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Education: 1980 "Kandidaats" degree in Biology (B.S. equivalent)
1982 "Ingenieurs" degree in Biology (M.S. equivalent)
1984 Doctorate, Faculty of Agricultural Sciences
All degrees were from the Agricultural University, Wageningen, The Netherlands, and were conferred cum laude

Professional experience:

1980-1981 Research Associate, Departments of Botany, and Physiology & Biophysics, University of Illinois at Urbana/Champaign, Urbana IL
1981-1982 Research Associate, MSU/DOE Plant Research Laboratory, Michigan State University, East Lansing MI
1982-1983 Research Associate, Max-Volmer-Institute of Physical & Biophysical Chemistry, Technische Universität Berlin, Berlin, Germany
1983-1984 Scientist, Department of Plant Physiological Research, Agricultural University, Wageningen, The Netherlands
1984-1986 Visiting Scientist, Central Research & Development Department, E.I. du Pont de Nemours & Co., Inc., Wilmington DE
1986-1990 Assistant Professor, Dept of Botany & Microbiology, Arizona State Univ
1990-1994 Associate Professor, Department of Botany, Arizona State University
1992-1993 Visiting Professor (sabbatical leave), Department of Biochemistry, Stockholm University, Stockholm, Sweden
1994-1997 Director, Center for the Study of Early Events in Photosynthesis, Arizona State University
1994-2003 Professor, Department of Plant Biology, Arizona State University
1999-2000 Visiting Professor (sabbatical leave), Lehrstuhl für Biochemie der Pflanzen, Ruhr University, Bochum, Germany
1999-2000 Visiting Professor (sabbatical leave), Microbiology group, University of Amsterdam, Amsterdam, The Netherlands
2003-2005 Associate Director, School of Life Sciences, Arizona State University
2003-2010 Professor, School of Life Sciences, Arizona State University
2010-present Foundation Professor, School of Life Sciences, Arizona State University

Selected Honors, Awards and Professional Service:

1980 Unilever Chemistry Award
1981 Dutch Ministry of Agriculture and Fisheries Research Award
1982 "Deutsche Akademische Austauschdienst" fellowship
1988 Organizer, ASU/UofA Molecular Biology/Biochemistry Conference
1989-1998 Editorial Board member, *Photosynthesis Research*
1990 NSF Presidential Young Investigator Award

1991	Organizer, first Western Photosynthesis Conference (held at ASU)
1991	Organizer, International Conference on the Molecular Biology of Photosynthesis, Tempe AZ
1993	Member, Organizing Committee, 6th International Conference on Applied Algology, Czech Republic
1996	US Organizer of the US/Japan Workshop on Advances in the Molecular Biology of Photosynthesis, Grand Canyon AZ
1998-2001	Editorial Board member, <i>Plant Cell Physiology</i>
1998-1999	Panel manager, USDA NRICGP Photosynthesis and Respiration program
1999	Alexander von Humboldt Research Fellowship
1999-2007	Editorial Board member, <i>Journal of Bacteriology</i>
2000-2009	Member, Organizing Committee, the International Symposia of Photosynthetic Prokaryotes
2000-2009	Associate Editor, <i>Plant Molecular Biology</i>
2002-2005	Advisory Board member, Genomes to Life project on <i>Synechococcus</i> sp. WH 8102
2003	Symposium co-organizer, American Society for Microbiology Meeting
2004-2010	Member, Executive Committee of the International Society for Photosynthesis Research
2006-2008	Vice Chair and Chair, Gordon Conference on Photosynthesis
2007	Innovator of the Year Award, Arizona Technology Enterprises and ASU
2010	Fellow, American Association for the Advancement of Science
2010	Faculty Achievement Award, Defining Edge Research, ASU
2010-present	Editorial Board member, <i>Journal of Biological Chemistry</i>

Publications:

- Vermaas, W.F.J., and van Rensen, J.J.S. (1981) Mechanisms of bicarbonate action on photosynthetic electron transport in broken chloroplasts. *Biochim. Biophys. Acta* **636**, 168-174.
- van Rensen, J.J.S., and Vermaas, W.F.J. (1981) Action of bicarbonate and photosystem II-inhibiting herbicides on electron transport in pea grana and in thylakoids of a blue-green alga. *Physiol. Plant.* **51**, 106-110.
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- Vermaas, W.F.J., and Govindjee (1981) Unique role(s) of carbon dioxide and bicarbonate in the photosynthetic electron transport system. *Proc. Ind. Natl Sci. Acad.* **B47**, 581-605.
- Vermaas, W.F.J., and Govindjee (1982) Bicarbonate effects on chlorophyll *a* fluorescence transients in the presence and absence of diuron. *Biochim. Biophys. Acta* **680**, 202-209.
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- Vermaas, W.F.J., Arntzen, C.J., Gu, L.-Q., and Yu, C.-A. (1983) Interactions of herbicides and azidoquinones at a photosystem II binding site in the thylakoid membrane. *Biochim. Biophys. Acta* **723**, 266-275.
- Vermaas, W.F.J., and Arntzen, C.J. (1983) Synthetic quinones influencing herbicide binding and photosystem II electron transport: The effects of triazine resistance on quinone binding properties in thylakoid membranes. *Biochim. Biophys. Acta* **725**, 483-491.

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- Vermaas, W.F.J., Renger, G., and Arntzen, C.J. (1984) Herbicide binding to photosystem II: an allosteric model. *Z. Naturforsch.* **39c**, 368-373.
- Vermaas, W.F.J., Steinback, K.E., and Arntzen, C.J. (1984) Characterization of chloroplast polypeptides in the 32 kDa region. *Arch. Biochem. Biophys.* **231**, 226-232.
- Vermaas, W.F.J., and Rutherford, A.W. (1984) EPR measurements on the effects of bicarbonate and triazine resistance on the acceptor side of photosystem II. *FEBS Lett.* **175**, 243-248.
- Vermaas, W.F.J., Williams, J.G.K., Rutherford, A.W., Mathis, P., and Arntzen, C.J. (1986) A genetically engineered mutant of the cyanobacterium *Synechocystis* 6803 lacks the photosystem II chlorophyll-binding protein CP47. *Proc. Natl Acad. Sci. USA* **83**, 9474-9477.
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- Vermaas, W.F.J., Williams, J.G.K., and Arntzen, C.J. (1987) Site-directed mutations of two histidine residues in the D2 protein inactivate and destabilize photosystem II in the cyanobacterium *Synechocystis* 6803. *Z. Naturforsch.* **42c**, 762-768.
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- Yao, C.I.D., and Vermaas, W. (2013) Function of *sll1906*, a member of the bacteriochlorophyll delivery family, in the cyanobacterium *Synechocystis* sp. PCC 6803. In: Photosynthesis Research for Food, Fuel and Future: 15th International Conference on Photosynthesis (T.Y. Kuang, C.M. Lu, and L.X. Zhang, eds.). Springer, in press.
- Vermaas, W. (2013) Solar-powered production of biofuels and other petroleum substitutes by cyanobacteria: Stoichiometries of reducing equivalents and chemical energy, and energy conversion efficiency. In: Photosynthesis Research for Food, Fuel and Future: 15th International Conference on Photosynthesis (T.Y. Kuang, C.M. Lu, and L.X. Zhang, eds.). Springer, in press.

Professional memberships:

American Association for the Advancement of Science
 American Chemical Society
 American Society for Microbiology
 International Society for Photosynthesis Research
 Society for Industrial Microbiology and Biotechnology

Current funding:

- US Department of Energy, Thylakoid Membrane Biogenesis in Cyanobacteria. PI. \$510K, 2011-2014 (individual research grant; continued DOE funding since 1988).
- US Department of Energy ARPA-E, Cyanobacteria Designed for Solar-Powered Highly Efficient Production of Biofuels. PI (co-PIs at ASU: David Nielsen and Bruce Rittmann; collaborators at North Carolina State University, Diversified Energy Co., and BioCee). \$6.5M, 2010-2013.

National Science Foundation, IGERT-SUN (Solar Utilization Network). PI. \$3M, 2012-2017 (graduate student training grant).

National Science Foundation, Acquisition of a NanoSIMS 50L Imaging Secondary Ion Mass Spectrometer. Co-PI; Peter Williams, PI. \$4.7M, 2010-2013 (instrumentation grant).

Invited lectures since 2007 include:

- 2007 University of Illinois
International Photosynthesis Conference, Glasgow
NAS / Gates Foundation Emerging Technologies Workshop, Washington DC
Minerva Symposium: “Photosynthesis: from Molecular Mechanisms to Environmental Impact”, Rehovot, Israel
7th International Conference on Tetrapyrrole Photoreceptors in Photosynthetic Organisms, Kyoto, Japan
- 2008 ITESM, Monterrey, Mexico
US Department of Agriculture, Maricopa
ESF-EMBO symposium on “Molecular Bioenergetics of Cyanobacteria: towards systems biology level of understanding”, Saint Feliu de Guixols, Spain
Midwestern Photosynthesis Conference, Turkey Run State Park, IN (keynote speaker)
- 2009 Western Photosynthesis Conference, Asilomar, CA
Algae Workshop, Berkeley, CA
Washington State University, Pullman, WA
International Symposium of Photosynthetic Prokaryotes, Montreal, Canada
Student Conference on Biology, Chemistry and Agronomy, Guadalajara, Mexico
- 2010 Zuvaposium, Maryland
International Conference on Porphyrins and Phthalocyanines, New Mexico
International Photosynthesis Conference, Beijing (symposium organizer and speaker)
Tsinghua University, Beijing
Chinese Academy of Sciences, Shanghai
Algal Biomass Organization Summit, Phoenix AZ
World Algae Congress USA, San Francisco, CA
- 2011 ARPA-E Innovation Summit, National Harbor MD
American Chemical Society annual meeting, Anaheim, CA
Gordon Conference on Photosynthesis, Davidson, NC
Biofuels Workshop, University of Warwick, UK
Phycological Society of America annual meeting, Seattle, WA
Society for Industrial Microbiology annual meeting, New Orleans, LA
ARPA-E Algae Day, Marysville, OH
European Science Foundation conference, Bielefeld, Germany
University of Alabama, Birmingham, AL
University of Arkansas – Little Rock, Little Rock, AR
Algal Biomass Organization Summit, Minneapolis, MN
Styring symposium, Uppsala, Sweden
DOE-BES Grantee Workshop, Baltimore, MD
NSF Biofuels Workshop, Arlington, VA
Zuvaposium, Maryland
- 2012 NSF/DFG Microbial Biofuels Workshop, Frankfurt, Germany
Utah State University, Logan, UT
Indo-US Workshop, Cyanobacteria: Molecular Networks to Biofuels, Lonavala, India
Reliance Industries, Mumbai, India
- 2013 UCLA, Los Angeles, CA

Banbury Workshop, Redesigning Photosynthesis, Cold Spring Harbor, NY
2014 Gordon Research Conference on Renewable Energy: Solar Fuels

Professional service:

Grant panels, etc.:

varying years Site visitor, NSF Research Training Grant program
Site visitor, NSF Plant Genome Research Program
Site visitor, Minerva Foundation (a Germany/Israel binational foundation)
Site visitor, DOE Energy Biosciences program
Site visitor, Air Force Office of Scientific Research
Panel member, NSF Young Investigator Awards program
Panel member, USDA NRICGP Photosynthesis and Respiration program
Panel manager, USDA NRICGP Photosynthesis and Respiration program
Panel member, DOE Energy Biosciences program
Panel member, National Science Foundation, Microbial Genetics Program
Panel member, NSF GK-12 Program
Panel member, European Commission Research Framework Program
Panel member, European Science Foundation, EuroSolarFuels Program
Panel member, NSF Biotech, Biochem and Biomass Engineering Program
Panel member, DOE ARPA-E Program
Site visitor, private companies

Reviewer for journals including:

Archives of Microbiology
Biochemistry
Biochimica et Biophysica Acta
FEBS Letters
Functional Plant Biology
Journal of Bacteriology
Journal of Phycology
Molecular Microbiology
Nature
Photosynthesis Research
Plant Cell
Plant Cell Physiology
Plant Molecular Biology
Plant Physiology
Proceedings of the National Academy of Sciences, USA
Trends in Biochemical Sciences

Ad-hoc reviewer of proposals for agencies including:

Australian Research Council
Biotechnology and Biological Sciences Research Council (UK)
Civilian Research and Development Foundation (US/Russia)
Fonds zur Förderung der wissenschaftlichen Forschung, Austria
Foundation for Research, Science and Technology, New Zealand
Global Climate and Energy Project (Stanford University)
Grant Agency of the Academy of Sciences (Czech Republic)
Human Frontiers Science Program
Icelandic Research Foundation

Israel Science Foundation
National Science Foundation
Natuur Wetenschappelijk Onderzoek (NWO), The Netherlands
U.S. Department of Agriculture
U.S. Department of Energy
U.S./Israel Binational Agricultural Research Development Fund

University service:

Interdepartmental:

1988-1989 Oligonucleotide synthesis facility
1988-1989 Member, Search Committee for a Structural Biochemist (Chemistry Dept)
1988-1991 Member, Radiation Protection Committee
1988-1992 Chair, Protein/Nucleic Acid Characterization Laboratory planning committee, Goldwater Center for Science, Engineering and Technology
1988-1989 Chair, Personnel Committee of the Photosynthesis Center
1989-1991 Chair, Publication and Conference Committee of the Photosynthesis Center
1989-1992 Member, Interdisciplinary Committee on Molecular and Cellular Biology
1992-1995 Member, Council for Research and Creative Activities
1993-1995 Member, Admissions Committee, Molecular and Cellular Biology Program
1994-1997 Chair, Executive Committee of the Photosynthesis Center
1995-1999 Member, Research Awards Committee, College of Liberal Arts and Sciences (Chair for Natural Sciences, 1997-1998)
1997-1998 Chair, Executive Committee, Strategic Initiative "Project Ingenhouz"
1998-2001 Member, Dean's Faculty Advisory Council, College of Liberal Arts and Sciences
2002-2003 Member, Life Sciences Reorganization Committee, College of Liberal Arts and Sciences
2002-2003 Co-chair, ad-hoc committee on undergraduate education in Life Sciences
2003-2004 Member, University-wide Academic Professionals Task Force
various times Member, Executive Committee, Molecular and Cellular Biology Program
2006-2009 Member, Executive Committee, Computational Biosciences Program
2007-2008 Member, Molecular and Cell Biology graduate program committee
2009-present Member, Bioimaging oversight committee
2009-present Member, DNA laboratory oversight committee
2009-2012 Member, Strategic Planning and Academic Resources Advisory Council, College of Liberal Arts and Sciences
2010-present Member, Goldwater Scholarship ASU selection committee

Departmental:

1988-1989 Chair, Search Committee for two faculty members and a research AP
1989-1990 Member, ad-hoc Committee on Department Bylaw Revision
1989-1991 Member, Search Committee for a Department Chair
1990-1991 Chair, Search Committee for a Research Scientist
1993-1995 Director of Graduate Programs
1995-1998 Member, Personnel Committee (Chair, 1997-1998)
2001-2002 Member, Search Committee for a faculty member in applied plant biology
2003-2004 Chair, Search Committee for Evolutionary and Systems Biology faculty
2003-2005 Chair, Academic Professionals Personnel Committee, School of Life Sciences
2003-2005 Chair, Initiatives Programs Committee, School of Life Sciences
2004-2006 Member, Search Committee for Metabolic Biology faculty

2005-present	Coordinator, Molecular Biosciences and Biotechnology
2005-2007	Faculty advisor, Associated Students for Biotechnology
2006-2010	Honors Disciplinary Advisor, Molecular Biosciences and Biotechnology
2006-2007	Chair, Search Committee for three faculty members
2008-2009	Member, Strategic Planning Committee
2009-present	Member, Undergraduate Education Committee
2012-present	Chair, Search Committee for a Bioenergy / Synthetic Biology faculty member

Thesis/dissertation:

Current graduate students:

Lisa Dirks, Ph.D., ELS; scheduled completion date: May 16
 Ipsita Dutta, Ph.D., MCB; scheduled completion date: December 13
 Raul Gonzalez, Ph.D., Plant Biology; scheduled completion date: May 13
 Vicki Moore, Ph.D., Biology; scheduled completion date: December 13
 Lucas Zackaj, Ph.D., Microbiology; scheduled completion date: May 16

ASU graduates from my laboratory:

1990 Shelly D. Carpenter (M.S., Botany; currently at the University of Washington, Seattle WA)
 1990 Michael R. Zianni (M.S., Botany; currently at Ohio State University, Columbus OH)
 1992 M. Elisabeth Eggers (M.S., Molecular and Cellular Biology; currently at the National Institutes of Health, Phoenix AZ)
 1992 Jiujiang Yu (Ph.D., Botany; currently at the Venter Institute)
 1993 Gaozhong Shen (Ph.D., Molecular and Cellular Biology; currently at Pennsylvania State University, University Park PA)
 1996 Pradip Manna (Ph.D., Molecular and Cellular Biology; currently at a private company)
 1998 Qingfang He (Ph.D., Plant Biology; currently at the University of Arkansas)
 1999 Martin Tichy (Ph.D., Molecular and Cellular Biology; currently at the Institute of Microbiology, Czech Academy of Sciences, Czech Republic)
 2000 Anna Keilty (M.S., Molecular and Cellular Biology; currently at a private company)
 2001 Jason Cooley (Ph.D., Plant Biology; currently at the University of Missouri)
 2002 Hong Xu (Ph.D., Plant Biology; currently at a private company)
 2003 Hatem Mohamed (Ph.D., Plant Biology; currently at Oregon State University)
 2006 Zhi Cai (Ph.D., Plant Biology; currently at the Biodesign Institute)
 2008 Sawsan Hamad (Ph.D., Plant Biology; currently at ASU)
 2009 YiFei Wu (Ph.D., Plant Biology; currently at the University of Arizona)
 2011 Christoph Trautner, Ph.D., Microbiology
 2011 Danny Yao, Ph.D., Plant Biology

Undergraduate education in the laboratory:

1987 Shelly Carpenter
 1988 Beth Eggers
 1989 Steven Turzinski
 1989 Ernest Lee
 1989-1991 Warren Apel
 1990-1991 Lucinda Estrada
 1991-1992 Amethyst Vu

1992-1993	Sinikka Wahab
1993	Julia Prescott (Pomona College)
1993-1997	Nazila Adib
1993-1995	Eric Knight
1994	Britt Glaunsinger (University of Arizona)
1995	Lucia Nurman (Rice University)
1996	Shalizeh Azizi (University of Texas)
1996-1997	Pacer Udall
1997	Dan Girard
1997	Ariella Poncz (University of Pennsylvania)
1998	Lisa Miller
2001	Natalie Weaver
2001-2003	Danny Yao
2003	Jennifer Jones (University of California – Riverside)
2003-2004	Eric Lovullo
2003-2005	Federico Martin
2005	Folarin Akinola
2006	Ankita Sharma
2006-2008	Nicholas Tatonetti
2006-2007	Shaw Shariari
2007-2008	Martin Dotson
2007-2008	Christopher Dixon
2008-2009	Bryan Hricik
2008-2009	Aaron Walker
2008-2011	James Garcia
2009	Luke Cizek Wieneke
2009-present	Angela Tsang
2009-2011	Dakota Lippincott
2010	Emma Burr
2011-2012	Jason Radebach
2011-present	Nicole Smith
2012-present	Chris McCauley
2012-present	Frea Mehta

Visiting scientists/postdoctoral research associates/visiting students in the laboratory:

1987-1988	Jeroen Charité (Agricultural University, Wageningen, The Netherlands)
1988-1990	Gaozhong Shen (Sichuan Agricultural University, P.R. China)
1989	Dr. Masahiko Ikeuchi (RIKEN Institute, Japan)
1989-1992	Dr. Julian J. Eaton-Rye (Postdoctoral Research Associate)
1989	Jianchen Cao (University of Illinois)
1989-1992	Dr. Matthias Kuhn (Postdoctoral Research Associate)
1990, 1993	Professor Govindjee (University of Illinois)
1990-1992	Ursula Liebl (University of Regensburg, Germany)
1990-1991	Frank van der Bolt (Agricultural University, Wageningen, Netherlands)
1990-1991	Janine Visser (Agricultural University, Wageningen, The Netherlands)
1991-1992	Elisabeth Haag (Technische Universität, Berlin, Germany)
1991-1992	Dr. Sammy Boussiba (Ben Gurion University of the Negev, Israel)
1991	Professor Itzhak Ohad (The Hebrew University of Jerusalem, Israel)
1992-1995	Dr. Svetlana Ermakova (Moscow State University, Russia)
1992	Dr. Georg Schmetterer (University of Vienna, Austria)
1992-1996	Dr. Hadar Kless (Postdoctoral Research Associate)

1993	Gert Schansker (Agricultural University, Wageningen, The Netherlands)
1993-1994	Dr. Tina Leguijt (Postdoctoral Research Associate)
1993	Dr. Jian-Ren Shen (RIKEN, Japan)
1993-1994	Dr. Qingyu Wu (Nanjing University, P.R. China)
1994-1995	Dr. Zhen-Bao Yu (Academia Sinica, P.R. China)
1995-1996	Dr. Christiane Funk (Postdoctoral Research Associate)
1995-1999	Dr. Svetlana Ermakova-Gerdes (Postdoctoral Research Associate)
1995-1997	Dr. Igor Shalak (Visiting Scientist)
1995-2000	Dr. Crispin Howitt (Postdoctoral Research Associate)
1998-1999	Dr. Qiang Hu (Postdoctoral Research Associate)
1998-2007	Dr. Dmitrii Vavilin (Postdoctoral Research Associate)
1998	Professor Achim Trebst (Ruhr Universität, Bochum, Germany)
1998	Dr. Christiane Funk (Stockholm University, Stockholm, Sweden)
1998-1999	Dr. Delphine Lagarde (Thallia Pharmaceuticals SA, Lyon, France)
1999-2006	Dr. Galyna Kufryk (Postdoctoral Research Associate)
1999	Dr. Jens Kurreck (Technical University, Berlin)
2001-2004	Dr. Fusheng Xiong (Postdoctoral Research Associate)
2001-2002	Professor Judy Brusslan (California State University, Long Beach)
2001-2002	Professor Kimiyuki Satoh (Okayama University, Okayama, Japan)
2002-2005	Dr. Allison van de Meene (Postdoctoral Research Associate) (shared with Prof. Roberson's group)
2003-2009	Dr. Bing Wang (Postdoctoral Research Associate)
2003-2006	Miguel Hernandez (University of Umea, Sweden)
2004	Professor Udo Johannngmeier (University of Halle, Germany)
2004-2005	Christoph Trautner (University of Vienna, Austria)
2006	Professor Christer Sundqvist (University of Goteborg, Sweden)
2006-2007	Helder Miranda (University of Umea, Sweden)
2008	Cazimir ten Brink (Agricultural University, Wageningen)
2008-2010	Dr. Otilia Cheregi (Umea University, Sweden)
2008-present	Dr. Shuqin Li (Postdoctoral Research Associate)
2008-2011	Dr. Hongliang Wang (Faculty Research Associate)
2008-present	Dr. Daniel Brune (Faculty Research Associate)
2009-2012	Dr. Sawsan Hamad (Postdoctoral Research Associate)
2009-2010	Waldemar Hauf (University of Tuebingen, Germany)
2010-present	Dr. Wei Xiong (Faculty Research Associate)
2010-2011	Dr. Fusheng Xiong (Faculty Research Associate)

Students at other institutions for whom I was dissertation defense opponent:

1993	Ursula Liebl (University of Regensburg, Germany)
1998	Jasper van Thor (University of Amsterdam, The Netherlands)
2003	Frank de Weerd (Free University, Amsterdam, The Netherlands)
2004	Natasha Yeremenko (University of Amsterdam, committee co-chair)
2006	Pengpeng Zhang (University of Turku, Finland)

Courses developed and taught at ASU:

BIO 343/MBB 343	Genetic Engineering and Society
BOT 560/PLB 550	Plant Molecular Biology
BOT 562/PLB 552	Plant Genetic Engineering
BCH 568/PLB 558	Molecular Mechanisms of Photosynthesis (team-taught with Plant Biology and Chemistry faculty members)

MBB 490/491	Capstone course in Molecular Biosciences and Biotechnology
MCB 555/MCB 556	Advanced Molecular and Cell Biology (team-taught)
MCB 598	Graduate Research Training Program "Brainstorming Sessions"
MCB 540/MBB 440	Functional Genomics
SOS 598	IGERT: Solar Utilization Network
SOS 598	IGERT: Energy in Context
No prefix	"Forensic Applications of DNA Technology"; one-week intensive course for the Arizona Department of Public Safety