

# TECHNICAL PROGRAMME

## MICRONEEDLES 2016

The 4<sup>th</sup> International Conference on Microneedles  
*GSK House, London*

### Day 1 - Monday 23 May

### Morning Session

08:45 Arrival at GSK House, security clearance, guided transfer to Events Centre

09:15 - 09:40 **Welcome, health and safety briefing and scene setting**  
Marie Mc Grath, GSK; James Birchall and Sion Coulman, Cardiff University

**Session 1: GLOBAL CHALLENGES – IMPROVING VACCINE DELIVERY**  
Chairs – Jim Janimak, GSK and Matthew Ivory, Cardiff University

09:40 - 10:15 **Keynote: The global vaccine problem**  
Birgitte Giersing, WHO; Darin Zehrung, PATH

10:15 - 10:45 **Keynote: Skin-associated immune system: cutaneous vaccination opportunities and controversies**  
Marcel Teunissen, Academic Medical Centre Amsterdam

10:45 - 11:15 *Coffee break*

11:15 - 11:45 **Invited: The key challenges for microneedle delivery of vaccines**  
Derek O'Hagan, GSK Vaccines

11:45 - 12:15 **Invited: Improving the reach of effective vaccines with Nanopatches**  
Mark Kendall, University of Queensland

12:15 - 12:30 **Selected Abstract: Hollow microneedle mediated prolonged intradermal immunization schedules lead to superior immune responses for inactivated polio vaccine**  
Joke Bouwstra, Leiden University

12:30 - 13:30 *Lunch and Poster/Exhibitor Orientation*

**TECHNOLOGY SHOWCASE**

Chair - Sion Coulman, Cardiff University

13.30 - 13.50 **Invited: Delivery of a solid dose of a triple vaccine using microneedles**  
Faz Chowdhury, Nemaura Pharma

13.50 - 14.10 **Invited: Delivery of vaccines and therapeutic peptides using 3M's solid microstructured transdermal system**  
Mark Tomai, 3M Drug Delivery Systems

**Session 2: GLOBAL CHALLENGES – IMPROVING VACCINE DELIVERY (Cont.)**  
Chairs – Darin Zehrung, PATH and Maeliosa McCrudden, Queen's University Belfast

14:10 - 14:45 **Rapid fire flash presentations 1 (Vaccines)**

14.45- 15.00 **Selected abstract – Evaluating the potential commodity and systems costs and health impact of microarray patches for measles-rubella and poliovirus vaccination**  
Courtney Jarrahian, PATH

15.00 - 15:20 **Invited: Addressing vaccine delivery challenges with dissolvable microneedle patches**  
Anne Moore, University College Cork

15:20 - 15:50 *Coffee break and poster/exhibitor viewing*

15:50 - 16.20 **Session Panel (Giersing, Zehrung, Teunissen, O'Hagan, Kendall, Moore)**  
Moderator – Bobby Singh, Corium International

**Session 3: ASSORTED INNOVATIONS**  
Chairs – James Birchall, Cardiff University and Megan Kelchen, University of Iowa

16:20 - 16:35 **Selected abstract – Hollow microneedles for intradermal cell delivery**  
Benedetta Gualeni, Extraject Technologies Ltd

16:35 - 16:50 **Selected abstract – Microneedle particles for drug delivery to large surface area tissues**  
Andrew Tadros, Georgia Institute of Technology

16:50 - 17:05 **Selected abstract – Worm-inspired microneedle patches for enhanced tissue adhesion and protein drug delivery**  
Seung Yang, Pusan National University

17:05 - 17:15 **Selected abstract – Accuracy and feasibility of piezoelectric inkjet technologies for microneedle coating applications**  
Leonie Hilliard, Scienion AG

17:15 - 17:35 **Rapid fire flash presentations 2 (Assorted Innovations)**

17:35 - 19:30 **Attended Poster and Exhibitor Session with Drinks Reception**

**Session 4: MICRONEEDLES IN THE CLINIC**  
Chairs – Efrat Kochba, Nanopass and Sonja Vucen, University College Cork

09:00 - 09:30 **Keynote: Microneedles in clinic trials: skin patch for influenza vaccination and suprachoroidal injection to treat ocular inflammation**  
Mark Prausnitz, GeorgiaTech

09:30 - 10:00 **Keynote: Transcutaneous influenza vaccination using a dissolving microneedle patch**  
Sachiko Hirobe, Osaka University

10:00 - 10:20 **Invited: MicroCor<sup>®</sup>: Broad-based clinical stage microarray patch technology**  
Bobby Singh, Corium International

*10:20 - 10:50 Coffee break and attended poster viewing – Odd numbers present*

10:50 - 11:10 **Invited: Clinical Experience with the MicronJet600<sup>®</sup> - from vaccines to immunotherapy and beyond**  
Yotam Levin, Nanopass

11:10 - 11:25 **Selected abstract - New intradermal drug delivery devices based on hollow microneedle**  
Paul Vescovo, Debiotech SA

11:25 - 11:40 **Selected abstract - Self-application of microneedle arrays: a study incorporating pressure-indicating sensor films**  
Emma McAlister, Queen's University Belfast

**11:40 - 11:55 Rapid fire flash presentations 3 (Clinical Applications)**

11:55 - 12:20 **Session Panel (Prausnitz, Hirobe, Singh, Levin)**  
Moderator – Ryan Donnelly, Queen's University Belfast

*12:20 - 13:20 Lunch and poster/exhibitor viewing*

**Session 5: COMMERCIALISATION AND REGULATORY ADOPTION**

Chair – Marie Mc Grath, GSK

- 13:20 - 13:50 **Invited: Scientific Considerations for Product Development, Manufacturing and Quality Control**  
James Norman, US Food and Drug Administration  
Caroline Strasinger, US Food and Drug Administration
- 13:50 - 14:10 **Invited: Regulatory aspects of microneedles**  
Sean Jones, Medicines and Healthcare Products Regulatory Agency, UK
- 14:10 - 14:30 **Invited: Considerations for commercialization of a microneedle product**  
Lisa Dick, 3M Drug Delivery Systems
- 14:30 - 15:10 **Commercialization and regulatory panel discussion and open debate**  
Moderator - Marie Mc Grath, GSK

15:10 – 15:40 *Coffee break and attended poster viewing – Even numbers present*

**Session 6: SENSORS – DEVICES AND DIAGNOSTICS**

Chairs – Mark Kendall, University of Queensland and Ellen Cahill, University College Dublin

- 15:40 – 16:10 **Keynote: Electrochemical microdevices for sampling, solution processing and sensing**  
Hiroaki Suzuki, University of Tsukuba
- 16:10 - 16:30 **Invited: Additive manufacturing of polymer microneedles for transdermal sensing and drug delivery**  
Roger Narayan, North Carolina State University
- 16:30 - 16:45 **Selected abstract – Towards Intelligent Micro Transdermal Interface Platforms (MicroTIPs)**  
Conor O'Mahony, Tyndall National Institute
- 16:45 - 17:00 **Selected abstract - Microneedles for Assessment of Dermal Lymphatic Vessels**  
Davide Brambilla, ETH Zurich
- 17:00 - 17:15 **Selected abstract - Microneedle-optofluidic biosensor for therapeutic drug monitoring in sub-nanoliter volumes**  
Sahan Ranamukhaarachchi, University of British Columbia

17:15 - 17:35 **Rapid fire flash presentations 4 (Sensors, Devices and Diagnostics)**

- 17:35 - 18:00 **Session Panel (Suzuki, Narayan, Andrew Fiorini)**  
Moderator – Conor O'Mahony, Tyndall National Institute

18:00 - 23:00 *Gala Event – A Night on the Thames*

## Day 3 - Wednesday 25 May

**Session 7: THERAPEUTIC DELIVERY**  
Chairs – Mark Prausnitz, GeorgiaTech and Nicole Brogden, University of Iowa

09:00 - 09:30 **Keynote: Considerations in the systemic delivery of drugs using microneedles**  
Ryan Donnelly, Queen's University Belfast

09:30 - 09:50 **Invited: Development of bleomycin microneedle for the treatment of recalcitrant wart and its clinical application**  
Jung-Hwan Park, Gachon University

09:50 - 10:10 **Invited: Quality aspects for the manufacturing of microarray patches**  
Heiko Spilgies, LTS

10:10 - 10:50 **Rapid fire flash presentations 5 (Therapeutic Delivery)**

10:50 - 11:20 *Coffee break and poster/exhibitor viewing*

11:20 - 11:40 **Invited: Improved DNA vaccination using coated microneedles**  
Yeu-Chun Kim, KAIST

11:40 - 11:55 **Selected abstract - Exploring dermal absorption of peptides: in vivo pharmacokinetics and in silico predictions**  
Mikolaj Milewski, Merck Research Laboratories, MSD

11:55 - 12:10 **Selected abstract - Abnormal Scar Treatment with Microneedle Technology**  
Chenjie Xu, Nanyang Technological University

12:10 - 12:30 **Session Panel (Donnelly, Spilgies, Kim, Matthew Burke)**  
Moderator – Mark Prausnitz, GeorgiaTech

12:30 - 12:45 **Prize giving and closing remarks**

12:45 *Boxed lunches to go, poster dismounting and end of conference*

**Session 8: Optional educational session on improving journal article writing for early career researchers (all welcome)**  
13:30-15:00 Jaap van Harten, Elsevier