

Below are research articles from Past Talks by “Physics 475” Students. These are meant to be illustrative.

Armani AM, Kulkarni RP, Fraser SE, Flagan RC, Vahala KJ. Label-free, single-molecule detection with optical microcavities. *Science*. 2007 Aug 10;317(5839):783–7.

Yasuda R, Noji H, Yoshida M, Kinoshita K, Itoh H. Resolution of distinct rotational substeps by submillisecond kinetic analysis of F1-ATPase. *Nature*. 2001 Apr 19;410(6831):898–904.

Sourjik V, Berg HC. Binding of the Escherichia coli response regulator CheY to its target measured in vivo by fluorescence resonance energy transfer. *Proc Natl Acad Sci U S A*. 2002 Oct 1;99(20):12669–74. PMCID: PMC130518

Sourjik V, Berg HC. Receptor sensitivity in bacterial chemotaxis. *Proc Natl Acad Sci U S A*. 2002 Jan 8;99(1):123–7. PMCID: PMC117525

Oesterhelt F, Oesterhelt D, Pfeiffer M, Engel A, Gaub HE, Müller DJ. Unfolding pathways of individual bacteriorhodopsins. *Science*. 2000 Apr 7;288(5463):143–6.

DeWitt MA, Chang AY, Combs PA, Yildiz A. Cytoplasmic dynein moves through uncoordinated stepping of the AAA+ ring domains. *Science*. 2012 Jan 13;335(6065):221–5.

Soares e Silva M, Depken M, Stuurmann B, Korsten M, MacKintosh FC, Koenderink GH. Active multistage coarsening of actin networks driven by myosin motors. *Proc Natl Acad Sci USA*. 2011 Jun 7;108(23):9408–13. PMCID: PMC3111259

Chung HS, McHale K, Louis JM, Eaton WA. Single-molecule fluorescence experiments determine protein folding transition path times. *Science*. 2012 Feb 24;335(6071):981–4.

Hohng S, Zhou R, Nahas MK, Yu J, Schulten K, Lilley DMJ, et al. Fluorescence-force spectroscopy maps two-dimensional reaction landscape of the holliday junction. *Science*. 2007 Oct 12;318(5848):279–83. PMCID: PMC3558530

Tessmer I, Baumann CG, Skinner GM, Molloy JE, Hoggett JG, Tendler SJB, et al. Mode of drug binding to DNA determined by optical tweezers force spectroscopy. *J Mod Opt*. 2003 Jan 1;50(10):1627–36.

James JR, White SS, Clarke RW, Johansen AM, Dunne PD, Sleep DL, et al. Single-molecule level analysis of the subunit composition of the T cell receptor on

live T cells. *Proc Natl Acad Sci U S A.* 2007 Nov 6;104(45):17662–7. PMCID: PMC2077052

Schuler B, Lipman EA, Eaton WA. Probing the free-energy surface for protein folding with single-molecule fluorescence spectroscopy. *Nature.* 2002 Oct 17;419(6908):743–7.

Yoon T-Y, Okumus B, Zhang F, Shin Y-K, Ha T. Multiple intermediates in SNARE-induced membrane fusion. *Proc Natl Acad Sci U S A.* 2006 Dec 26;103(52):19731–6.

Brandenburg B, Lee LY, Lakadamyali M, Rust MJ, Zhuang X, Hogle JM. Imaging poliovirus entry in live cells. *PLoS Biol.* 2007 Jul;5(7):e183–3. PMCID: PMC1914398

Wang MDM, Schnitzer MJM, Yin HH, Landick RR, Gelles JJ, Block SMS. Force and velocity measured for single molecules of RNA polymerase. *Science.* 1998 Oct 30;282(5390):902–7.

Brower-Toland BDB, Smith CLC, Yeh RCR, Lis JTJ, Peterson CLC, Wang MDM. Mechanical disruption of individual nucleosomes reveals a reversible multistage release of DNA. *Proc Natl Acad Sci U S A.* 2002 Feb 19;99(4):1960–5.

Vale RD. The molecular motor toolbox for intracellular transport. *Cell.* 2003 Feb 21;112(4):467–80. (This is a Review article—NOT ok for original research article.)

Mori T, Vale RD, Tomishige M. How kinesin waits between steps. *Nature.* 2007 Nov 29;450(7170):750–4.

Rhoades E, Cohen M, Schuler B, Haran G. Two-state folding observed in individual protein molecules. *J Am Chem Soc.* 2004 Nov 17;126(45):14686–7.

Other:

Jain A, Liu R, Ramani B, Arauz E, Ishitsuka Y, Ragunathan K, et al. Probing cellular protein complexes using single-molecule pull-down. *Nature.* 2011 May 26;473(7348):484–8. PMCID: PMC3103084