

THE **SCHOOL OF MEDICINE** AND **DERMATOLOGY RESEARCH CENTRE**
WELCOME YOU TO:

THE INAUGURAL ALAN COOPER **EPIDERM LECTURE**

The Role of Keratinocytes in Inflammatory Skin Diseases

presented by

Professor Erwin Tschachler

MD, Honorary FACD

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*President European Academy of
Dermatology and Venereology 2014–16*

Friday 4 September 2015

The Long Room, Customs House

PROGRAM

The Alan Cooper Epiderm Lecture has been established in recognition of Epiderm's generous support of UQ's dermatology and skin cancer research programs. Epiderm, formerly the Australian Dermatology Research and Education Foundation, was established in 1992 following Australia's successful bid to host the International League of Dermatological Societies World Congress of Dermatology meeting in Sydney in 1997. The World Congress was led by Professor Alan Cooper and Professor Robin Marks and generated a significant financial surplus representing the majority of the Foundation's initial funding.

Professor Alan Cooper, a driving force behind academic Dermatology in Australia, played a lead role on the board of Epiderm. Over a 22 year period, Epiderm funded many dermatological projects within Australia. From 2007–2014, Epiderm donated over \$2.8 million in support of the dermatology and skin cancer research within the Dermatology Research Centre under the direction of Professor H. Peter Soyer. Epiderm's capstone donation of \$2.05 million in 2014, prior to the Foundations disestablishment, leveraged over \$3.5 million in additional support for UQ's dermatology and skin cancer research programs.

6:00pm-6:30pm	Registration
6:30pm-6:35pm	Opening remarks Professor H. Peter Soyer <i>Chair in Dermatology Director, Dermatology Research Centre Deputy Head, School of Medicine, UQ</i>
6:35pm-6:40pm	Welcome Address Professor Max Lu <i>Provost and Senior Vice-President, UQ</i>
6:40pm-6:45pm	Introduction of the Speaker Professor H. Peter Soyer
6:45pm-7:35pm	Alan Cooper Epiderm Lecture - The Role of Keratinocytes in Inflammatory Skin Diseases Professor Erwin Tschachler <i>Medical University of Vienna, Austria</i>
7:35pm-7:50pm	Discussion and questions Facilitated by Professor H. Peter Soyer
7:50pm-8:00pm	Concluding Address Professor Alan Cooper <i>Head, Department of Dermatology, Royal North Shore Hospital, St Leonards, NSW</i>
8:00pm-9:00pm	Refreshments to be served at the Riverside Terrace and Art Gallery

THE INAUGURAL ALAN COOPER - EPIDERM LECTURE

The Role of Keratinocytes in Inflammatory Skin Diseases

The development of the cornifying epidermis was the major step from amphibian to fully terrestrial life and allowed our predecessors to explore and conquer Earth. A majority of skin diseases involve alterations of the epidermal differentiation process, resulting in visible changes of the skin surface and alterations of the protective epidermal function. Two alternative hypotheses have been proposed to explain the pathogenesis of the 2 most frequent inflammatory skin diseases, psoriasis and atopic dermatitis. These are the 'inside out' hypothesis in which primarily inflammatory cells are initiators of disease activity, and the 'outside in' hypothesis in which epidermal disturbances initiate the inflammatory process. The successful treatment of psoriasis with "biologics" in recent years has given strong

support to the 'inside out' hypothesis. However, the important role of epidermal keratinocytes has been highlighted by several findings, such as functional mutations in the filaggrin gene leading to increased susceptibility for atopic dermatitis, and the lack of an epidermal protease inhibitor in Netherton's disease leading to a systemic inflammatory disorder. As such, it is unlikely that a consensus regarding the pathogenic hypotheses will be reached in the near future.

In my lecture I will present and discuss evidence for a central role of epidermal keratinocytes in the initiation and perpetuation of inflammatory skin disorders, supporting the 'outside in' pathogenic hypothesis.



Professor Erwin Tschachler

MD, Honorary FACC

Professor of Dermatology and Venereology

Head of Research Division of Skin Biology and Pathobiology

Department of Dermatology, Medical University of Vienna, Vienna General Hospital, Vienna, Austria

President European Academy of Dermatology and Venereology 2014–16

Professor Erwin Tschachler is Professor of Dermatology and Venereology at the Medical University of Vienna, Austria, and Head of the Research Division for Skin Biology and Pathobiology in the Department of Dermatology. His current areas of research include keratinocyte differentiation and skin barrier function, the skin sensory nervous system, autophagy in the regulation of skin cell homeostasis, and infectious skin diseases.

His main scientific contributions have included the discovery of a new cell type (gamma delta T cells) in mouse skin, the first description of dendritic cells in airway epithelium, the first demonstration of HIV-infection in cells of the dendritic cell/macrophage lineage, the characterisation of the cellular lineage of Kaposi's

sarcoma tumour cells, the identification of T cells as targets for HHV-6 infection, and the demonstration of involvement of Caspase 14 in terminal keratinocyte differentiation.

He has a significant publication record with over 230 peer-reviewed scientific articles to date, more than 10,000 cumulative citations and a Hirsch index of 52 (Web of Science). He is the current President of the European Academy of Dermatology and Venereology (EADV), past President of the Austrian Society of Dermatology and Venereology (OEGDV), was a founding member of the Austrian AIDS Society, and is on the editorial board of several international scientific journals including the Journal of Investigative Dermatology.

UQ SCHOOL OF MEDICINE DERMATOLOGY RESEARCH CENTRE

The Dermatology Research Centre was established in 2007 as a joint initiative of The University of Queensland and the Queensland Institute of Dermatology to represent Queensland's first research unit led by a specialist dermatologist. Since its inception, the Centre has grown at a rapid pace and has established a global reputation in clinical-molecular diagnosis of early melanomas utilising novel imaging techniques, next-generation sequencing technology and micromedical device development. The Centre currently consists of four cooperative clinical/laboratory research groups studying skin and skin cancer, utilising the world-class research infrastructure at the Translational Research Institute located within the Princess Alexandra Hospital Precinct.

Our Team



Professor H. Peter Soyer is the inaugural UQ Chair in Dermatology and Director of the Dermatology Research Centre. Professor Soyer is a world-renowned academic dermatologist from Austria and is a pioneer of dermoscopy for the early diagnosis of melanoma and teledermatology. His research group's main focus is clinico-pathologic-molecular-characterisation of melanocytic and keratinocytic skin cancer and its precursor lesions. He is also a Chief Investigator of the UQ based Centre of Research Excellence in Telehealth.



Associate Professor Tarl Prow, the Centre's Deputy Director, earned his PhD in 2004 from the University of Texas in the field of Nanomedicine. He joined the Centre in 2011 and is a multidisciplinary researcher with internationally recognised expertise in the fields of micromedical device development, nanodermatology and imaging. His research group focuses on topical drug delivery platform development, skin micro-sampling for research/diagnostics, and skin imaging and automated analysis.



Associate Professor Helmut Schaidler established his research team at the Centre in 2013. He is an academic dermatologist from Austria and previously headed the Cancer Biology Unit, Department of Dermatology, at the Medical University of Graz. His main research interests relate to all aspects of melanoma biology with an emphasis on elucidating mechanisms of drug resistance, melanoma progression and new treatment options.



Associate Professor Rick Sturm joined the Centre in 2014, after numerous years of collaboration with Professor Soyer. He previously headed the Molecular Genetics of Pigmentation Research Group at the UQ Institute for Molecular Bioscience, moving his full laboratory into the Centre at the beginning of 2015. He is considered one of the world's leading authorities on human pigmentation genetics, with a particular interest in correlation of pigmentation genetics and phenotypic traits to skin cancer risk.

One of the leading skin and skin cancer research centres in Australia and globally, an accomplished team of forty researchers underpin the Dermatology Research Centre's innovative research, which is aimed at improving patient outcomes through clinical translation.

L-R Professor Peter Høj, A/Professor Stephen Shumack and Professor Peter Soyer

QUEENSLAND: THE WORLD'S SKIN CANCER CAPITAL BUT NOT IF WE CAN HELP IT

Skin cancer packs a killer punch, especially in Queensland, but a team of UQ researchers is fighting back thanks to the \$5 million philanthropic efforts of three key organisations.

Epiderm, formerly the Australian Dermatology Research and Education Foundation, got the ball rolling with the promise of \$500,000, which then became \$2.05 million. Together with financial support from the Merchant Charitable Foundation and PA Research Foundation, that figure skyrocketed to more than \$5 million.

The funding will underpin vital, world-leading research into melanoma and non-melanoma skin cancers at UQ's School of Medicine's Dermatology Research Centre (DRC) and the UQ Diamantina Institute (UQDI).

This philanthropy will support Professor H. Peter Soyer's Chair in Dermatology and dermatology and skin cancer research at the DRC. The Merchant Charitable Foundation and PA Research Foundation will also support his centre's melanoma research and the skin cancer research being done under the direction of UQDI's Professor Ian Frazer.

UQ Vice-Chancellor and President Professor Peter Høj thanked Epiderm, Merchant and the PA Charitable Foundation for the generous support, which will further augment UQ's skin cancer research and its capacity to improve the prevention, diagnosis and treatment of skin cancers.

"Epiderm is a long-standing enabler of skin cancer and dermatology research at UQ, and this capstone donation

represents an enduring gift to people at risk of skin cancer in Queensland, throughout Australia, and internationally," Professor Høj said.

Epiderm's board of directors made the decision to sunset the foundation and invest the foundation's remaining capital to seed several dermatology projects across Australia. However, once they embraced the decision to donate all remaining assets, they concluded that they could achieve their goals and have the greatest impact by investing in UQ's dermatology and skin cancer efforts under the direction of Professor Soyer.

Consultant Dermatologist, President of the Australasian College of Dermatologists and Epiderm Board of Directors' Secretary Associate Professor Stephen Shumack said the foundation wanted to make a real difference and enable transformational advances for dermatology and skin cancer research.

"Our decision to support UQ with all of our resources is a credit to its collaborative approach to skin cancer research under the leadership of Professor Soyer, coupled with UQ's ability to leverage our donation so effectively," Associate Professor Shumack said.

"We couldn't think of a better way to conclude the final chapter in Epiderm's 22-year history then by investing in Professor Soyer's research and leveraging so much additional support for dermatology and skin cancer research. By doing this we've achieved all the foundation's goals."

Professor Soyer said the generous support of three organisations and the leverage attracted by this donation would ensure that their clinical and

translational research in the skin cancer arena would remain internationally competitive in the years to come.

"The School of Medicine and the Faculty of Medicine and Biomedical Sciences is unique in Australia by currently employing four full-time academic dermatologists, and with Epiderm's leading support and other philanthropic donations, we will boost all three of the centre's major research programs," Professor Soyer said.

These programs are:

- The refining of the genetic characteristics of melanoma patients that might make them more susceptible to this type of cancer.
- The continuing development of teledermoscopy and 'melanoma diagnosis by one click' so people can detect suspected melanoma using a mobile phone app.
- Further developing minimal invasive biopsy methods and searching for biomarkers for understanding the natural history of moles and their progression to melanoma.

Professor Soyer said the three programs integrating personalised precision medicine with the ubiquitous mobile technology will position UQ to make a major impact on skin cancer research across the globe.

"We are very grateful to Epiderm for recognising and investing in UQ's transformational research in skin cancer. I would like to thank Epiderm, along with the Merchant Charitable Foundation and PA Research Foundation, for their generous support," he said.

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School of Medicine

FACULTY OF MEDICINE +
BIOMEDICAL SCIENCES

The University of Queensland School of Medicine and Dermatology Research Centre wish to gratefully acknowledge the many generous donors who have provided philanthropic funding to support dermatology and skin cancer research.

THANK YOU

Epiderm

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