

# Yan Yan

Wyss Institute for Biological Inspired Engineering,  
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## Academic training

Postdoctoral fellow  
Wyss Institute at Harvard University, Boston, MA, USA

Advisor: *Dr. Peng Yin*  
November 2019-Present

Postdoctoral fellow  
Emory University, Atlanta, GA, USA

Advisor: *Dr. Laura Finzi*  
March 2018-October 2019

Center for Physics of Living Cells (CPLC) summer school  
University of Illinois, Urbana-Champaign

Theme: Physics of DNA  
July 16-22, 2017

Undergraduate research training  
Institute of Physics, Chinese Academy of Sciences, Beijing, China

Advisor: *Dr. Ming Li*  
December 2009-July 2011

## Education

**Ph. D. in Physics**  
Emory University, Atlanta, GA, USA

Advisor: *Dr. Laura Finzi*  
September 2011-March 2018

**B. S. in Physics**  
Shandong University, Jinan, Shandong, China

September 2007-June 2011

## Publications

7. **Yan, Y.**, Ding.,Y., Leng, F., Dunlap, D. D., Finzi, L. "Protein-mediated loops in supercoiled DNA create large topological domains". *Nucleic Acids Research*, 46(9), (2018), 4417-4424.
6. **Yan, Y.**, Leng, F., Finzi, L., Dunlap, D. D., "Protein-mediated looping of DNA under tension requires supercoiling". *Nucleic Acids Research*, 46(5), (2018), 2370-2379.
5. Kovari, D. T., **Yan, Y.**, Dunlap, D. D., Finzi, L. "Tethered Particle Motion: An easy technique for probing DNA topology and interactions with transcription factors". *Single Molecular Analysis, Springer*, pp 317-340 (2018).
4. Vörös, Z., **Yan, Y.**, Kovari, D. T., Finzi, L., Dunlap, D. D. "Proteins mediating DNA loops effectively block transcription". *Special issue of Protein Science on "Molecular Machines One Molecule at a Time"*, 26(7), (2017), 1427-1438.
3. Zhang, Y. W., Nong, D. G., Dou, S. X., Li, W., **Yan, Y.**, Xi, X. G., Xu, C. H., Li, M. "Iterative homology checking and non-uniform stepping during RecA-mediated strand exchange". *Biochemical and Biophysical Research Communications*, 478(3), (2016), 1153-1157.

2. Zhang, Y.W., **Yan, Y.**, Nong, D.G., Xu, C.H., Li, M. "Combination of magnetic tweezers with DNA hairpin as a potential approach to the study of RecA-mediated homologous recombination". *ACTA PHYSICA SINICA*, 65(21), (2016).

1. Priest, D. G., Kumar, S., **Yan, Y.**, Dunlap, D. D., Dodd, I. B., & Shearwin, K. E. "Quantitation of interactions between two DNA loops demonstrates loop domain insulation in E. coli cells". *PNAS*, 111(42), (2014) E4449-E4457.

### Invited Talks

1. "Supercoiling makes protein-mediated looping of DNA tethers deterministic", *Biochemistry/Structural Biology Seminar Series, Emory University* (Atlanta, GA, June 11<sup>th</sup>, 2019)

2. "Supercoiling makes protein-mediated looping of DNA tethers deterministic", Protein-Nucleic Acid Interactions/Chromatin and the Nucleoid I, *Biophysical Society 63<sup>rd</sup> Annual Meeting*, platform session (Baltimore, MD, March 5<sup>th</sup>, 2019)

3. "Protein-mediated loops in supercoiled DNA create large topological domain", *Nucleic Acid Seminar Series, Emory University* (Atlanta, GA, October 10<sup>th</sup>, 2017)

4. "Protein-mediated loops in supercoiled DNA create large topological domain", *1<sup>st</sup> South Eastern Single-Molecule Biophysics Meeting* (Amicalola Falls State Park, Dawsonville, GA, April 6-9, 2017)

5. "Protein-mediated loops in supercoiled DNA create large topological domain", Protein-Nucleic Acid Interactions I, *Biophysical Society 61<sup>st</sup> Annual Meeting*, platform session (New Orleans, LA, February 2017)

6. "HU protein and DNA supercoiling dramatically enhance Lac-Repressor-Mediated DNA looping", *Biophysical Society 60<sup>th</sup> Annual Meeting*, Nanoscale subgroup (Los Angeles, CA, February 2016)

### Poster Presentations

1. "RNA polymerase pauses at *Lac* repressor obstacles", *Biophysical Society 62<sup>nd</sup> Annual Meeting* (San Francisco, CA, February 2018)

2. "Protein-mediated DNA looping traps surprisingly large topological domains", *Gordon Research Conference (GRC), Conference: Single Molecule Approaches to Biology* (Hong Kong, China, July 2016)

3. "Protein-mediated DNA looping traps surprisingly large topological domains", *Gordon Research Seminars (GRS), Seminars: Single Molecule Approaches to Biology* (Hong Kong, China, July 2016)

4. "HU protein and DNA supercoiling dramatically enhance Lac-Repressor-Mediated DNA looping", *Biophysical Society 60<sup>th</sup> Annual Meeting* (Los Angeles, CA, February 2016)

5. "Estimation of DNA interactions supports the loop domain model of insulator action", *Biophysical Society 59<sup>th</sup> Annual Meeting* (Baltimore, MD, February 2015)

6. "The effect of HU protein on Lac-Repressor-Mediated DNA looping", *Biophysical Society 59<sup>th</sup> Annual Meeting* (Baltimore, MD, February 2015)

### Honors and Awards

- Education Committee Travel Award, *Biophysical Society*, 2016
- Student Research Achievement Award, *Biophysical Society*, 2016
- Laney Graduate School Professional Development Support Funds, *Emory University*, 2015-2017
- Laney Graduate School Scholarship, *Emory University*, 2011-2013
- International Mathematical Contest in Modeling, Honorable Mention, *Consortium for mathematics and its application*, 2010

- China Undergraduate Mathematical Contest in Modeling, 1<sup>st</sup> Prize, *Ministry of Education of the P. R. China & Chinese Mathematical Society*, 2009
- Outstanding undergraduate thesis award, *Shandong University*, 2011
- National Undergraduate Innovation Program, Excellent Work Prize, 2010
- Outstanding Undergraduate Award for Research and Innovation, *Shandong University*, 2010
- Excellence in Leadership, *Shandong University*, 2010
- Outstanding student scholarship, *Shandong University*, 2008, 2009, 2010
- Dong Mingzhu Scholarship, *Shandong University*, 2009

## Teaching Experience

Teaching assistant, department of physics, Emory University, Sep. 2012-Dec. 2013

- Taught an undergraduate Intro to Physics Laboratory course, including lectures, office hours, lab supervision and assistance, and the grading of homework and exams.