Colin D. Kinz-Thompson

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Education

Ph.D. M.Ph. M.A.	**Columbia University**, Chemistry. Thesis: *Dynamics of Stop-codon Recognition by Release Factor 1.*	2016
B.S.	**University of Rochester**, Chemistry. Magna Cum Laude, Highest Distinction. Thesis: *Photophysics of Excitons and Radicals in DNA.*	2010

Fellowships

Department of Energy Office of Science Graduate Fellowship (DE-AC05-06OR23100)	2012 – 2015
NIH Training Program in Molecular Biophysics (T32-GM008281)	2011

Honor, Awards, and Professional Activities

George Pegram Award for Meritorious Achievement in Chemical Research.	May 2015
John McCreary Memorial Prize.	May 2010
President's Award in Science and Engineering (University of Rochester 2010 Undergraduate Research Expo).	April 2010
2009 Merck Scholar Award for Juniors.	May 2009
Carl A. Whiteman Jr. Teaching Award.	May 2008

Publications

10. Kinz-Thompson, C.D., Pulukkunat, D.P., and Gonzalez, R.L., Jr. *Dynamics of Stop-codon Recognition by Release Factor 1.* In preparation.
9. Kinz-Thompson, C.D.*, Fei, J.*, and Gonzalez, R.L., Jr. *Temperature-dependent, single-molecule FRET studies of macromolecular dynamics*. In preparation.
8. Kinz-Thompson, C.D. and Gonzalez, R.L., Jr. *Temporal Super-resolution.* In preparation.
7. Kinz-Thompson, C.D., Bailey, N.A., and Gonzalez, R.L., Jr. *Precisely and Accurately Inferring Single-molecule Rate Constants.* Methods in Enzymology. In preparation.

6. Kinz-Thompson, C.D.*, Sharma, A.K.*, Frank, J., Gonzalez, R.L., Jr. Chowdhury, D. *Quantitative Connection between Ensemble Thermodynamics and Single-Molecule Kinetics: A Case Study Using Cryogenic Electron Microscopy and Single-Molecule Fluorescence Resonance Energy Transfer Investigations of the Ribosome*. J. Phys. Chem. B, **2015**, 119(34), 10888–10901.
5. Kinz-Thompson, C.D., Gonzalez, R.L., Jr. *smFRET studies of the "encounter" complexes and subsequent intermediate states that regulate the selectivity of ligand binding.* FEBS Lett. **2014**, 588(19), 3526–3538.
4. Kinz-Thompson, C.D., Palma, M., Pulukkunat, D.K., Chenet, D., Hone, J., Wind, S.J., Gonzalez, R.L., Jr. *Robustly Passivated, Gold Nanoaperture Arrays for Single-Molecule Fluorescence Microscopy.* **2013** ACS Nano, 7(9), 8159–8166.
3. Kravec, S.M., Kinz-Thompson, C.D, Conwell, E.M. *Localization of a Hole on an Adenine-Thymine Radical Cation Embedded in B-Form DNA in Water.* J. Phys. Chem. B **2011,** 115(19), 6166-6171.
2. Kinz-Thompson, C., Conwell, E. *Proton Transfer in Adenine-Thymine Radical Cation Embedded in B-Form DNA*. J. Phys. Chem. Lett. **2010**, 1 (9), 1403-1407.
1. Kucherov, V.M., Kinz-Thompson, C.D., Conwell, E.M. *Polarons in DNA Oligomers*. J. Phys. Chem. C **2010**, 114 (3), 1663-1666.

Patents

1. Kinz-Thompson, C, Gonzalez, R.L, Hone, J.C., Palma, M., Godarenko, A.A., Chenet, D.A., Wind, S.J., "Zero-mode waveguide for single biomolecule fluorescence imaging" **2013**, US Patent No. 13/655,947.

Presentations and Posters

Kinz-Thompson, C.D., Gonzalez, R.L., Jr. Dynamics of Stop-codon Recognition by Release Factor 1. Presented at Biophysical Society 60th Annual meeting, Los Angeles, CA. 1170-Pos. — February 29, 2016

Kinz-Thompson, C.D., Gonzalez, R.L., Jr. *Bayesian Inference for the Analysis of Sub-Temporal Resolution Data*. Presented at the 2014 DOE SCGF Retreat at Fermi National Accelerator Laboratory. — July 22, 2014

Kinz-Thompson, C.D., Palma, M., Pulukkunat, D.K., Chenet, D.A., Hone, J., Wind, S.J., Gonzalez, R.L., Jr. *Robustly Passivated, Gold Nanoaperture Arrays for Single-Molecule Fluorescence Microscopy.* Presented at the 2013 DOE SCGF Retreat at Lawrence Berkeley National Laboratory. — July 30, 2013

Kinz-Thompson, C.D. *Defeating the Concentration Barrier.* Presented at Physical Chemistry Student Seminar, Columbia University. — February 5, 2013

Kinz-Thompson, C.D., Palma, M., Pulukkunat, D.K., Chenet, D.A., Hone, J., Wind, S.J., Gonzalez, R.L., Jr. "Second-Generation Zero-Mode Waveguides" Presented at the Gordon Research Conference: Single- — July 21, 2012

Molecule Approaches to Biology.

Kinz-Thompson, C.D. *Proton Transfer in the Adenine-Thymine Radical Cation.* Presented at the 2010 University of Rochester Undergraduate Research Exposition, Rochester, NY. — April 23, 2010

Kinz-Thompson, C.D., Conwell, E.M. *Charge Transport in DNA: The Role of Water.* Presented at the 239th ACS National Meeting: Div. Phys. Chem.: Multiscale Nanomaterials, Polymer, and Biomolecular Dynamics, San Francisco, CA, Publication No. 480. — March 24, 2010

Research Experience

Single-molecule fluorescence resonance energy transfer studies of the ribosome. — September 2010 – *Present*

Ruben L. Gonzalez, Jr., Columbia University.

Single-molecule investigations of translation termination, *in vivo* cellular biology experiments, nanofabrication of photonic devices, and Bayesian inference-based analysis methodology development.

Charge transfer in DNA. — June 2008 – February 2011

Esther M. Conwell, University of Rochester.

1-D, tight-binding, nearest-neighbor modeling of a positive charge in DNA, and DFT QM/MM molecular dynamics simulations of a positive charge in DNA that shed light on proton transfer processes.

Ultrafast spectroscopy and photophysics of DNA. — September 2009 – May 2010

David W. McCamant, University of Rochester.

Investigations of exciton coupling in DNA using spectroelectrochemical apparatus to monitor radicals.

Teaching Experience

Biophysical Chemistry, *Columbia University* — 2016

Independently developed and presented three graduate-level lectures, including a hands-on exercise, entitled Introduction to Molecular Dynamics as part of the ChemTeach program.

General Chemistry 2, *Columbia University* — 2011 – 2014

Teaching assistant for General Chemistry. Duties included holding weekly recitations, quiz writing and grading, exam writing, holding review sessions, and giving mini-lectures.

Molecular Spectroscopy Lab, *University of Rochester* 2010

Teaching assistant. Responsible for weekly lab session, preparing and troubleshooting instrumentation, and grading lab reports.

General Chemistry Lab, *University of Rochester* 2008 – 2009

Teaching assistant. Duties included supervising lab sessions, and grading reports.

General Chemistry 2, *University of Rochester* 2008

Teaching assistant. Developed chalkboard based lectures into digital presentations.

Organic Chemistry 1 and 2, *University of Rochester* 2008 – 2010

Workshop leader. Responsible for holding weekly peer-lead workshops, pedagogical training of other workshop leaders, and grading exams.

Affiliations/Memberships

Phi Beta Kappa

American Chemical Society

Biophysical Society

The New York Academy of Sciences