**Dr. Marta Bjornson**

mlbjornson@ucdavis.edu

@MB\_MPMI

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| **Education** |
| 2009 - 2016 | *PhD Horticulture and Agronomy, Designated Emphasis in Biotechnology*University of California, Davis |
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| 2005 - 2009 | *B.S. Bioengineering*Rice UniversityMagna Cum Laude |
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| **Research Experience** |
| 2022-present | *Project Scientist - University of California, Davis, Davis CA***Supervisor**: Prof. Steven Knapp**Project**: Resistance to soil-borne diseases in strawberry |
| 2016 - 2021 | *Postdoctoral Researcher - The Sainsbury Laboratory, Norwich, UK &* *The University of Zurich, Zurich, Switzerland***Supervisor**: Prof. Cyril Zipfel**Project**: The transcriptional landscape of plant pattern-triggered immunity |
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| 2009 - 2016 | *Doctoral Researcher – University of California, Davis, Davis CA***Supervisors**: Prof. Abhaya Dandekar (Department of Plant Sciences) and Prof. Katie Dehesh (Department of Plant Biology)**Dissertation title**: Regulation of the plant general stress response (GSR) |
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| 01/2016 - 04/2016 | *Visiting Student Researcher Program (VSRP) Intern - King Abdullah University of Science and Technology, Saudi Arabia***Supervisor**: Prof. Heribert Hirt**Project**: Immunity characterization of retrograde signaling and GSR mutants |
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| 06/2015 - 09/2015 | *Research Intern – Monsanto, Woodland, CA***Supervisor**: Dr. Juan Pedro Sanchez**Project**: BioDirectTM mode of action investigation and efficiency improvement |
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| 2007 - 2009 | *Undergraduate researcher – Rice University, Houston, TX***Supervisor**: Prof. Bonnie Bartel**Project**: Identification of novel mutants deficient in peroxisome function |
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| 07/2007 - 09/2007 | *Undergraduate researcher – Keck Graduate Institute, Claremont, CA***Supervisor**: Prof. Kathrin Schrick**Project**: Characterization of sterol biosynthesis mutants |
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| **Publications** – [17 total](https://scholar.google.com/citations?hl=en&user=msdqproAAAAJ&scilu=&scisig=AMstHGQAAAAAWyeOzsaTrvdR6TMQbqRHoGfj0Di5pHL0&gmla=AJsN-F48Uoraii24tcTOa_iuhEo4Q4ahRwE71sUaZn1eIMR7RwJe5W4s36U_kQ9o5Tox1z_trmf321gcF6EF8kk8_67ABM1pR59LX1kmpaF2DfqYV73JstA&sciund=5309489598133860176), 8 first author |
| N.P. Jiménez, M.J. Feldmann, R.A. Famula, D.D.A. Pincot, **M. Bjornson**, G.S. Cole, S.J. Knapp “Harnessing Underutilized Gene Bank Diversity and Genomic Prediction of Cross Usefulness to Enhance Resistance to Phytophthora cactorum in Strawberry” **The Plant Genome 2022** 00, 1– 23. |
| D.D.A. Pincot, M.J. Feldmann, M.A. Hardigan, M.V. Vachev, P.M. Henry, T.R. Gordon, **M. Bjornson**, A. Rodriguez, N. Cobo, R.A. Famula, G.S. Cole, G.L. Coaker, S.J. Knapp. “[Novel Fusarium wilt resistance genes uncovered in natural and cultivated strawberry populations are found on three non-homoeologous chromosomes](https://link.springer.com/article/10.1007/s00122-022-04102-2)” **Theor Appl Genet 2022** 135, 2121–2145 |
| J. Dindas, T.A. DeFalco, G. Yu, L. Zhang, P. David, **M. Bjornson**, M.-C. Thibaud, V. Custódio, G. Castrillo, L. Nussaume, A.P. Macho, C. Zipfel “[Direct inhibition of phosphate transport by immune signaling in Arabidopsis](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8791604/)” **Curr Biol 2022** 32(2):488-495.e5 |
| J. Rhodes, A. Roman, **M. Bjornson**, B. Brandt, P. Derbyshire, M. Wyler, M.W. Schmid, F.L.H. Menke, J. Santiago, C. Zipfel “[Perception of a conserved family of plant signalling peptides by the receptor kinase HSL3](https://elifesciences.org/articles/74687)” **eLife. 2022** 11:e74687 |
| K. Bender, D.Couto, Y. Kadota, A. Macho, J. Sklenar, P. Derbyshire, **M. Bjornson**, T. A. DeFalco, A. Petriello, M. F. Farre, B. Schwessinger, V. Ntoukakis, L. Stransfeld, A. M. E. Jones, F. L. H. Menke, C. Zipfel “[Activation loop phosphorylaton of a non-RD receptor kinase initiates plant innate immune signaling](https://www.pnas.org/content/118/38/e2108242118)” **Proc Natl Acad Sci USA. 2021** September 21 118 (38)**M. Bjornson** and C. Zipfel “[Plant immunity: Crosstalk between plant immune receptors](https://www.cell.com/current-biology/pdf/S0960-9822%2821%2900648-5.pdf)” **Current Biology** Dispatch **2021** June 31(12)**M. Bjornson**, P. Pimprikar, T. Nürnberger, C. Zipfel “[The transcriptional landscape of *Arabidopsis thaliana* pattern-triggered immunity](https://www.nature.com/articles/s41477-021-00874-5)” **Nature Plants 2021** 7: 579–586; top 5% Altmetric attention score; News and Views article *Different threats, same response* |
| **M. Bjornson**\*, K. Kajala, C. Zipfel, P. Ding\* [“Low-cost and high-throughput RNA-seq library preparation for Illumina sequencing](https://bio-protocol.org/e3799)” **Bio-Protocol 2020** October 10(20): e3799 \*contributed equally |
| JZ. Wang, B. Li, Y. Xiao, H. Ke, P. Yang, A. de Souza, **M. Bjornson**,X. He, Z. Shen, G.U. Balcke, S.P. Briggs, A. Tissier, D.J. Kliebenstein, K. Dehesh, “[Initiation of ER body formation and indole glucosinolate metabolism by the plastidial retrograde signaling metabolite, MEcPP](https://www.sciencedirect.com/science/article/pii/S1674205217302757),” **Mol. Plant 2017** Nov; 10(11) 1400-1416 |
| **M. Bjornson**, G.U. Balcke, Y. Xiao, A. de Souza, JZ. Wang, D. Zhabinskaya, I. Tagkoupoulos, A. Tissier, & K. Dehesh, “[Integrated omics analyses of retrograde signaling mutant delineate interrelated stress-response strata](https://onlinelibrary.wiley.com/doi/full/10.1111/tpj.13547),” **Plant J. 2017** Jul; 91(1) 70-84 |
| **M. Bjornson,** A. Dandekar, J. Chory, & K. Dehesh, “[Brassinosteroid's multi-modular interaction with the general stress network customizes stimulus-specific responses in Arabidopsis](https://www.sciencedirect.com/science/article/pii/S0168945216301224),” **Plant Sci. 2016** Sep; 250 165-177. |
| G. Benn, **M. Bjornson**, H. Ke, A DeSouza, E.I. Balmond, J.T. Shaw, & K. Dehesh, “[Plastidial metabolite MEcPP induces a transcriptionally centered stress-response hub via the transcription factor CAMTA3](http://www.pnas.org/content/113/31/8855.short),” **Proc Natl Acad Sci USA. 2016** Aug 02; 113(31) 8855-8860 |
| M. Lemos, Y. Xiao, **M. Bjornson**, J. Wang, D. Hicks, A.J. De Souza, C-Q. Wang, P. Yang, S. Ma, S. Dinesh-Kumar, & K. Dehesh “[The plastidial retrograde signal methyl erythritol cyclopyrophosphate is a regulator of salicylic acid and jasmonic acid crosstalk](https://academic.oup.com/jxb/article/67/5/1557/2885142),” **J Exp Bot. 2016** Mar; 67(5) 1557-1566 |
| **M. Bjornson**, A. Dandekar, & K. Dehesh, “[Determinants of timing and amplitude in the plant general stress response](https://onlinelibrary.wiley.com/doi/full/10.1111/jipb.12373),” ***J. Integr. Plant Biol.* 2016** Feb; 58(2) 119-126 |
| **M. Bjornson**, X. Song, A. Dandekar, A. Franz, G. Drakakaki, & K. Dehesh, “[A Chemical Genetic Screening Procedure for *Arabidopsis thaliana* Seedlings.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4950980/)” ***Bio-protocol* 2015** July; 5(13): e1519 |
| **M. Bjornson**, G. Benn, X. Song, L. Comai, A. K. Franz, A. Dandekar, G. Drakakaki, & K. Dehesh, “[Distinct roles for MAPK signaling and CAMTA3 in regulating the peak time and amplitude of the plant general stress response](http://www.plantphysiol.org/content/166/2/988.short).,” ***Plant Physiol.* 2014** Oct; 166(2) 988-996 |
| A. W. Woodward, W. A. Fleming, S. E. Burkhart, S. E. Ratzel, **M. Bjornson**, & B. Bartel, “[A viable Arabidopsis pex13 missense allele confers severe peroxisomal defects and decreases PEX5 association with peroxisomes](https://link.springer.com/article/10.1007/s11103-014-0223-8),” ***Plant Mol. Biol.*, 2014** Sep; 86(1-2) 201-214 |
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| **Teaching** |
| 2020 | *Methods in Molecular Plant Biology (BIO282) Instructor: RNA biology section*In this four-week block course, I lectured and guided students for one week through experimental and analysis procedures for assaying plant transcriptional responses - using RNAseq, qRT-PCR, and luciferase reporter lines. |
| 2019 | *Plant Sensing (BIO286) Guest lecturer and mentor*Gave a guest lecture on experimental design and data presentationMentored two undergraduate students through a four-week mapping-by sequencing project, including selection, DNA extraction, and analysis of previously generated data. |
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| 2017 | *TSL Summer School facilitator*The TSL summer school teaches visitors ranging from new group leaders to graduate students fundamentals of plant immunity research. I assisted with the Zipfel lab section on innate immunity assays. |
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| 2014 | *Plant Physiology (PLB111) Guest lecturer*Gave two lectures on plant water relations |
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| 2013, 2014 | *Plant Physiology (PLB111) course Teaching Assistant*Instructors: Katie Dehesh and William LucasLed discussion sections and held office hours weekly, designed and graded homeworks and examsReceived excellent evaluations praising my knowledge, organization, and dedication to students, such that I was “without question as essential to the course as [the professors]” |
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| 2013 | *Principles of Horticulture and Agronomy (HRT 200B) Reader*Designed assignments and rubrics, graded written assignments in multiple professional stylesHelped redesign course –this course now has a full Teaching Assistant and my assignments and rubrics were still in use when I graduated UC Davis |
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| 2010, 2011 | *Principles of Plant Biotechnology (BIT160) Teaching Assistant*Designed and graded homework assignments and exams, led review sessions for examsReceived extremely positive student evaluations, praising my dedication to help students and clarity of feedback. |
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| **Fellowships/Awards/Grants** |
| Year | *~ Amt (US$)* | Name | Notes |
| 2022 | 6,255,366 | *USDA SCRI grant* | Co-PI on “Delivering Breeding and Management Solutions to Prevent Losses to Emerging and Expanding Disease Threats in Strawberry” |
| 2016 | 245,000 | *Marie Skłodowska-Curie Individual Fellowship* | Competitive postdoctoral fellowship grant, two years of salary with research support |
| 2016 | 88,000 | *Japan Society for the Promotion of Science Postdoctoral fellowship* | Competitive postdoctoral fellowship grant, two years of salary with research support- declined |
| 2015 | 1,500  | *Walter R. and Rosalind H. Russell Fellowship* | Research funding awarded to single Plant Biology Graduate Student annually, 15 minute talk at annual Celebration of Plant Biology |
| 2012 |  | *Participant, NAIST/UCD/CAS International Student Workshop* | Competitive position, one of ten among UC Davis College of Biological Sciences students |
| 2012 | 600 | *American Society of Plant Biologists travel grant* | Funds early career scientists’ registration and travel to ASPB annual meeting, approximately 80 awarded |
| 2009-2012 | 78,500 | *John F. Steindler Fellowship* | Two years’ support offered to graduate students working in selected research areas, including molecular biology of plants, one awarded annually |
| 2010-2012 | 82,000 | *NSF CREATE-IGERT* | Two year’s support for graduate students working on interdisciplinary research on plant transformation and crop improvement, 6-8 awarded annually |
| 2011 | 1,500  | *Elsie Taylor Stocking Memorial Fellowship* | Research and travel money awarded to three-to-four selected Plant Biology graduate students based on a proposal, 5 minute presentation at annual Celebration of Plant Biology |
| 2010 | 2,500 | *Henry A. Jastro Research Award* | Research and travel money awarded to selected Plant Sciences graduate students based on a proposal |
| 2009 | 1,275 | *Bert and Nell Krantz International Agriculture Fellowship* | Awarded based on outstanding scholarship and potential to benefit agriculture in developing countries |
| 2009-2015 | 80,000 + 6,000  | *UC Davis Graduate Student Research Assistantship and assorted grants* | Full support for two years and assorted smaller grants, awarded based on scholarship, research potential, and service to department, graduate group, and community |
| **Selected Mentoring** |
| 2022 | *Research mentor*Held weekly one-on-one meetings with doctoral students in Knapp lab, sharing molecular biology knowledge and guiding project development |
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| 2020 | *Research mentor*Mentored Oïana Brayle during her masters internship for triclustering of time-series RNAseq, and gene regulatory network generation, analysis, and validation |
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| 2017 | *L’ecole Biologie-Biotech de l’UCLY mentor*Mentored Mathilde Large, from a technical masters program, learning time management, data analysis, and troubleshooting through a genetic screen |
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| 2009 - 2016 | *Research mentor*In Dehesh and Dandekar labs I mentored undergraduate and graduate students.* Undergraduates Joe Garcia, Brandyn Bobb, and Linda Du worked with me on forward genetic screening. Joe and Brandyn went on to medical school, and Linda is working at a Biomedical research company.
* PhD student Jenna Gallegos rotated with me in the Dehesh lab, learning new skills in image analysis and map-based cloning.
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| 2011, 2013 | *Sheldon High School e-mentor*Exchanged weekly e-mails with a local high school student discussing working in the sciences |
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| 2011, 2012, 2013 | *Young Scholars Program*Mentored YSP high school students, in an immersive college experience program consisting of half shared coursework/labwork, half full-time labwork, culminating in a research presentation. Students worked with me primarily on forward genetic screening, carrying on to MIT, Berkeley, and Harvard. |
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| 2011, 2012 | *Nara Institute of Science and Technology Exchange*Mentored two visiting PhD students from NAIST, in an immersive language/science exchange program with the UC Davis College of Biological Sciences. In this short program we focused on sharing protocols and techniques. |
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| **Selected Service/Outreach** |
| 2022 | *California Strawberry Commission Research Committee Annual Meeting*Led panel discussion on genome editing: the technology, the capabilities at UC Davis, the opportunities, and the regulations in the US and worldwide. |
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| 2021 | *International Society for Molecular Plant Microbe Interactions eSymposium Poster Session moderator* I facilitated discussion in one of several poster breakout sessions |
| 2021 | [*Plant Immunity’s First Response*](http://www.tsl.ac.uk/news/plant-immunitys-first-response/)I coordinated with The Sainsbury Laboratory’s press office to write this press release sharing my research results in common language |
| 2019 | [*Results in Brief News Article*](https://cordis.europa.eu/article/id/252277-harnessing-the-immune-defences-of-plants-for-better-crop-yields?WT.mc_id=exp)Selected Marie Curie fellowships are selected for a News in Brief article summarizing the results of the fellowship, which is published on the website of the European Commission’s Community Research and Development Information Service. |
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| 2017 | *TSL Postdoc Society Communication Committee*The Communication Committee focused on facilitating communication within and beyond TSL. Our work included generating and analyzing a survey of TSL postdoc interests and working through LinkedIn to maintain contact with TSL alumni. |
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| 2011 - 2016 | *Coordinator, Horticulture and Agronomy Journal Club*I founded this group in 2011 to improve communication and scholarship in the Horticulture and Agronomy Graduate Group. Each week the journal club critically discusses a paper from one of the fields in Horticulture and Agronomy, relevant high-impact pieces, or new technology releases. As coordinator, I arranged for speakers each week, maintained the website, and archived discussion topics. |
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| 2014, 2015 | *Fiesta de las Ciencias*Prepared and presented “Plant Plumbing” to 8-10 year old children at Margeurite Montgomery elementary school with the Horticulture and Agronomy graduate group |
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| 2010, 2011, 2014 | *Teen Biotech Challenge Award Dinner*This dinner celebrates 15-18 year olds who have researched a scientific topic and created a web page explaining a topic in biotechnology. |
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| **Selected Meeting Presentations and Posters** |
| 2023 | **M. Bjornson**, D.D.A. Pincot, M.J. Feldmann, N.P. Jiménez, M.V. Vachev, R.A. Famula, G.S. Cole, G.L. Coaker, and S.J. Knapp “Genetic Basis of Resistance to California-Prevalent Diseases in Strawberry” Talk in the Fruit/Nut Workshop, Plant and Animal Genome Conference (PAG 30) |
| 2021 | **M. Bjornson**, P. Pimprikar, T. Nürnberger, C. Zipfel “The transcriptional landscape of Arabidopsis thaliana pattern-triggered immunity” Talk at International Plant Systems Biology Workshop *\*Winner, early career researcher presentation award* |
| 2019 | **M Bjornson.** “Golden Gate-enabled CRISPR multiplexing” Institute for Plant and Molecular Biology Synthetic Biology Workshop *\*Workshop co-chair* |
| 2019 | **M. Bjornson**, S. Ranf, T. Nürnberger, & C. Zipfel “The transcriptional landscape of plant pattern-triggered immunity” International Society for Molecular Plant Microbe Interactions XVIII congress *\*Selected for 3-minute poster flash talk*  |
| 2018 | **M. Bjornson**, S. Ranf, T. Nürnberger, & C. Zipfel “The transcriptional landscape of plant pattern-triggered immunity” Poster at the Zurich-Basel Plant Science Center Symposium Zurich, Switzerland. *\*Winner, second place poster prize* |
| 2015 | **M. Bjornson,** A.M.Dandekar. J. Chory, & K. Dehesh. “The Systemic General Stress Response is Enhanced by Brassinosteroid signaling” Poster at the Keystone Symposium - Plant Receptor Kinases: from molecules to the environment, Taos, NM |
| 2013 | **M. Bjornson**, A.M. Dandekar, R. Bostock, & K. Dehesh. “Arachidonic acid for durable resistance to Phytophthora plant pathogens” “Dragon’s Den”-style pitch to regulators, investors and academics at CREATE-IGERT International Symposium Galway, Ireland |
| 2012 | **M. Bjornson**, A.M. Dandekar, & K. Dehesh. “The Plant Rapid Stress Response,” Presentation at NAIST/UCD/CAS Internations Workshop *\*Selected among plant biology talks to present to larger audience* |
| 2008, 2009 | **M. Bjornson**, A.W. Woodward, B. Bartel “Screening for peroxisome function mutants Poster at Rice Undergraduate Research Symposium and Southern Section American Society for Plant Biologists *\*Winner, undergraduate poster presentation* |
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| **Professional Societies** |
| 2019 | American Society of Plant Biologists |
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| 2018 | International Society for Molecular Plant-Microbe Interactions |
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| 2009 | Phi Beta KappaUS oldest and most highly regarded honor society |
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| 2009 | Tau Beta PiUS oldest and most highly regarded engineering honor society |