

## Hsiao-Ying (Monica) Wey, Ph.D.



Dr. Hsiao-Ying (Monica) Wey is an Assistant Professor of Radiology at the Massachusetts General Hospital and Harvard Medical School. Dr. Wey received her Ph.D. in Medical Physics from the University of Texas Health Science Center at San Antonio in 2011 and completed her postdoctoral training at the Department of Radiology (Martinos Center for Biomedical Imaging) at Massachusetts General Hospital. Dr. Wey became an Instructor in 2014 and an Assistant Professor in 2016 at Harvard Medical School to establish her independent research program. Dr. Wey's research interests centered around the technical development of simultaneous PET/MR imaging methodologies and its applications investigating alternations of neurochemistry and function in the healthy and diseased brain. Specifically, Dr. Wey is developing an integrated PET/MRI method to estimation *in vivo* mu-opioid receptor regulations, such as receptor desensitization and internalization, in response to mu-opioid receptor agonists. She is also working on disentangling the interactions between the mu-opioid and dopamine receptor systems. Her research has a huge clinical implication because these two mechanisms, i.e., mu-opioid receptor regulations and opioid-dopamine interactions, have a direct link to the addictive liability of pain medicine. Her research is currently funded by a NIH-NIDA K99/R00 Grant. Another major area of Dr. Wey's research focuses on translating novel PET radiotracers from preclinical setting to a first-in-human study, and ultimately, to disease applications. Dr. Wey has a unique expertise in PET tracer kinetic modeling to characterize *in vivo* pharmacokinetics and pharmacodynamics of novel radiotracers. Most notably, Dr. Wey has facilitated the translation of an innovated epigenetic radiotracer, [<sup>11</sup>C]Martinostat, binding selectively to a subset of histone deacetylase (HDACs) from preclinical evaluations to the first-in-human study. Current ongoing studies using [<sup>11</sup>C]Martinostat PET/MRI include chronic pain, opioid addiction, alcoholism, Alzheimer's disease, and Parkinson's disease. Dr. Wey is currently establishing a neuroimaging program focusing on translational neuropharmacology and addiction research at MGH.