

## CURRICULUM VITAE - IRMGARD BISCHOFBERGER

Department of Mechanical Engineering, Massachusetts Institute of Technology  
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### EMPLOYMENT

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Massachusetts Institute of Technology, USA Assistant professor d'Arbeloff Career Development Professor	January 2016 – present
University of Chicago, USA Postdoctoral researcher Advisor: Sidney R. Nagel	July 2011 – October 2015
University of Fribourg, Switzerland Research associate	December 2006 – June 2011

### EDUCATION

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University of Fribourg, Switzerland PhD in Physics Advisor: Véronique Trappe	December 2006 – June 2011
New York University, USA Internship at the Center for Soft Matter Research Advisor: Paul M. Chaikin	April 2006 – November 2006
University of Sevilla, Spain External Semester Department of Physics	February 2003 – August 2003
University of Fribourg, Switzerland MSc in Physics, BSc in Physics Department of Physics	October 2000 – March 2006

### RESEARCH INTERESTS

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*Soft Matter Physics and Fluid Dynamics.* Fluid instabilities, pattern formation, flow in porous materials, air vortex dynamics, splashing of drops on dry surfaces, jamming, phase separation of colloidal systems, kinetic pathways in spinodal phase separation, interplay between glass transition and phase separation in colloidal gels, thermosensitive polymers, hydrophobic hydration, phase behavior of amphiphiles

### TECHNICAL SKILLS AND EXPERTISE

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Static and dynamic light scattering, diffusing wave spectroscopy, neutron scattering, microscopy, rheometry (oscillatory and steady shear, capillary viscosimetry), differential scanning calorimetry, FTIR spectroscopy, high speed video imaging, Schlieren imaging, polymer and colloid synthesis, machine shop, laser cutter, 3D printer

### AWARDS

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2013-2015	Kadanoff-Rice Postdoctoral Fellowship
2011-2012	Swiss National Science Foundation Postdoctoral Fellowship
2012	Poster Prize Winner, Gallery of Fluid Motion, APS DFD Meeting, San Diego

## ACTIVITIES

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Organizer of the Soft Materials, Structure and Devices Seminar Series at MIT, 2016-present

Organizer of the New England Complex Fluids Workshop at MIT, 2016

Co-founder and organizer of the monthly meetings for students and postdocs from various research groups within the Chicago Materials Research Center, aimed at promoting interdisciplinary collaborations between the different research groups, 2012-2015

Co-organizer of the weekly Computations in Science Seminars at the University of Chicago, 2012-2013

Head organizer of the weekly Computations in Science Seminars at the University of Chicago, 2013-2014

## PUBLICATIONS

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*Designing allosteric-inspired response in mechanical networks*

J. W. Rocks, N. Pashine, I. Bischofberger, C. P. Goodrich, A. J. Liu, S. R. Nagel, PNAS, 114, 2520-2525 (2017)

*Fluid instabilities that mimic animal growth*

I. Bischofberger, S. R. Nagel, Phys. Today, 69, 70-71 (2016)

*Air flows generated by an impacting drop*

I. Bischofberger, B. Ray, J. F. Morris, T. Lee, S. R. Nagel, Soft Matter, 12, 3013-3020 (2016)

*New aspects in the phase behaviour of poly-N-isopropyl acrylamide: systematic temperature dependent shrinking of PNiPAM assemblies well beyond the LCST*

I. Bischofberger, V. Trappe, Sci. Rep. 5, 15520 (2015)

*An island of stability in a sea of fingers: emergent large-scale features of the viscous flow instability*

I. Bischofberger, R. Ramachandran, S. R. Nagel, Soft Matter, 11, 7428-7432 (2015)

*Fingering versus stability in the limit of zero interfacial tension*

I. Bischofberger, R. Ramachandran, S. R. Nagel, Nat. Commun. 5:5265 (2014)

*Co-nonsolvency of PNiPAM at the transition between solvation mechanisms*

I. Bischofberger, D. C. E. Calzolari, V. Trappe, Soft Matter, 10, 8288-8295 (2014)

*Hydrophobic hydration of poly-N-isopropyl acrylamide: a matter of the mean energetics of water*

I. Bischofberger, D. C. E. Calzolari, P. De Los Rios, I. Jelezarov, V. Trappe, Sci. Rep. 4, 4377 (2014)

*Seeing the invisible - Air vortices around a splashing drop*

I. Bischofberger, K. W. Mauser, S. R. Nagel, Phys. Fluids 25, 091110 (2013)

*Multiple dynamic regimes in concentrated microgel systems*

D. A. Sessoms, I. Bischofberger, L. Cipelletti, V. Trappe, Phil. Trans. Royal Society A 367, 5013 (2009)

*Global features of the fingering instability for miscible fluids in a porous medium*

I. Bischofberger, S. R. Nagel, in preparation

## ORAL PRESENTATIONS

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Condensed Matter and Biological Physics Seminar, April 2017, Syracuse University (invited)

Colloquium, March 2017, UMass Boston (invited)

Condensed Matter Seminar, March 2017, Tufts University (invited)

Condensed Matter Seminar, January 2017, UMass Amherst (invited)

International Conference on Soft Materials, December 2016, Jaipur, India (invited)

Physics Colloquium, October 2016, Brandeis University (invited)

CM/Biological Physics Seminar, October 2016, Brown University (invited)

New England Complex Fluids Workshop, September 2016, Brandeis University (invited)

International Soft Matter Conference, September 2016, Grenoble, France (invited)

Trends in Nanotechnology Conference, September 2016, Fribourg, Switzerland (invited)

Applied Mechanics Colloquium, April 2016, Harvard University, Cambridge MA (invited)  
APS March Meeting, March 2016, Baltimore (invited)  
Soft Matter Seminar, October 2015, Georgetown University, Washington DC (invited)  
Special Seminar, May 2015, Northumbria University, Newcastle UK (invited)  
Seminar, May 2015, University of Fribourg, Fribourg, Switzerland (invited)  
Special Seminar, May 2015, ETH Zurich, Zurich, Switzerland (invited)  
Special Seminar, April 2015, MIT Mechanical Engineering, Cambridge (invited)  
APS March Meeting, March 2015, San Antonio  
Special Seminar, February 2015, Princeton University, Princeton (invited)  
APS DFD Meeting, November 2014, San Francisco  
LASSP Seminar, June 2014, Cornell University, Ithaca (invited)  
Friday Baglunch, June 2014, University of Chicago, Chicago (invited)  
Kavli Seminar, March 2014, Harvard University, Cambridge (invited)  
WAM Seminar, March 2014, Harvard University, Cambridge (invited)  
Seminar, January 2014, University of Fribourg, Fribourg, Switzerland (invited)  
APS DFD Meeting, November 2013, Pittsburgh  
Computations in Science Seminar, August 2013, University of Chicago, Chicago (invited)  
Seminar at CCNY, June 2013, New York (invited)  
APS March Meeting, March 2013, Baltimore  
APS DFD Meeting, November 2012, San Diego  
LeoFest, October 2012, University of Chicago, Chicago (invited)  
Friday Baglunch, February 2012, University of Chicago, Chicago (invited)  
Swiss Soft Days, June 2010, Lausanne, Switzerland  
Frontiers in Water Biophysics, May 2010, Trieste, Italy  
IOP Conference on Phase Separation and Mixing, September 2008, Cambridge UK  
UK Polymer Colloids Forum, August 2008, University of Greenwich, Chatham UK  
NYU-PENN Soft Matter Workshop, November 2006, UPenn, Philadelphia  
Squishy Physics Seminar, August 2006, Harvard University, Cambridge  
European Student Colloid Conference, May 2005, Biezenmortel, The Netherlands

#### *OUTREACH*

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*MIT Community College Program:* Advisor of community college student, MIT, 2016  
*Summer link program:* Talk and discussion on pattern formation, high-school students, University of Chicago, 2015  
*Women in Science:* Organizer of lab tours for female undergraduate students, University of Chicago, 2014-2015  
*SIR program:* Advisor of high school student, University of Chicago, 2014-2015  
*REU program:* Advisor of REU students, University of Chicago, 2012, 2014  
*Physics with a BANG!:* High-speed camera operator, demo presenter and lab tour guide at open house for the community, University of Chicago, 2011-2014  
*Women in Science:* Organizer of lab workshops for female high school students, University of Fribourg, 2008-2010  
*Prospective student days:* Organizer of lab tours and study information, University of Fribourg, 2007-2010  
*Laser days:* Organizer of the kids' corner (optics experiments) for the community, University of Fribourg, 2010  
*Year of Einstein:* Co-organizer of physics demo shows for the community, University of Fribourg, 2005