

JOE EUGENE LEPO, Ph.D.

PROFESSOR
Department of Biology, and
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United States of America

EDUCATION:

Ph.D., Microbiology/Biochemistry, The University of Texas, Austin, Texas, 1979, Dissertation: Nitrogen and Ammonia Assimilation in *Azotobacter vinelandii*

M.S., Microbiology/Biology, Pittsburg State University, Pittsburg, Kansas, 1971, Thesis: A Study of Respiration in *Epicoccum nigrum* Link

B.S., Biology, Pittsburg State University, Pittsburg, Kansas, 1969

PROFESSIONAL EXPERIENCE

UNIVERSITY OF WEST FLORIDA, Pensacola, Florida

Professor; (2009 – present); Department of Biology and Center for Environmental Diagnostics and Bioremediation (CEDB)

Associate Professor; (2001 – 2009); Department of Biology and Center for Environmental Diagnostics and Bioremediation (CEDB)

Research Assistant Professor (1991 – 2001); (CEDB)

Director, CEDB Wetlands Research Laboratory (2001 – present)

Acting Director, Institute for Coastal and Estuarine Research, and Wetlands Research Laboratory (1997 – 1999)

THE UNIVERSITY OF MISSISSIPPI, University, Mississippi (1990-1991)

Visiting Research Scientist. Department of Biology

ECOGEN INC., Langhorne, Pennsylvania (1987-1989)

Senior Research Scientist, Microbiology/Microbial Physiology

THE UNIVERSITY OF MISSISSIPPI, University, Mississippi (1980-1987)

Assistant Professor of Microbiology, Department of Biology (tenured 1987)

ALLIED CORPORATION, Syracuse Research Laboratory, Solvay, New York (1984)

Visiting Scientist, Crop Science

UNIVERSITY OF HELSINKI, Department of Microbiology, Helsinki, Finland (1983)

Organization for Economic Cooperative Development,

Research Grantee

Fulbright Fellow, Senior Research

OREGON STATE UNIVERSITY, Corvallis, Oregon (1979-1980)

Postdoctoral Research Associate, Laboratory for Nitrogen Fixation Research, (Dr. Harold J. Evans, Director)

THE UNIVERSITY OF TEXAS, Austin, Texas (1973-1979)

Assistant Instructor (1977-1979); **Research Assistant** (1973-1977)

Department of Microbiology (Laboratories of Drs. Orville Wyss and F. Robert Tabita)

MISSOURI WESTERN STATE UNIVERSITY, St. Joseph, Missouri (1969-1972)

Assistant Professor, Department of Biology

**PROFESSIONAL
AFFILIATIONS:**

American Society for Microbiology, National and Southeastern United States Branch
American Association for the Advancement of Science
American Phytopathological Society
World Aquaculture Society
Florida Association of Environmental Professionals, Northwest Chapter

HONORS:

Organization for Economic Cooperative Development, Research Grantee, 1983

Fulbright Fellow, Senior Research, 1983, University of Helsinki, Finland

University of West Florida Research and Creative Activities Award, 2005,
Selected as Top Researcher by University of West Florida's Scholarly and Creative
Activities Committee

Million Dollar Research Club, 2006, University of West Florida Sponsored
Research Programs

University of West Florida Research and Creative Activities Award, 2009,
Selected as Top Researcher by University of West Florida's Scholarly and Creative
Activities Committee

Five-Million Dollar Research Club, 2011, University of West Florida Office of
Sponsored Research Programs

Sabbatical Leave: Fall 2011, 2011, University of West Florida College of Arts and
Science; scholarly work in China, Japan and USA; multiple academic and industrial
institutions

**INTERESTS
AND HOBBIES:**

Writing, music, audio, home theater, guitar, literature, language, philosophy,
running, snow skiing, swimming, bicycling, microcomputer applications

TEACHING

Courses Taught at University of West Florida

- Microbiology, MCB3020, Summer, Term A, 1996
 - Microbiology, MCB3020, Summer, Term A, 1998
 - Microbiology, MCB3020, Summer, Term A, 1999
 - Microbiology, MCB3020, Fall 2002
 - Microbiology, MCB3020, Spring 2003
 - Microbiology, MCB3020, Fall 2003
 - Microbiology, MCB3020, Spring 2004
 - Microbiology, MCB3020, Fall 2004
 - Microbiology, MCB3020, Spring 2005
 - Microbiology, MCB3020, Fall 2005
 - Microbiology, MCB3020, Spring 2006
 - Microbiology, MCB3020, Fall 2006
 - Microbiology, MCB3020, Spring 2007
 - Microbiology, MCB3020, Fall 2007
 - Microbiology, MCB3020; Fall 2007
 - Microbiology, MCB3020; Spring 2008
 - Microbiology, MCB3020; Fall 2008
 - Microbiology, MCB3020; Spring 2009
 - Microbiology, MCB3020; Fall 2009
 - Microbiology, MCB3020; Spring 2010
 - Microbiology, MCB3020; Fall 2010
 - Microbiology, MCB3020; Spring 2011
-
- Microbial Physiology, PCB6990, Spring 1996
 - Microbial Physiology, PCB6990, Fall 1998
-
- Microbial Ecology, MCB5605, Spring 2000
-
- Symbiosis, PCB6991, Spring 1999
-
- Mycology, BSC 4990/BSC5990, Fall 1999
 - Mycology Laboratory, BSC5990L, Fall 1999
-
- Biology Seminar, PCB4990, Fall 2001
 - Biology Seminar, PCB5991; Spring 2002
 - Biology Seminar, PCB4990, Fall 2002
 - Biology Seminar, PCB4990, Spring 2003
 - Biology Seminar, PCB4990, Fall 2003
 - Biology Seminar, PCB4990, Spring 2004
 - Biology Seminar, PCB4990, Fall 2004
 - Biology Seminar, PCB4990, Spring 2005
 - Biology Seminar, PCB4990, Fall 2005
 - Biology Seminar, PCB4990, Spring 2006
 - Biology Seminar, PCB4990, Fall 2006
 - Biology Seminar, PCB4922, Spring 2007
 - Biology Seminar, PCB5924, Spring 2007

Recent Individual Directed Studies

- Spring 2008: PCB3905 variable cr. hour, 2 students
- Spring 2008: PCB4905 variable cr. hour, 1 student
- Spring 2008: PCB6905 variable cr. hour, 1 student
- Summer 2008: PCB4905 variable cr. hour, 1 student
- Fall 2008: MCB4905 variable cr. hour, 1 student
- Fall 2008: MCB5905 variable cr. hour, 1 student
- Spring 2009: MCB3905 variable cr. hour, 1 student
- Spring 2009: PCB4905 variable cr. hour, 1 student
- Summer 2009: PCB4905 variable cr. hour, 1 student
- Fall 2009: MCB4905 variable cr. hour, 1 student
- Fall 2009: MCB5905 variable cr. hour, 1 student
- Spring 2010: MCB3905 variable cr. hour, 1 student
- Spring 2010: PCB4905 variable cr. hour, 1 student
- Summer 2010: PCB4905 variable cr. hour, 1 student
- Fall 2010: MCB4905 variable cr. hour, 2 students
- Fall 2010: PCB4905 variable cr. hour, 1 student
- Fall 2010: MCB5905 variable cr. hour, 1 student
- Spring 2011: MCB3905 variable cr. hour, 1 student
- Spring 2011: MCB4905 variable cr. hour, 3 students
- Spring 2011: PCB4905 variable cr. hour, 1 student
- Spring 2011: MCB5905 variable cr. hour, 1 student

Graduate Student Supervision and Training

Recent Thesis Hours

- Fall 2003, BSC6971 variable cr. hour, 3 students
- Spring 2004, BSC6971 variable cr. hour, 1 student
- Fall 2004, BSC6971 variable cr. hour, 1 student
- Summer 2006, BSC6971 variable cr. hour, 1 student
- Summer 2007, BSC6971 variable cr. hour, 3 students
- Fall 2008, BSC6971 variable cr. hour, 2 students
- Spring 2009, BSC6971 variable cr. hour, 2 students
- Fall 2010, BSC6971 variable cr. hour, 2 students
- Spring 2011, BSC6971 variable cr. hour, 2 students
- Summer 2011, BSC6971 variable cr. hour, 1 student

Master of Science students as thesis director

- Candace L. Zuleger; MS 1996
- Katherine Ruopp-Edwards; MS, 1997
- Valerie Walker; MS, 1999
- Lori L. Phillips; MS, 2005
- Rachel A. Brooks-Barry; MS, 2005
- Kristen Nicole Hellein; MS, spring 2009
- Abidemi Ajidahun, MS, spring 2011
- Elizabeth M. Kennedy, MS, summer 2011
- Brian Davis, MS, to arrive fall 2011

MS Committees

- Committee Member, Phillip Turner, MS, 1996
- Committee Member, Paula Nicola, MS, 1998
- Committee Member, Katie Briethoff, MS, 1999

- Committee Member, Aileen Petty Grunwald, MS, 1999
- Committee Member, Lassandra vonAppel, MS, 1999
- Committee Member, Keith Simmon, MS, Fall 2001
- Committee Member, Laura Pennington; in progress
- Committee Member, Joe Moss; MS, 2005
- Committee Member, Matthew Wagner; MS, 2006
- Committee Member, Jeff Allison; MS, 2006
- Committee Member, Britta Hays; MS, projected completion spring 2012

Current graduate students and thesis progress

- MS Thesis Major Professor for Elizabeth Kennedy; admitted to grad school, summer 2008; expected completion, summer 2011
- MS Thesis Major Professor for Chris Maxwell; admitted to grad school, summer 2010; anticipated graduation, spring 2012
- MS Thesis Major Professor for Brian Davis; admitted to grad school, summer 2011

RESEARCH

Intramural Support from UWF

- *Validation of a Best Management Practice for Nutrients Control in Agricultural Runoff* Faculty summer project; Summer 2001; \$7500, University of West Florida
- *Distinction of Crop Bioterrorism from Natural Phytopathogenic Outbreaks*; Faculty summer project; Summer 2002; \$7500, University of West Florida
- *Database of Infrared Reflectance Spectra of Diseased Crops*; Faculty summer project; Summer 2003; \$7500, University of West Florida
- *Detection, Identification and Quantitation of Mycotoxins and Mycotoxin-Producing Fungi in Cereal Grains*; Faculty summer project; Summer 2004; \$6500, University of West Florida
- *Validation of Molecular Methods for Detection and Quantification of Aflatoxin-Producing Fungi on Plants*; Summer 2005; \$2000, University of West Florida
- *Host Range of Helicobacter pylori, a Human-Pathogenic Bacterium that Causes Gastric and Peptic- Ulcers*; Summer 2006, \$7500, University of West Florida
- *Supporting Data for Patenting Biosurfactants Produced by Marine Microorganisms*; Summer 2007, \$2000, University of West Florida
- *Molecular Assessment of Cell-Membrane Integrity Elucidates Mechanism by which Novel Biocides Kill Human-Pathogenic Bacteria* ; Summer 2010, \$2000, University of West Florida
- *Does Influx of Petroleum Hydrocarbons into Gulf-Coastal Ecosystems Affect Microbial Indicators of Water Quality and Human Pathogenic Bacteria*; Summer 2011, \$2000, University of West Florida

Extramural Support

Regional

- *Environmental Monitoring of South Palafox Marina*; City of Pensacola, Community Redevelopment Agency; July 1998 – June 2002; \$13,147 for Year 1; \$7,163 for subsequent years
- *Water Quality Assessment of Bacterial and Nutrient Pollution in Park Water*, U. S. Department of the Interior, National Parks Service, Gulf Islands National Seashore, Gulf Breeze, Florida \$14,000; 1 September 1997 – 31 August 1998
- *Impact of Fluoridation of the Municipal Drinking Water*; Escambia County Utilities Authority; 15 January 2000 – 8 September 2000; \$29,876, Co-PI: Richard A. Snyder
- *Water Quality Monitoring of Bayous Texar and Grande*; Florida Department of Health Environmental Services; 14 March 2000 – 31 December 2000; \$63,802, Co-PI: Richard A. Snyder

- *Water Quality Monitoring of Bathing Places*; Escambia County Department of Health; approx. \$9,800 per year from April 1999– 31 July 2007, Co-PIs: Jan Macauley
- *Healthy Beach Sampling, Okaloosa County*; Okaloosa County Health Department, Ft. Walton Beach, Florida; 1 Jan. – 30 June 2003; \$9922
- *Water Quality Monitoring in Escambia County Bathing Places*; Escambia County Health Department; Pensacola, Florida; \$46,302; 1 July 2002 – 30 June 2003; Co-PIs: Jan Macauley, Richard A. Snyder
- *Molecular Genetic and Analytical Chemical Strategies for Detection of Source Evaluation of Human Fecal Waste in Environmental Waters*; Escambia County Health Department, 1 July 2001 – 30 June 2002, \$130,000 / year, Co-PIs: Richard Snyder, Wade Jeffrey
- *Fecal Source Tracking in Environmental Waters*. Escambia County Health Department; Pensacola, Florida, 1 July 2002 – 30 June 2003; \$130,000, Co-PIs: Richard A. Snyder, Wade Jeffrey
- *Fecal Source Tracking in Environmental Waters*. Escambia County Health Department; Pensacola, Florida, 1 July 2003 – 30 June 2004; \$100,000, Co-PI: Richard A. Snyder
- *Fecal Source Tracking in Environmental Waters*. Escambia County Health Department; Pensacola, Florida, 1 July 2004 – 30 June 2005; \$76,500, Co-PI: Richard A. Snyder
- *Water Quality Monitoring in Escambia County Bathing Places*; Escambia County Health Department; Pensacola, Florida; 1 July 2006 – 30 June 2007; \$41,000
- *Characterization and Management of Effluent from Aquaculture Ponds in Florida—A Treatment System Evaluation*: Florida Department of Agricultural and Consumer Services, US. EPA, FDEP, Three Rivers RC&D; \$23,000, 16 July 2001 – 31 December 2002.
- *Fecal Source Tracking in Environmental Waters*. Escambia County Health Department; Pensacola, Florida, 1 July 2005 – 30 June 2006; \$76,500, Co-PI: Richard A. Snyder
- *Fecal Source Tracking in Environmental Waters*. Escambia County Health Department; Pensacola, Florida, 1 July 2006 – 30 June 2007; \$76,500, Co-PI: Richard A. Snyder
- *Fecal Source Tracking in Environmental Waters*. Escambia County Health Department; Pensacola, Florida, 1 July 2007 – 30 June 2008; \$40,000, Co-PI: Richard A. Snyder
- *Fecal Source Tracking in Environmental Waters*. Escambia County Health Department; Pensacola, Florida, 1 July 2008 – 30 June 2009; \$40,000, Co-PI: Richard A. Snyder

Extramural Support

National

- *Effectiveness and Safety of Strategies for Oil Spill Bioremediation: Potential and Limitation, Laboratory to Field*, U.S. Environmental Protection Agency, \$886,000 (1992 – 1995); Co-PI: K. R. Rao
- *Efficacy of Biosurfactants in Remediation of Oil Spills*. Petroleum Environmental Research Forum (through Amoco Oil Company) and Marine Spills Response Corporation. \$130,000 (1993 – 1995)

- *Bioconcentration of Contaminants*, U.S. Environmental Protection Agency, Gulf Ecology Division, \$2500 (July 1999)
- *Early Detection and Diagnosis of Phytopathogens as Agents of Bioterrorism*: Department of Defense; Department of the Army, Research Development Engineering Command (RDECOM), \$1,389,500 (2001 – 2006)
- *Microbial Biofilms as Indicators of Estuarine Ecosystem Condition*, component project within: Estuarine Indicators Centers proposal; Microbial Indicators component, U. S. EPA: \$1,563,111 (2001 – 2007); Co-PI: Richard A. Snyder
- *Agricultural Runoff Impacts on Total Maximum Daily Loads and Water Quality*, US Department of Agriculture: \$532,000 (2001 – 2005); Co-PI: Richard A. Snyder
- *Assessment of Environmental Impacts of Toxic Pollutants in Bayou Texar*. Task 4 of PERCH project; U. S. EPA. \$168,389 (2003 – 2004); Co-PIs: Carl Mohrherr and Johan Liebens
- *Assessment of Environmental Pollution in Bayou Chico and Sanders Beach*. PERCH subproject; U. S. EPA. \$225,638 (2004 – 2006); Co-PIs: Johan Liebens and Carl Mohrherr
- *Microbial Source Tracking and its Application to the Northern Gulf of Mexico*, \$875,907 (2007 – 2010); U.S. Environmental Protection Agency Gulf of Mexico Program; Co-PIs at University of South Florida (Valerie Harwood) and University of Southern Mississippi (R.D. Ellender)
- *Validation and Field Testing of Microbial Source Tracking Methodologies in the Gulf of Mexico*; National Oceanographic and Atmospheric Administration; \$75,000 (2007 – 2008); Co-PIs at University of South Florida (Valerie Harwood) and University of Southern Mississippi (R.D. Ellender)
- *Diagnostics for Intentionally Released Human Pathogens in Surface- and Drinking-Waters*; Department of Defense; Department of the Army, Research Development Engineering Command (RDECOM); \$218,125 (2008 – 2010); Co-PI at University of North Florida (Cynthia Nyquist-Battie).
- *Developing and testing environmentally safe biocides for bio-defense, biomedical and environmental use*. Defense Threat Reduction Agency (DTRA); Subcontract \$50,000 (July 2009 – February 2011); Lead-PI Jose Barreto at Florida Gulf Coast University.
- *BioBlend Technologies Consultation*” Teaming Agreement between UWF and others, including Enviro-Pro-Tech, Inc., Synergy Environmental and Industrial Services, U.S. O’Neill Industries, Green Earth Industrial Solutions, Bio Blend Technologies. \$61,996 (25 January 2011—14 October 2011); co-PIs: Fred Hileman, Michael Huggins.
- *Studies of Microbial Communities Affected by the Deepwater Horizon Spill*. PI Omar Oyarzabal, \$60,000 total; subcontract with Alabama State University, Montgomery. Approx. \$15,000.

SELECTED INVITED LECTURES

- "A Renaissance of Nitrogen Fixation Research." Granting Agency Conference at the Department of Microbiology, University of Helsinki, Helsinki, Finland. December 1983.
- "Carbon Substrate Metabolism in Rhizobia." Symposium on Symbiotic Nitrogen Fixation sponsored by Allied Corporation, Syracuse, New York. June 1985.
- "Carbon Substrate Metabolism Relative to the Ecology, Survival and Competition in Rhizobia." 6th International Symposium on Nitrogen Fixation, Corvallis, Oregon. August 1985.
- "2089: Biological Science and Biotechnology in the Future." Three-lecture series delivered at Pittsburg State University, Pittsburg, Kansas. 14 - 16 June 1989.
- "Validation of Protocols for Assessing the Effectiveness of Commercial Bioremediation Agents for Oil Spills Using Open-Water Test Systems." Presented at U. S. EPA, United States of America-- Israel Bioremediation Workshop, Nahsholim, Israel. 11 November 1992.
- "Potential for Bioremediation of Oil-Contaminated Environments." Presented to Florida Independent Petroleum Producers' Association, Annual Meeting, Perdido Key, Florida. 24 September 1993.
- "Effectiveness and Safety of Strategies for Oil Spill Bioremediation: Potential and Limitation." Presented at the U. S. Environmental Protection Agency's Annual Symposium on Bioremediation of Hazardous Wastes: Research, Development and Field Evaluations, San Francisco, California. 27 - 30 June 1994.
- "Assessing Safety and Effectiveness of Oil Spill Bioremediation Strategies." Special Seminar: Presented to visiting Japanese scientists from the University of Tokyo and from Mitsubishi at the Gulf Ecology Division of U. S. EPA; Gulf Breeze, Florida; 13 November 1996.
- "Alternative Endpoints for Assessing Bioremediation Success: Special Considerations for Wetlands Ecosystems." Presented at the "Oil Spills in Coastal Marsh Ecosystems" workshop. Sponsored by the Louisiana Environmental Research Center, McNeese State University; 6 - 7 June 1996, Lake Charles, Louisiana.
- "Effectiveness and Relative Toxicity of Biosurfactants." Presented at the "Oil Spills in Coastal Marsh Ecosystems" workshop. Sponsored by the Louisiana Environmental Research Center, McNeese State University; 6 - 7 June 1996, Lake Charles, Louisiana.
- "Effectiveness and Safety of Biosurfactants as Agents in Oil Spill Response." Presented to the 1997 International Oil Spill Conference. Ft. Lauderdale, Florida. 7 - 10 April 1997.
- "Role of Wetlands Microorganisms in Biogeochemical Cycling." Presented to the Escambia County League of Women Voters conference on Wetlands. Molino, Florida. 15 November 1997.
- "Environmental Impact of Effluent from the Champion International Paper Mill." Presented to the Bay Area Resource Council; Pensacola, Florida. July 1998.

- “Biodegradation of Polycyclic Aromatic Hydrocarbons (PAH) from Crude Oil in Sandy-Beach Microcosms.” Invited Biodegradation Symposium speaker, 8th International Symposium on Microbial Ecology. Halifax, Nova Scotia, Canada. 9 – 14 August 1998.
- “Effectiveness and Safety of Bioremediation Strategies for Oil Spills in Open-Water and on Sandy Beaches.” Pensacola Bay System 2nd Annual Technical Symposium of the Bay Area Resource Council; Pensacola, Florida, 11 September 1998.
- “Unconventional Patterns in the Biodegradation of Crude Oil by Indigenous Microbial Flora” presented to the Florida Association of Environmental Professionals, Northwest Chapter. 12 November 1999.
- “Stormwater Runoff Issues and Solutions.” Presented to the Santa Rosa County Stormwater Runoff Task Force. March 2000.
- “*Tracking Sources of Fecal Contamination in Environmental Waters.*” Presented to Comprehensive Meeting of the EPA Gulf of Mexico Program Focus and Project Teams. New Orleans, Louisiana. 26 June 2003.
- “*Microbial Biofilms as Indicators of Estuarine Ecosystem Condition.*” Presented at the University of Mississippi, Department of Biology, Oxford, Mississippi. 31 October 2003.
- “*Sentinel Molecular Diagnostics for Crop Agroterrorism.*” Presented at the Pennsylvania State University, Department of Biology; York, Pennsylvania. 24 April 2007.
- “*Biological Research at the University of West Florida, Pensacola, Florida*” 18 December 2007; Seminar to multiple Departments of the Hunan Agricultural University, Changsha, Hunan Province, China.
- “*The University of West Florida’s Center for Environmental Diagnostics and Bioremediation*” 14 May 2008; Seminar to China Centers for Disease Control and Prevention, Nanjing, China.
- “*Molecular Assessment of Estuarine Microbial Biofilm Community Response to Environmental Conditions*” (18 May 2008, Hangzhou, China).
- “*Microbial Biosurfactants: No More Blue Mondays*”; 19 December 2008; Departmental Seminar presentation to students and faculty within the Department of Energy and Resources Engineering and the College of Engineering, Peking University, Beijing, China.
- “*Research and Study Opportunities at the University of West Florida*”; 22 December 2008; Keynote presentation to 2nd International Student Conference on Advanced Science and Technology; sponsored by 0 University College of Engineering (Beijing, China) and Kumamoto University College of Science and Technology (Kumamoto, Japan).
- “*Round-Robin-2: The Sequel! Culture-Independent Microbial Source Tracking*”; 20 March 2009; Seminar to Department of Biology, University of West Florida, Pensacola.
- “*Travel and Research in China*”; 14 April 2009; Presentation to China-Florida Linkage students, faculty and interested parties, International Center, University of West Florida, Pensacola.
- “*Research and Study Opportunities at the University of West Florida*”; 5 January 2010; Seminar to multiple Departments of the Hunan Agricultural University, Changsha, Hunan Province, China.

- *“Round-Robin-2: The Sequel! Culture-Independent Microbial Source Tracking*; 20 March 2009; Seminar to Department of Biology, University of West Florida, Pensacola.
- *“Biodegradation of Crude-Oil Hydrocarbons: Cows in the Water, Cows on the Beach, All Totally Nude”*; 17 June 2010; Invited Seminar to Pensacola Post of the Society of American Military Engineers.
- *“Fate of Crude-Oil in Environmental Oil Spills: Cows in the Water, Cows on the Beach, All Totally Nude”*; 13 July 2010 Invited Seminar to Pensacola Chamber of Commerce; Pensacola, Florida.
- *“Fate of Crude-Oil in the Aftermath of Anthropogenic Spills: Cows in the Water!, Cows on the Beach!! All Totally Nude!!!”*; 24 September 2010, Seminar to Department of Biology, University of West Florida, Pensacola.
- *“Microbial Ecology and Role of Prokaryotes in Biodegradation of Hydrophobic Organic Pollutants: Microbial Biosurfactants and Microbial Catabolic Capability”*; 5 November 2010 to The Southeastern Branch of the American Society for Microbiology; Montgomery, Alabama.

PUBLICATIONS AND RESEARCH PRESENTATIONS

Books and Book Chapters

Andresen, W., R. A. Boutwell, R. Crumley, M. Davis, H. F. Force, **J. E. Lepo**, D. J. Robbins, and R. Wiese. 1971. *Laboratory Inquiries into Concepts of Biology*. Kendall/Hunt, Dubuque. 117 pp.

Emerich, D. W., **J. E. Lepo**, and H. J. Evans. 1983. *Nodule Metabolism*. In *Nitrogen Fixation, Volume 3: Legumes*. W. J. Broughton, Ed. Oxford University Press, New York. pp. 213-244.

Lepo, J. E., and S. M. Ferrenbach. 1987. *Measurement of Nitrogen Fixation by Direct Means (Chapter 10)*. In *Practical Symbiotic Nitrogen Fixation Methodology*. G. H. Elkan, Ed. Marcel Dekker, Inc., New York. pp. 221-255.

Lepo, J. E. and J. M. Henson. 2005. *Crop Bioterrorism: Risk, Diagnosis, Control, Prevention, the Future*. Invited Review Chapter In *Emerging Concepts in Plant Health Management*. ISBN: 81-7736-227-5; Robert T. Lartey and Anthony J. Caesar, Eds.; Chapter 1, pp.1 - 15.

Hagedorn, C.E., **J. E. Lepo**, K. N. Hellein, A. Ajidahun, L. Xinqiang, H. Li. 2011. *Microbial Source Tracking in Developing Nations (Chapter 22)* In: *Microbial Source Tracking: Methods, Applications and Case Studies*. ISBN: 978-1-4419-9386-1. Charles Hagedorn, Valerie J. Harwood, and Anicet R. Blanch, Eds. Springer, New York. Chapter 22, pp. 515-544.

PUBLICATIONS, Continued

Peer-Reviewed Journal Publications

- Lepo, J. E.**, and O. Wyss. 1974. Derepression of Nitrogenase in *Azotobacter*. *Biochem. Biophys. Res. Commun.* **60**:76-80.
- Lepo, J. E.**, B. Duncan, and A. C. Herald. 1976. Respiration in *Epicoccum nigrum*. *Science of Biology Journal*. July-August:136-149.
- Lepo, J. E.**, G. Stacey, O. Wyss, and F. R. Tabita. 1979. The Purification of Glutamine Synthetase from *Azotobacter* and Other Prokaryotes by Blue-sepharose Chromatography. *Biochim. Biophys. Acta* **568**:426-428.
- Lepo, J. E.**, F. J. Hanus, and H. J. Evans. 1980. Chemoautotrophic Growth of Hydrogen-Uptake Positive Strains of *Rhizobium japonicum*. *J. Bacteriol.* **141**:664-670.
- Lepo, J. E.**, R. E. Hickok, M. A. Cantrell, S. A. Russell, and H. J. Evans. 1981. Revertible Hydrogen-Uptake Mutants of *Rhizobium japonicum*. *J. Bacteriol.* **146**:614-620.
- Lepo, J. E.**, O. Wyss, and F. R. Tabita. 1982. Regulation and Biochemical Characterization of Glutamine Synthetase from *Azotobacter vinelandii*. *Biochim. Biophys. Acta* **704**:414-421.
- McAllister, C. F., and **J. E. Lepo**. 1983. Succinate Transport by Free-Living Forms of *Rhizobium japonicum*. *J. Bacteriol.* **153**:1155-1162.
- Reding, H. K., and **J. E. Lepo**. 1989. Physiological Characterization of Dicarboxylate-Induced Pleomorphic Forms of *Bradyrhizobium japonicum*. *Appl. Environ. Microbiol.* **55**:666-671.
- Purdy, R. F., **J. E. Lepo**, and H. B. Ward. 1993. Biodesulfurization of Organic-Sulfur Compounds. *Current Microbiol.* **27**:219-222.
- Whiting, V., G. Cripe, and **J. E. Lepo**. 1996. Effect of the Anionic Surfactant, Sodium Dodecyl Sulfate, on Newly Hatched Blue Crab, *Callinectes sapidus*, and Other Routinely Tested Estuarine Crustaceans. *Arch. Environ. Contam. Toxicol.* **31**:293-295.
- Daly, K. D., A. C. Dixon, R. P. J. Swannell, **J. E. Lepo**, and I. M. Head. 1997. Diversity Among Aromatic Hydrocarbon Degrading Bacteria and Their *meta*-Cleavage Genes. *J. Appl. Microbiol.* **83**:421-429.
- Chelius, M. K., and **J. E. Lepo**. 1999. Restriction Fragment Length Polymorphism Analysis of PCR-Amplified *nifH* Sequences from Wetland Plant Rhizosphere Communities. *Environ. Technol.* **20**:883-889.
- Edwards, K. R., **J. E. Lepo**, and M. A. Lewis. 2003. Toxicity Comparison of Biosurfactants and Synthetic Surfactants Used in Oil Spill Remediation to Two Estuarine Species. *Marine Pollution Bulletin* **46**: 1309-1316.
- Lepo, J. E.**, C. R. Cripe, S. Zhang, J. L. Kavanaugh, and G. P. Norton. 2003. The Effect of Amount of Crude Oil on Extent of Its Biodegradation in Open Water- and Sandy Beach-Laboratory Simulations. *Environ. Technol.* **24** (10): 1291-1302.

PUBLICATIONS, Continued

- Kiely, C. L., R. A. Snyder, A. M. Lazur, and **J. E. Lepo**. 2004. Evaluation of a Vegetated Filter Strip as a Best Management Practice for Treating Catfish Pond Stormwater Effluent. *Global Aquaculture Advocacy*. **7**:67-68.
- Nocker A., **J. E. Lepo**, and R. A. Snyder. 2004. Influence of an Oyster Reef on the Development of the Microbial Heterotrophic Community of an Estuarine Biofilm. *Appl. Environ. Microbiol.* **70**:6834-6845.
- Moss, J. A., A. Nocker, **J. E. Lepo**, and R. A. Snyder. 2006. Stability and Change in Estuarine Biofilm Bacterial Community Diversity. *Appl. Environ. Microbiol.* **72**: 5679-5688.
- Nocker, A., **J. E. Lepo**, L. L. Martin, R. A. Snyder. 2007. Response of Estuarine Biofilm Microbial Community Development to Changes in Dissolved Oxygen and Nutrient Concentrations *Microbial Ecol.* Published online DOI: 10.1007/s00248-007-9236-z
- Harwood, V. J., M. Brownell, S. Wang, **J. E. Lepo**, R. D. Ellender, A. Ajidahun, K. N. Hellein, E. Kennedy, Y. Ye, and C. Flood. 2009. Validation and Field Testing of Library-Independent Microbial Source Tracking Methods in the Gulf of Mexico. *Water Research*. **43**:4812–4819.
- Hellein, K.N., C. Battie, E. Tauchman, D. Lund, O. Oyarzabal, and **J.E. Lepo**. 2011. Culture-Based Indicators of Fecal Contamination and Molecular Microbial Indicators Rarely Correlate with *Campylobacter* spp. in Recreational Waters. Accepted May 2011; in press to *Journal of Water and Health*.

PUBLICATIONS, Continued

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- Kennedy, E.M., K. N. Hellein, A. Morrow., and **J. E. Lepo**. 2010. A Filter-Based PMA Technique to Distinguish Live- from Membrane-Compromised Microorganisms in Environmental Waters. Q-2393. Poster presentation to the 110th Annual Meeting of the American Society for Microbiology, 23-27 May 2010, San Diego, Calif.
- Brownell, M.J., V.J. Harwood, **J. E. Lepo**, S.Y. Wang, K.N. Hellein, E.M. Kennedy, and X. Ye, .2010. Field Testing of Library-Independent Microbial Source Tracking Methods in the Gulf of Mexico. Poster presentation to the 110th Annual Meeting of the American Society for Microbiology, 23-27 May 2010, San Diego, Calif.
- Hellein, K. N., E. M. Kennedy, A. Morrow, and **J. E. Lepo**. 2010. A Filter-Based PMA Technique to Distinguish Live from Dead Bacteria in Environmental Waters. Poster Presented at UWF Seastars 2010.
- Lepo. J.E.** 2010. Microbial Ecology and Role of Prokaryotes in Biodegradation of Hydrophobic Organic Pollutants: Microbial Biosurfactants and Microbial Catabolic Capability. Keynote Presentation to the Southeastern Branch Meeting of the American Society for Microbiology, 5 November 2010, Montgomery, Ala.
- Kennedy, E.M., K. Cravero, K. N. Hellein, and **J. E. Lepo**. 2011. Comparative Efficiency of Light Sources for PMA Activation to Distinguish Live vs. Dead Cells using qPCR. Poster presentation to the 111th Annual Meeting of the American Society for Microbiology, 21-24 May 2011, New Orleans, La.

PUBLICATIONS, Continued

Technical Reports

- Lepo, J. E.** 1993. Evaluation of Tier III Bioremediation Agent Screening Protocol for Open Water Using Commercial Agents. Project Deliverable. University of West Florida/U. S. Environmental Protection Agency, Gulf Breeze Environmental Research Laboratory. **EPA/600 1-93/001**. (*peer-reviewed*)
- Lepo, J. E.**, and C. R. Cripe. 1998. Development and Application of Protocols for Evaluation of Oil Spill Bioremediation. United States Environmental Protection Agency. National Health and Environmental Effects Laboratory, Gulf Ecology Division, Gulf Breeze, FL 32561. US EPA Office of Research and Development. **EPA/600S-970007**, April 1998.
- Lepo, J. E.**, and C. R. Cripe. 1998. Effectiveness and Safety of Strategies for Oil Spill Bioremediation: Potential and Limitation, Laboratory to Field. United States Environmental Protection Agency. National Health and Environmental Effects Laboratory, Gulf Ecology Division, Gulf Breeze, FL 32561. US EPA Office of Research and Development. **EPA/600S-970008**, March 1998.
- Lepo, J. E.**, and R. A. Snyder. 2004. Agricultural Runoff Impacts on Total Maximum Daily Loads and Water Quality. Annual Report to USDA CSREES.
- Lepo, J. E.**, and R. A. Snyder. 2004. Characterization and Management of Effluents from Aquaculture Ponds in Florida — A Treatment System Evaluation. Submitted to Three Rivers Resource Conservation and Development as a Final Report; February 2004.
- Snyder, R. A., **J. E. Lepo**, W. Huth, A. Nocker, K. Martin. 2004. Microbiological indicators of water quality in submerged karst caves of Northern Florida. Florida Geologic Service Special Report, Wakulla Springs Scientific Symposium, Tallahassee, Fla., May 2004.

PUBLICATIONS, Continued

PUBLICATIONS IN PREPARATION

- Hellein, K.N., K. M. S, V. J. Harwood, K. Gordon, S. Wang, and **J. E. Lepo.** A Filter-Based PMA Technique to Distinguish Live- from Membrane-Compromised Microorganisms using qPCR. Submitted March 2011 to *Journal of Applied Microbiology*.
- Ajidahun, A., and **J. E. Lepo.** Detection by PCR of *Helicobacter pylori* in Pig- and Human- Feces: Pigs as a Possible Zoonotic Reservoir .Science Brevia.
- Phillips, L. L., K. J. Martin, and **J. E. Lepo.** F-ARISA Characterizes Epiphytic Fungal Communities. To be submitted to *New Phytologist*.
- K. J. Martin, R. A. Snyder, S. Jakobowski, and **J. E. Lepo.** Detection of *Bacteroides* Types Characteristic of Human or Bovine Contamination. To be submitted to *J. Appl. Microbiol.*
- Brooks-Barry, R. A., K. J. Martin, and **J. E. Lepo.** Leaf-Epiphytic Communities of Domain *Bacteria* Elucidated by Quantitative PCR and Terminal Restriction Fragment Length Polymorphism Analysis. To be submitted to *Phytopathology Journal*.
- Kiely, C. L., R. A. Snyder, A. M. Lazur, and **J. E. Lepo.** Evaluation of a Vegetated Filter Strip as a Best Management Practice for Treating Catfish Pond Stormwater Effluent. To be submitted to *J. World Aquaculture Soc.*
- Lee, S.H., K.N. Hellein, A.C. Knowles, RA. Snyder, and **J.E. Lepo.** Molecular diversity of *nifH* communities responds to added N-nutrient rather than dissolved oxygen in microbial biofilms generated in flow-through seawater microcosms. *Microbial Ecology*.
- Lee, S.H., A.C. Knowles, RA. Snyder, and **J.E. Lepo.** Effect of N-loading and dissolved oxygen on the diversity of denitrifying *nirS* and *nirK* communities in microbial biofilms generated in flow-through seawater microcosms. *Microbial Ecology*.

SELECTED MEDIA PRESENTATIONS

- **Will The Gulf Ever Be Oil-Free?** No. But bacteria ate most of BP's spilled oil months ago. SLATE (Washington Post) phone and email interview over several days in late December 2010 of Joe Lepo and Terry Hazen (Lawrence Berkeley National Laboratory); Posted on SLATE, 4 January 2011 By Brian Palmer
<http://www.slate.com/id/2279401/>
- **Dr. Joe Lepo - Gulf Crisis Oil Spill**
UWF Marketing interview at Pensacola Beach, Florida
<http://www.youtube.com/watch?v=eB0yCLrxvg0>
- **UWF Microbial Physiologist Discusses Biodegradation of Crude Oil Hydrocarbons**
<http://www.youtube.com/watch?v=Q2HrIQyEC7M>

SERVICE

Community and Regional

- **Member, Environmental Advisory Board, City of Pensacola;** February 2002 to present.
- **Member, Escambia County Citizens Environmental Committee;** 1997 to 2006.
- **Assisted development of *Trinity DNA* (small business in Santa Rosa County) by UWF alumna**
- **Three Rivers RC & D Council;** collaborative grant activity on management of agricultural runoff
- **Natural Resources Conservation Service, US Department of Agriculture** (Escambia County Extension); collaborative grant activity on agricultural runoff
- **Institute of Food and Agricultural Science,** University of Florida, collaborative research on agricultural best management practices
- **Bay Area Resource Committee (BARC),** member and participant
- **BARC Technical Advisory Council;** former member of Subcommittee on Water Quality
- Participant in **Escambia Soil and Water Conservation Board**
- Consultant for several environmental groups concerning impacts of sewage disposal systems; assisting **Escambia County Department of Health (Environmental)** to develop a proposal to study the issue
- **Continuing Collaborator with Escambia County Department of Health (Environmental)** to study microbial source tracking of fecal pollution in environmental waters
- Active in a number of environmental initiatives supported by the **Escambia County Neighborhood and Environmental Services Department**

Undergraduate and other Students, Elementary-, Middle- and High-School Teachers:

- **Science education for teachers.** *Impact of Fluoridation of the Municipal Drinking Water Supply: Field and Laboratory Water Quality Study.* (summer of 2000) research experience for two high-school science teachers
- **National Science Foundation Florida Collaborative for Excellence in Teacher Preparation** (summers of 1999, 2000). NW Florida regional middle school and high school science teachers were provided environmental laboratory experience in a collaborative program with Florida State University.
- **Numerous tours and workshops** for regional high-school and middle-school students and teachers of the Wetlands Research Laboratories and CEDB facilities

SERVICE, Continued

U.S. Department of Agriculture Grant-Supported Education Activity (with Carol Briscoe, Johan Liebens, Richard Snyder)

Phase I — Lead Teacher Education (summer 2002). Seven teachers from Escambia and Santa Rosa Counties in Florida studied agricultural Best Management Practices (BMPs) at a catfish aquaculture pond in Molino, Florida; monitored water quality, and had hands-on training in sampling and analyses for water quality assessment. Each teacher developed lessons on the relationship between agricultural BMPs and water quality.

Phase II — Summer Workshops for Teachers/Students (summer 2003). Seven teachers and six students participated in summer workshop. Field trips to agricultural BMPs in aquaculture and in pasture management. The teachers met with the research team and graduate students on the project to discuss data collection and analytical procedures that were in operation; teachers and students worked individually with UWF graduate students in the laboratories. Some participated in microbial counts on soils and waters learning microbiological analyses. Some learned nutrient analysis (Hach® kits) of field samples.

Phase III — Development of Instructional Modules. Using their experiences in the laboratory these teachers developed additional lesson plans for their classroom, which have been posted on the project website and are available to all teachers in the program for testing and evaluation. Each teacher was provided with Hach kits for nutrient analysis through funding from the grant to facilitate testing activities in their classrooms.

Phase IV — Summer Camps for High School Students/Middle School Students. During the June of 2004, a 1-week summer day camp was held at UWF, which will be a prototype for future summer camps that study water quality issues. Selected teachers, trained as part of this grant served as instructors. Students will visit the research sites and participate in laboratory experiences that model the actual data collection and analysis activities.

GPS workshops (6 teachers in 2002; 7 teachers, 5 students in 2003; 4 teachers, 20 students, 2004) were offered at UWF to cover GPS use in research and how it can enhance the science and geography curricula.

Regional and Community Leadership

- **Member (2000 – 2002)**, Northwest Florida Legislative **Natural Resources Advisory Committee** to provide environmental expertise for the Northwest Florida Legislative delegation
- **Leadership and participant; Envision EscaRosa initiative:**
 - Environmental representative on the **Envision EscaRosa Benchmarks Task Force**
 - Member of the **Environmental Action Team** for Envision EscaRosa and is a Facilitator for the Envision EscaRosa Strategies: Air- and Water- Quality, Hazardous Waste, and Environmental Code Enforcement
- **Northwest Florida Water Management District;** collaborative grant activity
- **Emerald Coast (Escambia County) Utility Authority;** public health and environmental impact of sewage; effects of water supply fluoridation; contracted research on impact of fluoridation

SERVICE, Continued

- **Researcher / Scientific Advisor, Technical Liaison and Writer** for the Escambia County Citizens' Task Force on Urban Stormwater. *Report of the Citizens' Task Force on Urban Stormwater Runoff J. E. Lepo*: Published by Escambia County, City of Pensacola, Escambia County Utilities Authority, 21 March 2000.
- **Facilitator / Scientific Advisor** for the Santa Rosa County Stormwater Runoff Task Force. May 2000 – May 2002. Santa Rosa County Stormwater Task Force Report; http://www.co.santa-rosa.fl.us/santa_rosa/stormwater/swtfcombined.pdf
- **Institute of Food and Agricultural Science**, University of Florida, collaborative research on agricultural best management practices
- **Participant, Escambia Soil and Water Conservation Board**
- **Northwest Florida Water Management District**; collaborative grant activity
- **Judge, University of West Florida Science Fair**, Spring of 2000, 2001, 2002, 2003, 2005, 2007

Federal and State Environmental Regulatory Agencies

- **Member** (18 months during 2000 – 2001), **Technical Advisory Committee with the Florida Department of Environmental Protection for the Allocation of Total Maximum Daily Loads (TMDL)** Anonymous. 2001. *A Report to the Governor and the Legislature on the Allocation of Total Maximum Daily Loads in Florida*. <http://www.dep.state.fl.us/water/division/tmdl/alloc.htm>
- **Florida Department of Community Affairs**; stormwater runoff issues
- **Florida Department of Agricultural and Consumer Services**; validation of Best Management Practices for control of agricultural runoff; stormwater runoff issues
- **Natural Resources Conservation Service, US Department of Agriculture** (Escambia County Extension); collaborative grant activity on agricultural runoff
- Participant in the **National Science Foundation** Florida Collaborative for Excellence in Teacher Preparation program to provide environmental laboratory experience for regional high-school teachers in cooperation with Florida State University

University Service

- **University of West Florida Faculty Senate**, (fall 2003 – 2006)
- **University Governance Committee** (fall 2003 – 2006)
- **Facilities Coordinator**: CEDB / Biology greenhouse; (2001 – present)
- **Bay Day** contributor, (2002, 2003, 2004)

SERVICE, Continued

- **Technical Director** of the Wetlands Research Laboratory (2001 – present), the analytical arm of the Center for Environmental Diagnostics and Bioremediation
- **Participant and Contributor, UWF Festival on the Green** (2001, 2002, 2003, 2004, 2006, 2007)
- **Science Fair Judge**, University of West Florida (Springs of 2000, 2001, 2002, 2003, 2004, 2005, 2007, 2009)
- **Search Committee for Microbiologist**, Wetlands Research Laboratory, Center for Environmental Diagnostics and Bioremediation
- **Search Committee for Director of Environmental Health and Safety**, University of West Florida
- **Search Committee for Microbiologist**, Department of Biology 2010
- **UWF Student Scholars Symposium 2011. Award for Best Collaborative Paper**
- **Advisor and Mentor recognition for University of West Florida-American Society for Microbiology** <http://uwf.collegiatelink.net/organization/asm>

Professional / Disciplinary Service

Gulf of Mexico Alliance (GOMA) Team Leader for several tasks, e.g., Pathogens in Water, Gulf of Mexico Microbiological water quality

Bioremediation Session Chair, 8th International Symposium on Microbial Ecology. Halifax, Nova Scotia, Canada. 9 – 14 August 1998.

Biological Surfactants Session Co-Chair at the International Industrial Biotechnology Conference (iBio) in Hangzhou, China 18 (May 2008)

Memorandum of Understanding between the Hunan Agricultural University(Changsha, Hunan Province, P.R. CHINA) and the Center for Environmental Diagnostics and Bioremediation at the University of West Florida, Pensacola, Florida, USA; January 2010

Editorial Board membership

- ***Journal of Applied Microbiology*** (Microbial Source Tracking; microbial diagnostics)
- ***Plant Pathology Journal***
- ***Scientific Journals International (SJI)*** <http://www.scientificjournals.org>
- ***Journal of Environmental Detection***, an on-line international peer-reviewed journal dedicated to the detection and amelioration of sources of pollution in the environment

SERVICE, Continued

Peer reviewer for grant proposals submitted to the federal funding agencies:

- * **Peer Review Panel Member; National Science Foundation** (March 2002; Washington D.C.)
- * **Peer Reviewer Panel Member; Department of Homeland Security (DHS):** proposals for a Post-Harvest Food Security (Agroterrorism) Center (10 – 11 March 2004; Washington, D.C.).
- * **Invited external reviewer for DHS** of candidate Center, on site at Kansas State University, Manhattan (24 – 26 March 2004).
- * **Peer reviewer Indo-US Science & Technology Forum:** Proposal review May 2005.
- * **Peer Review Panel Member; EPA National Center for Environmental Research, Science to Achieve Results (STAR)** “*Development and Evaluation of Innovative Approaches for the Assessment of Pathogens in Drinking Water Program*”: Proposal review, Washington, D.C., 5 – 7 October 2005.
- * **Peer Review Panel Member; U.S. Environmental Protection Agency,** for Line Item Proposals, March – April 2006; reviews handled via conference calls.
- * **Peer Review Panel Member; EPA National Center for Environmental Research, Science to Achieve Results (STAR)** “*STAR and Greater Research Opportunities Fellowships in Microbiology*”: Proposal review, Washington, D.C., 13 – 14 February 2008.

Reviewer of book chapters and manuscripts for professional journals (examples below)

- *Applied and Environmental Microbiology*; 12 manuscripts reviewed (2000 – present)
- *Association for Marine Oil Pollution*; 5 manuscripts reviewed (1995 to present)
- *Trends in Biotechnology (TIBTECH)*; 2 manuscripts reviewed (2003 – present)
- *Environmental Science and Technology*; 6 manuscripts reviewed (1999 – present)
- *Environmental Technology*; 5 manuscripts reviewed (2002 – present)
- *Marine Pollution Bulletin*; 4 manuscripts reviewed (2000 – present)
- *Bioremediation Journal*; 2 manuscripts reviewed (2004 – present)
- *Journal of Hazardous Materials*; 12 manuscripts reviewed (2004 - present)
- *Journal of Applied Microbiology*; 13 manuscripts reviewed (2004 – present)
- *Journal of Water and Health*; 5 manuscripts reviewed (2009– present)