

# James Fitzpatrick

## Contact information:

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## Biography:

James Fitzpatrick, Ph.D. originally studied chemistry at King's College, London and then completed his doctorate in physics at the University of Bristol (both in the United Kingdom), where he developed an injection-seeded Fourier-transform bandwidth limited optical parametric oscillator (OPO) laser system to probe the hyperfine structure of gas phase free radicals in their excited electronic state. In 2003, he emigrated to the United States for post-doctoral training at the University of Pittsburgh where he undertook high-resolution Stark spectroscopy of biological macromolecules and their micro-solvated clusters in the gas phase, and at Carnegie Mellon University where he worked on developing new fluorescent biosensors to study signaling processes in living cells. It was at Carnegie Mellon University that he developed his passion for microscopy. In 2009 he was appointed the inaugural Core Director of the Waitt Advanced Biophotonics Center at the Salk Institute in La Jolla, CA, a multi-scale imaging service center, where he developed an interest in correlative microscopy. In 2015 he was recruited to Washington University in St. Louis as the inaugural Director of the Center for Cellular Imaging and as an Associate Professor in Cell Biology & Physiology and Neuroscience, where he works directly with biomedical researchers to integrate cutting-edge microscopy and image analysis tools into their research programs. In addition, he continues to focus on the development and application of advanced and correlative microscopy methods and leverages those efforts in collaborative studies relating to cancer, protein aggregation and neurodegeneration.

## Research Interests:

Current efforts are focused on the development and application of correlative and cryo-electron microscopy methods to study the pathogenesis of disease and the structures of proteins and macromolecular complexes. I could give either a talk focused on Cryo-EM and structures we have solved, or on correlative microscopy and how we are using such approaches to study disease pathogenesis.