

Meet the Researcher - Dr. Thomas Huser



Dr. Thomas Huser is an *Associate Professor in the Department of Internal Medicine at the University of California, Davis*. He also serves as Chief Scientist for CBST and Co-Director for the Translational Core of the Clinical Translational Science Center at UC Davis. Until November 2005, he was a Group leader for Biophotonics and Nanospectroscopy at Lawrence Livermore National Laboratory (LLNL) in Livermore, CA, where he developed and applied novel nano-biophotonics tools for characterizing the nano-systems biology of individual cells. He joined LLNL in 1998 as a postdoctoral researcher and became a staff scientist in 2000. Dr. Huser obtained his Ph.D. in Physics from the University of Basel, Switzerland, where he worked primarily on near-field optical microscopy. At UC Davis he applies single molecule fluorescence, Nano-Biophotonics, and Raman spectroscopy and imaging to biological and medical problems at the single cell level. He routinely serves as reviewer on Special

Emphasis Panels on Nanoscience and Nanotechnology for the National Institutes of Health, and for a wide range of scientific journals. He has organized 5 scientific meetings and symposia, teaches short courses on Biophotonics at scientific conferences, and has published >50 peer-reviewed papers and 5 book chapters.

Research Interests: Centered around ultra-sensitive optical microscopy and spectroscopy of biomolecular and cellular systems.

Current Research Projects: Nondestructive characterization of individual stem cells, cancer cells, and virus-infected cells; development and application of novel super-resolution optical microscopy techniques to dissect virological synapses between cells and to determine the structure and dynamics of intercellular interactions; and development of nanosensors and novel markers for the long-term cellular and molecular imaging of chemicals, small molecules, and macromolecules in individual cells based on Raman and coherent anti-Stokes Raman spectroscopy (CARS) of individual cells, organelles, and lipoproteins. Other projects include the study of DNA-protein, protein-protein, and protein-lipid interactions by single molecule fluorescence spectroscopy, and advanced live cell imaging techniques.

Additional Interests: Outside his research, Dr. Huser enjoys reading, sports, and outdoor activities with his family.

Current group members: Tingjuan Gao, Postdoc; Gregory McNerney, graduate student; Sonny Ly, graduate student; Tun Nyunt, graduate student; Tyler Weeks, graduate student; Latevi Lawson, graduate student; Iwan Schie, graduate student - <http://huserlab.ucdavis.edu/people/>.

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