

**Martin Casimir Jonikas, Ph.D.**  
Investigator, Howard Hughes Medical Institute  
Associate Professor, Department of Molecular Biology, Princeton University  
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*updated 2/1/2022*

## VISION

My group seeks to advance the basic understanding of cell biology. We study the pyrenoid, a fascinating phase-separated organelle that enhances CO<sub>2</sub> capture in nearly all eukaryotic algae. Understanding the pyrenoid is important for three reasons: (1) the pyrenoid plays a central role in our planet's carbon cycle, (2) the pyrenoid embodies fundamental questions in organelle biogenesis, and (3) engineering a pyrenoid into land plants could dramatically increase crop yields. To accelerate progress, we are developing community resources for the unicellular green alga *Chlamydomonas reinhardtii* as a model system for photosynthetic organisms. My group also seeks to nurture and train future world-leading scientists.

## EDUCATION

2004 B.S., Aerospace Engineering, Massachusetts Institute of Technology  
2009 Ph.D., Biochemistry and Molecular Biology, University of California, San Francisco. Research advisors: Dr. Jonathan Weissman and Dr. Peter Walter

## PROFESSIONAL POSITIONS

2010-2016 Young Investigator (faculty position equivalent to Assistant Professor), Department of Plant Biology, Carnegie Institution for Science, Stanford, CA  
2011-2016 Assistant Professor by courtesy, Department of Biology, Stanford University, Stanford, CA  
2016-2021 Assistant Professor, Department of Molecular Biology, Princeton University, Princeton, NJ  
2019-present Affiliated Faculty, Princeton Quantitative and Computational Biology Program  
2021-present Associate Professor, Department of Molecular Biology, Princeton University, Princeton, NJ  
2021-present Investigator, Howard Hughes Medical Institute

## AWARDS AND HONORS

2002 1<sup>st</sup> place, MIT 2.007 Robotics Competition  
2005 National Science Foundation Graduate Research Fellowship  
2010 Air Force Office of Scientific Research Young Investigator Award  
2015 National Institutes of Health Director's New Innovator Award  
2016 HHMI-Simons Faculty Scholar Award  
2020 Vilcek Prize for Creative Promise in Biomedical Science

## TEACHING

2012-2016	Stanford BIO 214 Advanced Cell Biology
2014	Stanford BIOC 223 Open Problems in Biology (MOOC)
2017-present	Princeton MOL 380 Microbiology

## DEPARTMENTAL AND UNIVERSITY SERVICE

2010	Member, Carnegie Department of Plant Biology website committee
2011, 2012	Co-wrote NSF Major Research Instrumentation (MRI) proposals for the Carnegie Department of Plant Biology
2011-2016	Co-organizer, Carnegie Department of Plant Biology seminar series
2012-2016	Member, Carnegie Plant Biology/Global Ecology Joint IT Committee
2014	Co-organizer, Carnegie Plant Biology retreat
2017-2018	Member, Princeton Molecular Biology Cryo Electron Microscopy Search Committee
2017-present	Chair, Princeton Molecular Biology Postdoctoral Career Development
2019	Andlinger E-filiates partnership Review Panel Member
2019-2020	Member, Princeton Molecular Biology Cryo Electron Microscopy Search Committee
2019-present	Member, Princeton Molecular Biology Graduate Committee
2020, 2021	Co-organizer, Princeton Molecular Biology Retreat

## PROFESSIONAL SERVICE

2010-present	Reviewer for <i>Nature</i> , <i>Cell</i> , <i>Nature Biotechnology</i> , <i>Nature Microbiology</i> , <i>Nature Communications</i> , <i>Proceedings of the National Academy of Sciences</i> , <i>The Plant Cell</i> , <i>eLife</i> , <i>New Phytologist</i> , <i>Plant Physiology</i> , <i>The Plant Journal</i> , <i>Scientific Reports</i> , and other journals.
2013-present	Reviewer for the U.S. National Science Foundation, U.S. Department of Energy, the U.S.-Israel Binational Science Foundation, the Human Frontiers Science Program, the Swedish Research Council, the Gordon and Betty Moore Foundation, and the Royal Netherlands Academy of Arts and Sciences.
2017-2021	Member, Merck Future Insight Prize Jury
2018	Panelist, U.S. Department of Energy Workshop on Breaking the Bottleneck of Genomes
2018	Panelist, Academic Career Panel, Rutgers University
2021	Convener, 12th International Phycological Congress, Puerto Varas, Chile
2022	Chair, 10th International Symposium on Inorganic Carbon Utilization by Aquatic Photosynthetic Organisms, Princeton, NJ ( <i>rescheduled from 2020</i> )
2023	Co-Chair, 20 <sup>th</sup> International Chlamydomonas Meeting

## PUBLICATIONS FROM PH.D. STUDIES

Haass FA, **Jonikas M**, Walter P, Weissman JS, Jan YN, Jan LY, & Schuldiner M. 2007. Identification of yeast proteins necessary for cell-surface function of a potassium channel. *Proceedings of the National Academy of Sciences U S A*. 104: 18079-18084. PMID: PMC2084299

**Jonikas MC**, Collins SR, Denic V, Oh E, Quan EM, Schmid V, Weibezahn J, Schwappach B, Walter P, Weissman JS, & Schuldiner M. 2009. Comprehensive characterization of genes required for protein folding in the endoplasmic reticulum. *Science*. 323: 1693-1697. PMID: PMC2877488

Vembar SS, **Jonikas MC**, Hendershot LM, Weissman JS, & Brodsky JL. 2010. J domain co-chaperone specificity defines the role of BiP during protein translocation. *Journal of Biological Chemistry*. 285: 22484-22494. PMID: PMC2903355

Battle A, **Jonikas MC**, Walter P, Weissman JS, & Koller D. 2010. Automated identification of pathways from quantitative genetic interaction data. *Molecular Systems Biology*. 6: 379. PMID: PMC2913392

Shurtleff MJ, Itzhak DN, Hussmann JA, Schirle Oakdale NT, Costa EA, **Jonikas M**, Weibezahn J, Popova KD, Jan CH, Sinitcyn P, Vembar SS, Hernandez H, Cox J, Burlingame AL, Brodsky JL, Frost A, Borner GH, & Weissman JS. 2018. The ER membrane protein complex interacts cotranslationally to enable biogenesis of multipass membrane proteins. *eLife*. doi: 10.7554/eLife.37018. PMID: 29809151

## PUBLICATIONS AS PRINCIPAL INVESTIGATOR

*Jonikas laboratory members' names are bolded.*

\***Zhang R**, \***Patena W**, **Armbruster U**, **Gang SS**, **Blum SR**, & **Jonikas MC**. 2014. High-Throughput Genotyping of Green Algal Mutants Reveals Random Distribution of Mutagenic Insertion Sites and Endonucleolytic Cleavage of Transforming DNA. *The Plant Cell*. 26: 1398-1409. PMID: PMC4036561. \*equal contribution

Avasthi P, Onishi M, Karpiak J, Yamamoto R, **Mackinder L**, **Jonikas MC**, Sale WS, Shoichet B, Pringle JR, & Marshall WF. 2014. Actin is required for IFT regulation in *Chlamydomonas reinhardtii*. *Current Biology*. 24: 2025-2032. PMID: PMC4160380

**Li X**, Umen JG, & **Jonikas MC**. 2014. Waking sleeping algal cells. *Proceedings of the National Academy of Sciences U S A*. 111: 15610-15611. PMID: PMC4226088

Yang W, Catalanotti C, D'Adamo S, Wittkopp TM, Ingram-Smith CJ, **Mackinder L**, Miller TE, Heuberger AL, Peers G, Smith KS, **Jonikas MC**, Grossman AR, & Posewitz MC. 2014. Alternative Acetate Production Pathways in *Chlamydomonas reinhardtii* during Dark Anoxia and the Dominant Role of Chloroplasts in Fermentative Acetate Production. *The Plant Cell*. 26: 4499-4518. PMID: PMC4277214

**Armbruster U**, Carrillo LR, Venema K, Pavlovic L, Schmidtman E, Kornfeld A, Jahns P, Berry JA, Kramer DM, & **Jonikas MC**. 2014. Ion antiport accelerates photosynthetic

acclimation in fluctuating light environments. *Nature Communications*. 5: 5439. PMID: PMC4243252

**Terashima M, Freeman ES, Jinkerson RE, & Jonikas MC**. 2015. A fluorescence-activated cell sorting-based strategy for rapid isolation of high-lipid *Chlamydomonas* mutants. *The Plant Journal*. 81: 147-59. PMID: PMC4280329

**Jinkerson RE & Jonikas MC**. 2015. Molecular techniques to interrogate and edit the *Chlamydomonas* nuclear genome. *The Plant Journal*. 82: 393–412. PMID: 25704665

Atkinson N, Feike D, **Mackinder LC**, Meyer MT, Griffiths H, **Jonikas MC**, Smith AM, & McCormick AJ. 2015. Introducing an algal carbon-concentrating mechanism into higher plants: location and incorporation of key components. *Plant Biotechnology Journal*. 14: 1302-15. PMID: 26538195

\*Yang W, \*Wittkopp TM, **Li X**, Warakanont J, Dubini A, Catalanotti C, Kim RG, Nowack EC, Mackinder LC, Aksoy M, Page MD, D'Adamo S, Saroussi S, Heinnickel M, Johnson X, Richaud P, Alric J, Boehm M, **Jonikas MC**, Benning C, Merchant SS, Posewitz MC, & Grossman AR. \*equal contribution. 2015. Critical role of *Chlamydomonas reinhardtii* ferredoxin-5 in maintaining membrane structure and dark metabolism. *Proceedings of the National Academy of Sciences U S A*. 112: 14978-83. PMID: 26627249

\***Li X**, \***Zhang R**, \***Patena W**, **Gang SS**, **Blum SR**, **Ivanova N**, **Yue R**, **Robertson JM**, Lefebvre P, Fitz-Gibbon ST, Grossman AR, & **Jonikas MC**. \*equal contribution. 2016. An indexed, mapped mutant library enables reverse genetics studies of biological processes in *Chlamydomonas reinhardtii*. *The Plant Cell*. 28: 367-87. PMID: 26764374

**Highlighted in “Best of 2016: Top Topics in The Plant Cell journal”.**

**Li X & Jonikas MC**. 2016. High-throughput genetics strategies for identifying new components of lipid metabolism in the green alga *Chlamydomonas reinhardtii*. Chapter 10 in *Lipids in Plant and Algae Development*, Y. Nakamura, Y. Li-Beisson (eds.), Springer. PMID: 27023238

**Armbruster U**, Leonelli L, Correa Galvis V, Strand D, Quinn EH, **Jonikas MC**, & Niyogi KK. 2016. Regulation and Levels of the Thylakoid K<sup>+</sup>/H<sup>+</sup> Antiporter KEA3 Shape the Dynamic Response of Photosynthesis in Fluctuating Light. *Plant Cell Physiology*. 57: 1557-1567. PMID: 27335350

**Mackinder LC**, Meyer MT, Mettler-Altman T, **Chen VK**, Mitchell MC, Caspari O, **Freeman Rosenzweig ES**, **Pallesen L**, **Reeves G**, **Itakura A**, Roth R, Sommer F, Geimer S, Mühlhaus T, Schroda M, Goodenough U, Stitt M, Griffiths H, & **Jonikas MC**. 2016. A repeat protein links Rubisco to form the eukaryotic carbon-concentrating organelle. *Proceedings of the National Academy of Sciences U S A*. 113: 5958-63. PMID: 27166422

**Freeman Rosenzweig ES**, †Xu B, †Kuhn Cuellar L, Martinez-Sanchez A, Schaffer M, Strauss M, Cartwright HN, Plitzko JM, Förster F, \*Wingreen NS, \*Engel BD, ‡**Mackinder LCM**, & ‡\***Jonikas MC**. †These authors contributed equally to this work. ‡These authors contributed equally to this work. \*Corresponding authors. 2017. The eukaryotic CO<sub>2</sub> concentrating organelle is liquid-like and exhibits dynamic reorganization. *Cell*. 171:148-162. PMID: 28938114

**Highlighted on the cover of Cell and in a Nature Plants Research Highlight.**

**Mackinder LCM**, **Chen C**, Leib RD, **Patena W**, **Blum SR**, **Rodman M**, Ramundo S, Adams CM, & **Jonikas MC**. 2017. A spatial interactome reveals the anatomy of the algal CO<sub>2</sub> concentrating mechanism. *Cell*. 171:133-147. PMID: 28938113

**Highlighted in a Cell Preview.**

Küken A, Sommer F, Yaneva-Roder L, **Mackinder LC**, Höhne M, Geimer S, **Jonikas MC**, Schroda M, Stitt M, Nikoloski Z, & Mettler-Altmann T. 2018. Effects of microcompartmentation on flux distribution and metabolic pools in *Chlamydomonas reinhardtii* chloroplasts. *eLife*. doi: 10.7554/eLife.37960. PMID: 30306890

**Li X, Patena W, Fauser F, Jinkerson RE**, Saroussi S, **Meyer MT, Ivanova N, Robertson JM, Yue R, Zhang R**, Vilarrasa-Blasi J, Wittkopp TM, Ramundo S, **Blum SR, Goh A**, Laudon M, Srikumar T, Lefebvre PA, Grossman AR, & **Jonikas MC**. 2019. A genome-wide algal mutant library reveals a global view of genes required for eukaryotic photosynthesis. *Nature Genetics*. 51:627-635. PMID: 30886426

Cable J, Brangwynne C, Seydoux G, Cowburn D, Pappu RV, Castañeda CA, Berchowitz LE, Chen Z, **Jonikas M**, Dernburg A, Mittag T, & Fawzi NL. 2019. Phase separation in biology and disease—a symposium report. *Annals of the New York Academy of Sciences*. 1452:3-11. PMID: 31199001

†**Itakura AK**, †Chan KX, Atkinson N, **Pallesen L**, Wang L, **Reeves G, Patena W**, Caspari O, Roth R, Goodenough U, McCormick AJ, \*Griffiths H, & \***Jonikas MC**. †These authors contributed equally to this work. \*Corresponding authors. 2019. A Rubisco-binding protein is required for normal pyrenoid number and starch sheath morphology in *Chlamydomonas reinhardtii*. *Proceedings of the National Academy of Sciences U S A*. 116:18445-18454. PMID: 31455733

Perlaza K, Toutkoushian H, Boone M, Lam M, Iwai M, **Jonikas MC**, Walter P, & Ramundo S. 2019. The Mars1 kinase confers photoprotection through signaling in the chloroplast unfolded protein response. *Elife*. 8:e49577. PMID: 31612858

**Hennacy JH & Jonikas MC**. 2020. Prospects for Engineering Biophysical CO<sub>2</sub> Concentrating Mechanisms into Land Plants to Enhance Yields. *Annual Review of Plant Biology*. 71:461-485. PMID: 32151155

Xu B, **He G**, Weiner BG, Ronceray P, Meir Y, **Jonikas MC**, & Wingreen NS. 2020. Rigidity enhances a magic-number effect in polymer phase separation. *Nature Communications*. 11:1561. PMID: 32214099

**Wang L & Jonikas MC**. 2020. The Pyrenoid. *Current Biology*. 30:R456-R458. PMID: 32428480

Ramundo S, Asakura Y, Salomé PAA, Strenkert D, Boone M, **Mackinder LCM**, Takafuji K, Dinc E, Rahire M, Crèvecoeur M, Magneschi L, Schaad O, Hippler M, **Jonikas MC**, Merchant S, \*Nakai M, \*Rochaix JD, \*Walter P. 2020. \*Corresponding authors. Co-expressed subunits of dual genetic origin define a conserved supercomplex mediating essential protein import into chloroplasts. *Proceedings of the National Academy of Sciences U S A* 3:202014294. PMID: 33273113

**Meyer MT, Itakura AK, Patena W, Wang L, He S**, Emrich-Mills T, Lau CS, Yates G, Mackinder LCM, & **Jonikas MC**. 2020. Assembly of the algal CO<sub>2</sub>-fixing organelle, the pyrenoid, is guided by a Rubisco-binding motif. *Science Advances* 6:eabd2408. PMID: 33177094

**He S**, Chou HT, Matthies D, Wunder T, **Meyer MT**, Atkinson N, Martinez-Sanchez A, Jeffrey PD, Port SA, **Patena W, He G, Chen VK**, Hughson FM, McCormick AJ, Mueller-Cajar O, Engel BD, Yu Z, & **Jonikas MC**. 2020. The structural basis of Rubisco phase separation in the pyrenoid. *Nature Plants* 6:1480-1490. PMID: 33230314

**Franklin E & Jonikas M.** 2020. Increasing the uptake of carbon dioxide. *eLife* 9:e64380. doi: 10.7554/eLife.64380. PMID: 33270556

**Prior MJ**, Selvanayagam J, Kim J-G, Tomar M, **Jonikas M**, Mudgett M, Smeekens S, Hanson J, Frommer WB. 2021. *Arabidopsis* bZIP11 Is a Susceptibility Factor During *Pseudomonas syringae* Infection. *Molecular Plant-Microbe Interactions* 34:439-447. PMID: 33400562

## PREPRINTS

†Vilarrasa-Blasi J, †**Fauser F**, Onishi M, Ramundo S, **Patena W**, **Millican M**, **Osaki J**, **Philp C**, **Nemeth M**, Salomé PA, **Li X**, Wakao S, Kim RG, Kaye Y, Grossman AR, Niyogi KK, Merchant S, Cutler S, Walter P, \*Dinneny JR, \***Jonikas MC**, & \***Jinkerson RE**. †Equal contribution. \*Corresponding authors. 2020. Systematic characterization of gene function in a photosynthetic organism. *Preprint on bioRxiv, accepted at Nature Genetics*. doi:10.1101/2020.12.11.420950

†Fei C, †**Wilson AT**, \*Mangan NM, \*Wingreen NS, & \***Jonikas MC**. †Equal contribution. \*Corresponding authors. 2021. Diffusion barriers and adaptive carbon uptake strategies enhance the modeled performance of the algal CO<sub>2</sub>-concentrating mechanism. *Preprint on bioRxiv*. doi: 10.1101/2021.03.04.433933

Vilarrasa-Blasi J, Vellosillo T, **Jinkerson RE**, **Fauser F**, Xiang T, Minkoff BB, Wang L, Kniazev K, Guzman M, Osaki J, Sussman MR, **Jonikas MC**, Dinneny R. 2021. Identification of green lineage osmotic stress pathways. *Preprint on bioRxiv*. doi: 10.1101/2021.07.19.453009

## BOOK

**Fauser F & Jonikas M**, editors. 2018. *Plant Chemical Genomics: Methods and Protocols. Methods in Molecular Biology*. Springer. ISBN 978-1-4939-7874-8.

## PATENTS AND PATENT APPLICATIONS

**Armbruster U**, Niyogi KK, & **Jonikas MC**. 2015. Photosynthetic Acclimation and Increased Biomass Production in Fluctuating Light Environments.

**Mackinder LCM**, Meyer MT, Mettler-Altmann T, Pallesen L, Stitt M, Griffiths H, & **Jonikas MC**. 2016. Algal Components of the Pyrenoid's Carbon Concentrating Mechanism.

**Mackinder LCM & Jonikas MC**. 2017. Spatial Interactome Reveals the Anatomy of the Algal CO<sub>2</sub> Concentrating Mechanism.

**Jonikas MC**, Meyer MT, He S, Itakura A, Chen VK, Mackinder LCM, Chou HT, Yu Z, & Matthies D. 2019. Rubisco-Binding Protein Motifs and Uses Thereof.

**Jonikas MC**, **Fauser FA**, **Jinkerson RE**, & Vilarrasa Blasi J. 2020. Genes With Roles in the Algal CO<sub>2</sub> Concentrating Mechanism, and Others.

**SELECTED SEMINARS**

- 2009 Center for Systems Biology, Harvard, Cambridge, MA
- 2009 Department of Plant Biology, Carnegie Institution for Science, Stanford, CA
- 2011 Invited talk, Donald Danforth Plant Sciences Center, St. Louis, MO
- 2012 15th International Conference on the Cell & Molecular Biology of Chlamydomonas, Potsdam, Germany
- 2012 Student-Invited Seminar, Michigan State University, East Lansing, MI
- 2013 Session Chair, 22nd Western Photosynthesis Conference, Asilomar, CA
- 2013 Invited Seminar, Plant Biology Graduate Group, UC Davis, Davis, CA
- 2013 16th International Congress on Photosynthesis, St Louis, MO
- 2013 Invited Seminar, Arizona State University, Tempe, AZ
- 2014 23rd Western Photosynthesis Conference, Asilomar, CA
- 2014 Invited Speaker, UC San Diego Food & Fuel for the 21st Century Symposium, San Diego, CA
- 2014 Invited Speaker, Gordon Research Conference on Photosynthesis, West Dover, VT
- 2014 Keynote Speaker, Harvard Medical School Systems Biology Ph.D. Program Retreat, Woods Hole, MA
- 2015 Invited Speaker and Session Chair, 24th Western Photosynthesis Conference, Asilomar, CA
- 2015 Invited Speaker, ASCB Bay Area Meeting on Organelle Biology 2015, San Francisco, CA
- 2015 Co-chair and Speaker, Organelle Minisymposium, ASCB 2015 Meeting, San Diego, CA
- 2016 Department of Molecular Biology, Princeton University, Princeton, NJ
- 2016 Plant Research Laboratory, Michigan State University, East Lansing, MI
- 2016 ChEM-H Institute, Stanford University, Stanford, CA
- 2016 17<sup>th</sup> International Conference on the Cell and Molecular Biology of Chlamydomonas, Kyoto, Japan
- 2016 Invited Speaker, 17<sup>th</sup> International Congress on Photosynthesis Research, Maastricht, Netherlands
- 2016 HHMI Faculty Scholars Orientation, Chevy Chase, MD
- 2017 Invited Speaker, Gordon Research Conference on Chloroplast Biotechnology, Ventura, CA
- 2017 Invited Speaker, Gordon Research Conference on CO<sub>2</sub> Assimilation in Plants from Genome to Biome, Lucca, Italy
- 2017 Invited Speaker, Chloroplast Metabolism and Photosynthesis Symposium, Neuchâtel, Switzerland
- 2017 Invited Speaker, ETH Zürich Plant Sciences Symposium, Zürich, Switzerland
- 2017 Invited Seminar, Department of Embryology, Carnegie Institution for Science, Baltimore, MD
- 2018 Invited Speaker, Plant and Animal Genome Conference, San Diego, CA
- 2018 Invited Seminar, Department of Plant Biology and Pathology, Rutgers University, NJ

- 2018 Invited Speaker, HHMI Science Meeting, Ashburn, VA
- 2018 Invited Seminar, J. Craig Venter Institute, La Jolla, CA
- 2018 Invited Seminar, Nature Publishing Group, New York, NY
- 2018 Invited Seminar, Rockefeller University, New York, NY
- 2018 EMBO/EMBL Symposium: Cellular Mechanisms Driven by Liquid Phase Separation, EMBL, Heidelberg, Germany
- 2018 Invited Speaker, 18<sup>th</sup> International Conference on the Cell and Molecular Biology of *Chlamydomonas*, Washington, DC
- 2018 Invited Speaker, Society for Experimental Biology Annual Meeting, Florence, Italy
- 2018 Invited Speaker, Mitochondria and Chloroplasts Gordon Research Conference, Lucca, Italy
- 2018 Invited Speaker, Princeton China Executive Summit Program
- 2019 Plenary Speaker, Phase Separation in Biology and Disease, New York Academy of Sciences, New York, NY
- 2019 Invited Seminar, Department of Geosciences, Princeton University, Princeton, NJ
- 2019 Invited Seminar, Department of Plant Biology, Carnegie Institution for Science, Stanford, CA
- 2019 Keynote Speaker, Eastern Regional Photosynthesis Conference, Woods Hole, MA
- 2019 Invited Seminar, John Innes Centre, Norwich, United Kingdom
- 2019 Invited Speaker, Centre for Organismal Studies Symposium, Heidelberg University, Heidelberg, Germany
- 2019 Invited Speaker, American Society of Plant Biologists Annual Meeting, San Jose, CA
- 2019 Invited Speaker, American Society for Cell Biology/European Molecular Biology Organization Meeting, Washington, DC
- 2020 Invited Speaker, Plant and Animal Genome Conference, San Diego, CA
- 2020 Invited Speaker, W2F2 Meeting, University of California, San Francisco, CA (*via teleconference*)
- 2020 Invited Speaker, Plant Cell Atlas, Carnegie Institution for Science, Stanford, CA (*via teleconference*)
- 2020 Keynote Speaker, Princeton Intracellular Phase Transition/Condensate Symposium, Princeton, NJ (*via teleconference*)
- 2020 Invited Speaker, Understanding the Rules of Life: Complexity in Algal Systems DOE & NSF Joint Workshop Virtual Summer Symposium (*via teleconference*)
- 2020 Invited Speaker, Synthetic Biology for Sustainability, Caltech, Pasadena, CA (*via teleconference*)
- 2020 Invited Speaker, Princeton BioEngineering Symposium, Princeton, NJ (*via teleconference*)
- 2020 Invited Seminar, IDPseminars (*via teleconference*)
- 2021 Plenary Speaker, 12<sup>th</sup> International Phycological Congress (*via teleconference*)
- 2021 Invited Seminar, Langebio, Irapuato, Mexico (*via teleconference*)
- 2021 Invited Seminar, University of California Los Angeles, CA (*via teleconference*)



- 2021 Invited Speaker, Chlamydomonas 2021 Meeting, Île des Embiez, France
- 2021 Invited Lecture, Chloroplast Symposium, Ludwig-Maximilians-Universität München, Munich, Germany (*via teleconference*)
- 2021 Invited Seminar, Princeton Adult School, Princeton, NJ
- 2021 Invited Seminar, University of Michigan, Ann Arbor, MI (*via teleconference*)
- 2021 Invited Speaker, Princeton Biomolecular Condensates Meeting, Princeton, NJ
- 2022 Invited Seminar, University of Illinois at Urbana-Champaign, Champaign, IL

## OUTREACH

In collaboration with songwriter Jonathan Mann, the Jonikas laboratory has produced three outreach music videos:

- 2015 Sammy the Chlamy (>2,600 views)  
<https://www.youtube.com/watch?v=f1F4lxKF41g&feature=youtu.be>  
A puppet music video about an alga helping crops do better photosynthesis. This video was the subject of an ASCB article:  
<http://www.ascb.org/ascb-post/sammy-chlamy-superhero-environment/>
- 2016 The Photosynthesis Song (>7,300 views)  
<https://www.facebook.com/Jonathanmann/videos/10153653902265741/?l=578396365785804152>  
A song of fun facts about photosynthesis.
- 2016 The Jonikas Lab Song (>4,400 views)  
<https://www.youtube.com/watch?v=fKncJDUNAIU>  
A song about life in an algal research laboratory.

## RESEARCH SUPERVISION

### *High School Trainees:*

- 2013-2014 **Augustine Chemparathy**, was a finalist in the 2015 Intel Science Talent Search competition as a result of his project in my laboratory.
- 2014 **Zoe Friedberg**
- 2014-2015 **Shriya Ghosh**

### *Undergraduate Trainees:*

- 2012 **Graciela Watrous**
- 2012 **Elisabeth Schmidtman**
- 2012 **Rachel Purdon**
- 2013 **Jason Middleton**

2013	<b>John Nguyen</b>
2014	<b>Jessie Bacha</b>
2014	<b>Rachel Vasquez</b>
2014	<b>Matthew Rodman</b>
2014-2015	<b>Chris Chen</b>
2015-2016	<b>Kyssia Mendoza</b>
2016	<b>Jackie Osaki</b>
2016	<b>Matthew Millican</b>
2016	<b>Matthew Nemeth</b>
2016	<b>Charlotte Philp</b>
2017	<b>Katie Kavanaugh</b>
2017	<b>Bradley Spicher</b>
2017	<b>Michael Hill-Oliva</b>
2018	<b>Toluwalase Olusola</b>
2018	<b>Izabela Szymanski</b>
2017-2019	<b>Kelly Van Baalen</b> , graduated with honors.
2017-2019	<b>Yihua Xie</b>
2019	<b>Gillian Gomer</b>
2019	<b>Xiaofei Ge</b>
2018-2020	<b>Alexandra Wilson</b> , graduated with highest honors; Global Health Program Senior Thesis Prize; MOL Sigma Xi Book Award.
2018-2020	<b>Sophia Gavrilenko</b> , graduated with honors.
2019-present	<b>Henry Harrigan</b>
2019-present	<b>Angelo Kayser-Browne</b>
2020-present	<b>Keenan Duggal</b>
2020-2021	<b>Vinh Ton</b>
2020-present	<b>Luke Bunday</b>
2021-present	<b>Arthur Sirkejian</b>
2021-present	<b>Vivian Chen</b>
2021-present	<b>Kevin Zhang</b>

***Predoctoral Trainees:***

2012-2017	<b>Elizabeth Freeman Rosenzweig</b> , Achievement Rewards for College Students Scholar. Now Law Student, U.C. Berkeley.
2012-2017	<b>Matthew Prior</b> (was joint with Wolf Frommer). Now Postdoctoral Fellow, U.C. Riverside.
2012	<b>Madeline Mitchell</b> (visiting Ph.D. student). Now Postdoctoral Fellow, CSIRO, Canberra, Australia.
2013	<b>Oliver Caspari</b> (visiting Ph.D. student). Now Molecular Biologist at CNRS, Paris, France.
2014-2016	<b>Alan Itakura</b> , transferred to Dan Jarosz lab when we moved to Princeton.
2014-2016	<b>Vivian Chen</b> , NSF Graduate Research Fellow. Transferred to Gavin Sherlock lab when we moved to Princeton.
2017-present	<b>Guanhua He</b> (joint with Ned Wingreen).
2018-present	<b>Jessica Hennacy</b>
2019-present	<b>Eric Franklin</b>
2020-present	<b>Micah Burton</b> , HHMI Gilliam Fellow.
2020-present	<b>Victoria Crans</b>

**Postdoctoral Trainees:**

- 2010-2016 **Ru Zhang, Ph.D.** Now Principal Investigator, Donald Danforth Plant Sciences Center.
- 2011-2014 **Ute Armbruster, Ph.D.** DFG German Research Foundation Postdoctoral Fellow. Now Group Leader, Max Planck Institute for Molecular Plant Physiology.
- 2011-2013 **Mia Terashima, Ph.D.** Agriculture and Food Research Initiative Postdoctoral Fellow. Now Professor, Cell and Molecular Biology of Phototrophic Organisms, Berliner Hochschule für Technik.
- 2011-2015 **Leif Pallesen, Ph.D.** Now Instructor, Foothill College, CA.
- 2012-2016 **Luke Mackinder, Ph.D.** Carnegie McClintock Postdoctoral Fellow. Now Professor, University of York, United Kingdom.
- 2012-2018 **Xiaobo Li, Ph.D.** Now Assistant Professor, Westlake Institute for Advanced Study, Hangzhou, China.
- 2014-2017 **Robert Jinkerson, Ph.D.** Simons Foundation Postdoctoral Fellow. Now Assistant Professor, U.C. Riverside, CA.
- 2015-2017 **Friedrich Fauser, Ph.D.** DAAD German Academic Exchange Service Postdoctoral Fellow. Now Scientist III, Sangamo Therapeutics.
- 2016-present **Shan He, Ph.D.**
- 2017-2020 **Moritz Meyer, Ph.D.**
- 2017-present **Lianyong Wang, Ph.D.**
- 2017-present **Moshe Kafri, Ph.D.** European Molecular Biology Organization and Human Frontiers Science Program Postdoctoral Fellow.
- 2020-present **Alice Lunardon, Ph.D.**
- 2021-present **Linnea Lemma, Ph.D.** Princeton Bioengineering Initiative - Innovators (PBI2) Distinguished Postdoctoral Fellow (joint with Cliff Brangwynne and Ned Wingreen).

**Bioinformatics Analyst:**

- 2011-present **Weronika Patena.**

**Technical staff:**

- 2010-2012 **Spencer Gang.** Now postdoctoral scholar, U.C. San Diego.
- 2011-2013 **Sean Blum.** Now Ph.D. student, U.C. Santa Cruz.
- 2012-2016 **Nina Ivanova.** Now Nursing student, U.C. San Francisco.
- 2013 **Saman Parsa.** Now Enologist, Sonoma-Cutrer Vineyards, California.
- 2013-2014 **Gregory Reeves.** Now Ph.D. student, Cambridge University, United Kingdom.
- 2013-2015 **Rebecca Yue.** Now Technical Staff Member, Augmedix, Inc., San Francisco.
- 2015-2016 **Jacob Robertson.** Now Ph.D. student, U.C. San Diego.
- 2016 **Chris Chen.** Now Research Associate, Caltech.
- 2016 **Ana Benveniste.** Now Laboratory Assistant, Carnegie Institution for Science.
- 2016-2019 **Audrey Goh.** Now Ph.D. student, Princeton University.
- 2019-present **Michelle Warren-Williams.**

2020-2021 **Vidalia Ariza.**  
2020-2021 **Jennifer Ayer.**  
2020-2021 **Alexandra Wilson.** Now Ph.D. student, Massachusetts Institute of  
Technology.  
2020-present **Warham (Lance) Martin.**  
2020-present **Emily Singer.**  
2021-present **Yuliya Zubak.**

***Sabbatical visitor:***

2019 **Cornelia Spetea Wiklund**, Professor, Department of Biological &  
Environmental Sciences, University of Gothenburg, Sweden

***Non-Research Staff Awards:***

**Ellen Brindle-Clark**, my faculty assistant, was selected for a Princeton Tiger Award in 2017 for going above and beyond her normal job responsibilities in helping my laboratory move from Stanford to Princeton.

**Elizabeth (Betsy) Hart**, a graduate teaching assistant for my MOL380 class, won the Graduate Student Teaching Award in 2018.