

Kevin Dalton
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Education

University of Chicago. Chicago, IL (S.B., A.B. 2010)
S.B. in Biochemistry with honors, A.B. in Chemistry

Stanford University. Stanford, CA (Ph.D. 2016)
Biophysics Program

Awards

University of Chicago Dean's List (2007-2010)
Biological Sciences Collegiate Division Summer Research Fellow (2007)
Lerman-Neubauer Junior Teaching Fellow (2008)
College Honors Award Recipient (2008, 2010)
PCBio Undergraduate Research Fellow, <http://ibd.uchicago.edu/pcbio/> (2008-2010)
National Science Foundation Graduate Research Fellowship Honorable Mention (2011)
Stanford Graduate Fellow, <http://sgf.stanford.edu/> (2011-2014)
Stanford Systems Biology Seed Grant,
http://med.stanford.edu/rmg/funding/systems_bio_seed_grants.html (2014)

Publications

Dalton KM, Crosson S. A Conserved Mode of Protein Recognition and Binding in a ParD–ParE Toxin–Antitoxin Complex. *Biochemistry*. 2010 Mar 16;49(10):2205–15.

Dalton KM, Frydman J, Pande VS. The Dynamic Conformational Cycle of the Group I Chaperonin C-Termini Revealed via Molecular Dynamics Simulation. *PLOS ONE*. 2015 Mar 30;10(3):e0117724.

Lopez T*, Dalton K*, Frydman J. The Mechanism and Function of Group II Chaperonins. *Journal of Molecular Biology*. 2015 Sep 11;427(18):2919–30.

Lopez T*, Dalton K*, Tomlinson A, Pande V, Frydman J. An information theoretic framework reveals a tunable allosteric network in group II chaperonins. *Nature Structural & Molecular Biology*. 2017 Sep;24(9):726–33.

Dalton K, Lopez T, Pande V, Frydman J. REP-X: An Evolution-guided Strategy for the Rational Design of Cysteine-less Protein Variants. *Scientific Reports*. 2020 Feb 10;10(1):2193.

Dalton KM, Greisman JB, Hekstra DR. Careless: A Variational Bayesian Model for Merging X-ray Diffraction Data. *bioRxiv* [Internet]. 2021; Available from: <https://www.biorxiv.org/content/early/2021/01/07/2021.01.05.425510>

*Equal contribution

Invited Talks

- Feb 2018 6th Ringberg Workshop on Structural Biology with FELs.
"Probing Protein Dynamics With Electric Field Stimulated X-ray Crystallography"
- May 2019 Greater Boston Crystal Group
"The Ratio Method for Time Resolved X-FEL Experiments"
- Sep 2020 Deutsches Elektronen-Synchrotron (DESY)
"Variational Bayesian Merging for Crystallography"
- Sep 2020 Greater Boston Crystal Group
"Variational Bayesian Merging for Crystallography"
- Nov 2020 BioCARS Beamline (University of Chicago & Advanced Photon Source)
"Variational Bayesian Merging for Crystallography"

Teaching Experience

Spring 2008 Teaching assistant: The UofC Initiative 2011, Biophysics & Chemical Biology
Professor: Dr. Steven Kron M.D.-Ph.D.

Work Experience

- Sep 2006–Jun 2010 *Undergraduate Research*: Structural and biochemical characterization of a toxin- antitoxin pair from *Caulobacter crescentus*.
Crosson Lab, University of Chicago
Principal Investigator: Dr. Sean Crosson Ph.D.
- Jun 2011–June 2017 *Doctoral Research*: Structural and computational characterization of the chaperonin.
Frydman Lab, Pande Lab, Stanford University
Principal Investigator: Dr. Judith Frydman Ph.D., Dr. Vijay Pande Ph.D.
- July 2017–Present *Postdoctoral Research*: Time resolved crystallography methods and application.
Hekstra Lab, Harvard University
Principal Investigator: Dr. Doeke Hekstra Ph.D.

Relevant Coursework

Stanford University

2010-2011 Academic Year

CS106A: Programming Methodology, Mehran Sahami, Fall

APPPHYS315: Methods in Computational Biology, Sebastian Doniach, Spring

2011-2012 Academic Year

BIOE214: Algorithms in Computational Molecular Biology, Russ Altman, Fall

BIOMEDIN374: Algorithms in Biology, Serafim Batzoglou, Fall

2015-2016 Academic Year

CS334A: Convex Optimization I, Stephen Boyd, Winter

Personal References

Dr. Sean Crosson Ph.D. crosson4@msu.edu
Dr. Judith Frydman Ph.D. jfrydman@stanford.edu
Dr. Vijay Pande Ph.D. vijay@a16z.com
Dr. Doeke Hekstra Ph.D. doeke_hekstra@harvard.edu