



2019

Research Award Recipients

Dermatology Foundation
1560 Sherman Avenue
Suite 500
Evanston, IL 60201
847-328-2256
www.dermatologyfoundation.org

Thanks to the generosity of its many members and industry supporters, the Dermatology Foundation bestowed \$2.7 million in funding to 57 promising individuals.

The Foundation's Board of Trustees is pleased to present the 2019 research award recipients. Funding was provided in the following 13 award categories designed to support innovative research in all aspects of dermatology. The Trustees take pride in supporting these individuals and look forward to watching each advance and contribute to the field of dermatology.

Mid-Career Awards:

1. Charles & Daneen Stiefel Scholar Award in Skin Cancer
2. Sun Pharma Research Award

Career Development Awards:

1. Public Health Career Development Award
2. Physician Scientist Career Development Award
3. Science of Human Appearance Career Development Award
4. Medical Dermatology Career Development Award
5. Women's Health Career Development Award
6. Research Career Development Award
7. Dermatopathology Research Career Development Award
8. Pediatric Dermatology Career Development Award

Dermatologist Investigator Research Fellowship

Research Grant

Diversity Research Supplement Award

Mid-Career Awards:

The Dermatology Foundation was pleased to offer two awards developed specifically for the outstanding mid-career investigator. Each award is intended for an exceptional individual who is dedicated to research and is actively pursuing “R” funding to further their research and academic careers in dermatology.

1. Charles and Daneen Stiefel Scholar Award in Skin Cancer

This award provides \$100,000 in annual support for up to three years for salary and/or project expenses. It was designed to support investigators committed to understanding the molecular and cellular basis of skin cancer (melanoma or non-melanoma) and/or its treatment. The Stiefel Scholar Award supports an outstanding early to mid-career investigator with an established trajectory of excellence in basic, translational and/or clinical science.



Brian C. Capell, M.D., Ph.D.

University of Pennsylvania

Restoring Epigenomic Histone Methylation Dynamics for the Treatment of Keratinocyte Carcinomas

Keratinocyte carcinomas include basal cell carcinoma (BCC) and cutaneous squamous cell carcinoma (cSCC), the two most common, and potentially deadly, human malignancies. The total number diagnosed annually far exceeds all other cancers combined. We know that mutations in epigenetic regulators of gene expression are common in both BCC and cSCC, but we do not know how they promote skin carcinogenesis. We aim to define these mechanisms to enable us to harness the inherent reversibility of epigenetics and thereby identify novel therapeutic opportunities.

To receive a second and third year of funding, a Stiefel Scholar Award recipient must demonstrate substantial progress in his/her funded project. The following individual has met the high standards for renewed support of his valuable research.



Todd W. Ridky, M.D., Ph.D. – Year 2

University of Pennsylvania

Inhibiting Melanoma Via a Novel and Druggable GPCR Pathway

Women, especially previously-pregnant women, have more favorable melanoma outcomes than men do. The underlying reason has been unknown, but preliminary studies in our lab indicate that much of this protection results from a newly appreciated type of estrogen receptor, called GPER, that is found on melanocytes, the cells involved in melanoma. Activating these receptors in mice reprograms the tumor melanocytes toward a more “differentiated” state that makes them more vulnerable to current immunotherapies. Now we will test the ability of new estrogen derivatives that activate only GPER, and not the classic estrogen receptor, to make immunotherapies more effective and inhibit melanoma.

2. Sun Pharma Research Award

The Sun Pharma Research Award provides \$100,000 in annual support for up to three years for salary and/or project expenses. It is intended to support an outstanding mid-career investigator with an established trajectory in basic, clinical or translational science. The proposed research should yield novel results that expand the understanding and/or treatment of patients with inflammatory skin disorders including but not limited to psoriasis or atopic dermatitis.



Elizabeth A. Grice, Ph.D.

University of Pennsylvania

Harnessing the Commensal Skin Microbiota to Modulate Inflammation and Barrier Function

Healthy human skin is colonized with a diversity of beneficial microbes that modulate skin barrier function and inflammation. Largely unknown are their mechanisms for communicating with the skin are largely unknown, or their therapeutic potential for inflammatory skin disease. We propose to: 1) conduct large-scale screenings to identify human skin microbes eliciting potent immunomodulatory activity; 2) identify the molecular mechanism(s) and biochemical mediators they produce to communicate with the skin; 3) investigate the potential for microbe-based therapy to positively alter the course of inflammatory skin disease in mouse models.

Career Development Awards

The most competitive of the Foundation's early career awards, career development awards (CDAs) provide \$55,000 in annual salary support for up to three years. The DF provides a variety of CDAs intended for individuals who exhibit exceptional potential to contribute to the advancement of dermatology. These awards provide recipients with the opportunity to focus on developing the data and experience necessary to successfully compete for future funding.

1. Public Health Career Development Award



Adewole S. Adamson, M.D.

University of Texas, Austin

Optimizing Care Delivery and Health Equity in Patients With Melanoma

Melanoma is one of the deadliest forms of skin cancer, and its incidence continues to rise. Recent studies have shown that vulnerable populations, including Medicaid and nonwhite patients, are at increased risk for delayed surgical treatment. This study aims to characterize patterns and disparities in the melanoma care continuum and examine their effect on survival, then develop an intervention to improve melanoma quality of care in vulnerable populations.

1. Public Health Career Development Award, Cont.



Lynn M. Petukhova, Ph.D.

Columbia University

Neuropsychiatric and Metabolic Comorbidities in Patients With Autoimmune Diseases of the Skin

Dermatology bears a substantial proportion of the high disease burden created by autoimmunity. Comorbidities are medical conditions that tend to occur together and may provide insight into causes of disease, suggest new drugs for treatment, and help patients and family members understand risk of other health conditions. This study will determine if patients with autoimmunity are at an increased risk for neuropsychiatric and metabolic disorders.



Mackenzie Wehner, M.D.

University of Pennsylvania

Risk of Skin Cancer After Actinic Keratosis

Actinic keratoses (AKs) are common skin lesions that have a low risk of becoming squamous cell carcinomas. This study asks a broader question, ie, whether being diagnosed with AKs increases a person's risk for all types of skin cancers bodywide, and what those risks are over time. The results will directly impact patient care by informing skin cancer prevention and screening efforts.

2. Physician Scientist Career Development Award



Matthew D. Vesely, M.D., Ph.D.

Yale University

Stimulating Immune Inhibitory Receptors for the Treatment of Cutaneous Lupus

Discoid lupus erythematosus (DLE) is a disfiguring autoimmune disease that lacks effective therapy. We found that an immune checkpoint molecule named VISTA is highly expressed in DLE. We will use mouse models of cutaneous lupus as well as human DLE tissue samples to study how VISTA contributes to lupus pathogenesis with the hope of developing a new therapeutic strategy of immune checkpoint stimulation for treating autoimmune diseases.



Sarah Whitley, M.D., Ph.D.

University of Pittsburgh

IL-23 Regulates Cutaneous Resident Memory T Cell Development and Maintenance

In addition to the skin serving as a physical barrier, skin-resident immune system cells identify and combat foreign pathogens. Long-lived memory T cells are key because they provide protection from repeat pathogen challenges. This project will characterize the development and maintenance requirements of TRM11 cells, a newly characterized subset of IL-17-producing skin-resident memory T cells, to provide a scientific foundation for their potential therapeutic manipulation.

3. Science of Human Appearance Career Development Award



Donna M. Brennan-Crispi, Ph.D.
University of Pennsylvania
Roles and Modulation of WNT-FZD Signaling in Hair

Hair loss diseases affect human appearance and quality of life. Wnt intercellular signals play key roles in controlling hair growth. Decreased canonical WNT10A/ β -catenin signaling is associated with androgenetic alopecia. Conversely, preliminary data suggest that active non-canonical Wnt signaling via the FZD2 Wnt receptor also suppresses hair growth. I will delineate cellular and molecular mechanisms of WNT10A and FZD2 signaling to identify and test novel therapeutic targets for alopecia.

4. Medical Dermatology Career Development Award



Albert Chiou, M.D.
Stanford University
Collagen VII Corrected Skin Grafts for Recessive Dystrophic Epidermolysis Bullosa

Recessive Dystrophic Epidermolysis Bullosa (RDEB) is an inherited genetic skin disorder characterized by frequent blistering, painful wounds, and reduced life expectancy. We developed a method for correcting the underlying structural protein mutation in RDEB, and demonstrated the safety of genetically-corrected skin grafts in 7 patients. Now we plan to assess the efficacy of gene-therapy-based skin grafts for promoting healing of chronic wounds in RDEB.



Shawn G. Kwatra, M.D.
Johns Hopkins University
Racial Differences in Biomarkers and Therapeutic Targets for Chronic Itch

This study will investigate the expression and variations of the newly discovered Mas-related G protein-coupled receptors, and specific cytokines that bind with them, in the pathogenesis of itch in atopic dermatitis and prurigo nodularis in human patients. The results will be correlated with race, as these itch-associated skin diseases disproportionately affect African Americans. The results will provide new pathogenic insights and biomarkers for itch in distinct patient populations.

5. Women's Health Career Development Award



James Chen, Ph.D.
Columbia University
Computational Modeling of Sexually Dimorphic Molecular Pathologies in Hair and Skin Development

The objective of this proposal is to study the molecular physiology of alopecia areata using regulatory networks governed by master regulators, ie, molecular "switches" that regulate specific physiological traits. I will develop a computational framework to identify genes that regulate targetable traits—such as susceptibility, progression, and immune infiltration—associated with dermatological diseases. These regulators will become the basis for developing treatments for diseases they govern.

5. Women's Health Career Development Award, Cont.



Alicia Little, M.D., Ph.D.

Yale University

Role of T Follicular Helper (Tfh) Cells in Chronic Cutaneous Lupus Erythematosus

Chronic cutaneous lupus erythematosus (CCLE) is a disfiguring autoimmune skin disease that disproportionately affects women, causing permanent scarring, hypopigmentation, and alopecia. No targeted therapies exist, and available treatments are often ineffective. CCLE pathogenesis is poorly understood, but aberrant inflammatory cells, including T cells, are implicated. This research focuses on the pathogenic role and potential for the therapeutic targeting of Tfh cells, which are a novel T-cell subset.

6. Research Career Development Award



Juan-Manuel Leyva-Castillo, Ph.D.

Harvard University

Role of PAX5 in Skin-Derived Dendritic Cells During the Development of Allergic Skin Inflammation

Atopic dermatitis (AD), which affects 15–20% of children worldwide, is characterized by an impaired skin barrier function, abnormal responses to normally innocuous factors, and itching. Using a mouse model of AD and mutant mice, we will investigate the role of the transcription factor PAX5 in skin DC function during the development of allergic skin inflammation.



Haiyun Liu, Ph.D.

Johns Hopkins University

The Role of Keratinocytes in Regulating IgE Production in Atopic Dermatitis

Increased IgE production contributes to skin inflammation in atopic dermatitis (AD) and in the atopic march toward other allergic diseases. In a mouse model of AD-like skin inflammation induced by cutaneous exposure to *Staphylococcus aureus*, we will investigate the role of keratinocyte STAT3-signaling and IL-36 responses in the production of IgE. Our findings will provide new insights into how keratinocytes control IgE production during AD pathogenesis.

7. Dermatopathology Research Career Development Award



Randie Hee Kim, M.D.

New York University

Using Artificial Intelligence to Improve Prognosis of Intermediate Thickness Melanomas

Identifying individual mutations in advanced melanomas is key to their management. For early-stage melanomas (intermediate thickness), clinically significant mutations are only now being identified. One, associated with poorer outcomes, affects the TERT gene. We developed novel mutation detection technology that avoids costly, time-consuming DNA analysis, ie, an artificial intelligence-based approach to evaluate histopathology images. This project will demonstrate its ability to identify these TERT mutations and tag high-risk primary melanomas.

7. Dermatopathology Research Career Development Award, Cont.



Ursula E. Lang, M.D., Ph.D.

University of California, San Francisco

Investigating the Role of Primary Cilia in Melanocytes and Melanomagenesis

Identifying melanocytic neoplasms is the most challenging area of dermatopathology. Primary cilia are cell-surface organelles that we have shown are lost in melanoma but retained in benign nevi, thus providing an alternate way of facilitating diagnosis. Because primary cilia are also a nexus of cellular signaling, studying this organelle in melanocytes and melanoma may provide novel insights into how to stop melanoma growth.

8. Pediatric Dermatology Career Development Award



JiaDe Yu, M.D.

Massachusetts General Hospital

Creation of Prospective Pediatric Allergic Contact Dermatitis Registry

Pediatric allergic contact dermatitis affects 4.4 million children in the United States, yet it is underdiagnosed, underevaluated, and not well studied. The goal of this study is to create a multicenter, prospective Pediatric Allergic Contact Dermatitis Registry that will enable us to determine the prevalence of cutaneous allergens in children, relationship with atopic dermatitis, impact on quality of life, previous treatments, time to diagnosis, and associated comorbidities.

Career Development Award Renewals

To receive a second or third year of funding, CDA recipients must provide evidence of substantial progress on their research projects and continued productivity in their academic and research careers. The following individuals have met the high standards for renewal of their awards.

1. Public Health Career Development Award

Arianne S. Kourosch, M.D., M.P.H. – Year 3

Massachusetts General Hospital

Avatoras: A Telehealth Innovation to Address Access and Compliance Barriers for Chronic Skin Disease

Aaron M. Secrest, M.D., Ph.D., M.P.H. – Year 2

University of Utah

Clinical Utility of Patient-Reported Outcomes in Dermatology

2. Clinical Career Development Award in Dermatologic Surgery

Jeremy R. Etzkorn, M.D. – Year 3

University of Pennsylvania

Coherent Anti-Stokes Raman Spectroscopy for Basal Cell Carcinoma Diagnosis and Surgical Management

Mary L. Stevenson, M.D. – Year 2

New York University

Identification of Novel Risk Factors and Biomarkers for Poor Outcomes in Squamous Cell Carcinoma

Abigail Waldman, M.D., M.H.S. – Year 2

Brigham and Women's Hospital

Skin Cancer Life Impact and Functional Evaluation (LIFE)

3. Physician Scientist Career Development Award

David Y. Chen, M.D., Ph.D. – Year 2

Washington University

Epigenetic Regulation of Skin Homeostasis and Tumorigenesis

William E. Damsky, M.D., Ph.D. – Year 2

Yale University

Elucidating and Overcoming Mechanisms of Immunotherapy Resistance in Melanoma

Marlys S. Fassett, M.D., Ph.D. – Year 3

University of California, San Francisco

IL-31: Coupling Itch and Rash in Atopic Dermatitis

Jennifer G. Gill, M.D, Ph.D. – Year 3

Southwestern Med. School Univ. of Texas

Transcriptional and Metabolic Adaptations of Melanoma Metastases

Allen W. Ho, M.D., Ph.D. – Year 2

Brigham and Women's Hospital

Mechanisms of Immune Tolerance to Apoptotic Cells and Its Role in Cutaneous Autoimmunity

Cory L. Simpson, M.D., Ph.D. – Year 3

University of Pennsylvania

Mechanism of Selective Autophagy in Epidermal Differentiation and Homeostasis

4. Medical Dermatology Career Development Award

Zelma C. Chiesa-Fuxench, M.D. – Year 3

University of Pennsylvania

Atopic Dermatitis: Expanding Our Understanding of Complex Disease in the Hispanic Population

Benjamin H. Kaffenberger, M.D. – Year 2

Ohio State University

Prospective Categorization and Outcome Analysis of Cutaneous Drug Eruptions

Cecilia Larocca, M.D. – Year 2

Brigham and Women's Hospital

An Implantable Microdevice for Candidate in Situ Drug Sensitivity Testing in Mycosis Fungoides

Hadar Lev-Tov, M.D., M.A.S. – Year 3

University of Miami

Understanding First Venous Leg Ulcers in People with Venous Insufficiency

Alina Markova, M.D. – Year 3

Cornell University

Epidemiology and Mechanisms of Dermatologic Disease in Hospitalized Patients with Cancer

Xiaolong Zhou, M.D., M.Sc. – Year 2

Northwestern University

Characterization of the Skin Microbiome in Cutaneous T Cell Lymphoma

5. Women's Health Career Development Award

Ian D. Odell, M.D., Ph.D. – Year 3

Yale University

Functional Analysis of Dendritic Cells and Development of a Humanized Mouse Model of Scleroderma

Jillian M. Richmond, Ph.D. – Year 2

University of Massachusetts

Targeting the CXCR3 Chemokine Axis in Cutaneous Lupus

6. Research Career Development Award

Ryan P. Hobbs, Ph.D. – Year 2

Pennsylvania State University

Cellular and Molecular Roles for Autoimmune Regulator in Early Skin Tumorigenesis

6. Research Career Development Award

Gatien Moriceau, Ph.D. – Year 3

University of California, Los Angeles

Exploiting Mechanisms of Drug Addiction to Suppress MAPKi Resistance in Melanoma

Bahram Razani, M.D., Ph.D. – Year 2

University of California, San Francisco

A20 Restricts Psoriatic Inflammation

7. Dermatopathology Research Career Development Award

Matthew S. Goldberg, M.D. – Year 2

Icahn School of Medicine at Mount Sinai

Melanoma Epigenetics and the Functional Role of MacroH2A in Melanoma Progression

Maija Kiuru, M.D., Ph.D. – Year 3

University of California, Davis

Molecular Basis of Inherited and Sporadic Melanocytic Nevi

8. Pediatric Dermatology Career Development Award

Leslie A. Castelo-Soccio, M.D., Ph.D. – Year 3

University of Pennsylvania

Genetics and Imaging of Pediatric Hair Disorders

Elena B. Hawryluk, M.D., Ph.D. – Year 2

Massachusetts General Hospital

Atypical Pediatric Pigmented Lesions

Dermatologist Investigator Research Fellowship

DF fellowships provide a one-year salary stipend of \$30,000. Fellowships are available to individuals who have recently completed their dermatology residency training and are embarking on careers in academic research.

Dermatologist Investigator Research Fellowship, Cont.

Allison Billi, M.D., Ph.D.

University of Michigan

Exploring the Conserved Factor VGLL3 as a Driver of Fibrosis in Female Sex-Biased Autoimmune Disease

The transcription factor VGLL3 regulates genes involved in immunity and scleroderma, an incurable, life-threatening autoimmune disease that is far more prevalent in women than in men. VGLL3 is also more abundant in the skin of women. We found that overexpressing VGLL3 in mouse epidermis causes scleroderma-like skin changes. Now we will investigate the mechanism underlying these changes to understand the prevalence in women and potentially identify new therapeutic approaches.

Jason M. Meyer, M.D., Ph.D.

University of California, San Francisco

Pathogenesis-Directed Therapy of Ichthyoses With Defects in Magnesium and Fatty Acid Metabolism

Investigation of the ichthyoses, a group of genetic diseases with an impaired skin barrier, has greatly improved understanding of how the skin barrier functions. This application is focused on developing treatments for two types of ichthyosis that both involve defects in magnesium and fatty acid metabolism. This will be one of the first studies to examine how these two nutrients interact in skin disease.

Timothy H. Schmidt, M.D., Ph.D.

University of California, San Francisco

Elucidating the fundamental Metabolic Pathways Utilized by Human Tissue Tregs in Health & Disease

Regulatory T cells (Tregs) are essential for keeping the immune system in balance. Little is known, however, about how these cells survive in nutrient-poor tissues, such as the skin. We will use cutting-edge technologies to examine the metabolism of these powerful cells in human tissues. With such knowledge, we may be able to modulate their activity specifically in the skin to treat cutaneous inflammatory and cancerous diseases.

Research Grant

Dermatology Foundation research grants provide \$20,000 to support the non-salary elements of a research project. Each year, the DF funds grants to support basic science, and medical and surgical studies with the potential to benefit the entire dermatologic community.

Research Grant, Cont.

Michael S. Garshick, M.D.

New York University

Inflammasome Signaling and Impaired Vascular Health in Patients with Psoriasis

Psoriasis is associated with systemic inflammation and increased risk of cardiovascular disease. To unravel mechanisms that underlie this risk, we will investigate endothelial inflammation and activation (a necessary precursor to atherosclerosis) in patients with psoriasis. We will also study whether statin therapy, which has anti-inflammatory actions, reduces markers of systemic inflammation and risk of developing cardiovascular disease in patients with psoriasis.

Jeffrey D. McBride, M.D., Ph.D.

University of Miami

Variation in Delivery of Extracellular Vesicle-Associated Collagen VII from Stem Cells to EB Cells

The potential tissue-restorative therapeutic potential of extracellular vesicles (EVs) from healthy donors may be relevant to the collagen VII (C7)-deficient severe skin disease recessive dystrophic epidermolysis bullosa (RDEB). EVs derived from healthy bone marrow mesenchymal stem cells (BM-MSCs) donate C7 and stimulate tissue repair and healing. This project will identify variation in C7 content among donor EVs to determine those BM-MSC EVs with the best therapeutic potential.

Diversity Research Supplement Award

Established in 2018, the Diversity Research Supplement Award is available to recent Career Development Awardees. The \$5,000 award is to be used to support the in-depth participation of a medical student—identified as belonging to an underrepresented minority group—in the completion of a full-time research plan for 6 to 12 weeks.

Emily Y. Chu, M.D., Ph.D.

University of Pennsylvania

Identification and Characterization of Patients with WNT10A Mutations

Sherrie J. Divito, M.D., Ph.D.

Brigham and Women's Hospital

Immunologic Profiling of Acute Skin GVHD versus Delayed-Type Drug Hypersensitivity Reactions

Esther E. Freeman, M.D., Ph.D.

Massachusetts General Hospital

Adherence to Chemotherapy for HIV Associated Kaposi's Sarcoma in Kenya

Adam J. Friedman, M.D.

George Washington University

Targeting p38 Isoforms to Inhibit Growth and Invasion, and to Overcome Therapy Resistance in Human Malignant Squamous Cell Carcinoma

Diversity Research Supplement Award, Cont.

Aaron Mangold, M.D.

Mayo Clinic, Scottsdale

1. Cutaneous Squamous Cell Carcinoma in Ethnic Minorities
2. Analysis of INPP5A in Squamous Cell Carcinoma

Haley B. Naik, M.D.

University of California, San Francisco

1. Examining the Hidradenitis Suppurativa Literature Across Medical Specialties
2. Retrospective Comparison of Adalimumab Dosing for Hidradenitis Suppurativa

Joseph F. Sobanko, M.D.

University of Pennsylvania

Buddy Relationships in Dermatologic Excisions for Skin Cancer

Junko Takeshita, M.D., Ph.D.

University of Pennsylvania

Psoriasis Treatment Patterns in a Commercially Insured Population: Identifying Potential Disparities

N:\DFWP\RAP\2019 RAP Info\RAP Booklet\2019 RAP Booklet V2.docx