

# BIOLS SEMINAR SERIES

## 北京生命科学研究院精品讲座

报告时间：2013年7月2日（星期二）下午14:00

报告地点：中国科学院生物物理所图书馆报告厅

报告题目：Structure and mechanism of a bacterial sodium-dependent carboxylate transporter — implications in fatty acid synthesis and obesity.

报告人：Da-Neng Wang, Professor. Skirball Institute and Department of Cell Biology, New York University School of Medicine.

### 欢迎广大科研人员和研究生光临！



Prof. Wang received his Ph.D. of Structural Chemistry from University of Stockholm, Sweden in 1989. He has been working in Skirball Institute and Dept. of Cell Biology, New York University School of Medicine since 1995. Dr. Wang became Head of Crystallography, New York Consortium of Membrane Protein Structure in 2005, and he was appointed as Professor of New York University in 2008. He is also the Guest Professor of the National Key Laboratory of Biomembrane and Membrane Biotechnology, Tsinghua University, Beijing. Prof. Wang is the member of the Biophysical Society, the Protein Society, American Association for the Advancement of Science and Commission on Electron Crystallography (CEC), International Union

of Crystallography (IUCr), etc.

Prof. Wang's lab aims to understand the molecular mechanisms of the membrane transporters and channels, including Neurotransmitter reuptake at the synapses and its inhibition, Sugar and nutrient transport across the cell membrane, Tetracycline efflux / resistance, Selectivity and gating mechanism of organic-ion channels, Regulation of fatty acid biosynthesis by citrate uptake. The lab is equipped with up-to-date equipment for carrying out structural biology research, from cell culture, molecular biology and biochemistry, to X-ray Crystallography and Cryo-Electron Microscopy, and they use a combination of biochemistry and structural biology approaches to determine all the mechanisms.

Key Publications:

- 2003. Structure and mechanism of the glycerol-3-phosphate transporter from *Escherichia coli*. **Science**. 301, 616-620.
- 2004. Electron microscopy analysis of KvAP voltage sensor paddle in an open conformation. **Nature**. 430, 806-810.
- 2007. LeuT-desipramine structure reveals how antidepressants block neurotransmitter reuptake. **Science**. 317, 1390-1393.
- 2008. Symmetric transporters for asymmetric transport. **Science**. 321, 781-782.
- 2008. Ins and outs of major facilitator superfamily antiporters. **Ann. Rev. Microbiol.** 62, 289-305.
- 2009. Antidepressant specificity of serotonin transporter suggested by three LeuT-SSRI structures. **Nat. Struct. Mol. Biol.** 16, 652-657.
- 2010. Structure and mechanism of a pentameric formate channel. **Nat. Struct. Mol. Biol.** 17, 31-37.
- 2010. Biophysics: Transporter in the spotlight. **Nature**, 465, 171-172.
- 2012. Identification and characterization of a bacterial hydrosulfide ion channel. **Nature**. 483, 494-497.
- 2012. Structure and mechanism of a bacterial sodium-dependent dicarboxylate transporter. **Nature**. 491, 622-626.
- 2013. Assembly and mechanism of a group II ECF transporter. **Proc. Nat. Acad. Sci. USA**. 110, 2534-2539.

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