THOMAS KEITH WOOD

Biotechnology Endowed Chair and Professor
Department of Chemical Engineering & Huck Institute for the Life Sciences
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Education

Doctor of Philosophy in Chemical Engineering (March 1991, North Carolina State University)

Thesis: Analysis of Cloned-Gene Expression in *E. coli* (with Dr. Steven Peretti and Dr. David Ollis)

Bachelor of Science with High Honors in Chemical Engineering (May 1985, University of Kentucky)

Valedictorian College of Engineering, emphasis on math, pollution control, and independent research (GPA 4.0/4.0)

High School Diploma in the Advanced Program (May 1981, Waggener High School, Louisville, KY)

Valedictorian, Honors Program (GPA 4.0/4.0)

Professional Experience

Pennsylvania State University (2011 – present). Department of Chemical Engineering Biotechnology Endowed Chair and Department of Biochemistry and Molecular Biology Professor (2011-2018).

Texas A & M University (2005 - 2011). Department of Chemical Engineering, T. Michael O'Connor II Endowed Chair and Professor. Joint appointments in Biology, the Zachry Department of Civil Engineering (2005), and Toxicology (2008).

University of Connecticut, (1998 - 2005). Department of Chemical Engineering, Northeast Utilities Endowed Chair in Environmental Engineering Education (2004), Full Professor (2003), Associate Professor (1998). Joint appointment in Molecular and Cellular Biology (2000).

University of California, Irvine, (1991-1998). Department of Chemical & Biochemical Engineering, Assistant Professor (1991), earned rank of Associate Professor (tenure) with 2-yr acceleration toward Full Professor (1997).

Becton Dickinson and Company, Research Triangle Park, NC (1991). Corporate research center.

Rohm and Haas Company, Bristol, PA (1985-1986). Corporate center for engineering.

Exxon Company, USA, Baton Rouge, LA (Summer 1984). Petroleum refinery projects.

Westinghouse Hanford Company, Richland, WA (Summer 1983). Uranium recovery project.

Research Pursuits

Include determining the genetic basis of biofilm formation and antibiotic tolerance (emphasis on determining the role of toxin/antitoxin systems in cellular metabolism and persistence); using directed evolution for energy production, green chemistry, antibody design, and bioremediation; harnessing protective, genetically-engineered biofilms to reduce the biocorrosion of metals; and metabolically-engineering microorganisms for degrading chlorinated aliphatics and various biotechnology applications including conversion of methane to biofuels.

Honors

Fellow in the American Institute for Medical and Biological Engineering (2013)
Editor, *Environmental Microbiology* (2015 to present)
Editor, *Applied & Environmental Microbiology* (2012 to 2014)
Pennsylvania State University Biotechnology Endowed Chair & Medal (2012-present)
American Chemical Society Upstream Symposium Keynote Address (2008)
American Institute of Chemical Engineers Biochemical Engineering Plenary Award (Area 15C, 2007)
Founding Editorial Board, *Microbial Biotechnology* (2007) and published the first two papers of this journal
Texas A & M University T. Michael O'Connor II Endowed Chair (2005-2012)
University of Connecticut Campus-Wide AAUP Research Excellence Award (2005)

University of Connecticut Northeast Utilities Endowed Chair & Medal in Environmental Engineering Education (2004-2005)
AAAS Science Update Radio broadcast on engineered biofilms (2000)
University of Connecticut School of Engineering Outstanding Junior Faculty Award (2000)
University of Connecticut Rogers Outstanding Teaching Award in Chemical Engineering (2000)
Discover Magazine Award for Technical Innovation (1999 semi-finalist)
E. I. du Pont de Nemours and Company Unrestricted Educational Aid Grant (1998)
American Society for Microbiology News Journal Highlights (March 1998 rhizoremediation AEM manuscript)
University of CA, Irvine 2-year acceleration toward full professor (1997)
University of CA, Irvine Chair of the Undergraduate Scholarships, Honors, and Financial Aid Committee (1996-97)
University of CA, Irvine Campuswide Faculty Career Development Award (1996)
University of CA, Irvine Department of Chemical & Biochemical Engineering Outstanding Professor Award (1996)
University of CA, Irvine School of Engineering Outstanding Assistant Professor Award (1994)
U.S. Army Research Office Young Investigator Award (1992)
National Science Foundation Research Initiation Award (1992)
UCI Faculty Research Fellowship (1992)
North Carolina State University Dean's Distinguished Graduate Fellowship
Southeastern Regional Ph.D. Fellowship in Chemical Engineering
Valedictorian University of Kentucky College of Engineering (held banner at graduation,1985)
University of Kentucky College of Engineering Outstanding Student Award
University of Kentucky Campuswide Oswald Research and Creativity Award (second place)
American Institute of Chemical Engineering Environmental Division Student Paper Award (second place)
Treasurer and Member of Tau Beta Pi, Engineering Honorary
University of Kentucky E. F. White Memorial Engineering Merit Scholarship
Member Omega Chi Epsilon Chemical Engineering Honorary
American Institute of Chemical Engineering Scholar Award
Virginia Tech Marshall Hahn Engineering Merit Scholarship
Valedictorian Waggener High School (honors program, won the leadership, physics, mathematics, & science awards, 1981)
Rensselaer Polytechnic Institute Medal for Excellence in Mathematics and Science (1980)
Sewanee University of the South Award for Excellence (1980)
The Union League of Philadelphia Boys Award for Good Citizenship (1978)

Editor Positions, Editorial Boards, Major Advisory Boards, & Societies

Editor *Environmental Microbiology*, 2015-present (~200 manuscripts/yr)
Editor *Environmental Microbiology Reports*, 2015-present
Editor, *Applied & Environmental Microbiology*, 2012 to 2014
Inaugural Editorial Board of *Microbial Biotechnology*, 2007-present
Editorial Board of *Biofilm*, 2019-present
Editorial Board of *Biotechnology & Bioengineering*, 2015-present
Editorial Board of *Toxins*, 2016-2019
Editorial Board of *PLoS ONE*, 2010
Editorial Board of *Applied & Environmental Microbiology*, 2002-2012
Editorial Board of *Journal of Science, Technology, and Humanities*, 2008-2012
Member American Institute for Medical and Biological Engineering (AIMBE)
Member American Society for Microbiology (ASM)
Member Society for Applied Microbiology (SfAM)
University of Kentucky Undergraduate Advisory Board member, 2001-2004
Extramural Review Committee, North Carolina Biotechnology Center, 1997-1999

Peer-Reviewed Journal Articles

(323 to date including 28 prestige publications; H index of 93 and over 26,800 citations at ~3,000 citations/yr)

Persistence and Toxin/Antitoxin Systems Including MqsR/MqsA and Hha/TomB

323. "*Escherichia coli* Cryptic Prophages Sense Nutrients to Influence Persister Cell Resuscitation," S. Song, J.-S. Kim, R. Yamasaki, S. Oh, M. J. Benedik, and T. K. Wood," *Environ. Microbiol.* on-line (2021).
322."*Vibrio splendidus* persister cells induced by host coelomic fluids show a similar phenotype to antibiotic-induced counterparts," Y. Li, T. K. Wood, W. Zhang, C. Lia, *Environ. Microbiol*. **23**: 5605–5620 (2021).
319. "The Secret Lives of Single Cells," T. Wood, *Microb Biotechnol* on-line (2021).

318. "Viable But Non-Culturable Cells are Dead," S. Song and T. K. Wood, *Environ Micro* **23:** 2335-2338 (2021).
316. "Persister Cells Form in the Plant Pathogen *Xanthomonas citri* subsp. citri Under Different Stress Conditions," P. M. M. Martins, T. K. Wood* and A. A. de Souza*, *Microorganisms* **9**: 384 (2021).
314. "Conjugative Plasmid-Encoded Toxin-Antitoxin System PrpT/PrpA Directly Controls Plasmid Copy Number," S. Ni, B. Li, K. Tang, J. Yao, T. K. Wood, P. Wang, and X. Wang, *PNAS U.S.A.* **118**: e2011577118 (2021).
313. "Type VII Toxin/Antitoxin Classification System for Antitoxins that Enzymatically Neutralize Toxins," X. Wang, J. Yao, Y.-C. Sun, T. K. Wood, *Trends in Microbiology* **29:**388-393 (2020).
312. "Novel polyadenylylation-dependent neutralization mechanism of the HEPN/MNT toxin/antitoxin system," J. Yao, X. Zhen, K. Tang, T. Liu, X. Xu, Z. Chen, Y. Guo, X. Liu, T. K. Wood, S. Ouyang, and X. Wang, *Nucleic Acids Research* **48**:11,054-11,067 (2020).
311. "Mechanisms of Tolerance and Resistance to Chlorhexidine in Clinical Strains of Klebsiella pneumoniae Producers of Carbapenemase: Role of New Type II Toxin-Antitoxin System, PemIK," I. Bleriot, L. Blasco, M. Delgado-Valverde, A. Gual de Torella, A. Ambroa, L. Fernandez-Garcia, M. Lopez, J. Oteo-Iglesias, T. K. Wood, A. Pascual, G. Bou, F. Fernandez-Cuenca, and M. Tomas, *Toxins* **12**: 566 (2020).
310. "A Primary Physiological Role of Toxin/Antitoxin Systems Is Phage Inhibition," S. Song and T. K. Wood, *Front. Microbiol*. **11**: 1895 (2020).
309. "Copper Kills Escherichia coli Persister Cells," P. M. M. Martins, T. Gong, A. A. de Souza, and T. K. Wood, *Antibiotics* **9**: 506 (2020).
308. "(p)ppGpp and its role in bacterial persistence: New challenges," O. Pacios, L. Blasco, I. Bleriot, L. Fernandez-Garcia, A. Ambroa, M. López, G. Bou, R. Cantón, R. Garcia-Contreras, T. K. Wood, and M. Tomás, *Antimicrob. Agents Chemother*., **64**:e01283-20 (2020).
307. "Combatting Persister Cells with Substituted Indoles," S. Song and T. K. Wood, *Frontiers Microbiology* **11**: 1565 (2020).
306. "Are We Really Studying Persister Cells?," S. Song and T. K. Wood, *Environmental Microbiology Reports* **13**: 3–7 (2021).
305. "Toxin/Antitoxin System Paradigms: Toxins Bound to Antitoxins Are Not Likely Activated by Preferential Antitoxin Degradation," S. Song and T. K. Wood, *Advanced Biosystems* 1900290 (2020).
304. "ppGpp ribosome dimerization model for bacterial persister formation and resuscitation," S. Song and T. K. Wood, *Biochem. Biophys. Res. Commun*. 523: 281-286 (2020).
303. "Forming and Waking Dormant Cells: The ppGpp Ribosome Dimerization Persister Model," S. Song, and T. K. Wood, *Biofilm* **2**:100018 (2020).
302. "Persister Cells Resuscitate Using Membrane Sensors that Activate Chemotaxis, Lower cAMP Levels, and Revive Ribosomes," R. Yamasaki, S. Song, M. J. Benedik, T. K. Wood, *iScience* **23**:100792 (2020).
301. "Deciphering the Antitoxin-Regulated Bacterial Stress Response via Single-Cell Analysis," L. Wu, M. Zhang, Y. Song, M. Deng, S. He, L. Su, Y. Chen, T. K. Wood, and X. Yan, *ACS Chem. Biol*. **14**:2859-2866 (2019).
300. "Persister Cells Resuscitate via Ribosome Modification by 23S rRNA Pseudouridine Synthase RluD," S. Song and T. K. Wood, *Environ. Microbiol*. **22**: 850-857 (2020). (Highlighted by This Week in Microbiology episode #209)
298. "Interkingdom Signal Indole Inhibits *Pseudomonas aeruginosa* Persister Cell Waking," W. Zhang, R. Yamasaki, S. Song, and T. K. Wood, *J. Appl. Microbiol.* **127**: 1768--1775 (2019).
297. "Toxins of Toxin/Antitoxin Systems are Inactivated Primarily Through Promoter Mutations," L. Fernandez-Garcia, J.-S. Kim, M. Tomas, and T. K. Wood, *J. Appl. Microbiol*. **127**: 1859-1868 (2019). Editors' Choice
295. "Identification of a potent indigoid persister antimicrobial by screening dormant cells," S. Song, T. Gong, R. Yamasaki, J-S Kim, and T. K. Wood, *Biotechnology Bioengineering* **116**:2263–2274 (2019). Editors' Choice
290. "Ribosome Dependence of Persister Cell Formation and Resuscitation," T. K. Wood, S. Song, and R. Yamasaki, *J. Microbiol*. **57**: 213-219 (2019).
289. "Resistance to oxidative stress by inner membrane protein ElaB is regulated by OxyR and RpoS," Y. Guo, Y. Li, W. Zhan, T. K. Wood, and X. Wang, *Microbiol. Biotechnol*. **12**: 392–404 (2019).
285. "Mechanisms of Bacterial Tolerance and Persistence in the Gastrointestinal and Respiratory Environments," R. Trastoy, T. Manso, L. Fernández-García, L. Blasco, A. Ambroa, M. L. Pérez del Molino, G. Bou, R. García-Contreras, T. K. Wood, and M. Tomás, Clinical Microbiology Reviews **31**: e00023-18 (2018).
282. "Post-segregational Killing and Phage Inhibition Are Not Mediated by Cell Death Through Toxin/Antitoxin Systems," S. Song and T. K. Wood, *Frontiers Microbiol.* **9:**814 (2018).
281. "Single Cell Observations Show Persister Cells Wake Based on Ribosome Content," J.-S. Kim, R. Yamasaki, S. Song, W. Zhang, and T. K. Wood, *Environment. Microbiol*. **20:** 2085-2098 (2018).
279. "Viable But Non-Culturable and Persistence Describe the Same Bacterial Stress State," J.-S. Kim, N. Chowdhury, R. Yamasaki, and T. K. Wood, *Environment. Microbio*l. **20**: 2038–2048 (2018). (Faculty of 1000 Biology)
278. "GhoT of the GhoT/GhoS toxin/antitoxin system damages lipid membranes by forming transient pores," J.-S. Kim, A. B. Schantz, S. Song, M. Kumar, and T. K. Wood, *Biochem. Biophysical Research Commun*. **497:**467-472 (2018).
271. "Strategies for combating persister cell and biofilm infections," T. K. Wood, Microbial Biotechnology **10**:1054-1056 (2017).

269. “Viable Bacteria Persist on Antibiotic Spacers Following Two-Stage Revision for Periprosthetic Joint Infection,” D. Ma, R. M. Q. Shanks, C. M. Davis, D. W. Craft, T. K. Wood, B. R. Hamlin, and K. L. Urish, Journal of Orthopaedic Research **36**:452-458 (2018).
267. “Tolerant, Growing Cells from Nutrient Shifts Are Not Persister Cells,” J.-S. Kim and T. K. Wood, mBio 8:e00354-17 (2017).
264. “Tail-Anchored Inner Membrane Protein ElaB Increases Resistance to Stress While Reducing Persistence in Escherichia coli,” Y. Guo, X. Liu, B. Li, J. Yao, T. K. Wood, and X. Wang, J. Bacteriol. **199:** e00057-17 (2017).
263. “Commentary: What is the link between stringent response, endoribonuclease encoding type II toxin/antitoxin systems and persistence?,” L. Van Melderen and T. K. Wood, Frontiers Microbiology **8:** 191 (2017).
259. “Persistent Persister Misperceptions,” J.-S. Kim and T. K. Wood, *Frontiers Microbiology* **7:** 2134 (2016).
258. “An oxygen-sensitive toxin–antitoxin system,” O. Marimon, J. M. C. Teixeira, T. N. Cordeiro, V. W.C. Soo, T. L. Wood, M. Mayzel, I. Amata, J. García, A. Morera, M. Gay, M. Vilaseca, V. Y. Orekhov, T. K. Wood, and. M. Pons, *Nature Communications* 7:13634 (2016). (86 Altmetric score)
257. “Halogenated indoles eradicate bacterial persister cells and biofilms,” J.-H. Lee, Y.-G. Kim, G. Gwon, T. K. Wood, and J. Lee, Appl. Microbiol. Biotechnol. Express 6:123 (2016).
254. “Repurposing the anticancer drug mitomycin C for the treatment of persistent *Acinetobacter baumannii* infections," M. Y. Cruz-Muñiz, L. E. López-Jacome, M. Hernández-Durán, R. Franco-Cendejas, P. Licona-Limón, J. L. Ramos-Balderas, M. Martinéz-Vázquez, J. A. Belmon-Díazt, T. K. Wood, R. García-Contreras, *Int. J. Antimicrobial Agents* **49:** 88-92 (2017)
253. “Exploiting quorum sensing inhibition for the control of *Pseudomonas aeruginosa and Acinetobacter baumannii* biofilms," I. Castillo-Juarez, L. E. López-Jácome, G. Soberón-Chávez, M. Tomás, J. Lee, P. Castañeda-Tamez, I. A. Hernández-Bárragan, M. Y. Cruz-Muñiz, T. Maeda, T. K. Wood, and R García-Contreras, *Curr To Med Chem.* **17:** 1915-1927 (2017).
252. “Repurposing of Anticancer Drugs for the Treatment of Bacterial Infections," VW Soo, BW Kwan, H Quezada, I Castillo-JuárezI, B Pérez-Eretza, SJ García-Contreras, M Martínez-Vázquez, TK Wood, R García-Contreras, *Curr Top Med Chem. 2016* **17:** 1157-1176 (2017).
251. "Toxin YafQ Reduces *Escherichia coli* Growth at Low Temperatures, Y. Zhao, M. J. McAnulty, and T. K. Wood, *PLoS ONE* **11:** e0161577 (2016).
250. "Toxin-Antitoxin Systems in Clinical Pathogens,” L. Fernández-García, L. Blasco, M. Lopez, G. Bou,R. García-Contreras, T. Wood, and M. Tomas, *Toxins* 8:227 (2016).
247. "The HigB/HigA toxin/antitoxin system of Pseudomonas aeruginosa influences the virulence factors pyochelin, pyocyanin, and biofilm formation,” T. L. Wood and T. K. Wood, *Microbiology Open* **5**:499-511 (2016).
246. "DNA-Crosslinker Cisplatin Eradicates Bacterial Persister Cells,” N. Chowdhury, T. L. Wood, M. Martínez-Vázquez, R. García-Contreras, and T. K. Wood, *Biotechnol. Bioengr.* **113**:1984-92 (2016).
245. "Toxin MqsR cleaves single-stranded mRNA with various 5’ ends,” N. Chowdhury, B. W. Kwan, L. C. McGibbon, P. Babitzke, and T. K. Wood, *MicrobiologyOpen* **5:**370-7 (2016).
244. "Antibiotic-tolerant Staphylococcus aureus Biofilm Persists on Arthroplasty Materials,” K. L. Urish, P. W. DeMuth, B. W. Kwan, D. W. Craft, D. Ma, H. Haider, R. S. Tuan, T. K. Wood, and C. M. Davis III, Clin Orthop Relat Res **474:**1649-56 (2016).
243. "Persistence Increases in the Absence of the Alarmone Guanosine Tetraphosphate by Reducing Cell Growth,” N. Chowdhury, B. W. Kwan, and T. K. Wood, *Scientific Reports* 6:20519 (2016).
235. "Combatting Bacterial Persister Cells,” T. K. Wood, Biotechnol. Bioengr. **113:**476-83 (2016).
230. "Combatting Bacterial Infections by Killing Persister Cells with Mitomycin C,” B. W. Kwan, N. Chowdhury, and T. K. Wood, Environ. Microbiol. **17:**4406-14 (2015). (Highlighted by *Nature Medicine*)
227. "Orphan Toxin OrtT (YdcX) of Escherichia coli Reduces Growth during the Stringent Response," S. Islam, M. J. Benedik, and T. K. Wood, Toxins 7:299-321 (2015).
225. "The MqsR/MqsA Toxin/Antitoxin System Protects *Escherichia coli* During Bile Acid Stress," B. W. Kwan, D. M. Lord, W. Peti, R. Page, M. J. Benedik, and T. K. Wood, Environ. Microbiol. **17:**3168-81 (2015).
217. "Polyphosphate, cyclic AMP, guanosine tetraphosphate, and c-di-GMP reduce in vitro Lon activity," D. O. Osbourne, V. W. C. Soo, I. Konieczny, and T. K. Wood, Bioengineered 5: 1-5 (2014).
216. "Toxin YafQ Increases Persister Cell Formation by Reducing Indole Signaling," Y. Hu1, B. W. Kwan, D. O. Osbourne1, M. J. Benedik, and T. K. Wood, Environ. Micro. **17:**1275-85 (2015).
214. "de novo Synthesis of a Bacterial Toxin/Antitoxin System," V. W. C. Soo, Hsin-Yao Cheng, Brian W. Kwan, and T. K. Wood, Scientific Reports 4: 4807 (2014).
213. "RalR (a DNase) and RalA (a small RNA) form a type I toxin–antitoxin system in *Escherichia coli*," Y. Guo, C. Quiroga, Q. Chen, M. J. McAnulty, M. J. Benedik, T. K. Wood,* and X. Wang,* Nucleic Acids Research, **14:** 6448-6462 (2014).
210. "Toxin GhoT of the GhoT/GhoS TA System Damages the Cell Membrane to Reduce ATP and to Reduce Growth Under Stress," H.-Y. Cheng, V. W. C. Soo, S. Islam, M. J. McAnulty, M. J. Benedik, and T. K. Wood, *Environmental Microbiology* **42:**6448-62 (2014).

209. "Antitoxin MqsA Represses Curli Formation Through the Master Biofilm Regulator CsgD," V. W. C. Soo and T. K. Wood, *Scientific Reports* 3 : 3186 (2013).
205. "Bacterial Persister Cell Formation and Dormancy," T. K. Wood, S. J. Knabel, and B. W. Kwan, *Appl. Environ. Microbiol*. **79**:7116-21 (2013).
199. "Arrested Protein Synthesis Increases Persister-Like Cell Formation," B. W. Kwan, J. A. Valenta, M. J. Benedik, and T. K. Wood, *Antimicrob. Agents Chemother*. 57:1468-1473 (2013).
198. "Type II Toxin/Antitoxin MqsR/MqsA Controls Type V Toxin/Antitoxin GhoT/GhoS," X. Wang, D. M. Lord, S. H. Hong, W. Peti, M. J. Benedik, R. Page, and T. K. Wood, *Enviornmental Microbiology* 15: 1734–1744 (2013).
194. "A New Type V Toxin-Antitoxin System Where mRNA for Toxin GhoT is Cleaved by Antitoxin GhoS," X. Wang, D. M. Lord, H.-Y. Cheng, D. O. Osbourne, S. H. Hong, V. Sanchez-Torres, C. Quiroga, K. Zhang, T. Herrmann, W. Peti, M. J. Benedik, R. Page, & T. K. Wood, *Nature Chem. Biol.* 8:855-861 (2012). (Highlighted by Nature Chemical Biology and Faculty of 1000 Medicine)
188. "Bacterial persistence increases as environmental fitness decreases," S. H. Hong, X. Wang, H. F. O'Connor, M. J. Benedik and Thomas K. Wood, *Microb. Biotechnol* 5: 509–522 (2012)
185. "Antitoxin DinJ influences the general stress response through transcript stabilizer CspE," Y. Hu, M. J. Benedik and Thomas K. Wood, *Environ. Microbiol.* 14: 669–679 (2012).
181. "Toxin/Antitoxin Systems Influence Biofilm and Persister Cell Formation and the General Stress Response," X. Wang and T. K. Wood, *Appl. Environ Microbiol*. 77: 5577-5583 (2011).
179. "Antitoxin MqsA helps mediate the bacterial general stress response," X. Wang, Y. Kim, S. H. Hong, Q. Ma, B. L. Brown, M. Pu, A. M. Tarone, M. J. Benedik, W. Peti, R. Page, and T. K. Wood, *Nature Chem. Biol.* 7: 359-366 (2011). (featured by NIH NIGMS and highlighted by Nature Chemical Biology)
168. "Structure of the *E. coli* antitoxin MqsA (YgiT/B3021) bound to its gene promoter reveals extensive domain rearrangements and the specificity of transcriptional regulation," B. L. Brown, T. K. Wood, W. Peti, and R. Page, *J. Biol. Chem.* 286: 2285-2296 (2011).
159. "Three Dimensional Structure of the MqsR:MqsA Complex: A Novel TA Pair Comprised of a Toxin Homologous to RelE and an Antitoxin with Unique properties," B. L. Brown, S. Grigoriu, Y. Kim, J. M. Arruda, A. Davenport, T. K. Wood, W. Peti, and R. Page, *PLoS Pathogens* 5: e1000706 (2009).
157. "*Escherichia coli* toxin/antitoxin pair MqsR/MqsA regulate toxin CspD," Y. Kim, X. Wang, X.-S. Zhang, S. Grigoriu, R. Page, W. Peti, and T. K. Wood, *Environ. Microbiol.* 12: 1105-1121 (2010).
154. "Toxins Hha and CspD and small RNA regulator Hfq are involved in persister cell formation through MqsR in *Escherichia coli*," Y. Kim and T. K. Wood, *Biochem. Biophys. Res. Commun.* 391: 209-213 (2010).
144. "Toxin-Antitoxin Systems in *Escherichia coli* Influence Biofilm Formation Through YjgK (TabA) and Fimbriae," Y. Kim, X. Wang, Q. Ma, X.-S. Zhang, and T. K. Wood, *J. Bacteriol.* 191: 1258-1267 (2009).
131. "*Escherichia coli* transcription factor YncC (McbR) regulates colanic acid and biofilm formation by repressing expression of periplasmic protein YbiM (McbA)," X.-S. Zhang, R. Garcia Contreras, and T. K. Wood, *Nature ISME Journal*. 2: 615-631 (2008).
139. "Protein Translation and Cell Death: The Role of Rare tRNAs in Biofilm Formation and in Activating Dormant Phage Killer Genes," R. Garcia-Contreras, X.-S. Zhang, Y. Kim, and T. K. Wood, *PLoS ONE* 3(6): e2394 (2008).
94. "Autoinducer 2 Controls Biofilm Formation in *Escherichia coli* K12 Through a Novel Motility Quorum Sensing Regulator (MqsR, B3022)," A. F. Gonzalez Barrios, R. Zuo, Y. Hashimoto, L. Yang, W. E. Bentley, and T. K. Wood, *J. Bacteriol*. 188: 305-316 (2006). (Faculty of 1000 Biology)
89. "Hha, YbaJ, and OmpA Regulate *Escherichia coli* K12 Biofilm Formation and Conjugation Plasmids Abolish Motility," A. Gonzalez, R. Zuo, D. Ren, and T. K. Wood, *Biotechnol. Bioengr.* 93: 188-200 (2006).
69. "Gene Expression in *Escherichia coli* Biofilms," D. Ren, L. Bedzyk, R. W. Ye, S. Thomas, and T. K. Wood, *Appl. Microbiol. Biotechnol*. 64: 515-524 (2004).
45. "Antimicrobial Properties of the *Escherichia coli* R1 Plasmid Host Killing Peptide," D. C. Pecota, G. Osapay, M. E. Selsted, and T. K. Wood, *J. Biotechnol.* 100: 1-12 (2003).
18. "Combining the *hok/sok*, *parDE*, and *pnd* Post Segregational Killer Loci To Enhance Plasmid Stability," D. C. Pecota, C. S. Kim, K. Wu, K. Gerdes, and T. K. Wood, *Appl. Environ Microbiol.* 63: 1917-1924 (1997).
6. "Temperature and Growth Rate Effects on the *hok/sok* Killer Locus for Enhanced Plasmid Stability," K. Wu, D. Jahng, and T. K. Wood, *Biotechnol. Prog.* 10: 621-629 (1994) .
5. "Evaluation of the *hok/sok* Killer Locus for Enhanced Plasmid Stability," K. Wu and T. K. Wood, *Biotechnol. Bioeng.* 44: 912-921 (1994).
2. "Enhanced Plasmid Stability Through Post-Segregational Killing of Plasmid-Free Cells," T. K. Wood, R. H. Kuhn, and S. W. Peretti, *Biotechnology Techniques* 4: 39-44 (1990).

Metabolic Engineering of Archaea

284. "Electron carriers increase electricity production in methane microbial fuel cells that reverse methanogenesis," R. Yamasaki, T. Maeda, and T. K. Wood, *Biotechnology for Biofuels* **11:**211 (2018).

268. “Electricity from methane by reversing methanogenesis,” M. J. McAnulty, V. G. Poosarla, K.-Y. Kim, R. Jasso-Chávez, B. E. Logan, and T. K. Wood, *Nature Communications* **8:15419** (2017) (211 Altmetric score).
256. “Metabolic Engineering of Methanosarcina acetivorans for Lactate Production from Methane,” M. J. McAnulty, V. G. Poosarla, J. Li, V. W. C. Soo, F. Zhu, and T. K. Wood, *Biotechnol. Bioengr.* **114:**852-861 (2017).
255. “Metabolic manipulation of methanogens for methane machinations,” T. K. Wood, *Microbial Biotechnol.* **10:** 9–10. (2017).
242. “Assessing methanotrophy and carbon fixation for biofuel production by Methanosarcina acetivorans,” H. Nazem-Bokaee, S. Gopalakrishnan, J. G. Ferry, T. K. Wood, and C. D. Maranas, *Microbial Cell Factories* 15:10 (2016).
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18. **U.S. Patent Application No. 17/337,097.** "Methods for Killing Antibiotic Tolerant Bacteria," Inventors: T. K. Wood and S. Song (2 June 2021).
17. **European patent application 18737776.7-1110. "**A Method for Biofilm Dispersal," G. Poosarla and T. K. Wood (21

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16. **US Patent App. 16/462,701**, "Devices and methods for generating electrical current from methane", TK Wood, MJ McAnulty, 2020.
15. **U.S. Patent application 16/795,726, 2020.** "Controlling Bacterial Biofilms," B. Yin and T. K. Wood (20 Feb 2020)
14. **U.S. patent application 16/632,408, 2020. "**A Method for Biofilm Dispersal," B. Yin, G. Poosarla and T. K. Wood (5 May 2020).
13. **European patent application 18737776.7-1110. "**A Method for Biofilm Dispersal," G. Poosarla and T. K. Wood (21 February 2020).
12. **U.S. patent 10,238,689. "**Methods for Combating Bacterial Infections by Killing Persister Cells with Mitomycin C and/or Cisplatin," T. K. Wood and N. Chowdhury, issued 26 March 2019.
11. **U.S. patent 10,172,362**, "Biofilms, Components, and Methods of Use to Reduce Biofouling and Contamination," Thomas K. Wood, Manish Kumar, and Thammajun L. Wood, issued 8 January 2019
10. **U.S. patent application 16/462,701. "**Devices and Methods For Generating Electrical Current From Methane," M. J. McAnulty and T. K. Wood (2020).
9. **U.S. patent 9,801,909**, "Compositions and methods for combating bacterial infections by killing persister cells with mitomycin C," Thomas Wood, Brian Kwan, and Nityananda Chowdhury, issued 31 October 2017.
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4. **U.S. patent 7,723,498,** "Directed Evolution of Recombinant Monooxygenase Nucleic Acids and Related Polypeptides and Methods of Use," inventors: T. K. Wood and G. Vardar. Issued 25 May 2010.
3. **U.S. patent 7,365,184,** Martin J. Blaser, Marcus B. Jones, Thomas K. Wood, and Dacheng Ren, "*B. anthracis* Prevention and Treatment: Mutant *B. anthracis* Lacking luxS Activity and Furanone Inhibition of Growth, AI-2 Quorum Sensing, and Toxin Production". Issued 29 April 2008.
2. **U.S. patent 7,060,486,** "Inhibition of Sulfate-Reducing-Bacteria-Mediated Degradation Using Bacteria Which Secrete Antimicrobials," inventors: T. K. Wood, A. Jayaraman, and J. C. Earthman. Issued 13 June 2006.
1. **U.S. patent 6,630,197,** "Inhibition of Sulfate-Reducing-Bacteria-Mediated Degradation Using Bacteria Which Secrete Antimicrobials," inventors: T. K. Wood, A. Jayaraman, and J. C. Earthman. Issued 7 October 2003 (also New Zealand patent 502111, 14 June 2001).

Funded Research

81. **Fulbright Fellowship** for former Ph.D. student Laura Fernández García, "Persister cell mechanisms", $164,199, 2021-2024, (co-PI with Professor Maria Tomas), Grupo de Investigación en Microbiología, INIBIC-Hospital Universitario A Coruña.
80. **Novo Nordic Foundation**, "The path to tackling antibiotic-resistant infections," 2020-2022, $736,893 (co-PI, with Prof Rikke Meyer, Aarhus Universitet)
79. **FAPESP Post-Doctoral Fellowship** (Brazil) for Dr. Paula Martins, 2018-2019, $48,640 (co-PI, with Prof. Alessandra Alves de Souza).
78. **SEIMC Help Ph.D. Fellowship** (Spain) for Laura Fernández García, 2018, $5,651 (co-PI, with Prof. Maria Tomas).
77. **ARO**, "2nd International Symposium on Finding New alternatives to Combat Bacterial Infections," Nov. 9-10, 2017, $5,200 (sole PI).
76. **Dow Chemical Corp.,** "Living Anti-Biofouling Membranes," 2017-2020, $1,000,000 (PI, with Manish Kumar, project cancelled due to merger with DuPont).
75. **Dow Chemical Corp.,** "Biofilm and Souring Control in Energy Fields via Microbial Quorum Sensing Regulation," 2016-2021, $1,250,000 (sole PI)
74. **NSF REU Supplement, "**Living Reverse Osmosis Membranes: Engineered Membrane Biofilms that Control Their Own Thickness, Prevent Biofouling and Degrade Contaminants," 2015-2016, $18,000 (co-PI)
73. **PSIEE PSU**, "Controlling electrokinetic flows for preventing membrane fouling" 2015-2016, $25,000 (co-PI).
72. **ExxonMobil** unrestricted gift, 2015-2016, $25,000 (PI).
71. **Eberly College of Science Lab Bench to Commercialization Grant Program**, "Bioconversion of Marcellus Shale Methane to the Alternative Fuel Methanol," 2014-2015, $75,000 (PI).
70. **ARO**, "c-di-GMP Controls Persister Cell Formation via its Control of Lon Protease Degradation of Antitoxins," 2014-2017, $409,383 (sole PI).
69. **NSF**, "Living Reverse Osmosis Membranes," 2014-2017, $421,678 (co-PI).
68. **American Society for Microbiology Indo-US Science and Technology Professorship**, 2014, $5,000 (co-PI).
67. **NSF REU**, "Integration of Biology and Materials," 2014-2017, $338,886 (co-PI).
66. **ARPA-E**, "Engineering a Methane to Acetate Pathway for Producing Liquid Biofuels," 2014-2017, $3,000,000 (co-PI, with Greg Ferry and Costas Maranas).

65. **Grace Woodward Endowment**, Development of Novel Treatment Methods for Periprosthetic Joint Infections," 2013-2015, $25,000 (PI).
64. **NSF**, "An Integrated Approach for Computationally Designing and Experimentally Characterizing Fully-Human Antibodies," 2012-2015, $600,000 (co-PI, with Costas Maranas).
63. **NSF REU**, "Materials & Systems Biology Research in Biotechnology and Biomedicine," 2010-2012, $338,574 (co-PI).
62. **NIH R01** "Re-wiring cellular metabolism to control biofilm formation and virulence by tuning cell regulators,", $898,103, 2009-2012 (PI, with Arul Jayaraman).
61. **National Science Foundation Interagency,** "A Systems Biology Approach for Metabolically Engineering *Escherichia coli* for Producing Hydrogen via Fermentation," $300,000, 2008-2011, (PI, with Ranjan Srivastava, U of CT and William Self, U of Central FA).
60. **U.S. Army Research Office**, "ARO Workshop: Advances in Biofilm Research to Inhibit Biocorrosion," 2008-2009, $33,617 (sole investigator).
59. **U.S. Army Research Office**, "Plant Biofilm Inhibitors to Discover Biofilm Genes," 2008-2009, $187,607 (sole investigator).
58. **SERDP,** "Biodegradable Pyrotechnics" 2008-2009, $99,000, (co-PI with Infoscitex Inc.).
57. **United States-Israel Binational Science Foundation**, "Protein Engineering of Toluene Monooxygenases for the Production of Chiral Sulfoxides," $60,000 (co-PI with Prof. Ayelet Fishman of Technion-Israel Institute of Technology)
56. **Army STTR,** "Microbial Detectors of Explosives," 2006-2007, $99,000, (co-PI with Infoscitex Inc.).
55. **NSF REU**, "A Chemical Engineering Approach to the Materials/Biology Interface, " 2006-2008, $249,722 (co-PI with 9 others at TAMU).
54. **SERDP,** "Environmentally-Responsible Microbiological Production of Energetic Ingredients," 2006-2007, $99,000, (co-PI with Infoscitex Inc.).
53. **NIEHS R21**, "*Rhodococcus* sp. RR1 Propane monooxygenase for *N*-Nitrosodimethylamine Degradation," 2006-2007, $148,750 (PI with Lisa Alvarez-Cohen of UC Berkeley).
52. **NIH Bioshield**, "Furanones to Inhibit *Bacillus anthracis*", 2006-2007, $30,300 (co-PI).
51. **National Science Foundation**, "Biosensor Arrays Based on DNA Shuffling and Chemometrics for Measurement of Chlorinated Solvent Mixtures", 2006-2008, $719,270 (co-PI).
50. **DARPA**, "Reconfigurable Marine Fuel Cells & Biological Fuel Reformers," 2006-2008, $595,517.38 (PI).
49. **NIH R01**, "Plant Biofilm Inhibitors to Discover Biofilm Genes," 2006-2010, $1,270,000 (PI).
48. **U.S. Army Research Office**, "Plant Biofilm Inhibitors to Discover Biofilm Genes," 2006-2008, $201,665 (sole investigator).
47. **DOD-STTR Army/Infosci**, "Biofilm Applique," 2004-2005, $100,000 (co-PI).
46. **Department of Defense**, 2003-2004, Directed Evolution of Hydrogenase Enzyme to Produce Hydrogen for a Portable Fuel Cell," $27,500 (co-PI Robert Coughlin)
45. **Sequoia Sciences** 2004-2005, "Plant Biofilms Inhibitors to Discover Biofilm Genes", $85,000.
44. **National Science Foundation Interagency** 2003-2006, "Enhanced Rhizoremediation of Metals and Chlorinated Aliphatics", $764,061 (co-PI with Wilfred Chen, U of CA, Riverside)
43. SymBiotech, Inc., 2003, chemical donation, $5000
42. SymBiotech, Inc., 2003, equipment donation, $120,000 (-80^{o}C Freezer at $10,000, SpeedVac with pump at $5000, luminometer at $5000, electroporator at $5000, spectrophotometer at $10,000, Gilson HPLC at $20,000, two GCs at $40,000, Waters HPLC at $20,000, autoclave at $5000, etc.)
41. **NSF Major Research Instrumentation Award**, 2003-2004, DNA Microarrays for Forensics," $415,554 (1 of 25 investigators)
40. **Carbon Trust (United Kingdom)**, 2003-2004, "Directed Evolution for Bioprocess Intensified Low-Carbon Biofuels Generation," $241,114 (co-Investigator with Phil Wright)
39. **The Korean Ministry of Environment**, 2002-2005, "Molecular Evolution of Dioxygenases for Bioremediation of Nitro Compounds," $75,000 (co-Investigator)
38. **Connecticut Innovations,** 2002-2005, "Green Chemistry for a Sustainable Environment: Enhancing Biological Degreasing Operations", 2002-2004, $265,598 (sole PI)
37. **National Science Foundation Research Experiences for Undergraduates**, "Chemical Engineering at the Nanoscale," 2002-2005, $199,608 (Investigator).
36. **National Science Foundation**, "Metabolic Engineering of Monooxygenases for 1-Naphthol and Styrene Epoxide Formation-Technology for a Sustainable Environment," 2002-2005, $693,049 (principal investigator with Prof. William Bentley, U of MD).
35. **Electric Power Research Institute**, "Control of Biofouling Using Natural Furanones to Eliminate Biofilms," 2001-2002, $65,000 (sole investigator).
34. **Electric Power Research Institute**, "Corrosion Control Using Protective Biofilms Which Secrete Antimicrobials and Corrosion Inhibitors," 2001-2004, $444,800 (sole investigator)
33. **National Science Foundation**, "Directed Evolution for Trinitrotoluene and Diaminotoluene Degradation," 2001-2004, $595,000 (co-principal investigator with Prof. Barth Smets of UConn).
32. **University of Connecticut School of Engineering**, "Fermentor to Support Development of a Biotechnology Experiment

for High School Outreach" $21,767 (principal investigator).

31. **BioClean USA**, "Training Grant, Enhancing Biological Degreasing," 2001-2002, $66,273 (sole investigator).
30. **National Science Foundation Research Experiences for Undergraduates**, "Redirecting Cellular Metabolism for the Biodegradation of Mixtures of Chlorinated Solvents," 2000-2003, $10,000 (principal investigator).
29. **U.S. Army Research Office**, "Directed Evolution of Toluene-*o*-Xylene Monooxygenase for Rhizoremediating Tetrachloroethylene," 2000-2003, $270,000 (sole investigator).
28. **National Science Foundation**, "Redirecting Cellular Metabolism for the Biodegradation of Mixtures of Chlorinated Solvents," 2000-2003, $714,932 (principal investigator with Prof. Kenneth Reardon of Colo. State University).
27. **U.S. Department of Education**, "Graduate Fellowship Program in Environmental Biotechnology at the University of Connecticut," 2000-2003, $761,250 (investigator).
26. **University of Connecticut School of Engineering**, "HPLC to Initiate Degradation of Atrazine by Combining Engineered, Root-Colonizing Bacteria with Poplar Trees," 2000, $23,565 (sole investigator).
25. **University of Connecticut School of Engineering**, "Ion Chromatograph for Environmental Process Research," 2000, $30,000 (co-investigator).
24. **Giner, Inc.**, "Novel Electrochemical Ozone Generator for Disinfection of Spacecraft Water," sub-contract for NASA Phase II SBIR, 1999-2000, $80,000 (co-investigator).
23. **UConn New Faculty Research Account**, "Rhizoremediation of Atrazine by Combining Engineered, Root-Colonizing Bacteria with Poplar Trees," 1999-2000, $6,147 (sole investigator).
22. **National Science Foundation Research Experiences for Undergraduates**, "Directed Evolution of Monooxygenases for Green Chemistry," 1998-1999, $10,000 (sole investigator).
21. **National Science Foundation**, "Directed Evolution of Monooxygenases for Green Chemistry," 1998-2000, $214,063 (sole investigator).
20. **DuPont Central Research and Development**, "Unrestricted Education Grant" 1998-1999, $20,000 (sole investigator).
19. **Electric Power Research Institute**, "Corrosion Control Using Protective Biofilms Which Secrete Antimicrobials and Corrosion Inhibitors," 1998-2000, $389,812 (principal investigator)
18. **University of CA Undergraduate Research,** 7/1/91-9/1/98, $3,862 (sole investigator).
17. **Department of Energy Phase I STTR,** "DC Atmospheric Corona Discharge System for Sterilization and Chemical Neutralization," 9/1/97-6/30/98, $75,000 (co-principal investigator).
16. **University of CA Toxic Substances Research & Training Program,** "*In Situ* Phytoremediation of Trichloroethylene with Bacteria that Continuously Express Monooxygenases," 7/1/97-6/30/98, $25,000 (sole investigator).
15. **Lucky Goldstar Industrial Systems Co.**, "Advanced Wastewater Remediation Technology," 1997-1998, $500,549 (co-principal investigator).
14. **National Science Foundation** Small Grant for Exploratory Research, "Novel Antimicrobial and Antiviral Properties of the Hok Killer Protein," 1996-1998, $50,000 (principal investigator).
13. **University of CA Toxic Substances Research & Training Program,** "*In Situ* Phytoremediation of Trichloroethylene with Bacteria that Continuously Express Monooxygenases," 7/1/95-6/30/96, $23,500 (sole investigator).
12. **U.S. Army Research Office**, "Trichloroethylene Mineralization and Methanol Synthesis Using Soluble Methane Monooxygenase," 1995-1998, $85,000 (sole investigator).
11. **Electric Power Research Institute**, "Corrosion Prevention by Regenerative Biopolymers," 1995-1997, $345,870 (co-principal investigator)
10. **U.S. Army Research Office** Young Investigator Program, "Enhanced TCE Degradation Using Genetically-Engineered Microorganisms," 1992-1995, $168,800 (sole investigator).
9. **National Science Foundation**, "Enhanced Plasmid Stability Using Multiple Killer Genes," 1993-1994, $47,286 (sole investigator).
8. **CA EPA Department of Toxic Substances Control**, "Gas-Phase TCE Degradation Using a Biofilter," 7/1/94-6/30/95, $25,000 (sole investigator).
7. **National Science Foundation** Research Equipment Grant, "Phosphor Image Analyzer and Spectrofluorometer," 1993, $69,935 (co-principal investigator).
6. **University of California Systemwide Biotechnology Research & Education Program**, "Protein Engineering: Structure and Design of Metalloproteins," 1993-1995, $135,000 (investigator).
5. **Fluor Daniel, Inc.**, "Environmental Engineering at UCI," 1993-1998, $250,000 (investigator).
4. **National Science Foundation Research Experiences for Undergraduates**, "Enhanced Bioremediation Using Genetically-Engineered Microbes," 9/1/93-8/31/95, $20,000 (sole investigator).
3. **National Science Foundation** Research Initiation Award, "Enhanced Bioremediation Using Genetically-Engineered Microbes," 1992-1995, $99,080 (sole investigator).
2. **Plasmid Foundation of Denmark**, "Enhanced Plasmid Stability Using Multiple Killer Genes," 1992-1993, $14,886 (sole investigator).
1. **UCI Faculty Research Grant**, "Enhancing Recombinant Protein Stability: Construction of a Chemically-Induced, Run-Away Plasmid," 1991-92, $5,000 (sole investigator).

Significant University Service

Penn State Research Integrity Committee, 2014-2015
Penn State Advisory Search Committee for the Associate Dean for Research and Innovation for COE, 2014
Penn State Chemical Engineering Privilege and Tenure Committee (***chair*** 2013-2014)
Texas A & M Association of Former Students Distinguished Achievement Awards Search Committee (2008)
Texas A & M Chemical Engineering Search Committee, 2007-present (***chair***)
Texas A & M Chemical Engineering Endowed Chairs and Professorships Committee, 2007-present (***chair***)
Texas A & M Chemical Engineering graduate admissions, 2005-present (***chair*** '05-'06)
University of Connecticut Research Advisory Council, 2001-2004
University of Connecticut Conflict of Interest Committee, 2001-2004
Chemical Engineering Graduate Admissions, 1999-2000
School of Engineering Environmental Engineering Courses & Curriculum Committee, 1999-present
University of CA, Irvine Undergraduate Scholarships, Honors, and Financial Aid Committee (1993-1996, ***chair*** '96-97), raised $492,000 for scholarships for outstanding undergraduates, captured 98 outstanding undergraduates with average SAT scores of 708 verbal and 718 math
University of CA, Irvine Honors Program Council, elected engineering representative for the 1995-1998 term
Established the UCI student chapter of the American Institute of Chemical Engineers (1996)
Established the UCI student chapter of the chemical engineering honorary society Omega Chi Epsilon (1996)
School of Engineering Biomedical Engineering Committee, 1995-1997
School of Engineering Environmental Engineering Graduate Concentration Admissions Committee, 1995-1997
School of Engineering Environmental Engineering Graduate Concentration Committee, 1992-1997
School of Engineering Ad Hoc Environmental Engineering Committee, 1992-1993
School of Engineering Graduate Studies Committee, 1992-1994
School of Engineering Environmental Engineering Brochure Committee, 1993
School of Engineering Undergraduate Studies Committee, 1991-1992
Chemical & Biochemical Engineering Faculty Search Committee, 1995-96
Chemical & Biochemical Engineering Graduate Committee, 1994-1997
Chemical & Biochemical Engineering Graduate Admissions (Chair), 1992-1994
Chemical & Biochemical Engineering Graduate Advisor, 1992-1994
Biochemical Engineering Faculty Search Committee, 1991-92
CA Minority Graduate Education Forum panelist at Cal State Long Beach, 1995
Campuswide Undergraduate Research Symposium, session monitor, 1996

Invited Lectures

129. "Persister Cell Sleeping and Waking," T. K. Wood, EMBO Workshop on Toxin/Antitoxin Systems, London, England, April 2019.
128. "Heterogeneity in Persister Cell Waking, T. K. Wood, SPP1617 International Meeting, Schloss Hohenkammer, Germany, March 2019.
127. "Distinguishing, Forming, Waking, and Eradicating Persister Cells," T. K. Wood, AIChE, Pittsburgh, PA, November 2018 (**plenary address**).
126. "Controlling Sulfate-Reducing Biofilm Formation and Souring," T. K. Wood, Dow Chemical Co., August 2018.
125. "Viable But Non-Culturable' and 'Persistence' Describe the Same Bacterial Stress State," T. K. Wood, 50th Korean Society for Food Science of Animal Resources International Symposium and Annual Meeting, Jeju, Korea, May 2018 (**keynote address**).
124. "Toward Controlling Multi-Species Biofilm Infections," T. K. Wood, 2nd International Symposium on Finding New Alternatives to Combat Bacterial Infections, Mexico City, November 2017 (**keynote address**).
123. "Engineering Multi-Species Biofilms Through Signal Manipulation," T. K. Wood, Eurobiofilms 2017, Amsterdam, September 2017 (**keynote address**).
122. "Killing Bacterial Persister Cells by Crosslinking Their DNA with Mitomycin C and Cisplatin", T. K. Wood, The Microbiological Society of Korea, Busan, Korea, April 2017.
121. "Living Reverse Osmosis Membranes and Reversing Methanogenesis to Capture Methane in Archaeal Biofilms," T. K. Wood, Kyushu Institute of Technology-Universiti Putra Malyasia 4th International Symposium on Applied Engineering and Sciences, Kitakyushu, Japan, December 2016.
120. "Living Reverse Osmosis Membranes and Reversing Methanogenesis to Capture Methane in Archaeal Biofilms," T. K. Wood, Recent Advances in Microbial Control, San Diego, CA, October 2016.
119. "Living Reverse Osmosis Membranes and Reversing Methanogenesis to Capture Methane in Archaeal Biofilms," T. K. Wood, University of Kentucky, Lexington, KY, August 2016.
118. "Biofilm and Souring Control in Energy Fields via Microbial Quorum Sensing Regulation," T. K. Wood, Dow Chemical Corporation, Collegeville, PA, August 2016.
117. "Reversing Methanogenesis to Capture Methane in Archaeal Biofilms," V. W. C. Soo, M. J. McAnulty, A. Tripathi, and T. K. Wood, Biofilms 7, Porto, Portugal, June 2016.
116. "Reversing Methanogenesis to Produce Biofuels," T. K. Wood, ARPA-E REMOTE Meeting, San Diego, CA, January 2016.
115. "Combatting Bacterial Infections by Killing Persister Cells with Mitomycin C," T. K. Wood, First Simposio

Internacional Nuevas Alternativas para Combatir Infecciones Bacterianas, Mexico City, Mexico, September 2015.

114. "Is spreading of resistance against quorum quenchers possible?," R. García-Contreras, P. Castañeda, T. Maeda, and T. K. Wood, First International Symposium on Quorum Sensing Inhibition, Santiago de Compostela, Spain, June 2015.
113. "Zombie Cell Tweets," ASM National Meeting, New Orleans, LA, June 2015.
112. "Killing Persister Cells," T. K. Wood, Workshop on Eliminating Chronic Infectious Diseases, Pennsylvania State Medical School, Hershey, PA, May 2015.
111. "Managing Stress Through Cellular Chatter," Dow Chemical Corporation, May 2015.
110. "Monooxygenases for Green Chemistry," ExxonMobil Bioconversions Workshop, April 2015.
109. "Resistance to Quorum Quenching Compounds," Frontiers in Interkingdom Signaling, Michigan State University, March 2015.
108. "Toxin YafQ Increases Persister Cell Formation by Reducing Indole Signaling," 2014 Molecular Genetics of Bacteria & Phages, Madison, WI, August 2014.
107. "Insect-Related Interkingdom Cell Signaling," Insect Interkingdom Symposium 2014, University Park, March 2014.
106. "The Role of Toxin/Antitoxin Systems in the General Stress Response, Biofilm Formation, and Persister Cell Formation," Food Science, Pennsylvania State University, January 2014.
105. "The Role of Toxin/Antitoxin Systems in the General Stress Response, Biofilm Formation, and Persister Cell Formation," Chemical Engineering, University of Massachusetts, October 2013.
104. "Toxin/Antitoxins and biofilms and persister cells," Eurobiofilms, Ghent, Belgium September 2013.
103. "Putting Cells (and Not the Audience) to Sleep," Millennium Café, Pennsylvania State University, PA, June 2013.
102. "The Role of Toxin/Antitoxin Systems in the General Stress Response, Biofilm Formation, and Persister Cell Formation," Biomedical Engineering, Pennsylvania State University, 31 January 2013.
101. "Antitoxin GhoS Regulates Membrane Toxin GhoT by mRNA Cleavage to Create the First Type IV Toxin/Antitoxin System," ASM Biofilms Meeting, Miami, FL, October 2012.
100. "Antitoxin GhoS Regulates Membrane Toxin GhoT by mRNA Cleavage," University of Dayton, October 2012.
99. "Antitoxin GhoS Regulates Membrane Toxin GhoT by mRNA Cleavage," Bacteria, Archaea, and Phage, Cold Spring Harbor, August 2012.
98. "Antitoxin GhoS Regulates Membrane Toxin GhoT by mRNA Cleavage," RNA Club, Pennsylvania State University, August 2012.
97. "Controlling Biofilm Formation and Dispersal," Environmental Engineering, Pennsylvania State University, 29 February 2012.
96. "Synthetic Quorum Sensing Circuit to Control Consortial Biofilm Formation and Dispersal in a Microfluidic Device," S. H. Hong, M. Hegde, J. Kim, A. Jayaraman, and T. K. Wood, ASM Cell Signaling 2011, Miami, November 2011.
95. "Tyrosine phosphatase TpbA and ShrA control rugose colony formation in *Pseudomonas aeruginosa* by through c-di-GMP," Pseudomonas 2011, Sydney, September 2011.
94. "Controlling Biofilm Formation and Dispersal," University of Notre Dame, 25 August 2011.
93. "The Role of Toxin/Antitoxin Systems in the General Stress Response, Biofilm Formation, and Persister Cell Formation," X. Wang, Y. Kim, S. Hoon Hong, Q. Ma, B. L. Brown, M. Pu, A. Tarone, M. J. Benedik, W. Peti, R. Page, and T. K. Wood, Eurobiofilms 2011, Copenhagen, July 2011.
92. "Tyrosine Phosphatase TpbA Controls Rugose Colony Formation in *Pseudomonas aeruginosa* by Dephosphorylating Diguanylate Cyclase TpbB," M. Pu and T. K. Wood, ASM National Meeting, New Orleans, May, 2011.
91. "Controlling Biofilm Formation and Dispersal," Pennsylvania State University, 10 February 2011.
90. "Controlling Biofilm Formation and Dispersal," T. K. Wood, Q. Ma, and S. H. Hong, ICBE, San Francisco, CA, January 2011.
89. "Cellular Sleeping Pills and Engineered Biofilm Systems," North Dakota State University, Fargo, ND, 22 October 2010.
88. "Biofilm Formation of Bacterium *Proteus mirabilis* Isolated from the Salivary Glands of Blow Fly *Lucilia sericata*," 3rd Annual International Symposium on Agricultural Research, Athens, Greece, 15 July 2010.
87. "Metabolic Engineering & Protein Engineering for Fermentative H_2 Production," Metabolic Engineering VIII: Metabolic Engineering for Green Growth, Jeju Island, Korea, June 2010.
86. "Cellular Sleeping Pills and Engineered Biofilm Systems," National Institute for Cardiology, Mexico City, Mexico, 20 May 2010.
85. "Cellular Sleeping Pills and Engineered Biofilm Systems," Universidad del Los Andes, 30April 2010.
84. "Learning How Cells Talk Then Speaking Their Language to Control Biofilm Formation," Iowa State University, 25 March 2010.
83. "Cellular Sleeping Pills and Engineered Biofilm Systems," Georgia Tech University, Atlanta, GA, 17 March 2010.
82. "Cellular Sleeping Pills and Engineered Biofilm Systems," Pennsylvania State University, University Park, PA, 28 January 2010.
81. "NSF Emerging Frontiers in Research and Innovation Program: Interkingdom Signaling," Washington, DC, 8 December 2009.
80. "Controlling Biofilm Formation," ASM TX Branch, 6 November 2009.
79. "Intraspecies, Interspecies, and Interkingdom Signaling via Indole," SUNY Binghamton, 25 September 2009.
78. "Connecting Quorum Sensing, c-di-GMP, Pel Polysaccharide, and Biofilm Formation in *Pseudomonas aeruginosa* Through Novel Tyrosine Phosphatase TpbA (PA3885)," A. Ueda and T. K. Wood, Eurobiofilms, 4 September 2009.
77. "Interspecies Signal Indole and Archetypal Signal Uracil Control *Pseudomonas aeruginosa* Virulence," University of Massachusetts, 14 April 2009.
76. "Interspecies Signal Indole and Archetypal Signal Uracil Control *Pseudomonas aeruginosa* Virulence," Beppu University, Kitakyushu, Japan, 30 January 2009.
75. "Managing International Researchers," Kysushu Institute of Technology, Kitakyushu, Japan, 29 January 2009.
74. "Interspecies Signal Indole and Archetypal Signal Uracil Control *Pseudomonas aeruginosa* Virulence," Srinakharinwirot

University Medical School, Bangkok, Thailand, 14 January 2009.

73. “Manipulating Cell Signaling for Novel Anti-Virulence Techniques and Metabolic Engineering for Hydrogen Production,” T. K. Wood, ACS National Meeting Plenary Presentation, Philadelphia, 18 August 2008.
72. “Metabolic Engineering for Fermentative Hydrogen Production,” T. K. Wood, Technion University, Haifa, Israel, 22 May 2008.
71. “Metabolic Engineering for Fermentative Hydrogen Production,” T. K. Wood, Rice University, Houston, 10 April 2008.
70. “Metabolic Engineering for Fermentative Hydrogen Production,” T. K. Wood, Colorado State University, Ft. Collins, 13 March 2008.
69. “Insights on Research Success from One Still Seeking It,” T. K. Wood, 2nd Srinakharinwirot Conference at Srinakharinwirot University, Bangkok, Thailand, 1 February 2008.
68. “Producing Hydrogen from Bacteria,” T. K. Wood, 2nd Srinakharinwirot Conference at Srinakharinwirot University, Bangkok, Thailand, 1 February 2008.
67. “Metabolic Engineering for Fermentative Hydrogen Production,” T. K. Wood, University of Texas, Austin, 27 November 2007.
66. “Metabolic Engineering for Fermentative Hydrogen Production,” T. K. Wood, American Institute for Chemical Engineering Plenary Presentation, Salt Lake City, Utah, 7 November 2007.
65. “Metabolic Engineering for Fermentative Hydrogen Production,” T. K. Wood, SUNY Buffalo, 24 October 2007.
64. “Controlling Regiospecific Oxidation for Green Chemistry and Biofilm Formation: Homage to Indole,” T. K. Wood, Society for Industrial Microbiology Annual Meeting, 2 August 2007.
63. “Engineering Oxygenases for Degrading Nitro-Aromatic Pollutants,” T. K. Wood, Society for Industrial Microbiology Annual Meeting, 30 July 2007.
62. “Deciphering Cell Signaling in Bacterial Biofilms: The Role of Indole,” T. K. Wood, Michigan State University, 6 April 2007.
61. “Deciphering Cell Signaling in Bacterial Biofilms: The Role of Indole,” T. K. Wood, Texas State San Marcos, 26 February 2007.
60. “Deciphering Cell Signaling in Bacterial Biofilms: The Role of Indole,” T. K. Wood, UCLA, 9 February 2007.
59. “Deciphering Cell Signaling in Bacterial Biofilms: The Role of Indole,” T. K. Wood, Department of Chemical Engineering, Carnegie Mellon University, 29 January 2007.
58. “Deciphering Cell Signaling in Bacterial Biofilms: The Role of Indole,” T. K. Wood, Department of Toxicology, Texas A & M University, 27 November 2006.
57. “*E. coli* Biofilms: Signaling and Listening,” T. K. Wood, Texas Branch Meeting of the American Society for Microbiology, 17 November 2006.
56. “Signaling in Biofilms: Regulation and Biofilm Inhibitors,” T. K. Wood, University of Florida, 6 March 2006.
55. “Signaling in Biofilms: Regulation and Biofilm Inhibitors,” T. K. Wood, University of Miami, 3 March 2006.
54. “Signaling in Biofilms: Regulation and Biofilm Inhibitors,” T. K. Wood, American Institute for Chemical Engineers National Meeting, Cincinnati, OH, 31 October 2205.
53. “Chemotaxis Toward TNT and Protein Engineering of *Burkholderia* and *Ralstonia* Dioxygenases for Enhanced Dinitrotoluene and Aminonitro-Toluene Degradation,” T. K. Wood, *Pseudomonas* X, Marseille, France, 30 August 2005.
52. “Designing Oxygenases for Green Chemistry and Bioremediation,” Biochemical Engineering XIV, 13 July 2005.
51. “Differential Gene Expression Shows Plant Extracts Inhibit *Escherichia coli* Biofilm Formation Through Sulfur Metabolism,” T. K. Wood, Army Research Office, May 23, 2005.
50. “Designing Oxygenases for Green Chemistry & Bioremediation,” T. K. Wood, Tulane University, April 21, 2005.
49. “Quorum Sensing in *E. coli*: Discovery of a new signal and interfering with cross-talk via furanones from seaweed,” T. K. Wood, UK Polymer Colloids Forum (Plenary Lecture), University of Sheffield, 7 April 2005.
48. “Identifying Bacterial Biofilm Formation Genes and Beneficial Biofilms for Inhibiting Corrosion,” T. K. Wood, Brown University, February 16, 2005.
47. “Designing Oxygenases for Green Chemistry & Bioremediation,” T. K. Wood, Texas A & M University, November 19, 2004.
46. “Designing Oxygenases for Green Chemistry & Bioremediation,” T. K. Wood, University of Minnesota, October 15, 2004.
45. “Oxygenases for Green Chemistry & Remediation,” T. K. Wood, University of Vermont, April 20, 2004.
44. “Corrosion Control Using Regenerative Biofilms and Furanone,” T. K. Wood, Biofilms 2003, Victoria, Canada, November 6, 2003.
43. “Oxygenases for Remediation and Green Chemistry,” T. K. Wood, University of Maryland, October 23, 2003.
42. “Metabolic Engineering to Reduce Toxicity Related to the Aerobic Degradation of Chlorinated Ethenes,” T. K. Wood, 19th Annual International Conference on Soils, Sediments, and Water, October 21, 2003.
41. "*Pseudomonas* Oxygenases for Remediation and Green Chemistry," T. K. Wood, Pseudomonas 2003, Quebec, September 10, 2003.
40. "Oxygenases for Remediation and Green Chemistry," T. K. Wood, Tyndall Air Force Base, August 18, 2003.
39. "Identifying Bacterial Biofilm Formation Genes and Beneficial Biofilms for Inhibiting Corrosion," T. K. Wood, Montana State University, April 17, 2003.
38. "Metabolic Engineering to Reduce the Toxicity of Aerobic Degradation of *cis*-DCE Using Toluene ortho-Monooxygenase," L. Rui, Y.-M. Kwon, K. F. Reardon, and T. K. Wood, University of Colorado, November 19, 2002.
37. "Metabolic Engineering to Reduce the Toxicity of Aerobic Degradation of *cis*-DCE Using Toluene ortho-

Monooxygenase," L. Rui, Y.-M. Kwon, K. F. Reardon, and T. K. Wood, American Institute for Chemical Engineering National Meeting, Indianapolis, IN, November 4, 2002.

36. "Biofilms that Control Corrosion," B. C. Syrett and T. K. Wood, International Water Conference, Pittsburgh, PA, October 23, 2002.
35. "Biofilms that Control Corrosion," T. K. Wood, EPRI Water Resources Sustainability Workshop, Milwaukee, WI, September 25, 2002.
34. "Saturation Mutagenesis of Toluene *ortho*-Monooxygenase for Naphthalene Oxidation and Chloroform Degradation," Young Man Kwon, Lingyun Rui, Kenneth F. Reardon, and T. K. Wood, Engineering Enzymes, Pasteur Institute, Paris, September 18, 2002.
33. "Evolving Toluene Monooxygenases for Green Chemistry and Remediation," T. K. Wood, Y. M. Kwon, L. Rui, K. F. Reardon, Society for Industrial Microbiology, Philadelphia, PA, August 12, 2002.
32. "Use of Proteomics to Determine the Physiological Effects of Metabolic Engineering for TCE Biodegradation," K. F. Reardon, V. A. Pferdeort, and T. K. Wood, Society for Industrial Microbiology, Philadelphia, PA, August 12, 2002.
31. "Quorum Sensing in Bacteria," Second Annual West Point Microbiology Symposium, United States Military Academy, West Point, NY, 3 May 2002.
30. "Evolving Toluene Monooxygenases for Green Chemistry and Remediation," Biocatalyst Function and Design, University of Iowa, Iowa City, 24 October 2001.
29. "Evolving Toluene Monooxygenases for Perchloroethylene, Trichloroethylene, and Chloroform Degradation," T. K. Wood, American, Society for Microbiology Conference on Biodegradation, Biotransformation, and Biocatalysis, San Juan, Puerto Rico, October 5, 2001.
28. "DNA Shuffling of Aromatic Monooxygenases for 1-Naphthol Synthesis and the Degradation of Chlorinated Ethenes," Pseudomonas Conference, Brussels, Belgium, 19 September 2001.
27. "Evolving Toluene Monooxygenases for Green Chemistry and Remediation," Biochemical Engineering XII, Sonoma, CA, 11 June 2001.
26. "Enhancement of Chlorinated Solvent Biodegradation Rates by Enzyme and Pathway Modification," Biochemical Engineering XII, Sonoma, CA, 12 June 2001.
25. "Evolving Toluene Monooxygenases for Green Chemistry and Remediation," Department of Chemical and Bioresource Engineering, Colorado State University, 16 March 2001.
24. "Aerobic Degradation of Tetrachloroethylene and Mixtures of Chlorinated Ethenes by Toluene-*o*-Xylene Monooxygenase of *Pseudomonas stutzeri* OX1, IBC Sixth Annual World Conference on Enzyme Technologies, 28 February 2001.
23. "Evolving Toluene Monooxygenases for Green Chemistry and Remediation," Department of Chemical Engineering, Rutgers University, 14 December 2000.
22. "Rhizoremediation of Chlorinated Compounds with Monooxygenases" Chemical Engineering Department, University of Kentucky, 13 September 2000.
21. "Degradation of Chlorinated Aliphatics with Monooxygenases" Departments of Surgery, Massachusetts General Hospital and Harvard Medical Center, 16 February 2000.
20. "Corrosion Control Using Protective Biofilms which Secrete Antimicrobials and Corrosion Inhibitors" Department of Chemical Engineering, New Mexico State University, Las Cruces, NM, 26 March 1999
19. "Corrosion Control Using Protective Biofilms which Secrete Antimicrobials and Corrosion Inhibitors" Electric Power Research Institute Research Advisory Committee Annual Meeting, Atlanta, GA, 10 March 1999
18. "Beneficial Bacterial Biofilms: Biofilters for TCE Remediation and Living Paint for Corrosion Inhibition," Chemical Engineering, University of Connecticut, Storrs, CT, 22 May 1998
17. "Beneficial Bacterial Biofilms: Biofilters for TCE Remediation and Living Paint for Corrosion Inhibition," Civil & Environmental Engineering, University of Connecticut, Storrs, CT, 22 April 1998
16. "Beneficial Bacterial Biofilms: Biofilters for TCE Remediation and Living Paint for Corrosion Inhibition," University of Maryland, Baltimore County, 20 April 1998
15. "Beneficial Bacterial Biofilms: Biofilters for TCE Remediation and Living Paint for Corrosion Inhibition," University of Toledo, Toledo, OH, 26 March 1998
14. "Beneficial Bacterial Biofilms: Biofilters for TCE Remediation and Living Paint for Corrosion Inhibition," National Research Council of Canada, Montreal, 6 March 1998
13. "Beneficial Bacterial Biofilms: Biofilters for TCE Remediation and Living Paint for Corrosion Inhibition," North Carolina State University, Raleigh, NC, 2 March 1998
12. "Expressing Active Bacterial Monooxygenases," DuPont Central Research and Development, Wilmington, DE, 18 February 1998.
11. "Remediating Trichloroethylene with Bacterial Monooxygenases," Tulane University, New Orleans, LA, 16 February 1998
10. "Expressing Active Bacterial Monooxygenases," University of CA, Santa Barbara, CA, 8 January 1998.
9. "Trichloroethylene Rhizoremediation by Recombinant Root-Colonizing Bacteria," University of California, Riverside, 3 November 1997.
8. "Remediating Trichloroethylene with Monooxygenases," Army Research Office, Cashiers, NC, 12 May 1997.

7. "Trichloroethylene Degradation Using Recombinant Bacteria Expressing Soluble Methane Monooxygenase from *Methylosinus trichosporium* OB3b," *Pseudomonas* 1995, Tsukuba, Japan, 24 August 1995.
6. "TCE Degradation Using Genetically-Engineered Soluble Methane Monooxygenase and Toluene *ortho* Monooxygenase, Army Research Office, Cashiers, NC, 1 May 1995.
5. "TCE Degradation Using Soluble Methane Monooxygenase from *Methylosinus trichosporium* OB3b," Keystone Symposium on Environmental Biotechnology, Lake Tahoe, CA, 20 March 1995.
4. "Enhanced Plasmid Stability Through Post-Segregational Killing of Plasmid-Free Cells: Chemostat Studies," Department of Molecular Biology, Odense University (Denmark), 5 May 1992.
3. "Enhanced Plasmid Stability Through Post-Segregational Killing of Plasmid-Free Cells: Chemostat Studies," Department of Molecular Biology, The Technical University of Denmark, 7 May 1992.
2. "Enhanced Plasmid Stability Through Post-Segregational Killing of Plasmid-Free Cells," Department of Molecular Biology and Biochemistry, University of California, Irvine, 10 February 1992.
1. "Enhanced TCE Degradation Using a Genetically-Engineered Pseudomonad, Army Research Office, Cashiers, NC, 5 May 1993.

Presentations

270. "Persistence in *Xanthomonas citri* subsp. *citri* and its impact on disease management," P. Martins and T. K. Wood, Third Annual Conference of the COST Action EuroXanth: Integrating science on *Xanthomonadaceae* for integrated plant disease management in Europe, Lednice, Czech Republic, September, 2019
269. "Distinguishing, Forming, Waking, and Eradicating Persister Cells (Part 2)," T. K. Wood, AIChE, Pittsburgh, PA, November 2018.
268. "Serine Hydroxymethyltransferase ShrA (PA2444) Controls Rugose Small-Colony Variant Formation in *Pseudomonas aeruginosa*," M. Pu, L. Sheng, S. Song, T. Gong, and T. K. Wood, 8th Conference on ASM Biofilms, Washington, D.C., October 2018.
267. "Substrate Binding Protein DppA1 of ABC Transporter DppBCDF Increases Biofilm Formation in *Pseudomonas aeruginosa* by Inhibiting Pf5 Prophage Lysis," Y. Lee, S. Song, L. Sheng, L. Zhu, J.-S. Kim, and T. K. Wood, 8th Conference on ASM Biofilms, Washington, D.C., October 2018.
266. "Glycoside Hydrolase DisH from *Desulfovibrio vulgaris* Degrades the N-Acetylgalactosamine Component of Diverse Biofilms," L. Zhu, V. G. Poosarla, S. Song, T. L. Wood, D. S. Miller, B. Yin, and T. K. Wood, 8th Conference on ASM Biofilms, Washington, D.C., October 2018.
265. "Bacteria and Blood Coagulation Responses to Textured/Nitric Oxide Releasing Biomaterial Surfaces," Society For Biomaterials, Atlanta, GA, April 2018.
264. "Interplay Between Quorum Sensing Systems and Temperate Bacteriophages *in Pseudomonas aeruginosa*" M. A. Saucedo-Mora, P. Castañeda, A. Cazares, D. Cazares, G. Guarneros, B, Pérez-Eretza, W. Figueroa, Y. Nishiyama, T. Maeda, T. K. Wood, and R. García-Contreras," The Korean Society of Microbiology, Busan, Korea, April 2017.
263. "Viable bacteria persist on antibiotic spacers following two-stage revision for periprosthetic joint infection," Ma, D; Davis, CM; Shanks, RM; Craft, DW; Wood, TK; Hamlin, BR; Urish, KL., American Academy of Orthopaedic Surgeons Annual Meeting, San Diego, California, March 2017.
262. "Living Biofouling-Resistant Membranes with Probiotic Biofilms," M. Kumar, T. L. Wood, R. Guha, M. Geitner, L. Tang, and T. K. Wood, AIChE Annual Meeting San Francisco, CA, Nov 2016.
261. "The HigB/HigA Toxin/Antitoxin System of *Pseudomonas aeruginosa* Influences the Virulence Factors Pyochelin, Pyocyanin, and Biofilm Formation," T. L. wood and T. K. Wood, Biofilms 7, Porto, Portugal, June 2016.
260. "Toxin YafQ Reduces Escherichia coli Growth at Low Temperatures," Y. Zhao, M. McAnulty, and T. K. Wood, ASM National Meeting, Boston, MA, June 2016
259. "Repurposing Anticancer Drugs to Combat Recalcitrant Bacterial Infections," R. García-Contreras, M.Y. Cruz-Muñiz, J.L. Ramos-Balderas, L.E. López Jacome, R. Franco- Cendejas, M. Martinéz-Vázquez, P. Licona-Limon, and T.K. Wood, IV International Conference on Antibiotic Resistance, Malaga Spain, June 2016.
258. "Living Biofilm-Resistant Membranes," T. L. Wood, R. Guha, M. Kumar, and T. K. Wood, North American Membrane Society, Bellevue, WA, May 2016.
257. "Reversing Methanogenesis to Produce Biofuels," T. K. Wood, ARPA-E Energy Innovation Meeting, Washington, D.C., February 2016.
256. "Living Reverse Osmosis Membranes: A Model for the Beneficial Use of Engineered Biofilms," T. L. Wood, R. Guha, M. Kumar, and T. K. Wood, AIChE Annual Meeting, Salt Lake City, UT, Nov 2015.
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46. "Root-Colonizing Genetically-Engineered Bacteria for Trichloroethylene Phytoremediation," T. K. Wood, H. Shim, D. Ryoo, J. S. Gibbons, and J. G. Burken, Battelle 2nd International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 22, 2000.
45. "Reduction in Pitting Corrosion Using Regenerative Biofilms on Aluminum 2024 in Artificial Seawater," T. K. Wood, F. B. Mansfeld, D. Ornek, A. Jayaraman, Z. Sun, and C. H. Hsu, American Chemical Society National Meeting, San Francisco, March 26, 2000.
44. "Rhizosphere Competitiveness of Trichloroethylene-Degrading, Poplar-Colonizing Recombinants," T. K. Wood, H. Shim, D. Ryoo, J. G. Burken, and J. S. Gibbons, American Chemical Society National Meeting, San Francisco, March 26, 2000.
43. "Degradation Mixtures of Chlorinated Aliphatics by Toluene/*o*-Xylene Monooxygenase and Toluene *ortho*-Monooxygenase" H. Shim, S. Chauhan, and T. K. Wood, American Society of Microbiology *Pseudomonas* '99, Maui, HI, September 1, 1999.

42. "Microbially Induced Reduction of Corrosion - A New Era?," B. C. Syrett, T. K. Wood, J. C. Earthman, P. Arps, and F. Mansfeld, EPRI Corrosion and Degradation Conference, St. Pete Beach, June 2, 1999.
41. "Rhizoremediation of Trichloroethylene by Recombinant, Root-Colonizing Bacteria," H. Shim, S. Chauhan, and T. K. Wood, American Chemical Society National Meeting, Anaheim, CA, March 23, 1999.
40. "Cloning the Antimicrobial Peptides Bactenecin and Indolicidin to Inhibit Sulfate-Reducing Bacteria in Biofilms on 304 Stainless Steel," A. Jayaraman, D. A. Duarte, C.-C. Lee, F. B. Mansfeld, and T. K. Wood, American Institute of Chemical Engineers National Meeting, Miami, November 18, 1998.
39. "Synthesis of the Novel Antimicrobial Peptide Hok of *E. coli*," D. C. Pecota, G. Osapay, M. E. Selsted, and T. K. Wood, American Institute of Chemical Engineers National Meeting, Miami, November 20, 1998.
38. "Oxidation of TCE, 1,1-DCE, and Chloroform by Toluene/*o*-Xylene Monooxygenase from *Pseudomonas stutzeri OX1*," T. K. Wood, P. Barbieri, and S. Chauhan, American Society of Microbiology, Atlanta, GA 98th National Meeting, May 20, 1998.
37. "Inhibiting Anaerobic Corrosion of Steel by Excluding Sulfate-Reducing Bacteria from Biofilms with *in situ*-Generated Peptide Antimicrobials," A. Jayaraman, R. M. Carson, P. J. Hallock, and T. K. Wood, American Society of Microbiology, Atlanta, GA 98th National Meeting, May 19, 1998.
36. "Degradation of 2,4,5-Trichlorophenol by Combining Pulse Electric Discharge with Bioremediation," S. Chauhan, E. Yankelevich, V. M. Bystritskii, and T. K. Wood, American Society of Microbiology, Atlanta, GA 98th National Meeting, May 19, 1998.
35. "Corrosion Inhibition of Mild Steel by Aerobic Bacteria," K. M. Ismail, A. Jayaraman, T. K. Wood, and J. C. Earthman, The Electrochemical Society 193rd Meeting, San Diego, CA, May 6, 1998.
34. "Pulsed Power Use for Assisting Bioremediation,' V. M. Bystritskii, T. K. Wood, Y. Yankelevich, S. Chauhan, and F. Wessel, Bioremediation for Industry, University of Notre Dame, March 10,1998.
33. "Trichloroethylene Degradation in the Rhizosphere by Recombinant Root-Colonizing Bacteria," D. C. Yee and T. K. Wood, American Institute of Chemical Engineers National Meeting, Los Angeles, November 19, 1997.
32. "Mathematical Model of Fixed-Film Biofilter for TCE Degradation," A. K. Sun and T. K. Wood, American Institute of Chemical Engineers National Meeting, Los Angeles, November 19, 1997.
31. "Inhibition of Localized SRB Corrosion of Steel," A. Jayaraman, P. J. Hallock, K. M. Ismail, J. C. Earthman, and T. K. Wood, American Institute of Chemical Engineers National Meeting, Los Angeles, November 19, 1997.
30. "Electroporation of Pink-Pigmented Methylotrophic Bacteria," C. S. Kim and T. K. Wood, American Institute of Chemical Engineers National Meeting, Los Angeles, November 19, 1997.
29. "Creating Auxotrophic Mutants in Methylophilus methylotrophus AS1 by Combining Electroporation and Chemical Mutagenesis," C. S. Kim and T. K. Wood, American Institute of Chemical Engineers National Meeting, Los Angeles, November 19, 1997
28. "Segregational Stabilization of Plasmids Using Two Post-Segregational Killer Loci," D. C. Pecota, K. Wu, C. S. Kim, K. Gerdes, and T. K. Wood, American Institute of Chemical Engineers National Meeting, Los Angeles, November 17, 1997
27. "Trichloroethylene Rhizoremediation by Recombinant Root-Colonizing Bacteria," D. C. Yee and T. K. Wood, *Pseudomonas* '97: VI International Congress on *Pseudomonas* Molecular Biology and Biotechnology, Madrid, Spain, 7 September, 1997.
26. "Pulsed Power for Advanced Wastewater Remediation Technology," V. M. Bystritskii, T. K. Wood, Y. Yankelevich, D. C. Yee, and F. Wessel, 11th IEEE International Pulsed Power Conference, Baltimore, MD, June 29, 1997.
25. "Aerosol Plasma for Aqueous Waste Treatment," V. M. Bystritskii, T. K. Wood, Y. Yankelevich, D. C. Yee, and F. Wessel, 24th IEEE International Conference on Plasma Science, San Diego, CA, May 19, 1997.
24. "Pulsed Power for Advanced Wastewater Remediation," V. M. Bystritskii, T. K. Wood, Y. Yankelevich, and D. C. Yee, 1997 High-Voltage Workshop, Newport Beach, CA, May 6, 1997.
23. "Trichloroethylene Degradation in the Rhizosphere by Recombinant Root-Colonizing Bacteria," D. C. Yee and T. K. Wood, Army Research Office Biotechnology Symposium, Cashiers, NC, May 12, 1997.
22. "TCE Degradation by a Root-Colonizing Bacterium," D. C. Yee and T. K. Wood, UC Toxics Substances Research & Teaching Program Annual Symposium, San Diego, CA, April 12, 1997.
21. "Corrosion Protection by Regenerative Biopolymers," A. Jayaraman, K. M. Ismail, J. C. Earthman, and T. K. Wood, Electric Power Research Institute Strategic R&D Corrosion Meeting, Palo Alto, CA, March 17, 1997.
20. "A Dual-Treatment System for the Degradation of 2,4-Dichlorophenol Which Utilizes a Pulsed-Electric Discharge Reactor and Bioremediation," D. C. Yee, Y. Yankelevich, D. Moorjani, V. Bystritskii, and T. K. Wood, American Institute of Chemical Engineers National Meeting, Chicago, IL, November 18, 1996.
19. "Inhibition of SAE 1018 Carbon Steel Corrosion by Aerobic Bacteria," A. Jayaraman, E T. Cheng, T. Gehrig, J. C. Earthman, and T. K. Wood, American Institute of Chemical Engineers National Meeting, Chicago, IL, November 18, 1996.
18. "Corrosion Inhibition of SAE 1018 Carbon Steel by Aerobic Biofilms," A. Jayaraman, J. C. Earthman, and T. K. Wood, American Society of Microbiology Conference on Microbial Biofilms, Salt Lake City, UT, October 1, 1996.
17. "Exclusion of T4 Phage by the *hok/sok* Killer Locus," D. C. Pecota and T. K. Wood, American Society of Microbiology, New Orleans, LA National Meeting, May 21, 1996.

16. "Dichlorophenol Degradation Using *Streptomyces viridosporus* T7A Lignin Peroxidase," D. C. Yee and T. K. Wood, American Society of Microbiology, New Orleans, LA National Meeting, May 21, 1996.
15. "Characterization of *P. fragi* and *E. coli* Biofilms for Corrosion Inhibition," A. Jayaraman, A. K. Sun, J. E. Earthman, and T. K. Wood, American Society of Microbiology, New Orleans, LA National Meeting, May 21, 1996.
14. "TCE Mineralization in a Biofilter with a Pure Culture Which Constitutively Expresses Toluene *ortho*-Monooxygenase," A. K. Sun and T. K. Wood, American Society of Microbiology, New Orleans, LA National Meeting, May 21, 1996.
13. "Trichloroethylene Degradation Using Recombinant Bacteria Expressing the Soluble Methane Monooxygenase from *Methylosinus trichosporium* OB3b," Deokjin Jahng, Craig Kim, and T. K. Wood, American Chemical Society, Anaheim, CA National Meeting, April 4, 1995.
12. "Degradation and Mineralization of Gas-Phase Trichloroethylene Using a Fixed-Film Bioreactor," Adam K. Sun and T. K. Wood, American Institute of Chemical Engineers National Meeting, San Francisco, Nov. 18, 1994.
11. "Mineralization of 2,4-Dichlorophenol and Decolorization of Humic-Acid-Contaminated Water by *S. viridosporus* T7A Lignin Peroxidase," D. C. Yee and T. K. Wood, American Institute of Chemical Engineers National Meeting, San Francisco, November 16, 1994.
10. "TCE Degradation by a Recombinant Pseudomonad Containing the Soluble Methane Monooxygenase Gene of *M. trichosporium* OB3b," Deokjin Jahng and T. K. Wood, Emerging Technologies in Hazardous Waste Management VI, Atlanta, GA, September 19, 1994.
9. "TCE Degradation by a Recombinant Pseudomonad Containing the Soluble Methane Monooxygenase Gene of *M. trichosporium* OB3b," Deokjin Jahng and T. K. Wood, American Chemical Society, San Diego, CA National Meeting, March 15, 1994.
8. "Evaluation of the *hok/sok* Killer Gene for Plasmid Maintenance," Kuowei Wu and T. K. Wood, American Institute of Chemical Engineers National Meeting, St. Louis, November 10, 1993.
7. "Effect of Specialized Ribosomes on Recombinant-Protein Synthesis in *E. coli*," T. K. Wood and S. W. Peretti, American Institute of Chemical Engineers National Meeting, Chicago, November 14, 1990.
6. "Effect of Chemically-Induced, Cloned-Gene Expression on Protein Synthesis in *E. coli*," T. K. Wood and S. W. Peretti, American Chemical Society, Washington National Meeting, August 27, 1990.
5. "Enhanced Plasmid Stability Through Post-Segregational Killing of Plasmid-Free Cells," T. K. Wood, R. H. Kuhn, and S. W. Peretti, American Chemical Society, Boston National Meeting, April 23, 1990.
4. "Effects of Recombinant Protein Synthesis on Protein Synthetic Capacity," T. K. Wood and S. W. Peretti, International Chemical Congress of Pacific Basin Societies (Pacifichem), Honolulu, Hawaii, Dec. 21, 1989.
3. "Effects of Recombinant Protein Synthesis on Transcription, Translation, and Macromolecular Stability," T. K. Wood and S. W. Peretti, American Institute of Chemical Engineers National Meeting, San Francisco, November 9, 1989.
2. "Effects of Recombinant Protein Synthesis Through Plasmid Amplification on Transcription and Translation in *E. coli*," T. K. Wood and S. W. Peretti, Mid-Atlantic Biochemical Engineering Consortium, Research Triangle Park, NC, June 28, 1989.
1. "Concentration of Selected Solutes by Hydrolyzed Polyacrylamide Gel," T. K. Wood and D. Bhattacharyya, AIChE Southern Region Meeting, Clemson, SC, 1985.

Teaching

Courses Taught:

Intro to Molecular Biology of the Cell (eukaryotes)	F’ 15
Intro. to Microbiology (undergrad, 319 students)	F’ 13
Intro. to Biomolecular Engineering (undergrad)	F’ 12
Intro. to Biochem. Engineering (undergrad/grad)	F '91, W '93, W '94, F' 99, S' 01, S’02, S’03, F’04, S’05, F’07, F’12, F’16, F’17, F’18, F’ 19
Bioremediation/Biocatalysis (undergrad/grad)	S '92, F '92, S '94, W '95, W '98, F '00, F ‘01, F ’02, S’04, F’09, F’10, F’11, S’13, S’14, S’15, S’16, S’17, S’18, S’19
Pollution Prevention (undergrad)	S '93, W '96
Reaction Engineering (undergrad/grad)	F '93-97, S ’06, S ’07, S’08, S’09, S’ 10, S’11, F’14
Chemical Engineering Process Design (undergrad)	S '95, S '96, S' 97, S '99, S '00, S '01
Presentations (undergrad)	F ‘06

Newly developed courses: (i) Chemical Engineering Process Design, (ii) Reaction Engineering, and (iii)Pollution Prevention for the new chemical engineering undergraduate program at UC Irvine as well as (iv) Bioremediation/Green Chemistry for both UC Irvine and UConn

Research Assistant/Teaching Assistant (1987-1991), North Carolina State University

Student/Post-Doctoral Researcher Advising

Former Ph.D. Students (major advisor, 8 faculty members produced)

A. Professor Deokjin Jahng (professor Myongji University, Korea)
Professor Arul Jayaraman (associate professor Texas A & M, formerly at Harvard/Mass General Hospital)
Professor Dacheng Ren (associate professor Syracuse University, formerly Cornell University post-doc)
Professor Thammajun Leungsakul (assistant professor Sirindhorn International Institute of Technology, Thailand)
Professor Andres Gonzalez Barrios (assistant professor Universidad de los Andes, Colombia)
Professor Gonul Vardar (assistant professor U of Hawaii)
Professor Viviana Sanchez Torres (assistant professor Universidad Industrial de Santander)
Professor Seok Hoon Hong (assistant professor Illinois Institute of Technology)

B. Dr. Mike McAnulty
Dr. Rajarshi Guha
Dr. Brian Kwan
Dr. Lili Sheng (Cathay Industrial Biotech)
Dr. Manjunath Hegde (post-doc Massachusetts General Hospital)
Dr. Qun Ma (research assistant Tianjin Institute of Industrial Biotechnology)
Dr. Tarun Bansal (NIH post-doc)
Dr. Can Attila (TANCAN Dis Ticaret Ltd. Sti.)
Dr. Ying Tao (CDC, Atlanta)
Dr. Brendan Keenan (BioHelix, Inc.)
Dr. Rongjun Zuo (Harvard/Mass General Hospital)
Dr. Lingyun Rui (Brandeis U post-doc, Imunogen, Inc.)
Dr. Sachiyo Iwashita (Research Staff, CRC Corporation, Fukuoka City, Japan.)
Dr. Adam Sun (Baxter Healthcare, Inc.)
Dr. Dennis Yee (Bio-Rad, Inc.)
Dr. Doug Pecota (post-doc University of CA, Irvine)

Former Post-Doctoral Students (14 faculty members produced)

Prof. Sooyeon Song (Assistant Professor in the Department of Food Science, Jeonbuk National University)
Dr. Ting Gong
Prof. Ryota Yamasaki (Assistant Professor in the Department of Infections and Molecular Biology, Kyushu Dental University)
Dr. Lei Zhu
Dr. Jun Seob Kim
Dr. Yijun Zhu
Prof. Giridhar Poosarla (Assistant Professor in the Department of Microbiology and Food Science and Technology at Gitam University, Visakhapatnam, Andhra Pradesh, India)
Dr. Valerie Soo
Dr. Nityananda Chowdhury
Dr. Jine Li
Dr. Xiao Li
Dr. Xin Fang
Dr. Zhigang Zhang
Dr. Fayin Zhu
Dr. Ceci Quiroga
Dr. Arti Tripathi
Dr. Hsin-Yao Cheng
Dr. Devon Osborune
Prof. Xiaoxue Wang (associate professor, Key Laboratory of Marine Bio-resources Sustainable Utilization, South China Sea Institute of Oceanology, Chines Academy of Sciences)
Dr. Mingming Pu
Dr. Ying Hu
Prof. Akihiro Ueda (associate professor, Hiroshima University, Japan)
Prof. Jintae Lee (assistant professor Yeungnam University, Korea)
Prof. Toshinari Maeda (assistant professor Kyushu Institute of Technology, Japan)
Prof. Ayelet Fishman (assistant professor Technion University, Israel)
Prof. Moshe Herzberg (assistant professor Ben Gurion University of the Negev, Israel)
Prof. Hojae Shim (associate professor University of Macau, Hong Kong)

Prof. Rodolfo Garcia Contreras (associate professor, National Cardiology Institute, Mexico City, Mexico)
Prof. Michael Yu (assistant professor, Chinese Academy of Sciences, China)
Dr. Yunho Lee
Prof. Younghoon Kim (assistant professor, College of Medicine at Kosin University)
Dr. Xuesong Zhang
Dr. Alvin Lo
Dr. Uma Sagaram
Prof. Sage Hiibel (assistant professor, University of Nevada Reno)
Dr. Heather Bean
Dr. Wenjin Liu
Dr. Cishan Li
Dr. Ruifu Zhang
Dr. Hari Krishna
Dr. Youngsoon Um
Dr. Dogan Ornek
Dr. Keith Canada
Dr. Evgeny Gak
Dr. Ik-Sung Ahn
Dr. Sadhana Chauhan
Dr. Young-Man Kwon
Dr. Kang Ryu
Dr. Jaisoo Kim

Former M.S. Students (major advisor)

Kuowei Wu
Craig Kim
Joanna Domka
Sabina Islam

Former Visiting Professors

Professor Honbo Hu
Professor Zhonghua Yang

Undergraduate Students Performing Independent Study (those enrolled in professional or graduate school are highlighted)

Chong Yung, **Philip Luu**, Phuc Nguyen, Ina Ann Jung, **Prof. Jennifer Maynard**, Dinesh Moorjani, Leslie Recaido, E. Tina Cheng, Peter Hallock, Sandra Cuevas, **Prof. Katie Kao**, Jenny O'Connor, Russell Carson, Byron Waller, Davianne Duarte, Matt Huang, Aracely Cordova, Mike Moon, Olivia Limbunan, Loius Monge, Raul Rohr, Richard Tsai, Christine Miller, James Flockhart, David Warnke, Melissa Burgess, **Kally Bowers**, Luke Autry, Dawn Griffith, Victoria Exheverria, Christopher Vitale, Megan Hurley, **Kristen Gardiner**, Clifford Weed, Reema Persaud, Lukasz Kozon, Stephanie Duffey, Ben Fairbanks, Nolan Wheeler, Brad Osinki, Matt Delude, Ian Kaye, Aparna Boddapati, Josh Munn, **Maria Villarreal**, **Brian Liu, Alex Liu**, Jake Mitchell, Laura Hash, Diakonon Laurette Seka, Trent Benefield, Ricky Palacious, Chris Hersch, Brett Owens, Ericka Reed, **Alec Jaeger**, Burgess Unwalla, Olga Vinogradova, Kenneth Hubbell, James Guerra, Fabiola Agramonte, Tasaya Northover, Michael Geitner, James Troia, Alyssa Hoke, Shujinn Zhong, Siyi Jiang, Chris Solis, Joshua Pezzulo, and Molly Sargen (**69 undergrads**).

Professional Activities

Conference organizer, 2nd International Symposium on Finding New alternatives to Combat Bacterial Infections, Mexico City, Mexico, 2017
Scientific Advisory Board, Eurobiofilms, Ghent, Belgium, 2013
Presented NSF EFRI ($100 M program) idea to engineering directorate, December 2009 (idea chosen for 2011 competition)
Reviewer for Environ. Microbiol., Microbial Biotechnology, ISMEJ, Biotechnology & Bioengineering, Appl. Environ. Microbiol., Applied Microbiology and Biotechnology, and J. Bacteriology
R15 study section, National Institute of Allergy and Infectious Diseases, 2012
Special emphasis panel, National Institute of Allergy and Infectious Diseases, 2012
Special emphasis panel, National Institute of Allergy and Infectious Diseases, 2008
Special Study Section, National Institute of Allergy and Infectious Diseases, 2002

Review Panel for Sustainable Energy Biomass/Biofuels, NSF, June, 2009
Review Panel for CBET Unsolicited proposals, NSF, June, 2008
Review Panel for EFRI, NSF, June, 2007
Review Panel for Metabolic Engineering, NSF, April 2005
Review Panel for CAREER Award, NSF, October 2004
Workshop on Opportunities for Catalysis, DOE, May 2002
Scientific Review Special Emphasis Panel, NIH, March 2002
Program Co-Chair, ACS, "Advances in Bioremediation and Biodegradation", March 1999
Review Panelist, NSF Professional Opportunities for Women in Research and Education, March 1998
Review Panelist, NSF/EPA Technology for a Sustainable Environment, May 1997
Review Panelist, NSF/EPA Technology for a Sustainable Environment, June 1996
Program Co-Chair, AIChE, "Advances in Biotechnology for Production of Chemicals and Fuels", November, 1997
Program Co-Chair, AIChE, "Advances in Bioremediation", November 1996
Program Chair, ACS, "Molecular-Level Bioremediation", April 1995