

## CURRICULUM VITAE

### JOHN P. KNEZOVICH, Ph.D.

John Knezovich is the director of the Center for Accelerator Mass Spectrometry (CAMS) at the Lawrence Livermore National Laboratory (LLNL) and serves as the director of the UC Toxic Substances Research and Teaching Program (UC TSR&TP). He also is an adjunct Professor of Environmental Chemistry at UC Davis. Knezovich has extensive experience in the design and application of experimental approaches for determining the fate, transport and toxicity of contaminants in the environment. In particular, he has assessed the bioavailability of heavy metals that are discharged from nuclear power stations; assisted the EPA's Office of Toxic Substances in the development of risk assessment strategies for the registration of new chemical products; evaluated the potential impacts of mutagenic contaminants and radiation on aquatic organisms; and assessed the risks posed by sediment-sorbed contaminants. As director of CAMS, he oversees a team of scientists who are applying ion-beam analytical techniques to environmental, biomedical, and national security research. As director of the UC TSR&TP, he is focused on establishing interdisciplinary research and education programs that meet existing and emerging needs within California.

### EDUCATION

B.A. (Biological Science), University of the Pacific, Stockton, California (1977)

M.S. (Chemical Ecology), University of California, Davis (1980)

Ph.D. (Chemical Ecology), University of California, Davis (1983)

### PROFESSIONAL EXPERIENCE

**Director**, Center for Accelerator Mass Spectrometry, Energy & Environment Directorate, Lawrence Livermore National Laboratory, Livermore, California (1998-Present)

**Director**, University of California Toxic Substances Research & Teaching Program (2004-Present)

**Adjunct Professor of Environmental Chemistry**, Department of Environmental Toxicology, University of California, Davis, California (2002-Present)

**Instructor**, Hazardous Materials Management Program, University of California, Santa Cruz, (1992-Present)

**Associate Director**, University of California Toxic Substances Research & Teaching Program (2002-2004)

**Group Leader**, Environmental Chemistry and Toxicology, Health & Ecological Assessment Division, Lawrence Livermore National Laboratory, University of California, Livermore, California (1993-1998)

**Staff Scientist**, Environmental Sciences Division, Lawrence Livermore National Laboratory, University of California, Livermore, California (1986-1993)

**Postdoctoral Research Scientist**, Environmental Sciences Division, Lawrence Livermore National Laboratory, Livermore, California (1983-1986)

### COMMITTEE MEMBERSHIPS AND PROFESSIONAL SERVICE RELEVANT TO AQUATIC TOXICOLOGY AND RISK ASSESSMENT

**Peer Reviewer**, "*Methodology for Derivation of pesticide Water Quality Criteria for the Protection of Aquatic Life in the Sacramento River Watershed*," Central Valley Regional Water Quality Control Board (2006)

**Chair**, Science Advisory Board, University of California, Pacific Estuarine Ecosystem Indicator Research Program (2001-2006)

**Peer Review Panels for Toxicology, Aquatic Toxicology, Environmental Chemistry, Water Disinfection Byproducts, and Graduate Research Fellowships**, Office of Research and Development, U.S. Environmental Protection Agency (1996-present)

**Scientific Planning and Review Committee**, Bay Protection and Toxic Cleanup Program, California State Water Quality Control Board (1996-2001)

**Chair, Mercury Program Scientific Review Committee**, Water Environment Research Foundation (1998-2001)

**World Health Organization Exposure Assessment Working Group**, International Commission for Protection Against Environmental Mutagens and Carcinogens (1991-1993)

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**Board of Directors**, Northern California Chapter, Society of Environmental Toxicology and Chemistry (1998-2000)

**Session Chair**, "Biotransformation and Biodegradation," Society of Environmental Toxicology and Chemistry Annual Mtg., Nashville, Tennessee (November 12-17, 2000)

**Program Chair**, 18<sup>th</sup> Annual National Meeting of the Society of Environmental Toxicology and Chemistry, San Francisco, California (1997)

**Session Chair**, 14<sup>th</sup> Annual ASTM Symposium on Aquatic Toxicology, San Francisco, California (April 22-24, 1990)

#### JOURNAL REVIEWER

*Aquatic Toxicology, Chemosphere, Ecotoxicology & Environmental Safety, Environmental Science & Technology, Environmental Toxicology & Chemistry, Journal of Agricultural Chemistry, Marine Environmental Research, Nuclear Instruments and Methods in Physics Research*

#### AWARDS

C.M. Boye Full Academic Scholarship (1973-1983)

Jastro-Shields Graduate Research Scholarship (1982)

Donald G. Crosby Outstanding Alumni Award, University of California, Davis (2001)

#### PUBLICATIONS RELEVANT TO AQUATIC TOXICOLOGY AND RISK ASSESSMENT

F.L. Harrison and J.P. Knezovich, "Effects of Radiation on Aquatic and Terrestrial Organisms," in *Radioecology: Radioactivity & Ecosystems*, E. Van der Stricht and R. Kirchmann Eds. (International Union of Radioecology, Liege, Belgium) Chapter V, pp. 317-375 (2001).

P.A. O'Day, S. A. Carroll, S. Randall, R.E. Martinelli, J.A. Jelinski, S.L. Anderson and J.P. Knezovich, "Metal Speciation and Toxicity in Contaminated Estuary Sediments, Alameda Naval Air Station, California," *Environmental Science and Technology* **34**, 3665-3673 (2000).

J.P. Knezovich, S.L. Anderson, J. Jelinski and R.E. Martinelli, "Pore-Water and Sediment Ecotoxicity Studies of Seaplane Lagoon and West Beach Landfill Wetlands, Alameda Naval Air Station," Berkeley Environmental Restoration Center, University of California, Berkeley (Final Report, 1999).

D. Layton, B. Napier, L. Gomez, J. Knezovich and M. Varela, "Introduction," in *Radionuclides in the Arctic Seas from the Former Soviet Union: Potential Health and Ecological Effects*, D. Layton, R. Edson, M. Varela and B. Napier Eds., Arctic Nuclear Waste Assessment Program, Office of Naval Research, Chapter 1 (November, 1997).

W. Templeton, F. Harrison, J. Knezovich, N. Fischer and D. Layton, "Bioconcentration of Radionuclides in Marine Food-Web Organisms," in *Radionuclides in the Arctic Seas from the Former Soviet Union: Potential Health and Ecological Effects*, D. Layton, R. Edson, M. Varela and B. Napier Eds., Arctic Nuclear Waste Assessment Program, Office of Naval Research, Chapter 4 (November, 1997).

F. Harrison, J. Knezovich and D. Layton, "Assessment of Risks to Marine Aquatic Populations Resulting From Exposures to Radionuclides in Arctic Seas," in *Radionuclides in the Arctic Seas from the Former Soviet Union: Potential Health and Ecological Effects*, D. Layton, R. Edson, M. Varela and B. Napier Eds., Arctic Nuclear Waste Assessment Program, Office of Naval Research, Chapter 5, (November, 1997).

J.P. Knezovich, D.J. Steichen, J. Jelinski and S.L. Anderson, "Sulfide Tolerance of Four Marine Species Used to Evaluate Sediment and Pore-Water Toxicity," *Bull. Environm. Contam. Toxicol.* **57**, 450-457 (1996).

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- J.P. Knezovich and R.E. Martinelli, "A Methodology for Assessing the Impact of Mutagens on Aquatic Ecosystems," Lawrence Livermore National Laboratory, Livermore, CA, UCRL-JC-120466 (1995).
- S.L. Anderson, J.P. Knezovich, J. Jelinski and D.J. Steichen, "The Utility of Using Pore-Water Toxicity Testing to Develop Site-Specific Marine Sediment Quality Objectives for Metals," Final Report to the U.S. Army Corps of Engineers, LBL-37615/UC-000 (1995), pp. 44.
- J.P. Knezovich, "Chemical and Biological Factors Affecting Bioavailability of Contaminants in Seawater," in *Bioavailability: Physical, Chemical, and Biological Mechanisms*, J. Hamelink, P. Landrum, H. Bergman, and W. Benson, Eds. (CRC Press, Inc., Boca Raton, FL, 1994) Chapter 2, pp. 23-30.
- R. J. Erickson, T.D. Bills, J.R. Clark, D.J. Hansen, J.P. Knezovich, F.L. Mayer, and A.E. McElroy, "Synopsis of Discussion Session on Physicochemical Factors Affecting Toxicity," in *Bioavailability: Physical, Chemical, and Biological Mechanisms*, J. Hamelink, P. Landrum, H. Bergman, and W. Benson, Eds. (CRC Press, Inc., Boca Raton, FL, 1994) Chapter 3, pp. 31-38.
- S.L. Anderson, J.E. Hose, and J.P. Knezovich, "Genotoxic and Developmental Effects in Sea Urchins are Sensitive Indicators of Effects of Genotoxic Chemicals," *Environ. Toxicol. Chem.* **13**, 1033-1042 (1994).
- E.R. Hoffman, S.L. Anderson, and J.P. Knezovich, "Determinants of Sediment Toxicity in San Francisco Bay," Final Report to the U.S. Army Corps of Engineers, LBL-36592/UC-000 (1994), pp. 125.
- D.W. Layton, T.E. McKone, J.P. Knezovich, and J.J. Wong, "Assessment of Exposures to Genotoxic Substances," in *Methods for Genetic Risk Assessment*, D. Brusick, Ed. (CRC Press, Inc., Boca Raton, FL, 1994), Chapter 13, pp. 29-63.
- J.P. Knezovich and L.S. Inouye, "The Influence of Sediment and Colloidal Material on the Bioavailability of a Quaternary Ammonium Surfactant," *Ecotox. Environ. Safety* **26**, 253-264 (1993).
- J.P. Knezovich, "Ecological Risk Assessment?," *SETAC News* **14(1)**, 12 (1994).
- S.R. Hansen and J.P. Knezovich, "Development of a Site-Specific Criterion for Copper for San Francisco Bay," Final Report, California Regional Water Quality Control Board, San Francisco Bay Region, Oakland, CA, (1992), pp. 124.
- F.L. Harrison, J.P. Knezovich, and R.E. Martinelli, "Representative Benthic Bioindicator Organisms for Use in Radiation Effects Research: Culture of *Neanthes arenaceodentata* (Polychaeta)," EPA 520/1-91-018. U.S. Environmental Protection Agency, Washington, DC (1991).
- J.P. Knezovich, "The Metabolic Transformation of Aromatic Amines in Marine Bivalves and Implications for Genotoxic Effects," *J. Shellfish Res.* **8**, 437-438 (1989).
- S.R. Hansen, J.P. Knezovich, S.L. Anderson and J.I. Daniels, "Risk Assessment: Coagulant Use at the Kuparuk Seawater Treatment Plant," Final Report, ARCO Alaska, Inc, Anchorage, AK, (December, 1989), pp. 79.

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F.L. Harrison and J.P. Knezovich, "Sublethal Effects of Contaminants on the Metabolism of Metals and Organic Compounds in the Bay Mussel," in *San Francisco Bay: Issues, Resources, Status, and Management. NOAA Estuary-of-the-Month Seminar Series No. 6*, pp. 107–123 (U.S. Department of Commerce, NOAA Estuarine Programs Office, 1987).

J.P. Knezovich, M.P. Lawton, and F.L. Harrison, "*In Vivo* Metabolism of Aromatic Amines by the Bay Mussel, *Mytilus edulis*," *Mar. Env. Res.* **24**, 89–91 (1988).

J.P. Knezovich and F.L. Harrison, "The Bioavailability of Sediment-Sorbed Chlorobenzenes to Larvae of the Midge, *Chironomus decorus*," *Ecotox. Environ. Safety* **15**, 226–241 (1988).

J.P. Knezovich, "Biodegradation of Organic Contaminants," *Energy and Technology Review*, Lawrence Livermore National Laboratory, Livermore, CA, UCRL-52000-88-7, p. 69 (1988).

J.P. Knezovich, J. Hirabayashi, D. Bishop, and F. Harrison, "The Influence of Different Soil Types on the Fate of Phenol and Its Biodegradation Products," *Chemosphere* **17**, 2199–2205 (1988).

J.P. Knezovich, M.P. Lawton, and L.S. Inouye, "Bioaccumulation and Tissue Distribution of a Quaternary Ammonium Surfactant in Three Aquatic Species," *Bull. Environ. Contam. Toxicol.* **42**, 87–93 (1989).

J.P. Knezovich, F.L. Harrison, and R. Wilhelm, "The Bioavailability of Sediment-Sorbed Organic Chemicals: A Review," *Water, Air Soil Pollut.* **32**, 233–245 (1987).

J.P. Knezovich and F.L. Harrison, "A New Method for Determining the Concentrations of Volatile Organic Compounds in Sediment Interstitial Water," *Bull. Env. Contam. Toxicol.* **38**, 937–940 (1987).

F.L. Harrison, J.P. Knezovich, D.W. Rice, Jr., and J.R. Lam, "Distribution, Fate, and Effects of Energy-Related Residuals in Marine Environments," in *Physiological Responses of Marine Organisms to Environmental Stresses*, J.V. Dorigan and F.L. Harrison, Eds, Chapter 13, DOE/ER-0317, pp. 251–292 (U.S. Department of Energy, Washington, DC, 1987).

J.P. Knezovich and D.G. Crosby, "The Comparative Metabolism of *o*-Toluidine by the Abalone (*Haliotis rufescens*) and Flatfish (*Platichthys stellatus*)," *Environ. Toxicol. Chem.* **5**, 387–392 (1986).

J.P. Knezovich and D.G. Crosby, "The Fate and Metabolism of *o*-Toluidine in the Marine Bivalve Molluscs *Mytilus edulis* and *Crassostrea gigas*," *Environ. Toxicol. Chem.* **4**, 435–446 (1985).

F.L. Harrison, J.P. Knezovich, and D.W. Rice, Jr., "The Toxicity of Copper to the Adult and Early Life Stages of the Freshwater Clam, *Corbicula manilensis*," *Arch. Environ. Contam. Toxicol.* **13**, 85–92 (1984).

J.P. Knezovich, F.L. Harrison, and J.S. Tucker, "The Influence of Organic Chelators on the Toxicity of Copper to Embryos of the Pacific Oyster, *Crassostrea gigas*," *Arch. Environ. Contam. Toxicol.* **10**, 241 (1981).