

Arthur R. Grossman  
*Curriculum Vitae*

**Professional Experience:**

**Present Position:** Senior Staff Member (Since 1982)      Professor by Courtesy  
Carnegie Institution for Science      Department of Biology  
Department of Plant Biology      Stanford University  
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**Past Position:** Assist. Professor by Courtesy, 1982-1989, Dept of Biology, Stanford University  
Assoc. Professor by Courtesy, 1989-2000, Dept of Biology, Stanford University  
Chief of Genetics, Solazyme Inc, South San Francisco  
Consultant Martek  
Consultant Exelixis

**Education and Research Experience:**

Postdoctoral Fellow. 1978-1982. Rockefeller University, Department of Cell Biology. Uptake of Polypeptides into chloroplasts (postdoctoral adviser, Nam-Hai Chua)  
PhD, 1978. Indiana University, Department of Biological Sciences. Characterization of Photosynthetic Mutants in *Chlamydomonas reinhardtii* (PhD adviser, Robert Togasaki)  
BS with Honors, 1973. Brooklyn College, New York. Major in Biology

**Honors, Services and Fellowships:**

2019      NSF Science and Technology Center Panel for Preproposals (September 26-27)  
2019      DOE-BES Panel (March 6)  
2018      Organizer of the International Conference on the Genetics and Molecular Biology of *Chlamydomonas* (Washington DC; June 17-23)  
2018      Organizing Committee, International Conference on Microbial Photosynthesis (Vancouver)  
2017      Edmond de Rothschild Chair (Fellowship to go to Paris, Laboratory of Francis André-Wollman for up to a year)  
2017      Arnon Endowed Lecture – Berkeley (March 1, 2017)  
2017      Chair of the Gordon Conference on Photosynthesis in 2017  
2016      Member of the Review Panel for the Integrated Microbial Diversity Program of the Canadian Institute for Advanced Research  
2015      Member Review Panel for Genomics and Synthetic Biology Program, NYU, Abu Dhabi  
2015      Co-Chair of the Gordon Conference on Photosynthesis in 2015  
2014      Visiting Scientist Fellowship - Department of Life and Environmental Sciences (DiSVA), Università Politecnica delle Marche (UNIVPM)  
2014-17      Scientific Advisory Board, Boyce Thompson Institute  
2014-2017      Steering Committee, University of Texas Culture Collection  
2014      Panel Member to Review Science and Technology Center, University of Nebraska  
2013      Organizer of Western Photosynthesis Conference – 2013  
2013      Teacher 17th International Course of School of Pure & Applied Biophysics, Venice

2013 External examiner on Thesis defense of Laura Houille,  
 2013 Member of EU Sunbiopath evaluation committee (Jan 20-24)  
 2013 Panel Member to Review Science and Technology Center, University of  
 Nebraska  
 2013 Review of Science and Technology Centers for NSF (Jan 13-15)  
 2012-2018 Co-editor-in Chief, Journal of Phycology  
 2012 Co-organizer of Western Photosynthesis Conference  
 2011/15 Steering Committee, University of Texas Culture Collection  
 2011 Member of DOE Evaluation Committee, Plant Research Laboratory  
 2011 Recipient of Lady Davis Fellowship  
 2009 Steering committee, Joint Genome Institute  
 2009 Recipient Gilbert Morgan Smith Medal (National Academy of Sciences)  
 2008 National Resources Defense Council Algal Biofuels Advisory Committee  
 2007 Editorial Board Eukaryotic Cell  
 2008 Editorial Board Molecular Plant  
 2005-9 Editorial Board Annu Rev Genet  
 2004 Geographical represented for the International Society of Photosynthesis  
 Research (elected position)  
 2002 Darbaker Prize for work on microalgae (Botanical Society of America)  
 2000-8 Editorial Board, Current Genetics  
 2000-3 Scientific Advisory Board for the Wallenberg Consortium North  
 2000 Advisory Committee, Arizona State University Consortium to establish a NSF funded  
 Biotechnology Center  
 2000-4 Editorial Board, Plant and Cell Physiology  
 2000 Organizer of Symposium 'The Dynamics and Evolution of Light Harvesting Complexes (to  
 honor Elizabeth Gantt)  
 1999 Coorganizer of Symposium to Honor the retirement of Olle Björkman  
 1998 Organizer of US-Japan Binational Meeting (Asilomar, CA)  
 1997 Editorial Board, Journal of Phycology  
 1996-8 Editorial Board, Journal of Biological Chemistry  
 1996 Guest on the Editorial Board of the Annual Review of Genetics (1998, Vol. 32)  
 1995 Plenary Lecture - Japan Society of Plant Physiologists (March)  
 1995 Coordinator for the Organization of the Plant Biology Retreat  
 1994 Member of AIBS panel to evaluate joint projects in plant biology  
 1994 Editor-Seminars in Cell Biology "Light regulation in photosynthetic organisms" (Autumn,  
 1994)  
 1994 Organizer of the Plant Biology Retreat  
 1993 Guest on the Editorial Board of the Annual Review of Genetics (1995 Vol. 29)  
 1993 Organizer Cyanobacterial Workshop at Asilomar  
 1993 Guest Teacher in Marine Molecular Phycology Course at Friday Harbor  
 1992 Recipient-Nehru University, Dept of Biotechnology Fellowship to work in India for 3  
 months (January - April 1992)  
 1992 Guest Teacher in Marine Molecular Phycology Course at Friday Harbor  
 1992 Organizer of the Carnegie Seminar Series  
 1991 Member Photosynthesis Panel (USDA)  
 1991 Help in organization of conference on tetrapyrrois (Solicited by Paul Castelfrance)  
 1990 Editorial Board Journal of Plant Growth Regulation  
 1989 Member NSF Panel - Postdoctoral Fellowship Awards  
 1988 Organizer of the Carnegie Seminar Series

- 1988 Participated in the organization of the C. Stacy French Symposium on Photosynthesis.
- 1988 Member NSF Panel - Postdoctoral Fellowship Awards
- 1987 Member Program Committee "Mol Biol Cyanobacteria Workshop, St. Louis, MO, July 17-
- 1987 Member of Photosynthesis Panel (USDA)
- 1987 Organizer of the Carnegie Seminar Series
- 1987-93 Editorial Board Plant Physiology
- 1985 Guest Member of Editorial Board for the Annu Rev Plant Physiology (1987 Vol.)
- 1985 Member of Plant Molecular Biology Panel (USDA)
- 1984 Member of NIH Postdoctoral Fellowship Panel
- 1979-81 National Institute of Health Postdoctoral Fellowship
- 1977 Floyd Fellowship
- 1974-97 National Science Foundation Predoctoral Fellowship
- 1972 L. Whorley Award in Biology
- 1968-72 New York State Regents Scholarship
- Phi Beta Kappa
- American Society of Plant Physiologists

1982-2016 Numerous ad hoc reviews for NSF, DOE and USDA, and some for NIH (as well as for a number of international agencies). I have also completed numerous reviews for a variety of journals including Science, Nature, PNAS, The Plant Cell, EMBO Journal, The Plant Journal, Molecular Microbiology, Plant Physiology and Journal of Bacteriology. I have also been on many committees and panels to help evaluate scientific directions for the various granting agencies [Systems Biology approaches for future development, for the National Academy of Sciences (algal biofuels), NASA program for experiments in the shuttle, NRDC advisory board etc]. Furthermore, I have reviewed many tenure packages and have evaluated many biology programs and have been instrumental in recently getting the Journal of Phycology indexed in PubMed (started in summer of 2016).

**Teaching activities – Current/Ongoing:**

1. Thirteen lectures in course on algae and fungi (offered once every couple of years).
2. Lectures in Plant Molecular Biology course (every time it is offered).
3. Lectures in Plant Biochemistry course (every other year).
4. Plant Physiology lectures. Selected lectures in 2000 and 2001 on the molecular aspects of anion assimilation.
5. Biology 301. A lecture each year to introduce students to work in my laboratory (every year).
6. Lecture every year (2006-2013) in Hopkins Microbiology Course (hosted by Alfred Spormann).
7. 2009 – Freshman course at Stanford University – From Photosynthesis to biofuels.
8. 2010 - Week-long course in Eilat, Israel – The Acclimation of Photosynthetic Organisms to their Environment
9. 2012 – Freshman course at Stanford University – From Photosynthesis to Biofuels; Energy for the Future
10. 2013 – Bioengineering - The GreenCut and Identifying Proteins Critical for Photosynthesis
11. 2014 – Ancona Italy – Algal physiology, biochemistry, and genetics – Three lectures - Light and photosynthetic organisms. 2. Acclimation to changing nutrient conditions. 3. The coral reefs and the interaction between an alga and its host
12. 2018 Teaching in summer school in Shantou University (August 16-23) – From endosymbiosis to organelle evolution and the biogenesis of an organelle.

**Previous Teaching Experience:**

- 1976 Indiana Univ., Laboratory section of the Physiology Course

- 1984, 1990 Stanford Univ., Course on Algae and Fungi (with Sarah Fultz) - thirteen lectures each time
- 1987-1995 Stanford Univ., Plant Molecular Biology and Plant Biochemistry courses (team taught; Sharon Long, Virginia Walbot, Peter Ray, and Neil Hoffman). Generally, I give between 5 and 10 lectures a year for various courses in the Biology Department of Stanford University
- 1983-1993 Helped in organization of several seminar courses. Gave two or three lectures in Biology 301 per year
- 1993-2017 Numerous guest lectures in various courses including Plant Biochemistry, Marine Microbiology (Hopkins Marine Station), Plant Molecular Biology
- 1992/1993 Course on Molecular Biology of Marine Algae (with Lynda Goff and Annette Coleman)

### **Masters Students (3)**

Amy Spater (1990) Unkown.

John Quisel (1997) Senior Vice President of Business Development of Acceleron Pharma, Inc.

Claire Granger (1999) Marketing agent for Clonotech.

### **Former PhD Students (15 Total):**

Laura Green, PhD, 1988. Sulfur Acquisition in *Anacystis nidulans*. Current Position: Working as editor, Amherst, MA.

Eugenio de Hostos, PhD, 1988. The De-repressible Arylsulfate in *C. reinhardtii*. Current Position: Manager of Corporate Partnering & Portfolio Development at the Non-profit Institute for One World Health.

Jackie Collier, PhD, 1995. Degradation and Biosynthesis of Phycobilisomes and Assembly of the Photosynthetic Apparatus in *Anacystis nidulans*. Current Position: Associate Professor, SUNY Stony Brook Marine Sciences Research Center.

Elena Casey, PhD, 1996. Molecular Genetic Analysis of Complementary Chromatic Adaptation. Current Position: Professor, Georgetown University, Department of Biology (Chair of Department).

Dennis Wykoff, PhD, 1999. Acclimation of *Chlamydomonas reinhardtii* to Phosphate Limitation. Current Position: Associate Professor, *Dennis M. Cook Endowed Gregor Mendel Chair in Genetics*. Villanova University, Department of Biology.

Claire Grainger, Masters, 1999. Acclimation of Arabidopsis to Phosphorus Limitation. Current Position: Scientific & Healthcare Research at KnowledgePoint360 Group.

Melissa Adams, Masters, 2008. Cyanobacteria of the Hotsprings. Current Position: Technology Specialist at Clark & Elbing LLP.

Blaise Hamel, Masters, 2008. Photosynthesis at High Temperatures. Current Position: Pharmacist.

Wirulda Pootakham, PhD, 2010. Sulfur Deprivation in Chlamydomonas. Current position: Senior Researcher in the National Center for Genetic Engineering and Biotechnology, Thailand.

Kate Mackey, PhD, 2010 (joint with Adina Paytan). Photosynthesis and Nutrient Deprivation Responses in Marine Cyanobacteria. Current Position: Assistant Professor, UC Irvine.

Leonardo Magneschi, PhD, 2012. Anoxic Metabolism in Algae and Plants, PhD (joint with Pierdomenico Perata). Current Position: Research Scientist Cell and Plant Physiology Laboratory, CEA Grenoble (joint appointment with Total Company).

Laura Houille (visiting graduate student from the Laboratory of Francis Andre Wollman). Working toward a PhD. The GreenCut and understanding the functions of unknown proteins associated with photosynthesis.

Zubin Huang. PhD, 2014 (joint with Fritz Prinz). Examination of Photosynthetic Function using AFM. Current Position: Research Scientist at Applied Materials (company in Bay Area).

Tyler Wittkopp, PhD. Postdoctoral Fellow with Joseph Noel, Salk Institute.

Witchukorn Phuthong, PhD. Staff Scientist, Thailand Innovation Agency.

**Former Postdoctoral Fellows/Research Associates (45 Total):**

- John Coleman, 1984. Current Position: Dept. of Botany, Univ. of Toronto, Professor (former Chair of the Department). Recently retired
- Terri Lomax, 1986. Current Position: Professor; Executive Vice President, Discovery-Science-Technology at RTI International, Raleigh, North Carolina.
- Peggy Lemaux, 1987. Current Position: Professor; Dept. of Molecular Plant Biology, Univ. of California-Berkeley.
- Pamela Conley, 1988. Current Position: Vice President, Biology at Portola Pharmaceuticals, San Francisco Bay Area Biotechnology.
- Maryse Block, 1988. Current Position: Senior Staff Scientist; Laboratoire de Physiologie Cellulaire Végétale, Unite Mixte de Recherche 5168, Centre National de la Recherche Scientifique Commissariat à l'Énergie Atomique Université Joseph Fourier Institut National de la Recherche Agronomique, 38054 Grenoble, France.
- Nancy Federspiel, 1989. Senior scientist, Human Genome Project, Department of Genetics Stanford University
- Lamont Anderson, 1990. Current Position: Professor; Dept. of Biology, Colorado College.
- David Laudenbach, 1991. Current Position: Assistant Professor; Univ. of Western Ontario, London, Ontario, Canada, Assistant Professor (Deceased).
- Jill Ray, 1991. Current Position: Scientific Manager, Companion Diagnostic Development at Genentech San Francisco Bay Area Biotechnology.
- Gisela Chiang, 1992. Current Position: Associate Director at Biogen IdecBaxter, Boston, MA.
- Michael Schaefer, 1993. Current Position: Chief, Translational Centers of Excellence and Research Coordination Section National Institutes of Health, Washington, DC.
- Kirk Apt, 1996. Current Position: Vice President of Research; Martek Biosciences Corporation, Columbia, MD (deceased).
- Peter Kroth, 1995. (Research Fellow). Current Position: Professor, University of Konstanz, Germany.
- Kris Niyogi, 1997. Current Position: Professor and Chair. Department of Plant and Microbial Biology, University of California, Berkeley, CA. Recently stepped down as chair.
- John Davies, 1998. Current Position: Scientist. Scientist at Dow AgroSciences, Portland, OR.
- David Kehoe, 1998. Current Position: Professor; Department of Biology, Indiana University, Bloomington, IA,
- Rakefet Schwarz, 2000. Current Position: Senior Lecturer; Bar Ilan University, Tel Aviv, Israel.
- Lorraine van Waasbergen, 2000. Current Position: Professor, Biology Department, University of Texas in Arlington.
- Devaki Bhaya, 2001. Current Position: Staff Associate; Carnegie Institution for Science. Courtesy Professor; Department of Biology, Stanford University.
- Hideki Takahashi, 2001. Current Position: Associate Professor; Department of Biochemistry and Molecular Biology, Michigan State University.
- Qingfang He, 2002. Current Position: Professor; Department of Applied Science, University of Arkansas, Little Rock.
- Wing-On Ng, 2002. Current Position: Senior Scientist/Project Manager; MBI (Michigan Biotechnology Institute).
- Chung-Soon Im, 2006. Current Position: CEO; Phycoil Biotechnology International, Inc and Phycoil Biotech Korea.
- Oliver Kilian, 2007. Current Position: Founder of Aqua Meadow Inc.
- Anne Steunou, 2007. Current Position: equivalent of Professor, CNRS, Gif-sur-Yvette.

David Gonzalez-Ballester, 2008. Current Position: equivalent of Assistant Professor, University of Cordoba, Spain.

Florence Mus, 2008. Current Position: Junior Manager, Metabolic Explorer, Research Associate, Washington State University.

Jeffrey Moseley, 2009. Current Position: Researcher; Solazyme Biofuels.

Shaun Bailey, 2009. Current Position: Director of Photosynthesis Research; Synthetic Genomics.

Nakako Shibagaki, 2010. Current Position: Formerly Assistant Professor Osaka University; Currently Manager at L'Oreal, Kawasaki, Kanagawa, Japan.

Jean Alric, 2013. Current Position: Equivalent to Associate Professor, CNRS position, Cadarache, France.

Xenie Johnson, 2013. Current Position: equivalent to Assistant Professor, CEA Research Engineer, Institute of Biotech. Environ. Biology, Cadarache, 13108 Saint-Paul-lez-Durance, France.

Mark Heinnickel, 2013. Current Position: Synthetic Genomics.

Dimitri Tolleter, 2014. Current Position: Assistant Professor, IRHS Team, University of Angers, France.

Eva Nowack, 2014. Current Position: equivalent to Assistant Professor, Heinrich\_Heine\_Universität Düsseldorf.

Munevver Aksoy, 2015. Current Position: Assistant Professor, Agricultural Biotechnology Department, Akdeniz University, Turkey.

Claudia Cattalanotti, 2015. Current Position: TenX Genomics (Senior Research Scientist).

Ru Zhang, 2016. Current Position: Staff Scientist, the Danforth Center.

Wenqiang Yang, 2017. Current Position: Assistant Professor and awardee of the 1000 Young Talents Program, Botanical Institute, Beijing, China.

Adam Idoine, 2017. Current Position: Research Scientist, Safetraces.

Yuval Kaye, 2018. Faculty, The Ramat Negev International Center for Advanced Agricultural Training

Sophie Clowez, 2018. Postdoc, The Carnegie Institution for Science.

Tingting Xiang, 2019. Assistant Professor, Univ. North Carolina, Charlotte.

Shai Saroussi, 2019. Currently offered Assistant Professorship at Ben Gurion University, Israel, but is considering other potential offers.

**Present Postdoctoral Fellows/Research Associates:**

Emanuelle Sanz Luque. Responses of algae to sulfur deprivation

Weichao Huang. Moving reductant from chloroplasts – the functions of shuttles

Shai Saroussi. The GreenCut and photosynthetic function

Petra Redkopp. LHCSR regulation

Freddy Bunbury. Recreating hot spring microbial mats

Victoria Calatrava. Probing organelle evolution (starting January, 20120)

**Academic/Industrial Affiliations:**

Joint project with Martek Biosciences Corporation in Columbia, MD. Molecular manipulation of chromophytic algae to facilitate production of metabolites and specific lipids (1993-2000)

Consultant for Exelixis Pharmaceuticals (1995-2001)

Martek Inc (1997-2002)

Chief of Genetics, Solazyme (2007-2015) – I function as a high level consultant mostly for the biotechnological aspects of working with the algae

Phoenix Bioinformatics (2013-Current) – Board of Directors

AppliColor (2016) – Consultant on the use of light as a diagnostic

Checkerspot (2016) – Advisory Board

Phycoil (2016) – Advisory Board

## External Support and pending grants (shown from 1995):

- 2019-2022 Focusing a quantitative lens on Synthetic Phototrophic Communities. NSF-BBSRC January 2019 with Devaki Bhaya, Seppe Kuehn, Alison Smith and Chris Howe. \$918,061 to Grossman and Bhaya. Pending
- 2018-2021 Elucidating the transition to eukaryotic phototrophy. NASA with Debashish Bhattacharya, Dana Price and Desmond Lun. \$398,000 to Grossman, Funded.
- 2018-2021 The 18<sup>th</sup> International Conference on the Cell and Molecular Biology of Chlamydomonas. DOE. \$10,000 Funded.
- 2018-2020 Dissecting the Role of Alternative Oxidases in Electron Flow, O<sub>2</sub> Reduction and Cellular Redox Balancing. DOE-BES. \$394,000. Funded.
- 2018-2019 The 18<sup>th</sup> International Conference on the Cell and Molecular Biology of Chlamydomonas. NSF. \$10,000 Funded.
- 2018-2021 Integrated view of photosynthetic control in response to light and metabolic signals. HSPF project. \$300,000. In a consortium with Dimitros Petroutsos, Chuan He, Zoran Nikoloski. Funded.
- 2018-2021 Where have all of the electrons gone? Understanding the role of alternative electron flow and O<sub>2</sub> reduction in balancing cellular redox (DOE-BES Grant in collaboration with Matthew Posewitz. Funded for 1 year at \$100,000 (with encouragement to reapply; reapplication has been submitted).
- 2017 For support of The Gordon Research Conference on Photosynthesis: Photosynthetic plasticity; From environment to synthetic systems (DOE and NSF) (Funded by both NSF and DOE; \$10,000 from NSF, \$10,040 from DOE)
- 2017-2020 Functional-genomics tools for cnidarian-dinoflagellate symbiosis (Edge Grant with Virginia Weis, John Pringle and others, in review) (\$475,000)
- 2016 Carnegie Venture Competitive Grant for developing new coral system (\$100,000).
- 2014-2017 Coral resilience investigated in the field and via a sea anemone model system (Moore Foundation – \$533,008)
- 2014-2017 Unraveling the mechanisms that enables record high growth and photosynthetic rates in a newly isolated *Chlorella* sp. from desert crusts (NSF, approved pre-proposal; joint grant with Aaron Kaplan at Hebrew University)
- 2013 The Western Photosynthesis Conference, 2013 (NSF \$10,596)
- 2012-2015 A window into the evolution of plastids (NSF \$320,000 total)
- 2011-2014 Understanding the death of the coral reefs and the role of the algal endosymbiont (\$596,000)
- 2012-2015 A mutant resource to transform reverse genetics in *Chlamydomonas reinhardtii* (with Martin Jonikas) (NSF \$2,661,285)
- 2012-2015 Biochemical integration of metabolic networks critical for energy transformation in *Chlamydomonas reinhardtii* (DOE \$330,000)
- 2010-2014 From the genome to photosynthetic function (NSF \$732,000 total)
- 2010-2012 The *Porphyra* model system and the need for transformation (NSF \$65,362 total)
- 2008-2011 Acclimation of Chlamydomonas to sulfur deprivation conditions (NSF \$450,000 total)
- 2007-2010 Filling knowledge gaps in biological networks: Integrated global approaches to understand H<sub>2</sub> metabolism in *Chlamydomonas reinhardtii* (NSF \$600,000 total)
- 2003-2010 Chlamydomonas genomics: Photosynthesis and acclimation (NSF \$3,197,682).
- 2004-2008 Probing acclimation responses in *Prochlorococcus* ecotypes through analyses of global gene expression. NSF Oceanography (\$500,000 total)
- 2004-2007 Generation of bioelectricity in algae. GCEP (\$450,000 total)
- 2003-2008 Do species matter in microbial communities? NSF (\$5,000,000 - total for the consortium)

2004-2006 The role of the STAS domain in sulfur deprivation. USDA (180,000)

2003-2008 *Chlamydomonas* genomics: Photosynthesis and acclimation. NSF (\$3,100,000 - total for the consortium)

2002-2004 Acclimation of *Chlamydomonas* to phosphorus starvation. USDA (\$90,000)

2001-2005 Genetic dissection of photoprotection and characterization of *npq* mutants. NSF (\$460,000)

2001-2002 Global analysis of acclimation processes in cyanobacteria. NSF (\$100,000)

2000-2003 Analysis of gene expression during acclimation of cyanobacteria to stress conditions. NSF International Program (\$21,000). This grant is for travel and collaborative work with Daniel Vaultot in Roscoff

1999-2002 Analysis of the *Chlamydomonas reinhardtii* genome: A model unicellular system for analyzing gene function and regulation in vascular plants. NSF (\$3,300,000, approximately \$2,000,000 of that comes to Carnegie and the rest to other institutions that are participating in the project)

1998-2001 Dissection of nutrient deprivation responses in cyanobacteria. NSF (\$300,000)

1998-2001 Defining the regulation of the blue/UV-A light inducible *hliA* gene. USDA (\$210,000)

1998-1999 US-Japan Binational Conference; The effects of environmental conditions on CO<sub>2</sub> fixation and the photosynthetic apparatus. NSF (\$12,000)

1998-2000 The use of transformation in diatoms. NSF/Martek Corporation (subcontract for \$150,000)

1996-1999 Acclimation of *Chlamydomonas* to sulfur limitation: Regulation and survival. USDA (\$202,000)

1996-1999 Photobiology and genetic analysis of complementary chromatic adaptation. NSF (\$300,000)

1996-1999 The acclimation of a photosynthetic eukaryote to phosphorus limitation. NSF International Program (33,000). Collaborative work with Hideaki Usuda and Kosuke Shimogawara

1997-1999 High light and blue-UV-A regulated light responses in photosynthetic organisms. USDA (\$140,000)

1994-1996 NblA/TxlA and the biosynthesis of the photosynthetic apparatus. USDA (\$100,000)

1993-1996 Gene transfer in marine algae. Martek (\$72,000)

1992-1995 Regulation and targeting of light harvesting proteins in marine diatoms. NSF (\$230,000). Neil Hoffman as co-PI

## Publications

1. Foo, S.A., Liddell, L., **Grossman**, A.R., Caldeira, K. (2019) Photo-movement in the sea anemone *Aiptasia* influenced by light quality and symbiotic association. Coral Reefs. In Review.
2. Sproles, A.E., Oakley, C.A., Matthews, J.L., Peng, L., **Grossman**, A.R., Weis, V.M., Davy, S.K. (2019) Proteomics quantifies protein expression changes in a model cnidarian colonised by a thermally tolerant but suboptimal symbiont ISME Journal. doi: 10.1038/s41396-019-0437-5. [Epub ahead of print] PMID: 31118473.
3. Sproles, A.E., Oakley, C.A., Krueger, T., Grossman, A.R., Weis, V.M., Meibom, A., Davy, S.K. (2019) Sub-cellular imaging of a model symbiosis shows reduced photosynthetic carbon assimilation of heterologous endosymbiont *Durudinium trenchii* in *Aiptasia* host. In Preparation.
4. Clowez, S., Cleves, P., Krediet, C.J., Pringle, J., **Grossman**, A.R. (2019) Sugar impacts photosynthetic activity and symbiont capacity of *Symbiodinium sp.* In Preparation.



5. Clowe, S., Renicke, C., Saroussi, S., **Grossman**, A.R. (2019) Impact of menthol on bleaching and photosynthetic activity of free-living and symbiotic *Breviolum* spp. SSB01 (Dinoflagellata, Dinophyceae). In Review.
6. Petroustos, D.,..... **Grossman**, A.R. et al. (2019) Carbon metabolism controls photoprotection in *Chlamydomonas* via the light harvesting complex stress response protein LHCSR3. In Preparation.
7. Xiang, T., Lehnert, E., Clowe, C., Pringle, J., DeNofrio, J.C., **Grossman**, A.R. (2019) Integration of nitrogen and carbon metabolism in the *Symbiodinium* cnidarian association. In Submission.
8. Li X., Patena W., Fauser F. Jinkerson RE, Saroussi S, Ivanova N, Robertson JM, Yue R, Zhang R, Vilarrasa-Blasi J, Ramundo S, Blum SR, Goh A, Laudon IM, 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(4):627-635. doi: 10.1038/s41588-019-0370-6.
9. **Grossman**, A.R, Sanz-Luque, E., Yi, H., Yang, W. (2019) Building the GreenCut2 suite of proteins to unmask photosynthetic function and regulation. *Microbiology*. doi: 10.1099/mic.0.000788. [Epub ahead of print].
10. Sanz-Luque, E., Saroussi, S., **Grossman**, A.R. (2019) The role of the polyphosphate in the control of cellular acclimation processes. Invited review. Preparation.
11. Saroussi, S., Karns, D., Thomas, D., Posewitz, P., **Grossman**, A.R. (2019) Alternative outlets for sustaining photosynthetic electron transport during dark to light transitions. *Proc Natl Acad Sci USA*. 116 (23) 11518-11527. <https://doi.org/10.1073/pnas.1903185116>.
12. Saroussi, S., Karns, D., Thomas, D., Posewitz, M., **Grossman**, A.R. (2019) Electron flow in *Chlamydomonas reinhardtii* in the absence of major energy sinks and reversible inactivation of cytochrome *b<sub>6</sub>f*. In Review.
13. Kaye, Y., Huang, W., Saroussi, S., Idoine, A., Clowe, S., Sanz-Luque, E., **Grossman**, A.R. (2019) *Chlamydomonas reinhardtii* Mitochondrial Alternative Oxidases Allows Survival in High Light. *J Biol Chem*. 294(4):1380-1395. doi: 10.1074/jbc.RA118.004667.
14. Halim, R., Hill, D.R.A., Hanssen, E.G. Webley, P.A., Blackburn, S, **Grossman**, A.R., Posten, C., Martin, G.J.O. (2019) Induction of autolytic cell-wall self-ingestion in lipid-rich *Nannochloropsis* under thermally coupled dark-anoxia incubation. *Green Chemistry* (Royal Society of Chemistry). DOI. 10.1039/C8GC03186J
15. Sasso, S., Stibor, H., Mittag, M., **Grossman**, A.R. (2018) The natural history of model organisms: From molecular manipulation of domesticated *Chlamydomonas reinhardtii* to survival in nature. *eLife*. *Elife*. 2018 Nov 1;7. pii: e39233. doi: 10.7554/eLife.39233.
16. Fan, J., Zheng, I., Bai, Y., Saroussi, S., **Grossman**, A.R. (2018) Flocculation of *Chlamydomonas reinhardtii* with different phenotypic traits by metal cations and high pH. *Frontiers in Plant Science*. Nov 20;8: 1997. doi: 10.3389/fpls.2017.01997.
17. Wittkopp, T., Heinnickel, M., Kim, R., Yang, W., Niyogi, K., **Grossman**, A.R. (2018) The GreenCut protein CPLD49 and its function in maintaining the stability of the cytochrome *b<sub>6</sub>f* complex. *Plant Journal*. 94:1023-1037.

18. Mathews, J.L., Oakley, C.A., Lutz, A., Hillyer, K.E., Roessner, U., **Grossman**, A.R., Weis, V.M., Simon, S.K. (2018) Partner switching and metabolic flux in a model cnidarian–dinoflagellate symbiosis. *Proceedings Royal Society B*. 28:285.
19. Esherick, L.Y., DeNofrio, J.C., Krediet, C.J., Tolleter, D., Xiang, T., **Grossman**, A.R., Pringle, J.R. (2017) Relative contributions of host and algal genotypes to bleaching susceptibility in a cnidarian-dinoflagellate symbiosis. In Preparation.
20. Xiang, T., Jinkerson, R.E., Clowez, S., Tran, C., Krediet, C.J., Onishi, M., Pringle, J.R., **Grossman**, A.R. (2018) Glucose-induced trophic shift of a clade B *Symbiodinium* strain and its physiological and molecular consequences. *Plant Physiol*. Dec 7. pii: pp.01572.2017. doi: 10.1104/pp.17.01572.
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