

## James Meador

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### Education

- 1988 **Ph.D. Aquatic Toxicology**, University of Washington, Seattle, WA.  
1981 **M.S. Biology/Physiology**, San Diego State University, San Diego, CA.  
1975 **B.A. Zoology**, Humboldt State University, Arcata, CA.

### Work Experience

- 1997- present **Team Leader**, Hazard Assessment and Risk Modeling Team.  
1992 - 1994 **Team Leader**, Toxic Metals Research Group and Analysis Laboratory.  
1990 - present **Fisheries Research Biologist**, National Marine Fisheries, NOAA.  
1989 - 1990 **Research Associate**, National Research Council. Research Associateship at the National Marine Fisheries Laboratory in Seattle (Dr. U. Varanasi).  
1988 - 1989 **Senior Associate Scientist**, Envirosphere Company.  
1983 - 1988 **Predoctoral Research and Teaching Assistant**, Univ. of Washington.  
1983 **Analyst**, Computer Sciences Corporation, San Diego, CA.  
1981 - 1982 **Senior Research Biologist**, Naval Ocean Systems Center, San Diego.  
1975 - 1981 **Staff Research Associate**, Scripps Institution of Oceanography, University of California, San Diego.

### Teaching Experience

- 1986 **Predoctoral Teaching Assistant**, School of Oceanography, University of Washington.  
1984 - 1987 **Predoctoral Teaching Assistant**, School of Fisheries, UW.  
1982 **Instructor**, Centro de Investigacion Cientifica y de Educacion Superior de Ensenada (CICESE), Ensenada, Baja California, Mexico.

### Conferences/Sessions

- "The Tissue Residue Approach for Toxicity Assessment, a Pellston Workshop". An international workshop sponsored by the Society of Environmental Toxicology and Chemistry (SETAC). Organizer and Chair. June 2007.  
"The tissue residue approach and mode of action for assessing toxicity". Pacific Northwest SETAC 2004, Port Townsend, WA. Organizer and chair.  
"Assessing Toxicity: Critical Body Residue Approach". SETAC 2003, Austin, TX. Organizer and chair.  
"Sediment Quality Guidelines". Pacific Northwest SETAC 2003, Port Townsend, WA. Organizer and chair of special session.  
"Sediment Chemistry and Toxicology". SETAC 2002, Salt Lake City, UT. Co-chair of session.

"Transboundary Contamination". SETAC 95, Vancouver, B.C. Organizer and chair.  
Fourth Annual Organotin Symposium - Oceans 89 Conference, Seattle, WA. Organizer  
and chair. 1989.  
Pacific Ecology Conference, Friday Harbor Labs. Member of organizing committee.  
1987.

### **Affiliations**

Past Board member, Pacific Northwest chapter of the Society of Environmental  
Toxicology and Chemistry.  
Society of Environmental Toxicology and Chemistry (national).  
Research adviser, National Research Council Associateship Program.

### **Awards**

National Research Council Associateship, 1989-1991; Geil Memorial Scholarship 1986,  
Egtvedt Scholarship 1985, Summer Research Scholarship 1986 and 1988, School of  
Fisheries, University of Washington. Several performance awards (NOAA).  
NOAA Fisheries Bronze Metal. For innovative work with an interdisciplinary  
team on a complex Biological Opinion for ESA listed salmonids.  
Paper of the Year (2006) from the journal Human and Ecological Risk Assessment for the  
category of ecological risk assessment.

### **Other information**

NAUI SCUBA diver, 1969; Eagle Scout, 1966; Secret Clearance (U.S. Government,  
DISCO), 1982.

### **Peer reviewer**

#### *Journals*

Aquatic Toxicology, Marine Biology, Marine Environmental Research, Environmental  
Science and Technology, Comparative Biochemistry and Physiology, Marine Pollution  
Bulletin, Ecological Applications, Marine Ecology Progress Series (staff reviewer),  
Archives of Environmental Contamination and Toxicology, Bulletin of Environmental  
Contamination and Toxicology Water Research, Aquaculture Engineering, Environmental  
Toxicology and Chemistry, Integrated Environmental Assessment and Management, and  
several book chapters (e.g., ASTM and SETAC special publications).

#### *Organizations*

Environmental Protection Agency, NOAA Sea Grant, Hudson River Foundation, Puget  
Sound Water Quality Authority, Washington State Dept. of Ecology, ASTM protocols  
under development, NMFS, NOAA Hazmat, California Dept. of Fish and Game, CALFED  
Bay-Delta Program, the Florida Wet Environments Program, and the Virginia Institute of  
Marine Sciences.

### *Panels*

Served on a peer-review panel for U.S. EPA Region 2 to evaluate the proposed framework for human and ecological risk assessment related to dredging activities in the New York/New Jersey area. 2002 - 2004.

Invited participant for Society of Environmental Toxicology and Chemistry sponsored Pellston Workshop on Sediment Quality Guidelines. Butte, MT. August 2002.

### **NMFS Related Activities**

#### *Consulting*

Frequent consulting with state agencies (e.g., Dept. of Ecology, Dept. Fisheries and Wildlife), Federal agencies (EPA, NOAA), consulting firms (e.g., Parametrix, PTI), Universities, other agencies (e.g., Cal Regional Water Qual Board, San Diego Sanitation District), and miscellaneous groups and individuals.

Substantial contribution to EPA's workgroup on tributyltin sediment criteria at local superfund sites.

Substantial contribution to determining guidelines for the use of treated wood in the Columbia River under the Endangered Species Act.

Substantial contribution to the NMFS Biological Opinion on Water Quality Criteria for Idaho and for the Potlatch Mill in Lewiston, Idaho.

Substantial contribution to various NMFS Biological Opinions for several local projects in Washington and Idaho.

#### *Training*

Designed, organized, and managed a statistics class for the Northwest Fisheries Science Center. Forty individuals from the center attended two 10-week sessions that covered basic to advanced biometrics.

Organizer of Environmental Conservation Division seminar series 1991- June 1996.

#### **Presentations:**

I have presented papers every year for that last 15 years at the national meeting of the Society of Environmental Toxicology and Chemistry (SETAC). Additionally, I have presented papers at various national and regional meetings such as the Puget Sound Water Quality meetings, the International Conference on Metals in the Environment, and various workshops.

#### *Invited Presentations*

Society for Environmental Toxicology and Chemistry (SETAC), national meeting, 1994, 1998, 2000, 2001, 2003, 2005, 2006.

Sediment Advisory Group. June 2002. Seattle, WA.

North Pacific Marine Science Organization (PICES), Victoria, B.C. Oct. 2001.

International Navigation Association (PIANC) meeting held in Seattle, WA. June 2001.

National Institute of Environmental Studies. Endocrine Disruptor Workshop, Tsukuba, Japan. March 2001.

### Peer-Reviewed Publications

- Meador, J.P.** Ecotoxicology of PAHs. In: Encyclopedia of Ecology, Jørgensen S.E. (ed). Elsevier. In press.
- Meador, J.P.**, J. Buzitis, F.C., and C. Bravo. 2007. Using fluorescent aromatic compounds (FACs) in bile from juvenile salmonids to determine exposure to polycyclic aromatic hydrocarbons. For *Environmental Toxicology and Chemistry*. In review.
- Meador JP**, FC Sommers, GM Ylitalo, CA Sloan. 2006. Altered growth and related physiological responses in juvenile chinook salmon (*Oncorhynchus tshawytscha*) from dietary exposure to polycyclic aromatic hydrocarbons (PAHs). *Canadian Journal of Fisheries and Aquatic Sciences* 63:2364-2376.
- Spromberg, J.A., **J.P. Meador**. 2006. Relating chronic toxicity responses to population-level effects: A comparison of population-level parameters for three salmon species as a function of low-level toxicity. *Ecological Modelling* 199:240-252.
- Meador, J.P.** 2006. Rationale and procedures for using the tissue-residue approach for toxicity assessment and determination of tissue, water, and sediment quality guidelines for aquatic organisms. *Human and Ecological Risk Assessment*. 12:1018-1073. Selected as Paper of the Year by HERA for the category Ecological Risk Assessment.
- Spromberg, J.A. and **J.P. Meador**. (2005). Population-level effects on chinook salmon from chronic toxicity test measurement endpoints. *Integrated Environmental Assessment and Management* 1:9-21.
- Meador, J.P.**, D.W. Ernest, and A. Kagley. (2005). A comparison of the non-essential elements cadmium, mercury, and lead found in fish and sediment from Alaska and California. *Science of the Total Environment* 339:189-205.
- Meador, J.P.**, F.C. Sommers, R.J. Wolotira, and L. Kubin. (2005). *Conducting Dose-Response Feeding Studies with Salmonids: Growth as an Endpoint*. In: Techniques in Aquatic Toxicology, Vol 2. G.K. Ostrander (ed). CRC Press, Boca Raton, FL. Chapter 5, pp. 93-115.
- Moore, D.W., Baudo R., Conder J.M., Landrum P.F., McFarland V.A., **Meador, J.P.**, Millward R.N., Shine J., Word J.Q. (2005). Bioaccumulation in assessment of sediment quality: uncertainty and potential application. In: Use of Sediment Quality Guidelines and Related Tools for the Assessment of Contaminated Sediments. Wenning RJ, G.E. Batley, C.G. Ingersoll, and D.W. Moore (eds). Society of Environmental Toxicology and Chemistry (SETAC). Chapter 11. pp. 429-495.
- Word JQ, Albrecht BB, Anghera MI, Baudo R, Bay SM, Di Toro DM, Hyland JI, Ingersoll CG, Landrum PF, Long ER, **Meador JP**, Moore DW, O'Connor TP, and Shine JP. (2005). Predictive ability of sediment quality guidelines. In: Use of Sediment Quality Guidelines and Related Tools for the Assessment of Contaminated Sediments. Wenning RJ, G.E. Batley, C.G. Ingersoll, and D.W. Moore (eds). Society of Environmental Toxicology and Chemistry (SETAC). Chapter 4. pp 121-161.
- Meador, J.P.**, D.W. Ernest, and A. Kagley. (2004). Bioaccumulation of arsenic in marine fish and invertebrates from Alaska and California. *Archives of Environmental Contamination and Toxicology* 47:223-233.

- Johnson, L.L., M.R. Arkoosh, T.K. Collier, M.M. Krahn, **J.P. Meador**, M.S. Myers, W.R. Reichert, and J.E. Stein. (2004). *The effects of polycyclic aromatic hydrocarbons in fish from Puget Sound Washington*. In: *The Toxicology of Fishes*. R. Di Giulio and D. Hinton (eds). Taylor & Francis, New York, London. In press.
- Meador, J.P.** (2003). *Bioaccumulation of PAHs in Marine Invertebrates*. In: *PAHs: An Ecotoxicological Perspective*. P.E.T. Douben (ed). John Wiley and Sons, Pubs. Chapter 9, pp. 147-171.
- Burgess, R.M., M.J. Ahrens, C.W. Hickey, P.J. Den Bensten, D. Ten Hulscher, B. van Hattum, **J.P. Meador**, P.E.T. Douben. (2003). *An Overview of the Partitioning and Bioavailability of PAHs in Sediments and Soil*. In: *PAHs: An Ecotoxicological Perspective*. P.E.T. Douben (ed). John Wiley and Sons, Pubs. Chapter 7, pp. 99-126.
- Stein, J.E., K.L. Tilbury, **J.P. Meador**, J. Gorzelany, G.A.J. Worthy, and M.M. Krahn. (2003). *Ecotoxicological Investigations of Bottlenose Dolphin (Tursiops truncatus) Strandings: Accumulation of Persistent Organic Chemicals and Metals*. In: *Toxicology of Marine Mammals*. J.G. Vos, G.D. Bossart, M. Fournier and T.J. O'Shea (eds.). CRC Press, Boca Raton, FL.
- Collier, T.K., **Meador J.P.**, and L.L Johnson. (2002). Introduction. Fish tissue and sediment effects thresholds for polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and tributyltin. *Aquatic Conservation: Marine and Freshwater Ecosystems* 12:489-492.
- Meador J.P.**, T.K. Collier, and J.E. Stein. (2002). Use of tissue and sediment based threshold concentrations of polychlorinated biphenyls (PCBs) to protect juvenile salmonids listed under the U.S. Endangered Species Act. *Aquatic Conservation: Marine and Freshwater Ecosystems* 12:493-516.
- Meador J.P.**, Collier T.K., and Stein J.E (2002). Determination of a tissue and sediment threshold for tributyltin to protect prey species for juvenile salmonids listed by the U.S. Endangered Species Act. *Aquatic Conservation: Marine and Freshwater Ecosystems* 12: 539-551.
- Meador, J.P.** and C.A. Rice. (2001). Impaired growth in the polychaete *Armandia brevis* exposed to tributyltin in sediment. *Marine Environmental Research* 51:113-129.
- Meador, J.P.** (2000). Predicting the fate and effects of tributyltin in marine systems. *Reviews of Environmental Contamination and Toxicology* 166:1-48.
- Meador, J.P.**, D. Ernest, A.A. Hohn, K. Tilbury, J. Gorzelany, G. Worthy, and J. Stein. (1999). Comparison of elements in bottlenose dolphins stranded on the beaches of Texas and Florida in the Gulf of Mexico over a one-year period. *Archives of Environmental Contamination and Toxicology*. 36:87-98.
- Meador, J.P.**, P.A. Robisch, R.C. Clark, D.W. Ernest. (1998). Elements in fish and sediment from the Pacific coast of the United States: Results from the National Benthic Surveillance Project. *Marine Pollution Bulletin* 37:56-66.
- Meador, J.P.**, T.H. Sibley, G.L. Swartzman, and F.B. Taub. (1998). Copper tolerance by the freshwater algal species *Oocystis pusilla* and its ability to alter free-ion copper. *Aquatic Toxicology* 44:69-82.

- Meador, J.P.**, N.G. Adams, E. Casillas, J.L. Bolton. (1997). Comparative bioaccumulation of chlorinated hydrocarbons from sediment by two infaunal invertebrates. *Archives Environmental Contamination and Toxicology* 33:388-400.
- Stehr C.M., M.S. Myers, D.G. Burrows, M.M. Krahn, **J.P. Meador**, B.B. McCain, and U. Varanasi, (1997). Chemical contamination and associated liver diseases in two species of fish from San Francisco Bay and Bodega Bay. *Ecotoxicology* 6:35-65.
- Meador, J.P.** (1997). Comparative toxicokinetics of tributyltin in five marine species and its utility in predicting bioaccumulation and toxicity. *Aquatic Toxicology* 37:307-326.
- Meador, J.P.**, C.A. Krone, D.W. Dyer, and U. Varanasi. (1997) Toxicity of sediment-associated tributyltin to infaunal invertebrates: species comparison and the role of organic carbon. *Marine Environmental Research* 43:219-241.
- Tilbury, K.L., J.E. Stein, **J.P. Meador**, C.A. Krone, and S-L. Chan. (1997). Intra- and inter-organ distribution and concentrations of chemical contaminants in tissues of harbor porpoises (*Phocoena phocoena*) from the North Atlantic Coast. *Chemosphere* 34:2159-2181.
- Kerr, D. and **J.P. Meador**. (1996). Modeling dose-response with generalized linear models. *Environmental Toxicology and Chemistry* 15:395-401.
- Rice, C.A., Plesha, P.D., Casillas, E., Misitano, D.A., and **Meador, J.P.** (1996). Growth and survival of three marine invertebrate species in sediments from the Hudson-Raritan Estuary, New York. *Environmental Toxicology and Chemistry* 14:1931-1940.
- Meador, J.P.**, J.E. Stein, W.L. Reichert, and U. Varanasi. (1995). A review of bioaccumulation of polycyclic aromatic hydrocarbons by marine organisms. *Reviews Environmental Contamination and Toxicology* 143:79-165.
- Meador, J.P.**, E. Casillas, C.A. Sloan, and U. Varanasi. (1995). Comparative bioaccumulation of polycyclic aromatic hydrocarbons from sediment by two infaunal invertebrates. *Marine Ecology Progress Series* 123:107-124.
- Meador, J.P.**, U. Varanasi, and S-L., Chan. (1993). Toxic metals in pilot whales (*Globicephala melaena*) from strandings in 1986 and 1990 on Cape Cod, MA. *Canadian Journal Fisheries and Aquatic Sciences* 50:2698:2706.
- Meador, J.P.** (1993). The effect of laboratory holding on the toxicity response of marine infaunal amphipods to cadmium and tributyltin. *Journal of Experimental Marine Biology and Ecology* 174:227-242.
- Meador, J.P.**, U. Varanasi, and C.A. Krone. (1993). Differential sensitivity of marine infaunal amphipods to tributyltin. *Marine Biology* 116: 231-239.
- Meador, J.P.**, F.B. Taub, and T.H. Sibley. (1993). Copper dynamics and the mechanism of ecosystem level recovery in a standardized aquatic microcosm. *Ecological Applications* 3(1) 139-155.
- Varanasi, U., J.E. Stein, K.L. Tilbury, **J.P. Meador**, C.A. Wigren, R.C. Clark, and S-L. Chan. (1994). Chemical contaminants in gray whales (*Eschrichtius robustus*) stranded along the west coast of North America. *Science of the Total Environment* 145:29-53.
- Meador, J.P.** (1991). The interaction of dissolved organic carbon, pH, and total copper in the determination of ionic copper and toxicity. *Aquatic Toxicology* 19:13-32.

- Taub, F.B., A.C. Kindig, **J.P. Meador**, and G.L. Swartzman. (1991). Effects of "seasonal succession" and grazing on copper toxicity in aquatic microcosms. *Verh. Internat. Verein. Limnol.* 24:2205-2214.
- Meador, J.P.**, B.D. Ross, P.A. Dinnel, and S.J. Picquelle. (1990). An Analysis of the relationship between a sand-dollar embryo elutriate assay and sediment contaminants from stations in an urban embayment of Puget Sound, Washington. *Marine Environmental Research* 30: 251-272.
- Swartzman, G.L., F.B. Taub, C. Huang, **J.P. Meador**, and A.C. Kindig. (1990). Modeling the effect of timing of copper addition in a multispecies aquatic microcosm. *Aquatic Toxicology* 17: 93-117.
- Meador J.P.** (1989). Chemoreception in a Lysianassid amphipod: The chemicals that elicit food-searching behavior. *Journal of Marine Behavior and Physiology* 14:65-80.
- Taub, F.B., A.C. Kindig, L.L. Conquest, and **J.P. Meador**. (1989). Results of interlaboratory testing of the standardized aquatic microcosm protocol. In *Aquatic Toxicology and Environmental Fate: Eleventh Volume, ASTM STP 1007*, G.W. Suter II and M.A. Lewis (eds). American Society for Testing and Materials, Philadelphia, PA. pp 368-394.
- Meador, J.P.** (1988). The chemical and biological factors associated with ecosystem recovery from copper-stress as exemplified by microcosms. Ph.D. dissertation, University of Washington. 230 pp.
- Meador, J.P.** and T.M.C. Present. (1985). *Orchomene limodes*, new species, a scavenging amphipod from Scripps Canyon, California: Species description and analysis of morphological variation. *Journal of Crustacean Biology* 5(3): 523-538.
- Meador, J.P.**, S.C. U'Ren, and M.H. Salazar. (1984). A flow-through bioassay system for the evaluation of organotin antifouling compounds. *Journal of Water Research* 18 (5): 647-650.
- Meador, J.P.** (1981). Chemoreception and food finding abilities of a lysianassid amphipod. Masters Thesis. San Diego State University, San Diego, Calif. 108 pp.
- Bernstein, B.B. and **J.P. Meador**. (1979). Temporal persistence of biological patch structure in an abyssal benthic community. *Marine Biology* 51:179-183.
- Smith, K.L. Jr., G.A. White, M.B. Laver, R.R. McConnaughey, and **J.P. Meador**. (1979). Free-vehicle capture of abyssopelagic animals. *Deep-Sea Research* 26:57-64.

### **Non-peer Reviewed Publications**

- Meador, J.P.** et al. (1994) National Benthic Surveillance Project: Pacific Coast. Trace element analyses for cycles I to V (1984-1988). NOAA Technical Memorandum NMFS-NWFSC-16. U.S. Dept. of Commerce, National Oceanic and Atmospheric Admin, National Marine Fisheries Service. 206 pp.
- Varanasi, U., J.E. Stein, K.L. Tilbury, D.W. Brown, **J.P. Meador**, C.A. Sloan, D.W. Brown, J. Calamobokidis, and S-L. Chan. (1993). Chemical contaminants in gray whales (*Eschrichtius robustus*) stranded in Alaska, Washington, and California, U.S.A. U. S. Dept. of Commerce, NOAA Tech. Memo. NMFS-NWFSC-11, 115 p.

- Stein, J.E., K.L. Tilbury, D.W. Brown, C.A. Wigren, **J.P. Meador**, P.A. Robisch, S-L. Chan, and U. Varanasi. (1992). Intraorgan distribution of chemical contaminants in tissues of harbor porpoises (*Phocoena phocoena*) from the northwest Atlantic. 76 pp. NTIS No. PB93-157139.
- Varanasi, U., J.E. Stein, K.L. Tilbury, D.W. Brown, **J.P. Meador**, M.M. Krahn, and S-L. Chan. Contaminant monitoring for NMFS marine mammal health and stranding response program. In Coastal Zone 93 Proceedings of the Eighth Symposium on Coastal and Ocean Management, New Orleans, LA. Vol 3: pp. 2517-2530.
- Stein, J.E., K.L. Tilbury, D.W. Brown, C.A. Wigren, J.P. Meador, P.A. Robisch, S-L. Chan, and U. Varanasi. (1992). Intraorgan distribution of chemical contaminants in tissues of harbor porpoises (*Phocoena phocoena*) from the Northwest Atlantic. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS NWFSC 3, 76 p.
- Meador, J.P.** and R.D. Cardwell. (1988). Effects of tributyltin in the marine environment: An update on knowledge. Proceedings of the Eight World Meeting; Organotin Environmental Programme (ORTEP). 1-3 November 1988, San Francisco, CA. pp 3-20.
- Taub, F.B., A.C. Kindig, and **J.P. Meador**. (1986). Interlaboratory testing of an aquatic microcosm protocol. Final Report to Food and Drug Admin. Contract 223-83-7000, Section IV of V, 160 pp.
- Meador, J.P.** 1986. An analysis of photobehavior in *Daphnia magna* exposed to tributyltin. Organotin Symposium, Marine Technological Society, Oceans 86 Conference, 22-25 September 1986. Washington D.C. Vol 4: 1213-1218.
- Cardwell, R.D. and **J.P. Meador** 1989. Tributyltin in the Environment: An overview and key issues. In press. Proceedings of the Organotin Symposium, Oceans 89. Sept. 18-21, 1989, Seattle, WA. Vol 2: 537-544.
- Meador, J.P.** 1989. The 1989 Organotin Symposium. Proceedings of the Organotin Symposium, Oceans 89. Sept. 18-21, 1989, Seattle, WA. Vol 2: 505-507.