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**Lori L. Wickham, Ph.D.**

**EXPERTISE: Biomedical Research, Physiology, Vascular Biology, Blood, Rheology**

**FORENSIC CONSULTING EXPERIENCE:**

Asphyxia Suffocation Drowning Heart Attack (MI) Bleeding Disorders Heat Shock  
Trauma Hemothorax Hemorrhagic Shock Anti-Coagulation Therapy COPD  
Abnormal Uterine Bleeding Amenorrhea Dysmenorrhea Menorrhagia Hormone Imbalance  
Thrombocytopenia Blood Processing (Transfusion Plasmapheresis Hemodilution/concentration)  
Implant Design Patent Infringement Medical Records Review Histology Dog Bites  
Organic Chemistry-Polar and Non-polar Solvents&Solutes Chemical Sensitivity (Hair/Skin)  
Charcot-Marie-Tooth Disease Peroneal Nerve Dysfunction Neuropathy Taser Death/Meth  
Syncope Iatrochemistry(Side Effects) Subdural Hematoma Necrotising Fasciitis StrepA

**RESEARCH AND ACADEMIC EXPERIENCE:**

***Biology:*** Molecular Cellular Tissue Organ Organismal

***Physiology:*** Cardiovascular Hematological Animal Veterinary Comparative  
Thermal Energetics Diving High Altitude Hypoxia Histology  
Biochemistry

***Engineering/  
Rheology:*** Cell Mechanics Soft / Hard Tissue Mechanics Blood Flow  
Biomaterials Implants Medical Devices Microcirculation  
Plasma-skimming

***Additional  
Coursework  
and Training:*** WAMI Medical Program Histology Biochemistry Veterinary Medicine  
Boat Handling Sailing Marine Sciences SCUBA/ PADI cert.1981  
Seamanship/Shipboard Techniques Oceanography Aquatic Chemistry  
Instructor, Docent Training Program – San Diego Natural History Museum  
Volunteer Instruction and Guest Lectures K-12 & Community Forums  
University Tutorials/Teaching in Calculus, Chemistry, Zoology, Physics,  
Statistics, Physiology, Botany, Marine Biology and Oceanography  
Expert Depositions: *The Law, Urban Myths, Reality* - FCA Symposium

***Instrumentation and Laboratory Skills List available upon request.***

## **PROFESSIONAL EXPERIENCE:**

**Forensic Scientist, John Fiske Brown Associates, Inc. 10/03-present.**

**Scientific Consultant, Biomedical Sciences and Engineering, Free-lance, San Diego, CA. 5/94-present.**

**Visiting Postdoctoral Scholar, Supervisor, Vertebrate Physiology Laboratory,** Department of Biology, University of California, Santa Cruz; Joseph M. Long Marine Laboratory, 100 Shaffer Road, Santa Cruz, CA 95060. **11/92-5/94.**

**Research Fellow – National Research Service Award [N.R.S.A.], Department of Applied Mechanical and Engineering Sciences (AMES) - Bioengineering,** 0412, University of California, San Diego, La Jolla, CA 92090-0142. **8/91- 8/92.**

**Research Scientist II - Suspension Rheologist.** Department of Chemical Engineering, University of New Hampshire, Kingsbury Hall, Durham, NH 03824-35-91. **4/88-4/91.**

**Research Assistant,** Water Research Center, Institute of Northern Engineering, University of Alaska-Fairbanks, Fairbanks, AK 99775. **Spring Semester, 1988.**

**Teaching Assistant,** Institute of Marine Science, 137 IRVII, University of Alaska, Fairbanks, AK 99775-1080. **1/87-6/87.**

**Research Assistant,** Water Research Center, Institute of Northern Engineering, University of Alaska, Fairbanks, AK 99775. **8/86-1/87.**

**Collaborative Researcher,** Department of Physiology and Biophysics, University of Southern California, 1333 San Pablo Street, Los Angeles, CA 90033. **6/86-6/87.**

**Collaborative Researcher,** Long Marine Laboratory, University of California, 100 Shaffer Road, Santa Cruz, CA 95060. **Spring 1985.**

**Collaborative Researcher,** Department of Pathology, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093. **1985-87.**

**Collaborative Researcher,** Hubbs Sea World Research Institute - **Summer 1985-87.**

**Research Assistant,** Institute of Marine Science, 221 O'Neill Building, University of Alaska, Fairbanks, AK 99775-1080. **1984-85.**

**Research Assistant,** Institute for Marine Biomedical Research (presently the Center for Marine-Related Research), UNC-Wilmington, 7205 Wrightsville Avenue, Wilmington, North Carolina, 28403. **1982-84.**

**Laboratory Assistant,** Department of Biological Sciences, University of North Carolina, Wilmington, NC 28403. **1981-84.**

### **MEMBER:**

Forensic Consultants Association of San Diego; *Officer 2009: Member at Large*  
American Association for the Advancement of Science  
Sigma Xi Scientific Research Society  
North American Society of Biorheology  
The American Physiological Society  
The Biomedical Engineering Society  
The Microcirculatory Society  
The Society for Marine Mammalogy

### **PROPOSALS FUNDED:**

Physiological and Ecological Implications of Blood Viscosity Variations in Marine Mammals. Sea World, Inc. of San Diego and Hubbs Marine Research Institute, San Diego, 1985.  
Coronary Flow and Resistance to Hypoxia in seals. Alaska Affiliate of the American Heart Association, AHA-87-002-1. R. Elsner, P.I, 1987.

### **EDUCATION:**

**Ph.D.** University of Alaska 1988  
**B.S.** University of North Carolina,  
**Magna Cum Laude with Honors in Biology**, 1984

### **HONORS AND AWARDS:**

National Institute of Health Fellowship - 1991-1992  
Sea World Stipend - Research Assistantship,  
University of Alaska, Fairbanks - 1987  
Grand Prize Student Award, 1985 Arctic Science Conference  
I. Larus AAAS Travel Award -National AAAS meeting, 1986  
Frank H. Allen Scholarship -1983-84  
Lee Murchison Marvin Scholarship - 1983-84  
The Honor Society of Phi Kappa Phi - 1983  
Academic Scholarship - 1982-83

### **PUBLICATIONS:**

### **JOURNAL ARTICLES:**

Wickham, L.L. 2008. Blood is thicker than water. *The Daily Transcript (SDDT.com)*, 123(89): 4A.

Wickham, L.L. 2007. Drowning, homicide and misadventure: water-related accidents and cause of death. *The Daily Transcript (SDDT.com)*, 122(88): 5A.

Wickham, L.L. 2007. Forensic analysis of injury and death by asphyxia. ([www.tasanet.com](http://www.tasanet.com)).  
*Technical Advisory Service for Attorneys*

Wickham, L.L. 2006. Blood, traffic and rheology: Go with the flow. *The Daily Transcript (SDDT.com)*, 121(208): 6A.

Wickham, L.L. 2006. Forensic implications of asphyxia. John Fiske Brown Associates, Inc. Staff Member Articles ([www.FiskeBrown.com](http://www.FiskeBrown.com)).

Wickham, L.L. 2006. Waiting to exhale: Asphyxia and death. *The Daily Transcript (SDDT.com)*, 121(144): 5A.

Debes, J.C. and L.L. Wickham. 2006. "Stress" applied to both mechanical, physiological concepts. *The Daily Transcript (SDDT.com)*, 121(87): 6A.

Debes, J. C. and L. L. Wickham. 2006. Stress. *In The Encyclopedia of Biomedical Engineering*, Wiley and Sons.

Debes, J. C. and L. L. Wickham. 2004. Watch your engines, *Letters to the Editor: Mechanical Engineering*, 126(6): 8.

Shyy, Y.-L., L. L. Wickham, Y.-L. Hu, E. Saldivar, S. H, Telian, A.J. Valente, K.-L. P. Sung and S. Chien 1993. Human monocyte colony stimulating factor increases the adhesion of monocytes to endothelial monolayers: Possible mediation through monocyte chemotactic protein (MCP-1). *J. Clin. Invest.*, 92:1745-1751.

Carr, R. T. and L. L. Wickham. 1991. Influence of vessel diameter on red cell distribution at microvascular bifurcations. *Microvascular Research*, 41: 184-196.

Carr, R. T. and L. L. Wickham. 1990. Plasma skimming at serial microvascular bifurcations. *Microvascular Research*, 40: 179-190.

Wickham, L. L., R. M. Bauersachs, R. B. Wenby, S. Sowemimo-Coker, H. J. Meiselman, and R. Elsner. 1990. Red cell aggregation and viscoelasticity of blood from seals, swine, and man. *Biorheology*, 27: 191-204.

Wickham, L.L., R. Elsner, F.C. White, E. Hill, D. Wilford and E. Meyerhoff. *In vivo* Optimal Hematocrit of Seals and Swine: A viscometric approach. *Unpublished Manuscript*

Wickham, L. L., D. P. Costa, and R. Elsner. 1990. Blood rheology of captive and free-ranging northern elephant seals and sea otters. *Canadian Journal of Zoology*, 68: 375-380.

Wickham, L. L., R. Elsner, F. C. White, and L. H. Cornell. 1989. Blood viscosity in phocid seals: possible adaptations to diving. *Journal of Comparative Physiology B: (Biochem. System. Integrat. Physiol.)* 159(2): 153-158.

Elsner, R. and L. L. Wickham 1988. Implications of physiological studies of seals. *Marine Mammal Science*, 4(1): 34-43

## **ABSTRACTS:**

Shyy, J.Y. , L. Wickham, Y-L. Hu, K-L. P. Sung, and S. Chien. 1992. MCSF increases the adhesion of monocytes to endothelial cell monolayers: Possible pathway through MCP-1. *FASEB J.* (April 1992).

Meiselman, H. J., M. A. Castellini, R. Elsner, R. B. Wenby, and L. L. Wickham. 1991. Hemorheological behavior of seal blood. Seventh Euro. Conf. on Clinical Hemorheology. (July 1991), U. K. *Int. J. Microcirc.* 11(6): 708.

Wickham, L. L. and R. T. Carr. 1990. Influence of vessel diameter on red cell distribution at microvascular bifurcations. 37th Ann. Conf. Microcirc. Soc.: (*FASEB J.*), (April 1990).

Carr, R. T., L. L. Wickham, and F. W. Rong. Red cell distribution in microvascular networks. Microvascular Networks Sat. Symp. XXXI. I.U.P.S. Congress, *Int. J. Microcirc. Clin. Exp.* 8 (Suppl. 1): S26 (May 1989).

Carr, R. T. and L. L. Wickham. 1989. Plasma skimming at downstream bifurcations. Proc. 36th Ann. Conf. Microcirc. Soc.: 50 (*FASEB J.*)

Hill, E. P., D. C. Willford, R. Elsner, F. C. White, E. Merhoff, and L. L. Wickham. 1987. Critical total oxygen transport (TOT) and critical PVO<sub>2</sub> during hypoxia and anemia in pigs and seals. *The Physiologist*, 30(4): 189.

Wickham, L. L., R. M. Bauersachs, H. J. Meiselman, and R. Elsner. 1987. Unusual hemorheological properties of seal blood: viscosity, sedimentation rate, and RBC aggregation. *The Physiologist*, 30(4): 189.

Wickham, L. L., R. Elsner, and L. H. Cornell. 1986. Comparisons of erythrocytes and blood viscosity in seals and pigs. *Proc. I.U.P.S. XXX Congress*, 16: 86.

Wickham, L. L., R. Elsner, L. H. Cornell, and F. C. White. 1986. Comparative hemorheology in terrestrial and marine mammals. *Proc. National Meeting AAAS*, 152: 151.

Wickham, L. L., L. H. Cornell, and R. Elsner. 1985 Red cell morphology and blood viscosity variations in marine mammals: Possible adaptations of phocid seals. *Proc. Sixth Biennial Conference on the Biology of Marine Mammals*, 6: 86.

Wickham, L. L., L. H. Cornell, and R. Elsner. 1985 Red cell morphology and blood viscosity implications in terrestrial and marine mammals: Possible adaptations of phocid seals. *Proc. Arctic Science Conference, 36th Ann. Alaska Science Conference*, 36: 121.

**DISSERTATION & THESIS:**

Wickham, L. L. 1988. Physiological and ecological implications of hemorheological variations in marine and terrestrial mammals. Ph.D. Dissertation, University of Alaska, 170 pp. (*Available through library request*)

Wickham, L. L. 1984. Iontophoretic backfilling of sensory and motor neurons in the brain of the blue crab, *Callinectes sapidus*. Honors Thesis, University of North Carolina, 30 pp. (*Available through library request*).

**REFERENCES:**

To be furnished upon request