

## Wylie W. Ahmed

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| CONTACT INFORMATION                 | California State University Fullerton<br>Department of Physics<br>800 N. State College Blvd.<br>Fullerton, CA 92831 USA  | <i>Office:</i> MH 665A<br><i>E-mail:</i> wahmed@fullerton.com<br><i>Phone:</i> (657) 278-2188<br><i>WWW:</i> www.SLAM-Lab.com |
| <b>Professional Appointments</b>    | <b>Assistant Professor</b> , California State University, Fullerton, California<br>Department of Physics <b>2016 - present</b>   |   |
|                                     | <b>Marie Skłodowska-Curie Research Fellow</b> , Institut Curie, Paris, France<br>Department of Physical Chemistry (UMR168) <b>2013 - 2016</b>  |   |
|                                     | <b>Instructor</b> , Université Paris Descartes, Paris, France<br>Center for Interdisciplinary Research (CRI-Paris) <b>2014 - 2016</b>  |   |
|                                     | <b>Researcher</b> , Max Planck Institute, Stuttgart, Germany<br>Department of New Materials and Biosystems <b>2008</b>   |   |
| <b>Education</b>                    | <b>University of Illinois</b> , Urbana, IL USA <b>2008 - 2013</b><br>Ph.D., Department of Mechanical Science & Engineering   |   |
|                                     | <b>University of Illinois</b> , Urbana, IL USA <b>2003 - 2008</b><br>B.S., Department of Mechanical Science & Engineering  |   |
| <b>Research Interests</b>           | Soft and active matter, biophysics, materials science, statistical physics, mechanics of materials, bionanotechnology, high-resolution imaging, opto-mechanical force measurement, rheology  |   |
| <b>Grants &amp; Fellowships</b>     | CSUF RSCA Grant - Microscopic jiggling, schools of fish, and flocks of birds (Co-PI, \$15,000) 2018  |   |
|                                     | CSUF RSCA Grant - A microfluidic negative pressure device (Co-PI, \$15,000) 2018   |   |
|                                     | CSUF FEID Grant - Physics for the life sciences (PI, \$4,500) 2017   |   |
|                                     | CSUF RSCA Grant - Defining the properties of living matter (PI, \$7,500) 2017  |   |
|                                     | Marie Skłodowska-Curie Actions Research Fellowship (€195,000) 2014-2016  |   |
|                                     | Pierre-Gilles de Gennes Foundation Postdoctoral Fellowship (€55,000) 2013  |   |
| <b>Selected Honors &amp; Awards</b> | LSAMP International REU Collaborative Research Award (\$5000) 2018   |   |
|                                     | Lindau Nobel Laureate, 65th Annual Meeting - Selected Young Scientist 2015   |   |
|                                     | Institut Curie - Young Investigator Travel Award 2014  |   |
|                                     | Institute for Complex Adaptive Matter - PhysCell: Soft and Living Matter Travel Award 2012   |   |
| <b>Publications in progress</b>     | * indicates equally contributing 1st authorship<br>† indicates corresponding author  |   |
|                                     | 4. D. Posey, P. Blaisdell-Pijuan, S. Knoll, T. Saif, <b>W. Ahmed</b> <sup>†</sup> . “Small-scale fluctuations of vesicles in fibroblasts”. ( <i>under review</i> )   |   |
|                                     | 3. A. Colin, M. Almonacid, <b>W. Ahmed</b> , T. Betz, M-E. Terret, R. Voituriez, Z. Gueroui, M-H Verlhac. “Centering based on active diffusion in mouse oocytes is non- specific”. ( <i>under review</i> )   |   |
|                                     | 2. <u>L. Willmore</u> , N. Brubaker <sup>†</sup> , <b>W. Ahmed</b> <sup>†</sup> . “A GUI to study active matter”. ( <i>in preparation</i> )  |   |
|                                     | 1. <b>W. Ahmed</b> <sup>*,†</sup> , E. Fodor <sup>*</sup> , M. Almonacid <sup>*</sup> , M. Bussonnier, M-H. Verlhac, N. Gov, P. Visco, F. van Wijland, T. Betz. “Active mechanics reveal molecular-scale force kinetics in living oocytes”. ( <i>Biophysical Journal</i> ). 2018 ( <i>in press</i> ) |   |

## Publications

\* indicates equally contributing 1st authorship

† indicates corresponding author

14. E. Fodor\*, **W. Ahmed\***, M. Almonacid\*, M. Bussonnier, N.S. Gov, M-H. Verlhac, T. Betz, P. Visco, F. van Wijland. “Nonequilibrium dissipation in living oocytes”. (*Europhysics Letters*). 2016 (DOI: 10.1209/0295-5075/116/30008)
13. M. Almonacid\*, **W. Ahmed\***, M. Bussonnier, P. Maily, T. Betz, R. Voituriez, N. Gov, M-H. Verlhac. “Active diffusion positions the nucleus in mouse oocytes”. *Nature Cell Biology*. 2015 (DOI: 10.1038/ncb3131)
12. **W. Ahmed**, T. Betz. “Dynamic cross-links tune the solid-fluid behavior of living cells”. *Proceedings of the National Academy of Sciences USA*. 2015 (DOI: 10.1073/pnas.1507100112)
11. **W. Ahmed**†, E. Fodor, T. Betz. “Active cell mechanics - measurement and theory”. *Biochimica et Biophysica Acta - Molecular Cell Research*. 2015 (DOI: 10.1016/j.bbamcr.2015.05.022)
10. S. G. Knoll, **W. Ahmed**, T. A. Saif. “Contractile dynamics change before morphological cues during fluorescence illumination”. *Scientific Reports* 5. 2015 (DOI: 10.1038/srep18513)
9. **W. Ahmed**, T. A. Saif. “Active transport of vesicles in neurons is modulated by mechanical tension” *Scientific Reports* 4, 4481. 2014 (DOI: 10.1038/srep04481)
8. C. Cha, E. Antoniadou, M. Lee, J. Jeong, **W. Ahmed**, T. A. Saif, S. A. Boppart, H. Kong. “Tailoring hydrogel adhesion to polydimethylsiloxane substrates using polysaccharide glue” *Angewandte Chemie IE*. 2013 (DOI: 10.1002/anie.201302925)
7. **W. Ahmed**, B. Williams, A. Silver, T. A. Saif. “Measuring non-equilibrium vesicle dynamics in neurons under tension” *Lab on a Chip*. 2013 (DOI:10.1039/C2LC41109A)
6. E. de Souza, **W. Ahmed**, V. Chan, R. Bashir, T. A. Saif. “Cardiac myocytes’ dynamic behavior differs depending on heart segment” *Biotechnology and Bioengineering*. 2012 (DOI: 10.1002/bit.24725)
5. **W. Ahmed**, J. Rajagopalan, A. Tofangchi, T. A. Saif. “Neuromechanics: The role of tension in neuronal growth and memory” *Nano and Cell Mechanics*. 2012 (DOI: 10.1002/9781118482568.ch3)
4. **W. Ahmed**, T. Li, S. Rubakhin, A. Chiba, J. Sweedler, T. A. Saif. “Mechanical tension modulates local and global vesicle dynamics in neurons” *Cellular and Molecular Bioengineering*. 2012 (DOI: 10.1007/s12195-012-0223-1)
3. **W. Ahmed**, T. Li, S. Rubakhin, A. Chiba, J. Sweedler, T. A. Saif. “The mechanical sensitivity of vesicle dynamics of *in-vitro* and *in-vivo* neurons” *Technical Proceedings of the 2011 NSTI Nanotechnology Conference and Expo, NSTI-Nanotech*, 3 : 436-439. 2011
2. **W. Ahmed**, M. H. Kural, T. A. Saif. “A novel platform for *in-situ* investigation of cells and tissues under mechanical strain” *Acta Biomaterialia*, 6: 2979-90. 2010 (DOI: 10.1016/j.actbio.2010.02.035)
1. **W. Ahmed**, T. Wolfram, A. Goldyn, K. Bruellhoff, B. Aragues Rioja, M. Moller, J. P. Spatz, T. A. Saif, J. Groll, R. Kemkemer. “Myoblast morphology and organization on biochemically micro-patterned hydrogel coatings under cyclic mechanical strain” *Biomaterials*, 31: 250-8. 2010 (DOI: 10.1016/j.biomaterials.2009.09.047)

## Selected Invited Seminars (4 of 17)

4. World Congress of Biomechanics, Dublin, Ireland. “Nonequilibrium dissipation in living oocytes”, July 2018
3. California Institute of Technology, Pasadena, CA. Condensed Matter Physics. “Nonequilibrium dissipation in living oocytes”, May 2017
2. California State University, Fullerton, CA. Department of Biological Science. “Active mechanics keeps our cells alive”, Nov. 2016
1. Max Planck Institute for Intelligent Systems, Stuttgart, Germany. “Active mechanics reveal molecular-scale kinetics in living oocytes”, Jul. 2016