

2017 Committee Chair:

Early DF Research Award Essential to Career as Independent Investigator

Johann Gudjonsson, MD, PhD, Chair of the Dermatology Foundation's 2017 Medical & Scientific Committee, says he knows just how much a DF research award can mean to a young investigator. "I am actually the poster child for what these grants are capable of."

This native of Iceland received three DF research awards early in his career that were essential to his becoming an independent investigator. "They were critical because they covered the period right after I finished my dermatology residency training at the University of Michigan, during those difficult early years as a junior investigator" when there were no other sources of support available.

Dr. Gudjonsson was drawn to dermatology out of curiosity about psoriasis, which affected some of his family members. A two- to three-month research project on psoriasis that he had begun at the University of Iceland Medical School "extended into summer and then into full PhD training." It also led ultimately to the University of Michigan, where the Department of Dermatology was engaged in groundbreaking research delineating the immune system's active role in psoriasis, and documenting that it is treatable with immunosuppressive drugs. Dr. Gudjonsson is now an Assistant Professor there. His primary research focus has been basic immunologic and genetic research on psoriasis, with projects directed at improving the diagnosis and treatment of this inflammatory disease. He also sees patients and directs the inpatient consultation service.



Johann E. Gudjonsson, MD, PhD

The new direction that his research has begun to take involves learning why so many more women than men develop autoimmune diseases. Naturally, he has started out by looking at genomic differences, and a paper reporting his initial findings will be in *Nature Immunology* by the end of the year.

Dr. Gudjonsson, an experienced grant reviewer, has been a member of the Medical & Scientific Committee for the past three years. He profoundly enjoys the great group of people and the collegial discussions, and "I am quite honored to lead it this year." His goal as Chair is to "move the best science and people forward so we can keep growing the field." Dr. Gudjonsson stresses that dermatology continues to lose too many talented new investigators because of research funding concerns. **"We desperately need more individuals who are dedicated to the intellectual excitement of exploration, discovery, and advancing the state of knowledge."**

Dr. Gudjonsson received three Dermatology Foundation research awards to advance his work in psoriasis: 2005: Research Fellowship, 2008: Research Grant, and 2010: Physician Scientist Career Development Award.

and skin aging appear to be closely related," he says, and NO₂ exposure is known to be associated both with low lung function and with lung cancer. To assess the link between chronic exposure to NO₂ and lentigo development, Krutmann and his group evaluated women from two geographic areas: an expanded Caucasian cohort (806 subjects) and 1,072 Han women >50 years old from a larger Chinese study. Lentigines were visually evaluated by trained personnel. The results recapitulated what had been found with PM. Exposure to NO₂ was significantly associated with more lentigines on the cheeks in both cohorts.

This was the largest epidemiologic study to demonstrate the link between traffic-related air pollution and lentigo formation. And it showed the association not only in Caucasians but in Asians, a population in which lentigo formation is a hallmark of skin aging.

Environment-induced Lentigines—and the AHR

Solar lentigines have been considered the exclusive hallmark of skin exposed to cumulative doses of UVR, the clinical icon of photoaged skin. *Photoaging* and *extrinsic aging* have been interchangeable terms.

But in light of such powerful evidence that widespread lentigo formation also occurs independently of UVR, Krutmann has recently reformulated the concept and terminology. He proposes the term *environment-induced lentigo*—or *EIL*—to replace the "solar" lentigo misnomer.

"We define EILs as acquired pigment spots (PS) of human skin that result from chronic exposure to a variety of environmental noxae," Krutmann explains (see illustration on front cover). (*Noxae* are agents capable of exerting a harmful effect on the body.) In addition to UVR, these stressors