

Conference Report – GSCN Travel Grant Recipient
Epithelial Differentiation and Keratinization GRS & GRC, Ventura, California, USA
May 31 – June 6, 2025

I had the pleasure of attending the Gordon Research Seminar (GRS) and the Gordon Research Conference (GRC) on Epithelial Differentiation and Keratinization (EDK), held from May 31 to June 6, 2025, in Ventura, California. This was a truly valuable experience that allowed me to present a poster and receive insightful feedback on my PhD work.

This was my first time attending an international conference specifically focused on skin and epithelial biology. The conference introduced me to the EDK field and gave me a broader understanding of the latest progress and cutting-edge technologies. It was exciting and inspiring to listen to talks by researchers whose work I had previously only read about, such as George Cotsarelis, Tony Oro, Katherine Green, Elaine Fuchs, and Cedric Blanpain. I also had the chance to meet and connect with many fantastic junior scientists, including Shruti Naik, Danelle Devenport, Jessica Whited, Karl Koehler, Yana Kamberov, Stephanie Ellis, and Bing Zhang and many others.

One aspect I particularly appreciated about the conference was the format. The moderate size and well-structured sessions—poster presentations, the “Power Hour” beach walks in random groups, and other informal discussions—provided plenty of time for real conversations with fellow students and both junior and senior researchers. Through GRS and GRC, I not only met people doing exciting research from around the world, but also made friends and shared great moments outside the formal conference hours.

My research focuses on how lipids regulate epidermal stem cells in healthy adult human skin. I use fluorescent microscopy and membrane-sensing probes to study stem cell behavior in vitro. Presenting my poster led to some very helpful and thoughtful feedback from peers and faculty.

Among the highlights of the conference was the keynote talk at the GRS by Karl Koehler, a junior group leader at Boston Children’s Hospital. He presented an overview of the development of organoids, particularly the complex inner ear organoids derived from skin organoid models. Built from human pluripotent stem cells, these models showcase how organoids can be used to reconstruct multi-lineage systems. This talk really sparked my interest in the potential of organoids for understanding disease mechanisms and for drug screening.

Another talk I found particularly fascinating was by Masayuki Amagai, focusing on the pH distribution within the skin. While it’s long been known that the skin surface is acidic (since 1928), his group showed that this is a more nuanced gradient than previously thought. In healthy skin, the upper stratum corneum is more neutral, the middle is most acidic, and the lower part near the granular layer has moderate acidity. This complex pH zoning challenges the oversimplified model and highlights its importance for barrier function and disease relevance.

The conference also opened my eyes to many new concepts and fields. For example, Danelle Devenport's group studies how epithelial polarization is established via planar cell polarity (PCP). Using reporter systems, her lab investigates how tissue-wide polarity arises from global cues—something absent in typical cultured cells. I found it fascinating how PCP proteins contribute to uniform hair follicle orientation, and how her team explores the minimal units required for this coordination.

Overall, I had great experience attending this conference. I'm aware of how lucky I am to have had the opportunity to join such a prestigious event at an early stage in my career. I'm truly grateful for the support from GSCN, which made this experience possible. Thank you for enabling this exciting and inspiring journey.

Warm regards,
Yidan Jiang
EMBL Heidelberg, Germany
02.07.2025