Special Section Guest Editorial

Optics of Human Skin

The very first diagnostic tool was clinical observation of human skin under natural lighting. Since the 1900s, artificial light has also been used to observe the skin. The design and development of diagnostic systems for human skin is regarded as one of the fastest growing areas in biomedical optics and photomedicine. A wide variety of optical diagnostic imaging techniques for human skin have been developed or are under development.

Attend almost any academic dermatology or plastic surgery conference and you are likely to find many lectures that relate to the development of diagnostic imaging systems for human skin. Engineers, physicists, and mathematicians are devising quantitative theories and image reconstruction techniques. Pre-clinical researchers are conducting experiments on tissue phantoms and animal models. However, the difficult task of making optical diagnostic imaging devices generally available requires physicians who can help identify the potential applications where such technologies may be clinically practical. This special section is devoted to the development and use of optical techniques in noninvasive or minimally invasive diagnosis of human skin and specific dermatoses with clinical potential.

I am indebted to the contributing authors for the exercise of their time, talents, and experience in preparing manuscripts for this special section of the *Journal of Biomedical Optics* to foster the educational process. It is our collective hope that their papers will stimulate further discussion in the fields of biomedical optics and photomedicine in general and light-based diagnostic and therapeutic systems for human skin in particular.

J. Stuart Nelson, M.D., Ph.D.
Beckman Laser Institute and Medical Clinic
University of California, Irvine

Special Section Guest Editor