

DEAN'S DISTINGUISHED LECTURE

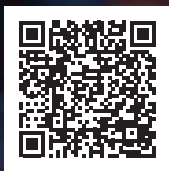
**Wednesday
December 6, 2017**

DuVal Auditorium

11:45 AM:
Complimentary lunch buffet begins

12:00 noon:
Lecture

Please RSVP at
<http://medicine.arizona.edu/webform/deans-distinguished-lecture>



THE UNIVERSITY OF ARIZONA
College of Medicine
Tucson

NATURAL PRODUCTS
AS PROBES OF THE
PAIN PATHWAY:

From Physiology to Atomic Structure

Dr. David Julius

Professor and Chair, Department of Physiology
University of California San Francisco

Abstract:

We are interested in determining the molecular basis of somatosensation - the process whereby we experience touch and temperature - with an emphasis on identifying molecules that detect noxious (pain-producing) stimuli.

We are also interested in understanding how somatosensation is altered in response to tissue or nerve injury. Our approach has been to identify molecular targets for natural products that mimic the psychophysical effects of commonly encountered somatosensory stimuli, such as heat or cold, and to then ask how these molecules are activated or modulated by noxious stimuli or injury.



We have focused on three members of the TRP channel family (TRPV1, TRPM8, and TRPA1) that are expressed by subpopulations of primary afferent sensory neurons and which have been implicated in the detection of thermal stimuli and/or inflammatory agents. Genetic studies support the idea that the capsaicin receptor (TRPV1) and the menthol receptor (TRPM8) function as detectors of heat and cold, respectively, whereas the wasabi receptor (TRPA1) functions as a detector of environmental and endogenous chemical irritants.

From a signal transduction and therapeutics perspective, there is great interest in understanding how these channels are activated (gated) by physical and/or chemical stimuli. We have used a combination of molecular genetics, natural product biochemistry, and biophysics to address these issues and probe mechanisms of stimulus detection, channel activation, and coding logic of the somatosensory system.

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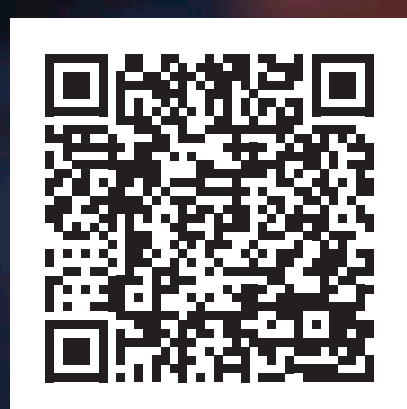
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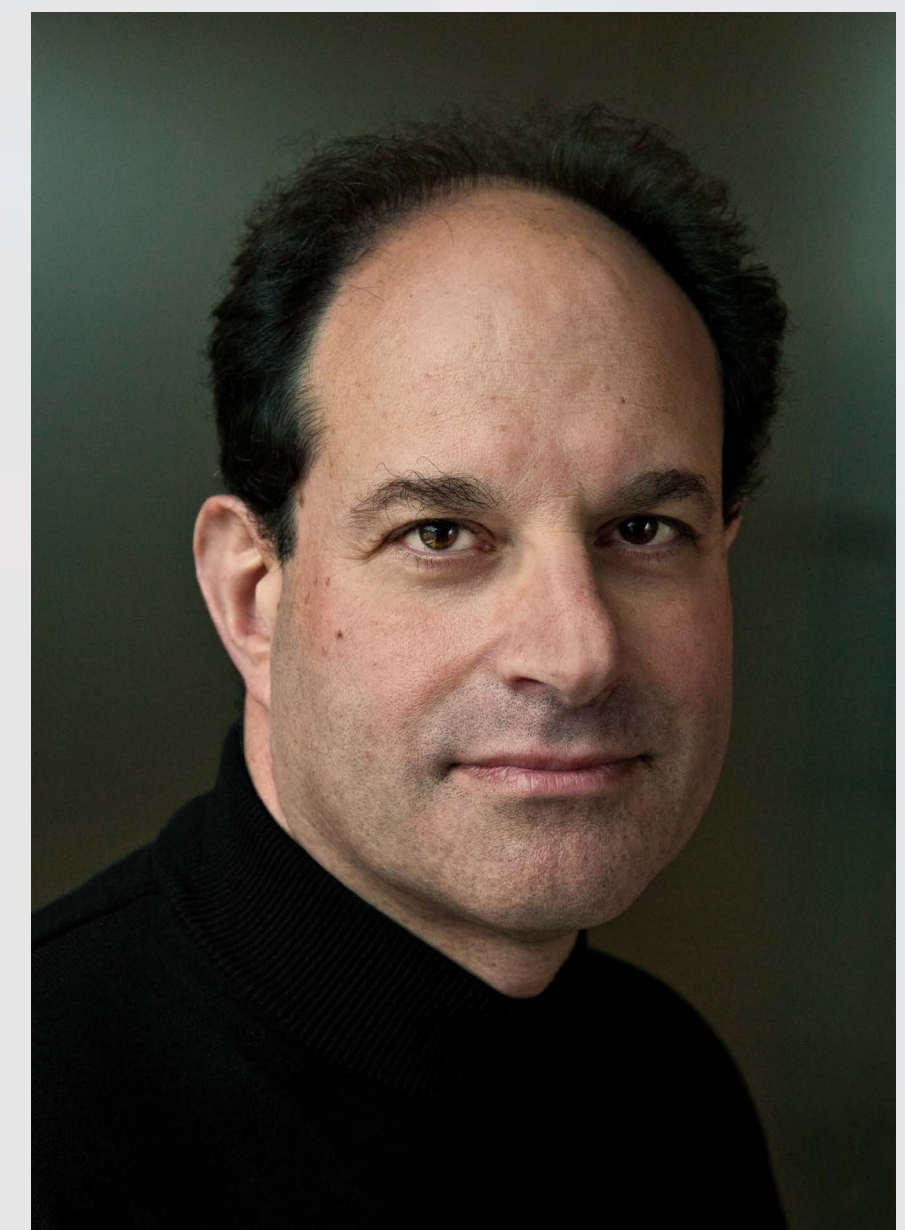
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