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EDUCATION

N.S.F. Postdoctoral Fellow, Plant Biology 1994
University of Wisconsin, Madison, with Dr. Ken Keegstra

Ph.D., Molecular Plant Biology 1990
University of California, Berkeley, with Dr. Richard Malkin

M.S., Biochemistry and Biophysics 1982
University of Massachusetts, Amherst, with Dr. Bob Blankenship

B.A., Chemistry and Biology (Dual Major) 1980
University of California, Santa Cruz, with Dr. Harry Beevers

ACADEMIC AND RESEARCH APPOINTMENTS

Univeristy of Tennessee

Fellow, American Association for the Advancement of Science 2014
Advisory Board, Tennessee Plant Science Research Center 2012-present
Senior Personnel, NIMBioS National Institute for Mathematical and Biological Synthesis 2012-present
State-wide Thrust Leader, NSF EPSCoR, TN-SCORE 2011-present
Inaugural Faculty, Center for Interdisciplinary Research and Graduate Education, UTK/ORNL 2010-present
Associate Director (SEERC), Sustainable Energy & Education Research Center, UTK 2007-present
Professor (Adjunct), Chemical and Biomolecular Engineering, UTK 2007-present
Professor (Adjunct), Microbiology, UTK 2007-present
Professor, Biochemistry, Cellular & Molecular Biology Department, UTK 2006-present
Member, Center of Excellence in Environmental Biotechnology, UTK 2001-present
Faculty, Genome Science & Technology Graduate Program, UTK/ORNL 2000-present
Faculty Member, Plant Physiology & Genetics Graduate Program, UTK 1994-present
Founding Member, Center of Excellence in Structural Biology, UTK 2001-2005
Founding Member, Center of Excellence in Food Safety, UTK 2001-2005
Associate Prof., Biochemistry, Cellular & Molecular Biology Department, UTK 2000-2006
Assistant Professor, Biochemistry, Cellular & Molecular Biology Department, UTK 1996-2000
Assistant Professor, Biochemistry Department (reorganized into BCMB), UTK 1994-1996
Faculty Member of the Graduate Group of Biotechnology, UTK 1994-1997

Univeristy of Wisconsin

Honorary Fellow, Botany Department, University of Wisconsin, Madison 1990-1993

University of California

Research Assistant, Molecular Plant Biology, University of California, Berkeley 1984-1989
Senior Research Specialist, Howard Hughes Medical Institute, U.C. San Francisco 1982-1990
Jr. Research Specialist, Physics Department, University of California, Santa Cruz 1982-1983

Amherst College

Research Associate, Chemistry Department, Amherst College 1980-1982

TEACHING AND INSTRUCTIONAL EXPERIENCE

Organizer/Instructor, Advanced Cell Biology, BCMB 311, UTK	2010-2014
Organizer/Instructor, Graduate Cell Biology, BCMB 513, UTK	2013
Organizer/Instructor, Advanced Plant Physiology, BCMB 522, UTK	2011
Speaker/Instructor, BCMB 615, The Future of BioEnergy, UTK	2009
Instructor, Freshman Studies, FS129, UTK	2008
Lecturer, FEBS/EMBO Adv. Lecture Course: Cellular & Molecular Biology of Membranes, Corsica, FR	2007
Bioenergy Journal Club, CBE 525, UTK	2007
Introductory Plant Physiology, BCMB 321, UTK	2007
Membrane Dynamics and Biogenesis, BCMB 615, UTK	2007
Advanced Cell Biology, BCMB 411, UTK	2000-2006
Advanced Concepts in Protein Structure, BCMB 511, UTK	1994-2012
Genome Sciences and Technology Colloquium, GST 510, UTK	2002-2004
Advanced Topics, BCMB 601, UTK	2004
Genomic Approaches in Plant Development, BCMB 607, UTK	2003
Advanced Topics in Cell Biology, BCMB 513, UTK	1998-2009
Advanced Cell Biology Laboratory, BCMB 429, UTK	2000
Experimental Techniques Laboratory, BCMB 515, UTK	1998
Experimental Approaches in the Plant Sciences, Life Science 510/610, UTK	1998
Membrane Transport Processes, BCMB 610, UTK	1997
Compartmentalization of Plant Cells, Life Science 510/610, UTK	1997
Advanced Topics in Biochemistry, BCMB 420, UTK	1995-1998
Lecturer, Plant Molecular Biology, Botany 510, UTK	1995
Cellular and Comparative Biochemistry Lab, Biochemistry 419, UTK	1994
Lecturer, Microbial Physiology, Microbiology 410, UTK	1994-1996
Lecturer, Senior Seminar, Biochemistry 462, UTK	1994-1995
Lecturer, Plant Biochemistry, Biochemistry Department, U.W. Madison	1993
Lecturer, Plants and Man, Botany Department, U.W. Madison	1991-1993
Lecturer, Survey of Plants, Botany Department, U.W. Madison	1992
Lecturer, Flow Cytometry, Zoology Department, U.W. Madison	1991
Teaching Assistant, Plant Physiology, Botany Department, U.C. Berkeley	1986
Teaching Assistant, Biochemistry Lab, Biochemistry Department, U.M. Amherst	1980-1981
Teaching Assistant, Chemistry 1, Chemistry Department, U.C. Santa Cruz	1979-1980
Instructor, California Wildflowers, Santa Cruz County Museum of Natural History	1978
Intern, Teaching Science in the University, Chemistry Department, U.C. Santa Cruz	1977

PROFESSIONAL RECOGNITIONS AND AWARDS

Fellow, American Association for the Advancement of Science	2014
Speaker, TED ^x UTK, Howard H. Baker Center for Public Policy, UTK	2014
Organizing Committee, NSF Bioinformatics Workshop, Little Rock, AR	2013
International Organizing Committee, "Photosynthesis Research for Sustainability", Baku, Azerbaijan	2013
Featured Researcher, QUEST Research Magazine, Fall issue	2012
QUEST Scholar of the Week, UTK Office of Research (http://quest.utk.edu/2010/barry-bruce)	2010
Invited U.S. Participant, NSF/BBSRC Ideas Lab, Surpassing Evolution: Transformative Approaches to Enhancing the Efficiency of Photosynthesis	2010
Delegate, CleanEquity® Monaco 2010, Monaco	2010
Member, International Search Committee, Director of the Center for Nanotechnology, King Abdullah University of Science and Technology (KAUST), Saudi Arabia	2008
Outstanding Senior Creative Achievement Award, College of Arts & Sciences Convocation, UTK	2008
NSF "Grand Challenge" Participant, Biosensors Workshop, University of Maryland, College Park	2007
Honoree, Ten People That May Change the World, Forbes Magazine	2007
Finalist, EPA P3 Competition, National Mall, Washington D.C.	2007

ASPB Representative, CoFARM Congressional Visit, Capitol Hill, Washington D.C.	2007
Expert Witness, Dekalb Plant Genetics vs. Syngeneta, St. Louis Federal Circuit Court	2007
Expert Witness, Monsanto vs. Syngeneta, Wilmington Federal Circuit Court	2005-2006
Expert Witness, Monsanto vs. Bayer Crop Science, St. Louis Federal Circuit Court	2003
SARIF Award, Faculty Senate Research Council & Office of Research, UTK	2002
SARIF Award, Faculty Senate Research Council & Office of Research, UTK	1999
Science Alliance Research Excellence Award (3-times), UTK/ORNL	1997-2000
EPPE Award (5), Faculty Senate Research Council & Office of Research, UTK	1996-2001
SARIF Award, Faculty Senate Research Council & Office of Research, UTK	1996
Professional Development Award, UTK	1994
Science Alliance Research Initiative Award, UTK	1994
Directors Fellowship, Los Alamos National Laboratory (not accepted)	1993
Dan Charitable Award for Biological Research, Nippon Bank, Japan	1992
N.S.F. Postdoctoral Fellowship in Plant Biology, University of Wisconsin, Madison	1990
N.I.H. Postdoctoral Fellowship (refused to accept NSF Postdoctoral Fellowship)	1990
N.S.F. International Award, NATO/ASI, New Developments in Photosynthesis, Greece	1988
Chancellor's Patent Award for Graduate Research, University of California, Berkeley	1986
McKnight Graduate Fellowship in Interdisciplinary Plant Biology, University of California, Berkeley	1984
University of California Honors Graduate in Chemistry and Biology	1979
Stanley Smith Horticultural Trust Award, Cambridge, England	1977

RECOGNITION FOR EDUCATIONAL MENTORING AND OUTREACH

Junior Faculty

Dr. Francesco Barrera, Assistant Professor, BCMB Dept., UTK	2014
Dr. Brad Binder, Assistant Professor, BCMB Dept., UTK (promoted and tenured)	2009-2014
Dr. Gladys Alexandre, Assistant Professor, BCMB Dept., UTK (promoted and tenured)	2005-2009
Dr. Tim Sparer, Assistant Professor, Microbiology Dept., UTK (promoted and tenured)	2001-2008

Graduate Students

Kristen Holbrook, ASPB Travel Award to attend Plant Biology 2014, Eugene, OR	2013
Kristen Holbrook, ASPB Travel Award to attend Plant Biology 2013, Providence, RI	2013
Amber Bassett, ASPB Travel Award to attend Plant Biology 2013, Providence, RI	2013
Meng Li, NSF Travel Award to attend 11th Cyanobacterial Workshop, St. Louis, MO	2013
Richard Simmerman, Outstanding Graduate Poster 11th Cyanobacterial Workshop, St. Louis, MO	2013
Meng Li, NSF Travel Award to attend 11th Cyanobacterial Workshop, St. Louis, MO	2013
Tuo Zhu, Outstanding Student Poster, 22th Midwestern Photosynthesis Meeting Asilomar Conference Grounds, Pacific Grove, CA	2013
Kristen Holbrook, Outstanding Student Talk, 22th Midwestern Photosynthesis Meeting Asilomar Conference Grounds, Pacific Grove, CA	2013
Kristen Holbrook, Outstanding Student Presentation 38th Midwestern Photosynthesis Meeting, Turkey Run State Park, IN	2012
Meng Li, Outstanding Graduate Presentation TN-SCORE Thrust I Retreat, Montgomery Bell State Park, TN	2012
Non Chotewutmontri, Science Alliance Graduate Award, Biology Division, UTK	2012
Kristen Holbrook, Graduate Travel Award, American Society of Plant Biology, Austin, TX	2012
Khoa Nguyen, Outstanding Student Presentation, 21th Western Regional Photosynthesis Meeting Asilomar Conference Grounds, Pacific Grove, CA	2012
Non Chotewutmontri, Beverly Green Outstanding Student Presentation 20th Western Photosynthesis Meeting, Asilomar Conference Grounds, Pacific Grove, CA	2011
Evan Reddick, Sigma Xi (The Scientific Research Society) 1st Place Outstanding Graduate Research Award, U.T. Knoxville	2009
Yanina Bukhman, Doctoral Dissertation Committee, Department of Chemistry and Biochemistry Arizon State University, Tempe, AZ	2008

Evan Reddick, Science Alliance Graduate Award, Biology Division, UTK	2007
Evan Reddick, Science Alliance Graduate Award, Biology Division, UTK	2005
Sarah Wright, ASPB Travel Award to attend Plant Biology 2005, Seattle, WA	2005
Orinda Chew, Doctoral Dissertation Committee	2004
Department of Biology, University of Western Australia, Perth, Australia,	
Carole Dabney-Smith, Outstanding Graduate Student, American Society of Plant Physiologists	2000
Paul van den Wijngaard, Doctoral Dissertation Committee, Department of Plant Physiology	1999
Wageningen University, Wageningen, Netherlands	
Robert Ivey, Outstanding Graduate Student Presentation, American Society Plant Physiology	1999

Undergraduate Students

Amber Bassett, Outstanding Undergraduate Poster, 23th Midwestern Photosynthesis Meeting	2013
Asilomar Conference Grounds, Pacific Grove, CA	
Melissa Bigler, Outstanding Undergraduate Presentation, TN-SCORE Thrust I Retreat	2012
Montgomery Bell State Park, TN	
Jason Lancaster, Research Excellence Award (Natural Sciences), EURECA Competition, UTK	2012
Michelle Brown, Research Excellence Award (Natural Sciences), EURECA Competiton, UTK	2012
Danielle Harrill, Summer Research Fellowship, Microbiology Dept., UTK	2009
Danielle Harrill, Research Excellence Award (Natural Sciences), EURECA Competiton, UTK	2009
Danielle Harrill, William Harris III, Undergraduate Research Award, EURECA Competiton, UTK	2009
Caitlin Pacquet, UTK/ORNL Undergraduate Research Fellowship, UTK	2008
Pinky Muhbamni, Chancellor's Undergraduate Research Fellowship, UTK	2008
Ian Campbell, Research Excellence Award (Natural Sciences), EURECA Competiton, UTK	2008
Ian Campbell, Chancellor's Undergraduate Research Fellowship, UTK	2007
Chris Lowe, Research Excellence Award (Natural Sciences), EURECA Competiton, UTK	2007
Ian Campbell, Nominee for Barry D. Goldwater Fellowship, UTK	2006
Sarah Wright, BCMB Award for Outstanding Teaching Assistant, UTK	2006
Ian Campbell, Undergraduate Research Excellence Award in the Natural Sciences,	2006
EURECA Competiton, UTK	
Wesley Phillips, UT Chancellor's Summer Research Internship Program	2005
Michael Vaughn, Outstanding Undergraduate Poster, 14th Western Photosynthesis Conference,	2005
Asilomar Conference Grounds, Pacific Grove, CA	
Brent Fagg, Undergraduate Research Fellowship, Microbiology Department, UTK	2005
Jennifer Millsaps, Outstanding Undergraduate Student, American Society of Plant Physiologists	2000
Yvonne Treece, Outstanding BCMB Undergraduate, UTK	1999
Yvonne Treece, Undergraduate Research Excellence in the Natural Sciences, UTK	1999
Tuhin Ganguly, NIH Minority Summer Research Excellence Award, UTK	1995
UW-Madison student, Howard Hughes Medical Institute Threshold Program Laboratory	1994

High School Students

Research Mentor, College of Arts and Sciences Pre-collegiate Research Scholars Program	2012
Emily Ledet Hardin Valley Academy	
Brooke Butler and Daniel Pitcher	2010
College of Arts and Sciences Pre-collegiate Research Scholars Program, Farragut High School	
Hannah Rojas & Megan Kurohara, Hilo High School, Hawaii	2010
2nd Place Winner, Intel International Science and Engineering Fair, San Jose, CA	
Project: A New Spin on Green Energy: Increasing Hydrogen Evolution in a Spirulina Derived Photobiological System	
Megan Kurohara & Hannah Rojas, Hilo High School, Hawaii	2009
1st Place Senior Research Division, 24th Annual Hawaii District Science and Engineering Fair	
Project: Photosynthetic Microalgae: A Green Source of Renewable H2	

Natalie Alberman and Sofya Kalantarova	2009
Carl Sagan Science and Math Honors Program, Forest Hills High School, Queens NYC	
Silver Medal Winners, iSWEEP, International Sustainable World Energy, Engineering, & Environment Project Olympiad	
Project: Analysis of chlorophyll content of dkg-1 strains of <i>Chlamydomonas reinhardtii</i> novel approach to improving plant biomass	
Natalie Alberman and Sofya Kalantarova	2008
Carl Sagan Science and Math Honors Program, Forest Hills High School, Queens NYC	
Finalists, Siemens Competition in Math, Science & Technology	
Project: Analysis of chlorophyll content of dkg-1 strains of <i>Chlamydomonas reinhardtii</i> novel approach to improving plant biomass.	
Instructor, Excellence in Teaching Workshop, East Tennessee Science Teachers Development	2008
Module Title: Biological Macromolecules	
Tehun Ganguly, NIH Minority Summer Research Excellence Award, UTK	1996

PRESS COVERAGE OF SCIENCE AND RESEARCH

The Scientist	http://www.the-scientist.com/?articles.view/articleNo/39440/	2014
Royal Society of Chemistry	http://www.rsc.org/chemistryworld/2014/03/nanobionic	2014
TED ^X UTK	https://tedxutk.com/talks	2014
Science Daily	http://www.sciencedaily.com/releases/2012/02/120202092246.html	2012
QUEST	http://quest.utk.edu/2012/biosolar-breakthrough/	2012
METROPULSE	http://www.metropulse.com/news/2012/apr/18/	2012
R&D Magazine	http://www.rdmag.com/News/2012/02/	2012
NSF	http://news.science360.gov/archives/20120206	2012
NPR Podcast	http://wuot.org/mt/archives/2012/02/000722barry_bruce	2012
Ecoseed	http://www.ecoseed.org/hydrogen-a-fuel-cells/article/	2012
CHEMIE.DE	http://www.chemie.de/news/e/109450/	2012
Popular Science	http://www.popsci.com/science/article/2009-11/	2009
Science Daily,	http://www.sciencedaily.com/releases/2009/11/091112095042.htm	2009
Cyber Scholar	http://mediabeast.ites.utk.edu/mediasite4/Viewer/	2009
UTK Television	http://www.youtube.com/watch?v=625p8Mb_GdE	2007
Knoxville News Sentinel	http://www.knoxnews.com/news/2007/aug/01/	2007
Forbes	http://www.forbes.com/2007/05/23/innovation	2007
EPA News	http://es.epa.gov/ncer/events/news/2007/10_17_07_feature.html/	2007
ASPB News	http://www.aspb.org/publicaffairs/news/bruceforbes.cfm/	2005
Nature	http://www.nature.com/nbt/journal/v22/n8/full/nbt0804-967.html/	2004
Science	http://www.sciencenews.org/articles/20040605/fob2.asp/	2004
Newsweek	http://www.msnbc.msn.com/id/5852745/site/newsweek/	2004
ABC News	http://abcnews.go.com/Technology/FutureTech/	2004
New York Times	http://www.nytimes.com/2004/11/11/technology/circuits/	2004
Boston Globe	http://www.boston.com/business/technology/articles/2004/09/18/	2004
USA Today	http://www.usatoday.com/tech/news/techinnovations/2004-09-24	2004
Discover, Top 100 Stories (#91)	http://www.discover.com/issues/jan-05/features/technology/	2004

RESEARCH FUNDING

Pending

NSF	IOS Preliminary Proposal (PI)	2014
<u>Evolutionary Steps in the Transition from a Trimeric to Monomeric Form in Photosystem I.</u>		
NSF/DOE	Advanced Frontiers in Renewable H ₂ Fuel Production via Solar H ₂ O Splitting Tech. (co-PI)	2014
<u>Supramolecular Engineering of Biohybrid Systems for Solar Hydrogen Production</u>		
\$741,915		

DOD	National Security Science And Engineering Faculty Fellowship (PI, UTK Nominee) <u>Surpassing Evolution: Synthetic Approaches to Enhance Applied Photosynthesis</u> \$2,000,000	2014
BMF	BrightFocus Foundation: Macular Degeneration Research (with co-PI Robert Chow, USC) <u>Integration of PSI molecules to stimulate retinal neurons in degenerative eye disease.</u> \$120,000	2013
DOD	DURIP: Defense University Research Instrumentation Program (PI) <u>Tennessee Photo-bioreactor Facility for Bioenergy</u> \$96,000	2013
Active		
UTK	Graduate School, Professional Development Award (PI) \$5,000	2014-2015
ARMY	DSI Topic: Extreme Energy Science (co-PI) <u>Hydrogen Production from Water by PSI I for use as Fuel in Energy Conversion Devices</u> \$1,500,000	2011-2015
NSF	EPSCoR - Research Infrastructure Improvement (co-PI) <u>Tennessee Solar Conversion and Storage using Outreach, Research and Education</u> \$24,000,000	2011-2015
Gibson	Gibson Family Foundation (PI) <u>Sustainable Research and Education</u> \$250,000	2010-2015
HPUD	Hallsdale Powell Utility District (PI) <u>Use of Algae for Wastewater Remediation</u> \$50,000	2011-2014
UTK	Bruce Enrichment Fund (PI) \$50,000	2009-2014
NSF	IGERT Proposal (co-PI) <u>STAIR: Sustainability Through Advanced Interdisciplinary Research</u> \$2,941,396	2009-2014
Past		
BIMR	Arnold and Mabel Beckman Initiative for Macular Research (co-PI) <u>A Light-Activated Cellular Prosthesis Based On Photovoltaic Nanoswitches</u> \$20,000	2012-2013
UTK	SARIF Award, Office of Research (PI) Wyatt Nanostar Dynamic Light Scatter \$40,000	2012-2013
UTK	SARIF Award, Office of Research (PI) Bruker FTIR Spectrometer \$60,000	2012-2013
UTK	Tennessee Plant Research Center (co-PI with N. Labbé) Collaborative Research Seed Grant \$5,000	2011-2012
UTK	M-CERV (PI) Microbiology Across Campuses Educational & Research Venture Seed Grant \$5,000	2011-2012
UTK	SARIF Award, Office of Research (PI) \$33,000	2010-2011

NSF	CBET- Energy for Sustainability Proposal (co-PI) <u>SPHERE: Sustainable <i>Photosynthetic Hydrogen Evolution Research</i></u> \$90,000	2009-2010
SEERC	Biophotovoltaics (co-PI, w/ Bamin Khomani) \$64,000	2009-2010
SEERC	Biohydrogen Production (co-PI, with Paul Frymeir) \$38,000	2009-2010
EPA	P3: People, Prosperity & the Planet, (co-PI) Student Design Competition for Sustainability <u>Photosynthetic Biohydrogen: An All-Worlds Solution to Global Energy Production</u> \$10,000	2009-2010
UTK	SARIF Award, Office of Research (PI) Nikon TIRF microscope \$205,000	2008-2009
NSF	Cell Biology Program, MCB-024790 (PI) <u>The Structural Basis of Transit Peptide Interaction(s) with the Chloroplast Toc Receptors</u> \$476,671	2004-2009
NSF	NIRT (Nanoscience Interdisciplinary Research Team) (PI) <u>Integration of Photosynthetic Complexes into Novel Biomolecular Electronic Devices</u> \$1,794,444	2004-2009
NSF	ROA (Research Opportunity Award) Supplemental Award (PI) \$31,124	2007-2008
USDA	CREES-NRI Food Safety Program (co-PI) <u>Antimicrobial Delivery Systems to Improve Food Safety</u> \$337,779	2004-2008
DOE/ORNL	Research Subcontract (PI) <u>Fundamental Studies of Photosystem I Complexes</u> \$82,000	1999-2005
StressGen	Corporate Contract (PI) <u>Expression and Purification of Molecular Chaperones</u> \$28,000	1998-2005
CESB	Center of Excellence in Structural Biology Seed Grant (PI) <u>Structural Basis of Transit Peptide and Import Receptor Interactions</u> \$40,000	2002-04
P&G	Procter and Gamble Inc. (co-PI) <u>Targeted Delivery of Lipophilic Antimicrobials to Skin Using Surfactant Micelles</u> \$50,243	2003
CEFS	Center of Excellence in Food Safety Seed Grant (co-PI) <u>Encapsulation of Polypeptide Antimicrobials in Biodegradable Nanoparticles to Improve Food Safety</u> \$36,640	2003
CEFS	Center of Excellence in Food Safety Seed Grant (co-PI) <u>Development of 'Release on Demand' Antimicrobial Delivery Systems to Improve Food Safety</u> \$39,706	2002
UTK	Office of Research Administration (PI) Exhibition, Publication, & Performance Expense Awards (5) \$5,000	1998-2001
NSF	Cell Biology Program, MCB-9604535 (PI) <u>The Role of Non-Bilayer Lipids in Chloroplast Protein Transport</u> \$325,000	1997-2001

NSF	Division Undergraduate Education, DUE-9851606 (co-PI) <u>Collaborative Learning Cell Biology Laboratory</u> \$80,000	1998-2000
NSF	Cell Biology Program, Supplemental Award (PI) Research Experience for Undergraduates \$7,000	1998-1999
USDA	Photosynthesis and Respiration (PI, declined to accept NSF support) <u>The Role of MGDG in Chloroplast Protein Transport</u>	Declined
NSF	Multi-User Biological Equipment, DBI-9602942 (co-PI) <u>An Integrated Plant Growth Facility</u> \$325,000	1997-1999
UTK	Science Alliance (PI) Award for Research Excellence (3) \$15,000	1996-1999
NSF	Cell Biology Program, MCB-9401840 (PI) <u>The Role of Cytosolic Factors in Chloroplast Protein Import</u> \$105,000	1994-1999
UTK	SARIF Award, Office of Research (PI) MicroCal DSC/ITC \$70,000	1996-1997
UTK	SARIF Award, Office of Research Administration (PI) ABI-BioCAD \$60,000	1996-1997
UTK	SARIF Award, Office of Research (PI) Graduate Student Award \$3,000	1996-1997
UTK	SARIF Award, Office of Research (PI) Aviv CD \$80,000	1996-1997
UTK	Faculty Research Development Award (PI) \$5,000	1996-1997

RECENT INVITED PRESENTATIONS

Campus, Local and Statewide

Speaker, TED ^x UTK, Howard H. Baker Center for Public Policy, UTK	2014
Speaker, Tennessee Plant Research Center, Calhoun's, Knoxville	2013
Speaker, Board of Visitors Spring Meeting, BCMB Dept., UTK	2010
Speaker, Farragut High School Science Institute, Knox County School District	2009
Speaker, UTK/ORNL Genome Science and Technology Program, Recruiting Fair	2009
Distinguished Faculty Speaker, UTK College of Arts and Science PreGame Scholar Showcase Lecture (Homecoming, Tennessee vs. Wyoming)	2008
Speaker, Knoxville Volunteer Rotary Club Monthly Meeting, Marriott Hotel, Knoxville, TN	2008
Speaker, BCMB Departmental Retreat, Norris Dam State Park	2008
Speaker, UTK/ORNL Genome Science and Technology Program, Recruiting Fair	2008
Seminar Speaker, Chemical and Biomolecular Engineering Department, UTK	2007
Speaker, Southeastern SunGrant Center, UTK	2007
Seminar Speaker, Microbiology Departmental, UTK	2007
Speaker, BCMB Departmental Retreat, Norris Dam State Park	2006
Lecturer, Knox County School District In-Service Day, Knoxville, TN	2005

Lecturer, Oak Ridge Institute for Continued Learning, Roane State University, Oak Ridge, TN	2005
Distinguished Faculty Speaker, UTK College of Arts and Science PreGame Scholar Showcase Lecture (Tennessee vs. Kentucky)	2004
Seminar Speaker, 5th Tennessee Mouse Genomics Consortium Retreat, Fall Creek Falls, TN	2004
Seminar Speaker, Botany Department, UTK	2002
Seminar Speaker, Biochemistry, Cellular and Molecular Biology Department, UTK	1998
Seminar Speaker, Plant Physiology and Genetics Group, UTK	1994
Seminar Speaker, Botany Department, UTK	1994
Seminar Speaker, Biochemistry Department, UTK	1994
Seminar Speaker, Botany Colloquium, University of Wisconsin, Madison	1993
Seminar Speaker, University Botany Club, University of Wisconsin, Madison	1993
Seminar Speaker, Plant Physiology Noon Lecture, University of Wisconsin, Madison	1993

National

Seminar Speaker, Biology Department, East Tennessee State University, Johnson City, TN	2012
Speaker, Transforming Tools of Emerging and Converging Technologies for Societal Benefit (NBIC2), National Science Foundation, DC	2012
Speaker, 41st Environmental Show of the South, April 25-27, 2012, Gatlinburg, TN	2012
Seminar Speaker, Chemistry Department, University of Memphis, Memphis, TN	2012
Seminar Speaker, NIH Membrane Interest Group, Bethesda, MD	2012
Speaker, NSF IUCRC Annual Meeting, Next Generation Photovoltaics Industry Consortium with Colorado State University and University of Texas-Austin	2012
Speaker, 21st Western Regional Photosynthesis Meeting, Asilomar, CA	2012
Keynote Speaker, NSF BIO Advisory Committee Annual Meeting, NSF Washington DC	2011
Speaker, NSF Workshop, Barriers to Sustainable Photosynthetic Production of Biofuels and Bioenergy, Purdue University, West Lafayette, IN	2011
Speaker, EPSCoR Workshop, Modeling Advanced Materials, Systems Biology and Alternative Energy Sources: Building Capabilities and Collaborations for Cyber-Enabled Discovery, Knoxville, TN	2011
Speaker and Panelist, "The Next Great Innovation", Tennessee Valley Solar Solutions Conference, Nashville, TN	2011
Seminar Speaker, Molecular and Cell Biology Department, University of Rhode Island, Kingston, RI	2011
Speaker, ASSET II Solar Energy Retreat, University of Arkansas, Fayetteville, AR	2011
Seminar Speaker, Chemistry Dept., Appalachian State University, Boone, NC	2011
Seminar Speaker, Chemistry Dept., Vanderbilt University, Nashville, TN	2010
Seminar Speaker, Biochemistry Dept, University of Missouri, Columbia	2010
Seminar Speaker, NREL (National Renewable Energy Laboratory), Golden, CO	2010
Speaker, URI/UConn Biofuels Symposium, Center for Biotechnology & Life Sciences, University of Rhode Island, Kingston, RI	2009
Speaker, 18th Photosynthesis Conference, Asilomar, CA	2009
Keynote Speaker, Salinas Valley Meets Silicon Valley Conference, Salinas, CA	2009
Plenary Speaker, Salinas Economic Summit, Salinas, CA	2008
Speaker, PV2008 Workshop, Arizona Research Institute for Solar Energy (AzRISE), Rio Rico, AZ	2008
Plenary Speaker, Arizona Institute of Renewable Energy (AIRE), Tempe, AZ	2008
Speaker, NSF Workshop on Biosensors, University of Maryland, College Park	2007
Seminar, NSF, Molecular and Cellular Biology Division, Arlington, VA	2007
Seminar, NASA Life Sciences Division, Kennedy Space Center, Cape Canaveral, FL	2006
Speaker, National Science Foundation Nanoscience Engineering Conference, Washington, DC	2005
Seminar Speaker, Program in Nanobiotechnology, University of Arizona, Tucson, AZ	2005
Seminar Speaker, Biochemistry and Chemistry Department, Arizona State University, Tempe AZ	2005
Speaker, 14th Western Photosynthesis Conference, Asilomar, Pacific Grove, CA	2005
Opening Speaker, 14th Western Photosynthesis Conference, Asilomar, Pacific Grove, CA	2005
Seminar Speaker, Immunocytometry Division, Becton Dickinson Biosciences, San Jose, CA	2002
Seminar Speaker, Biochemistry Dept., University of Massachusetts, Amherst	2002

Seminar Speaker, Roundup Ready Biotechnology, Monsanto Co., Chesterfield, MO	2001
Seminar Speaker, Computational Biology Section, Oak Ridge National Laboratory, Oak Ridge, TN	2000
Speaker, University of Connecticut Agriculture Biotechnology Symposium, Storrs, CT	1998
Seminar Speaker, De Kalb Genetics Corporation, Mystic, CT	1995
Seminar Speaker, Chemistry Department, University of Nevada, Las Vegas	1993
Seminar Speaker, Biology Department, George Washington University, Washington, DC	1993
Seminar Speaker, Biochemistry & Spectroscopy Division, Los Alamos National Lab, Los Alamos, NM	1993
Seminar Speaker, Biochemistry Department, UTK	1993
Seminar Speaker, Biology Department, Bucknell University, Lewisberg, PA	1993
Seminar Speaker, Biology & Microbiology Department, University of Wisconsin, Oshkosh	1991
Speaker Speaker, 1990 Meeting of the American Society of Plant Physiologists, Indianapolis, IN	1990

International

Organizer and Speaker, International Meeting on Photosynthesis Research for Sustainability, Pushchino, Russia	2014
Speaker, Secretaría de Ciencia y Tecnología, La Universidad Nacional de Rosario, Argentina	2013
Seminar Speaker, Biochemistry and Biophysics Department, University of Stockholm, Stockholm, Sweden	2013
Seminar Speaker, Czech Acad. of Sciences, Institute of Microbiology, Department of Phototrophic Microorganisms, Trebon, Czech Republic	2013
Seminar Speaker, Chemistry Department, University of Umea, Umea, Sweden	2013
Organizer and Speaker, International Meeting on Photosynthesis Research for Sustainability, Baku, Azerbaijan	2013
Keynote Speaker, China-US Joint Symposium: Global Sustainability Issues in Energy Climate, Water, and Environment, Shenyang, China	2012
Plenary Speaker, 11th Nordic Photosynthesis Congress, Turku, Finland	2012
Keynote Speaker, China-US Joint Symposium "Global Sustainability Issues in Energy Climate, Water, and Environment", Purdue University, West Lafayette, IN	2011
Plenary Speaker, International Mtg. on Photosynthesis Research for Sustainability, Baku, Azerbaijan	2011
Seminar Speaker, Division of Molecular and Life Sciences, POSTECH- Pohang University of Science and Technology, Pohang South Korea	2011
Inaugural Speaker, Energy Week, University of Mauritius 2011 Science Café, Food Court, Phoenix Les Halles, Mauritius	2011
Speaker, China-US Workshop on Biotechnology of Bioenergy Plants, Beijing, China	2011
Speaker, Asian Biotechnology Congress, Shanghai, China	2010
Keynote Speaker, China-U.S. Joint Research Center for Ecosystem and Environmental Change Workshop, Beijing, China	2010
Speaker, China-US Workshop on Biotechnology of Bioenergy Plants, Beijing, China	2010
Keynote Speaker, China-U.S. Joint Research Center for Ecosystem and Environmental Change Workshop, Beijing, China	2010
Speaker and Moderator, CleanEquity Monaco 2010, Principality of Monaco	2010
Speaker, Biochemie der Pflanzen, Ruhr-Universität, Bochum, Germany	2010
Speaker, Applied Algal Research Laboratory, Faculty Of Science, Chiang Mai University, Thailand	2009
Speaker, National Nanotechnology Institute (NANOTEK), Bangkok, Thailand	2009
Speaker, Kasetsart University, Department of Genetics, Bangkok, Thailand	2009
Speaker, Kasetsart University Research & Development Institute, Bangkok, Thailand	2009
Speaker, China-US Workshop, Biotechnology of Bioenergy, UTK	2009
Speaker, KBC Workshop on Energy for the Future, University of Umea, Umea, Sweden	2009
Speaker, The Future of BioEnergy Seminar Series, Microbiology/BCMB Dept., UTK	2009
Seminar Speaker, Department of Bioengineering, Tokyo Institute of Technology, Yokohama, Japan	2008
Seminar Speaker, Division of Structural Biology, Medical Institute of Bioregulation, Kyushu University, Japan	2008
Speaker, University of Shanghai Forum on Renewable Energy & Green Economy, Shanghai, China	2008
Speaker, The Ins and Outs of Chloroplasts Meeting, Osaka, Japan	2008

Speaker, 2008 MEPS (Molecular & Environmental Plant Science) Symposium, Texas AM Univ., College Station, TX	2008
Seminar Speaker, Umea Plant Science Center, Umea, Sweden	2007
Seminar Speaker, Institut d'Études Scientifiques de Cargèse, Corsica, France	2007
Seminar Speaker, Caprion Pharmaceuticals, Montreal, Canada	2002
Speaker Speaker, FEBS Advanced Course on Chloroplast and Mitochondria Evolution, Hvar, Croatia	2001
Seminar Speaker, Botanical Institute, Christian Albrechts University, Kiel, Germany	2000
Seminar Speaker, Biology Department, Queens University, Kingston, Canada	1996
Speaker and Chair, Plant Biology '96, San Antonio, Texas	1996
Speaker, XII International Congress of Photosynthesis, Nagoya, Japan	1992
Speaker, XV Meeting of the International Society of Analytical Cytology, Bergen, Norway	1991
Lecturer, NATO/ASI on Individual Cell and Particle Analysis, Italy	1990
Speaker, NATO/ASI in Plant Molecular Biology, Germany	1990

PROFESSIONAL SERVICE

Academic

Member, Scientific Misconduct Inquiry Board, Office of Research, UTK	2012-present
Thrust Leader, TN-SCORE, Tennessee NSF EPSCoR	2011-present
Director, Intercollegiate Graduate Program in Plant Science, UTK/UTAI/ORNL	2010-present
Member, Tennessee State EPSCoR Committee	2010-present
Co-Founder and Assoc. Director, Sustainable Energy Education and Res. Center (SEERC), UTK	2009-present
Member, Science Advisory Board, Joint Institute of Biological Sciences (JIBS), ONRL/UTK	2009-present
Chair, Faculty Search Committee, Physical Biochemist/Biophysicist, BCMB Department, UTK	2013
Member, External Academic Review Committee, Food Science and Technology Department, UT Agriculture Institute (UTAI), UTK	2012
Reviewer, USDA-NIFA Agriculture and Food Research Initiative, Sustainable Bioenergy Challenge	2012
Reviewer, JDRD Proposal Selection, Science Alliance, UTK	2012
Reviewer, BRIDGE Grant Program, USDA-HEC-funded, UTAI	2012
Internal Reviewer, Microbiology Department, Mid-cycle Review Team, Provost Office, UTK	2010
Member, Faculty Search Committee, Biomolecular Engineering, Chemistry & Biomolecular Engineering Department, UTK	2008
Chair, Faculty Search Committee, Plant Biologist, BCMB Department, UTK	2007
Member, Faculty Search Committee, Biomolecular Engineering, Chemistry & Biomolecular Engineering Department, UTK	2007
Member, GST Preliminary Exam Committee, UTK/ORNL	2007
Member, Search Committee, Grants Coordinator II, Office of Research, UTK	2007
Member, UTK/ORNL Governor's Chair Search Committee	2007
Organizer, BCMB Departmental Retreat, Norris Dam State Park, TN	2006-2007
Member, Faculty Workload Committee, BCMB Department, UTK	2005-2007
Chair, Advising Committee, Genome Sciences & Tech. Graduate Program, UTK/ORNL	2005-2007
Member, Graduate Affairs Committee, Genome Sciences & Tech. Graduate Program, UTK/ORNL	2005-2007
Chair, Space Committee, BCMB Department, UTK	2005-2007
Member, Equipment Committee, BCMB Department, UTK	2005-2007
Chair, Seminar Committee, BCMB Department, UTK	2004-2007
Faculty Workload Committee, BCMB Department, UTK	2004-2007
External Reviewer for Promotion, Dept. of Food Science, University of Massachusetts, Amherst	2006
Faculty Speakers Bureau, College of Arts and Sciences, UTK	2001-2006
Search Committee, Director of Mass Spectrometry Facility, Chemistry Department, UTK	2005
Grand Judge (Biochemistry), 2005 Intel ISEF (International Science & Engineering Fair), Phoenix, AZ	2005
Judge (Biological Sciences), Undergraduate Competition in Research and Creative Achievement, Office of Research, UTK	2005
Faculty Participant, Knox County School District Science Departments In-service Program	2005

Faculty Search Committee, Plant Molecular Physiologist, BCMB Department, UTK	2005
Selection Committee, NSF NER & NIRT Internal Competiton, Office of Research, UTK	2004
Faculty Search Committee, Microbial Cell Biologist, Microbiology Dept., UTK	2004
Faculty Search Committee, Microbial Ecologist, Microbiology Dept., UTK	2004
Chair, Equipment Committee, BCMB Department, UTK	2001-2004
Chair, Colloquium Committee, Genome Sciences & Technology Graduate Program, ORNL	2001-2004
Graduate Admissions Committee, BCMB Department, UTK	2001-2003
External Reviewer for Promotion, Dept. of Molecular Genetics and Cell Biology, University of Chicago	2002
Faculty Search Committee, Plant Molecular Biologist, Botany Dept., UTK	2000
Panel Moderator, 9th Gatlinburg Symposium, Plants, Nutrition, and Human Health, UTK	1999
Organizer, 9th Gatlinburg Symposium, Plants, Nutrition, and Human Health, UTK	1999
Chair/Acting Chair, Social & Development Committee, BCMB Dept., UTK	1995-1999
Graduate Admissions Coordinator, PPG Graduate Group, UTK	1998
Graduate Admissions Committee, BCMB Department, UTK	1995-1998
Equipment Committee, BCMB Department, UTK	1995-1998
Director, Biology Program, Tennessee Science Olympiad	1997
Coordinator, Cell Biology Section, Tennessee Science Olympiad	1995-1996
Mentor, NIH Minority Summer Science Program, UTK	1995-1996
Member, Electron Microscopy Facility Advisory Board, UTK	1994
Coordinator, The 1st and 2nd U.C. Berkeley Photosynthesis Retreat, Sonoma, CA	1987-1989
Organizer, The 1st and 2nd McKnight Lecture Series in Photosynthesis, U.C. Berkeley	1986-1987
Graduate Admissions Committee in Molecular Plant Biology, U.C. Berkeley	1985

Research

UTK Representative, NSF IUCRC (Industrial/University Center for Research Collaboration) on Next Generation Photovoltaics Industry Consortium with Colorado State University and University of Texas-Austin	2012
Ad Hoc Reviewer, NSF GEPR (Genome-Enable Plant Research) Program	2009
Ad Hoc Reviewer, NSF Cell Biology Program	2009
Referee, Environmental Science and Technology (ACS) (2 manuscripts)	2009
Referee, JACS, (1 manuscript)	2009
Panel member, NSF IGERT Proposals in Bioengineering	2009
Referee, The Journal of Cell Biology (1 manuscript)	2008
Participant, NSF Workshop on Biosensors (Sponsored by BIO, ENG, MPS & CISE Directorates), University of Maryland, College Park	2007
Referee, Proceedings of the National Academy of Science (1 manuscript)	2007
Ad Hoc Reviewer, NSF Cell Biology Program	2007
Panel member, NSF DMS NIGMS Joint Program in Mathematical Biology	2007
NSF Panel member, NSF Graduate Fellowship Program, American Society for Engineering Education	2007
Referee, Structure (1 manuscript)	2007
Referee, Journal of Molecular Biology (2 manuscript)	2006-2007
NSF Panel Member, Cellular Organization, Molecular & Cellular Biology Division	2004-2007
NSF Panel Member, IGERT: Interdisciplinary Graduate Education Research Training	2004-2007
Referee, Plant Cell (9 manuscripts)	1993-2007
Referee, Proceedings of the National Academy of Science (1 manuscript)	2006
Referee, Physiologia Plantarum (2 manuscript)	2006
Referee, Molecular Biology and Evolution (2 manuscript)	2006
NSF Eligibility Consultant, NSF Graduate Fellowship Program	2006
Referee, Biochemistry (3 manuscripts)	2004-2006
Referee, Plant Physiology (11 manuscripts)	1995-2006
Referee, Canadian Journal of Botany (1 manuscript)	2005
Referee, Journal of Nanoscience and Nanotechnology (1 manuscript)	2005
NSF Panel Member, Biosensors and Biosensor Networks	2004-2005
NSF Panel Member, Nanoscience Exploratory Research	2004-2005

NSF Panel Member, Biosensors	2004-2005
Referee, Environmental Science and Technology, American Chemical Society (1 manuscript)	2004
Referee, BMC Plant Biology (1 manuscript)	2003
Referee, Protein Science (1 manuscript)	2002
Referee, Science (1 manuscript)	2002
Referee, Plant Physiology and Biochemistry (1 manuscripts)	2002
Ad Hoc Reviewer, The Israel Science Foundation	2000-2002
Referee, Plant Molecular Biology (1 manuscript)	2001
Referee, European Journal of Biochemistry (2 manuscripts)	2000
Invited Book Reviewer, Quarterly Review of Biology, (1 book)	2000
Referee, Photochemistry and Photobiology (2 manuscripts)	1999-2000
Ad Hoc Reviewer NSF Cell Biology Program	1996-2000
Referee, Biotechnology, (1 manuscript)	1999
Ad Hoc Reviewer, NSF Integrative Plant Biology Program	1999
Referee, Journal of Plant Physiology (6 manuscripts)	1995-1999
Ad Hoc Reviewer DOE Energy Biosciences Program	1996-1998
Ad Hoc Reviewer USDA Plant Growth and Development Panel	1995-1998
Ad Hoc Reviewer USDA Photosynthesis and Respiration Panel	1993-1998
Ad Hoc Reviewer NSF Cellular Biochemistry Panel	1996
Session Chairman, Plant Biology '96, Protein Targeting, Import and Chaperones, San Antonio, TX	1996
Organizing and Program Committees, 8th International Congress for Molecular Plant-Microbe Interactions, Knoxville	1995
Referee, Photosynthesis Research (2 manuscripts)	1994
Referee, International Review of Cytology: A Survey of Cell Biology, Academic Press (1 book)	1994
Ad Hoc Reviewer United States-Israel Binational Science Foundation	1994
Referee, Cytometry (5 manuscripts)	1990-1992
Ad Hoc Reviewer NSF Cellular Biochemistry Panel	1990

PROFESSIONAL CONSULTING ACTIVITY

Consulting

US Strategic Briefing Participant, Ambrosetti, The European House, Milan, IT	2008
Faculty Search, King Abdullah University of Science and Technology (KAUST), Saudi Arabia	2006
Encapsula Nanosciences, Nashville, TN	2006
BioRad Life Sciences, Hercules, CA	2005
Becton Dickinson Biosciences, Immunocytometry Division, San Jose, CA	2003
Caprion Pharmaceuticals, Montreal, Canada	2003
Monsanto, Roundup Ready, Chesterfield, MO	2002
DeKalb Plant Genetics, Mystic, CT	1998-1999

Expert Witness Testimony

Finnegan, Henderson, Farabow, Garrett & Dunner LLP, Washington, DC (ruled in favor)	2007-2009
Connolly, Bove, Lodge and Hutz LLP, Wilmington, DE (ruled in favor)	2004-2005

PROFESSIONAL MEMBERSHIPS

American Chemical Society	2006-present
International Society of Cell Stress and Chaperones (Founding Member)	1999-present
American Association for the Advancement of Science (Fellow)	1994-present
International Society of Plant Molecular Biology	1990-present
American Society of Plant Biologists	1979-present

PUBLICATIONS

Invited Reviews, Meeting Proceedings, and Book Chapters:

17. Chen, W., Sekmen, A., **Bruce, B.D.**, Nguyen, K., Mishra, P., Emujakporue, and L., Wehbi, K. (2013) Computational Approaches for Predicting Interaction Sites of Cytochrome c_6 and Photosystem I. **BICoB-2013**: Proceedings 5th International Conference on Bioinformatics and Computational Biology, Honolulu, HI.
16. Taylor, M.T., Davidson, P.M., **Bruce, B.D.**, and Weiss, J. (2005) Liposomal Nanocapsules in Food Science and Agriculture. Critical Reviews in Food Science and Nutrition **45(7-8)**: 587-605.
15. Greenbaum, E., Humayun, M., Kuitz, T., Lee, J., Saunders, **Bruce, B.D.**, and Lee, I. (2002) Biomolecular optoelectronic Devices and Application to Artificial Sight. International Electron Devices Meeting. IEDM '02 Digest, 496-498.
14. Nguyen, R.T., Savage, T., VerBerkmoes, N.C.; Schar, C., Hettich, R.L., and **Bruce, B.D.** (2002) Analysis of *Arabidopsis thaliana* proteome by one- and two-dimensional chromatography coupled with mass spectrometry. Proceedings of the 50th Conference for the American Society of Mass Spectroscopy **50**:431-433.
13. Greenbaum, E., Humayun, M., Kuitz, T., Lee, J., Saunders, **Bruce, B.D.**, and Lee, I. (2002) Nanoscale Photosynthesis, the photophysics of neural cells, and artificial sight. Proceedings of the IEEE-EMBS Conference on Molecular, Cellular, and Tissue Engineering. 83-85.
12. **Bruce, B.D.** (2001) The Paradox of Plastid Transit Peptides: Conservation of Function Despite Divergence in Primary Structure; Special Edition on Chloroplast and mitochondria protein import (Ed. R. Jenson & J. Soll) Biochemica et Biophysica Acta 1541:2-21.
11. **Bruce, B.D.** (2001) Protein Targeting and Translocation (Ed. D.A. Phoenix)- Book Review Quarterly Review of Biology 75(3), 311-312.
10. Greenbaum, E., Humayun, M., Kuitz, T., Lee, J., Saunders, **Bruce, B.D.**, Millsaps, J., and Lee, I. (2001) Application of Photosynthesis to Artificial Sight. Proceedings of the 23rd Annual IEEE Conference on Engineering in Medicine and Biology 23: 423-429.
9. **Bruce, B.D.** (2000) Chloroplast Transit Peptides: Structure, Function, and Evolution. Trends in Cell Biology 10:440-447.
8. **Bruce, B.D.** (1998) The Role of Lipids in Plastid Protein Transport. In: Protein Trafficking in Plant Cells. (J. Soll, Ed.) 223-246, Kluwer Academic Publishers.
7. **Bruce, B.D.** and Keegstra, K. (1995) Translocation of Proteins across Chloroplast Membranes In: Advances in Molecular and Cell Biology. Vol. 10, 389-430. (J. Barber, ed.) JAI Press, Inc.
6. **Bruce, B.D.**, Perry, S., Froehlich, J. and Keegstra, K. *In vitro* import of proteins into chloroplasts (1995) In: Plant Molecular Biology Manual. Vol. J1, 1-15. (S. Gelvin, R. Schilperoort and D. P. Verma, eds.) Kluwer Academic Publishers.
5. **Bruce, B.D.**, Malkin, R. Wynn, M.R., and Zilber, A. (1988) Structural Organization and Function of Polypeptide Subunits in Photosystem I. In: Techniques and Developments in Photosynthesis Research. (J. Barber, ed.) Plenum Publishing Co.
4. **Bruce, B.D.**, Wynn, M.R., Zilber, A., and Malkin, R. (1988) Subunit Functions in the Chloroplast Photosystem I Complex. Proceedings of the 10th European Bioenergetic Conference.
3. Lebo, R.V. and **Bruce, B.D.** Gene Mapping with Sorted Chromosomes. (1987) Methods Enzymol. **151**, 292-313.
2. **Bruce, B.D.** and Malkin, R. (1987) Structure-Function Studies of the Higher Plant Photosystem I Complex. In: Plant Membranes: Structure, Function, Biogenesis, and Assembly. Alan R. Liss, Inc., 47-63.

1. Lebo, R.V., Conneally, P.M., Flandermeier, R. R., Christian, C., Golbus, M.S., Lovelace, R.E., Anderson, L. A., Chance, P.F., Bird, T. D., **Bruce, B.D.**, Slotnick, P.N., Dyckoff, D., Sadler, J. E., Carver, V., Schonberg, S., Fowler, W., Ionasescu, V., Kadasi, L., and Dyck, P.J. (1988) The Multilocus Charcot-Marie-Tooth Syndrome. In: Charcot-Marie-Tooth Disorders. (R. Lovelace and H. Shapiro, ed.) Alan R. Liss, Inc.

Research Papers

In Preparation

78. Vaughn, M., Meyers, N., Mahbubani, P., Nguyen, K., and **Bruce, B.D.** (2014) Optimization of Expression of a Thermophilic Cyanobacterial Cytochrome c_6 in *E. coli* and Engineering of Additional Thermal Enhancements. Microbial Cell Factories, *in preparation*.
77. Reddick, L.E., Campbell, I., Wright, S.J., and **Bruce, B.D.** (2014) The Toc Clock: Oligomerization of the Toc GTPases is Modulated by Nucleotide and Transit Peptide. EMBO, *in preparation*.
76. Nguyen, K., Vaughn, M., Henson, W., Frymier, P.D., and **Bruce, B.D.** (2014) *In Vitro* Kinetics of P700⁺ Reduction of *Thermosynechococcus elongatus* PS I Particles by Recombinant Cytochrome c_6 Using a Joliet-Type LED Spectrometer. BBA-Bioenergetics, *in preparation*.
75. Vaughn, M., Thangaraj, B., Sarrou, I., Myers, N., Kodis, G., Whitelegge, J., **Bruce, B.D.** and Fromme, P. (2014) Purification and Characterization of Photosystem I of the Ancient Red Algae, *Galdieria sulphuraria* and Its Interactions with Cyt c_6 . BBA-Bioenergetics, *in preparation*.

Publication Year 2014

74. Chotewutmontri, P., and **Bruce, B.D.** (2014) Non-Native, N-terminal Hsp70-Recognition Elements Support Plastid Protein Translocation *In Vivo* and *In Vitro*. The Plant Cell, *in review*.
73. Harris, B., Le, R., Iwuchukwu, I.J., **Bruce, B.D.**, Cheng, X., Qian, S., Heller, W., O'Neill, H., and Frymier, P.D. (2014) Determination of a Solution Structure of Photosystem I in *n*-Dodecyl- β -D-Maltoside Detergent Using Small-Angle Neutron Scattering and Molecular Dynamics Simulations. Arch. Biochem. Biophys., *in review*.
72. Li, M., Semchonok, D.A., Boekema, E.J., and **Bruce, B.D.** (2014) Characterization and Evolution of Tetrameric Photosystem I from the Thermophilic Cyanobacterium *Chroococcidiopsis* sp. TS-821. The Plant Cell, *in press*.
71. Nguyen K., and **Bruce, B. D.** (2014) Growing Green Electricity: Progress and Strategies for the Use of Photosystem I in Sustainable Photovoltaic Energy Conversion. Biochim Biophys Acta., *in press*.
70. Cashman, D., Zhu, T., Simmerman, R., Scott, C., **Bruce, B.D.** and Baudry, J. (2014) Molecular Interactions Between Photosystem I and Ferredoxin: An Energy Frustration-Based Model. J. Mol. Recognition, *in press*.
69. Cutulle, M., Armel, G., Brosnan, J., Best, M., Kopsell, D., **Bruce, B.D.**, Bostic, H., Layton, D. (2014) Synthesis and Evaluation of Heterocyclic Analogs of Bromoxynil. J. Ag. Food Chem. **62**: 329-336.
68. Baker, D.R., D.R., Manocchi, A.K., Bigler, M.L, Nguyen, K., Li, M, Sumner, J.J., **Bruce, B.D.**, and Lundgren, C.A. (2014) Comparative Photoactivity and Stability of Isolated Cyanobacterial Monomeric and Trimeric Photosystem. J. Phys. Chem. B. **118**: 2703–2711.
67. Simmerman, R.M., Dave, A., and **Bruce, B.D.** (2014) Structure and Function of POTRA Domains of Omp85/TPS Superfamily, Int. Rev. Cell Mol. Biol. **308**: 1-34.

Publication Year 2013

66. Manocchi, A.K., Baker, D.R., Pendley, S.S., Nguyen, K., Hurley, M.M., **Bruce, B.D.**, Sumner, J.J., and Lundgren, C.A. (2013) Photocurrent Generation from Surface Assembled Photosystem I on Alkanethiol Modified Electrodes. Langmuir **29(7)**: 2412-9.

65. Huang X., **Bruce B.D.**, Buchan A., Congdon C.B., Cramer C.L., Jennings S.F., Jiang H., Li Z., McClure G., McMullen R., Moore J.H., Nanduri B., Peckham J., Perkins A., Polson S.W., Rekepalli B., Salem S., Specker J., Wunsch D., Xiong D., Zhang S., Zhao Z. (2013) No-Boundary Thinking in Bioinformatics Research. BioData Min. **6(1)**: 19-27.

Publication Year 2012

64. Jing, X., Wright, E., Bible, A.N., Peterson, C.B., Alexandre, G., **Bruce B.D.**, and Serpersu, E.H. (2012) Thermodynamic Characterization of a Thermostable Antibiotic Resistance Enzyme, the Aminoglycoside Nucleotidyltransferase. Biochemistry **51**: 9147–9155.
63. Chotewutmontri, P., Reddick, L.E., McWilliams, D.R., Campbell, I.M., and **Bruce, B.D.** (2012) Differential Transit Peptide Recognition During Preprotein Binding and Translocation into Chloroplasts. Plant Cell **24(7)**: 3040-59.
62. Mershin, A., Matsumoto, K., Kaiser, L., Yu, D., Vaughn, M., Nazeeruddin, M., **Bruce, B.D.**, Graetzel, M., and Zhang, S. (2012) Self-Assembled Photosystem-I Photovoltaics On Nanostructured TiO₂ And ZnO. Nature Scientific Reports **2**: 234-239.

Publication Year 2011

61. Mukherjee, D., Vaughn, M., Khomami, B., and **Bruce, B.D.** (2011) Modulation of Cyanobacterial Photosystem I Deposition Properties on Alkanethiolate Au Substrate by Various Experimental Conditions. Colloids and Surfaces B: Biointerfaces **88(1)**: 181–190.
60. Iwuchukwu, I., Iwuchukwu, E., Le, R., Pacquet, C., Sawhney, S., and **Bruce, B.D.** & Frymier, P. (2011) Optimization of Photosynthetic Hydrogen Yield from Platinized Photosystem I Complexes using Response Surface Methodology. Intl. J. Hydrogen Research, **36**: 11684–11692.

Publication Year 2010

59. Iwuchukwu, I., Vaughn, M., Myers, N., O’Neill, H., Frymier, P., and **Bruce, B.D.** (2010) Self-Assembled Photosynthetic Nanoparticle for Cell-Free Hydrogen Production. Nature Nanotechnology **5**: 73-79.
58. Mukherjee, D., May, M., Vaughn, M., **Bruce, B.D.**, and Khomami, B. (2010) Controlling the Morphology of Photosystem I Assembly on Thiol-Activated Au Substrates. Langmuir **26(20)**: 16048-16054.

Publication Year 2009

57. Mulder, C.L., Theogarajan, L., Currie, M., Mapel, J.K., Vaughn M., Willard P., Moss, M.W., C.E. McLain, C.E, Morseman, J.P., **Bruce, B.D.**, and Baldo, M.A. (2009) Luminescent Solar Concentrators Employing Phycobilisomes. Advanced Materials **21**:1-5.
56. Matsumoto, K., Vaughn, V., **Bruce, B.D.**, Koutsopoulos, S., and Zhang, S. (2009) Designer Peptide Surfactants Stabilize Functional Photosystem-I Membrane Complex In Aqueous Solution For Extended Time. J. Phys. Chem B. **113(1)**: 75-83.

Publication Year 2008

- 55 Reddick, L., Chotewutmontri, P., Crenshaw, W., Dave, A., Vaughn, M., and **Bruce, B.D.** (2008) Nano-scale Characterization of the Dynamics of the Chloroplast Toc Translocon. Methods in Cell Biology, **95**: 365-387.
54. Gaysinsky, S., Taylor T.M., Davidson, P.M., **Bruce, B.D.**, and Weiss, J. (2008) Antimicrobial Efficacy of Eugenol MicroEmulsions in Milk against *Listeria monocytogenes* and *Escherichia coli* O157:H7 J. Food Prot. **71(6)**: 1256-1261.

Publication Year 2007

53. Reddick, E.L., Vaughn, M., Wright, S.J., Campbell, I., and **Bruce, B.D.** (2007) *In Vitro* Comparative Kinetic Analysis of the Chloroplast Toc GTPases. J. Biol. Chem. **282(15)**: 11410-11426.

52. Gülseren, I., Güzey, D., **Bruce, B.D.** and Weiss, J. (2007) Structural and Functional Changes in High-Intensity Ultrasonicated Bovine Serum Albumin. Ultrasonics Sonochemistry, **14**: 173-183.
51. Taylor T.M., Gaysinsky, S., Davidson, P.M., **Bruce, B.D.**, and Weiss' J. (2007) Characterization of Antimicrobial-Bearing Liposomes by Zeta-Potential, Vesicle Size, and Encapsulation Efficiency. Food Biophysics **2(1)**: 1-9.

Publication Year 2006

50. Papalia, G., Leavitt, S., Bynum, M., Katsamba, P., Wilton, R., Qiu, H., Steukers, M., Wang, S., Bindu, L., Phogat, S., Gianetti, A., Ryan, T., Victoria, A., Pudlak, V., Matusiewicz, K., Michelson, K., Nowakowski, A., Pham-Baginski, A., Brooks, J., Tieman, B., **Bruce, B.D.**, Vaughn, M., Baksh, M., Cho, Y., Lindquist, K., De Wit, M., Smets, A., Vandersmissen, J., Michiels, L., and Myszka, D. (2006) Comparative Analysis of Ten Small Molecules Binding to Carbonic Anhydrase II by Different Investigators using Biacore Technology. Anal. Biochem. **359(1)**: 94-105.
49. Yu, A.A., Stoney, P.R., Norvillez, J.E., Vaughn, M., Pacsial, E.J., **Bruce, B.D.**, Baldo, M., and Stellacci, F. (2006) A Simple Atomic Force Microscopy Method the Visualization of Polar and Non-Polar Parts Organic Films. J. Exp. Nanoscience, **1**: 63-73.
48. Güzey, D., Gülseren, I., **Bruce, B.D.** and Weiss, J. (2006) Interfacial Properties and Structural Conformation of ThermoSonicated Bovine Serum Albumin. Food Hydrocolloids **20(5)**: 669-677.

Publication Year 2005

47. Gaysinsky, S., Davidson, P.M., **Bruce, B.D.**, and Weiss, J. (2005) Growth Inhibition of *Escherichia coli* O157:H7 and *Listeria monocytogenes* by Carvacrol and Eugenol Encapsulated in Surfactant Micelles. Stability and Antimicrobial Efficiency of Eugenol Encapsulated in Surfactant Micelles. J. Ag. Food Chem., **68**: 2556-2566.
46. Taylor, M.T., Davidson P.M., **Bruce, B.D.**, and Weiss, J. (2005) Ultrasonic Spectroscopy and Differential Scanning Calorimetry of Liposomal Encapsulated Nisin. J. Ag. Food Chem. **53**: 8722-8728.
45. Bhushan S., Stahl, A., Nilsson, S., Lefebvre, B., McWilliams, D., Wright S.J., Seki, M., Liberles, D.A., Shinozaki, K., **Bruce B.D.**, Boutry, M., and Glaser, E. (2005) Molecular Characterization of an Isoenzyme of an of the Targeting Peptide Degrading Protease, PreP2- Catalysis, Subcellular Localization, Expression and Evolution. Plant & Cell Physiology **46(6)**: 985-996.
44. Kiley, P., Zhao, X., Vaughn, M., Baldo, M.A., **Bruce, B.D.**, and Zhang, S. (2005) Self-Assembling Peptide Detergents Stabilize Isolated Photosystem I on a Dry Surface for an Extended Time. PloS Biology, **3(7)**: e230-237.
43. Gaysinsky, S., Davidson' P.M., **Bruce, B.D.**, and Weiss, J. (2005) Stability and Antimicrobial Efficiency of Eugenol Encapsulated in Surfactant Micelles as Affected by Temperature and pH. J. Food Prot. **68(7)**: 1359-1366.

Publication Year 2004

42. Strader, M.B., VerBerkmoes, N.C., Tabb, D.L., Connelly, H.M., Barton, J.W., **Bruce, B.D.**, Pelletier, D.A., Davison, B.H., Hettich, R.L., Larimer, F.W., and Hurst, G. (2004) Characterization of the 70S Ribosome from *Rhodospseudomonas palustris* using an Integrated "Top-Down" and "Bottom-Up" Mass Spectrometric Approach. J. Proteome Res. **3(5)**: 965-978.
41. Evans, B.R., O'Neill, H.M., Hutchens, S.A., **Bruce, B.D.**, and Greenbaum E. (2004) Enhanced Photocatalytic Hydrogen Evolution by Covalent Attachment of Plastocyanin to Photosystem I. Nano Lett. **4(10)**: 1815-1819.
40. Das, R., Kiley, P.J., Segal, M., Norville, J., Yu, A.A., Wang, L.Y., Trammell, S.A., Reddick, L.E., Kumar, R., Stellacci, F., Lebedev, N., Schnur, J., **Bruce, B.D.**, Zhang, S.G., and Baldo, M. (2004) Integration of

Photosynthetic Protein Molecular Complexes in Solid-State Electronic Devices. *Nano Lett.* **4(6)**: 1079-1083.

39. Were L.M., **Bruce B.D.**, Davidson P.M., and Weiss J. (2004) Encapsulation of Nisin and Lysozyme in Liposomes Enhances Efficacy against *Listeria monocytogenes*. *J. Food Prot.* **67(5)**: 922-927.
38. Boland J.S., Davidson P.M., **Bruce B.D.**, and Weiss J. (2004) Cations Reduce Antimicrobial Efficacy of Lysozyme-Chelator Combinations. *J. Food Prot.* **67(2)**: 285-294.

Publication Year 2003

37. Were L.M., **Bruce, B.D.**, Davidson, P.M., and Weiss J. (2003) Size, Stability and Entrapment Efficiency of Phospholipid Nanocapsules Containing Polypeptide Antimicrobials. *J. Agric. Food Chem.* **51(27)**: 8073-8079.
36. Moberg P., Stahl, A., Bhushan, S., Wright, S.J., Eriksson A., **Bruce, B.D.**, and Glaser, E. (2003) Characterization of a Novel Zinc Metalloprotease Involved in Degrading Targeting Peptides in Mitochondria and Chloroplasts. *Plant J.* **36(5)**: 616-628.
35. Bhushan, S., Lefebvre, B., Stahl, A., Wright, S.J., **Bruce B.D.**, Boutry, M, and Glaser, E. (2003) Dual Targeting and Function of a Protease in Mitochondria and Chloroplasts. *EMBO Rep.* **4(11)**: 1073-1078.
34. Kumaraguru, U., Gouffon, C., Ivey, R., Rouse, B.T. and **Bruce, B.D.** (2003) Antigenic Peptides Complexed to Phylogenically Diverse hsp70s Induce Differential Immune Responses. *Cell Stress & Chaperones* **8(2)**: 134-143.

Publication Year 2002

33. VerBerkmoes, N.C., Hettich, R.L., **Bruce, B.D.**, Nguyen, R., and Savage, T.L. (2002) One- and Two-Dimensional LC/MS/MS Analysis of *Arabidopsis thaliana* Proteome. *LC/GC (North America)* **01**: 10-11.
32. Schleiff, E., Sveshnikova, N., Tien, R., Soll, J., Wright, S., Dabney-Smith, C., Subramanian, C., and **Bruce, B.D.** (2002) Structural and Nucleotide Requirements for Transit Peptide Recognition by the Cytosolic Domain of the Receptor, Toc34 and the Chloroplast Translocation Machinery. *Biochemistry* **41**: 1934-1946.
31. Kumaraguru, U., **Bruce, B.D.**, and Rouse, B.T. (2002) Immunization with a Chaperone-Peptide Complex Induces Low Avidity CTLs Providing Transient Protection against HSV Infection. *J. Virology* **76**: 136-141.

Publication Year 2001

30. Lee, S.-Y., Dabney-Smith, C., Hacker, D.L., and **Bruce, B.D.** (2001) Membrane Activity of the SCPMV Coat Protein: The Importance of Basic Amino Acids, Helix-forming Potential, and Lipid Composition. *Virology* **291(2)**: 299-310.
29. Peng, Z., Staub, J.M., Serino, G., Kwok, S.F., Kurepa, J., **Bruce, B.D.**, Vierstra, R.D., Wei, N., and Deng, X-W., (2001) The Cellular Level of PR500, a Protein Complex Related to the 19S Regulatory Particle of the Proteasome, is Regulated in Response to Stresses in Plants. *Mol. Biol. Cell* **12(2)**: 383-392.
28. Millsaps J.I., **Bruce B.D.**, Lee J.W., and Greenbaum E., (2001) Nanoscale Photosynthesis: Photocatalytic Production of Hydrogen by Platinized Photosystem I Reaction Centers. *Photochem. Photobiol.* **73**: 630-636.
27. Subramanian, C., Ivey, R.A., and **Bruce, B.D.** (2001) Cytometric Analysis of an Epitope-Tagged Transit Peptide Bound to the Chloroplast Translocation Apparatus. *Plant J.* **23**: 349-363.

Publication Years 1996-2000

26. Kumaraguru, U., Nair, S., Rouse, R.J., **Bruce, B.D.**, and Rouse, B.T. (2000) Involvement of an ATP-Dependent Peptide Chaperone in Cross-Presentation after DNA Immunization. *J. Immun.* **165**: 750-759.

25. Ivey, R.A., Subramanian, C., and **Bruce B.D.** (2000) Identification of an Hsp70 Recognition Domain within the Rubisco Small Subunit Transit Peptide Plant Physiol. **122**: 1289-1299.
24. Ivey, R.A. and **Bruce B.D.** (2000) *In Vivo* and *In Vitro* Interaction between a Chloroplast Transit Peptide and dnaK. Cell Stress & Chaperones **5**: 62-71.
23. Dabney-Smith, C., van den Wijngaard, P., Treece, Y., Vrendenberg, W., and **Bruce, B.D.** (1999) The C-terminus of a Chloroplast Precursor Modulates Interaction with the Translocation Apparatus and PIRAC. J. Biol. Chem. **274**: 32351-32359.
22. van den Wijngaard, P., Dabney-Smith, C., **Bruce, B.D.**, and Vrendenberg, W., (1999) The Mechanism of Inactivation of a 50 pS Envelope Anion Channel during Chloroplast Protein Import. Biophys. J. **77**: 3156-3162.
21. Miltenberger, R.J., Mynatt, R.L. **Bruce, B.D.**, Wilkinson, W.O., Woychik, R.P. and Michaud, E. J (1999) An *agouti* Mutation Lacking the Basic Domain Induces Yellow Pigmentation but not Obesity in Transgenic Mice. Proc. Natl. Acad. Sci. USA **96**: 8579-8584.
20. Kausch, A., Owen, T.P., Narayanswami, S., and **Bruce, B.D.** (1999) Organelle Isolation by Magnetic Immuno-Absorption. Biotechniques **26**: 336-343.
19. **Bruce, B.D.** (1998) The Role of Lipids in Plastid Protein Transport. Plant Mol. Biol. **38**: 223-246.
18. **Bruce, B.D.**, and Churchich, J. (1997) Characterization of the Molecular Chaperone Function of the Heat Shock Cognate 70-Interacting Protein, Hip. Eur. J. Biochem. **245**: 738-744.
17. Pinnaduwege, P.D. and **Bruce B.D.** (1996) *In vitro* interaction between a chloroplast transit peptide and chloroplast outer membrane lipids is sequence specific and lipid-class dependent. J. Biol. Chem. **271**: 32907-32915.

Publication Years 1991-1995

16. Keegstra, K., **Bruce, B.D.**, Li, H.-M., and Perry, S. (1995) Targeting of Proteins into Chloroplasts. Physiol. Plant. **93**: 157-162.
15. Kausch, A. and **Bruce, B.D.** (1994) Isolation and Immobilization of Various Plastid Forms by Magnetic Immunoabsorbtion. Plant J. **6**: 767-779.
14. Markwell, J., **Bruce, B.D.**, and Keegstra, K. (1992) Isolation of a Carotenoid-Containing Sub-membrane Particle from the Chloroplast Outer Envelope of Pea (*Pisum sativum*). J. Biol. Chem. **267**: 13933-13937.
13. von Heijne, G., Hirai, T., Klösgen, R.B., Steppuhn, J., **Bruce, B.D.**, Keegstra, K., and Herrmann, R. (1991) CHLPEP- A Database of Chloroplast Transit Peptides. Plant Mol. Biol. Rep. **9**: 104-126.
12. **Bruce, B.D.** and Malkin, R. (1991) Biosynthesis of the Chloroplast *b₆/f* Complex: Studies on a Photosynthetic Mutant of *Lemna*. Plant Cell **3**: 203-212.

Publication Years 1986-1990

11. **Bruce, B.D.** and Malkin, R. (1988) Isolation and Characterization of Photosystem I Core Complexes from *Dunaliella salina*. Plant Physiol. **88**: 1201-1206.
10. Wynn, M.R., Bertsch, J., **Bruce, B.D.**, and Malkin, R. (1988) Green Algal Cytochrome *b₆/f* Complexes: Isolation and Characterization from *Dunaliella salina*, *Chlamydomonas reinhardtii*, and *Scenedesmus obliquus*. Biochim. Biophys. Acta. **935**: 115-122.
9. **Bruce, B.D.**, and Malkin, R. (1988) Subunit Stoichiometry of the Chloroplast Photosystem I Complex. J. Biol. Chem. **263**: 7302-7308.
8. Tolan, D.R., Nicholas, J., **Bruce, B.D.**, Lebo, R. (1987) Evolutionary Implications of Human Aldolase - α , - β , - γ , and -Pseudogene Chromosomal Locations. Am. J. Hum. Genet. **41**: 907-925.

7. Lebo, R.V., **Bruce, B.D.**, Dazin, P., and Payan, D. (1987) Design and Application of a Multiuser Triple-laser Cell/Chromosome Sorter. Cytometry **8**: 71-83.

Publication Years 1981-1985

6. Lebo, R.V., **Bruce, B.D.**, Riccardi, V.M., Kao, F-T, and Kan, Y.W. (1985) Mapping Parathyroid Hormone, β -Globin, Insulin, and LDH- α Genes within the Human Chromosome 11 Short Arm by Spot-Blotting Sorted Chromosomes. Hum. Genet. **69**: 316-320.
5. Mayo, K.E., Cerelli, G., **Bruce, B.D.**, Rosenfeld, M.G., and Evans, R.M. (1985) Structure, Sequence, and Chromosomal Assignment of the Gene Encoding Human Growth Hormone Releasing Factor. Proc. Natl. Acad. Sci. USA **82**: 63-67.
4. Lebo, R.V., Tolan, D.R., **Bruce, B.D.**, Cheung, M.C., and Kan, Y.W. (1985) Spot-Blot Analysis of Sorted Chromosomes Assigns a Fructose Intolerance Disease Locus to Chromosome 9. Cytometry **6**: 478-483.
3. Lebo, R.V., Gorin, F., Fletterick, R.J., Kao, R-T, Cheung, M.C., **Bruce, B.D.**, and Kan, Y.W. (1984) High-Resolution Chromosome Sorting and DNA Spot-Blot Analysis Assign McArdle's Syndrome to Chromosome 11. Science **225**: 57-59.
2. Blankenship, R.A., Feick, R., **Bruce, B.D.**, Kirmaier, C., Holten, D., and Fuller, R.C. (1982) Primary Photochemistry in the Facultative Green Photosynthetic Bacterium *Chloroflexus aurantiacus*. J. Cell Biochem. **22**: 251-261.
1. **Bruce, B.D.**, Fuller, R.C., and Blankenship, R.A. (1982) Primary Photochemistry in the Facultative Green Photosynthetic Bacterium *Chloroflexus aurantiacus*. Proc. Natl. Acad. Sci. USA **79**: 6532-6537.