

**FINAL PROGRAMME & BOOK OF ABSTRACTS**

2 – 3 June 2016

DECHEMA-Haus · Frankfurt am Main · Germany

# Single Cell Technologies 2016

**Advances in isolation, handling  
and analytics of single cells**

[www.dechema.de/singlecell2016](http://www.dechema.de/singlecell2016)

## EXHIBITORS

### EXHIBITORS



**Nanosurf GmbH**  
Langen/D



**SyntenTec GmbH**  
Elmshorn/D



**TATAA Biocenter GmbH**  
Saarbrücken/D



**Becton Dickinson GmbH**  
Heidelberg/D



**Menarini Silicon Biosystems**  
Castel Maggiore (BO)/I



**Schaefer Technologie GmbH**  
Langen/D



**FLUIDIGM GmbH**  
München/D



**cytena GmbH**  
Freiburg/D

## GENERAL INFORMATION

### SCIENTIFIC COMMITTEE

**Rainer Fischer** RWTH Aachen University and Fraunhofer IME, Aachen/D  
**Hansjörg Hauser** Helmholtz Centre for Infection Research, Braunschweig/D  
**Beate Müller-Tiemann** Sanofi-Aventis Deutschland GmbH, Frankfurt am Main/D  
**Udo Reichl** Otto von Guericke University Magdeburg and Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg/D  
**Karin Tiemann** DECHEMA e.V., Frankfurt am Main/D  
**Andrea Traube** Fraunhofer IPA, Stuttgart/D

### CONFERENCE VENUE

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## LECTURE PROGRAMME

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<b>Wednesday, 1 June 2016</b>	
19:00 <b>Get-Together at Ristorante La Contessa</b> Schloßstraße 126, 60486 Frankfurt am Main Informal pre-conference meeting, self-payment basis Registration necessary (keyword "DECHEMA")	
<b>Thursday, 2 June 2016</b>	
08:15 <b>Registration</b>	
<i>Max-Buchner-Hörsaal</i>	
09:00 <b>WELCOME ADDRESS</b> B. Müller-Tiemann, Sanofi-Aventis Deutschland GmbH, Frankfurt am Main/D	
<b>ADDRESSING SINGLE CELL HETEROGENITY</b>	
<i>Chair: U. Reichl, Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg/D</i>	
09:05 <b>KEYNOTE LECTURE</b> <b>Addressing single-cell heterogeneity with targeted and post-hoc analysis</b> T. Kroneis, University of Gothenburg/SE	11
09:50 <b>Heterogeneity in onset of endogenous and synthetic gene expression</b> U. Rand <sup>1</sup> ; M. Köster <sup>1</sup> ; J. Riedel <sup>1</sup> ; D. Wirth <sup>1</sup> ; <sup>1</sup> Helmholtz Zentrum für Infektionsforschung, Braunschweig/D	12
10:15 <b>Heterogeneity in influenza A virus infection unveiled by single-cell analysis and stochastic mathematical modeling</b> S. Kupke <sup>1</sup> ; F. Heldt <sup>1</sup> ; U. Reichl <sup>2</sup> ; T. Frensing <sup>2</sup> ; <sup>1</sup> Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg/D; <sup>2</sup> Max Planck Institute for Dynamics of Complex Technical Systems and Otto von Guericke University Magdeburg/D	13
10:40 <b>Enrichment, isolation and profiling of single circulating tumor cells from patients with colon cancer</b> S. Liebs <sup>1</sup> ; U. Keilholz <sup>2</sup> ; <sup>1</sup> DTK Berlin/D; <sup>2</sup> Charite Universitätsmedizin Berlin/D	14
11:05 <b>Coffee Break</b>	
<b>SINGLE CELL ANALYTICS: THE TEMPO-SPATIAL CONTEXT</b>	
<i>Chair: H. Hauser, Helmholtz-Zentrum für Infektionsforschung (HZI), Braunschweig/D</i>	
11:35 <b>KEYNOTE LECTURE</b> <b>Long-term single cell quantification: New tools for old questions</b> T. Schroeder, ETH Zürich, Basel/CH	16
12:20 <b>An integrated platform for dynamic microfluidic experimentation with single-cell resolution</b> C. Sachs <sup>1</sup> ; C. Probst <sup>1</sup> ; A. Grünberger <sup>1</sup> ; W. Wiechert <sup>1</sup> ; J. Frunzke <sup>1</sup> ; D. Kohlheyer <sup>1</sup> ; K. Nöh <sup>1</sup> ; <sup>1</sup> Forschungszentrum Jülich GmbH, Jülich/D	17
12:45 <b>Lunch</b>	

## LECTURE PROGRAMME

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<b>Thursday, 2 June 2016</b>	
<i>Max-Buchner-Hörsaal</i>	
<b>MONOCLONALITY</b>	
<i>Chair: B. Müller-Tiemann, Sanofi-Aventis Deutschland GmbH, Frankfurt am Main/D</i>	
14:00 <b>KEYNOTE LECTURE</b> <b>Scientific and regulatory aspects of clonality of biopharmaceutical production cell lines</b> T. Wenger, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss/D	18
14:45 <b>KEYNOTE LECTURE</b> <b>Technical solutions for ensuring monoclonality of biopharmaceutical production cell lines</b> U. Göpfert, T. Scherzinger, L. Woltering, S. Hansen, Roche Diagnostics GmbH, Penzberg/D	19
15:30 <b>Poster Pitch (P.01)</b> <b>An automated cell screening system for the generation of stable cell lines for the manufacture of lentiviral vectors</b> L. Pearson <sup>1</sup> ; L. Dunne <sup>1</sup> ; E. Macchiarulo <sup>1</sup> ; P. Jones <sup>1</sup> ; H. Maunder <sup>1</sup> ; B. Williams <sup>1</sup> ; K. Mitrophanous <sup>1</sup> ; H. Stewart <sup>1</sup> ; <sup>1</sup> Oxford BioMedica, Oxford/UK	20
15:35 <b>Poster Pitch (P.02)</b> <b>Utilizing single cell deposition for cell line development: evaluation of modules for setting up a new monoclonalization workflow</b> C. Goetzberger-Schad <sup>1</sup> ; A. Mayer-Bartschmid <sup>1</sup> ; N. Pawlowski <sup>1</sup> ; <sup>1</sup> Bayer AG, Wuppertal/D	21
15:40 <b>Coffee Break</b>	
<b>SINGLE CELL PRINTING</b>	
<i>Chair: A. Traube, Fraunhofer IPA, Stuttgart/D</i>	
16:15 <b>KEYNOTE LECTURE</b> <b>Drop-on-demand printing for single-cell isolation</b> J. Schöndube, A. Gross, cytena GmbH, Freiburg/D; J. Riba, S. Zimmermann, University of Freiburg/D	22
17:00 <b>High precision single cell printing by laser-induced-forward transfer</b> A. Gillner <sup>1</sup> ; D. Riester <sup>1</sup> ; N. Nottrodt <sup>1</sup> ; M. Wehner <sup>1</sup> ; <sup>1</sup> Fraunhofer Institute for Laser Technology, Aachen/D	23
17:25 <b>Investigations into cell behaviours during printing within a piezo dispense capillary and single cell deposition</b> E. Cheng <sup>1</sup> ; K. Chueng <sup>1</sup> ; O. Berthuy <sup>2</sup> ; C. Marquette <sup>2</sup> ; G. Tourniaire <sup>3</sup> ; <sup>1</sup> University of British Columbia, Vancouver/CDN; <sup>2</sup> Lyon 1 Université, Lyon/F; <sup>3</sup> Scienion AG, Berlin/D	24
<b>ENABLING TECHNOLOGIES</b>	
<i>Chair: A. Traube, Fraunhofer IPA, Stuttgart/D</i>	
17:50 <b>SHORT TECHNOLOGY TALK (17:50 – 18:05)</b> <b>Label-free and non-invasive single cell analysis using Raman spectroscopy</b> K. Schütze <sup>1</sup> ; H. Kremling <sup>1</sup> ; R. Werk <sup>2</sup> ; F. Sekhavati <sup>3</sup> ; J. Rädler <sup>3</sup> ; D. Marino <sup>4</sup> ; S. Meyer <sup>4</sup> ; <sup>1</sup> CellTool GmbH, Bernried/D; <sup>2</sup> Babende Institut für medizinische-mikrobiologische Forschung, Würzburg/D; <sup>3</sup> University of Munich/Center for NanoScience (CeNS), Munich/D; <sup>4</sup> Tissue Biology Research Unit, Department of Surgery, University Children`s Hospital, Zurich/CH	26
18:15 <b>DINNER (18:15 – 21:30)</b> (included in conference fee, registration necessary, detailed information will be given later)	

Friday, 3 June 2016

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*Max-Buchner-Hörsaal*

## LEAD DISCOVERY AND TECHNICAL SOLUTIONS

*Chair: R. Fischer, Fraunhofer IME, Aachen/D*

09:00	<b>KEYNOTE LECTURE</b> <b>Living droplets – phenotypic and genotypic single-cell screens for antibody discovery and biomedical research</b> C.A. Merten, EMBL - European Molecular Biology Laboratory, Heidelberg/D	27
09:45	<b>Immediate drop on demand technology - Handling of cells in nano liter scale</b> L. Schober <sup>1</sup> ; C. Laske <sup>1</sup> ; T. Brode <sup>1</sup> ; A. F. Traube <sup>1</sup> ; A. Traube <sup>1</sup> ; <sup>1</sup> Fraunhofer IPA, Stuttgart/D	28
10:10	<b>An antibody discovery platform for mining rare monoclonal antibodies using single-cell technology</b> T. Dabdoubi <sup>1</sup> ; B. Cameron <sup>1</sup> ; N. Maestrali <sup>1</sup> ; S. Somarriba <sup>1</sup> ; F. Soubrier <sup>1</sup> ; N. Couteault <sup>1</sup> ; A. Peretti-Renaud <sup>1</sup> ; E. Deschamps <sup>1</sup> ; L. Maton <sup>1</sup> ; M. Reau <sup>1</sup> ; M. Annat <sup>1</sup> ; D. Bournizel <sup>1</sup> ; K. Radošević <sup>1</sup> ; <sup>1</sup> Sanofi, Global BioT, Vitry sur Seine/F	30
10:35	<b>Poster Pitch (P.03)</b> <b>Evaluation of droplet based microfluidics for antibody lead discovery</b> J. Fitting <sup>1</sup> ; M. Strerath <sup>1</sup> ; B. Müller-Tiemann <sup>2</sup> ; R. Hoet <sup>1</sup> ; U. Gritzan <sup>1</sup> ; F. McAleese Eser <sup>1</sup> ; H. Hiemisch <sup>3</sup> ; G. Redlich <sup>2</sup> ; A. Eicker <sup>1</sup> ; <sup>1</sup> Bayer Pharma AG, Cologne/D; <sup>2</sup> Bayer Pharma AG, Wuppertal/D; <sup>3</sup> Bayer Pharma AG, Berlin/D	31
10:40	Coffee Break	

## ASSAY TECHNOLOGIES

*Chair: U. Reichl, Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg/D*

11:10	<b>KEYNOTE LECTURE</b> <b>Progress in single cell protein analysis: motivations and applications</b> D.R. Klug, Imperial College London/UK	32
11:55	<b>Single cell force spectroscopy by fluidic force microscopy for the measurement of cell adhesion forces and cell elasticity</b> A. Sancho <sup>1</sup> ; F. Jakob <sup>1</sup> ; J. Groll <sup>1</sup> ; <sup>1</sup> Julius Maximilians University of Würzburg, Würzburg/D	33
12:20	<b>From single-cell perturbation to subcellular analysis using fluidic force microscopy</b> O. Guillaume-Gentil <sup>1</sup> ; T. Zambelli <sup>1</sup> ; J. Vorholt <sup>1</sup> ; <sup>1</sup> Eidgenössische Technische Hochschule Zürich (ETHZ), Zurich/CH	34
12:45	<b>A novel element microscope for multiplex imaging of single cells</b> L. Müller <sup>1</sup> ; A. Herrmann <sup>1</sup> ; <sup>1</sup> Federal Institute for Materials Research and Testing (BAM), Berlin/D	35
13:10	<b>Dielectrophoresis-based microfluidic systems for live cell processing at the single-cell level</b> M. Kirschbaum <sup>1</sup> ; C. Guernth-Marschner <sup>1</sup> ; C. Duschl <sup>1</sup> ; <sup>1</sup> Fraunhofer IZI-BB, Potsdam/D	36
13:35	Closing Remarks	
13:40	Lunch (13:40 – 14:30)	

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Posters will be on display throughout the conference.

Discussions are welcome during the lunch and coffee breaks.

P.01	<b>An automated cell screening system for the generation of stable cell lines for the manufacture of lentiviral vectors</b> L. Pearson <sup>1</sup> ; L. Dunne <sup>1</sup> ; E. Macchiarulo <sup>1</sup> ; P. Jones <sup>1</sup> ; H. Maunder <sup>1</sup> ; B. Williams <sup>1</sup> ; K. Mitrophanous <sup>1</sup> ; H. Stewart <sup>1</sup> ; <sup>1</sup> Oxford BioMedica, Oxford/UK	20
P.02	<b>Implementing single cell deposition and automated image analysis in cell line development</b> C. Goetzberger-Schad <sup>1</sup> ; A. Mayer-Bartschmid <sup>1</sup> ; N. Pawlowski <sup>1</sup> ; <sup>1</sup> Bayer AG, Wuppertal/D	21
P.03	<b>Evaluation of droplet based microfluidics for antibody lead discovery</b> J. Fitting <sup>1</sup> ; M. Strerath <sup>1</sup> ; B. Müller-Tiemann <sup>2</sup> ; R. Hoet <sup>1</sup> ; U. Gritzan <sup>1</sup> ; F. McAleese Eser <sup>1</sup> ; H. Hiemisch <sup>3</sup> ; G. Redlich <sup>2</sup> ; A. Eicker <sup>1</sup> ; <sup>1</sup> Bayer Pharma AG, Cologne/D; <sup>2</sup> Bayer Pharma AG, Wuppertal/D; <sup>3</sup> Bayer Pharma AG, Berlin/D	31
P.04	<b>Comparison of the adhesion of single prokaryotic and eukaryotic cells to different surfaces using single cell force microscopy</b> P. Wysotzki <sup>1</sup> ; W. Baumann <sup>1</sup> ; J. Gimsa <sup>1</sup> ; <sup>1</sup> University of Rostock, Rostock/D	38
P.05	<b>Use of a micromanipulation system for single microbial cell transfer</b> M. Hohnadel <sup>1</sup> ; M. Lemaitre <sup>1</sup> ; G. Waiche <sup>1</sup> ; R. Chollet <sup>1</sup> ; <sup>1</sup> Merck, Molsheim/F	40
LMP.06	<b>A large scale and multiplex patterning process for cell adhesion assay</b> C. Colin <sup>1</sup> ; J. Foncy <sup>1</sup> ; A. Degache <sup>2</sup> ; A. Estève <sup>1</sup> ; J. Cau <sup>2</sup> ; B. Berteloite <sup>2</sup> ; E. Trévisiol <sup>1</sup> ; C. Vieu <sup>1</sup> ; L. Malaquin <sup>1</sup> ; <sup>1</sup> LAAS CNRS, Toulouse/F; <sup>2</sup> INNOPSYS, Carbonne/F	42
LMP.07	<b>Photostick: a method for selective isolation of target cells from culture</b> M. Chien <sup>1</sup> ; <sup>1</sup> Harvard University, Cambridge/USA	43
LMP.08	<b>Stochastic modeling of noise in gene regulation and of its effect on single-cell heterogeneity</b> S. Hahl <sup>1</sup> ; A. Kremling <sup>1</sup> ; <sup>1</sup> Technische Universität München, Garching/D	44
LMP.09	<b>High-throughput single cell isolation methods for analysis and 3D cultivation</b> M. Widder <sup>1</sup> ; L. Karen <sup>1</sup> ; T. Förster <sup>1</sup> ; R. Römer <sup>1</sup> ; B. Kekec <sup>1</sup> ; G. Gastrock <sup>1</sup> ; <sup>1</sup> Institut für Bioprozess- und Analysenmesstechnik e.V., Heilbad Heiligenstadt/D	45

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