UCI SKIN
A Skin Biology Resource Center

November 2024

Falling Leaves Foundation Medical Innovation Building

The Interdisciplinary Skin Science Program has been chosen as one of 12 high-impact research initiatives to be housed in the new Falling Leaves Foundation Medical Innovation Building. This unique facility will accommodate world-class research programs and, upon completion, will span 215,000 square feet. It will be one of the largest buildings on the West Coast dedicated to basic and translational research and training.

UPCOMING EVENTS:

DISTINGUISHED SEMINAR SERIES:

JAN 17, 2025, 11am: Dr. Brian Capell, UPenn. Title: "Epithelial Epigenetics: Chromatin at the Nexus of Epithelial Development, Differentiation and Disease"

MAR 28, 2024, 11am: Dr. Sara Stahley. Title: "Cadherin Regulation of Planar Cell Polarity in the Mammalian Epidermis"

Join These Online:

Zoom Link: https://uci.zoom.us/j/94050554971
Meeting ID: 940 5055 4971

8TH ANNUAL UCI SKIN SYMPOSIUM (SAVE THE DATE):

February 21, 2025 Nine leading experts will share their research insights and innovations.

RSVP: https://app.smartsheet.com/b/form/8b5de39ce84e404f9855fe2d978c4457

A Message from the Director, Bogi Andersen, MD

Welcome to the first edition of our newsletter. I'd like to introduce to the wider community, the mission that fuels the UC Irvine Skin Biology Center: to push the boundaries of skin biology and disease research. We do this by fostering cross-disciplinary collaboration to integrate multiple scientific disciplines in a systems biology framework. Thank you for your interest and support of the UC Irvine Skin Biology Resource Center.

IN THIS ISSUE:

New Enrichment Program Offerings!

We are launching enrichment programs designed to support and energize our community, including Pilot and Feasibility (P&F) Awards, manuscript/grant revision support awards, and travel grants for both external members and workshop attendance. Additionally, we're introducing trainee meeting attendance support to foster the growth of our upcoming researchers. These initiatives underscore our commitment to fostering innovation and collaboration, ensuring our members have the resources they need to excel and contribute to our collective mission. For more details on the application process, please refer to page 3.

The UCI Skin Center has been awarded a 5-year renewal on the P30 NIH Grant.

The Skin Center at UCI has secured a five-year extension on its P30 grant. With this extended support, the center is poised to continue its work exploring innovative treatments and fostering collaborations that will work to build sustained progress towards addressing critical skin-related challenges.

Introducing New Advisory Board Members

The newest members of our advisory board, a group of distinguished professionals, have joined us and bring a wealth of experience and fresh perspectives to our organization. Please join us in warmly welcoming them and in looking forward to the innovative directions their leadership will guide us towards.

CORE SERVICES

IMAGING-ENGINEERING CORE

The goal of the Imaging Core is to enable skin biology researchers to incorporate the latest imaging technology into their research, whether it be in vivo in humans or animals, or ex vivo using live or fixed tissues/cells. The core is specifically adept at engineering new imaging solutions to fit a particular application, enhancing the impact and innovation of publications. We help skin biologists:

- Identify the right technology for their experiments and aid in experimental design.
- Train them and their teams in hands on use of the imaging devices.
- Review data acquired to troubleshoot and enhance data acquisition.
- Develop an analytic framework for their studies, together with the systems biology core.

MULTIOMICS CORE

The core functions to promote genomics approaches to skin biology and disease research by enabling investigations that dissect molecular and cellular heterogeneities within skin in order to predict lineages, cell state transitions and cellular interactions. Specifically, the core supports technologies to genomic DNA sequencing; bulk, single cell, and spatial transcriptomic sequencing; as well as bioinformatic analysis of sequencing data across these platforms.

SYSTEMS BIOLOGY CORE

The goal of the Systems Biology Core is to enable skin biology researchers to incorporate systems biology approaches into their research, enhancing productivity and the impact of publications. We help skin biologists:

- Derive meaningful models from data, including large, high-dimensional data;
- Build and analyze explicit, quantitative models;
- Use models to interpret, analyze, and integrate data (including data generated by other cores);

Use models to generate and prioritize testable hypotheses about function; Better understand and utilize literature that draws upon systems biology ideas and approaches.

ADMINISTRATIVE CORE

The Administrative Core provides centralized administrative, clerical, logistical and organizational services and resources to meet the needs of the Center and associated research personnel. The Administrative Core personnel facilitate interactions with members of local and national biomedical research communities in areas within the mission of NIAMS.

SKIN GENES DATABASE

http://www.skinnygenes.org/

RESEARCH FOCUS AREAS

Epidermal biology group: The broad theme for the research of this group of investigators is to understand how skin homeostasis is maintained, and how the skin, including the epidermis, responds to injury and insults. Developing from the surface ectoderm during embryogenesis, the primitive epidermis has different fates, including the interfollicular epidermis and appendages such as hair follicles; we seek to understand how the different fates are specified.

Pigment and Merkel cell biology group: Melanocytes in the epidermis respond to UV damage by activating DNA damage repair and ROS detoxification, and by inducing cell division (nevus generation) and the production of more melanin; this and how melanocytes develop from the neural crest are this group's research themes. Epidermal Merkel cells connect to sensory nerves and mediate touch sensation. They are also thought to be the source of Merkel cell carcinoma.

Skin vascular biology group: The main theme of this group is to understand the pathogenesis of vascular abnormalities in skin and the development of effective treatments for these conditions, as well as understanding the vascular response in wounding and other types of injury.

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Enrichment Program Offerings In Detail:

The enrichment program offers a range of initiatives designed to support research and collaboration. Among these are the P&F awards, which have been increased to $40,000 each, with three awarded annually. The current cohort of selected awards are under final review at NIAMS, and the next funding round will be announced soon.

The program also includes a seminar series and an annual symposium, both of which will allow hybrid access. This format allows for greater participation from external members. The symposium will coincide with the EAB annual meeting, where award winners will be announced, enhancing the event's significance.

Additional offerings include manuscript/grant revision support awards ranging from $5,000 to $10,000, travel grants for external members at $3,000, and workshop/travel grants for theme-focused team building at $6,000. Trainee meeting attendance grants of $1,000 are also available. These grants support various aspects of research and collaboration, fostering a dynamic research environment.

Applications for these grants are accepted on a rolling basis and are reviewed quarterly by the executive committee. The first set of awards will be announced at the February 2025 symposium, with distributions planned for the winter, spring, and fall quarters to ensure ongoing support throughout the year.

The program employs a web-based application and review process to streamline operations and track outcomes, such as supported manuscripts and grants.

Enrichment Program Application Links:

- **Manuscript/Grant Revision Support Awards:** https://app.smartsheet.com/b/form/07920944f91c44e5ac7e6e3369618b03
- **Travel Grants for External Members:** https://app.smartsheet.com/b/form/a322e64c3729419687130e9b8df526b6
- **Workshop/travel grants for theme-focused team building:** https://app.smartsheet.com/b/form/9b2fe3875a50447583d29d3d5c91d605
- **Trainee meeting attendance**: https://app.smartsheet.com/b/form/e5675485e864427eafac0208dbf9d165

Introducing New Advisory Board Members

We are pleased to welcome Dr. Aileen Andersen, Director of Sue & Bill Gross Stem Cell Research Center; Diane O'Dowd, Emeritus Professor, Developmental & Cell Biology; and Marian Waterman, from the School of Medicine, specializing in Microbiology & Molecular Genetics. Their expertise will provide valuable guidance and input for the center.