AFM BioMed Conference San Diego, December (13)14-17, 2014

After Barcelona 2007 (Spain), Monterey 2008 (USA), Red Island 2010 (Croatia), Paris 2011 (France) and Shanghai 2013 (China), AFM BioMed Conference has the pleasure to announce the 6th conference on AFM for Life Sciences and Nanomedicine, on December (13)14-17, 2014 (including training) in San Diego, California, USA.

The conference is hosted by the University of California, San Diego (UCSD). The venue is the Auditorium of Sanford Consortium for Regenerative Medicine. The Conference is chaired by Professor Adam Engler, UCSD.

**PROGRAM**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Chairs</th>
<th>Invited Speakers</th>
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</thead>
<tbody>
<tr>
<td>Imaging</td>
<td>Clemens Franz</td>
<td>James J. De Yoreo</td>
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<tr>
<td></td>
<td>IT, Karlsruhe, Germany</td>
<td>PNNL, Richland, USA</td>
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<tr>
<td>Integrative AFM Developments</td>
<td>Robert Ros</td>
<td>Tilman Schäffer</td>
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<td></td>
<td>ASU, Tempe, USA</td>
<td>University of Tübingen, Germany</td>
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<tr>
<td>Forces and Biomechanics</td>
<td>Hermann Gaub</td>
<td>Hongbin Li</td>
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<td>LMU Munich, Germany</td>
<td>UBC, Vancouver, Canada</td>
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<tr>
<td>Biomedical Applications</td>
<td>James Gimzewski</td>
<td>Hans Oberleithner</td>
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<td></td>
<td>UC Los Angeles, USA</td>
<td>Münster University, Germany</td>
</tr>
</tbody>
</table>

Organizing Committee
- Pierre Parot CEA Marcoule, France
- Jean-Luc Pellequer CEA Marcoule, France
- Daniel Navajas University of Barcelona - IBEC, Spain
- Sanjay Kumar UC Berkeley, USA
- Vesna Svetličić Rudjer Boskovic Institute, Zagreb, Croatia
- Simon Scheuring INSERM, Aix-Marseille Université, France
- Jun Hu Shanghai Institute of Applied Physics, Shanghai, China
- Adam Engler UC San Diego, USA

http://www.afmbiomed.org
### Workshop 1

**Sanford Consortium Room 1013A/B: Ian Armstrong**

The Dimension FastScan-Bio AFM allows direct visualization of biomolecules with an unprecedented combination of spatial and temporal resolution. The FastScan AFM is easier to use than ever before with innovative software that allows image canvas pan and zoom, and image stamping to quickly get to an area of interest. A slider bar facilitates scan rate control without the need of multiparametric adjustment to enable the user to capture dynamic events. Nano-tracking software continuously tracks an object to remain in the scanning field of view to compensate for either intrinsic or extrinsic sample movement. Realtime on-board data manipulation allows the user to create movies whilst they are scanning to see immediate results. These features and more will be demonstrated on Origami DNA samples courtesy of Dr. Masudur Rahman and Dr. Michael Norton of Marshall University.

### Workshop 2

**Sanford Consortium Room 1013A/B: Andrea Slade**

Our latest BioScope AFM is the perfect integration of AFM and inverted light microscopy. It incorporates Bruker’s latest Peak Force Tapping innovations including the new nanomechanics package, which significantly expands mechanobiology applications into a lower modulus range covering live cells and tissues. With its open access design, and bio friendly features and accessories, the latest BioScope AFM is the most integrated and easiest to use life science AFM available. The workshop will include a real-time demonstration of the functional integration of light microscopy techniques with AFM in order to conduct optically guided, high-resolution mapping of both the structural and mechanical properties of mammalian cells.

### Conference Registration / Poster Installation

**16:00-18:00**

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http://afmbiomed.org
All the scientific sessions will happen in the

**Roth Auditorium of Sanford Consortium for Regenerative Medicine.**

**Sunday Dec 14th 2014 - DAY 1**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
<th>Institution / Location</th>
</tr>
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<tbody>
<tr>
<td>8:00</td>
<td><strong>Registration / Poster Installation</strong></td>
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<tr>
<td>8:45</td>
<td>Welcome address and Conference Introduction</td>
<td><em>Adam J. Engler, Conference Chair</em></td>
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<td><em>Shu Chien, Director of IEM</em></td>
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<tr>
<td>9:00</td>
<td><strong>Invited Lecture:</strong> “Using in situ AFM to understand how proteins assemble into ordered structures that direct the formation of mineralized tissues”</td>
<td><em>James J. De Yoreo</em>, Pacific Northwest National Laboratory, Richland, WA, USA</td>
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<tr>
<td>9:30</td>
<td>“Marine polysaccharide networks: self-assembly vs. self-organization revealed by atomic force microscopy”</td>
<td><em>Vesna Svetličić</em>, Ruđer Bošković Institute, Zagreb, Croatia</td>
<td>1-1</td>
</tr>
<tr>
<td>9:50</td>
<td>“Protein-protein and Protein-membrane interaction of Annexin-A5”</td>
<td><em>Atsushi Miyagi</em>, INSERM, Université Aix-Marseille, Marseille, France</td>
<td>1-2</td>
</tr>
<tr>
<td>10:10</td>
<td>“Imaging electrostatic charge distribution in biomembranes using low oscillation Dynamic Atomic Force Microscopy”</td>
<td><em>Jaime Colchero</em>, Universidad de Murcia, Madrid, Spain</td>
<td>1-3</td>
</tr>
<tr>
<td>10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:50</td>
<td>“Probing the compressibility of tumor cell nuclei by combined atomic force-confocal microscopy”</td>
<td><em>Marina Krause</em>, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands</td>
<td>1-4</td>
</tr>
<tr>
<td>11:10</td>
<td>“Probing of antigens on malaria infected erythrocytes using protein-antibody affinity based molecular force spectroscopy”</td>
<td><em>Himanshu Singh</em>, National University of Singapore, Singapore</td>
<td>1-5</td>
</tr>
<tr>
<td>11:20</td>
<td>“High-Speed Atomic Force Microscopy of ESCRT protein assembly”</td>
<td><em>Lorena Redondo-Morata</em>, INSERM, Aix-Marseille Université, Marseille, France</td>
<td>1-6</td>
</tr>
<tr>
<td>11:30</td>
<td>“Applying image registration technique to construct 3D object from topologic images”</td>
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<td>1-7</td>
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<tr>
<td>Time</td>
<td>Session</td>
<td>Speaker and Affiliation</td>
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<tr>
<td>11:40*</td>
<td>POSTER 1</td>
<td>Hoyeon Lee, KIAST, Republic of Korea</td>
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<tr>
<td></td>
<td></td>
<td>“Atomic Force Microscopy of Protein Translocation Machinery in Supported Lipid Bilayers”</td>
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<td>R.R. Sanganna Gari, University of Missouri-Columbia, Columbia, MO, USA</td>
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<tr>
<td>11:50</td>
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<td>Dongdong Lin, Fudan University, Shanghai, China</td>
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<td></td>
<td></td>
<td>“Effects of Carbon Nanotubes on the Aggregation of A-beta Peptides”</td>
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12:00 Lunch Break POSTER SESSION 1

13:30 Invited Lecture: “From Nanomechanics towards Medical Diagnosis”  
Hans Oberleithner, Münster University, Germany

14:00 “CAT (Confocal-AFM-TIRF) Microscopy as Novel Tool for E-Cadherin Knockdown Analysis in Cancer Cells”  
Mariafrancesca Cascione, Istituto Nanoscienze CNR and University of Salento, Lecce, Italy

14:20 “Fibrinogen-erythrocyte binding as biomarker of increased cardiovascular risk. An atomic force microscopy study.”  
Ana Filipa Guedes, Universidade de Lisboa, Lisbon, Portugal

14:40 “In vitro guidance of developing neural networks”  
H. Dermutz, ETH Zürich, Zürich, Switzerland

15:00 Coffee Break

15:30 “Human erythrocytes adapt to mechanical stress by regulation of cell volume and cell elasticity”  
Hermann Schillers, University of Münster, Münster, Germany

15:50 “Cancer Metastasis in Bone: Investigating the Role of Cancer Cell Interaction with Bone Matrix Proteins and Mesenchymal Stem Cells on the Single Cell Level”  
Stefanie Sudhop, Munich University of Applied Sciences, Munich, Germany

16:10* “Cartilage Morphogenesis: Investigation of Cartilage Structure and Mechanical Properties by AFM.”  

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<tr>
<th>Time</th>
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<th>Speaker, Institution</th>
<th>Room</th>
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<tbody>
<tr>
<td>16:20</td>
<td>“Three Biomedical Applications of Atomic Force Microscopy”</td>
<td>Carina Prein, Ludwig-Maximilians-University, Munich, Germany</td>
<td>1-16</td>
</tr>
<tr>
<td>16:30</td>
<td>“Study of blocking effect on T-cell by Atomic Force Microscopy”</td>
<td>Hueih-Min Chen, National Nano Device Laboratories, Hsinchu, Taiwan</td>
<td>1-17</td>
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17:00

**WELCOME PARTY**

At the Sanford Consortium

* indicates a short talk that will also be presented as a poster
<table>
<thead>
<tr>
<th>Time</th>
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<th>Presenter and Institution</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Invited Lecture: “Folding and Unfolding Mechanism of the Metalloprotein Rubredoxin: a Single Molecule Force Spectroscopy Perspective.”</td>
<td>Hongbin Li, University of British Columbia, Vancouver, Canada</td>
</tr>
<tr>
<td>9:30</td>
<td>“The elastic and structural properties of ribonucleotide embedded short DNA”</td>
<td>Hsiang-Chih Chiu, National Taiwan Normal University, Taipei, Taiwan</td>
</tr>
<tr>
<td>9:50</td>
<td>“Feeling what cells feel: Using the AFM to mimic cell mechano‐sensing”</td>
<td>Alexander Fuhrmann, UC San Diego, La Jolla, CA, USA</td>
</tr>
<tr>
<td>10:10</td>
<td>“Atomic force microscopy can distinguish force-contraction properties of human pluripotent stem cell-derived cardiomyocytes”</td>
<td>Martin Pesl, Masaryk University, Brno, Czech Republic</td>
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<tr>
<td>10:30</td>
<td>Group Photo</td>
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<tr>
<td>10:50</td>
<td>Coffee Break</td>
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<tr>
<td>11:20</td>
<td>“Stimuli-sensitive intrinsically disordered protein brushes”</td>
<td>Sanjay Kumar, UC Berkeley, Berkeley, CA, USA</td>
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<tr>
<td>11:30</td>
<td>“Investigating the Influence of LRP-1 Silencing on the Migratory potential of FTC-133 Cancer Cells by Dynamic Cell Studies and Atomic Force Microscopy”</td>
<td>Anthony Le Cigne, University of Reims Champagne-Ardenne, Reims, France</td>
</tr>
<tr>
<td>11:40*</td>
<td>“Biomechanics of articular cartilage – friction and wear at the micro-scale”</td>
<td>Joanna M. Urban, Technical University of Munich, Garching, Germany</td>
</tr>
<tr>
<td>11:50*</td>
<td>“Tension predominates the nanomechanical behavior of cells probed by Torsional Harmonic AFM”</td>
<td>Nicola Mandriota, Columbia University, New York, NY, USA</td>
</tr>
<tr>
<td>12:00*</td>
<td>“Single-molecule force spectroscopy on oligorotaxane foldamers”</td>
<td>Damien Sluysman, University of Liège, Liège, Belgium</td>
</tr>
<tr>
<td>12:10*</td>
<td>“The binding force of the staphylococcal adhesion SdrG is remarkably strong”</td>
<td>Philippe Herman-Bausier, Université catholique de Louvain, Louvain-la-Neuve, Belgium</td>
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<tr>
<td>Time</td>
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<td>Speaker/Institution</td>
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<tr>
<td>12:20</td>
<td>“The interplay between cholesterol, Aβ(1-42) and lipid phase domains determines membrane failure in complex model systems”</td>
<td>Silvia Seghezza, Istituto Italiano di Tecnologia, Genova, Italy</td>
</tr>
<tr>
<td>12:30*</td>
<td>“Lipid preference of lactose permease: combining AFM and FS with FRET measurements”</td>
<td>Jordi H. Borrell, Universitat de Barcelona, Barcelona, Spain</td>
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<tr>
<td>12:40*</td>
<td>“Dynamics and pH-dependence of Ag43 adhesins self-association probed by Atomic Force Spectroscopy”</td>
<td>Grégory Francius, Université de Lorraine, Villers-lès-Nancy, France.</td>
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<tr>
<td>13:00</td>
<td>Lunch Break</td>
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<tr>
<td>14:30</td>
<td>Invited Lecture: “Cell mechanics by scanning ion conductance microscopy”</td>
<td>Tilman Schäffer, University of Tübingen, Tübingen, Germany</td>
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<tr>
<td>15:00</td>
<td>“Fast Stiffness Mapping of Cells Using High-Bandwidth Atomic Force Microscopy”</td>
<td>Manish J. Butte, Stanford University, Palo Alto, CA, USA</td>
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<tr>
<td>15:20</td>
<td>“AFM Nanodynamics a complementary tool to conventional Micromechanical AFM-contact assessment for time dependent biomaterial”</td>
<td>Mojtaba Azadi, MIT, Cambridge, MA, USA</td>
</tr>
<tr>
<td>15:40</td>
<td>“Cellular adaptive response to mechanical signaling studied by integrated optical and atomic force microscopy”</td>
<td>Andreea Trache, Texas A&amp;M University, College Station, TX, USA</td>
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<tr>
<td>16:00</td>
<td>Coffee Break</td>
<td>-</td>
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<tr>
<td>16:30</td>
<td>“A 3D-Printed AFM System with Piezotube and Electromagnetic Actuators for Biomedical Applications”</td>
<td>Hamdi Torun, Bogazici University, Istanbul, Turkey</td>
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<tr>
<td>16:50*</td>
<td>“Uncovering Bacterial Phenotypic Heterogeneity by Combined Time-Lapse Atomic Force”</td>
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<tr>
<td>Time</td>
<td>Title</td>
<td>Speaker, Institution and Location</td>
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<tr>
<td>17:00*</td>
<td>“Correlative Light Atomic Force Electron Microscopy (CLAFEM): combining force measurements to CLEM”</td>
<td>Frank Lafont, Institut Pasteur, University of Lille, Lille, France</td>
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</tbody>
</table>

* indicates a short talk that will also be presented as a poster
# Tuesday Dec 16th 2014 - DAY 3

<table>
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<th>Time</th>
<th>Session</th>
<th>Speaker/Institution</th>
<th>Location</th>
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<tbody>
<tr>
<td>9:00</td>
<td><strong>Plenary Lecture:</strong> “Atomic Force Microscopy of cells as a Diagnostic for Cancer, cancer prevention and detection of chemo-resistance”</td>
<td>James Gimzewski, University of California, Los Angeles, CA, USA</td>
<td></td>
</tr>
<tr>
<td>9:30</td>
<td>“Fibrinogen-dependent cell-cell adhesion of erythrocytes assessment by AFM-based force spectroscopy”</td>
<td>Ana Filipa Guedes, Universidade de Lisboa, Lisbon, Portugal</td>
<td>3-1</td>
</tr>
<tr>
<td>9:50</td>
<td>“The overexpression of Lamin B1 in autosomal dominant leukodystrophy influences the mechanical properties of cell nuclei”</td>
<td>Claudio Canale, Istituto Italiano di Tecnologia, Genova, Italy</td>
<td>3-2</td>
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<tr>
<td>10:10</td>
<td>“Shear dependence of von Willebrand Factor’s interactions with Factor VIII and ADAMTS13 demonstrated at single molecular level by AFM”</td>
<td>Klaus Bonazza, Vienna University of Technology, A-1060 Vienna, Austria</td>
<td>3-3</td>
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<tr>
<td>10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:50</td>
<td>“In Vivo Lung Elastance And Stiffness Of The Decellularized Lung In A Murine Model Of Marfan Syndrome”</td>
<td>Daniel Navajas, Universitat of Barcelona, Barcelona, Spain</td>
<td>3-4</td>
</tr>
<tr>
<td>11:10*</td>
<td>“Are marine polysaccharide gels harvesting silica?”</td>
<td>Galja Pletikapić, Ruđer Bošković Institute, Zagreb, Croatia</td>
<td>3-5</td>
</tr>
<tr>
<td>11:20</td>
<td>“Obtention and characterization of acellular myocardial scaffold for cardiac tissue engineering”</td>
<td>A. Bayes-Genis, Germans Trias i Pujol University Hospital, Badalona, Spain</td>
<td>3-6</td>
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<tr>
<td>11:30*</td>
<td>“T-lymphocyte adhesion forces and mechanotransduction modulated by activation with TNF”</td>
<td>Qian Li, University of Kiel, Kiel, Germany</td>
<td>3-7</td>
</tr>
<tr>
<td>11:40*</td>
<td>“Unravelling of a mechanism of resistance to colistin in Klebsiella pneumoniae thanks to Atomic Force Microscopy”</td>
<td>Cécile Formosa, Université de Toulouse, Toulouse, France</td>
<td>3-8</td>
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<tr>
<td>11:50*</td>
<td>“Inhibition of host-pathogen interactions in cystic fibrosis The role of lectinglycoconjugates interaction”</td>
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<td>3-9</td>
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<tr>
<td>Time</td>
<td>Session</td>
<td>Title</td>
<td>Speaker, Institution</td>
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<tr>
<td>12:00</td>
<td>Lunch Break</td>
<td>POSTER SESSION 3</td>
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<tr>
<td>13:30</td>
<td>Plenary Lecture</td>
<td>“Studying early stages of fibronectin fibrillogenesis in living cells by atomic force microscopy”</td>
<td>Clemens Franz, Karlsruhe Institute of Technology, Germany</td>
</tr>
<tr>
<td>14:00</td>
<td>“Structural Analysis of Recombination Mediator Protein Rad52 by Atomic Force and Electron Microscopy”</td>
<td>Jarmila Mlouskova, Masaryk University, Brno, Czech Republic</td>
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<tr>
<td>14:20</td>
<td>“Imaging and Three-Dimensional Reconstruction of Chemical Groups in a Protein Complex using DNA Labels”</td>
<td>Duckhoe Kim, Columbia University, New York, NY, USA</td>
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<tr>
<td>14:50</td>
<td>“AFM-based approaches to high resolution imaging and electrical recording of amyloid proteins”</td>
<td>Fernando Terán Arce, UC San Diego, La Jolla, CA, USA</td>
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<td>15:10</td>
<td>Coffee Break</td>
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<tr>
<td>15:40</td>
<td>“Single-molecule reconstruction of DNA secondary structure by atomic force microscopy”</td>
<td>Alice Pyne, University College London, London, UK</td>
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<tr>
<td>16:00</td>
<td>The adsorption and disassembly of amelogenin nanospheres onto hydroxyapatite surfaces</td>
<td>Jinhui Tao, Pacific Northwest National Laboratory, Richland, WA, USA</td>
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</tr>
<tr>
<td>16:20</td>
<td>“AFM mapping of the role of the Fast Kinetics of highly toxic Alzheimer’s disease related Pyroglutamate-Modified Amyloid-β Oligomers in Membrane Binding and Membrane Permeability”</td>
<td>Joon Lee, UC San Diego, La Jolla, CA, USA</td>
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<tr>
<td>16:40*</td>
<td>“Dynamics of Toxins in Non Supported Lipid Bilayers by high-speed Atomic Force Microscopy”</td>
<td>Ignacio López de Blas, INSERM, Université Aix-Marseille, Marseille, France</td>
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18:00

**GALA BANQUET**

Birch Aquarium at Scripps

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### Wednesday Dec 17th 2014 - DAY 4

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Site</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Plenary Lecture: “Mechanical Nanotomography of Cells Invading 3D-Matrices”</td>
<td>Robert Ros, Arizona State University, Tempe, AZ, USA</td>
</tr>
<tr>
<td>9:30</td>
<td>“How to overcome the effect of spurious resonances on the quantification of tip-sample interactions”</td>
<td>Mario S Rodrigues, Universidade de Lisboa, Lisbon, Portugal</td>
</tr>
<tr>
<td>9:50</td>
<td>“Force-controlled patch-clamp using atomic force microscopy”</td>
<td>Dario Ossola, ETH Zurich, Zurich, Switzerland</td>
</tr>
<tr>
<td>10:30</td>
<td>Coffee Break</td>
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</tr>
<tr>
<td>10:50</td>
<td>“Contact Resonance Force Microscopy of Soft Materials in Liquid”</td>
<td>Allison B. Churnside, National Institute of Standards and Technology, Boulder, CO, USA</td>
</tr>
<tr>
<td>11:10</td>
<td>“AFM Circular Mode: A new powerful tool for applications in NanoBiotechnology”</td>
<td>Olivier Noel, Université du Maine, Le Mans, France</td>
</tr>
<tr>
<td>11:30</td>
<td>“New Conducting Atomic Force Microscopy for Simultaneous Electrical Recording and Imaging of Biomolecules”</td>
<td>Brian Meckes, UC San Diego, La Jolla, CA, USA</td>
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<tr>
<td>11:50</td>
<td>Lunch Break POSTER SESSION 4</td>
<td></td>
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<tr>
<td>13:00</td>
<td>“Parkin affects the biomechanical properties of human fibroblasts: a CAT microscopy study”</td>
<td>Stefano Leporatti, Istituto Nanoscienze CNR, Lecce, Italy.</td>
</tr>
<tr>
<td>13:20</td>
<td>“Local and global cell mechanics depend on adhesion geometry”</td>
<td>Annafrancesca Rigato, INSERM, Université Aix-Marseille, Marseille, France</td>
</tr>
<tr>
<td>13:40</td>
<td>“Influence of cellular adhesiveness on the formation of cell boundaries”</td>
<td>Steve Pawlizak, University of Leipzig, Leipzig, Germany</td>
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<thead>
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<tbody>
<tr>
<td>14:00</td>
<td>“Impact of the Actin Cytoskeleton on the Mechanical Properties of Cells and Tissues”</td>
<td><strong>Celine Heu</strong>, University of New South Wales, Sydney, Australia</td>
<td>4-9</td>
</tr>
<tr>
<td>14:20</td>
<td>“Dynamic coupling of ALCAM to the actin cortex strengthens cell adhesion to CD6”</td>
<td><strong>Joost te Riet</strong>, Radboud UMC, Nijmegen, The Netherlands</td>
<td>4-10</td>
</tr>
<tr>
<td>14:40</td>
<td>“Nanomechanical and topographical imaging of living cells by Atomic Force Microscopy with colloidal probes”</td>
<td><strong>Alessandro Podestà</strong>, Università degli Studi di Milano, Milano, Italy</td>
<td>4-11</td>
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<tr>
<td>15:30</td>
<td><strong>Awards Ceremony</strong></td>
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**Announcement of AFM BioMed Conference 2016**
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<tr>
<th>Board #</th>
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| 1*     | “Uncovering Bacterial Phenotypic Heterogeneity by Combined Time-Lapse| Haig Alexander Eskandarian
         | Atomic Force and Optical Microscopy”                                   | Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland           |
| 2      | “High-speed force mapping on living cells with a small-cantilever AFM” | Tilman Schäffer
         |                                                                         | University of Tübingen, Tübingen, Germany                                  |
| 3*     | “Correlative Light Atomic Force Electron Microscopy (CLAFEM):         | Frank Lafont
         | combining force measurements to CLEM”                                  | Institut Pasteur, Univeristy of Lille, Lille, France                       |
| 4      | “Non-contact imaging combining the Scanning Ion Conductance Microscopy| Livie Dowling-Carter
         | and the Atomic Force Microscope”                                      | ETH Zürich, Zürich, Switzerland                                            |
| 5      | “Improved Single Molecule Force Spectroscopy using Micromachined     | Thomas T. Perkins
         | Cantilevers”                                                           | National Institute of Standards and Technology, Boulder, CO, USA           |
| 6      | FluidFM for local electroplating and electrografting in liquid       | Luca Hirt
         |                                                                         | Institute for Biomedical Engineering, ETH Zurich, Switzerland              |
| 7      | Photoplastic AFM Cantilevers with integrated microchannel for Single | Vincent Martinez
         | Cell Experiments                                                       | Institute for Biomedical Engineering, ETH Zurich, Switzerland              |
| 8      | “A sticky tale: Sample preparation technique determines cell surface  | Thomas Mueller
<pre><code>     | receptor mobility and adhesion”                                       | University of Birmingham                                                  |
</code></pre>
<p>| 9*     | “Dynamics of Toxins in Non Supported Lipid Bilayers by high-speed    | Ignacio López de Blas,                                                |
| Atomic Force Microscopy”                                              | INSERM, Université Aix-Marseille, Marseille, France                      |</p>
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<td>10*</td>
<td>“Atomic Force Microscopy of Protein Translocation Machinery in Supported Lipid Bilayers”</td>
<td>R.R. Sanganna Gari</td>
<td>University of Missouri-Columbia, Columbia, MO, USA</td>
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<td>Atomic Force Microscopy Study on Photosystem II-rich Region of Thylakoid Membrane in Chlamydomonas reinhardtii during State Transition</td>
<td>Witchukorn Phuthong</td>
<td>Stanford University</td>
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<td>Estimating water content of individual fibrin fibers</td>
<td>Alina Popescu</td>
<td>NCI,NIH</td>
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<td>Exploring the structure of exosomes with nanofilaments using atomic force microscopy</td>
<td>Jung-Reem Woo</td>
<td>UC Los Angeles</td>
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<td>Stable imaging of heterogeneous samples in liquids with atomic force microscopy</td>
<td>Jaime Colchero</td>
<td>Universidad de Murcia</td>
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<td>New emerging technique of Electrostatic force Microscopy AFM gives insight into the DNA-protein interaction path</td>
<td>Parminder Kaur</td>
<td>North Carolina state University</td>
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<td>16</td>
<td>“Hydrophobic interaction governs unspecific adhesion of staphylococci”</td>
<td>Nicolas Thewes</td>
<td>Saarland University, Saarbrücken, Germany</td>
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<td>17*</td>
<td>“Tension predominates the nanomechanical behavior of cells probed by Torsional Harmonic AFM”</td>
<td>Nicola Mandriota</td>
<td>Columbia University, New York, NY, USA</td>
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<td>18*</td>
<td>“Single-molecule force spectroscopy on oligorotaxane foldamers”</td>
<td>Damien Sluysmans</td>
<td>University of Liège, Liège, Belgium</td>
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<td>“Polymeric Ultrasound Contrast Agents Mechanical Properties”</td>
<td>Baptiste Sarrazin</td>
<td>CEA Saclay, Saclay, France</td>
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<td>20*</td>
<td>“The binding force of the staphylococcal adhesion SdrG is remarkably strong”</td>
<td>Philippe Herman-Bausier</td>
<td>Université catholique de Louvain, Louvain-la-Neuve, Belgium</td>
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<td>“Elasticity of pulmonary arteries within human lung tissue: Application of AFM to study pulmonary arterial hypertension”</td>
<td>Delphine Sicard</td>
<td>Mayo Clinic, Rochester, MN, USA</td>
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<td>22*</td>
<td>“Dynamics and pH-dependence of Ag43 adhesins self-association probed by Atomic Force Spectroscopy”</td>
<td>Grégory Francius</td>
<td>Université de Lorraine, Villers-lès-Nancy, France</td>
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<td>23*</td>
<td>“Biomechanics of articular cartilage – friction and wear at the micro-scale”</td>
<td>Joanna M. Urban, Technical University of Munich, Garching, Germany</td>
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<td>Characterisation of the mechanical properties of blood and artificial clots</td>
<td>Celine Heu</td>
<td>MechBio Team, Graduate School of Biomedical Engineering, UNSW Australia</td>
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<td>Studying in situ protein adsorption and bacterial adhesion via fast scanning AFM and force spectroscopy</td>
<td>Christian Spengler</td>
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<td>Atomic force microscopy reveals distinct regional nanomechanical properties of the extracellular matrix in healthy, aged, and osteoarthritic native human menisci</td>
<td>Jeanie Kwok</td>
<td>UC San Diego</td>
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<td>27*</td>
<td>“Lipid preference of lactose permease: combining AFM and FS with FRET measurements”</td>
<td>Jordi H. Borrell</td>
<td>Universitat de Barcelona, Barcelona, Spain</td>
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<td>“Investigating the Impact of Antigen Density on Antigen-antibody Binding Efficiency with AFM”</td>
<td>Bin Li</td>
<td>Shanghai Institute Of Applied Physics, Shanghai, China</td>
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<td>29*</td>
<td>“Are marine polysaccharide gels harvesting silica?”</td>
<td>Galja Pletikapić</td>
<td>Ruđer Bošković Institute, Zagreb, Croatia</td>
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<td>30*</td>
<td>“Unravelling of a mechanism of resistance to colistin in Klebsiella pneumoniae thanks to Atomic Force Microscopy”</td>
<td>Cécile Formosa</td>
<td>Université de Toulouse, Toulouse, France</td>
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<td>31*</td>
<td>“Inhibition of host-pathogen interactions in cystic fibrosis The role of lectin-glycoconjugates interaction”</td>
<td>Francesca Zuttion</td>
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<td>“CFTR is involved in polyphenol-induced swelling of the endothelial glyocalyx”</td>
<td>Université de Lyon, Lyon, France</td>
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<td>Hermann Schillers, University of Münster, Münster, Germany</td>
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<td>“Cartilage Morphogenesis: Investigation of Cartilage Structure and Mechanical Properties by AFM.”</td>
<td>Carina Prein, Ludwig-Maximilians-University, Munich, Germany</td>
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<td>“AFM-based sarcolemmal surface analysis of living cardiomyocytes unveils unexpected mitochondrial shift in heart failure”</td>
<td>Véronique Lachaize, CNRS, LAAS, Toulouse, France</td>
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<td>“T-lymphocyte adhesion forces and mechanotransduction modulated by activation with TNF”</td>
<td>Qian Li, University of Kiel, Kiel, Germany</td>
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<td>“Using the FluidFM to connect neurons, a step towards building engineered networks”</td>
<td>Mathias J. Aebersold, Laboratory of Biosensors and Bioelectronics, Institute for Biomedical Engineering, ETH Zurich</td>
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<td>The role of glyocalyx in cellular interactions between lung carcinoma cells and the endothelium</td>
<td>Katarzyna Malek-Zietek, Center for Nanometer-scale Science and Advanced Materials, NANOSAM, Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, Reymonta 4, 30-059 Krakow, Poland</td>
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* indicates a short talk that will also be presented as a poster