

# 54th Annual Montagna Symposium on the Biology of Skin

## “Tissue Remodeling and Repair: Molecular Mechanisms and Clinical Challenges”

Salishan Lodge, Gleneden Beach, Oregon, 13–17 October 2005

Jackie R. Bickenbach<sup>1</sup> and Molly Kulesz-Martin<sup>2</sup>, Co-Chairs

*Journal of Investigative Dermatology Symposium Proceedings* (2006) **11**, 1–3. doi:10.1038/sj.jidsymp.5650022

Approximately one hundred participants gathered for the 54th Annual Montagna Symposium on the Biology of Skin at Salishan Resort from 13 to 17 October 2005, to listen to and discuss the presentations of 20 invited speakers, six short talks chosen from submitted abstracts, and 22 posters. This meeting continues to follow the tradition established in 1950 by Dr William Montagna. It is a forum where basic cutaneous biologists and clinically trained scientists meet with clinicians to discuss a single major topic in cutaneous biology. The topic for the 54th Annual Montagna Symposium was “Tissue Remodeling and Repair: Molecular Mechanisms and Clinical Challenges”. The flow of presentations was designed to lead the discussion from basic aspects of skin biology to clinical challenges and potential opportunities. These included plenary sessions with vibrant discussions and a breakout session, where we discussed topics necessary to advance wound healing research (see “Highlights of Clinician/Scientist Translational Discussion Session”, this issue). As in the past, we took time for an excursion to the Oregon Coast Aquarium or, for those who preferred, a hike in the coastal hills or a walk on the beach. We ended with a salmon bake on the beach at the home of AAD president-elect Diane Baker, MD and her husband, allergy-specialist Jim Baker, MD.

Paul Martin began the Symposium on Thursday night with a lively *keynote* talk that included movies of “dancing cells”. These showed migration patterns of cells using the model organisms *Drosophila* and zebrafish.

**Inflammation:** On Friday morning, we began with Karin Scharffetter-Kochanek discussing her work with CD18-deficient mice. She showed that they had delayed wound closure primarily owing to a decrease in leukocytes in the wound bed. Brian Nickoloff followed with a comparison of how psoriatic lesions relate to wound healing. Walter Wahli showed us that peroxisome proliferator-activated receptor $\beta/\delta$  regulate tissue repair, and Dennis Roop showed us that p63 is critical for tissue homeostasis.

**Cell-matrix interactions:** On Friday afternoon, Lisa Cousens described the role of leukocytes in premalignant cell progression. George Davis followed with an engaging look at how tube morphogenesis and vessel formation requires a balance between matrix metalloproteinases (MMPs) and their inhibitors (TIMPs). William Park continued this theme and demonstrated that skin wounds required matrix metalloproteinase1, whereas oral mucosal wounds required matrix metalloproteinase7. Richard Clark talked about making a “smart matrix” that utilized functional domains of proteins required to heal wounds. Leslie Gold ended this session with a discussion of calreticulin and how it accelerates wound healing. To cap the day, Andrew Blauvelt, dermatologist-specialist on Langerhans cell research, led the dermatology residents and fellows on a guided tour of the poster session.

**Scarring and fibrotic disease:** Participants heard Thomas Krieg discuss how fibroblasts interact differently with the surrounding matrix during normal repair *versus* fibrosis. Paul Noble offered perspective with a discussion of how repair in lung tissue differed from that in skin. Susan Gilmour introduced polyamines and their necessity to cell survival during wound healing. Using zebrafish as a model, Jean Schwarzbauer demonstrated that tenascin is required for wound repair. In short talks, Sabine Eming, winner of a Eugene M. Farber Travel Award for Young Investigators, demonstrated the requirement of vascular endothelial growth factor-A for repair of chronic wounds, and Donna Kusewitt showed that the embryonic transcription factor Slug is required for cutaneous wound re-epithelialization. The afternoon was spent hiking on the beach, in the coastal hills, or touring the Oregon Coast Aquarium. The Banquet Dinner was held in the Cedar Room at Salishan Resort. After dinner, *Walter Lobitz* was recognized as a *Founding Member of the Montagna Symposium*. At 96 years old, he gave a rousing talk about the origins of the dermatology specialty and the symposium on cutaneous biology founded by William Montagna (edited text of his talk is in this issue).

<sup>1</sup>The University of Iowa, Iowa City, Iowa, USA; <sup>2</sup>Oregon Health & Science University, Portland, Oregon, USA

*Epithelial morphogenesis and repair:* Sunday began with Manfred Blessing illuminating the roles of transforming growth factor- $\beta$  and GM-CSF in apoptosis, autocrine growth, and angiogenic repair. Norbert Fusenig gave an overview of epidermal-stromal interactions during tissue regeneration. Sabine Werner used functional genomics to identify injury-related genes. James Rheinwald demonstrated that co-expression of p16 and laminin 5 produced keratinocyte hypermotility. Xiao-Jing Wang used bigenic mouse models to explore the effects of transforming growth factor- $\beta$  signaling on wound healing.

*Novel approaches:* On Sunday afternoon, Jackie Bickenbach broached the future possibility of using epidermal stem cells to assist in wound healing. Bruce Cronstein followed with a talk on adenosine A2A receptors and their role in dermal fibrosis. Jeffrey Davidson introduced cardiac ankyrin repeat protein, a member of the Ankyrin family, as a novel molecule necessary for neovascularization. Jeffrey Hubbell moved the discussion into translational work. He showed that growth factors bound into matrices and delivered to chronic wounds could increase closure. Lillian Nanney presented new techniques that can be used to identify novel wound repair molecules.

The last session was a breakout session, led by Richard Clark and Karin Scharffetter-Kochanek, to discuss the topic, "Bridging the basic understanding of wound healing to clinical applications and therapeutic development". New this year – "Highlights of the Clinician/Scientist Translational Discussion Session" is published in this issue.

We ended with a rousing good time around the bonfire on the beach, enjoying salmon cooked in the "potlatch" style of native people of the Oregon coast.

**The 2005 Eugene M. Farber Travel Awards for Young Investigators Winners** (See page 142 for winning abstracts):

**Nesrine I. Affara**  
**Ulrich auf dem Keller**  
**Sabine A. Eming**  
**Richard Grose**  
**Gangwen Han**  
**Maranke I. Koster**  
**Philip Owens**  
**Kamali Pugazhenti**  
**Christine E. Pullar**  
**Traci A. Wilgus**

#### **ACKNOWLEDGMENTS**

We greatly appreciate the 40 years of support of this conference by the National Institutes of Health and the current support by the National Institute of Arthritis, Musculoskeletal and Skin Diseases AR009431. We thank all who gave generously; the Symposium could not continue without the support of foundations, pharmaceutical companies, and the Eugene M. Farber Family.

Information about content and support of past symposia and the next Montagna Symposium on the Biology of Skin can be found at <http://www.montagnasyposium.org/>.

## Mark your calendar for the next two exciting Symposia

### Montagna 2006

“Signaling to Structures: Skin Appendages, Development and Diseases”  
12–16 October 2006, Salishan Resort, Gleneden Beach, Oregon

Program Chairs:

Sarah E. Millar, PhD

Associate Professor, Departments of Dermatology and Cell & Developmental Biology;  
Director of Research, Department of Dermatology,  
University of Pennsylvania Medical School

George Cotsarelis, MD

Associate Professor, Department of Dermatology,  
University of Pennsylvania Medical School

Andrzej A. Dlugosz, MD

Professor, Department of Dermatology, University of Michigan Medical School;  
Scientific Director, Cutaneous Oncology Program,  
University of Michigan Comprehensive Cancer Center

### Montagna 2007

“Epidermal T-cell Interactions: Clinicopathologic and Basic Mechanisms”  
11–15 October 2007, Salishan Resort, Gleneden Beach, Oregon

Program Chairs:

Richard Sontheimer, MD

Professor and Vice-Chairman, Fleischaker Endowed Chair,  
Dermatology Residency Program Director,  
Department of Dermatology,  
The University of Oklahoma Health Sciences Center

Kevin D. Cooper, MD

Professor and Chairman  
Department of Dermatology and Director,  
Skin Diseases Research Center,  
Case Western Reserve University