe oryzae</i> . <i>Molecular Plant-Microbe Interactions</i> , 34(11), pp.1267-1280.
2021	Liu, B.*, Seong, K.* , Pang, S.*, Song, J.*, Gao, H., Wang, C., Zhai, J., Zhang, Y., Gao, S., Li, X. and Qi, T., Functional specificity, diversity, and redundancy of <i>Arabidopsis</i> JAZ family repressors in jasmonate and COI1-regulated growth,

development, and defense. *New Phytologist*, 231(4), pp.1525-1545.

- 2021 Thomazella, D.P.D.T., **Seong, K.**, Mackelprang, R., Dahlbeck, D., Geng, Y., Gill, U.S., Qi, T., Pham, J., Giuseppe, P., Lee, C.Y. and Ortega, A., Loss of function of a *DMR6* ortholog in tomato confers broad-spectrum disease resistance. *Proceedings of the National Academy of Sciences*, 118(27), p.e2026152118.
- 2020 **Seong, K.***, Seo, E.*, Witek, K., Li, M. and Staskawicz, B., Evolution of NLR resistance genes with noncanonical N-terminal domains in wild tomato species. *New Phytologist*, 227(5), pp.1530-1543.
- 2018 Qi, T., **Seong, K.**, Thomazella, D.P., Kim, J.R., Pham, J., Seo, E., Cho, M.J., Schultink, A. and Staskawicz, B.J., NRG1 functions downstream of EDS1 to regulate TIR-NLR-mediated plant immunity in *Nicotiana benthamiana*. *Proceedings of the National Academy of Sciences*, 115(46), pp.E10979-E10987.

* Equal contribution

PREPRINTS

- 2024 **Seong, K.**, Wei, W., Sent, S., Vega, B., Dee, A., Ramirez-Bernardino, G., Kumar, R., Parra, L., Saur, I. and Krasileva, K., 2024. Resurrection of the Plant Immune Receptor Sr50 to Overcome Pathogen Immune Evasion. *bioRxiv*. Currently in revision for *Nature Biotechnology*.
- 2024 Lunde, C., **Seong, K.**, Kumar, R., Deatker, A., Chhabra, B., Wang, M., Kaur, S., Song, S., Palayur, A., Davies, C. and Cumberlich, W., 2024. Wheat Enhanced Disease Resistance EMS-Mutants Include Lesion-mimics With Adult Plant Resistance to Stripe Rust. Currently in revision for *Molecular Breeding*.
- 2023 **Seong, K.**, Kumar, R., Lunde, C. and Krasileva, K., 2023. Chromosome-level genome assembly of *Triticum turgidum* var 'Kronos'. Zenodo datasets. Currently in manuscript preparation.
- 2022 **Seong, K.**, Shaw, C.L., Seo, E., Li, M., Krasileva, K.V. and Staskawicz, B., A draft genome assembly for the heterozygous wild tomato *Solanum habrochaites* highlights haplotypic structural variations of intracellular immune receptors. *bioRxiv*, pp.2022-01

INVITED TALKS

- 2025.04 Beyond Primary Sequence: Leveraging Predicted Structures to Decode Fungal Effector Evolution and Engineer Plant Immune Receptors. Seoul National University, Seoul, South Korea.
- 2023.07 Structures predicted by AlphaFold elucidate fungal effector evolution. The 19th Congress of IS-MPMI, Providence, Rhode Island.
- 2022.11 Elucidating effector evolution through predicted structures. What's New in MPMI with Kyungyong Seong. Link: https://apsjournals.apsnet.org/whatsnew_Seong

AWARDS AND FELLOWSHIPS

- 2024-2025 BioEnginuity Fellowship: awarded for innovative research on plant immune receptor engineering
- 2022 Best Graduate Student-authored Paper Aware, MPMI
- 2020-2022 Berkeley Fellowship for Graduate Study
- 2017 National Science Foundation Research Experience for Undergraduate
- 2016 Quantedge Award for Academic Excellence

OUTREACH

- 2023/2024.07 Instructor, the Genomes and Plant Health | University of California, Berkeley

MENTORSHIP

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| 2024-2025 | Undergraduate | McCree Tang and Brandon Vega |
| 2023 | Undergraduate | Griselda Ramirez-Bernardino |
| 2023 | Graduate | Amanda Dee |

Teaching

2023/2024, Fall	Graduate	Graduate module for Computational Biology
2024, Fall	Undergraduate	General Microbiology Lab
2024, Spring	Undergraduate	Secret Life of Plants

Services

Reviews	Microbial Genomics (1), Molecular Ecology (1), PLOS Pathogens (1), The Plant Journal (1)
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