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**Arnold D Kim\*** (adkim@ucmerced.edu), School of Natural Sciences, UC Merced, P.O. Box 2039, Merced, CA 95344. *The inverse fluorescent source problem for optical molecular imaging of tissues.*

Optical technologies offer a means to obtain quantitative information about tissue health non-invasively. By determining optical properties of tissues from measurements, we may infer physiological properties. In doing so, we develop a means for early diagnosis leading to more effective preventative treatment. Light propagation in tissues is governed by the radiative transport equation. In this talk, we describe a method to recover the location, size and strength of a source in a half-space from angle-resolved boundary data. This problem applies to optical molecular imaging in which the source is a fluorescent marker. We make some remarks on the case when only limited boundary data is available. (Received February 13, 2007)