Endowments are among the most significant gifts that may be given to or received by an academic institution. Endowed gifts are long-term investments in the University, held in perpetuity, that provide important funds to deserving faculty members year after year, generation after generation. Endowed funds may be named to honor or recognize the donor, a faculty member, or a donor’s loved ones. Because the gift principal is carefully invested and only a portion of the generated interest is spent, donors who create an endowed fund today can be confident that it will grow and continue to support UAB in the years to come.

Endowed funds are critical for the Department of Dermatology faculty in the face of constant competition from other academic institutions. This fall, the department received a major gift from a graduate of the School of Medicine at UAB to establish the first endowed fund for the department in graduate education. This fund will support resident training and help further the department’s mission of educating and training outstanding and compassionate physicians who are committed to the care and service of their patients.

For more information on endowed funds or supporting the Department of Dermatology, contact Erica Hollins at (205) 996-6839 or ehollins@uab.edu.

Welcome Dr. Sami

The University is pleased to announce the addition of Naveed Sami M.D. to the Department of Dermatology. Dr. Sami recently completed a Dermatology Residency at UAB. He graduated from the Aga Khan Medical School in Karachi, Pakistan. He then spent three years in research as a post-doctoral research fellow at the Harvard Medical School. His research focus was in autoimmune bullous diseases. Dr. Sami continued his interest in the treatment of patients with these disorders as a resident at UAB. He will be the Director of the Autoimmune Bullous Disorders Clinic at TKC. Please call 996-SKIN (7546) to make a referral or schedule an appointment.
The Department of Dermatology and Craig Elmets, M.D., principal investigator, have been awarded a prestigious T32 training grant from the NIH to establish a post-doctoral fellowship program in investigative dermatology and cutaneous biology at UAB. The goal of the program is to train promising M.D.s and/or Ph.D.s for investigative careers in academic dermatology. Each trainee will have both a primary and secondary mentor to oversee their training. In most instances, one of these will be within Dermatology and the other outside of the Department. This will provide the trainee with exposure to new scientific skills, while at the same time maintaining a link to dermatology.

Kimberly Loesch, Ph.D., under the mentorship of Stuart J. Frank, M.D., was selected to be one of the first two post-doctoral trainees. Dr. Loesch is a graduate of Texas A&M University and gained substantial research experience as a research associate in the laboratories of Drs. R. Pollard, M. Nokta, and S. Lemon at University of Texas Medical Branch at Galveston prior to entering the Cellular and Molecular Biology Program at UAB in 2000. After several laboratory rotations in her first year of graduate school, Dr. Loesch began her thesis work as a Ph.D. student in the Department of Cell Biology in Dr. Frank’s laboratory in 2001.

Dr. Frank joined the UAB faculty in 1991 after Internal Medicine residency at Barnes Hospital, Washington University in St. Louis and Endocrinology and basic research fellowships at the NIH. He is currently Professor of Medicine, Cell Biology, and Physiology in the Division of Endocrinology, Diabetes, and Metabolism and Director of the Basic Science Section of the Division of Gerontology, Geriatrics, and Palliative Care at UAB. Dr. Frank is also Chief of the Endocrinology Section in the Birmingham VAMC Medical Service.

Dr. Frank’s laboratory focuses on several aspects of the cellular actions of the anterior pituitary hormones growth hormone (GH) and prolactin. GH is a key regulator of growth and metabolism in humans and may also have roles in aging and longevity. Many cells and tissues in the body are affected by GH, including liver, muscle, fat cells, and bone. Recent findings by other investigators also suggest that skin cells express GH receptors and it has long been known that GH deficiency and excess both manifest clinically relevant skin changes. Furthermore, some have speculated that GH exerts effects on skin cancers of various sorts, suggesting that GH signaling may be a relevant drug target for dermatologists.

Dr. Loesch’s Ph.D. thesis work with Dr. Frank dealt with cellular factors that govern the availability of GH receptors at the surface of cells. She identified how an important GH signaling molecule, JAK2, both allows the GH receptor to travel from inside the cell to its surface and stabilizes the receptor once it arrives there. This work is critical for a complete understanding of the determinants of cellular sensitivity to GH.

Dr. Loesch will use her T32 fellowship award to pursue basic studies of GH signaling and GH receptor dynamics in human skin cell lines. To accomplish these studies, Dr. Loesch will utilize the services of the SDRC Cell Culture Core Facility under the direction of Dr. Laura Timares. This comprehensive examination of GH action should allow rational novel approaches to alter GH action in skin in various physiologic and pathophysiologic states.
Erin Thacker, Ph.D., under the mentorship of David T. Curiel, M.D., Ph.D., was also selected as one of the first two post-doctoral trainees to receive the T32 training grant. Dr. Thacker graduated from Louisiana State University where she started her scientific career as a Student Research Assistant at Pennington Biomedical Research Center studying the role of leptin in obesity. She then entered the Cellular and Molecular Biology program at UAB, and received her Ph.D. from the Department of Cell Biology. Her thesis, under the direction of Dr. Anne Theibert, focused on characterizing the role of the novel neuronal protein, centaurin alpha, in PI 3-kinase regulated signaling.

Dr. Curiel received his medical degree from Emory University, where he also completed his residency in Internal Medicine. He then spent several years training at the NIH, followed by a fellowship at the National Cancer Institute. Dr. Curiel joined the faculty at UAB in 1993, and has since earned his Ph.D. from the University of Groningen in the Netherlands. Dr. Curiel currently serves as the Director of both the Gene Therapy Center and the Division of Human Gene Therapy, is a Professor in the Departments of Medicine, Microbiology, Gynecologic Oncology, Pathology, and Hematology/Oncology, and is a Senior Scientist in the Comprehensive Cancer Center, Center for AIDS research, UAB Arthritis and Musculoskeletal Diseases Center, and Gregory Fleming Cystic Fibrosis Center at UAB. In addition, he holds the Jeanne and Ann Griffin Chair of Women’s Research at UAB, and is a Professor of Experimental Gene Therapy at the Free University of Amsterdam.

Research in Dr. Curiel's laboratory is focused primarily on the development of vector systems for gene delivery to treat cancers and cardiovascular diseases. Human adenovirus is an ideal vector for gene delivery in many ways, including its high insert capacity. However, clinically relevant problems still remain to be addressed, including non-specific cell targeting. In light of this, much of the lab’s research involves modifying adenovirus to specifically interact with receptor proteins expressed only on the surface of targeted cells. This cell-specificity maximizes gene delivery to targeted cells and minimizes toxic side-effects of virus accumulation in non-targeted cells and organs such as the liver.

Dr. Thacker will use her T32 fellowship to investigate adenovirus targeting strategies for the treatment of melanoma. Recent human clinical trials in which the patient’s dendritic cells were transformed ex vivo with adenoviral vectors expressing melanoma antigens and subsequently re-injected into the patient have reported immune responses against melanoma antigens. However, a much more clinically relevant scenario would involve the direct injection into the patient of dendritic cell-targeted adenovirus, eliminating the need for in vitro transformation. Dr. Thacker will identify and compare the utility of targeting adenoviral vectors containing melanoma antigens to multiple dendritic cell-specific receptors. Through a collaboration with Dr. Bruce Smith at Auburn’s College of Veterinary Medicine, these targeted adenovirus vectors will be tested for efficacy in canine melanoma subjects prior to human trials.
Disseminated Superficial Actinic Porokeratosis (DSAP) is an inherited, autosomal dominant skin condition causing dry patches on sun exposed areas of the arms and legs. Exacerbations are most likely during the summer months and may be accompanied by mild pruritus. DSAP lesions are similar in appearance to actinic keratoses, and generally consist of 1-3 mm papules and patches characterized by a slightly raised hyperkeratotic ring with central atrophy, hyperkeratosis, erythema, or hyperpigmentation. DSAP generally occurs in the third or fourth decade of life and is three times more frequent in women than in men. It may be triggered by sun exposure, UV radiation (such as for treatment of psoriasis), or immune disorder.

Cryosurgery is currently the most common treatment modality for DSAP. Other treatments include: keratolytic agents, imiquimod, fluorouracil, topical and oral retinoids, phototherapy, and photodynamic therapy. However, these treatments are not always effective and can have significant side effects. The potential thus exists for Solaraze® Gel (a topical NSAID) to become the preferred treatment for DSAP.

The Department of Dermatology, under the direction of Boni Elewski, M.D., is currently seeking subjects to participate in a “Pilot Study to Evaluate the Safety and Efficacy of diclofenac sodium 3% gel (Solaraze® Gel, Bradley Pharmaceuticals) for the Treatment of Disseminated Superficial Actinic Porokeratosis”. Inclusion criteria are as follows: Subjects must be 19 years of age or older with a minimum of five visible DSAP lesions on the target forearm, no topical therapy for three months prior to screening, no cryosurgery for two weeks prior to screening, be generally healthy without immunodeficiency disorder, have Fitzpatrick skin type I, II, or III, and be willing to practice sun protective behavior. Exclusion criteria include NSAID allergy, recent sunburn (within the past 2 weeks), history of melanoma on the target forearm, concurrent Basal Cell or Squamous Cell Carcinoma on the target forearm, history of asthma, active GI bleeding, history of renal or hepatic impairment, and pregnancy. Screenings will be conducted in The Kirklin Clinic by Rajat Varma, M.D. (clinical trials fellow) or Wendy Cantrell, C.R.N.P.

Subjects will apply Solaraze® Gel to the target forearm twice daily, and will be evaluated every four weeks for three months. Subjects with residual lesions at a four week post-treatment evaluation will be allowed a second three month treatment course. Lesion counts, photography, and mapping of the target area will be performed at each visit. A global assessment will also be performed at each visit to identify mild, moderate, or severe DSAP.

The primary study endpoint is reduction from baseline in the number of DSAP lesions. Adverse events, patient satisfaction, and change in global assessment scores will also be evaluated. Subjects are compensated for their time and travel. Please call (205) 502-9960 for more information or to refer a patient.
SDRC—Announcements

Publications

Donggou He, Lizhi Wu, Heekyung Kim, Hui Li, Craig A. Elmets, and Hui Xu. CD8+ IL-17 producing T cells are important in effector functions for the elicitation of contact hypersensitivity responses. *Journal of Immunology* 2006; Volume: 177(10): 6852-6858.


Dr. Katiyar was featured in VA News for the Research Community of the U.S. Department of Veterans Affairs, November, 2006.

Dr. Katiyar’s research was featured in The New York Post on Nov. 21, 2006. Please see the following web page: http://www.nypost.com/seven/11282006/entertainment/health/green_tea_may_help_bag_skninecancerhealth_jennifer_gould_keil.htm

New Grants

Michael Ruppert, M.D., Ph.D. - has been awarded an R01 (total award of $250,000; 3/1/2007-2/28/2012) to characterize the role of Klf4 in normal development of the breast and its role in the skin tumor squamous carcinoma.

Kent T. Keyser, Ph.D. has been awarded a grant from the Rosacea Foundation to pursue a project he initiated as an SDRC pilot and feasibility study. The project is entitled “Nicotine-evoked increases in intracellular calcium affect protein phosphorylation in human dermal microvascular endothelial cells”.

Nicotine is responsible for many of the effects of cigarette smoke and for the addictive properties of tobacco. Recent studies have shown that nicotine, acting on nicotinic acetylcholine receptors on vascular endothelial cells, can cause new blood vessels to form in the skin, a process known as neovascularization, or to remodel existing blood vessels. Increased blood flow to the vasculature of the face and increased numbers of vessels near redness and flushing associated with rosacea. The effects of nicotine on vascular endothelial cells that result in neovasculogenesis are poorly understood, hindering the development of treatments for vascular diseases. The aim of this proposal is to identify the effect of nicotine on intracellular signaling pathways and to provide insight into the longer term effect of nicotine on gene transcription.

Santosh Katiyar, Ph.D.—has been awarded an R01 (total award of $1,117,660; 9/1/2006-8/31/2010) to determine and define the mechanism of immunoprotective and anti-photocarcinogenic effects of green tea polyphenols using a genetically modified mouse mode. Dr. Katiyar has previously shown that drinking green tea induces IL-12 production in mice and the induction of immunoregulatory cytokine (IL-12) may have a role in mediating the chemopreventive effect of green tea polyphenols. Specific aims are to determine whether green tea polyphenols: (1) prevent photocarcinogenesis in IL-12 KO mice, (2) reverse UVB-induced immunosuppression in IL-12 KO mice, and (3) inhibit photocarcinogenesis through repair of UVB-induced DNA damage.

Craig Elmets, M.D. Has been awarded a VA Merit Award (total awarded, $514,200, 5/01/06-4/30/10) entitled “Host Defense Mechanisms in Polyaromatic Hydrocarbon Carcinogenesis” to evaluate the protective role of cell-mediated immune mechanisms to polyaromatic hydrocarbons in skin carcinogenesis by those agents.