

CARL EUGENE BAUER

DEGREES

- 1978 B.S., Microbiology, University of Minnesota, Minneapolis
1980 M.S., Bacteriology, Washington State University, Pullman
1982 M.S., Microbiology, University of Illinois, Urbana
1986 Ph.D., Microbiology, University of Illinois, Urbana

APPOINTMENTS

- 1978-80 Teaching Assistant, Washington State University
1980-84 Teaching Assistant, University of Illinois
1984-86 Research Assistant, University of Illinois
1986-88 Visiting (postdoctoral) Scientist, E.I. du Pont de Nemours & Co.
1988-97 Fellow, Indiana Molecular Biology Institute
1988-94 Assistant Professor, Department of Biology
1993-98 Director, Microbiology Graduate Program
1999-01
1995-98 Director, Molecular Biology and Biochemistry Program
1999-01
1994-97 Associate Professor, Department of Biology
1997 Professor, Department of Biology
2004-05 Sabbatical leave, Indiana University
1997- Senior Fellow, Indiana Molecular Biology Institute
1997-2007 Clyde Culbertson Professor of Biology
2001-04 Director, Interdisciplinary Biochemistry Graduate Program
2006-10
2007-12 Class of 54 Professor of Biology
2009- Professor and Chairman, Department of Molecular and Cellular Biochemistry

FELLOWSHIPS AND AWARDS

- 1982 Phi Kappa Phi
- 1984 Sigma Xi
- 1983-86 HEW Cellular and Molecular Biology Training Fellowship
- 1992 Marcus Rhoades Outstanding Young Faculty Award
- 1993-98 NIH Research Career Development Award
- 1994 American Society for Photobiology Young Investigator Award
- 1997 Clyde Culbertson Endowed Professorship
- 2002 IBASM Outstanding Academic Achievement Award
- 2004-06 American Society for Microbiology "Waksman Foundation for Microbiology Lecturer"
- 2007 National Institutes of Health MERIT (Method to Extend Research Time) award
- 2007 Class of 54 Endowed Professor
- 2008 Elected Fellow, American Academy of Microbiology
- 2012 Elected Fellow, American Association for the Advancement of Science (AAAS)

PUBLICATIONS

Books:

Blankenship, R., Madagan, M. and Bauer C., eds. 1995. Anoxygenic photosynthetic bacteria. Kluwer Academic Publishers. 1331 pp.

Articles:

1. Bauer, C.E., J. Carey, L.M. Kasper, S.P. Lynn, D.A. Waechter & J.F. Gardner. 1983. Attenuation in bacterial operons. In *Gene Function in Prokaryotes*. (eds. J. Beckwith, Davies, and J.A. Gallant), pp. 65-89. Cold Spring Harbor Press, Cold Spring Harbor, NY
2. Bauer, C.E., S. Hesse, J.F. Gardner & R.I. Gumport. 1984. DNA interactions during bacteriophage lambda site-specific recombination. *Cold Spring Harbor Symp. Quant. Biol.* 49:699-705
3. Bauer, C.E., J.F. Gardner & R.I. Gumport. 1985. The extent of sequence homology required for bacteriophage lambda site-specific recombination. *J. Mol. Biol.* 181:187-197
4. Bauer, C.E., S.D. Hesse, D.A. Waechter-Brulla, S.P. Lynn, R.I. Gumport & J. F.

- Gardner. 1985. A genetic enrichment for mutations constructed by oligonucleotide-directed mutagenesis. *Gene* 37:73-81
5. Lynn, S.P., C.E. Bauer, K. Chapman & J. F. Gardner. 1985. Identification and characterization of mutants affecting transcription termination at the threonine operon attenuator. *J. Mol. Biol.* 183:529-541
 6. Bauer, C.E., S.D. Hesse, R.I. Gumport & J. F. Gardner. 1986. A mutational analysis of integrase arm-type binding sites of bacteriophage lambda: Integration and excision involve distinct interactions of integrase with arm-type sites. *J. Mol. Biol.* 192:513-527
 7. Nash, H.A., C.E. Bauer & J. F. Gardner. 1987. The role of homology in site-specific recombination of bacteriophage lambda: Evidence against annealing of cohesive ends. *Proc. Natl. Acad. Sci.*, 84:4049-4053
 8. Bauer, C.E., M. Eleuterio, D.A. Young & B. L. Marrs. 1987. Analysis of transcription through the *Rhodobacter capsulatus* *puf* operon using a translational fusion of *pufM* to the *E. coli* *lacZ* gene. In *Progress in Photosynthesis Research*. (J. Biggins, ed.) vol. 4, pp. 699-705, Martinus Nijhoff Pub., Dordrecht, Netherlands
 9. Pollock, D., C.E. Bauer & P.A. Scolnick. 1988. I. Transcription of the *Rhodobacter capsulatus* *nifHDK* operon is modulated by the nitrogen source. II. Construction of plasmid expression vectors based on the *nifHDK* promoter. *Gene* 65:269-275
 10. Bauer, C.E., D.A. Young & B.L. Marrs. 1988. Analysis of the *Rhodobacter capsulatus* *puf* operon: Location of the oxygen regulated promoter region and the identification of an additional *puf* encoded gene. *J. Biol. Chem.* 263:4820-4827.
 11. Bauer, C.E. & B.L. Marrs. 1988. The oxygen and light regulated *Rhodobacter capsulatus* *puf* operon encodes a regulatory protein for bacteriochlorophyll biosynthesis. *Proc. Natl. Acad. Sci. U.S.A.* 85:7047-7087
 12. Young, D.A., C.E. Bauer & B.L. Marrs. 1989. Genetic evidence for superoperonal organization of genes for photosynthetic pigments and pigment-binding proteins in *Rhodobacter capsulatus*. *Mol. Gen. Genet.* 218:1-12
 13. Bauer, C.E., J.F. Gardner, R.I. Gumport & R.I. Weisberg. 1989. The effect of attachment site mutations on strand exchange in bacteriophage lambda site-specific recombination. *Genetics* 122:727-735
 14. Yang, Z. & C.E. Bauer. 1990. *Rhodobacter capsulatus* genes involved in early steps of the bacteriochlorophyll biosynthetic pathway. *J. Bacteriol.* 172:5000-5010
 15. Marrs, B.L., D.A. Young, C.E. Bauer, & J.C. Williams. 1990. The regulation of bacteriochlorophyll synthesis in *Rhodobacter capsulatus*. In *Molecular biology of membrane-bound complexes in phototrophic bacteria*. (G. Drews and E.A. Dawes eds.) pp. 47-48. Plenum Press, NY
 16. Bauer, C.E., J. Buggy, Z. Yang & B.L. Marrs. 1991. The "superoperonal" organization of genes for pigment biosynthesis and reaction center proteins is a conserved feature in *R. capsulatus*: Analysis of overlapping *bchB* and *pufA* transcripts. *Mol. Gen. Genet.* 228:433-444
 17. Yildiz, F.H., H. Gest & C.E. Bauer. 1991. Genetic analysis of photosynthesis in

- Rhodospirillum centenum*. *J. Bacteriol.* 173:4163-4170
18. Yildiz, F.H., H. Gest & C.E. Bauer. 1991. Attenuated effect of oxygen on photopigment synthesis in *Rhodospirillum centenum*. *J. Bacteriol.* 173:5502-5506
 19. Sganga, M. & C.E. Bauer. 1992. Regulatory events controlling light harvesting and reaction center structural gene expression in *R. capsulatus*. *Cell* 68:945-954
 20. Bollivar, D.W. & C.E. Bauer. 1992. Association of tetrapyrrole intermediates in the bacteriochlorophyll *a* biosynthetic pathway with the major outer membrane porin protein from *Rhodobacter capsulatus*. *Biochem. J.* 282:471-476
 21. Wellington, C.L., C.E. Bauer & J.T. Beatty. 1992. Minireview-Superoperons in purple non-sulfur bacteria: The tip of the iceberg? *Can. J. Microbiol.* 38:20-27
 22. Bollivar, D.W. & C.E. Bauer. 1992. Nucleotide sequence of S-adenosyl methionine magnesium protoporphyrin methyltransferase from *Rhodobacter capsulatus*. *Plant Physiol.* 98:408-410
 23. Sganga, M. W, R. R. Aksamit, G.L. Cantoni & C.E Bauer. 1992. Mutational and nucleotide sequence analysis of S-adenosylhomocysteine hydrolase from *Rhodobacter capsulatus*. *Proc. Natl. Acad. Sci.* 89:6328-6332
 24. Suzuki, J.Y. & C.E. Bauer. 1992. Light-independent chlorophyll biosynthesis: Involvement of the chloroplast gene *chlL* (*frxC*). *The Plant Cell*, 4:929-940
 25. Yildiz, F.H., C.E. Bauer & H. Gest. 1992. Conservation of the photosynthesis gene cluster in *Rhodospirillum centenum*. *Mol. Microbiol.* 6:2683-2691
 26. Yildiz, F.H., C.E. Bauer & H. Gest. 1992. Characterization of light harvesting and reaction center complexes from *Rhodospirillum centenum*. In *Research in Photosynthesis*, (N. Murata ed.) Vol. III, 19-26. Kluwer Press. Academic Publishers
 27. Bauer, C. E., D. Bollivar, J. Dobrowski & J. Suzuki. 1992. Molecular-genetic analysis of Mg-tetrapyrrole biosynthesis in bacteria and alga. In *Frontiers of Photobiology*, (Shima, A., M. Ichahashi, Y. Fujiwara and H. Takebe ed.) pp 41-42. Elsevier Science Publishers.
 28. Bauer, C. E., J. J. Buggy & C. Mosely. 1993. Control of photosystem genes in *Rhodobacter capsulatus*. *Trends in Genet.* 9:56-60. (Invited review)
 29. Bauer, C. E., D. W. Bollivar & J. Y. Suzuki. 1993. Minireview-Genetic analysis of photopigment biosynthesis in eubacteria: A guiding light for algae and plants. *J. Bacteriol.* 175:3919-3925.
 30. Buggy, J. J., M. W. Sganga & C.E. Bauer. 1994. Nucleotide sequence and characterization of the *Rhodobacter capsulatus hvrB* gene: HvrB is an activator of S-adenosyl-L-homocysteine hydrolase expression and is a member of the LysR family. *J. Bacteriol.* 176: 61-69.
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33. Bollivar, D. W., Z-Y. Jiang, C. E. Bauer & S. I. Beale. 1994. Heterologous overexpression of the *bchM* gene product from *Rhodobacter capsulatus* and demonstration that it encodes for *S*-adenosyl-L-methionine:Mg-protoporphyrin methyltransferase. *J. Bacteriol.* 176:5290-5296.
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39. Suzuki, J. Y. & C. E. Bauer. 1995. Altered monovinyl and divinyl protochlorophyllide pools in the *bchJ* mutant of *Rhodobacter capsulatus*: Possible monovinyl substrate discrimination of light independent protochlorophyllide reductase. *J. Biol. Chem.* 270, 3732-3740.
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43. Ponnampalam, S. N., J. J. Buggy & C. E. Bauer. 1995. Characterization of an aerobic repressor that coordinately regulates bacteriochlorophyll, carotenoid and light harvesting-II expression in *Rhodobacter capsulatus*. *J. Bacteriol.* 177, 2990-2997.
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- photosynthesis gene expression in *Rhodobacter capsulatus*. *J. Bacteriol.* 177, 6958-6965.
45. Bauer, C. E. 1995. Evolutionary relatedness of the bacteriochlorophyll and chlorophyll biosynthetic pathways. In *Photosynthesis: From Light to Biosphere* (P. Mathis ed.). Kluwer Press. Academic Publishers. pp 899-904.
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 51. Ponnampalam, S. N., & C. E. Bauer. 1997. DNA Binding characteristics of CrtJ: A redox-responding repressor of bacteriochlorophyll, carotenoid and light harvesting-II gene expression in *Rhodobacter capsulatus*. *J. Biol. Chem.* 272, 9671-9676.
 52. Jiang, Z-Y, H. Gest & C. Bauer. 1997. Analysis of a chemotaxis operon from *Rhodospirillum centenum*. *J. Bacteriol.* 179, 5712-5719.
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 57. Nickens, D. G. & C. E. Bauer. 1998. Transcription analysis of the *puc* operon from *Rhodobacter capsulatus* *J. Bacteriol.* 180, 4270-4277.
 58. Xiong, J., K. Inoue & C. E. Bauer. 1998. Characterization of a major photosynthesis gene cluster from the heliobacterium *Heliobacillus mobilis*. In *Photosynthesis:*

- Mechanisms and Effects, (G. Garab ed.), Kluwer Academic publishers, Dordrecht, The Netherlands. Vol. IV: pp 2835-2840
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105. Smart, J. L. & C. E. Bauer. 2006. Tetrapyrrole biosynthesis in *Rhodobacter capsulatus* is transcriptionally regulated by a novel heme-binding regulatory protein, HbrL. *J. Bacteriol.* 188: 1567-1576.
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- metabolic processes by monitoring the redox state of the ubiquinone pool. *J. Biol. Chem.* 281: 6768-6775.
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 110. Swem L. R., Swem, D. L., Wu, J., & C. E. Bauer. 2007. Purification and Assays of *Rhodobacter capsulatus* RegB-RegA Two Component Signal Transduction System. In *Two-Component Signaling Systems*" edited by Mel Simon, Brian Crane and Alexandrine Bilwes Crane. *Methods in Enzymology*. 422: 173-183
 111. Willett, J., J. L. Smart & C. E. Bauer 2007. RegA in Controls Bacteriochlorophyll and Carotenoid Synthesis in *Rhodobacter capsulatus*. *J. Bacteriol.* 189, 7765-7773.
 112. Xiong, J., C. E. Bauer & A. Pancholy. 2007. Insight into the heme *d*₁ biosynthesis pathway in heliobacteria through bioinformatics analysis. *Microbiology*, 153, 3548-3562
 113. Bauer, C. E., A. Setterdahl, J. Wu & B. R. Robinson. 2008. Regulation of Gene Expression in Response to Oxygen Tension. In *Purple Photosynthetic Bacteria*. pp 707-725. C. N. Hunter, F. Daldal, M. C. Thurnauer and J. T. Beatty (eds) Kluwer Academic Press.
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 115. Masuda, S., J. Berleman, B. M. Hasselbring & C. E. Bauer. 2008. Regulation of aerobic photosystem synthesis in the purple bacterium *Rhodospirillum centenum* by CrtJ and AerR. *Photochem. Photobiol. Sci.* 7, 1267-1272
 116. Wu, J., & C. E. Bauer. 2008. RegB/RegA, A Global Redox-Responding Two-Component Regulatory System. In, *Bacterial Signal Transduction: network and drug targets*. Ryutaro Utsumi ed. *Advances in Experimental Medicine and Biology* vol 631 pp 131-148, Landes Bioscience Eurekah, Georgetown, TX

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120. Dragnea V, Arunkumar AI, Lee CW, Giedroc DP, Bauer CE. (2010) A Q63E *Rhodobacter sphaeroides* AppA BLUF domain mutant is locked in a pseudo-light-excited signaling state. *Biochemistry*. 49:10682-90. PMID: PMC3127458
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122. Marden JN, JE Berleman & CE Bauer (2011) Cyclic GMP regulates encystment in *Rhodospirillum centenum*. *Mol. Micro*. 79:600-615 (*This work was highlighted by a commentary of this study in the same issue of Mol. Micro 79:562-565*). PMID: PMC4273943
123. Yuan H, V Dragnea, Q Wu, KH Garner & Bauer CE (2011) Mutational and structural studies of the PixD BLUF output signal that affects light-regulated interactions with PixE. *Biochemistry* 50:6365-6375 PMID: 21688827
124. Wu, J, V Dragnea & CE Bauer (2012) Redox Responding Sensor Kinases. In *Two Component Systems in Bacteria*. Ed. R Gross and D Beier. pp 41-56. Horizon Scientific Press.
125. Yin, L, V Dragnea, & Bauer CE (2012) PpsR, a regulator of heme and bacteriochlorophyll biosynthesis, is a heme-sensing protein. *J. Biol Chem*. 287:13850-13858. PMID: 22378778
126. Cheng, Z, J Wu, A Setterdahl, K Reddie, K Carroll, L A. Hammad, J A Karty & CE Bauer (2012) Activity of the tetrapyrrole regulator CrtJ is controlled by oxidation of a redox active cysteine located in the DNA binding domain. *Mol. Micro*. 85:734-746 PMID: PMC3418406

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129. Yin, L., & C. E. Bauer (2013) Controlling The Delicate Balance of Tetrapyrrole Biosynthesis. *Phil. Trans. Royal. Soc. B.* 368 no. 1622 20120253. PMID: [23754814](#)
130. Wu J, Cheng Z, Reddie K, Carroll K, Hammad LA, Karty JA, & Bauer CE. (2013) [RegB kinase activity is repressed by oxidative formation of cysteine sulfenic acid](#). *J. Biol. Chem.* 288:4755-4762. PMID: 23306201
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132. Zappa, S. & C. E. Bauer. (2013) The LysR-Type Transcription Factor HbrL Is A Global Regulator Of Iron Homeostasis And Porphyrin Synthesis In *Rhodobacter capsulatus*. *Mol Microbiology*. 90:1277-1292 PMCID: PMC3890261
133. He, K., J. M. Marden, E. M. Quardokus & C. E. Bauer (2013) Phosphate Flow between Hybrid Histidine Kinases CheA₃ and CheS₃ Controls *Rhodospirillum centenum* Cyst Formation. *PLOS Genetics*, DOI: 10.1371/journal.pgen.1004002 (*This work was highlighted by Nature Reviews Microbiology* PMID: 24367276 <https://twitter.com/NatureRevMicro/status/414059234586656768>)
134. Cheng, Z., K. Li, L. A. Hammond, J. A. Karty & C. E. Bauer (2014) B₁₂ controls photosystem gene expression by light regulated binding to the antirepressor AerR. *Mol. Microbiol.* 91:649-664. PMCID: PMC3946051 (*This work was highlighted in a companion commentary in the same issue by G. Klug; Mol Microbiol.* 91:635-640.)
135. He, K. & C. E. Bauer (2014) Chemosensory signaling that controls bacterial survival. *Trends in Microbiology*. 22:389-393 PMCID: PMC4273944
136. Zappa, S & C. E. Bauer (2015) Regulation of cytochrome biosynthesis. In *Advances in Photosynthesis and Respiration; Cytochrome Complexes: Evolution, Structures, Energy Transduction, and Signaling*. William Cramer and Toivo Kallas (editors). Springer, Dordrecht. *In Press*.
137. Dong, Q., & C. E. Bauer (2015) Transcriptome analysis of cyst formation in *Rhodospirillum centenum* reveals large global changes in expression during cyst development. *BMC Genomics*. 16:68 DOI: 10.1186/s12864-015-1250-9.
138. Shimizu T., Cheng Z., Matsuura K., Masuda S. & C. E. Bauer (2015) The purple

- bacterium *Rubrivivax gelatinosus* utilizes altered *cis* element spacing to promote redox sensing by the photosynthesis gene-specific transcription factor PpsR. Submitted
139. He, K., V. Dragnea, & C. E. Bauer (2015) Adenylate charge regulates sensor kinase Ches₃ to control cyst formation in *Rhodospirillum centenum*. *mBio*. In Press.
 140. Dong, Q., Roychowdhury, S., & C. E. Bauer (2015) Mapping The CgrA Regulon Of *Rhodospirillum centenum* Reveals a Hierarchical Network Controlling Cyst Development. Submitted
 141. Roychowdhury, R. S., Q. Dong & C. E. Bauer. (2015) DNA binding properties of a cGMP binding CRP homolog that controls development of metabolically dormant cysts of *Rhodospirillum centenum*. Submitted
 142. Kumka Y. E. & C. E. Bauer (2015) The FNR Regulon From *Rhodobacter capsulatus*. Submitted.
 143. Vermeulen, A., & C. E. Bauer (2015) Members of the PpaA/AerR antirepressor family binds cobalamin. In preparation.
 144. Vermeulen, A., He, K., Q. Dong & C. E. Bauer (2015) Light Activation of The PYP-Phytochrome Hybrid Photoreceptor Ppr Is Essential for Cyst Formation in *Rhodospirillum centenum*. In preparation.
 145. Cheng, Z., & C. E. Bauer (2015) Multifaceted control of PpsR, a transcription factor controlling tetrapyrrole biosynthesis in purple bacteria. In Preparation

GRANTS

Previous funding

- 1989-93 National Institute of Health GM40941; Prokaryotic gene regulation by light and oxygen; \$515,518 total costs
- 1990-93 National Science Foundation, \$240,000 Total costs; Characterization of *Rhodospirillum centenum* and other novel anoxyphototrophes
- 1993-97 National Science Foundation, \$270,662 Total costs; Genetics and physiology of novel anoxyphototrophs
- 1993-97 National Institute of Health GM40941; Prokaryotic gene regulation by light and oxygen; \$783,300 total costs
- 1993-98 NIH Research and Career Development Award, \$372,060 total costs
- 1995-98 National Science Foundation Postdoctoral Fellowship (awarded to B. Rushing) \$110,000 (Direct)
- 1996-00 National Institute of Health GM53940; Genetic analysis of Mg-tetrapyrrole biosynthesis; \$591,647 total costs
- 1996-97 National Science Foundation, Conference grant \$4,000
- 1996-97 Department of Energy, Conference grant \$3,000
- 1997-01 National Institute of Health GM40941; Prokaryotic gene regulation by light and oxygen; \$906,989
- 1998-03 National Institute of Health GM58050; Prokaryotic Swarm Cell Differentiation and Photoperception; \$779,795 total costs
- 1999-03 NASA Astrobiology Grant (Subcontracted from an Arizona State University funded proposal), \$115,908 total costs; Defining evolution of photosynthesis by sequence analysis.
- 2000-02 National Institute of Health GM53940; Genetic analysis of Mg-tetrapyrrole biosynthesis; \$30,000 total costs
- 2001-06 National Institute of Health, \$1,197,273 Total costs; Prokaryotic gene regulation by light and oxygen
- 2002-06 National Institute of Health, \$916,373 total costs; Genetic analysis of Mg-tetrapyrrole biosynthesis
- 2002-07 David and Lucile Packard Foundation, \$1,000,000 (Direct) Life at the edge of hydration. (Co-PI with Donald Burke and Lisa Pratt)
- 2004-08 National Science Foundation , \$1,254,415 total costs; Microbial genome sequencing: genome sequences for four phototrophic prokaryotes. (Co PI with R. E. Blankenship, J. W. Touchman, M. T. Madigan and T. J. Beatty)

2005-11 METACyt Award (Bauer, PI)
09/01/2005 – 08/31/2011 \$69,666
Agency: Indiana University METACyt Initiative
Title: The Study Of Microbial Cyst Formation
The major goal of this project is to investigate how bacteria form resting cyst cells using DNA chip array technology

Current funding

2006-16 National Institutes of Health MERIT (Method to Extend Research Time) award: Prokaryotic gene regulation by light and oxygen. \$5,802,054 total costs.

**2012-2017 National Institutes of Health
Regulatory Circuits Controlling Development of Dormant Microbial Cysts
09/01/2011 through 08/31/2016
\$1,603,371 Total costs**

Pending grants

None

PATENTS

Pending:

Patent Application number 10-723,427
Title: Production of Ubiquinones

STUDENTS AND POSTDOCS TRAINED

Graduated Ph.D. Students (Degree Year):

Yildiz, Fitnat	1992
Bollivar, David	1993
Buggy, Joe	1993
Suzuki, Jon	1994
Sganga, Mike	1996
Mosley, Cheré	1996
Ponnampalam, Stephen	1997
Kouadio, Jean-Louis	1997
Jiang, Ze-Yu	1997
Nickens, David	1997
Du, Shouying	1999
Dong, Chen	2000
Berleman, James	2004
Swem, Lee	2005
Hua Yuan	2008
Keran Li	2009
Marden, Jeremiah	2010
Wu, Jiang	2012
Liang Yin	2012
Zhuo Cheng	2013
Kung He	2013
Roychowdhury Sugata	2013

Graduated Master's Students (Degree Year):

Yang, Zamin	1990
Yong, Bai	1995
Smith, Craig	1995
Swem, Danielle	2001
McClain, John	2001
Marina, Sousa	2007
George Fieldman	2011

Past Postdoctorals:

Kamicker, Barbara	1988-89
Bird, Terry	1994-98
Rushing, Brenda	1994-99
Elsen, Sylvie	1996-1999
Tang, Lei	1999-2000
Jiang, Ze-Yu	1997-2000
Xiong, Jin	1996-2001
Masuda, Shinji	2000-2003
Smart, James	2002-2006
Yong-Ho Chen	2005-2007
Setterdahl, Aaron	2004-2007

Current Ph.D. Students:

Qian Dong
Arjan Vermeulen
Mingxu Fang
Yosh Kumtra
Nandhini Ashok
Heidi Schindel
Elizabeth Czerwinski

Current Master's Students:

Frank Harden

Current Postdoctorals:

Sébastien Zappa
Dragnea, Vladimira

Past Ph.D. Committees:

Kitayama, Kaoru	Yangrae, Cho
Yeage, Julie	Gold, Benjiman
Kitayama, Masahiko	Burns, Chris
Symensma, Tonia	Graham, James
Seaton, Nancy	Feng, Lan`
Xu, Lily	Wu, Chi-Ju
Tubergen, Malinda	Angert, Esther
Davis, John	Merlin, Sean
Cernec, Alex	LaGrandeur, Thomas
Opperman, Timothy	Konan, Kouacou
Galvani, Cheryl	Alfonzo, Juan
Pickett, Frank	Van Eaton, William
Barns, Sue	Ozes, Osman
Martinez, Chon	Ruegger, Max
Chapman, Matt	Carlson, Susan
Bisgrove, Sherryl	Van Eaton, William
Sackett, Marci	Capone, Ann
Yang, Yunliang	Hu, Xiao
Datta, Amita	Liu, Yi-Chun
Gindhart, Joseph	Fry, Christopher
Janakiraman, Raji	Moyse, Keith
Wang, Yan	Laura Ort (M.S.)
Marcia Ireland (M.S.)	Fry, Christopher
Ramsey, Bronwin	Coates, Dave
Dayal Saran (Chemistry)	Laura Ong
Mathew Worthington (Chem)	John Zhu
Avery, Rick	Lina Li
Wai-Leung Ng	Zhifeng Chen
Peiwei Li	Deanne Pierce
Jennifer Wagner	Thomas Danhorn
Guozhou Che	Melanie Lawler
David Kline	Michael Trimble
Beli Quan (Chemistry)	Ibrahim Khan
Kyle Wayne	Smirla Ramos Montañez
Adam Johnson	Brigitte Robinson (Chemistry)
Adrian DeShaun Land	Benjamin Kester
Shuo Li	Vince Waldman (Chemistry)
Soca Wibowo	Lok To Sham
Xiaoyun Guo	

Undergraduate Researchers:

Wagoner, Cindy	1988	Fry, Chris	1992-94
Impy, Soren	1989-90	Swen, Lee	1997-98
Dobrowolski, Janice	1989-91	Kiesling, Kristin	1998-99
Newell, John	1990-91	Rhore, Carri	1998 (REU)

Current Ph.D. Committees:

Yue Fu
John Gillece
Datta, Amita
Jangchuan Shen
Smapriti Mukherjee
Amelia Tomlinson
John Lister
Peter Mackelevia (Chem)
Jiangchuan Shen
Vivekananda Kedage
Daniel Chodur
Sundhar Subramanian
Jing Wang
Ali Ozes
Meng Pu

Jones, Carri	1991	Boddie, LaShawnda	1999 (REU)
Simone, Philip	1992	Marchial, Ty	1999 High School Achievers
Burns, Heather	1993-94	Hoover, Cara	2002 (REU)
Hipskind, Andy	1994-95	Hasselbring, Benjamin	2001-2002
Surziky, Ray	1995-96	Willet, Jonathan	2002- (IU Stars)- current
Borneo, Jovencio	1995-96	Christena Garcia	2003 (REU)
Marina Antionio	2004-2005	Erica Gladney	2003(MEDIC-B)
Jannell Kenzor	2004- 2006	Nathen McGraw	2004-2005
Danielle Fanslow	2008-10	Joshua Carter	2008-2010
Ashley Bernacchi	2008-2009	Jonathan Bell	2010-11
Gina Gordon	2009- (IFLE)	Heidi Schindel	2010-11
Scott Bauer	2010-11	Jennifer Bullard	2010-11
Sam Hanger	2011	Ellen Quardokus	2011-

Visiting Faculty Who Have Performed A Sabbatical In The C. Bauer Laboratory:

1990	Dr. Mariann Eleuterio, Professor, Westchester University, Westchester, PA
1992	Dr. Thomas Beatty, Professor, University of British Columbia, Vancouver, B.C., Canada
1993-94	Dr. Kazuhito Inoue, Associate Professor, Kanagawa University, Kanagawa, Japan
1996	Dr. Kazuhito Inoue, Associate Professor, Kanagawa University, Kanagawa, Japan
1998-99	Dr. Yuichi Fujita, Associate Professor, Osaka University, Osaka Japan
2005-07	Dr. Young-Ho Chung; Korea Basic Science Institute; , Korea (ROK).

COURSES TAUGHT

<u>Course</u>	<u>Enrollment</u>	<u>Semester</u>	<u>Year</u>
M850 Microbiology Seminar	17	I	1988-89
M480 Microbial and Molecular Genetics	24	II	
M525 Microbial Physiology*	17	II	
M480 Microbial and Molecular Genetics	22	I	1989-90
B572 Photobiology†	6	I	
M480 Microbial and Molecular Genetics	32	I	1990-91
M850 Microbiology Seminar	19	II	
M525 Microbial Physiology*	16	II	
M480 Microbial and Molecular Genetics	29	I	1991-92
B572 Photobiology†	2	I	
M850 Microbiology Seminar	17	II	
M480 Microbial and Molecular Genetics	26	I	1992-93
M850 Microbiology Seminar	11	I	
L585 Molecular Genetics††	37	II	1993-94
L585 Molecular Genetics††	14	II	1994-95
C584 Biosynthesis of Macromolecules#	24	I	1995-96
C584 Biosynthesis of Macromolecules#	36	I	1996-97
C584 Biosynthesis of Macromolecules#	38	I	1997-98
M850 Microbiology Journal Club	6	II	1998-99
C584 Biosynthesis of Macromolecules#	25	I	1999-00
M850 Microbiology Journal Club	7	II	
M360 Microbial Physiology Laboratory§	18	II	2000-01
M850 Microbiology Journal Club	17	II	
M850 Microbiology Journal Club	21	I	2001-02
M850 Microbiology Journal Club	18	I	2002-03
B580 Introduction to Biochemical Research	5	I & II	
M850 Microbiology Journal Club	18	I	2003-04
B680 Grant writing	5	I	
H111 Integrative Freshman Learning experience	5	I	
B580 Introduction to Biochemical Research	4	I & II	
Z620/B680 Prokaryotic signal transduction	11	II	
B600 Seminar in Biochemistry	10	II	

2004-2005 academic year I was on sabbatical without teaching.

COURSES TAUGHT (cont)

B580 Introduction to Biochemical Research	11	I & II	2005-06
B600 Seminar in Biochemistry	11	II	
B680 Grant writing	33	I	2006-07
B600 Seminar in Biochemistry	21	II	
B680 Grant writing	34	I	2008-09
B680 Grant writing	37	I	2009-10
B680 Grant writing	33	I	2010-11
B680 Grant writing	13	I	2011-12
B506 Integrated Biochemistry II	11	II	
B506 Integrated Biochemistry II	14	II	2012-13
B680 Grant writing	17	I	
B680 Grant writing	21	I	2013-14

*Team taught

†With Robert Togasaki

††With Roger Innes

§ With George Hegemen

#With John Richardson and Donald Burke

UNIVERSITY AND DEPARTMENTAL SERVICE

<u>University Committees:</u>	<u>Year</u>
Administrator, Designer Genes event, Indiana Science Olympiad	1992, 93, 94
Intercampus Undergraduate Research Review Committee	1992-93
Administrator, Designer Genes event, National Science Olympiad	1995
Ad hoc Graduate School Committee on IU/Japan Exchange Program	1996
College of Arts and Sciences Tenure Committee	1997-98
Multidisciplinary Science Building Facilities Committee	2000-01
Interdisciplinary Biochemistry Program Advisory Committee-Chair	2001
The Patten Foundation Lectures Committee	2000-2002
Human Biology Curriculum committee	2003-2004
INGEN executive committee	2002-2005
Biotechnology curriculum committee	2002-2005
Member of IU Stars Mentors Program	1997-current
IU representative board member to the Molecular Biology (synchrotron) Consortium	1997-current
Committee for Life Sciences Oversight	2001-03
Multidisciplinary Science Building Architectural Committee (Chair)	2001-2006
Simon Hall Space Committee Chair	2006-current
Life Science Building III task force	2006-07
NRC Survey Advisory Group –Graduate School accreditation	2006

College of Arts and Sciences Strategic Planning Committee 2008-2009
Natural Sciences Division COAS Advisory Committee 2012-

<u>Departmental Committees (Biology):</u>	<u>Year</u>
Sonneborn lecture committee	1988-1993
Cell Biology Search committee (Bender & Saxton)	1989-90
Microbiology Admissions committee	1989-91
L490 Undergraduate HHMI Awards committee	1989-1993
Microbiology Prelim Exam Committee	1990
Plant Sci Prelim Exam Committee	1990
Space Committee	1990-94
Microbiology Prelim Exam Committee	1991
MBB Admissions Committee	1991
MCDB and Genetics Prelim Exam Committee	1991
Microbiology Steering Committee	1991-92
Plant Sciences Search Committee	1991-92
MCDB Seminar Committee	1991-93
Plant Sci Prelim Exam Committee	1992
Microbiology Lecturer Search Committee	1992
Microbiology Search Committee (Kao, Brun)	1992-93
Microbiology Graduate Admissions Committee	1992-93
Microbiology Prelim Exam Committee	1993
MCDB and Genetics Prelim Exam Committee	1993
Myers Hall Occupancy Steering Committee	1993
Biochemistry Program Search Committee	1993-94
Committee of Graduate Program Directors	1993-94
MCDB/Genetics/Microbiology Graduate Admissions Committee	1993-98
Microbiology Graduate Program Director	1993-98
Microbiology Graduate Student Advisor	1993-98
MCDB, Genetics and Microbiology Preliminary Exam Committee	1994
Joint MBB/Biochemistry Program Search Committee	1994-95
MBB/GCDB Curriculum Committee	1994-95
Bender Tenure committee	1994-95
Yves Brun Junior Faculty Evaluation Committee	1994-98
Training Grant Executive Committee	1994-98
Biology Department Chairmanship Search Committee	1995
MCDB, Genetics and Microbiology Preliminary Exam Committee	1995
Mentor for the Minority Achievers in Science Program	1995
Roger Innes Junior Faculty Evaluation Committee	1995-96
Salary Committee	1995-96
Graduate Student Recruiting Committee	1995-98
MBB/GCDB Seminar Committee	1995-98
Foreign Graduate Student Interviewer, Beijing China	1996
Roger Innes Tenure Committee	1996
Biotechnology Undergraduate Curriculum Committee	1996
Molecular Biology and Biochemistry Faculty Search Committee-Chair (Drummond)	1996-97
Graduate Affairs Committee	1996-97
Molecular Biology and Biochemistry Program Director	1996-98
Institute for Molecular and Cellular Biology Facilities Committee	1996-98
Biology Department Executive Committee	1996-98
Ad hoc committee for the "Class of 54" Endowment nominee	1997
Foreign Graduate Student Interviewer, Beijing China	1997

Long Range Planning Committee	1997-98
Molecular Biology and Biochemistry Faculty Search Committee-Chair (Kehoe, Fuqua, Foster, Williams)	1997-98
Yves Brun Tenure Committee-Chair	1998
Structural Biologist Search Committee	1998-99
Microbiology Seminar Coordinator	1994-00
Structural Biologist Search Committee	1999-00
Departmental Executive Committee	1999-2001
Molecular Biology and Biochemistry Program Director	1999-2001
Microbiology Graduate Program Director	1999-2001
Microbiology Graduate Student Advisor	1999-2001
Institute for Molecular and Cellular Biology Facilities Committee	1999-2001
Chen Kao promotion committee	2001
Biology Department Salary Committee	2001
Prelim Examination Committees (B. Ramsey, R. Alvey)	2001
Yves Brun promotion committee chair	2002
Prelim Examination Committees (Lina Li, Thomas Danhorn)	2002
Biotechnology Curriculum Committee	2002-2004
Kelly Williams Tenure and Promotion Committee	2003-2004
MCDB Graduate recruitment Committee	2003-2004
David Kehoe Junior Faculty Evaluation Committee-Chair	1999-2004
David Kehoe Tenure Evaluation and Promotion Committee	2005
Clay Fuqua Tenure Evaluation and Promotion Committee	2005
Training Grant Executive Committee	1999-2004
MBB/GCDB Seminar Committee	1999-2004
	2005-2007
Lingling Chen Junior Faculty Evaluation Committee-Chair	2001-2004
	2005-2007
Jim Holland Fellowship Committee	1999-2004
Microbiology Undergraduate Curriculum Committee	2000-2004
	2005-2007
Myers Hall Space committee	2001-2004
	2005-2007
Joel Ybe Junior Faculty Evaluation Committee	2002-2004
	2005-2007
Richard Hardy Junior Faculty Evaluation Committee	2002-2004
	2005-2007
Tuli Mukhopadhyay Junior Faculty Evaluation Committee-	2005-2012
Lingling Chen Tenure Evaluation Committee-Chair	2007
Richard Hardy Tenure Evaluation Committee	2007
Joel Ybe Tenure Evaluation Committee	2007

Biochemistry Committees:

Biochemistry Executive Committee-Chair	2001-2004
	2005-current
Biochemistry Admissions Committee	2001-2004
	2005-current
Director, Interdisciplinary Biochemistry Graduate Program	2001-2004
	2005-2010
Biochemistry Graduate Advisor	2001-2004
	2005-2007
Biochemistry Search Committee Chair	2001-2004

Biochemistry Graduate Recruiting Committee

2005-current

2001-2004

Biochemistry Graduate Curriculum Committee

2005-current

2001-2004

2005-current

INVITED MEETING TALKS

- 1983 Invited Speaker, Arlie Recombination Meeting. Arlie House, Arlie, VA
- 1984 Invited Speaker, XLIX Cold Spring Harbor Symposium on Quantitative Biology
- 1985 Seminar, American Society of Biological Chemists Annual Meeting
- 1988 Seminar, E. I. DuPont de Nemours & Co., Wilmington, DE
Seminar, Purdue U/IU Biotechnology & Agri. Genetics Symposium
- 1989 Invited Speaker, Annual Meeting, American Society of Microbiology
Seminar, 15th Annual Midwest Photosynthesis Conference, French Lick, IN
- 1990 Invited Speaker, Eastern regional photosynthesis conference, Woods Hole, MA
Symposia Speaker, Molecular Genetics of Bacteria and Phage, Cold Spring Harbor Laboratory
- 1991 Invited Speaker, session keynote speaker, VII international symposium on photosynthetic prokaryotes, Amherst, MA
Invited Speaker, Annual meeting of the American Society for photobiology, San Antonio, TX
Speaker, Annual Meeting for the American Society of Microbiology, Dallas, TX
Invited speaker, Pyrroles of Photosynthetic Organisms, Davis, CA
- 1992 Invited Speaker, 11th International Congress on Photobiology, Kyoto, Japan.
Invited Speaker, IX International Congress on Photosynthesis, Nagoya, Japan
- 1993 Speaker, Annual Meeting for the American Society of Microbiology, Atlanta, GA
Invited Speaker, Gordon Conference, Biochemical Aspects of Photosynthesis, New Hampshire
Speaker, Deer Creek Photosynthetic Bacteria Meeting
Speaker, West Coast Bacterial Physiologists Asilomar Conference, Asilomar Conference Center, Pacific Grove, CA.
- 1994 ASP New Investigator Award Speaker, Annual Meeting for the American Society for Photobiology, Scottsdale Arizona
Plenary Speaker, VII International Symposium on Photosynthetic Prokaryotes. Urbino, Italy
- 1995 Speaker, Bacterial Locomotion and Signal Transduction, Austin, Texas
Conference attended: Oxygen Control of Gene Expression. Park City, Utah
Invited Speaker, Tetrapyrrole Photoreceptors, Freising, Germany
Guest Instructor, Woods Hole Marine Biological Laboratory Course on Microbial Diversity
Lecturer, Woods Hole Marine Biological Laboratory Course on Microbial Diversity, Woods Hole, MA
Invited Speaker, X International Congress on Photosynthesis, Montpellier, France
Speaker, Midwest Consortium for Plant Biotechnology
- 1996 Invited Speaker, Genome Structure and Function of Photosynthetic Organisms, Makuhari, Japan

- Seminar, Harvard Medical School, Department of Microbiology and Molecular Genetics
 Invited Speaker; Annual Meeting for the American Society for Photobiology, Scottsdale Arizona
 Invited Speaker, Gordon Conference on Tetrapyrroles, New Hampshire
 Guest Instructor, Woods Hole Marine Biological Laboratory Course on Microbial Diversity
 Lecturer, Woods Hole Marine Biological Laboratory Course on Microbial Diversity, Woods Hole, MA
 Invited Speaker, Joint Japan-USA Workshop on "Advances in the Molecular Biology of Photosynthesis," Grand Canyon National Park
- 1997 Speaker, Bacterial Locomotion and Signal Transduction Meeting, Cuernavaca, Mexico (Presented by Zeyu Jiang)
 Invited Speaker, Tetrapyrrole Photoreceptors in Photosynthetic Organisms. Blarney Ireland
 Invited Plenary Speaker, 9th International Symposium on Photosynthetic Prokaryotes, Vienna, Austria.
 Invited speaker, European Science Foundation Workshop on Green and Heliobacteria. Urbano Italy
- 1998 Speaker, Gordon Conference on Signal Transduction in Microorganisms, Ventura, CA
 Invited Speaker, Annual Meeting for the American Society of Microbiology, Atlanta, GA
 Invited Plenary Speaker, Echem Conference on Protein Phosphorylation in Photosynthesis. Sjudarhöjden, Sweden
 Invited Speaker, Gordon Conference on Microbial Stress Response. (Declined Invitation)
 Invited Plenary Speaker, XIth International Congress on Photosynthesis, Budapest Hungary
 Invited Speaker, American Society for Photobiology Annual Meeting
 Student Invited Speaker for The Symposium, "Interactions of Proteins with their targets" honoring graduating Biology students at Rhur-Universität Bochum, Bochum Germany
 Invited Speaker, Midwest Prokaryotes Meeting, Urbana, Illinois
 Invited Speaker, US-Japan binational workshop on "The Effects of Environmental Conditions on CO₂ Fixation and the Photosynthetic Apparatus." Asilomar Conference Center, Pacific Grove, CA
- 1999 Invited Speaker, European Symposium on Photomorphogenesis, Freie Universität, Berlin, Germany
 Invited Speaker, International Symposium on "Photosynthesis: a Landmark in the History of Life." Sevilla, Spain
 Invited Speaker, XVI International Botanical Congress, Saint Louis, Missouri
 Invited Speaker, IVth Workshop on Green & Heliobacteria, Girona, Spain
- 2000 Invited Speaker, Gordon Research Conference on "Signal Transduction in Microorganisms." Ventura, California
 Invited Speaker, The First Annual Astrobiology Science Conference. NASA's Ames Research Center, Mountain View, California (presented by Jin Xiong)
 Invited Speaker, 2000 Eastern Regional Photosynthesis Conference. Marine Biological Laboratory, Woods Hole, MA
 Invited Speaker, Gordon Research Conference on Photosensory Receptors & Signal

- Transduction, Ciocco, Italy
 Invited Plenary Speaker, Plant Physiology Meeting, San Diego, CA
 Invited Speaker, Gordon Research Conference on Nitrogenase and Nitrogen Fixation. New Hampshire (Presented by Yuichi Fujita).
 Invited Plenary Speaker, 10th International Symposium of Photosynthetic Prokaryotes. Barcelona, Spain
 Invited Speaker, 5th International Porphyrin-Heme Symposium. Sendai, Japan
 Invited Speaker, Royal Netherlands Academy of Arts and Sciences meeting on "Photoreceptor proteins: Structure, Photochemistry & Dynamics." Amsterdam, The Netherlands (Declined Invitation)
- 2001 Invited Speaker, Meeting Titled: From Prokaryotes To Eukaryotic Organelles: Cellular, Biochemical And Genetical Integration. Havar, Croatia.
 Invited Speaker, Astrobiology Workshop, Arizona State University
 Invited Speaker; Genomics of Phototrophic Organisms, The Kazusa Akademia Park, Chiba Prefecture, Japan.
 Invited speaker, 13th International Congress on Nitrogen Fixation, Hamilton, Ontario Canada.
 Invited speaker, XIIth International Congress on Photosynthesis, Brisbane, Australia
 Invited speaker, Evolution of Photosynthesis Satellite Meeting, Heron Island, Australia (Declined invitation)
- 2002 Invited speaker, Jacques Monod Conference on the Evolution of bioenergetic Mechanisms, Marseille, France
 Invited speaker, The Royal Society Meeting on "Comparative functional genomics of chloroplasts, mitochondria and their bacterial homologs-new perspectives on symbiosis in cell evolution". London England
 Invited speaker, Novartis Foundation Meeting on "Molecular evolution of photosynthesis and respiration. London England".
 Invited speaker, EuroConference on "Bacterial Neural Networks" Obernai, France
 Invited speaker, Gordon Conference on "Photosensory Receptors and Signal Transduction, Ciocco Italy,
 Invited speaker, Gordon Conference on Photosynthesis (Declined invitation)
 Invited speaker "Photosynthesis And Crop Production" Kyiv, Ukraine (Declined Invitation)
 Invited speaker, Annual meeting of the Indiana Branch of the American Society of Microbiology
 Speaker at the "ASM conference on Microbial Development", Montréal, Canada (Presented by James Berleman)
 Invited speaker, "IV International Congress On Blue-light Syndrome" Okazaki, Japan (presented by Shinji Masuda)
- 2003 Invited Plenary Speaker, 11th International Symposium of Photosynthetic Prokaryotes. Tokyo, Japan
 Speaker, Bacterial Locomotion and Signal Transduction (BLAST), Cornovaka, Mexico (Presented by Lee Swem)
 Invited speaker, International symposium on thermophilic phototrophic prokaryotes, Nakabusa Hot Spring, Japan
 Invited speaker, 10th Western Regional Photosynthesis Meeting, Asilomar State Park, Pacific Grove CA.

Invited speaker, FEBS-Advanced Lecture Course on "Origin and Evolution of Mitochondria and Chloroplasts". Hvar, Croatia. (Declined invitation)
Invited speaker, International Workshop on Green and Heliobacteria, Chiba, Japan
Invited speaker, Tetrapyrrole photoreceptors in photosynthetic organisms" Passau, Germany (Declined Invitation)
Invited speaker, Photobiology Meeting, Marburg, Germany (Declined Invitation)

2004
Invited speaker, Gordon Conference on "Photosensory Receptors and Signal Transduction", Ventura California
Invited speaker, Sixth International Biocomplexity Workshop, Indiana University Bloomington, IN
Invited speaker, 14th International Congress on Photobiology, Jungmun, Jeju(Cheju), Korea
Speaker, Gordon Conference on "Tetrapyrroles", New Hampshire (presented by James Smart)
Invited speaker, Gordon Conference on "Microbial Stress", Mount Holyoke College
Invited speaker, Retinal and Other Photosensory Photoreceptors, München, Germany
Invited speaker, 56th Yamada Conference on "Light sensing and signal transduction in plant photomorphogenesis. Okazaki, Japan (Declined Invitation)
Invited Plenary Speaker, 13th International Congress on photosynthesis, Montreal Canada
Invited speaker, Gordon Conference on "Nitrogenase and nitrogen fixation" (declined invitation).
Invited speaker, Midwest Prokaryotic Meeting, University of Illinois- Champaign.
Invited speaker, International Satellite Meeting in honor of Professor Norio Murata "PHOTOSYNTHESIS and POST-GENOMIC ERA: From Biophysics to Molecular Biology, a Path in the Research of Photosystem II" . Québec, Canada, (declined invitation).

2005
Invited Plenary speaker, 6th International Conference on Tetrapyrrole Photoreceptors in Photosynthetic Organisms; Lucerne, Switzerland
Invited speaker, Annual meeting of the American Society for Microbiology. Session on "Oxygen sensing".
Invited speaker, Annual meeting of the International Union of Microbiological Societies. Session on "redox sensing and response", San Francisco, California.
Speaker, Bacterial Locomotion and Signal Transduction VIII, Deerfield beach, Florida (Presented by James Berleman)
Invited Speaker, Gordon Conference on "Biochemical and Biophysical Aspects of Photosynthesis, New Hampshire (Declined invitation)
Invited speaker, FEBS meeting on "Origin and Evolution of Mitochondria and Chloroplasts" Wildbad Kreuth, Germany (Declined invitation)
Invited speaker, SFB-Symposium: 100 Years of the Endosymbiotic Theory: From Prokaryotes to Eukaryotic Organelles; University of Marburg, Germany (declined invitation)
Invited speaker, Frontiers in Photobiology Symposium at the 230th American Chemical Society National Meeting, Washington, DC (Presented by V. Dragnia)

- 2006 Invited Speaker, Conference on the Evolution of Aquatic Photoautotrophs. Rutgers University. (declined invitation)
Invited Speaker, 12th Western Regional Photosynthesis Meeting, Asilomar State Park, Pacific Grove CA. (declined invitation)
Invited speaker, 12th International Conference on Retinal Protein. Awaji Island, Japan (declined invitation)
Invited speaker, 14th European Bioenergetic Conference, Moscow, Russia (declined invitation)
Invited speaker, Tribute symposium to Dr. Ken-ichiro Takamiya; Tokyo Institute of Technology, Yokohama Japan (declined invitation)
Invited speaker, Gordon Conference on “Photosensory Receptors and Signal Transduction, Ciocco Italy, (presented by Vladimira Dragnia)
- 2007 Invited speaker, NASA Astrobiology Conference. San Juan, Puerto Rico. (presented by Marina Resends de Sousa Antonio)
Speaker, Bacterial Locomotion and Signal Transduction IX, Laughlin, Nevada (Presented by Jeremiah Mardin)
Speaker 2^o International Workshop. Exploring Mars and its Earth Analogues. Universita’ di Trento, Italy. . (presented by Marina Resends de Sousa Antonio)
Speaker, II International Conference Biosphere Origin and Evolution Loutraki (Greece) . (presented by Marina Resends de Sousa Antonio).
Invited speaker, 7th International Conference on Tetrapyrrole Photoreceptor in Photosynthetic Organisms (7th ICTPPO) Kyoto, Japan
- 2008 Speaker, Gordon Conference on “Origin of Life” (presented by Marina Resends de Sousa Antonio).
Invited speaker and session chairman, Gordon Conference on “Photosensory Receptors and Signal Transduction, Ventura, CA
Invited speaker, Gordon Conference on Tetrapyrroles, Newport, Rhode Island,
Invited speaker, College & University Science Facilities Tradeline conference. San Diego, CA
Invited Speaker, , Gordon Conference on “Photosensory Receptors and Signal Transduction, Ciocco Italy, (presented by Vladimira Dragnia)
- 2009 Plenary speaker, International Society of Photosynthetic Prokaryotes
Invited Speaker, 3rd International Peptide conference, Beijing China (declined invitation).
- 2010 Invited Speaker, Gordon Conference on “Photosensory Receptors and Signal Transduction, Ciocco Italy
Invited Speaker, International Photosynthesis Congress, Beijing, China
Invited Speaker, Third International Peptide Congress, Beijing, China (Declined invitation).
Invited Speaker, Bacterial Locomotion and Signal Transduction (declined invitation)

- 2011 Invited Speaker, 55th Wind River Conference on Prokaryotic Biology, Rocky Mountain National Park, Colorado
 Invited Keynote Speaker, Conference on Prokaryotic Biology; Department of Microbiology, University of Illinois-Urbana
 Invited Speaker, International Conference on Tetrapyrrole Photoreceptors from Photosynthetic Organisms. Berlin, Germany
- 2012 Invited speaker, Royal Society Meeting: Energy transduction and genome function - an evolutionary synthesis; London, England
 Invited Speaker. Symposium on secondary messenger signaling. 2012 American Society for Microbiology General Meeting. San Francisco.
 Invited Speaker, Sensory Transduction in Microorganisms. Gordon Research Conference. Ventura CA (presented by Kung He)
 Invited Speaker, Symposium on the Origin and Evolution of Photosynthesis, NASA Astrobiology Science Conference (declined invitation).
 Speaker, Gordon Conference on Chemistry and Biology of Tetrapyrroles Newport, RI.
 Speaker, Prokaryotic Cell Biology and Development, Montreal, Canada
- 2013 Invited speaker, International Conference on Tetrapyrrole Photoreceptors from Photosynthetic Organisms. Wuhan, China**
Speaker, Molecular Genetics of Bacteria and Phage, Madison WI (presented by Kung Hu)
- 2014 Invited speaker, Gordon Conference on "Photosensory Receptors and Signal Transduction, Ciocco Italy**

INVITED SEMINARS

- 1985 Invited Speaker, *E. coli* molecular biology journal club, University of Wisconsin
 Co-director of a workshop on "Site-directed mutagenesis," Biochemistry Department, University of Wisconsin, Madison, October
- 1987 Seminar, Northwestern University Medical School, Chicago, IL
 Seminar, University of Illinois College of Medicine at Chicago, IL
 Seminar, Indiana University, Bloomington
 Seminar, University of Tennessee, Knoxville, TN
 Seminar, University of Illinois at Urbana-Champaign, Biochemistry Dept.
 Seminar, University of Iowa, Iowa City, IA
 Seminar, Symposium on Molecular Biology of Photosynthetic Prokaryotes, University of Wisconsin, Madison
 Invited Speaker, EMBO workshop on promiscuous plasmids of gram negative bacteria, University of Birmingham, Birmingham, England

- 1988 Seminar, Indiana University, Biology Department
Seminar, University of Louisville, Biochemistry Department
- 1989 Seminar, University of Illinois at Urbana-Champaign, Microbiology Department
- 1991 Seminar, Indiana University, Department of Biology
Seminar, Ohio State University, Microbiology Department
Seminar, University of Illinois at Urbana-Champaign, Biochemistry Dept.
Seminar, Simon Fraser University, Biochemistry Department, Burnaby, B.C.,
Canada
Seminar, University of British Columbia, Microbiology Dept., Vancouver, B.C.,
Canada
Seminar, Purdue University, Biology Department
- 1992 Seminar, Arizona State University, Chemistry Dept., Tempe, AZ
Seminar, the University of North Carolina at Chapel Hill, Biochemistry Dept.
- 1993 Seminar, Biology Department, University of Pennsylvania, Philadelphia, PA.
Invited Speaker, Midwest Prokaryotic Molecular Genetics and Physiology Club.
University of Illinois at Urbana-Champaign,
Seminar, Indiana University, Department of Biology
- 1994 Seminar, University of Cincinnati, Department of Biology
- 1995 Seminar, Southern Illinois University, Department of Biochemistry
- 1996 Seminar, University of Lund, Department of Plant Biology, Lund Sweden
Seminar, Umeå University, Department of Plant Physiology, Umeå Sweden
Invited Speaker, Department of Physiology, Carlsberg Laboratory, Copenhagen
Denmark (Declined Invitation)
Seminar speaker, Fifteenth Annual Distinguished Speakers in Biochemistry and
Molecular Biology, University of Wisconsin-Milwaukee
Seminar, University of Wisconsin, Bacteriology Department, University of
Wisconsin-Madison
Seminar, Plant Physiology Department, Beijing Agricultural University, Beijing,
China
Seminar, University of Pennsylvania, Department of Biology
Seminar, University of Georgia, Department of Microbiology
Seminar, Department of Biology, Indiana University
Seminar, Diversity, Genetics and Physiology of Photosynthetic Prokaryotes
conference. Bloomington, Indiana
Seminar, Arizona State University, Department of Botany
- 1997 Graduate Student Invited Seminar Speaker, Michigan State University, Department
of Microbiology
Distinguished Visiting Professor Seminar, The Department of Microbiology,
University of Iowa.
Invited Seminar, Department of Microbiology, University of Amsterdam, The
Netherlands (Declined Invitation)
Seminar, Department of Microbiology, The Ohio State University
Seminar, Department of Microbiology, The University of Texas at Austin
- 1998 Seminar, Department of Microbiology, University of California at Los Angeles

- Seminar, Department of Biology, Washington University
Seminar, Department of Microbiology, University of California at Los Angeles
Seminar, Biology Department, Illinois Wesleyan University
Seminar, Department of Plant and Microbial Biology, University of California, Berkeley
Student Invited Distinguished Visiting Professor Seminar, Center for Microbial Ecology, Michigan State University
- 1999 Seminar, Department of Microbiology, Southern Illinois University at Carbondale
Seminar, Department of Molecular Biology & Biochemistry, Rutgers University
Seminar, Department of Natural Resources, University of Illinois at Urbana-Champaign
Seminar, Department of Microbiology, Department of Microbiology & Molecular Genetics. University of Texas Medical School-Houston, Texas
Seminar, Department of Chemistry and Biochemistry, Arizona State University, Tempe, Arizona
Seminar, Department of Biochemistry, University of Arizona, Tucson, Arizona
- 2000 Seminar, Department of Microbiology, The University of British Columbia, Vancouver, B.C., Canada
Seminar, Plant Biology Section, Carnegie Institution of Washington at Stanford. Stanford, CA
Seminar, Department of Chemistry, University of California at Los Angeles, Los Angeles, CA
Seminar, Institute for Protein Research, Osaka University, Osaka Japan
Seminar, Department of Biology, Tokyo Metropolitan University, Tokyo Japan
Seminar, Waseda University, Tokyo Japan
Seminar, Faculty of Science, Osaka University, Toyonaka city, Japan
Seminar, Department of Biological Sciences, Kanagawa University, Kanagawa, Japan
- 2001 Seminar, Department of Biochemistry, Texas Tech University, Lubbock, Texas
Seminar, Cargill Corporation, Minneapolis, MN
- 2002 Seminar and two class lectures to a “Evolution of Prokaryotic Diversity course”, Department of Microbiology, University of Washington, Seattle, Washington
- 2002 Seminar, Department of Biochemistry and Molecular Biology at Wright State University, Dayton, OH
Seminar, Department of Biochemistry, University of Arizona, Tucson, Arizona
Seminar, Department of Microbiology, Ohio State University, Columbus, OH
Seminar, Department of Microbiology & Immunology University of British Columbia Vancouver, BC, Canada
Seminar, Department of Microbiology. University of Illinois-Urbana, Urbana, IL
- 2003 Graduate student invited Keynote Speaker for the student run “5th Annual Microbiology Graduate Student Symposium, “ Microbiology program, University of California-Berkeley
- 2004 Distinguished Symposium Speaker, University of North Carolina -Pembroke.

- Seminar, Department of Microbiology, University of Iowa
- 2005 Seminar, Department of Microbiology, Southern Illinois University
Seminar, Department of Microbiology, University of Illinois Chicago (declined invitation)
- 2006 Speaker invitation, Wabash College (declined invitation)
Seminar University of Indianapolis
Seminar, Department of Microbiology and Immunology, University of Illinois at Chicago
Seminar, Institute for Molecular and Cell Biology, Porto Portugal

(note; travel was limited from 2007-2010 as a result of becoming widowed and having to take care of an underage child that was at home during this period)

- 2008 Graduate student invited speaker, Microbiology Department, University of Georgia
Seminar, Department of Microbiology, University of Illinois at Urbana-Champaign
Seminar, Department of Biology, San Diego University
- 2009 Seminar, Department of Biochemistry, University of Missouri
- 2010 Seminar, University of Indianapolis
- 2011 Seminar, Department of Microbiology, Oklahoma State University
Student Invited Distinguished Alumni Speaker, Department of Microbiology, University of Illinois
- 2012 “Distinguished Lectures in Microbiology Speaker”; Department of Bacteriology at UW-Madison.
Seminar, Molecular and Cellular Biochemistry Department, Indiana University
Seminar, Imperial College of London, London England
Seminar, Biochemistry Department, Oxford University, Oxford England
- 2013 **Seminar, Department of Microbiology, Michigan State University**
Seminar, Biology Department, Indiana University
Seminar, Biology Department, University of Wyoming

MEETING ORGANIZER

- 1991 Session Chairperson, “Regulation of Gene Expression in Response to Oxygen,” Annual Meeting for the American Society of Microbiology, Dallas, TX
- 1992 Session Chairperson, Emerging Microbial Systems, Fifth ASM conference on genetics and molecular biology of industrial microorganisms, Bloomington, IN
- 1998 Session Chairperson, "Tetrapyrrole biosynthesis,” Annual Meeting for the

American Society of Microbiology, Atlanta, GA

1996 Chair, Conference Organizing Committee (with Michael Madigan, Robert Tabita, J. Tom Beatty and John Omerod), "Diversity, Genetics and Physiology of Photosynthetic Prokaryotes"

Session Chairperson, "Gene Regulation," Annual meeting of the Society for Industrial Microbiology

1997-07 Elected member, International Symposium of Photosynthetic Prokaryotes Scientific Advisory Committee

PROFESSIONAL OFFICES

1995 Ad hoc committee member of the Microbial Physiology Study Section-01, National Institutes of Health

1996 Ad hoc committee Member, Bacteriology and Mycology-1 study section, National Institutes of Health
Ad hoc Committee Member, National Institutes of Health Bacteriology and Mycology-1 study section

1997 Ad hoc committee Member, Bacteriology and Mycology-1 study section, National Institutes of Health

1997 Panel Member, Department of Energy, Division of Biosciences, Study section on photosynthesis

2003-09 Member executive committee; Indiana Branch American Society for Microbiology

CONSULTING ACTIVITIES

2001-2008 Cargill Corporation
2010-current Frontier Scientific

GRANT AND FUNDING REVIEW PANELS

Ad hoc Grant proposal reviewer for:
Department of Energy
National Science Foundation
National Institutes of Health
U.S. Dept. of Agriculture
International Human Frontier Science Program
National Environment Research Council, United Kingdom

EDITORIAL BOARDS

1994 Invited member of *FEMS* editorial board; (declined invitation)

- 1997 Invited editor *Photochemistry and Photobiology* (declined invitation)
Invited editor *Archives of Microbiology*, (declined invitation)
Guest Editor; *Photosynthesis Research*
- 2001 Invited editor *Archives of Microbiology*, (declined invitation)
Invited editor *Journal of Bacteriology*, 2001-2006 (declined invitation)
Invited member of the editorial board, *Journal of Bacteriology*, 2001-2006
(declined invitation).
Invited editor *Photosynthesis Research* (declined invitation)

Books edited:

Co-Editor (with Robert Blankenship and Michael Madigan), *The Anoxygenic Photosynthetic Bacteria*, Kluwer Academic Press, 1995.

MANUSCRIPT REVIEWER

Ad hoc reviewer for manuscripts submitted to:

Analytical Biochemistry
Archives of Microbiology
Biochemistry Journal
Biochimica, Biophysica Acta
BBRC
Cell
European Journal of Biochemistry
FEMS
Gene
Gene Expression
Journal of Bacteriology
Journal of Biological Chemistry
Molecular Microbiology
Nature
Photosynthesis Research
Physiologia Plantarum
Plant Molecular Biology
Plant Physiology
Plasmid
Proc. Natl. Acad. Sci.
Science
The Plant Cell

Books reviewed:

Bacterial Molecular Genetics, by Larry Snyder and Wendy Champness, ASM Press

OTHER PROFESSIONAL ACTIVITIES

- 1993 Invited external Ph. D. committee member for a graduate student (Safique Fidai) in the Biochemistry Department, Simon Fraser University, Burnaby, B.C.,

Canada

- 1996 Nominated to submit a proposal to the "Howard Hughes Medical Institute Investigatorship"
- 1999 Wrote outside letter of promotion for a candidate for Full professorship
- 2000 Wrote outside letter of promotion for a candidate for Full professorship
Wrote outside letter for a candidate for promotion to Associate Professor with tenure
- 2001 Wrote outside letter of promotion for a candidate for Full professorship
- 2002 Wrote outside letter for promotion for a candidate to Associate Professor with tenure
Wrote outside letter for promotion for a candidate to Full Professor
Wrote outside letter for a candidate for a Dean position
- 2003 Wrote outside letter for promotion for a candidate to Associate Professor with tenure
Wrote outside letter for a candidate for a Department Chair position
- 2004 Wrote outside letter for promotion for a candidate to Associate Professor with tenure
- 2005 Wrote outside letter for promotion for a candidate to Associate Professor with tenure
- 2006 Wrote outside letter for promotion for a candidate to Associate Professor with tenure
- 2007 Wrote outside letter for promotion for a candidate to Associate Professor with tenure
- 2008 Member of an external team to review the Department of Microbiology at The Ohio State University
- 2009 Wrote two outside letters for promotion for candidates to Associate Professor with tenure
- 2010 Wrote two outside letters for promotion for candidates to Associate Professor with tenure
- 2011 Wrote outside letter for promotion of candidates to Full Professor
- 2012 Wrote outside letter for promotion for candidates to Associate Professor with tenure
- 2013 Wrote outside letter for promotion for candidate to Associate Professor with tenure

PROFESSIONAL SOCIETIES

American Assn. for the Adv. of Science
American Society for Microbiology
American Society for Biochem. and Mol. Biol.
Int. Society for Plant Mol. Biol.
American Society for Photobiology