Curriculum Vitae

ELIZABETH VIERLING

ORCID: 0000-0002-0066-4881

EDUCATION

2007-08	(Summers) Sabbatical Research, Max Planck Institute for Molecular Plant Physiology, Golm, Germany, Sponsor Dr. N. Mark Stitt. (Alexander Von Humboldt support)
2000-01	Sabbatical Research, Wageningen Univ., Wageningen, The Netherlands, Sponsor, Dr. M. Koornneef. (NSF and Guggenheim support)
1993-94	Sabbatical Research, Whitehead Institute for Biomedical Research, Sponsor, Dr. G. Fink.
1982-85	Postdoctoral Research Associate, Botany Department, Univ. of Georgia, Athens, GA, Dr. J.L. Key, advisor.
1982	Ph.D., Biology, The University of Chicago, Chicago, IL. Dissertation title: "Structure and Biosynthesis of the P700 Chlorophyll *a* Protein" Dr. R.S. Alberte, advisor.
1979	M.S., Biology, The University of Chicago, Chicago, IL.
1979	Physiology Course, Marine Biological Laboratory, Woods Hole, MA.
1975	B.S., Botany, University of Michigan, Ann Arbor, MI.
1973	Junior Year in Freiburg, Albert-Ludwigs Universität, Germany.

EMPLOYMENT

2013	Distinguished Professor, University of Massachusetts
2011	Professor, Department of Biochemistry & Molecular Biology, University of MA, Amherst, MA; Regents' Professor Emerita, University of Arizona, Tucson, AZ
2008 - 10	Program Director, BIO/MCB National Science Foundation, Arlington, VA
2008	Regents' Professor, Dept. Chemistry & Biochemistry, University of Arizona
1999	Joint Professor of Plant Sciences, University of Arizona
1996	Professor of Biochemistry & Molecular Biophysics, and of Molecular and Cellular Biology, University of Arizona, Tucson, AZ.
1991	Associate Professor of Biochemistry and of Molecular and Cellular Biology, University of Arizona, Tucson, AZ.
1986	Joint Faculty, Department of Molecular and Cellular Biology, Univ of AZ, Tucson, AZ.
1985	Assistant Professor of Biochemistry, Univ of AZ, Tucson, AZ.

HONORS AND AWARDS

2013	University of Massachusetts Spotlight Scholar
2012	Appointed Fellow of the American Society of Plant Biologists
2012	Distinguished Graduate of Riverdell High School, Oradell, NJ
2007	Alexander von Humboldt Senior Research Fellow
2002	Elected Fellow of the AAAS
2000	John Simon Guggenheim Memorial Fellow
1997	NSF/JSPS Short Term Invitation Fellowship for Research in Japan
1993-97	American Cancer Society Faculty Research Award.
1978-81	Trainee, NIH Cell & Molecular Biology Training Grant, University of Chicago.
1979	Junior Researcher, Physiology Course, MBL, Woods Hole, MA; Society of General Physiologists Grant (summer).
1976-78	Hutchinson Botany Fellow, University of Chicago.
1971-75	National Merit Scholar, University of Michigan.

SERVICE (1994 to present)

Outreach:

High School Science Fair Project Sponsor: 1995,1999-2000
Sponsored two Salpointe High students who performed research in my lab.
Sponsored 3 students for 2000 Science Fair projects.

Sponsored High School Teachers for summer research, 2002 - 2007.

Science Teachers Colloquium Presentation: 1997

Biology Career Day: 1995, 1997, 1999, 2003 Organizing committee.

K-12 Outreach: Took the Manduca Project to my daughter's kindergarten and 1st grade classes.

Spoke to 5th grade class about DNA and cells, Spring 2003.

Speaker, Science Career Day for middle school girls, March, 2003.

Presenter, Science Career Day for middle schoolers, Swanson Middle school, Arlington, VA, Nov. 2008

Presenter, Thomas Jefferson Science Career Day, Arlington, VA, 2009

High School Science Fair Judge, Arlington, VA, Feb. 2009

Presenter: Girls Excited about Math and Science, 6th grade Daniels Run Elementary, Falls Church, VA Jan. 2010

Eureka Program: Developed two morning laboratory exercise for 15 year old girls from Holyoke Girls, Inc. program, UMass campus, Summer 2013; 2104.

Public Lectures: "GMOs: Science behind the Hype", Amherst Town Hall, April 2014 (video recorded, shown on local TV and posted on Amherst town website); New Canaan, NY church group, May 2014; "Is there an upside to genetically modified plants?", Amherst Town Hall, Nov 2014; "Science of meaningful GMO labeling" Speaker and panelist at forum sponsored by MA State Senator Brownsberger, Watertown, MA, October 2015; "The Science of Genetically Engineered Plants", sponsored by the CT Valley section of the ACS, Amherst, MA, Oct 2015; "Where GMOs Stand Today" New England Vegetable and Fruit Conference, Manchester, NH, Dec 15, 2015; An evening with an expert, Amherst Hillel, Amherst, MA, April 2016. "Transgenic Plants: From basic research to agricultural applications", Amherst Learning in Retirement, Hitchcock Center for the Environment. Dec 2017.

Organized "This is STEM in College" panel and campus shadowing day for Amherst Regional High school students (involved UMass undergrads); Spring 2014 to 2017, 2019 (12-20 student participants each time). Same event for Girl's Inc. of Holyoke for middle school girls (14 girls), Fall 2015, Spring 2017.

Sponsored a visiting student from the Czech Republic for a ten day visit for a collaboration on the function of the enzyme GSNOR (Dec 2014).

Sponsored a visiting postdoc from Australian National University in Canberra for one week to perform pilot experiments on heat stress in grasses (June 2015).

Sent a postdoc to Berlin, Germany for three weeks to learn new techniques and collaborate with an international partner (Feb 2015).

Met with Boston Globe Editorial Board members as expert on GMOs to discuss MA GMO labeling bill. (May 2016).

Sponsored middle school science/math teacher Elliot Kelly to perform research and develop middle school curricula with plants (July-Aug 2016-2020), and Jodi Stevens (2018-2020). Work in summer 2020 involved teacher's preparing on-line curricular materials for remote student learning.

Teacher Workshop – Amherst Middle School, August 2017. Morning workshop on middle school science project with plants. Led by Elliott Kelly. Three teachers, one student teacher and one UMass graduate student.

Attended Elliott Kelly's Amherst Middle School 8th grade classroom for "radish races" exercise (2017); Attended Elliott Kelly's and Jodi Stevens Amherst Middle School 7th grade classroom to observe plant density lab (2018).

Met with teachers from all three Amherst Elementary Schools and curriculum coordinator Jennifer Reece in November 2019 to introduce them to the plant growth rack system developed in previous years by Amherst middle school teacher Elliott Kelly. Purchased all components for setting up racks and growing plants with NSF funds.

Professional Training – Mentoring and Diversity, Equity & Inclusion

July 2020 – Participated in CNS Discussion Group on the fild "White Like Me"

Departmental Committees

U AZ

Undergraduate Advising 1991 - 1996; 2004 to 2008
Graduate Studies Committee 1995 - 2000. Chair from 1996-1999
Biochemistry Department Executive Committee 1995-1998, 2005-2007
Seminar Committee - 1999
Curriculum Committee - 2002, 2003 to 2008
Research Program Committee, Chair – 2006 to 2008

U Mass

BMB Departmental Personnel Committee: 2011 – 14, 2019; Chair 2012-13, 2013-14; Chair 2019-21
Undergraduate Advising – Class of 2015 (~25 students), Class of 2019 (~33 students)
Nordin Lecturer Committee – For Spring 2012, 2014, 2016 lectures
Research Resources Committee – Spring 2012 - 2017
Academic Affairs Committee – Fall 2014 – 2017
Head's Advisory Committee – Fall 2014 – 2017
Faculty Search Committee, Chair – Fall 2014, Margaret Stratton hired.
BMB Office Manager Search Committee – Chair – Fall 2015
Faculty Search Committee, Chair – Summer 2016-2017, Sibongile Mafu hired.
BMB Honors Program Director – 2019 to present

University

U AZ

Biochemistry Head Search Committee - 1996
Graduate College Representative - 1995 -2003
Faculty Senate - 2000 - 2005
Biochemistry Dept Head 5-yr Review Committee - 2001
Research Policy Committee - 2002-2003
Honors College Scholarship Board - 2004 - 2007
College of Science P & T Committee – 2006

U Mass

Campus Physical Planning Council: Fall 2011 to 2017
Faculty Senate Outreach Council Subcommittee: 2011 to 2015
Broader Impacts Working Group (grant development advisory function): Spring 2011, Spring 2012
Facilitator: Workshop on Broader Impacts in Grant Applications: Spring 2011, 2012
Scribe: Workshop on Outreach and Engagement: Fall 2013.

Plant Biology Program Graduate Admissions Committee: 2012 – 2017, 2019
IALS Models to Medicine Steering Committee: 2013 - 2016.
Interdepartmental Graduate Program Review Committee: 2015 - 2016
Plant Biology Graduate Program Director: 2015 to 2017; academic year 2018-2019
Co-Organizer -13th Annual UMass Plant Biology Symposium – Oct 2015
Chair, Dean's CNS Plant Visioning Committee: 2015-2016
Life Sciences Steering Committee: 2015 - 2017
CNS Dean Search Committee: 2016
IALS Core Facility Director Search Committee: 2016
Graduate Education Innovation Working Group: 2019
Commonwealth Honors College Council: 2019-2022
Plant Biology Graduate Program Graduate Operations Committee: Chair 2019-2020
Plant Biology Graduate Program Graduate Steering Committee: 2020-21

Service to Profession: (Selected)

International Service:

Advisory Board for the Gregor Mendel Institute of Plant Biology, Vienna, Austria. Appointed 2011-2106. Yearly board meetings.

Advisory Board for Marie Curie Initial Training Network SPOT-ITN, EU Project coordinated at Goethe University, Frankfurt, Germany. 2012-2015. Yearly consortium meetings.

Editorial Positions

Editor - Plant Physiology, 1992 - 1995
Editorial Board - Plant Molecular Biology, 2000 - 2004
Editorial Board - Journal of Biological Chemistry, 2003-2008
Editorial Board - Plant Journal, 2003-2008
Reviewing Editor – Frontiers in Molecular Biosciences, Protein Folding, misfolding & degradation

Elected Offices

American Society for Cell Biology, Publications Committee, 1992-1995.
American Society for Plant Physiologists, Executive Committee, 1995-1997.

Committee Service

American Society for Plant Biologists, Charles Albert Shull Award Committee, 2005-2008.
American Society for Plant Biologists, ASPB Pioneer Hi-Bred Graduate Student Fellowship Committee, 2009 to 2015
American Society for Plant Biologists, Constitution and Bylaws Committee, 2020-2023

Grant and Program Review Panels

1994 USDA-NRICGP - Plant Responses to the Environment
1995 NIH Molecular Cytology Study Section, Ad Hoc reviewer
1996 American Cancer Society - Personnel grants
1999 USDA-NRICGP - Plant Development
2000 USDA-NRICGP - Plant Responses to the Environment
2002 DOE - Energy Biosciences
2004-5 USDA-NRICGP - Panel Manager, Plant Responses to the Environment
2005 DOE – MSU Plant Research Lab Site Review
2011 NSF – MCB Signal Transduction Panel

2012 NIH – MSFB Study Section, Ad Hoc
2014 VA Tech – Review of Department of Plant Pathology, Physiology and Weed Science
2014 NIFA – USDA - Plant Growth, Development, Composition and Stress Tolerance
2016 NSF – PhD Dissertation award panel

Membership in Professional Societies

American Society for Biochemistry and Molecular Biology - 1997 to present
American Association for the Advancement of Science - 1985 to present
American Society for Cell Biology - 1978 to 2004
American Society of Plant Biologists - 1977 to present

Meeting organization/chair positions:

Keystone Conferences:
Chair, Plant Responses to Abiotic Stress. Copper Mountain CO, April 2006
Co-Chair, Plant Responses to Abiotic Stress. Santa Fe, NM, February, 2004.
Gordon Research Conference: Chair, Plant Responses to Temperature: January, 2006
National Science Foundation: Cochair, Workshop on Innovation in Biological Research and Education in the Molecular and Cellular Biosciences, Arlington, VA, June 2010.
ASPB Annual Meeting: Minisymposium Chair, Minneapolis, MN, August 2011.
Minisymposium Chair, Providence ,R.I. July 2013.
ASBMB Annual Meeting: Theme Session Organizer (12 speakers); Chair and Speaker, Indianapolis, IN, Apr 2021 – possibly postponed due to COVI-19.

TEACHING

U Mass

Formal Courses:

BiochemHO1 - (Spr '11;13;14 Fall '12,13) **–** 1 credit, ~30 students, 1 lecture
Biochem694A PB II - Topics in Plant Biology Research (Spring 2011) – 2 credits, 2 students, 1 lecture
Bio 891PB -Topics in Plant Biology Research (Fall '11; 12) – 3 credits, ~15 students, 2 lectures
Biochem 697A – Protein Folding Journal Club, co-organizer (Fall '11, '12, Spr 13) – 2 credits, ~18;~18; 6 students
Biochem694A PB II - Topics in Plant Biology Research 2 credits (Spr 12 - 8 students; Spr 13- 9 students; Spr 14 – 3 students; Spr 15 – 8 students; Spr 16 - 3 students; Spr 17 – 9 students; Spr 2019 – 4 students)
Biochem 491H – Junior year writing (Fall 12, 13, 15, 16) – 2 credits (11, 13, 9, 13 students)
Biochem 430H - Biochemistry Writing seminar (Fall 18, Spring 2020) – 3 credits, 12, 17 students.
NatSci 494I - Global Issues/Applied Biology (Spr 2015 – 3 credits, 83 students; Spr 2016 – 3 credits, 59 students; cotaught 1/3 of course with Li-Jun Ma both years. (Spr 2017, 2019, 2020 – 3 credits, 65-90 students; taught 1/3 of course).

Independent Studies:

Biochem 396 (Fall 2011) Brett Higgins, BMB Sophomore, 2 credits
Biochem 396 (Spring 2012) Brett Higgins, BMB Sophomore, 3 credits
Biochem 496 (Spring 2012) Jonathan Barricelli, BMB Senior, 3 credits
Honors Capstone (Spring 2012) Joshua Coomey, PSIS Senior, 3 credits, Co-Advisor
Biochem 396H (Fall 2012) Michelle Rousseau, BMB Junior, 3 credits
Biochem 499Y (Spring 2013) Umaru Barrie, BMB Senior, 3 credits
Biochem 296 (Spr 2013) Olena Gross, BMB, 3 credits

Biochem 499T (Fall 2013) Umaru Barrie, Honors thesis, 3 credits.
Biochem 396 (Fall 2014) Mary Fowler, 4 credits
Biochem 496 (Fall 2014) Olena Gross, 3 credits
Biochem 396 (Spring 2015) Chirag Mehta, 2 credits
Biochem 396H (Spring 2015) Mary Fowler, 4 credits
Biochem 496 (Spring 2015) Olena Gross, 3 credits
Biochem 499Y (Fall 2015) Mary Fowler, 3 credits
Chem 496 (Fall 2015) Ian Truebridge, 3 credits
Biochem 396H (Spring 2016) Chirag Mehta, 3 credits
Chem 496 (Spring 2016) Ian Truebridge, 2 credits
Biochem 496 (Spring 2016) Sam Del'Olio, 4 credits
Biochem 499T (Spring 2016) Mary Fowler, 6 credits
Biochem499Y (Fall 2016) Chirag Mehta, 3 credits
Biochem 499Y (Fall 2016) Chirag Mehta, 3 credits
Biochem499T (Spr 2017) Alyssa McQuillan, 3 credits - Edward Via College of Osteopathic Medicine
Biochem 499T (Spr 2017) Chirag Mehta, 3 credits
Biochem 396H (Spr 2017) Thi Bui, 3 credits
Biochem 396H (Spr 2017) Jesse Arsenault, 3 credits
Biochem 396 (Spr 2017) Corey Isgur, 3 credits
Biochem 499Y (Fall 2017) Thi Bui, 3 credits, UMass NSB MS 2020
Biochem 499Y (Fall 2017) Jesse Arsenault, 3 credits
Biochem 496 (Fall 2017) Corey Isgur, 3 credits
Biochem 499T (Spr 2018) Jesse Arsenault, 3 credits
Biochem 396H (Spr 2018) Sam Zelman. 3 credits
Biochem 396H (Spr 2018) Esther Oh, 4 credits
Biochem 496 (Spr 2018) Corey Isgur. 3 credits
Biochem 499Y (Fall 2018) Esther Oh, 4 credits
Biochem 496H (Fall 2018) Sam Zelman, 3 credits
Biochem 296H (Fall 2018) Lilly Voke, 3 credits
Biochem 499T (Spr 2019) Parth Patel, 3 credits
Biochem 499T (Spring 2019) Esther Oh, 3 credits
Biochem 396H (Fall 2019) Astha Parmar, 4 credits
Biochem 296 (Fall 2019) Philipp Guettler, 4 credits
Biochem 496 (Fall 2019) Eli Gordon, 4 credits
Biochem 499Y (Spr 2020) Astha Parmar, 4 credits
Biochem 496H (Fall 2020) Nora Haggerty, 3 credits
Biochem 496H (Fall 2020) Elana Carleton, 3 credits
Biochem 496 (Fall 2020) Philipp Guettler, 3 credits
Biochem 499Y (Fall 2020) Prem Patel, 3 credits
Biochem 499T (Fall 2020) Astha Parmar, 4 credits

Undergraduate Student Awards (2019-20 only):
Spr 2019 – Parth Patel, Honors Research Grant
Spr 2019 – Esther Oh, Honors Research Grant
Spr 2020 – Nora Haggerty, Honors College Research Fellowship
Spr 2020 – Prem Patel, Honors College Research Fellowship
Spr 2020 – Astha Parmar, Honors College Research Grant
Fall 2020 – Nora Haggerty, Honors College Research Fellowship

Fall 2020 – Prem Patel, Honors College Research Grant
Fall 2020 – Astha Parmar, Honors College Research Grant

Graduate Program Participation:
Molecular and Cellular Biology (MCB) Program (weekly colloquia, weekly seminars)
ICE IGERT (2011-2015)
Plant Biology (PB) program (weekly seminars)
Chemistry Biology Interface (CBI) Program (monthly seminars); Training grant faculty – 2012-2019
CBI/BMB/BMP Joint Retreat, Worcester MA, June 2011, 2015; Amherst, MA June 2012, 2013, 2016, 2017, 2019

Informal Presentations to Graduate Programs:
MCB Colloquium - Spring 2011
ICE: Coffee and Connections - Spring 2011
CBI Chalk Talk-Spring 2011, 2015, 2017, Fall 2019
PB Graduate Student Program – Fall 2011, 2012
MCB Graduate Student Program – Fall 2011, 2012, 2015
BioTechTALES – BTP Training grant debate – Fall 2019

U Arizona (1995-2010)
Biochemistry 462a – Macromolecular structure/function for upper division Biochem majors (~110 students)
Biochemistry 462b - Metabolism for upper division Biochem majors (~100 students).
Biochemistry 462bH - Honors section of above.
Biochemistry 461 - Nucleic acid biochemistry (for pharmacy, nursing, micro majors) (~140 students)
Plant Sciences 561 - Biochemistry of photosynthesis & carbon metabolism (10-20 graduate students)
Biochemistry 595c - Current topics in biochem. & mol biol (8-15 MCB & Biochem graduate students).

GRADUATE STUDENTS
U Mass
PhD Advisor:
Keith Ballard –MCB PhD 2018

Visiting PhD Student:
Tianxiang Liu – NW Ag & Forestry University, Yangling, China – 2018-2020

PhD Student Committees:
Alba Tannous – PhD Student of Daniel Hebert, MCB Program, degree 2015
Peter van Gisbergen – PhD student of Magdalena Bezanilla, degree 2016
Jing Lui – PhD student of Peter Chien, degree 2016
Greg Delulio – PhD Student of Li-Jun Ma, PB Program, Degree 2017
Onur Oznas – PhD student of Dong Wang, MCB program, degree 2016
Patrick Hill – PhD student of Kevin Griffith, MCB program
Ryan Shepard – PhD student of Om Parkash, PB program; left with terminal MS 2016
Joseph Tilitsky – PhD student of Lila Geirasch, Chemistry; Left with terminal MS 2017
Joshua Coomey – PhD student of Sam Hazen, PB program
Nana Zhang – PhD Student at University of Pittsburgh, Stephen Tonsor advisor; degree 2016
Liyuan Zhang – PhD student at Beijing Agricultural University, Huiru Peng advisor; degree 2016

Lingling Zhu – PhD student at Australian National University, Owen Atkin advisor; degree 2017
Jarrett Man – PhD student of Madelaine Bartlett, PB program; Degree Dec 2020
Nishadi Gamage – PhD student of Geunhwa Jung
Afua Adusei – PhD student of Tricia Serio, MCB program

Masters Students:
MS Advisor:
Yichen Zhang – MCB MS 2014; MS in statistics, bioinformatics at Rutgers, 2016; employed in industry
Nathen Bopp – Biochem, MS 2015 – Currently PhD student at UT Galveston
Sally Chu – Applied Biotech, MS 2014; employed in industry
William Scholl - Applied Biotech, MS 2016
Mary Fowler – Applied Biotech, MS 2017; employed in industry
Kathryn Vescio –PB program MS 2019 with Li-Jun Ma
Ian Truebridge – Biochem MS 2018; employed in academic research lab
Sam Zelman – Biochem MS 2020; Scientist III at Merck
Parth Patel – Biochem MS 2020; U Central Florida Medical School

MS Student committees
Sarah Tarullo - MS 2014 (Scott Garman, Advisor)
Dennis DePaulo – MS 2014 (Sam Hazen, Advisor)

Rotations (ORPs):
Keith Ballard – MCB, Summer 2011
Tieyang Liu – MCB, Spring 2012
Yichen Zhang – MCB, Spring 2012
Thomas Sawyer – MCB, Fall 2014
Jarrett Man – PB, Spring 2016
Ahmet Bakirbas – PB, Spring 2018
Nishadi Gamage – PB, Spring 2019
Robert Yvon – (MCB ORP), Spring 2020

<u>Undergraduate Thesis Committees:</u>
Chair:
Umaru Barrie – BMB Honors Thesis, Dec 2013
Mary Fowler – BMB Honors Thesis, May 2016
Chirag Mehta – BMB Honors Thesis, May 2017
Alyssa McQuillan – BMB Honors Thesis, May 2017
Jesse Arsenault – BMB Honors Thesis, May 2018
Esther Oh – BMB Honors Thesis, May 2019
Parth Patel – BMB Honors Thesis, May 2019
Astha Parmar – BMB Honors Thesis, Dec 2020
Prem Patel – BMB Honors Thesis, May 2020

Member:
Joshua Coomey – PSIS Honors Thesis, May 2012
Christopher Waters - BMB Honors Thesis, Wang Lab, May 2014
Samantha Williams – BMB Honors Thesis, Gierasch Lab, May 2014
Swarna Veeramani – BMB Honors Thesis, Mager Lab (VASCI), May 2015

Laura Carlucci – Biology Honors Thesis, Baskin Lab, May 2016
Thi Bui – BMB Honors Thesis, Katz Lab, Dec 2018

U AZ
Qiang Chen, PhD 1992. Professor, Dept of Applied Biological Sciences. AZ State University.
Amy DeRocher, PhD 1993. Senior Staff Scientist, Seattle Biomedical Research Institute, Seattle, WA.
Teri Suzuki, PhD 1998. Senior Research Scientist, Aventis Pharmaceuticals, Tucson, AZ
Nadja (Wehmeyer) Anderson, PhD 1999. K-12 Biotech Outreach Coordinator, U of AZ, Tucson, AZ.
Dee Willet, MS in Biology Teaching. 1999. Middle School Teacher, Tucson, AZ
David Kim, M.S. 1999. Dean of Students, Albuquerque Academy High School, NM
Kenny Friedrich, PhD 2003, Associate Professor, Portland Community College, OR.
Guilong (Charles) Cheng, PhD 2007, (joint with Dr. Vicki Wysocki) Research Scientist, Amgen, MA.
Nomalie Jaya, PhD 2009. Senior Scientist, Seattle Genetics, Bothell,WA
Christina Jahr, MS 2010. High school teacher, CA.
Minsoo Kim, PhD 2011. Returned as postdoc in Nov 2014

POSTDOCTORAL RESEARCH ASSOCIATES
Former:
Dr. Ricardo Azpiroz, Instructor, Richland College, Dallas, TX
Dr. Kim Giese – RN, Princeton, NJ
Dr. Damian Guerra – April 2013 to July 2016; Assistant Professor University of Kentucky, Louisville
Dr. Andrew Hausrath – Scientist, UCLA
Dr. Kenneth Helm, Professor, Siena College, NY
Dr. Suk-Whan Hong- Associate Professor, Chonnam University, Korea
Dr. Surekha Katiyar-Agarwal – Associate Professor, University of New Delhi, New Delhi, India
Dr. Jane Larkindale – Director of Translational Research, Muscular Dystrophy Association, Tucson, AZ
Dr. Gary J. Lee – Former Monsanto Scientist; Luthier, Wayne, NJ
Dr. Ung Lee – Humanitarian Farm Advisor
Dr. Fionn McLoughlin – April 2012-Dec 2015; Postdoc, Washington University, St. Louis, MO
Dr. Heather O'Neill – Scientist, Caris Life Sciences, Phoenix, Arizona
Dr. Katherine Osteryoung - Professor, Michigan State University
Dr. Kerstin Petersen – Scientist, Max Planck Institute for Molecular Plant Physiology, Golm, Germany
Dr. Indu Santhanagopalan – March 2011 to Nov 2016; Postdoc, Cambridge UK
Dr. Elizabeth Waters, Professor, San Diego State University
Dr. Colin Watson, Neuroscience Regional Specialist, Pfizer, Tucson AZ
Dr. Shengbao Xu – Associate Professor, Northwest Ag & Forestry University, Yangling, China

Current:
Dr. Minsoo Kim – Nov 2014 to present
Dr. Patrick Treffon – August 2016 to present

VISITING SCIENTISTS
Former (Since 2004 – two prior):
Dr. Eman Basha – 2004 to 2012, from Tanta University, Tanta, Egypt
Dr. Kishor Gaikwad – 2009-2010, from National Research Centre on Plant Biotechnology, Indian Agricultural Research Institute, New Delhi, India
Dr. Joel Stafstrom – Fall 2011, Professor, Department of Biological Sciences, Northern Illinois University.

Dr. Huiru Peng – Sept 2011- Sept 2012, Associate Professor, China Agricultural University, Beijing.
Return visit planned – delayed by coronavirus, 2020
Dr. Alejandra Covarrubias – March 2014 – Sept 2014, Professor, UNAM, Cuernavaca, Mexico

PUBLICATIONS (Complete list) (128 total)

Peer Reviewed: (102 total published) (* undergraduate authors)

All: H-Index – 73, i10 – 114; Citations: 22,661 (Dec 2020 – Google Scholar)
Since 2015: H-Index – 48, i10 index 87; Citations: 7754 (Dec 2020 – Google Scholar)

104) Wang, J., X. Guo, T. Liu, S. Javed, S. Xu, E.Vierling. Maternal S-nitrosoglutathione reductase impacts female gametophyte development by maintaining sporophytic nitric oxide homeostasis in *Arabidopsis. In prep.*

103) Kim, M., V. Schulz, L. Brings, T. Schoeller, K. Kühn, E. Vierling. Mitochondrial nucleoid organization and biogenesis of complex I require mTERF18/SHOT1 and ATAD3 in Arabidopsis thaliana. bioRxiv (2020) 2020.05.11.088575; doi: https://doi.org/10.1101/2020.05.11.088575, Submitted to Plant Cell, under review.

102) Wang, J., X. Guo, J. Zhu, Q. Xiao, A. Cheung, R. Palanivelu, L.Yuan, E. Vierling, S. Xu. Auxin efflux controls orderly nucellar degeneration and expansion of the female gametophyte in Arabidopsis. New Phytologist, in press (2021).

101) Waters, E., E. Vierling. Plant Small Heat Shock Proteins - Evolutionary and Functional Diversity. New Phytologist – Tansley Review. 227:24-37 (2020). https://doi.org/10.1111/nph.16536

100) McLoughlin, F., M. Kim, R. S. Marshall, R. D. Vierstra, and E. Vierling. HSP101 interacts with the proteasome and promotes the clearance of ubiquitylated protein aggregates. Plant Physiol. 180:1829-1847 (2019). DOI:10.1104/pp.19.00263. Highlighted in Plant Physiol. News and Views: 180:1777-1778. DOI: https://doi.org/10.1104/pp.19.00711.

99) Santhanagopalan, I., M.T. Degiacomi, D.A. Shepard, G.K.A. Hochberg, J.L.P. Benesch, E. Vierling. It takes a dimer to tango: Oligomeric small heat shock proteins dissociate to capture substrate. J. Biol. Chem. 293: 19511–19521 (2018). Cover article.

98) Wang, X., L. Hou, Y. Lu, B. Wu, X. Gong, M. Liu, J. Wang, Q. Sun, E. Vierling, S. Xu. Metabolic adaptation of wheat grain contributes to stable filling rate under heat stress. J. Exp. Bot. 69: 5531-5545 (2018). https://doi.org/10.1093/jxb/ery303

97) Marklund, E. G., Y. Zhang, E. Basha, J. L.P. Benesch, E. Vierling. Structural and functional aspects of the interaction partners of the small heat-shock protein in *Synechocystis*. Cell Stress & Chaperones https://doi.org/10.1007/s12192-018-0884-3 (2018). PMCID: PMC6045555

96) Hochberg, G. K.A., D. A. Shepherd, E.G. Marklund, I. Santhanagoplan, M. Degiacomi, A. Laganowksy, T. M. Allison, E. Basha, M. T. Marty, M. R. Galpin, W. B. Struwe, A. J. Baldwin, E. Vierling, J. L.P. Benesch. Structural principles that enable oligomeric small heat-shock protein paralogs to evolve distinct functions. Science 359: 930-935 (2018). PMID:29472485

95) Guerra, D., S. Eyles, I. Truebridge, P. Treffon, E. Vierling. Direct detection of in vitro protein nitrosation by mass spectrometry: S-Nitrosoglutathione Reductase as a Model Protein. In: Mengel A., Lindermayr C. (eds) Nitric Oxide. Methods in Molecular Biology, vol 1747, pp 143-160. Humana Press, New York, NY (2018). PMID:29600457

94) Zhang, L. X. Liu, K. Gaikwad, X. Kou, F. Wang, X. Tian, M. Xin, Z. Ni, Q. Sun, H. Peng, E. Vierling. Mutations in eIF5B confer thermosensitive and pleiotropic phenotypes via translation defects in *Arabidopsis thaliana*. Plant Cell 29:1952-1969 (2017). PMID: 28808135

93) Kim, M., F. McLoughlin, E. Basha, E. Vierling. Assessing tolerance to acute heat stress. Bio-protocol 7(14): e2405. DOI: 10.21769/BioProtoc.2405 (2017).

92) McLoughlin, F., E. Basha, M. E. Fowler*, M. Kim, J. Bordowitz*, S. Katiyar-Agarwal**,** E. Vierling. Class I and II small heat shock proteins together with HSP101 protect eukaryotic protein translation factors during heat stress. Plant Physiol. 172:1221-1236 (2016). PMID:27474115

91) Guerra, D., K. Ballard, I. Truebridge*, E. Vierling. S-nitrosation of conserved cysteines modulates activity and stability of S-nitrosoglutathione reductase (GSNOR). Biochemistry 55:2452-64 (2016). PMID:27064847

90) Haslbeck, M., E. Vierling. A first line of defense: Small heat shock proteins and their function in protein homeostasis. J. Mol. Biol. 427:1537-48 (2015). PMID:25681016

89) Patel, S., E. Vierling, F. Tama. Replica exchange molecular dynamics simulations provide insight into substrate recognition by small heat shock proteins. Biophys. J. 106:2644-2655 (2014). PMID:24940782

88) Xu, S., D. Guerra, U. Lee, E. Vierling. S-Nitrosoglutathione reductases are low-copy number, cysteine-rich proteins in plants that control multiple developmental and defense responses in Arabidopsis. Front. Plant Sci. 4: 1-13 (2013). doi: 10.3389/fpls.2013.00430. PMID:24204370

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7) Carra, S., S. Alberti, P.A. Arrigo, J. L. Benesch, I. J. Benjamin, W. Boelens, B. Bartelt-Kirbach, B. J. J. M. Brundel, J. Buchner, B. Bukau, J. A. Carver, H. Ecroyd, C. Emanuelsson, S. Finet, N. Golenhofen, P. Goloubinoff, N. Gusev, M. Haslbeck, L. E. Hightower, H. H. Kampinga, R. E. Klevit, K. Liberek, H. S. Mchaourab, K. A. McMenimen, A. Poletti, R. Quinlan. S. V. Strelkov, M. E. Toth, E. Vierling, R. M. Tanguay. The growing world of small heat shock proteins: from structure to functions. Cell Stress Chaperones. DOI 10.1007/s12192-017-0787-8 March (2017).

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5) Osteryoung, K.W., B. Pipes, N. Wehmeyer, E. Vierling. Studies of a chloroplast-localized small heat shock protein in *Arabidopsis*. In: *Biochemical and Cellular Mechanisms of Stress Tolerance in Plants*. J. Cherry, ed. NATO ASI Series. Vol H 86: 97-113. Springer-Verlag, Berlin (1994). https://www.springer.com/us/book/9783642791352

4) Osteryoung, K., E. Vierling. Genetic approaches to the function of the chloroplast low molecular weight heat shock proteins. In: *Research in Photosynthesis*, Norio Murata, ed. Vol IV, pp.129-136. Kluwer Academic Publishers, Dordrecht, The Netherlands (1992).

3) Vierling, E., A. Sun. Developmental regulation of heat shock proteins in higher plants. NATO ASI Series. *Environmental Stress in Plants*. J. Cherry, ed. Vol. G19: 343-354. Springer-Verlag, Berlin. (1989). https://link.springer.com/book/10.1007%2F978-3-642-73163-1

2) Vierling, E. Characterization of chloroplast-localized heat shock proteins. In: *Plant Gene Systems and their Biology*, L. McIntosh, J.L. Key, eds. A.R. Liss, Inc., pp. 99-108 (1987).

1) Vierling, E., J.K. Roberts, R.T. Nagao, J.L. Key. A chloroplast heat shock protein has homology to cytoplasmic heat shock proteins. In: *Progress in Photosynthesis Research*. J. Biggins, ed. Vol IV: 143-145 (1987). https://doi.org/10.1007/978-94-017-0519-6_31

SCHOLARLY PRESENTATIONS

Invited Seminars:

Zoecon Corporation, Palo Alto, CA - February 1986
University of California, Davis, CA - May 1987
Arizona State University, Tempe, AZ - October 1987
Washington University, St. Louis, MO - January 1989
Michigan State University, East Lansing, MI - October 1989
University of Florida, Gainesville, FL - October 1989
University of Arizona, Tucson, AZ - November 1989
Akademie der Wissenschaften der DDR, Halle, East Germany - June 1990
Universität Tübingen, Tübingen, West Germany - June 1990

University of Missouri, Columbia, MO - November 1990
University of California, Berkeley, CA - November 1990
University of California, Los Angeles, CA - May 1991
University of Illinois, Champaign, IL - September 1991
Columbia College of Physicians and Surgeons, NY, NY - November 1991
Carnegie Institute of Plant Biology, Stanford, CA - January 1992
DuPont de Nemours & Co., Wilmington, DE - June 1993
New Mexico State University, Las Cruces, NM - October 1994
University of California, Davis, CA - September 1995
University of Illinois, Champaign, IL - December 1995
University of Arizona, Cancer Center - September 1996
University of California, Riverside, CA - January 1997
Colorado State University, Fort Collins, CO - May 1997
National Taiwan University, Taipei, Taiwan - October 1997
Academica Sinica, Taipei, Taiwan - October 1997
Ehime University, Matsuyama, Japan - March 1998
Kyoto University, Kyoto Japan - March 1998
Saitama University, Urawa, Japan - March 1998
Albert-Ludwigs Universität, Freiburg, Germany - December 1998
University of Frankfurt, Frankfurt, Germany - December 1998
University of Nebraska, Biotechnology Center, Lincoln, NE - August 1999
University of South Dakota, Vermillion, SD - November 1999
University of Nijmegen, Nijmegen, The Netherlands - September 2000
Wageningen University, Wageningen, The Netherlands - October 2000
Goethe Universität, Frankfurt, Germany - November 2000
Max Planck Institute, Cologne, Germany - December 2000
Birkbeck College, University of London - February 2001
University of Utrecht, Utrecht, The Netherlands - March 2001
Kiel University, Kiel, Germany - May 2001
Institute of Biology, Seville, Spain - June 2001
Michigan State University - October 2001
University of British Columbia - September 2002
University of Missouri, Columbia; Department of Biochemistry - December 2003
Cornell University, Ithaca, NY - November 2004
University of Arizona, EEB Department - February 2005
Rice University, Houston, TX, Department of Biology –February 2005
University of Texas, Austin, TX, Department of Biochemistry - February 2005
Peking University – October 2005
China Agricultural University – October 2005
Oberlin College - March 2006
Wooster College of Ohio - March 2006
University of Ohio, Wooster - March 2006
CERES, Inc., Westlake CA – August 2006
University of Arizona, AHCC “Frontiers in Biomedical Research – October 2006
University of Arizona, Cancer Biology Program – March, 2007
University of Arizona, Dept. Cell Biology & Anatomy – April 2007
Purdue University – May 2007
Monsanto Company, St. Louis, MO – June 2007

Max Planck Institute for Molecular Plant Physiology, Potsdam, Germany – August, 2007
Max Planck Institute for Plant Breeding Research, Köln, Germany – June 2008
University of Heidelberg, Heidelberg, Germany – June 2008
University of Massachusetts, Amherst – March 2010
Olomouc University, Olomouc, Czech Republic – November 2011
University of Toronto, Scarborough Campus, Canada – March 2012
University of Toronto, Toronto, Canada – March 2012
University of Pennsylvania, Philadelphia, PA - Host: Walter Englander – March 2013
University of Massachusetts, Stockbridge School of Ag – Host: Om Parkash – Feb 2014
University of Florida, Gainsville, FL – March 2014
University of Maryland, College Park, MD – Host Jianhua Zhu – May 2014
China Agricultural University, Beijing, China – Host Huiru Peng – Sept 2014
Northwest University of Agriculture and Forestry, Yangling, China – Host Shengbao Xu – Sept 2014
Instituto de Biotecnologia, UNAM, Cuernavaca, Mexico – Host Allejandra Covarrubias – Oct 2015
Rhode Island College, RI. "Transgenic Plants: From Basic Research to Agricultural Applications" – Oct 2016
Northwest University of Agriculture and Forestry, Yangling, China – Nov 2017
Lanzhou University, Lanzhou, China – Nov. 2017
China Agricultural University, Beijing, China – Nov 2017
Tianjin University, Tianjin, China – Nov 2017
Shanghai Center for Plant Stress Biology, Chinese Academy of Sciences. "Controlling protein folding and reactive oxygen species: Keys to plant stress tolerance" – Nov 2017
University of Wollongong, Wollongong Australia. "Capturing denaturing substrates with small HSPs" March 2018
University of Western Australia, Perth Australia. "The mTERF18/SHOT1 protein modulates mitochondrial function to confer increased plant heat tolerance". Apr 2018
Australian National University, Canberra Australia."What am I doing here, and What's up with all these small HSPs anyway?" Apr 2018.
Australian National University, Canberra Australia. **"**Controlling protein folding and reactive oxygen species: Keys to plant stress tolerance" Apr 2018.
Technische Universität München, Garching, Germany. "A Diversity of sHSP Chaperones". July 2019.
University of Arizona, Tucson, AZ. "Making Connections: Mitochondria & Stress Tolerance". Feb 2020.
ASPB Plantae Presents webinar series. "From Chaperones to Mitochondria: Surviving Stress". Oct 2020.

Invited Symposium/Conference Presentations:
UCLA Symposium: Plant Gene Systems and their Biology, Tamarron, CO - February 1987
NATO Advanced Study Workshop: Biochemical and Physiological Mechanisms Associated with Environmental Stress Tolerance in Plants, Norwich, England - August 1987
Conference on Molecular Mechanisms of Plant Stress: Hannover, West Germany - February 1988
Gordon Conference: Plant Response to Temperature Stress. Oxnard, CA - January 1989
Gordon Conference: Plant Molecular Biology. Speaker and Session Chair, NH - June 1989
UCLA Symposium: Molecular Strategies for Crop Improvement, Keystone, CO "Hot Topics" short presentation (given by Dr. K. Helm, representing the lab) - April 1990
American Society for Horticultural Science: Tucson, AZ - November 1990
AAAS Regional meeting (Southwest/Rocky Mountain Division): Lubbock, TX - May 1991
US-Taiwan Workshop in Plant Molecular Biology: St. Louis, MO - June 1991

NSF Workshop: Plant Stress Biology, Tuskegee University, Tuskegee AL - September 1991
IXth International Congress on Photosynthesis: Nagoya, Japan - August 1992
Biotechnology for Crop Improvement: Caracas, Venezuela - November 1992
Gordon Conference: Plant Response to Temperature Stress. Oxnard, CA - February 1993
Mid-Atlantic Plant Molecular Biology Symposium: Univ. of Maryland, College Park, MD - July 1994
ASCB Annual Cell Biology Meetings: Minisymposium on Molecular Chaperones. San Francisco, CA - December 1994
Keystone Symposium: Plant Cell Biology, Speaker and Workshop Chair - January 1995
Gordon Conference: Plant Response to Temperature Stress. Session Chair. Oxnard, CA - February 1995
Society for Experimental Biology: Annual meeting in St. Andrew's, Scotland. Symposium Speaker - April 1995
Cold Spring Harbor: Molecular Chaperones and Protein Folding - May 1996
American Society of Plant Physiologists: National meeting, San Antonio, TX. Symposium talk and session chair - July 1996
Advances in the Molecular Biology of Photosynthesis. NSF sponsored US-Japan Workshop. Grand Canyon, AZ - November 1996
International Conference on Molecular Biology of Plants under Environmental Stress. Symposium speaker. Poznan, Poland - September 1997
International Society for Plant Molecular Biology: International Congress, Singapore. Symposium speaker - September 1997
Cold Spring Harbor: Molecular Chaperones and Protein Folding. Session chair and invited speaker. Talk given by Dr. Gary Lee from my lab - May 1998
Gordon Conference: Plant Response to Temperature Stress. Session Chair and Speaker. Oxnard, CA - February 1999
SFB Symposium, Tübingen, Germany: Mechanisms of Cell Behavior - October 1999
Cold Spring Harbor: Molecular Chaperones and Protein Folding. Invited short talk. May 2000.
International Symposium of the Leopoldina Academy: Progress in Plant Sciences, Halle, Germany - November 2000
Molecular Chaperones: Meeting of Dutch Researchers, Nijmegen, The Netherlands - January 2001
Dutch Society of Plant Physiologists: Lunteren, The Netherlands - March 2001
First International Congress of Seed Stress Biology: Wageningen, The Netherlands - April 2001
EU Conference "Molecular Chaperones". St. Feliu, Spain - May 2001
Conference on Medical Importance of Stress Proteins. Grenoble, France - June 2001
Annual Meeting of FEBs. Lisbon, Portugal - July 2001
Cold Spring Harbor: Molecular Chaperones and Protein Folding. Invited short talk. May 2002
FASEB Protein Folding Meeting. Vermont - August 2002
Gordon Conference: Plant Response to Temperature - Oxnard, CA; January 2003. Organizing Committee & Session Chair.
Indo-US Agricultural Biotechnology Conference: New Delhi, India, May 2003.
American Society for Research in Vision and Opthamology (ARVO). Speaker, Ft. Lauderdale, FL., May 2003.
14th International Arabidopsis Conference: June 2003; Speaker and session chair.
XIIth International Congress on Genes, Gene Families and Isozymes: Berlin, Germany, July 2003.
Annual Meeting of American Society for Plant Biology: Symposium speaker, Honolulu, HI, Aug. 2003.
Keystone Conference: Plant Responses to Abiotic Stress. February 2004 Co- Organizer, Speaker and Session Chair.
Third International Conference on Biological Sciences - Tanta, Egypt, April 2004.
FASEB Conference: Protein Folding in the Cell. Vermont - August 2004.

IIIce Cycle Romand Meeting: Protein Folding in Cell Biology and Disease, Villars, Switzerland - Sept 2004
14th Queenstown Molecular Biology Meeting: Queenstown, NZ, Nov. 2004.
Gordon Conference: Plant Response to Temperature - January 2005, Keynote Speaker and Vice Chair.
5th Symposium on Post-Transcriptional Mechanisms in Plant Gene Regulation: Austin TX. Invited Speaker, June 2005.
Plant Stress Symposium: Chonnam National University, Kwanju, Korea. One of five invited speakers. Sept 2005.
NAS Sackler Symposium: Washington, D.C. April 2006
Third Trinational Arabidopsis Conference: Tuebingen, Germany Sept. 2006.
First Shennong Center Symposium with Huazhong Agricultural University: Wuhan China, May 2007.
Gordon Conference: Stress Proteins in Growth, Development and Disease, August, 2007 Oxford, UK
3rd Cell Stress Society International Congress: Stress Responses in Biology and Medicine, August, 2007 Budapest, Hungary. Plenary Speaker.
Umea Plant Science Center, Umea,Sweden. Plant Abiotic Stress Symposium. August 2007.
POG:Plant Oxygen Group meeting: Ghent, Belgium. Invited talk from abstract. September, 2007
Richard and Elizabeth Hageman Distinguished Lecturer in Agricultural Biochemistry – Kansas State University – October 2007 http://www.k-state.edu/bchem/Hageman.htm
International Symposium: Biotechnology for Better Crops, Energy and Health – Taipei, Taiwan, May 2008
Adaptation Potential in Plants: Gregor Mendel Institute, Vienna Austria, March 2009.
Gordon Conference: Stress Proteins in Growth, Development and Disease, Andover, NH. July, 2009.
Keystone Conference: Plant Abiotic Stress Tolerance Mechanisms, Water and Global Agriculture, CO, Jan 2011.
Third EMBO Conference on "The Biology of Molecular Chaperones", Austria. May 2011.
5th International Congress on Stress Responses in Biology and Medicine: Quebec City, Canada. August, 2011
Perspectives on Modern Plant Physiology Symposium: Frankfurt Germany, August 2011.
Royal Society International Seminar Series: Combining approaches to conquer αB-crystallin: a paradigm for the structural biology of heterogeneous and dynamic protein assemblies. Oxford, UK, October 2011.
10th Anniversary Symposium of The Gregor Mendel Plant Research Institute (GMI): Vienna, Austria, November 2011.
Tropical Vegetation and Rising Temperatures: Functional basis of ecological response. Invited Symposium presentation. Smithsonian Tropical Research Institute. Panama City, Republic of Panama. May 2012.
Molecular Chaperones and Stress Responses: Cold Spring Harbor, NY, Invited short talk. May 2012.
International Symposium of the SFB594 -Molecular machines in proteins folding and translocation: Munich, Germany, July 2012. Unable to attend due to health reasons.
10th International Congress on Plant Molecular Biology: Jeju, South Korea, Oct 2012
SPOT-IN: EU Framework Program on Pollen thermotolerance and crop fertility. Keynote Lecture: Frankfurt, Germany, January 2013
2013 International Symposium on Agricultural Biotechnology: Emerging topics in Plant Stress Biology. Academica Sinica, Taipei, Taiwan. May 2013.
EMBO Conference: The Biology of Molecular Chaperones. Pula, Sardinia, Italy. May 2013.
Plant Biology 2013. Minisymposium Chair and Speaker. Providence RI, July 2013.
Plant Biology 2013. Women in Plant Biology, featured luncheon speaker. Providence R.I. July 2013.

ARC Center of Excellence Plant Energy Biology Retreat. Partner investigator lecture. Canberra Australia, Sept 2014.
Cell Stress & Chaperones International: The Small Heat Shock Protein World. Quebec City, Canada, Oct 2014
SPOT-IN: EU Framework Program on Pollen Thermotolerance and Crop Fertility. Sorrento, Italy, March 2015
Interdisciplinary Plant Group's (IPG) 32nd Annual Symposium. University of Missouri, Columbia, MO, May 2015
Plant Center 30th Anniversary: Joe L Key Symposium. "The Heat Shock Response – 30+ years later!" Athens, GA. May 2016.
6th Plant Nitric Oxide International Meeting. Selected from abstracts: "S-Nitrosoglutathione reductase: Role in plant fertility and regulation by NO". Granada, Spain. Sept 2016.
The small HSP World: Second International Workshop of Cell Stress Society International (CSSI). "sHSP Interactions with Substrates" – Bertinoro, Italy. Oct 2016.
13th International Conference on Reactive Oxygen and Nitrogen Species in Plants. "S-Nitrosoglutathione Reductase Regulation & Role in Fertilization". Kusadasi, Turkey. Sept 2017.
5th International Conference Plant Abiotic Stress Tolerance. "Tolerance to extreme heat is linked to mitochondrial metabolism", Vienna Austria, July 2018.
Gordon Research Conference: Chloroplasts and Mitochondria."Mitochondrial mTERF and ATAD3 Proteins in Arabidopsis". Selected from Abstracts. Il-Ciocco, Italy, July 2018.
Third International Workshop of Cell Stress Society International (CSSI). "sHSP Interactions with Substrates", Quebec City, Canada. Aug 2018.
14th International Conference on Reactive Oxygen and Nitrogen Species in Plants**.** "Mitochondrial mTERF Proteins and Stress Tolerance". Munich, Germany, July 2019.
Deutsche Forshung Gemeinschaft TRR175: Acclimation & Chloroplast Biology: from Genes to Systems. "Organelle Small Heat Shock Proteins", Irsee, Germany, August 2019.
ASBMB Annual Meeting: Theme Session Speaker and Chair, Indianapolis, IN, 2020 – postponed to 2021.

GRANTS AND CONTRACTS

Active :

National Science Foundation – MCB 1817985
8/01/18- 7/31/22 $800,000
"Regulating Nitric Oxide Homeostasis and its Impact on Plant Growth and Reproduction"

UMass Agriculture Experiment Station – Hatch Project MAS00566
NIFA – National Institute of Food and Agriculture – Project # 1024718
10/5/2020-9/30/2023 $TBD, depending on funds available to the Department
"Function of Chloroplast and Mitochondrial Small Heat Shock Protein in Stress Tolerance"

Alexander Von Humboldt Senior Research Award
6/24/07- open € 50,000
Sabbatical research support
"Metabolism of Nitric Oxide – Impact on carbon and nitrogen metabolism and stress responses**"**

Previous Awards: (since 1994)

Federal:

National Science Foundation – IOS 1354960
6/1/2014 -5/31/2020 $800,000
"mTERF function in the control of plant respiration and stress tolerance"

National Science Foundation - MCB 1517046
7/15/15-7/14/2019 $682,357
"Linking Reactive Nitrogen Metabolism and Redox Homeostasis in Plants"

National Institutes of Health
RO1 GM42762 $1,306,082 (direct plus indirect)
9/1/11-8/31/16
"Structure and function of the small heat shock proteins".

DOE - Energy Biosciences Program
8/1/11-7/31/12 $186,109 (direct plus indirect)
Hsp100/ClpB Chaperone Function and Mechanism

USDA-CSREES-NRI-001030 UMASS 2008-35318-31202
09/1/08-08/31/13 $400,000 total for all years (direct plus indirect)
"Function and regulation of a key enzyme in nitric oxide metabolism: S-nitrosoglutathione reductase"

NSF DBI - 0820047
03/01/09-02/28/13 $429,700 (direct plus indirect to EV – subcontract still at U AZ)
Dan Gallie, UC Riverside, PI
"Arabidopsis 2010: Global analysis of translational regulation"

NSF POWRE Award: MCB-9752978
1997 $4,500 a Merit Award
"A genetic approach to structure and function analysis of a new class of molecular chaperones"

USDA NRICGP 96-351003232
9/15/96 - 9/14/99 $230,000 total for project period
"Class I small HSPs in Plant Development and Thermotolerance"
USDA NRICGP 93-02143
9/1/93 -8/31/96 $190,000 total for project period
"Role of Class I Small HSPs in Development and Thermotolerance"

USDA NRICGP 99-351007618
9/15/99 - 9/14/02 $200,000 total for project period
"Plant Thermotolerance: The role of small heat shock proteins and other factors"

USDA-NRICGP 3510014857
9/1/04-8/31/07 $420,000 total costs
"Genes and gene networks controlling tolerance to high temperature"

DOE - Basic Energy Biosciences DE-FG03-95ER20208
9/1/95- 2/28/98 - $150,000 total costs

“Role of Hsp100 proteins in plant stress tolerance”

DOE - Energy Biosciences Program
9/16/99-9/14/02 $100,000/yr direct plus indirect
"Cytosolic HSP100 Proteins and Stress Tolerance in Plants"

DOE - Energy Biosciences Program
9/16/02-9/14/05 $100,000/yr direct plus indirect
"Cytosolic HSP100 Proteins and Stress Tolerance in Plants"

DOE - Energy Biosciences Program
9/15/05-9/14/08 $470,000 total for all years, direct plus indirect.
"Cytosolic HSP100 Proteins and Stress Tolerance in Plants"

NIH R01 GM42762-01
7/1/89-6/30/94 - $770,175 (Total direct plus indirect costs)
"Expression and Function of Organelle Heat Shock Proteins"

NIH R01 GM42762
7/1/95-6/30/99 - $775,000 (Total direct plus indirect costs)
"Structure and Function of Small Heat Shock Proteins"

NIH RO1 GM42762
7/1/00-6/30/05 ~$800,000 (Total direct plus indirect costs)
"Structure and function of the small heat shock proteins"

University of Arizona Hatch funds.
1994 -1998 approx. $15,000/yr (Direct costs)
"The Roles of Heat Shock Proteins in Plant Thermotolerance."

USDA-Southwest Consortium for Plant Genetics and Water Resources
Co PIs - J.J. Burke, USDA, Lubbock Texas
9/00-9/01 15% effort $14,000 direct costs
"Identification of Arabidopsis mutants with altered thermotolerance"

NSF POWRE Program
8/1/00-7/31/01 $75,000 direct plus indirect support (Sabbatical salary support)
“QTL Mapping of heat tolerance traits in Arabidopsis”

NSF: IBN-0213128
10/1/02-9/30/06 $120/yr direct plus indirect + REU and RET supplements.
“Function of the small Hsps in stress tolerance, growth and development”

NSF REU- DBI-0551115
CoPi: Carol Bender
4/1/06-3/31/09 $237,000
“REU Site: Research Experiences for Undergraduates in Molecular Biosciences”

NIH - Fogarty Award Collaboration with Dr. Laszlo Vigh, Szeged Hungary.
9/1/03 - 8/31/06 Funds, with the exception of some overhead, essentially all go to collaborator
"Lipid interactions of small heat shock proteins"

International:

Japanese Society for the Promotion of Science:
Short-term Invitation Fellowship for Research In Japan.
Award 1997. Supported full cost of 10-day trip to Japanese Universities.

Dutch National Science Foundation
8/1/00-7/31/01 $18,000 direct (Sabbatical living support)
"Genetics of stress tolerance in Arabidopsis"

AMVIS – Czech-American Cooperation
2011-2014 All research funds to Czech partner. Supported exchange of EV to Czech Republic, and Czech students to US.
PI: Marek Petrivalsky
"Plant GSNOR"

State:

UMass President's Fund for Science & Technology
Co-PI: Susan Roberts, Chemical Engineering
7/1/2014 – 6/31/2016 $150,000 ($100,000 matching from UMass)
"Massachusetts BioFoundry: A Center for the Discovery and Synthesis of Bioreactive Natural Products"

Private:

American Cancer Society Faculty Research Award (#FRA-420).
1992 - 1997 - Direct costs 5 yrs. $ 205,000.
"Roles of LMW HSPs in Eukaryotes".

John Simon Guggenheim Memorial Fellowship
8/1/00-7/31/01 $34,000 direct
"Genes for heat tolerance in agriculture" (Sabbatical salary support)