

# BARRY D. BRUCE, M.S., PH.D.

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## EDUCATION

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|--|-------------|
| <b>N.S.F. Postdoctoral Fellow</b> , Plant Biology<br>University of Wisconsin, Madison, with Dr. Ken Keegstra     | <b>1994</b> |
| <b>Ph.D.</b> , Molecular Plant Biology<br>University of California, Berkeley, with Dr. Richard Malkin            | <b>1990</b> |
| <b>M.S.</b> , Biochemistry and Biophysics<br>University of Massachusetts, Amherst, with Dr. Bob Blankenship      | <b>1982</b> |
| <b>B.A.</b> , Chemistry and Biology (Dual Major)<br>University of California, Santa Cruz, with Dr. Harry Beevers | <b>1980</b> |

## ACADEMIC AND RESEARCH APPOINTMENTS

### Univeristy of Tennessee

|   |              |
|---|--------------|
| Senator, University of Tennessee Faculty Senate   | 2014-2017    |
| Member, BCMB Executive Committee, UTK   | 2015-present |
| NSF Program Director, TN-SCORE  | 2015-2016    |
| Advisory Board Member, UTK Education Advancement Program (US Dept. Education)             | 2015-present |
| Fellow, American Association for the Advancement of Science                               | 2014-present |
| 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  | 2011-2016    |
| 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

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

|   |           |
|---|-----------|
| Post-doctoral Mentor, NIMBIOS Program   | 2015-2017 |
| Organizer/Instructor, Membrane Structure, Function and Dynamics, BCMB 615, UTK                  | 2015      |
| Organizer/Instructor, Advanced Cell Biology, BCMB 311, UTK                                      | 2010-2015 |
| Advanced Concepts in Protein Structure, BCMB 511, UTK   | 1994-2014 |
| Organizer/Instructor, Graduate Cell Biology, BCMB 513, UTK                                      | 1998-2013 |
| 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 |
| Organizer/Instructor, Genome Sciences and Technology Colloquium, GST 510, UTK                   | 2002-2005 |
| Advanced Topics, BCMB 601, UTK  | 2004      |
| Genomic Approaches in Plant Development, BCMB 607, UTK  | 2003      |
| 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**

|   |      |
|---|------|
| Recipient, Outstanding Academic Outreach Award, College of Arts and Sciences Award, UTK   | 2018 |
| GIAN Faculty, GIAN: Global Initiative for Academic Network,<br>Ministry of Human Resource Development, Government of India<br>University of Hyderabad, 2019 Course Date (TBD) | 2018 |
| International Organizing Committee, Joint ASPB/ISPR Conference, Monteral, CA  | 2019 |
| International Organizing Committee, "Photosynthesis Research for Sustainability", Hyderabad, IN   | 2017 |
| Co-Chair, 27 <sup>th</sup> Western Regional Photosynthesis Meeting, Oracle, AZ  | 2018 |
| Chair, 26 <sup>th</sup> Western Regional Photosynthesis Meeting, Marconi Conference Center  | 2017 |
| International Organizing Committee, "Photosynthesis Research for Sustainability", Puschino, Russia  | 2015 |
| Co-Chair, Western Regional Photosynthesis Meeting, Devils Thumb Resort, Colorado  | 2016 |
| Conference Organizer, No-Boundary Thinking Conference in Bioinformatics, Little Rock, AR  | 2015 |

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| Conference Organizer, Photosynthesis Research for Sustainability, Orthodox Academy of Creta   | 2015      |
| Editorial Board, International Review of Cell and Molecular Biology, Elsevier Press   | 2014      |
| Fellow, American Association for the Advancement of Science   | 2014      |
| Speaker, TED <sup>x</sup> UTK, Howard H. Baker Center for Public Policy, UTK  | 2014      |
| Outstanding Senior Research Award, BCMB Dept. UTK   | 2014      |
| Organizing Committee, NSF Bioinformatics Workshop, Little Rock, AR  | 2013      |
| International Organizing Committee, "Photosynthesis Research for Sustainability", Baku, AZ  | 2013      |
| Featured Researcher, QUEST Research Magazine, Fall issue  | 2012      |
| QUEST Scholar of the Week, UTK Office of Research ( <a href="http://quest.utk.edu/2010/barry-bruce">http://quest.utk.edu/2010/barry-bruce</a> )             | 2010      |
| Invited U.S. Participant, NSF/BBSRC Ideas Lab, Surpassing Evolution: Transformative Approaches to Enhancing the Efficiency of Photosynthesis                | 2010      |
| Delegate, CleanEquity <sup>®</sup> 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. Francisco 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

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|--|------|
| Kristen Holbrook, Ken Monty Outstanding Biochemistry Award, BMCB, UTK                                  | 2015 |
| Kristen Holbrook, Division of Biology Outstanding Graduate Student Award                               | 2015 |
| Khoa Nguyen, Science Alliance Graduate Award, Biology Division, UTK                                    | 2015 |
| Kristen Holbrook, Cynthia B. Peterson Award for Outstanding Poster, BCMB/GST Retreat                   | 2015 |
| Kristen Holbrook, <i>Invited Speaker</i> , Chloroplast Minisymposium, Plant Biology 2014, Portland, OR | 2014 |
| Meng Li, Scholar of the Week, Office of Research, UTK  | 2014 |
| Meng Li, Science Alliance Graduate Award, Biology Division, UTK  | 2014 |

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|---|------|
| Kristen Holbrook, ASPB Travel Award to attend Plant Biology 2014, Portland, OR  | 2014 |
| Kristen Holbrook, 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<br>Asilomar Conference Grounds, Pacific Grove, CA                             | 2013 |
| Kristen Holbrook, Outstanding Student Talk, 22th Midwestern Photosynthesis Meeting<br>Asilomar Conference Grounds, Pacific Grove, CA                      | 2013 |
| Kristen Holbrook, Outstanding Student Presentation<br>38th Midwestern Photosynthesis Meeting, Turkey Run State Park, IN                                   | 2012 |
| Meng Li, Outstanding Graduate Presentation<br>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<br>Asilomar Conference Grounds, Pacific Grove, CA             | 2012 |
| Non Chotewutmontri, Beverly Green Outstanding Student Presentation<br>20th Western Photosynthesis Meeting, Asilomar Conference Grounds, Pacific Grove, CA | 2011 |
| Evan Reddick, Sigma Xi (The Scientific Research Society)<br>1st Place Outstanding Graduate Research Award, U.T. Knoxville                                 | 2009 |
| Yanina Bukhman, Doctoral Dissertation Committee, Department of Chemistry and Biochemistry<br>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<br>Department of Biology, University of Western Australia, Perth, Australia,                                 | 2004 |
| Carole Dabney-Smith, Outstanding Graduate Student, American Society of Plant Physiologists  | 2000 |
| Paul van den Wijngaard, Doctoral Dissertation Committee, Department of Plant Physiology<br>Wageningen University, Wageningen, Netherlands                 | 1999 |
| Robert Ivey, Outstanding Graduate Student Presentation, American Society Plant Physiology   | 1999 |

### Undergraduate Students

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|---|------|
| Truc Le, 28th Western Photosynthesis Meeting<br>Fiday Harbor Conference Center, Friday Harbor, WA                                     | 2019 |
| Rena Abdurehman, <i>Fulbright Scholarship</i><br>Rosario, Argentina   | 2018 |
| Rena Abdurehman, <i>ONSF Explorations Grant Recipient</i> , Office Research & Engagement<br>Rosario, Argentina                        | 2017 |
| Rena Abdurehman, <i>Best Poster Award</i> , 26th Western Photosynthesis Meeting<br>Marconi Conference Center, Marshall, CA            | 2017 |
| Erica Sanders, <i>Best Poster Award</i> , 25th Western Photosynthesis Meeting<br>Devils Thumb Ranch Resort, Tabernash, CO             | 2016 |
| Gabriel Little, <i>Best Poster Award</i> , 23th Western Photosynthesis Meeting<br>Asilomar Conference Grounds, Pacific Grove, CA      | 2015 |
| Louis Thai, <i>Best Poster Award</i> , Summer Science Academy<br>12th Annual Research Symposium, Vanderbilt University, Nashville, TN | 2014 |
| Gabriel Little, <i>Best Poster Award</i> , Educational Advancement<br>Program's Summer Research Institute, UTK                        | 2014 |
| Gabriel Little, <i>Exemplary Scholar Award</i> , Educational Advancement<br>Program's Summer Research Institute, UTK                  | 2014 |
| Gabriel Little, Presenter, 20th Annual SAEOPP McNair/SSS Scholars Research Conference, Atlanta  | 2014 |
| Amber Bassett, Research Excellence Award (Natural Sciences), EURECA Competiton, UTK   | 2014 |

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| Amber Bassett, Outstanding Undergraduate Poster, 23th Midwestern Photosynthesis Meeting<br>Asilomar Conference Grounds, Pacific Grove, CA   | 2014 |
| Amber Bassett, ASPB Travel Award to attend Plant Biology 2013, Providence, RI   | 2013 |
| Melissa Bigler, Outstanding Undergraduate Presentation, TN-SCORE Thrust I Retreat<br>Montgomery Bell State Park, TN                         | 2012 |
| Jason Lancaster, Research Excellence Award (Natural Sciences), EURECA Competition, UTK  | 2012 |
| Michelle Brown, Research Excellence Award (Natural Sciences), EURECA Competition, UTK   | 2012 |
| Danielle Harrill, Summer Research Fellowship, Microbiology Dept., UTK   | 2009 |
| Danielle Harrill, Research Excellence Award (Natural Sciences), EURECA Competition, UTK   | 2009 |
| Danielle Harrill, William Harris III, Undergraduate Research Award, EURECA Competition, 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 Competition, UTK   | 2008 |
| Ian Campbell, Chancellor's Undergraduate Research Fellowship, UTK   | 2007 |
| Chris Lowe, Research Excellence Award (Natural Sciences), EURECA Competition, 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,<br>EURECA Competition, UTK                                   | 2006 |
| Wesley Phillips, UT Chancellor's Summer Research Internship Program   | 2005 |
| Michael Vaughn, Outstanding Undergraduate Poster, 14th Western Photosynthesis Conference,<br>Asilomar Conference Grounds, Pacific Grove, CA | 2005 |
| 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

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|--|------|
| Research Mentor, College of Arts and Sciences Pre-collegiate Research Scholars Program<br>Emily Ledet Hardin Valley Academy  | 2012 |
| Brooke Butler and Daniel Pitcher<br>College of Arts and Sciences Pre-collegiate Research Scholars Program, Farragut High School  | 2010 |
| Hannah Rojeski & Megan Kurohara, Hilo High School, Hawaii<br>2nd Place Winner, Intel International Science and Engineering Fair, San Jose, CA<br>Project: A New Spin on Green Energy: Increasing Hydrogen Evolution in a Spirulina Derived Photobiological System  | 2010 |
| Megan Kurohara & Hannah Rojeski, Hilo High School, Hawaii<br>1st Place Senior Research Division, 24th Annual Hawaii District Science and Engineering Fair<br>Project: Photosynthetic Microalgae: A Green Source of Renewable H <sub>2</sub>  | 2009 |
| Natalie Alberman and Sofya Kalantarova<br>Carl Sagan Science and Math Honors Program, Forest Hills High School, Queens NYC<br>Silver Medal Winners, iSWEEP, International Sustainable World Energy, Engineering, & Environment Project Olympiad<br>Project: Analysis of chlorophyll content of dkg-1 strains of <i>Chlamydomonas reinhardtii</i> novel approach to improving plant biomass | 2009 |
| Natalie Alberman and Sofya Kalantarova<br>Carl Sagan Science and Math Honors Program, Forest Hills High School, Queens NYC<br>Finalists, Siemens Competition in Math, Science & Technology<br>Project: Analysis of chlorophyll content of dkg-1 strains of <i>Chlamydomonas reinhardtii</i> novel approach to improving plant biomass.   | 2008 |
| Instructor, Excellence in Teaching Workshop, East Tennessee Science Teachers Development<br>Module Title: Biological Macromolecules  | 2008 |
| Tehun Ganguly, NIH Minority Summer Research Excellence Award, UTK  | 1996 |

## PRESS COVERAGE OF SCIENCE AND RESEARCH

|                                 |   |      |
|---------------------------------|---|------|
| UTK Torchbearer                 | <a href="http://torchbearer.utk.edu/2015/01/science-for-monks/">http://torchbearer.utk.edu/2015/01/science-for-monks/</a>   | 2015 |
| Knoxville News Sentinal         | <a href="http://www.knoxnews.com/news/local-news/ut-professor-teaches-buddhist-monks_28501509">http://www.knoxnews.com/news/local-news/ut-professor-teaches-buddhist-monks_28501509</a>         | 2014 |
| UTK                             | <a href="http://quest.utk.edu/2014/meng-li/">http://quest.utk.edu/2014/meng-li/</a>   | 2014 |
| The Scientist                   | <a href="http://www.the-scientist.com/?articles.view/articleNo/39440/">http://www.the-scientist.com/?articles.view/articleNo/39440/</a>   | 2014 |
| Royal Society of Chemistry      | <a href="http://www.rsc.org/chemistryworld/2014/03/nanobionic">http://www.rsc.org/chemistryworld/2014/03/nanobionic</a>   | 2014 |
| TED <sup>x</sup>                | <a href="http://tedxtalks.ted.com/video/Growing-Electricity-Plugging-int;search%3AAbBruce%20barry">http://tedxtalks.ted.com/video/Growing-Electricity-Plugging-int;search%3AAbBruce%20barry</a> | 2014 |
| Science Daily                   | <a href="http://www.sciencedaily.com/releases/2012/02/120202092246.html">http://www.sciencedaily.com/releases/2012/02/120202092246.html</a>   | 2012 |
| QUEST                           | <a href="http://quest.utk.edu/2012/biosolar-breakthrough/">http://quest.utk.edu/2012/biosolar-breakthrough/</a>   | 2012 |
| METROPULSE                      | <a href="http://www.metropulse.com/news/2012/apr/18/">http://www.metropulse.com/news/2012/apr/18/</a>   | 2012 |
| R&D Magazine                    | <a href="http://www.rdmag.com/News/2012/02/">http://www.rdmag.com/News/2012/02/</a>   | 2012 |
| NSF                             | <a href="http://news.science360.gov/archives/20120206">http://news.science360.gov/archives/20120206</a>   | 2012 |
| NPR Podcast                     | <a href="http://wuot.org/mt/archives/2012/02/000722barry_bruce">http://wuot.org/mt/archives/2012/02/000722barry_bruce</a>   | 2012 |
| Ecoseed                         | <a href="http://www.ecoseed.org/hydrogen-a-fuel-cells/article/">http://www.ecoseed.org/hydrogen-a-fuel-cells/article/</a>   | 2012 |
| CHEMIE.DE                       | <a href="http://www.chemie.de/news/e/109450/">http://www.chemie.de/news/e/109450/</a>   | 2012 |
| Popular Science                 | <a href="http://www.popsoci.com/science/article/2009-11/">http://www.popsoci.com/science/article/2009-11/</a>   | 2009 |
| Science Daily,                  | <a href="http://www.sciencedaily.com/releases/2009/11/091112095042.htm">http://www.sciencedaily.com/releases/2009/11/091112095042.htm</a>   | 2009 |
| Cyber Scholar                   | <a href="http://mediabeast.ites.utk.edu/mediasite4/Viewer/">http://mediabeast.ites.utk.edu/mediasite4/Viewer/</a>   | 2009 |
| UTK Television                  | <a href="http://www.youtube.com/watch?v=625p8Mb_GdE">http://www.youtube.com/watch?v=625p8Mb_GdE</a>   | 2007 |
| Knoxville News Sentinel         | <a href="http://www.knoxnews.com/news/2007/aug/01/">http://www.knoxnews.com/news/2007/aug/01/</a>   | 2007 |
| Forbes                          | <a href="http://www.forbes.com/2007/05/23/innovation">http://www.forbes.com/2007/05/23/innovation</a>   | 2007 |
| EPA News                        | <a href="http://es.epa.gov/ncer/events/news/2007/10_17_07_feature.html/">http://es.epa.gov/ncer/events/news/2007/10_17_07_feature.html/</a>   | 2007 |
| ASPB News                       | <a href="http://www.aspb.org/publicaffairs/news/bruceforbes.cfm/">http://www.aspb.org/publicaffairs/news/bruceforbes.cfm/</a>   | 2005 |
| Nature                          | <a href="http://www.nature.com/nbt/journal/v22/n8/full/nbt0804-967.html/">http://www.nature.com/nbt/journal/v22/n8/full/nbt0804-967.html/</a>   | 2004 |
| Science                         | <a href="http://www.sciencenews.org/articles/20040605/fob2.asp/">http://www.sciencenews.org/articles/20040605/fob2.asp/</a>   | 2004 |
| Newsweek                        | <a href="http://www.msnbc.msn.com/id/5852745/site/newsweek/">http://www.msnbc.msn.com/id/5852745/site/newsweek/</a>   | 2004 |
| ABC News                        | <a href="http://abcnews.go.com/Technology/FutureTech/">http://abcnews.go.com/Technology/FutureTech/</a>   | 2004 |
| New York Times                  | <a href="http://www.nytimes.com/2004/11/11/technology/circuits/">http://www.nytimes.com/2004/11/11/technology/circuits/</a>   | 2004 |
| Boston Globe                    | <a href="http://www.boston.com/business/technology/articles/2004/09/18/">http://www.boston.com/business/technology/articles/2004/09/18/</a>   | 2004 |
| USA Today                       | <a href="http://www.usatoday.com/tech/news/techinnovations/2004-09-24">http://www.usatoday.com/tech/news/techinnovations/2004-09-24</a>   | 2004 |
| Discover, Top 100 Stories (#91) | <a href="http://www.discover.com/issues/jan-05/features/technology/">http://www.discover.com/issues/jan-05/features/technology/</a>   | 2004 |

## RESEARCH FUNDING

### Pending

|     |  |                  |
|-----|--|------------------|
| NSF | <b>MRI:</b> Acquisition of an Amnis ImageStream Mark II Imaging Flow Cytometer (co-PI)                             | <b>\$464,264</b> |
| NSF | <b>EAGER:</b> Exploring mechanism of SMA insertion into lipid membranes using Neutron and X-Ray reflectometry (PI) | <b>\$300,000</b> |
| NSF | <b>CLP:</b> Styrene-Maleic Acid Copolymers: a New Tool for Analysis of Photosynthetic Membrane Organization (PI)   | <b>\$545,377</b> |

### Current

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| NSF | MRI: Acquisition of a transmission electron microscope (TEM) for soft materials for the Advanced Microscopy and Imaging Center (AMIC) (co-PI) | <b>\$675,828</b> |
| UTK | JDRD, Office of Research and Engagement (PI)<br>Year 2: Characterization of PSI-Styrene Maleic Acid Copolymer Lipid Particles by SANS         | <b>\$50,000</b>  |
| DOE | Conference Support: Photosynthesis From Light to Life, 2018-2019 (PI)   | <b>\$10,000</b>  |
| UTK | JDRD, Office of Research and Engagement (PI)<br>Characterization of PSI-Styrene Maleic Acid Copolymer Lipid Particles by SANS                 | <b>\$50,000</b>  |

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|-------------|---|------------------|
| UTK         | Institute for Secure and Sustainable Environment (co-PI), 2017-2019<br>Nutrient and microbial community implications associated with the addition of duckweed to wastewater remediation | <b>\$45,000</b>  |
| Gibson      | Gibson Family Foundation (PI), 2010-2019,<br><u>Sustainable Research and Education</u>  | <b>\$250,000</b> |
| HPUD        | Hallsdale Powell Utility District (PI), 2011-2019,<br><u>Use of Algae for Wastewater Remediation</u>  | <b>\$50,000</b>  |
| UTK         | Bruce Enrichment Fund (PI), 2009-2019,  | <b>\$100,000</b> |
| <b>Past</b> |   |                  |
| DOE         | Conference Support for the Western Photosynthesis Conference, 2017 (PI)<br><b>\$7,200</b>   | 2016-2018        |
| NSF         | IGERT Proposal (co-PI)<br><u>STAIR: Sustainability Through Advanced Interdisciplinary Research</u><br><b>\$2,941,396</b>  | 2009-2015        |
| DOD         | DURIP: Defense University Research Instrumentation Program (PI)<br><u>Tennessee Photo-bioreactor Facility for Bioenergy</u><br><b>\$98,000</b>  | 2012-2015        |
| NSF         | EPSCoR - Research Infrastructure Improvement (co-PI)<br><u>Tennessee Solar Conversion and Storage using Outreach, Research and Education</u><br><b>\$24,000,000</b>                     | 2011-2015        |
| UTK         | Graduate School, Professional Development Award (PI)<br><b>\$5,000</b>  | 2014-2015        |
| ARMY        | DSI Topic: Extreme Energy Science (co-PI)<br><u>Hydrogen Production from Water by PSI I for use as Fuel in Energy Conversion Devices</u><br><b>\$1,500,000</b>                          | 2011-2015        |
| BIMR        | Arnold and Mabel Beckman Initiative for Macular Research (co-PI)<br><u>A Light-Activated Cellular Prosthesis Based On Photovoltaic Nanoswitches</u><br><b>\$20,000</b>                  | 2012-2013        |
| UTK         | SARIF Award, Office of Research (PI)<br>Wyatt Nanostar Dynamic Light Scatter<br><b>\$40,000</b>   | 2012-2013        |
| UTK         | SARIF Award, Office of Research (PI)<br>Bruker FTIR Spectrometer<br><b>\$60,000</b>   | 2012-2013        |
| UTK         | Tennessee Plant Research Center (co-PI with N. Labbé)<br>Collaborative Research Seed Grant<br><b>\$5,000</b>  | 2011-2012        |
| UTK         | M-CERV (PI)<br>Microbiology Across Campuses Educational & Research Venture Seed Grant<br><b>\$5,000</b>   | 2011-2012        |
| UTK         | SARIF Award, Office of Research (PI)<br><b>\$33,000</b>   | 2010-2011        |
| NSF         | CBET- Energy for Sustainability Proposal (co-PI)<br><u>SPHERE: Sustainable Photosynthetic Hydrogen Evolution Research</u><br><b>\$90,000</b>  | 2009-2010        |

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| SEERC     | Biophotovoltaics (co-PI, w/ Bamin Khomani)<br><b>\$64,000</b>   | 2009-2010       |
| SEERC     | Biohydrogen Production (co-PI, with Paul Frymeir)<br><b>\$38,000</b>  | 2009-2010       |
| EPA       | P3: People, Prosperity & the Planet, (co-PI)<br>Student Design Competition for Sustainability<br><u>Photosynthetic Biohydrogen: An All-Worlds Solution to Global Energy Production</u><br><b>\$10,000</b> | 2009-2010       |
| UTK       | SARIF Award, Office of Research (PI)<br>Nikon TIRF microscope<br><b>\$205,000</b>   | 2008-2009       |
| NSF       | Cell Biology Program, MCB-024790 (PI)<br><u>The Structural Basis of Transit Peptide Interaction(s) with the Chloroplast Toc Receptors</u><br><b>\$476,671</b>   | 2004-2009       |
| NSF       | NIRT (Nanoscience Interdisciplinary Research Team) (PI)<br><u>Integration of Photosynthetic Complexes into Novel Biomolecular Electronic Devices</u><br><b>\$1,794,444</b>                                | 2004-2009       |
| NSF       | ROA (Research Opportunity Award) Supplemental Award (PI)<br><b>\$31,124</b>   | 2007-2008       |
| USDA      | CREES-NRI Food Safety Program (co-PI)<br><u>Antimicrobial Delivery Systems to Improve Food Safety</u><br><b>\$337,779</b>   | 2004-2008       |
| DOE/ORNL  | Research Subcontract (PI)<br><u>Fundamental Studies of Photosystem I Complexes</u><br><b>\$82,000</b>   | 1999-2005       |
| StressGen | Corporate Contract (PI), 1998-2005,<br><u>Expression and Purification of Molecular Chaperones</u>   | <b>\$28,000</b> |
| CESB      | Center of Excellence in Structural Biology Seed Grant (PI), 2002-2004<br><u>Structural Basis of Transit Peptide and Import Receptor Interactions</u>  | <b>\$40,000</b> |
| P&G       | Procter and Gamble Inc. (co-PI), 2003-2004<br><u>Targeted Delivery of Lipophilic Antimicrobials to Skin Using Surfactant Micelles</u>   | <b>\$50,243</b> |
| CEFS      | Center of Excellence in Food Safety Seed Grant (co-PI), 2003<br><u>Encapsulation of Polypeptide Antimicrobials in Biodegradable Nanoparticles to Improve Food Safety</u>                                  | <b>\$36,640</b> |
| CEFS      | Center of Excellence in Food Safety Seed Grant (co-PI)<br><u>Development of 'Release on Demand' Antimicrobial Delivery Systems to Improve Food Safety</u><br><b>\$39,706</b>                              | 2002            |
| UTK       | Office of Research Administration (PI)<br>Exhibition, Publication, & Performance Expense Awards (5)<br><b>\$5,000</b>   | 1998-2001       |
| NSF       | Cell Biology Program, MCB-9604535 (PI)<br><u>The Role of Non-Bilayer Lipids in Chloroplast Protein Transport</u><br><b>\$325,000</b>  | 1997-2001       |
| NSF       | Division Undergraduate Education, DUE-9851606 (co-PI)<br><u>Collaborative Learning Cell Biology Laboratory</u><br><b>\$80,000</b>   | 1998-2000       |
| NSF       | Cell Biology Program, Supplemental Award (PI)<br>Research Experience for Undergraduates<br><b>\$7,000</b>   | 1998-1999       |

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

## RECENT INVITED PRESENTATIONS

### Campus, Local and Statewide

|  |      |
|--|------|
| Speaker, UTK Science Forum   | 2019 |
| Speaker, TED <sup>x</sup> 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 Count 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<br>(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<br>(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 |

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| 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

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| Speaker, Neutrons: current past and future, 2019 ORNL Users Meeting,   | 2019 |
| Speaker, Symposium Speaker, Washington University, Robert Blankenship Celebration  | 2019 |
| Speaker, 28th Western Regional Photosynthesis Meeting, BioSphere2, Oracle, AZ  | 2018 |
| Speaker and Session Chair, 25th Western Regional Photosynthesis Meeting, Devils Thumb Resort   | 2016 |
| Speaker, 24th Western Regional Photosynthesis Meeting, Asilomar, CA  | 2015 |
| Instructor, The Exploratorium, San Francisco, CA   | 2014 |
| Seminar Speaker, Biology Department, East Tennessee State University, Johnson City, TN   | 2012 |
| Speaker, Transforming Tools of Emerging and Converging Technologies for Societal Benefit (NBIC2),<br>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<br>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,<br>Purdue University, West Lafayette, IN   | 2011 |
| Speaker, EPSCoR Workshop,<br>Modeling Advanced Materials, Systems Biology and Alternative Energy Sources:<br>Building Capabilities and Collaborations for Cyber-Enabled Discovery, Knoxville, TN | 2011 |
| Speaker and Panelist, "The Next Great Innovation", Tennessee Valley Solar Solutions Conference,<br>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,<br>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 |

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| 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, Lewisburg, PA                        | 1993 |
| Seminar Speaker, Biology & Microbiology Department, University of Wisconsin, Oshkosh           | 1991 |
| Speaker, 1990 Meeting of the American Society of Plant Physiologists, Indianapolis, IN         | 1990 |

### International

|   |      |
|---|------|
| Keynote Speaker, Light-to-Life an ISPR/ISPB Conference, Montreal, Canada  | 2018 |
| Keynote Speaker, 69 <sup>th</sup> Meeting of the Electrochemistry Society, Bologna, Italy   | 2018 |
| Course Speaker, The 2nd School for Young Scientists, Experimental Methods in Photosynthesis, Pushchino, Russia  | 2017 |
| Seminar Speaker, Photosynthesis Group, Physics Department, Vrije University, Amsterdam  | 2015 |
| Organizer and Speaker, International Meeting on Photosynthesis Research for Sustainability, Crete   | 2015 |
| Seminar Speaker, Center for Nanotechnology, KAUST (King Abdullah University of Science and Technology), Saudi Arabia                                      | 2015 |
| Organizer and Speaker, International Meeting on Photosynthesis Research for Sustainability, Pushchino, Russia   | 2015 |
| Seminar Speaker, Microbiology Department, Institut Pasteur, Paris, FR   | 2015 |
| Speaker, Biohybrid Solar Cells—Photosynthesis-Based Photovoltaics and Photocatalytic Solar Cells, Material Research Society, San Francisco                | 2015 |
| Speaker, Innopolis Science and Technology Fair, Yachay City of Knowledge, Ecuador   | 2015 |
| Faculty, Western Faculty, 3rd Cohort, Science For Monks, Dharamsala, India  | 2014 |
| Speaker, XVI Congreso Nacional de Ciencia, Tecnología y Sociedad, San Jose, Costa Rica  | 2014 |
| Organizer and Speaker, International Meeting on Photosynthesis Research for Sustainability, Pushchino, Russia   | 2014 |
| Speaker, BioTech 2014 and 6 <sup>th</sup> Czech-Swiss Symposium, Prague, CR   | 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 |

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| 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, Executive Committee, BCMB Department, UTK  | 2018-2023    |
| Red Team Member, NSF Material Innovations Platform (MIP) Proposal Development, ORE, UTK                                  | 2019         |
| Chair, Search Committee, BSF Manager, Division of Biology, UTK,  | 2017         |
| Panelist, Panel on Junior Faculty Participation in NSF/NIH Review Reviews, ORE, UTK                                      | 2019         |
| Chair, Interim Search Committee, BSF Manager, Division of Biology, UTK,  | 2017         |
| Member, Graduate Affairs Committee, BCMB Department, UTK   | 2013-2023    |
| Member, Executive Committee, BCMB Department, UTK  | 2013-2018    |
| Member, Faculty Search Committee, Physical Biochemist/Biophysicist, BCMB Department, UTK                                 | 2018         |
| Chair, Faculty Search Committee, Physical Biochemist/Biophysicist, BCMB Department, UTK                                  | 2017         |
| Senator, UTK Academic Senate   | 2014-present |
| Reviewer, JDRD Proposal Selection, Science Alliance, UTK   | 2012-2015    |
| 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, BRIDGE Grant Program, USDA-HEC-funded, UTAI  | 2012         |
| Internal Reviewer, Microbiology Department, Mid-cycle Review Team, Provost Office, UTK                                   | 2010         |

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| Member, Faculty Search Committee,<br>Biomolecular Engineering, Chemistry & Biomolecular Engineering Department, UTK     | 2008      |
| Chair, Faculty Search Committee, Plant Biologist, BCMB Department, UTK  | 2007      |
| Member, Faculty Search Committee,<br>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,<br>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

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|--|------|
| Reviewer, Nature Plants (two manuscripts)  | 2019 |
| External Reviewer, Netherlands Organisation for Scientific Research, Council for Chemical Sciences   | 2015 |
| Panel member, Systems and Synthetic Biology Program, MCB Directorate, NSF  | 2015 |
| UTK Representative, NSF IUCRC (Industrial/University Center for Research Collaboration) on<br>Next Generation Photovoltaics Industry Consortium with Colorado State University<br>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 |

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| 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),<br>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<br>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**

\* denotes Communicating or Co-communicating Author

*Italics* denotes Bruce Lab Graduate Student/Postdoc

*Underlined Italics* denotes Bruce Lab Undergraduate Student

**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., Weiss, J. and **Bruce, B.D.**, (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 50<sup>th</sup> 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) *Biochimica 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 23<sup>rd</sup> 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 10<sup>th</sup> 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., Flandermeyer, 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*

101. Korotych, O. Nguyen, T., and **\*Bruce, B.D.** (2019) Selective Non-detergent Extraction of Membrane Complexes from Chloroplast Thylakoids using Styrene Maleic Acid Copolymers. J. Biol. Chem. **in preparation**
100. Holbrook, K., Reddick, L.E., Campbell, I., Wright, S.J., and **Bruce, B.D.** (2019) The Toc Clock: Oligomerization of the Toc GTPases is Modulated by Nucleotide and Transit Peptide. EMBO, **in preparation**
99. Vaughn, M., Myers, N., Thangaraj, B., Sarrou, I., Nguyen, K., Kodis, G., Whitelegge, J., **Bruce, B.D.** and Fromme, P. (2019) Purification and Characterization of Photosystem I of the Ancient Red Algae, *Galdieria sulphuraria* and Its Interactions with Cyt c<sub>6</sub>. BBA-Bioenergetics, **in preparation**
98. Holbrook, K., Sanders, E., Chotewutmontri, P., and **\*Bruce, B.D.** (2019) A Heuristic Approach to Motif Identification and Verification in Chloroplast Transit Peptides. New Phytologist, **in preparation**
97. Abdurehman, R. Holbrook, K., Mondal, J., Chotewutmontri, P., and **\*Bruce, B.D.** (2019) Improved methodology for visualization, quantification, and detection of *in vivo* plastid protein targeting. Plant J., **in preparation**

#### *Publication Year 2019*

96. Gisriel, G., Coe, J., Romain Letrun, R., Luna-Chavez, C., Stander, N.E., Lisova, S., Yefanov, O.N., Mariani, V., Kuhn, M., Grant, T.D., Dörner, K., Sato, T., Echelmeier, A., Villarreal, J.C., Hunter, M.S., Wiedorn, M.O., Knoska, J., Mazalova, V., Roy-Chowdhury, S., Yang, J.-H., Jones, A., Bean, R., Bielecki, J., Kim, Y., Mills, G., Weinhausen, B., Meza, J.D., Al-Qudami, N., Bajt, S., Brehm, G., Botha, S., Boukelef, D., Brockhauser, S., **Bruce, B.D.**, Coleman, M.A., Danilevski, C., Erin Discianno, E., Dobson, Z., Fangohr, H., Martin-Garcia, Y.M., Gevorkov, Y., Hauf, S., Giewekemeyer, K., Hosseinizadeh, A., Januschek, F., Ketawala, G.K., Kupitz, C., Maia, L., Manetti, M., Messerschmidt, M., Michelat, T., Mondal, J., Oberthür, D., Abbas Ourmazd, A., Previtali, G., Sarrou, I., Schön, S., Schwander, P., Shelby, M.L., Sikorski, M., Silenzi, A., Sztuk-Dambietz, J., Szuba, J., Turcato, M., White, T.A., Wrona, K., Xu, C., Abdellatif, M.H., Zook, J.D., Spence, J.C.H., Chapman, H.N., Barty, A., Kirian, K.A., Frank, M., Ros, A., Schmidt, M., Fromme, R., Mancuso, A.P., Fromme, P., and Zatsepin, N.A. (2019) Membrane Protein Megahertz Crystallography at the European XFEL. Nature Communications, **in review**
95. Cherepanov, D.A., Brady, N.G., Shelaev, I.V., Nguyen, J., Gostev, F.E., Mamedov, M.D., Nadtochenko, V.A. and **\*Bruce, B.D.** (2019) PSI-SMALP, A Detergent-free Form of Cyanobacterial Photosystem I Reveals Faster Femtosecond Photochemistry. J. Biol. Chem. **in review**
94. Brady, N.G., Li, M., Ma, Y., Gumbart, J.C., and **\*Bruce, B.D.**, (2019) Non-detergent Isolation of a Cyanobacterial Photosystem I using Styrene Maleic Acid Alternating Copolymers. J. Biol. Chem. **in review**

93. Teodor, A.H, Alarcon M., Medina, J., Ooi, E.-J., Vaughn, M.D., \*Bruce, B.D. and Bergkamp, J.J. (2019) Characterization of Synthetic Bipyridine-Based Cobalt Redox Mediators as Photosystem I Redox Mediators for Biophotovoltaic Integration. ACS Applied Energy Materials, in revision
92. Li, Meng, Calteau, A., Semchonok, D.A., Witt, T.A., Nguyen, J., Sassoon, N., Boekema E. J., Julian Whitelegge, J., Gugger, M., and \*Bruce, B.D. (2019) Tetrameric Photosystem I in Cyanobacteria: Implications in Physiology and Evolution. Nature Plants in review
91. Voloshin, R., Brady, N., Atashova, S., Rodionova, M., Gabrielyan, D., Kreslavski, V., Zharmukhamedov, S., Huseynova, I., Shen, J.R., \*Bruce, B.D. and Allakhverdiev, S. (2019) Enhanced activity and stability of osmotically-stabilized thylakoids in a biohybrid solar cell. ACS Applied Materials & Interfaces. in revision.
90. Brady, N., Qian, S. and \*Bruce, B.D., (2019) Analysis of Styrene Maleic Acid Alternating Copolymer Supramolecular Assemblies in Solution by Small Angle X-Ray Scattering. Eur. Polymer J. **114**: 178-184.
89. Korotych, O. Mondal, J., Gattas-Asfura, K., Hendricks, J., and \*Bruce, B.D. (2019) Evaluation of commercially available styrene-co-maleic acid polymers in extraction of membrane proteins from chloroplast thylakoids. Eur. Polymer J. **114**: 485-500.

#### Publication Year 2018

88. Musazade, E., Voloshin, R.A., Brady, N.G., Atashova, A., Zharmukhamedov, S.K., Huseynova, I., Ramakrishna, Shen, J.R., \*Bruce, B.D., and Allakhverdiev, S.I. (2018) Biohybrid Solar Cells: Fundamentals, Progress, and Challenges. J. Photochemistry and Photobiology C. **35**: 134-156.
87. Kapoor, K. Cashman, D., Nientimp, L., \*Bruce, B.D. and Baudry, J. (2018) Binding mechanisms of electron transport proteins with cyanobacterial photosystem I: an integrated computational and experimental model. J. Phys. Chem. B. **122(3)**: 1026–1036.
86. Mondal, J, and \*Bruce, B.D. (2018) Ferredoxin: The Central Hub Connecting Photosystem I to Cellular Metabolism. Photosynthetic, **56(1)**: 279-293.
85. Shelaev, I.V., Mamedov, M.D., Gostev, F.E., Aybush, A.V., Li, M., Nguyen, J., \*Bruce, B.D. and Nadochenko, V.A. (2018) Comparisons of electron transfer reactions in a cyanobacterial Tetrameric and Trimeric Photosystem I complex. Photobiology and Photochemistry, **94(3)**, 564-569.

#### Publication Year 2017

84. Chotewutmontri, P., Holbrook, and \*Bruce, B.D. (2017) Plastid Protein Targeting: Preprotein Recognition and Translocation International Review of Cell and Molecular Biology, **(330)**: 227–294.
83. Nguyen, K., Vaughn, M., Frymier, P.D., and \*Bruce, B.D. (2017) *In Vitro* Kinetics of P700<sup>+</sup> Re-reduction of *Thermosynechococcus elongatus* PS I Particles by Recombinant Cytochrome c<sub>6</sub> Using a Joliet-Type LED Spectrometer. Photosynthesis Research, **131(1)**: 79-91.
82. Rodionova, M.V., Poudyal, R.S., Tiwari, I., Voloshin, R.A., Zharmukha, S.K., Nam, H.G., Zayadan, B.K. \*Bruce, B.D., Hou, H.J.M., and Allakhverdiev, S.I. (2017) Biofuel production: Challenges and opportunities. Int. J. Hydrogen Energy, **42(12)**: 8450-8461.
81. Voloshin, R.A., Bedbenov, V.S., Gabrielyan, D.A., Brady, N.G., Kreslavski, V.D., Zharmukhamedov, S.K., Rodionova, M.V., \*Bruce, B.D., and Allakhverdiev, S.I. (2017) Optimization and characterization of TiO<sub>2</sub>-based solar cell design using diverse plant pigments. Int. J. Hydrogen Energy, **42(12)**: 8576-8585.

#### Publication Year 2016

80. Semchonok, D.A., Li, M., \*Bruce, B.D., Oostergetel, G.T., and Egbert J. Boekema, E.J. (2016) Cryo-EM Structure of a Tetrameric Cyanobacterial Photosystem I Complex Reveals Novel Subunit Interactions. (BBA)-Bioenergetics **1857(9)**: 1619-1626.
79. Holbrook, K., Subramanian, C., Reddick, L.E., Wright, S., Zhang, H., Chotewutmontri, P., Moncrief, L., and \*Bruce, B.D. (2016) Functional analysis of semi-conserved transit peptide motifs and implications in chloroplast protein import. Molecular Plant **9(9)**: 1286-1301.
78. Simmerman, R., Zhu, T., Baker, D., Wang, L., Mishra, S., Lundgren, C., and \*Bruce, B.D. (2015) Engineering of Photosystem I Complexes with Metal-Oxide Binding Peptides for Bioelectronic Applications. J. Bioconjugate Chem. **26(10)**: 2097–2105.

#### Publication Year 2011-2015

77. Carter, R.J., Baker, D.R., Witt, T.A., and \*Bruce, B.D. (2015) Enhanced Photocurrent from Photosystem I upon *in vitro* Truncation of the Antennae Chlorophyll. Photosynthesis Research **26 (10)**: 2097-2105.

76. Chotewutmontri, P., and \*Bruce, B.D. (2015) Non-Native, N-terminal Hsp70-Recognition Elements Support Plastid Protein Translocation *In Vivo* and *In Vitro*. *J. Biol. Chem.*, **290(12)**: 7602-7621.
75. Huang, X, Jennings, S.F, Bruce, B.D., Buchan, A., Cai, L., Chen, P., Cramer, C.L., Guan W, Hilgert UK, Jiang H, Li Z, McClure G, McMullen DF, Nanduri B, Perkins A, Rekepalli B, Salem S, Specker J, Walker K, Wunsch D, Xiong D, Zhang S, Zhang Y, Zhao Z, Moore JH (2015) Big data - a 21st century science Maginot Line? No-boundary thinking: shifting from the big data paradigm. *BioData Min.* **8(7)**: 1-5.
74. Baker, D.R., D.R., Simmerman, R., Sumner, J.J., Bruce, B.D., and Lundgren, C.A. (2014) Photoelectrochemistry of Photosystem I Bound in Nafion. *Langmuir* **30(45)**: 13650-13655.
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- $\beta$ -D-Maltoside Detergent Using Small-Angle Neutron Scattering and Molecular Dynamics Simulations. *Arch. Biochem. Biophys.*, **551**: 50-57.
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 *Chroococciopsis* sp. TS-821. *The Plant Cell*, **26(3)**: 1230-1245.
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.*, **1837(9)**: 1553-66.
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*, **27**: 597-608.
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.
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.
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)**: 3040-3059.
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 TiO<sub>2</sub> And ZnO. *Nature Scientific Reports* **2**: 234-239.
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 Surf. 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. *Int. J. Hydrogen Energy*, **36**: 11684-11692.

#### **Publication Year 2006-2010**

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.
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, M., 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.
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 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.
53. *Reddick, E.L., Vaughn, M., Wright, S.J., Campbell, L., 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.
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., Norville, 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 2001-2005

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.
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