Generally Physiological

Taking a thermodynamic approach: A conversation with Baron Chanda



This issue of *The Journal of General Physiology* includes the Abstracts for the 68th Annual Meeting of the Society of General Physiologists, scheduled to take place September 2–6 in Woods Hole. We've been publishing the Abstracts for the SGP Annual Meeting since 1996, which was also the first year the SGP presented the Paul F. Cranefield

"And it's one of those things that, as a biologist, there's a lot of uncertainty in what we do, but this feels like it's the closest I have come to being exact about things, and that's what feels really nice. I think it's going to be downhill from this point onwards."

-Baron Chanda

Award, created to honor long-time *JGP* Editor Paul Cranefield. The Cranefield Award, intended to recognize an independent young investigator who in the preceding calendar year published a truly outstanding article in the *JGP*, has been presented nine times between 1996 and 2013.

In this month's installment of *Generally Physiological*, I'm delighted to present a condensed version of a

conversation with Baron Chanda, winner of last year's Cranefield Award, as a fitting accompaniment to the 2014 Abstracts. My conversation with Baron, which is the second of an occasional series of audio presentations of conversations with notable physiologists, took place in San Francisco, during the 58th Annual Meeting of the Biophysical Society.

The interview and transcript are available here: http://www.jgp.org/cgi/content/full/jgp.201411251/DC1.

Listeners interested in learning more may wish to explore some of the following closely related *JGP* articles, as well as those cited in the conversation.

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Chanda, B., and F. Bezanilla. 2002. Tracking voltage-dependent conformational changes in skeletal muscle sodium channel during activation. J. Gen. Physiol. 120:629–645. http://dx.doi.org/10.1085/jgp.20028679

Chanda, B., O.K. Asamoah, and F. Bezanilla. 2004. Coupling interactions between voltage sensors of the sodium channel as revealed by site-specific measurements. J. Gen. Physiol. 123:217–230. http://dx.doi.org/10.1085/jgp.200308971

Chowdhury, S., and B. Chanda. 2012a. Estimating the voltage-dependent free energy change of ion channels using the median voltage for activation. *J. Gen. Physiol.* 139:3–17. http://dx.doi.org/10.1085/jgp.201110722

 $Chowdhury, S., and B. Chanda. 2012b. Perspectives on: Conformational coupling in ion channels: Thermodynamics of electromechanical coupling in voltage-gated ion channels. \\ \emph{J. Gen. Physiol.}\ 140:613-623. \ http://dx.doi.org/10.1085/jgp.201210840$

 $\label{eq:miller} \mbox{Miller, C. 2012. Model-free free energy for voltage-gated channels. } \emph{J. Gen. Physiol.} \mbox{ 139:1-2. http://dx.doi.org/10.1085/jgp.201110745}$

Chowdhury, S., and B. Chanda. 2013. Free-energy relationships in ion channels activated by voltage and ligand. J. Gen. Physiol. 141:11–28. http://dx.doi.org/10.1085/jgp.201210860

Sigg, D. 2013. A linkage analysis toolkit for studying allosteric networks in ion channels. $\emph{J. Gen. Physiol.}~141:29-60.~ http://dx.doi.org/10.1085/jgp.201210859$

Yifrach, O. 2013. No model in mind: A model-free approach for studying ion channel gating. J. Gen. Physiol. 141:3–9. http://dx.doi.org/10.1085/jgp.201210929 Capes, D.L., M.P. Goldschen-Ohm, M. Arcisio-Miranda, F. Bezanilla, and B. Chanda. 2013. Domain IV voltage-sensor movement is both sufficient and rate limiting for fast inactivation in sodium channels. J. Gen. Physiol. 142:101–112. http://dx.doi.org/ 10.1085/jgp.201310998

