Colin D. Kinz-Thompson

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Education

Ph.D. **Columbia University**, Chemistry, *present.*

B.S. **University of Rochester**, Chemistry, 2010.
Magna Cum Laude, Highest Distinction.
Thesis: *Photophysics of Excitons and Radicals in DNA.*

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

- Kinz-Thompson, C.D.*, Fei, J.*, and Gonzalez, R.L., Jr. *Temperature-dependent, single-molecule FRET studies of macromolecular dynamics*. — In Preparation
- Kinz-Thompson, C.D. and Gonzalez, R.L., Jr. *Temporal Super-Resolution.* — In Preparation
- Kinz-Thompson, C.D., Bailey, N.A., and Gonzalez, R.L., Jr. *Correcting for missed events in single-molecule time trajectories.* — In Preparation
- 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* — April 2015

Cryogenic Electron Microscopy and Single-Molecule Fluorescence Resonance Energy Transfer Investigations of the Ribosome. J. Phys. Chem. B, **2015** Article ASAP.

- 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. July 2014
- 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. August 2013
- 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. April 2011
- 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. April 2010
- Kucherov, V.M., Kinz-Thompson, C.D., Conwell, E.M. *Polarons in DNA Oligomers*. J. Phys. Chem. C **2010**, 114 (3), 1663-1666. January 2010

Patents

- 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. 2013

Presentations and Posters

- 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-Molecule Approaches to Biology. July 21, 2012
- 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, March 24, 2010, 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.
- **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.
- **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.

Teaching Experience

- **General Chemistry 2**, *Columbia University* 2011-2014
  Teaching assistant for General Chemistry. Duties included holding weekly recitations, quiz writing and grading, exam writing, and holding review session.
- **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
- The New York Academy of Sciences