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Federal funding boosts SFU's pioneering health research

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A new round of funding from the Canada Foundation for Innovation (CFI) will support the development of emergent, multi-disciplinary research that is putting Simon Fraser University on the map in health sciences research. SFU's most recent CFI recipients are pioneering research that could one day enable doctors to accurately diagnose and cure complex and life threatening diseases using molecular and mathematical analysis.

Mario Liotti, Nancy Forde, Melanie O'Neill, Ghassan Hamarneh and Faisal Beg, recent appointees at SFU, are collectively receiving \$570,000 under the CFI's New Opportunities Fund program. Liotti, a neurologist, a cognitive neuroscientist and an associate professor of psychology, will use his \$140,000 award to purchase equipment for a unique facility in Canada, and one of a few worldwide. Liotti's laboratory of affective and developmental neuroscience will help researchers understand the cognitive and neurological markers of mental illnesses such as depression, attention deficit hyperactivity disorder (ADHD) and autism. Forde, an assistant professor of physics, specializing in molecular biophysics, will use her \$150,000 to build an instrument available in only a handful of labs worldwide, none in Canada. Forde will pioneer the adaptation of multi-trap optical tweezers to probe biological systems at the molecular level. The tweezers will enable Forde to use the optical force of highly focused laser light to study the stability and elasticity of collagen molecules. Hamarneh is an assistant professor in the school of computing science; Beg is an assistant professor in the school of engineering science. The two will use their \$130,000 to acquire computational, storage and visualization infrastructure for their emerging medical image analysis laboratory. The lab is dedicated to enhancing modern medical imaging technology by developing mathematical models to describe, detect and predict normal and abnormal human anatomical structures.

O'Neill is one of a few scientists worldwide researching how humans use light to synchronize their metabolic and behavioural patterns, or circadian rhythm, with the outside world. The assistant professor of chemistry will use her \$150,000 to construct a laser system that illuminates events happening in a fraction of a second. This equipment will allow O'Neill to probe ultra-fast, light-driven biological reactions, and to use light to visualize how molecules found in the eyes move, interact and react in response to light. The CFI, an independent, federally created research-funding body, awards New Opportunities Funds to newly recruited, full-time faculty pursuing leading edge research that benefits Canadians.