Carolyn G. Rasmussen
Department of Botany and Plant Sciences
Center for Plant Cell Biology
University of California, Riverside
carolyn.rasmussen@ucr.edu

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

RESEARCH AND PROFESSIONAL EXPERIENCE

07/2025-present	Professor of Plant Cell Biology and Plant Cell Biologist, University of California, Riverside
07/2020-06/2025	Associate Professor of Plant Cell Biology and Plant Cell Biologist, University of California, Riverside
07/2014-06/2020	Assistant Professor of Plant Cell Biology and Plant Cell Biologist, University of California, Riverside
2011- 2014	Postdoctoral Researcher and PI, 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

PUBLICATIONS (SINCE 2014)

(UG) indicates undergraduate researcher from the Rasmussen lab, underlined indicates PhD student, technician or postdoc from the Rasmussen lab, *italics* indicates corresponding author, **bold** indicates Rasmussen

Preprint

Martinez, S. E. & ***Rasmussen, C.*** KATANIN is required for the formation of complete preprophase bands and subsequent division positioning of subsidiary mother cells in maize. *bioRxiv* (2026) doi:10.64898/2026.05.17.725781.

Zebosi, B., Martinez, S. E.**,** Wimalanathan, K., Ssengo, J., Brown, G.(UG), Best, N. B., Facette, M., **Rasmussen, C. G.** and *Vollbrecht, E.* (2025). Recessive antimorph alleles reveal novel functions of the OPAQUE1 myosin XI in maize. *bioRxiv* 2025.06.26.661838. https://doi.org/10.1101/2025.06.26.661838

Published

Martinez S. E., Lau K.H., Allsman L. A., Irahola C(UG), Habib C.(UG), Diaz I.Y.(UG), Ceballos I.(UG), Panteris E., Bommert P., Wright A., Weil C., ***Rasmussen C. G.*** (2026) KATANIN

promotes cell elongation and division to generate proper cell numbers in maize organs. Nature Communications, https://doi.org/10.1038/s41467-026-71200-w

Schönbeck, L. C., **Rasmussen, C**. and Santiago, L. S. (2025). Leaf turgor loss does not coincide with cell plasmolysis in drought-tolerant chaparral species. Plant Cell Environ. https://doi.org/10.1111/pce.15505

Pérez-Henríquez P, Nagawa S, Liu Z, Pan X, Michniewicz M, Tang W, **Rasmussen C,** Cui X, Van Norman J, Strader L, *Yang Z* (2025) PIN2-mediated self-organizing transient auxin flow contributes to auxin maxima at the tip of Arabidopsis cotyledons. Nat Commun 16, 1380. https://doi.org/10.1038/s41467-024-55480-8

Uyehara, A. N., Diep, B. N.(UG), Allsman, L. A., Gayer, S. G.(UG), Martinez, S. E., Kim, J. J.(UG), Agarwal, S.(UG) and ***Rasmussen, C. G****.* (2024). De novo TANGLED1 recruitment from the phragmoplast to aberrant cell plate fusion sites in maize. *J. Cell. Sci.* 137, jcs262097. doi:10.1242/jcs.262097

Uyehara, A. N. & ***Rasmussen, C. G.*** Redundant mechanisms in division plane positioning. Eur. J. Cell Biol. 102, 151308 (2023).

Neher, W., **Rasmussen, C. G**., Braybrook, S. A., Lažetić, V., Stowers, C. E.(UG), 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.(UG), Duong, M.(UG), Contreras, A.(UG), Romero, A. N., Verboonen, B., Sidhu, S.(UG), Zhang, X., Steinkraus, H., Uyehara, A. N., Martinez, S. E., Sinclair, R. M., Soriano, G. S.(UG), Diep, B.(UG), Byrd, D., V.(UG), Noriega, A.(UG), 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) doi: 10.3389/fpls.2023.1204889.

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) https://doi.org/10.1093/plcell/koad099 .

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) https://doi.org/10.1093/plcell/koad033.

Mills, A. M., Morris, V. H.(UG) & ***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) doi:10.1093/plcell/koac266.

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*, (2020) 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.* (2020). doi:10.1083/jcb.201907184

Mills, A.M., Allsman, L. A., Leon, S.(UG) & ***Rasmussen, C. G.*** Using Seed Chipping to Genotype Maize Kernels. *Bio-101*: e3553. doi: 10.21769/BioProtoc.3553. PDF

Farrow, J.(UG), 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.(UG) & ***Rasmussen, C. G.*** Staining Maize Epidermal Leaf Peels with Toluidine Blue O. Bio-Protocol, 9(8). doi:10.21769/bioprotoc.3214. PDF

Allsman, L. A., Dieffenbacher, R. N.(UG) & ***Rasmussen, C. G.*** Glue Impressions of Maize Leaves and Their Use in Classifying Mutants. Bio-protocol Bio101: e3209. doi: 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 (2018) 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.(UG), 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 (2018) https://doi.org/10.1105/tpc.18.00401.

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 (2018) doi:10.1111/nph.15183.

Mir, R., Morris, V.(UG), Buschmann, H., & ***Rasmussen, C. G.*** Division Plane Orientation Defects Revealed by a Synthetic Double Mutant Phenotype. Plant Physiology (2018) doi: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. (2017) *Trends Cell Biol.* **27,** 885–894 .

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..(UG) 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.

TEACHING EXPERIENCE

BPSC184 Planning For A Postgraduate Career in Life Sciences, 2-unit undergraduate class
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 21st Century, 1-unit undergraduate class developed with Professor David Nelson (every other year 2015-2019)

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

03/2025-07/2025	Dr. Bilal Ahmad
2017-2021	Dr. Hong Liang, ***co-author***
2015-2017	Dr. Ricardo Mir Moreno, ***co-author*** now an Assistant Professor at Polytechnic University of Valencia (UPV)

Supervisor of Graduate Student Research

02/2024-current	Makayla Drew, Plant Biology (PB) graduate student, UC-HBCU Fellowship, Plants 3D Fellowship
02/2023-09/2023	Benjamin Verboonen, PB graduate student, ***co-author***
10/2020-06/2026	Dr. Stephanie Martinez, PB graduate student, ***co-author*****,** Plants 3D Fellowship, GAANN Fellowship
03/2019-06/2024	Dr. Aimee Uyehara, PB graduate student, ***co-author,*** Plants 3D Fellowship, CEPCEB Outstanding Graduate Student Award 2023
02/2018-06/2024	Wesley Neher, PB graduate student, ***co-author***, joint advisor with Professor Patricia Springer, GAANN Fellowship
03/2017-06/2022	Dr. Alison Mills, Biochemistry and Molecular Biology (BCMB) graduate student, ***co-author*****,** CEPCEB Outstanding Graduate Student Award 2021
01/2016-03/2020	Dr. Marschal Bellinger, PB graduate student, ***co-author,*** GAANN Fellowship
10/2015- 06/2019	Dr. Pablo Martinez, BCMB graduate student, ***co-author,*** Ford Foundation dissertation year fellowship, CEPCEB Outstanding Graduate Student Award 2019

Supervisor of Undergraduate student research

39 undergraduates mentored, 28 awarded fellowships, 14 undergraduate co-authors***,*** for more information please see https://rasmussenlab.weebly.com/lab-members.html

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FUNDING AND AWARDS

2025-2027	NSF-REU #2447384 REU Site: Next generation plant biology and plant-microbe interactions PI: Dawn Nagel, CoPI: Carolyn Rasmussen
2025	NCEMS working group on cytokinesis https://ncems.psu.edu/working-groups/
2024	American Society of Plant Biology: 1 of 25 Inspiring Women in Plant Biology https://blog.aspb.org/25-inspiring-women-in-plant-biology/
2024-2026	NSF-MCB #2426623 (PI, $826,720)
2021-2025	NSF-REU: Research Experience for Undergraduates: Next Generation Cell Biology

	of Plants and Plant Pathogens #2051131with Co-PI Thomas Eulgem $380,010
2021	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 ($250,000, PI with 3 UCR Co-PIs David Nelson, Linda Walling and Patricia Springer)
2017-2021	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)

WORKSHOPS

2024	Participant in ADVANCEGeo ROOT & SHOOT Bystander Intervention Training
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*

UNIVERSITY SERVICE

2025-present	Member of the Senate Committee on Committees
2025-present	Chair of Agricultural Biotechnology MS program development
2025-present	Co-PI of the Center for Plant Cell Biology NSF-REU site program
2021-2024	Director and PI of the Center for Plant Cell Biology NSF-REU site program

2020-2023	Co-chair of the BPSC Undergraduate Education Advisory Committee
2020-2023	Member of the Senate Undergraduate Admissions Committee
2018-2020	Member of the BPSC Undergraduate Education Advisory Committee
2018-present	UCR Campus-wide 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-current	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

TALKS AND SEMINARS 2014-PRESENT

International seminars are highlighted in *italics*
Named or keynote seminars are highlighted in **bold**

2024	Seminar, University of Delaware, Wilmington, DE
2024	Talk, National Science Foundation CAREER symposium, Washington D.C.
2024	Seminar, Howard University, Washington D.C.
2024	Seminar, University of Wisconsin, Madison, Madison, WI
2023	**McCarter Lecture, Washington State University, Pullman, WA**
2023	Short talk, Plant Cell Dynamics Meeting Madison, WI
2023	*Seminar, University of Erlangen–Nuremberg, Nuremberg, Germany*
2023	***Barbara McClintock Lecture, Max Planck Institute for Plant Breeding Research, Cologne, Germany***
2022	Seminar, Oregon State University, OR
2022	Seminar, Iowa State University (Virtual)
2021	Seminar, Purdue University, West Lafayette, IN (virtual)
2020	Seminar, Danforth Center, St. Louis, MO (virtual)
2020	Seminar, University of Wisconsin, Madison, WI (graduate student invited, virtual)
2020	Seminar, Carnegie Institute, Stanford, CA (virtual)
2019	*Seminar, Vlaams Instituut voor Biotechnologie (VIB), Ghent, Belgium*
2019	*Seminar, École Normale Supérieure (ENS) de Lyon, France*
2019	*Invited talk, Plant Growth and Form, Heildelberg, Germany*
2019	**Keynote speaker, Plant Cell Dynamics Meeting, Penn State University, PA**
2019	Seminar, University of Arizona,Tucson, AZ
2019	Talk chosen from abstract, 61st Maize Genetic Conference, Saint Louis, MO
2019	Invited talk, Plant Biology Symposium, University of California, San Diego, CA
2019	Invited talk, Plant and Animal Genome Conference, San Diego, CA
2018	Seminar, Rockhurst University, Kansas City, MO
2018	Invited talk, Predictive Plant Phenomics, Iowa State University, IA
2018	Seminar, Washington University, Saint Louis, MO
2018	Seminar, University of Missouri, Coumbia, MO
2018	Discussion chair and talk chosen from abstract, American Society of Plant Biology, Plant Biology 2018, Montreal, Canada

2018 Discussion chair, Gordon Research Conference, Plant and Microbial Cytoskeleton, Andover, NH
2018 Seminar, University of California, Davis, CA
2018 Invited talk, Phenomics Meeting, Tucson, AZ
2018 *Seminar, Universidad Nacional Autónoma de México, Cuernavaca, México*
2017 Invited talk, Fifteenth Annual Award Symposium, Center for Plant Cell Biology (CEPCEB), UCR, Riverside, CA
2017 Talk chosen from abstract, Mechanisms of Plant Development, Federation of American Societies for Experimental Biology (FASEB), VT
2017 Seminar, University of Massachusetts, Amherst , MA
2017 Seminar, University of Vermont (missed due to canceled flight)
2017 ***Keynote speaker, Annual Conference of the Nordic Microscopy Society, SCANDEM, Reykjavik, Iceland.***
2017 Talk chosen from abstract, 59th Annual Maize Genetics Conference, Saint Louis, MO
2017 Seminar, University of Georgia, Athens, GA
2016 Invited speaker, Gordon Research Conference, Plant and Microbial Cytoskeleton, Andover, NH.
2016 Talk chosen from abstract, Plant Cell Dynamics Meeting, Saint Louis, MO
2016 Seminar, Penn State University, PA
2015 Seminar, CMBD-GGB-MCBL joint seminar series, UCR, Riverside, CA
2014 Invited talk, Twelfth Annual Award Symposium, Center for Plant Cell Biology (CEPCEB), UCR, Riverside, CA

SYNERGISTIC ACTIVITIES

2026 Guest editor for PNAS
2023-present Maize Genetics Cooperative Awards Committee
2023-2024 Mentor for PhD Student in “Career mentoring of Underrepresented STEM Students for the Professoriate” (CUSP) program.
2024 PhD dissertation committee member, University of Copenhagen
2023, 2025 Guest Editor for PNAS, PLos Genetics
2023 Promotion to tenure letter for a Primarily Undergraduate Institution (PUI)
2015-current Activities leader or participant for Plant Discovery Day at UCR
2015-2019 Activities leader or participant in Science Night for Stork Elementary School
2014-current Grant reviewer for NSF, USDA-NIFA, DOE-BES, BBSRC, European Research Council Consolidator Grant, Laboratory of Excellence Saclay Plant Science (Labex SPS), Human Frontier Science Program, USDA-NIFA REEU
2014-current Reviewer for journal articles, 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, Journal of Cell Science, Current Biology
2018 Public lecture for UCR Science Lecture Series at UCR
2018 Guest Editor, PLOS-Genetics
2014-2016,2019 Maize Editorial Board

Member of professional societies including AAAS, ASPB, Maize Genetics Cooperation, North

American Arabidopsis Steering Committee (NAASC), ASCB