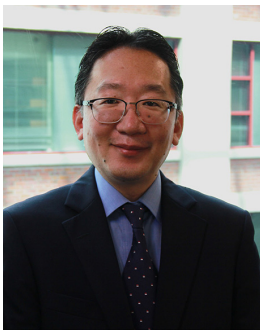
Stephenson School of Biomedical Engineering
Seminar Series Presents

NEAR-INFRARED LASER ADJUVANT FOR VACCINATION



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zoom
Meeting ID: 929 1208 4947
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ABSTRACT

The incorporation of an immunologic adjuvant to enhance the immune response is a standard practice for modern vaccines. In the past decade, researchers have consistently reported a new approach to augment the immune response to vaccine by brief treatment of the skin with laser light without appreciable adverse effects. To date, four classes of laser adjuvant have been established. Non-pulsed laser adjuvant merits further development because of its established efficacy and safety in animal models. Recent study from us demonstrated that the adjuvant effects of non-pulsed laser adjuvant were mediated by activation of innate immunity including dermal dendritic cells via photochemical reactions. The laser-based technology has numerous advantages over the conventional pharmacologic approaches and exhibits the excellent safety profile. Such a technology offers a valuable choice of immunologic adjuvant for accelerated vaccine development against emerging infectious diseases.

BIO

Satoshi Kashiwagi is assistant professor of Radiology at Harvard Medical School and Massachusetts General Hospital. He finished his medical training at Keio University in Tokyo, Japan and practiced as an obstetrician. He then earned his doctorate degree at Keio University and completed his postdoctoral training at HMS/MGH in the U.S. elucidating the role of gaseous molecules in immune cell trafficking and tumor angiogenesis to have gained a broad and unique skill set for basic and translational research in bioimaging, immunology, reactive oxygen species, cancer biology and laser medicine. He took a faculty position at MGH in 2009, and his research group focuses on creative approaches in photobiomodulation using near-infrared light and development of a new therapy for infectious diseases and cancer.