

Paul T. Henderson, Ph.D.

Clinical Interests

Mechanisms of cellular response to oxidative stress, drug and carcinogen metabolism, pharmacokinetics assay development, mass spectrometry, HPLC. Dr. Henderson is pursuing the development of advanced diagnostics with the goal of predicting patient response to cancer drugs prior to initiation of toxic chemotherapy. The diagnostics development is enabled by accelerator mass spectrometry (AMS), an ultrasensitive technology for detecting rare isotopes such as radiocarbon and tritium in biological samples. AMS is also useful for measuring pharmacokinetics of small drug doses in humans, which Dr. Henderson is applying to drug development and drug formulation studies. Another project involves the incorporation of hydrophobic drugs and membrane proteins into nanoparticles made of apolipoproteins and phospholipids called nanolipoproitein particles (NLPs). NLPs closely mimic the cellular membrane bilayer, and render hydrophobic molecules water soluble. Dr. Henderson is using NLPs for drug delivery and protein biochemistry studies that are related to breast cancer research.

Title Associate Adjunct Professor

Specialty Cancer, Hematology and Oncology, Internal Medicine

Department Internal Medicine

Division Hematology and Oncology

Clinic UC Davis Cancer Center

Education Ph.D., Georgia Institute of Technology, Atlanta, Georgia, 1999

B.S., University of Florida, Gainesville, Florida, 1992

Professional Memberships American Association for Advancement of Science

American Association for Cancer Research

American Chemical Society Environmental Mutagen Society

Select Recent Publications Gao T, Blanchette CD, He W, Bourguet F, Ly S, Katzen F, Kudlicki WA, Henderson PT, Laurence

TA, Huser T, Coleman MA. Characterizing diffusion dynamics of a membrane protein associated with nanolipoproteins using fluorescence correlation spectroscopy. *Protein Sci.* 2011 Feb;20(2):

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Hah SS, Henderson PT, Turteltaub KW. Towards biomarker-dependent individualized chemotherapy: exploring cell-specific differences in oxaliplatin-DNA adduct distribution using accelerator mass spectrometry. *Bioorg Med Chem Lett.* 2010 Apr 15;20(8):2448-51. Epub 2010 Mar 7.

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Hah SS, Henderson PT, Turteltaub KW. Recent advances in biomedical applications of accelerator mass spectrometry. *J Biomed Sci.* 2009 Jun 17;16:54. Review. Erratum in: *J Biomed Sci.* 2009;16: 111.

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