UCI SKIN
A Skin Biology Resource Center

March 2025

A Message from the Director,

Bogi Andersen, MD

Welcome to the second 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.

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.

IN THIS ISSUE:

Skin Symposium Success with strong attendance and trainee travel support

Our recent skin symposium on February 21st was both well-attended and enthusiastically received by participants. UCI Skin sponsored 5 trainee's travel costs to attend, enabling them to gain valuable experience from the event.

Encourage your collaborators to become UCI Skin External Faculty Members

We are happy to welcome new external faculty members to the UCI P30 Skin Center. Please encourage your collaborators from other institutions to consider joining. They can follow this link to apply. External expertise significantly enhances our collaborative capabilities and strengthens our endeavors across the board. We look forward to the innovative approaches and solutions that will emerge from these new partnerships as we continue to advance skin science together.

Recent Enrichment Program Awardees!

We have launched comprehensive 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. We've already begun distributing these awards and invite you to learn who are the inaugural awardees on page 3.

UPCOMING EVENTS:

DISTINGUISHED SEMINAR SERIES:

APR 25, 2025, 11am: Dr. Hasan Abaci, Columbia University. Title: "Edgeless 3D Skin Constructs as a Tool to Uncover Geometric Influence on Skin Function"

MAY 30, 2025, 11am: Dr. Andrew Ji, Mt Sinai-Icahn School of Medicine. Title: "Probing The Single-Cell Spatial Landscape of Human Skin"

Join These Online:

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

FEATURED PUBLICATION:

UC Irvine-led discovery of new skeletal tissue advances regenerative medicine potential

Maksim Plikus, a UC Irvine professor, along with Raul Ramos, a postdoctoral researcher in the Plikus laboratory and the study's lead author, says, "Lipochondrocytes are not fat cells, nor are they conventional cartilage cells. They represent cells of a distinct skeletal tissue type that uses lipids in a way we've never seen before."

Full Story Here: https://news.uci.edu/2025/01/09/uc-irvine-led.discovery-of-new-skeletal-tissue-advances.regenerative-medicine-potential/

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

www.skingenes.net

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.

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.

Enrichment Program Application Links:

- **Manuscript/Grant Revision Support Awards:** https://app.smartsheet.com/b/form/07920944f91c44e5ac7e6e3369618b03

  Awardees: Dae Seok Eom (UC Irvine)

- **Travel Grants for External Members:** https://app.smartsheet.com/b/form/a322e64c3729419687130e9b8df526b6

  Awardees: Jonathan Zippin (Weill Cornell), Qixuan Wang (UC Riverside)

- **Workshop/travel grants for theme-focused team building:** https://app.smartsheet.com/b/form/9b2fe3875a50447583d29d3d5c91d605

  Awardees: None Yet

- **Trainee meeting attendance**: Closed for new applications

  Awardees: Alexander Moshensky (UC Irvine–Marangoni Lab), Yunlong Jia (UC Irvine–Atwood Lab), Jessica Ayers (UW Medicine–Simpson Lab)

Skin Symposium Trainee Travel Grant Awardees

We sponsored travel costs for five promising PhD candidates from outside universities to attend our recent symposium. Their participation enriched our gathering tremendously, fostering valuable cross-institutional connections and bringing fresh perspectives to our discussions. It was great to welcome: Angeliz Casillas (UCR-Wang Lab), Maria Mercedes (Mt Sinai-Ezhkova Lab), Alyssa Moore (UPenn-Capell Lab), Eben Manegbe (Mt Sinai–Millar Lab) and Thandi-Kesi Robins (UMich-Fisher Lab).

Introducing New External Faculty Members

We are pleased to welcome your collaborators as UCI Skin external faculty members. Their participation will provide valuable perspectives and aid in collaboration efforts to further the cause of skin science. We look forward to the innovative insights and expertise they will bring to our community as we work together to advance skin research and discovery. Watch this space and help us welcome new members.