

Seppe Kuehn

Curriculum Vitae

Department of Physics
Center for the Physics of Living Cells
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CURRENT POSITION

Assistant Professor Department of Physics U. of Illinois at Urbana-Champaign 1/2014 - present

Faculty Affiliate - Biocomplexity theme, Institute for Genomic Biology. UIUC.

Member - Center for Biophysics and Quantitative Biology. UIUC.

EDUCATION

Post Doctoral	Physics & Biology	The Rockefeller University	2007 - 2013
Ph.D.	Chemical Physics	Cornell University	August 2007
M.S.	Chemical Physics	Cornell University	October 2003
B.S. Magna Cum Laude	Physics	Beloit College	May 2000

RESEARCH INTERESTS

– Quantitative biology – Microbial communities – Rapid evolution in microbial ecosystems – Experimental evolution – Evolution of bacterial motility –

PUBLICATIONS

“Frequency dependent resilience in a bacterial communities,” Jason Merritt and Seppe Kuehn. (In preparation. 2016)

“Environment determines evolutionary trajectory in a constrained phenotypic space,” David T. Fraebel, Harry Mickalide, Jason Merritt, Thomas Kuhlman and Seppe Kuehn. (In preparation. 2016).

“Quantitative high-throughput population dynamics in continuous-culture by automated microscopy.” Jason Merritt and Seppe Kuehn. *Scientific Reports* **6** 33173 (2016).

“Strongly deterministic population dynamics in closed microbial communities,” Zak Frentz*, Seppe Kuehn* and Stanislas Leibler. *Physical Review X* **5**, 041014 (2015). Featured in *Physics*. (co-first author)

“Behavioral diversity in microbes and low dimensional phenotypic spaces.” David Jordan*, Seppe Kuehn*, Eleni Ketifori and Stanislas Leibler. *Proceedings of the National Academy of Sciences USA* **110** (34) 14018-14023 (2013). (co-first author)

“Microbial population dynamics by digital in-line holographic microscopy,” Zak Frentz*, Seppe Kuehn*, Doeke Hekstra, and Stanislas Leibler, *Review of Scientific Instruments* **81**, 084301 (2010). (co-first author)

“Quantifying Electric Field Gradient Fluctuations over Polymers Using Ultrasensitive Cantilevers,” Showkat M. Yazdani, Nikolas Hoepker, Seppe Kuehn, Roger F. Loring and John A. Marohn. *Nano Letters*, **9** (6) 22732279 (2009).

“Advances in Mechanical Detection of Magnetic Resonance,” Seppe Kuehn, Steven A. Hickman, and John A. Marohn, *J. Chemical Physics* **128** (5) 052208 (2008).

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“Dielectric Fluctuations and the Origins of Noncontact Friction,” Seppe Kuehn, Roger F. Loring, and John A. Marohn, *Physical Review Letters* **96**, 156103 (2006). Also featured in: **Physics Today**, **Physik Journal**, and **Physics News Update**

“Noncontact Dielectric Friction,” Seppe Kuehn, John A. Marohn, and Roger F. Loring, *J. Physical Chemistry B Letters* **110** (30) 14525-14528 (2006).

“Force-gradient detected nuclear magnetic resonance,” Sean R. Garner, Seppe Kuehn, Jahan M. Dawlaty, Neil E. Jenkins, and John A. Marohn, *Applied Physics Letters* **84**, 5091 (2004).

“Batch fabrication and characterization of ultrasensitive cantilevers,” Neil E. Jenkins, Lauren P. DeFlores, Jack Allen, Tse Nga Ng, Sean R. Garner, Seppe Kuehn, Jahan M. Dawlaty and John A. Marohn, *J. Vacuum and Science Technology B* **22**, 909 (2004).

“The direct production of CO(v=1-9) in the reaction of O(³P) with the ethyl radical,” Jonathan P. Reid., Timothy P. Marcy, Seppe Kuehn, and Stephen R. Leone. *J. Chemical Physics* **113** (11) 4572-4580 (2000)

HONORS and AWARDS

Scialog Fellow	Research Corp/Moore Foundation	2014
Helen Hay Whitney Fellow	HHWF	2009
Tunis Wentink Award. Outstanding Ph.D. thesis.	Cornell University	2007
Wachter Prize for excellence in Physical Chemistry	Cornell University	2005
Phi Beta Kappa	Beloit College	2000
Departmental Honors in Physics	Beloit College	2000
NSF Research Experience for Undergraduates	UC Boulder, JILA	1999