

**Carolyn G. Rasmussen**  
Department of Botany and Plant Sciences  
Center for Plant Cell Biology  
University of California, Riverside  
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### EDUCATION

- 2007 University of California, Berkeley, Ph.D. in Microbiology  
"Characterization of genes required for septation and cell fusion in *Neurospora crassa*" Research Advisor: Professor N. Louise Glass
- 1998 University of Chicago B.A. in Chemistry, General Honors, Honors in Chemistry  
Research Advisor: Professor David G. Lynn

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### RESEARCH AND PROFESSIONAL EXPERIENCE

- 07/2020-present Associate Professor of Plant Cell Biology and Plant Cell Biologist, University of California, Riverside
- 07/2014-2020 Assistant Professor of Plant Cell Biology and Plant Cell Biologist, University of California, Riverside
- 2011- 2013 Postdoctoral Researcher, University of Wyoming, Molecular Biology  
Postdoctoral Advisor: Professor Anne W. Sylvester
- 2007-2011 American Cancer Society Postdoctoral Research Fellow  
University of California, San Diego, Cell and Developmental Biology  
Postdoctoral Advisor: Professor Laurie G. Smith

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### PUBLICATIONS SINCE 2014

<sup>(UG)</sup> indicates undergraduate researcher from the Rasmussen lab

- Neher, W., **Rasmussen, C. G.**, Braybrook, S. A., Lažetić, V., Stowers, C. E., Mooney, P. T., Sylvester, A. W. & Springer, P. S. The maize preligule band is subdivided into distinct domains with contrasting cellular properties prior to ligule outgrowth. *Development* (2023). doi:10.1242/dev.201608
- Allsman, L. A., Bellinger, M. A., Huang, V.<sup>(UG)</sup>, Duong, M.<sup>(UG)</sup>, Contreras, A.<sup>(UG)</sup>, Romero, A. N., Verboonen, B., Sidhu, S.<sup>(UG)</sup>, Zhang, X., Steinkraus, H., Uyehara, A. N., Martinez, S. E., Sinclair, R. M., Soriano, G. S.<sup>(UG)</sup>, Diep, B.<sup>(UG)</sup>, Byrd, D., V.<sup>(UG)</sup>, Noriega, A.<sup>(UG)</sup>, Drakakaki, G., Sylvester, A. W. & **Rasmussen, C. G.** Subcellular positioning during cell division and cell plate formation in maize. *Front. Plant Sci.* **14**, 1204889 (2023).
- Nan, Q., Liang, H., Mendoza, J., Liu, L., Fulzele, A., Wright, A., Bennett, E. J., **Rasmussen, C. G.** & Facette, M. R. The OPAQUE1/DISCORDIA2 myosin XI is required for phragmoplast guidance during asymmetric cell division in maize. *Plant Cell* **35**, 2678–2693 (2023).
- Bellinger, M. A., Uyehara, A. N., Allsman, L., Martinez, P., McCarthy, M. C. & **Rasmussen, C. G.** Cortical microtubules contribute to division plane positioning during telophase in maize. *Plant Cell* **35**, 1496–1512 (2023).

- Mills, A. M., Morris, V. H.<sup>(UG)</sup> & **Rasmussen, C. G.** The localization of PHRAGMOPLAST ORIENTING KINESIN1 at the division site depends on the microtubule-binding proteins TANGLED1 and AUXIN-INDUCED IN ROOT CULTURES9 in Arabidopsis. *Plant Cell* **34**, 4583–4599 (2022).
- Mills, A. M. & **Rasmussen, C. G.** Defects in division plane positioning in the root meristematic zone affect cell organization in the differentiation zone. *J. Cell Sci.* **135**, (2022).
- Mills, A., Jaganatha, V., Cortez, A., Guzman, M., Burnette, J. M., 3rd, Collin, M., Lopez-Lopez, B., Wessler, S. R., Van Norman, J. M., Nelson, D. C. & **Rasmussen, C. G.** A Course-Based Undergraduate Research Experience in CRISPR-Cas9 Experimental Design to Support Reverse Genetic Studies in Arabidopsis thaliana. *J. Microbiol. Biol. Educ.* **22**, e00155–21 (2021).
- Gu Y. & **Rasmussen, C. G.** Cell biology of primary cell wall synthesis in plants. *The Plant cell*, doi:10.1093/plcell/koab249
- Martinez, P, R. Dixit, R.S. Balkunde, A. Zhang, S.E. O’Leary, K.A. Brakke, & **Rasmussen, C. G.** TANGLED1 mediates microtubule interactions that may promote division plane positioning in maize. *J. Cell Biol.* 219. doi:10.1083/jcb.201907184
- Mills, A.M., Allsman, L. A., Leon, S.<sup>(UG)</sup> & **Rasmussen, C. G.** Using Seed Chipping to Genotype Maize Kernels. *Bio-101*: e3553. doi: 10.21769/BioProtoc.3553. PDF
- Farrow, J.<sup>(UG)</sup>, Bellinger, M. A. & **Rasmussen, C. G.** *In vitro* Conditions for Dark Growth and Analysis of Maize Seedlings. *Bio-101*: e3555. doi: 10.21769/BioProtoc.3555. PDF
- Bellinger, M., Sidhu, S.<sup>(UG)</sup> & **Rasmussen, C. G.** Staining Maize Epidermal Leaf Peels with Toluidine Blue O. Bio-Protocol, 9(8). doi:[10.21769/bioprotoc.3214](https://doi.org/10.21769/bioprotoc.3214). PDF
- Allsman, L. A., Dieffenbacher, R. N.<sup>(UG)</sup> & **Rasmussen, C. G.** Glue Impressions of Maize Leaves and Their Use in Classifying Mutants. Bio-protocol Bio101: e3209. doi: [10.21769/BioProtoc.3209](https://doi.org/10.21769/BioProtoc.3209). PDF
- Facette, M.R., **Rasmussen C.G.**, Van Norman J.M. A plane choice: coordinating timing and orientation of cell division during plant development. *Current Opinion in Plant Biology* <https://www.sciencedirect.com/science/article/pii/S1369526618300293>
- Banwarth-Kuhn, M., Nematbakhsh, A., Rodriguez, K. W., Snipes, S., **Rasmussen, C. G.**, Reddy, G. V. & Alber, M. Cell-Based Model of the Generation and Maintenance of the Shape and Structure of the Multilayered Shoot Apical Meristem of Arabidopsis thaliana. *Bull. Math. Biol.* (2018). doi:10.1007/s11538-018-00547-z
- Martinez, P., Allsman, L.A., Brakke, K.A., Hoyt, C.<sup>(UG)</sup>, Hayes, J., Liang, H., Neher, W., Rui, Y., Roberts, A. M., Moradifam, A., Goldstein, B., Anderson, C.T., & **Rasmussen, C. G.**, Predicting division planes of three-dimensional cells by soap-film minimization. *Plant Cell* <https://doi.org/10.1105/tpc.18.00401>. PDF
- Liang, H., Zhang, Y., Martinez, P., **Rasmussen C. G.**, Xu, T., Yang, Z. The microtubule-associated protein IQ67 DOMAIN5 modulates microtubule dynamics and pavement cell shape. *Plant Physiology* doi: <https://doi.org/10.1104/pp.18.00558>
- Rasmussen C. G.**, Bellinger M. An overview of plant division-plane orientation. *New Phytologist*, doi:10.1111/nph.15183. PDF
- Mir, R., Morris, V.<sup>(UG)</sup>, Buschmann, H., & **Rasmussen, C. G.** Division Plane Orientation Defects Revealed by a Synthetic Double Mutant Phenotype. *Plant Physiology* doi: [10.1104/pp.17.01075](https://doi.org/10.1104/pp.17.01075)
- Smertenko, A., Assaad, F., Baluška, F., Bezanilla, M., Buschmann, H., Drakakaki, G., Hauser, M.-T., Janson, M., Mineyuki, Y., Moore, I., Müller, S., Murata, T., Otegui, M. S., Panteris, E., **Rasmussen, C.**, Schmit, A.-C., Šamaj, J., Samuels, L., Staehelin, L. A., Van

- Damme, D., Wasteneys, G. & Žárský, V. Plant Cytokinesis: Terminology for Structures and Processes. *Trends Cell Biol.* **27**, 885–894 (2017).
- Martinez, P., Luo, A., Sylvester, A. W., & **Rasmussen, C. G.** Proper division plane orientation and mitotic progression together allow normal growth of maize. *PNAS*  
doi:10.1073/pnas.1619252114
- Mir, R., Aranda, L.<sup>(UG)</sup> Biaocchi, T., Luo, A., Sylvester, A.W., & **Rasmussen, C. G.** A DII Domain-Based Auxin Reporter Uncovers Low Auxin Signaling During Telophase and Early G1. *Plant Physiol.* 173 173(1):863-871. doi: 10.1104/pp.16.01454
- Rasmussen, C. G.** Using live cell markers in maize to analyze cell division orientation and timing *Methods Mol Biol.* 1370:209-25 “Plant cell division” Marie-Cecille Caillaud, editor.

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## TEACHING EXPERIENCE

- BPSC011 Plants and Human Affairs, 4-unit undergraduate non-majors class (since 2015)
- NASC093 First-year advising for UCR Learning Community 2023
- BPSC235 Plant Cell and Developmental Biology, 4-unit graduate class, 50% with Professor Venu Reddy 2023, previously BPSC237 Plant Cell Biology, 4-unit graduate class co-taught 50% with Professor Zhenbiao Yang (from 2015 - 2021) 100% in 2022
- BPSC191 Seminars in Agriculturally Related Careers in the 21<sup>st</sup> Century, 1-unit undergraduate class developed with Professor David Nelson 2017-2022, (every other year since 2017)
- BPSC 240 Mathematical modeling in patterning and cell shape, 2-unit graduate class (2015)
- BPSC 250 Botany and Plant Sciences Departmental Seminar (Fall Quarter, 2014, and Winter Quarter 2017, 50% with Professor Zhenbiao Yang)

### Supervisor of Postdoctoral research

- 11/2017-2021 Dr. Hong Liang, **co-author** now at Fulgent Genetics
- 07/2015-09/2017 Dr. Ricardo Mir Moreno, **co-author** now at Polytechnic University of Valencia (UPV)

### Supervisor of Graduate Student Research

- 02/2023- 09/2023 Benjamin Verboonen, Plant Biology (PB) graduate student, on leave of absence, **co-author**
- 10/2020-current Stephanie Martinez, PB graduate student, **co-author**
- 03/2019-current Aimee Uyehara, PB graduate student, **co-author**
- 03/2017-06/2022 Dr. Alison Mills, Biochemistry and Molecular Biology (BCMB) graduate student, **co-author**
- 01/2016- 03/2020 Dr. Marschal Bellinger, PB graduate student, **co-author**
- 10/2015- 06/2019 Dr. Pablo Martinez, BCMB graduate student, **co-author**

### Supervisor of Undergraduate student research

- 36 undergraduates mentored, 12 **co-authors**, for more information please see <https://rasmussenlab.weebly.com/lab-members.html>

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## FUNDING AND AWARDS

- 2021-2024 NSF-REU: Research Experience for Undergraduates: Next Generation Cell Biology

of Plants and Plant Pathogens #2051131 with Co-PI Thomas Eulgem \$380,010  
 2021-2023 NSF #2131271 COVID supplement \$129,922  
 2020-2024 NSF-CAREER-MCB-#1942734 \$1,2600,000  
 2019 Natasha V. Raikhel Award in Research Innovation and Science Leadership shared with Professor David Nelson  
 2018 NSF-REU supplement #1852923 \$15,360  
 2017 USDA Hispanic Serving Institution Education grant (\$249,000, PI with 3 UCR Co-PIs David Nelson, Linda Walling and Patricia Springer)  
 2017 NSF-MCB-1716972 (PI, \$870,309)  
 2017 Agricultural Experiment Station Hatch Project (PI, \$52,000)  
 2015 UCR Omnibus Travel Award (\$1,400)  
 2015 Internal Research and Education Development (RED) grant for Mathematical modeling (\$10,000) with Amir Moradifam (UCR, Department of Mathematics)  
 2014 IIGB Internal Chemical genomics grant (\$5,000)  
 2013-2018 NSF-MCB (Cellular Dynamics and Functions) proposal #1244202 and 1505848 (\$521,024.00)  
 2008-2011 American Cancer Society Postdoctoral Fellowship #PF-08-280-01 (\$148,000)  
 2008 Finalist for Life Sciences Research Fellowship LSRF (No money awarded)  
 2006 Graduate Division Travel Grant UC Berkeley (\$500)  
 2004 David D. Perkins Award for Neurospora Research (\$100)  
 2004 Department of Plant and Microbial Biology Travel Grant (\$500)  
 2001 National Science Foundation Graduate Fellowship Honorable Mention  
 2001 Patricia St. Lawrence Graduate Fellowship (\$3,500)

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### WORKSHOPS

2022 Participant in a 6-month long equity and community leadership training with Movement Consulting sponsored by ROOT & SHOOT, an NSF LEAPS RCN (<https://rootandshoot.org/>)  
 2019 Speaker, "When to Publish/When to Preprint", American Society of Plant Biology, Plant Biology, 2019, San Jose, CA  
 2019 Speaker, "Mathematical Modeling in Plant Biology", American Society of Plant Biology, Plant Biology 2019, San Jose, CA  
 2019 Organizer, "Career development in Plant Cell Biology", Plant Cell Dynamics Meeting, State College, PA  
 2016 Co-organizer with Kathy Osteryoung and Melissa Gardner "Power hour", Gordon Research Conference, Hanover, NH  
 2014 Co-organizer, "From Trainee to Tenure-Track Faculty: How to Navigate Within The Academic System to Reach the Top of the Pyramid." *Postdoc mentorship panel*

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### UNIVERSITY SERVICE

2021-present Director of the Center for Plant Cell Biology NSF-REU site program  
 2020-present Co-chair of the Undergraduate Education Advisory Committee  
 2020-2023 Member of the Senate Undergraduate Admissions Committee  
 2018-2020 Member of the Undergraduate Education Advisory Committee

2018-present	UCR Undergraduate Minigrant Reviewer
2018-2019	Chair of Center for Plant Cell Biology Awards committee
2017-2022	Director of a Hispanic Serving Institution Education grant from USDA-NIFA "Underrepresented Students Pursuing Agriculturally Related Careers"
2016-2022	Member of CMDB Graduate Program Executive Committee
2016-2020	MARC-USTAR Admissions Committee
2015-2018	Botany and Plant Sciences Department Awards Committee
2015-2016	Member of the International Education Committee

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### SYNERGISTIC ACTIVITIES

2023	Promotion to tenure letter
2023	Guest Editor for PNAS
2015-current	Activities leader or participant for Plant Discovery Day (at UCR) and Science Night for Stork Elementary School
2014-current	Grant reviewer for NSF-IOS and NSF-PGRP, USDA-NIFA, DOE-BES, BBSRC, Laboratory of Excellence Saclay Plant Science (Labex SPS), Human Frontier Science Program, USDA-NIFA REEU
2014-current	Reviewer for journal articles, for example Science, PNAS, eLife, Plant Cell, Molecular Plant, Plant Physiology, PLOS-Computational Biology, Current Opinion in Plant Biology, Nature Communications PLOS-Genetics, Journal of Cell Biology, G3, New Phytologist, Nature Plants, and Developmental Biology
2018	Public lecture for UCR Science Lecture Series at UCR and UC
2018	Guest Editor, PLOS-Genetics
2014-2016, 2019	Maize Editorial Board
2010-current	Member of professional societies AAAS, ASPB, Maize Genetics Cooperation