UCF-COM Directory of Post-Docs

Dr. Rashmi Gupta

Ph.D graduate from Microbiology program of Oregon State University, M.S. and B.S. in Microbiology from University of Delhi, India.

Research Group at UCF: BSBS (Infectious Disease)

Research Interests

Mycobacteria tuberculosis, the tubercle bacillus causes tuberculosis and its relative *M. abscessus* is an opportunistic human pathogen. These two human pathogens are difficult to treat owing to drug resistance. My research areas are

- Mycobacterial pathogenesis
- Host-pathogen interactions
- Drug resistance
- Drug screening and drug discovery

Hobbies: Gardening, Cooking

Dr. Michael W. Kwan

Ph.D graduate in Materials Science and Engineering from University of Florida, B.S. in Materials Science and Engineering from University of Florida.

Willenberg Research Group at UCF Department of Internal Medicine

Research Interests:

- Biomaterials
- Nanoscience
- Tissue regeneration and hydrogel scaffolds
- Separation sciences
- Analytical methods
- Spatial repellents

Hobbies: Music, traveling.

Dr. Mona Doshi Mathew

PhD in Chemistry at the NanoScience Technology Center, University of Central Florida

Willenberg Research Group at UCF Department of Internal Medicine

Research Areas:

During Mona's PhD she worked on photoactivatable organic (polymer) and inorganic (quantum dots) nanoparticles for cancer therapy and in developing biosensors. Most of her work involved developing polymer nanoparticles and testing their photoactivatable property for generating reactive oxygen species (ROS) that could facilitate targeted destruction of cancer cells *in vitro* through photodynamic therapy. She also worked on developing quantum dot (Qdot) biosensors with the aim of achieving fluorescence reporting of intracellular small molecule/drug delivery.

During postdoctoral training in Dr. Sampath Parthasarathy's lab (2015-2018), Mona used the nanoscience-optics-cancer interdisciplinary knowledge from PhD for developing Near Infrared (NIR) fluorescent tagged biomolecules (NIR-glucosamine) for *in vitro* and *in vivo* cancer diagnosis

Currently, she is working on a project funded by Florida Department of Agriculture and Consumer Services (FDACS) for developing nanoceria based pesticide for vector mosquitoes which are responsible for diseases caused by Zika, Dengue virus etc. Her main focus in this project is to investigate the larvicidal and adulticidal properties of nanoceria and study the influence of nanoceria on life traits in adult mosquitoes.

Hobbies: Photography, be it wild, nature, microphotography or microscopy. Additionally, reading books which are based on real stories or biographies as well as sci-fi novels.

Dr. Kyle J. Mamounis

Research Group at UCF: Dr. Davidson

Research Areas:

Kyle J. Mamounis is a postdoctoral fellow in the biochemistry lab of Victor L. Davidson at the Lake Nona medical school campus of UCF. The Davidson lab studies the structural and mechanistic characteristics of endogenous quinone cofactor-containing bacterial proteins. Techniques employed include scanning spectrophotometrics, high performance liquid chromatography, and site-directed mutagenesis of active site residues. Kyle earned his PhD in nutritional science from Rutgers University in 2017 studying the effects of different types of fatty acids on obesity, glucose metabolism, and hypothalamic inflammation, using a combination of gross physiological assays like MRI of body composition and insulin tolerance test, as well as molecular techniques like qPCR and ELISA. His bachelor's degree is in biological science from Rowan University.

Kyle's motivation for entering a career in biomedical science came from an interest in diets and nutrition, and he writes articles and gives talks about nutrition, metabolism, and philosophy of science for websites, lay conferences, podcasts, radio, and YouTube. Not entirely decided between a career in academia or industry, Kyle is leaning towards pursuing a private research career while maintaining a side gig with science education and communication through various platforms.

Dr. Susmita Ghosh

Ph.D graduate in Infectious Disease from University of Calcutta, India.

Jewett's research group at Immunity and Pathogenesis Division

Research Interests

Susmita Ghosh is a postdoctoral fellow at Dr. Mollie Jewett's lab at the Lake Nona medical school campus of UCF. She is working on Lyme disease molecular pathogenesis caused by *Borrelia burgdorferi*. She has generated genetically modified fluorescent *Borrelia* which can be monitored by several methods e.g. flow cytometry, immunofluorescence etc. She is also determining novel riboflavin/FAD transporter of *Borrelia* by transposon mutagenesis screening.

During her postdoctoral training at Dr. Travis Jewett's lab, she studied on the effector molecules from type III secretion system of *Chlamydia trachomatis*, the most frequently reported causative organism for Human STDs. She characterized the biophysical activity and actin modulating mechanism of translocated actin recruiting phosphoprotein (Tarp), one of the early effectors of *Chlamydia*. She also discovered the lower infectivity of mutant Tarp *Chlamydia* to the host cells which suggests Tarp as an important virulence factor.

Hobbies: Listening to music, gardening.