

CURRICULUM VITAE

Chirlmin Joo

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Date of Birth Nov. 24, 1976 (male)
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EDUCATION

Ph.D. University of Illinois at Urbana-Champaign, USA (physics, May 2007)
Single-Molecule FRET Study on the RecA-Mediated DNA Repair (*Advisor*: Dr. Taekjip Ha)

B.S. Seoul National University, South Korea (physics, *summa cum laude*, Feb 2002)
Microcanonical Monte Carlo Simulation of Fermions and Bosons (*Advisor*: Dr. Insuk Yu)

APPOINTMENTS AND CAREERS

Jun 2009– Research Professor, School of Biological Sciences,
Seoul National University, Korea (*P.I.*: Dr. V. Narry Kim)

Sep 2007–May 2009 Post-Doctoral Fellow, School of Biological Sciences,
Seoul National University, Korea (*Mentor*: Dr. V. Narry Kim)

May 2007–Aug 2007 Post-Doctoral Fellow, Depts. of Bioengineering & Physics,
University of Illinois, USA (*Mentors*: Drs. Y. Wang and T. Ha)

Feb 1997–Apr 1999 Military Service, Field Artillery, Republic of Korea Army

HONORS AND AWARDS

International Travel Award (Biophysical Society, San Francisco, USA, 2010)
Weber International Prize (finalist) (International Weber Symposium, Hawaii, USA, 2008)
Best Oral Presentation (Annual CMB & MBP Research Symposium, UIUC, USA, 2006)
Recognition by Ministry of Science & Tech. of Korea for Excellent Work (Korea, 2006)
Drickamer Award for Significant Ability at Research (Fellowship, Dept. of Physics, UIUC, 2006)
Excellent Student Scholarship (Seoul National University, Korea, 2001)
Seoul National University Fellowship (Seoul National University, Korea, 2000-2001)

PUBLICATIONS (RESEARCH ARTICLES)

Heo, I*., Joo, C*., Kim, Y.K*., Ha, M., Yoon, M.J., Cho, J., Yeom, K.H., Han, J., and Kim, V.N. (2009). TUT4 in concert with Lin28 suppresses microRNA biogenesis through pre-microRNA uridylation. *Cell* 138, 696-708. (*equal contribution)

- Featured by *Nature Reviews: Molecular and Cellular Biology* (2009)

Heo, I*., Joo, C*., Cho, J., Ha, M., Han, J., and Kim, V.N. (2008). Lin28 mediates the terminal uridylation of let-7 precursor MicroRNA. *Mol Cell* 32, 276-284. (*equal contribution)

- Featured article in *Molecular Cell*

Cisse, I., Okumus, B., **Joo, C.,** and Ha, T. (2007). Fueling protein-DNA interactions inside porous nanocontainers. *Proc Natl Acad Sci U S A* 104, 12646-12650.

McKinney, S.A., **Joo, C.,** and Ha, T. (2006). Analysis of single-molecule FRET trajectories using hidden Markov modeling. *Biophys J* 91, 1941-1951.

Joo, C., McKinney, S.A., Nakamura, M., Rasnik, I., Myong, S., and Ha, T. (2006). Real-time observation of RecA filament dynamics with single monomer resolution. *Cell* 126, 515-527.

Myong, S., Rasnik, I., **Joo, C.,** Lohman, T.M., and Ha, T. (2005). Repetitive shuttling of a motor protein on DNA. *Nature* 437, 1321-1325.

- *News & Views* by *Nature* (2005)

Hohng, S., **Joo, C.,** and Ha, T. (2004). Single-molecule three-color FRET. *Biophys J* 87, 1328-1337.

- Highlighted by *Biophotonics* (2004)

Joo, C., McKinney, S.A., Lilley, D.M., and Ha, T. (2004). Exploring rare conformational species and ionic effects in DNA Holliday junctions using single-molecule spectroscopy. *J Mol Biol* 341, 739-751.

PUBLICATIONS (REVIEW ARTICLE AND BOOK CHAPTER)

Joo, C., Balci, H., Ishitsuka, Y., Buranachai, C., and Ha, T. (2008). Advances in single-molecule fluorescence methods for molecular biology. *Annu Rev Biochem* 77, 51-76.

Joo, C. and Ha, T. (2008) "Single Molecule FRET with Total Internal Reflection Microscopy" In 'Single Molecule Techniques: A Laboratory Manual' (ed P. Selvin and T. Ha) *Cold Spring Harbor Laboratory Press*

ORAL PRESENTATIONS (MicroRNA)

2009

- Seminar *Biophysics Seminar*, Department of Physics, SNU, Seoul, Korea
Regulators of Small Regulators: TUT4 proteins in concert with Lin28 suppress microRNA biogenesis in human
- Conference *RNA 2009, Annual Meeting of the RNA Society*, Madison, WI, USA
Conserved Sequence Motif of Let-7 Precursor MicroRNA Triggers Lin28 to Recruit a Uridylyl Transferase for 3' Terminal Uridylation
- Workshop *Single-Molecule Biophysics Workshop*, Daejeon, Korea
(Invited Talk) Regulator of Small Regulators: Lin28 proteins suppress microRNA biogenesis in human
- Seminar *Physics of Living Cells Seminar*, Univ. of Illinois, Urbana, IL, USA
Regulator of Small Regulators: Lin28 proteins suppress microRNA biogenesis in human

2008

- Symposium *Seoul RNA Symposium*, SNU, Seoul, Korea
Lin28-Mediated Uridylation of the let-7 Precursor

ORAL PRESENTATIONS (Single Molecule Studies)

2009

- Seminar *Department of Chemistry, SNU, Seoul, Korea*
Next and Third Generation Sequencing
- Seminar *Nano Systems Institute, SNU, Seoul, Korea*
Ever-Fluctuating DNA: Lessons From 15 Years of Single Molecule Studies
- Seminar *New Generation Imaging Center, Chung-Ang Univ., Seoul, Korea*
Real-Time Observation of RecA Filament Dynamics
- Seminar *Department of Bioinformatics, Soongsil Univ., Seoul, Korea*
Real-Time Observation of RecA Filament Dynamics

2008

- Symposium *International Weber Symposium, Kauai, Hawaii, USA*
(Invited Talk) Real-Time Observation of RecA Filament Nucleation and Dynamics

2007

- Conference *Korean Physical Society Meeting, Daejeon, Korea*
(Invited Talk) Real-Time Observation of RecA Filament Nucleation and Dynamics
- Conference *American Chemical Society, Boston, MA, USA*
Real-Time Observation of RecA Filament Nucleation and Dynamics
- Seminar *Biophysics Seminar, Department of Physics, SNU, Seoul, Korea*
Single-Molecule Study Shows How a Protein Processes a Damaged DNA in Real Time

2006

- Symposium *Annual Cell and Molecular Biology & Molecular Biophysics Research Symposium, Univ. of Illinois, Urbana, IL, USA*
Real-time Observation of RecA Filament Dynamics with Single Monomer Resolution
- Symposium *Annual Biophysics and Computational Biology Symposium, UIUC, USA*
Real-time Observation of RecA Filament Dynamics with Single Monomer Resolution
- Conference *Biophysical Society Meeting, Salt Lake City, UT, USA*
Dynamics of RecA Filament Formation on ssDNA Tail of a ssDNA-dsDNA Junction