SPECIAL SECTION GUEST EDITORIAL

Biomedical Optics and Women's Health

For biological and cultural reasons, gender has a profound impact on healthcare. The importance of women's health issues has often been overlooked. Breast cancer, reproductive cancers, heart disease, osteoporosis, and HIV/AIDS are significant sources of morbidity and mortality for women—better tools to prevent, detect, and treat these diseases would significantly improve women's health worldwide. In this special section, we consider the significant potential that optical technologies have to improve the health of women. For example, optical technologies have been developed to detect and treat gynecologic cancers, and large-scale clinical trials of these technologies are underway in the developed world. In the developing world, low-cost portable optical systems could revolutionize gynecologic cancer screening, preventing the unnecessary death of hundreds of thousands of women each year. The fourteen papers in this special section examine the role

that optical technologies could play in all aspects of women's health including using optical interrogation of biochips to screen for disease-related gene expression patterns, and using optical methods to detect gynecologic cancers, breast cancer, and osteoporosis. These papers highlight the promise of this technology and discuss the steps required to make this a reality.

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Special Section Guest Editors