

SKIN VACCINATION SUMMIT 2013

4-6 September 2013, Bell Harbor Conference Center, Seattle, Washington, USA

FINAL ORAL PROGRAMME & POSTER PROGRAMME SVS 2013

SCIENTIFIC ADVISORY PANEL

SVS 2013 Conference Chair: Bruce G. Weniger (Chiang Mai University, Chiang Mai, Thailand) and Greg Glenn (Novavax Inc., Rockville, Maryland, USA)

Mark Kendall (*University of Queensland, Australia*)
 Richard Compans (*Emory University, Atlanta, Georgia, USA*)
 Joke Bouwstra (*Leiden/Amsterdam Center for Drug Research, The Netherlands*)
 Behazine Combadiere (*INSERM, Paris, France*)
 Kristine Hansen (*3M Drug Delivery Systems, St. Paul, Minnesota, USA*)
 Niranjn Y. Sardesai (*INOVIO Inc., Blue Bell, Pennsylvania, USA*)
 Richard R. Stout (*Bioject Inc., Tualatin, Oregon, USA*)
 Mark Tomai (*3M Drug Delivery Systems, St. Paul, Minnesota, USA*)
 Darin Zehrung (*PATH, Seattle, Washington, USA*)
 Yotam Levin (*NanoPass Technologies Ltd, Rehovot, Israel*)
 Nathalie Garcon (*GSK Biologicals, Rixensart, Belgium*)
 David Chen (*Pfizer, Kalamazoo, Michigan, USA*)

Mark Prausnitz (*Georgia Institute of Technology, Atlanta, USA*)
 Ryan Donnelly (*Queen's University Belfast, Northern Ireland, UK*)
 Philippe Laurent (*BD Medical Pharmaceutical Systems, Le Pont de Claix, France*)
 Terry L. Bowersock (*Zoetis, Kalamazoo, Michigan, USA*)
 Michael Royals (*PharmaJet Inc., Golden, Colorado, USA*)
 John Clements (*Tulane University, New Orleans, Louisiana, USA*)
 Derek O'Hagan (*Novartis Vaccines & Diagnostics, Cambridge, Massachusetts, USA*)
 Steve Reed (*IDRI, Seattle, Washington, USA*)
 Geert van den Bossche (*UNIVAC LLC, Seattle, Washington, USA*)
 Marcel B.M. Teunissen (*University of Amsterdam, Amsterdam, The Netherlands*)
 Bobby Singh (*Corium International, Menlo Park, California, USA*)



08.00 onwards

Registration

Welcome & Opening Remarks including:

09.15-09.20

'Welcome to Seattle'

Darin Zehrung (*PATH, Seattle, Washington, USA*)

Opening Remarks:

09.20-09.35

'Overview on cutaneous vaccination'

Bruce G. Weniger (*Chiang Mai University, Chiang Mai, Thailand*)

SESSION 1: PROSPECTS AND PROMISE FOR CUTANEOUS VACCINATION

Moderator: Darin Zehrung (*PATH, Seattle, Washington, USA*)

09.35-10.05

'Working to Achieve the Millennium Development Goals:

The role of innovation in global public health'

Anurag Mairal (*PATH, Seattle, Washington, USA*)

10.05-10.35

'The potential of skin delivery technologies'

Derek O'Hagan

(*Novartis Vaccines & Diagnostics, Cambridge, Massachusetts, USA*)

10.35-11.05

'Design, engineering and formulation of microneedle patches for skin vaccination'

Mark Prausnitz (*Georgia Institute of Technology, Atlanta, Georgia, USA*)

11.05-11.25

Coffee Break & Poster Set-Up

SESSION 2: THE CASE FOR CUTANEOUS

Moderator: Derek O'Hagan

(*Novartis Vaccines & Diagnostics, Cambridge, Massachusetts, USA*)

11.25-11.55

'Opportunities and challenges in achieving desirable product attributes for global public health'

Darin Zehrung (*PATH, Seattle, Washington, USA*)

11.55-12.15

'Economic analysis predicts increased vaccination rates and reduced vaccination cost enabled by self-vaccination'

James J. Norman, Jaya M. Arya, Paula M. Frew and Mark R. Prausnitz

(*Georgia Institute of Technology, Atlanta, Georgia, USA*)

12.15-12.35

'Intradermal delivery of your vaccine, with a needle free delivery system'

Richard R. Stout and Dan Williamson (*Bioject Inc., Tigard, Oregon, USA*)

12.35-14.00

Lunch Break & Posters

SESSION 3: IMMUNOLOGY AND ANATOMY FOR VACCINATING INTO SKIN

Moderator: Mark Prausnitz (*Georgia Institute of Technology, Atlanta, Georgia, USA*)

14.00-14.30

'Mechanisms of epidermal and dermal immunization'

Behazine Combadiere (*INSERM, Paris, France*)

14.30-14.50

'Effect of aging on influenza skin vaccination'

Dimitrios G. Koutsonanos, Stein E. Esser, Joanna A. Pulit-Penalzo, Elena E.

Vassilieva, Misha T. Taherbhai, Lee Jenong-Woo, Mark R. Prausnitz, Ioanna

Skountzou and Richard W. Compans (*Emory University, Atlanta, Georgia, USA*)

14.50-15.10

'The role of polymorphonuclear neutrophils in innate and adaptive responses to nanopatch delivery of split virion influenza vaccine to skin'

Frances E. Pearson, Oscar L. Haigh, Alexandra Depelsenaire, Marion E.G. Brunc and Mark A.F. Kendall (*University of Queensland, Brisbane, Queensland, Australia*)

15.10-15.30

'Langerin negative dendritic cells promote potent CD8+ T-cell priming by skin delivery of live recombinant virus microneedle array'

Linda S. Klavinskis, V. Bachy, C. Hervouet, P.D. Becker, L. Chorro, L.M. Carlin, S. Herath, S.-J. Ho, S.-Y. Kwon and F. Geissmann

(*Kings College School of Medicine, University of London, London, UK*)

15.30-15.50

'Depletion of langerin+ cells ablates adaptive immune responses to influenza vaccine delivered transdermally'

Joanna A. Pulit-Penalzo, Stein E. Esser, Lee Jeong-Woo, Elena E. Vassilieva, Misha T. Taherbhai, Dimitrios G. Koutsonanos, Mark R. Prausnitz, Richard W. Compans and Ioanna Skountzou (*Emory University, Atlanta, Georgia, USA*)

15.50-16.10

Tea Break & Posters

SESSION 4: REINVENTING THE WHEEL – CLASSICAL INTRADERMAL DELIVERY

Moderator: Richard R. Stout (*Bioject Inc., Tigard, Oregon, USA*)

16.10-16.30

'MicronJet600®: A novel microneedle device for ID delivery of vaccines – Clinical experience in flu, the elderly, and beyond'

Yotam Levin and Efrat Kochba (*NanoPass Technologies, Rehovot, Israel*)

16.30-16.50

'Tropis – development and clinical use update'

Michael Royals (*Pharmajet Inc., Golden, Colorado, USA*)

16.50-17.10

'Improved intradermal injection by Auto-Disable (AD) intradermal (ID) adapter'

Izzy Tsals (*SID Technologies, Newtown, Pennsylvania, USA*)

17.10-17.30

'A novel, cost-effective and simple device for improving the administration of intradermal vaccines'

Zach Marks (*West Pharmaceutical Services, Lionville, Pennsylvania, USA*)

17.30-17.50

'New intradermal delivery device'

Paul Mallins (*Star Syringe Ltd, Uckfield, East Sussex, UK*)

18.00-19.00

SVS 2013 Posters Session

**SESSION 5:
ADJUVANTS & DELIVERY TECHNOLOGIES
FOR VACCINATION INTO SKIN**

Moderator: Mark Kendall

(University of Queensland, Brisbane, Queensland, Australia)

09.00-09.30

'Adjuvants for intradermal vaccination'

Steve Reed *(IDRI, Seattle, Washington, USA)*

09.30-09.50

'Adjuvanted intradermal immunization with inactivated poliovirus vaccine'

Elizabeth B. Norton and John D. Clements

(Tulane University School of Medicine, New Orleans, USA)

09.50-10.10

'Elucidation of the immunophenotype from electroporation mediated DNA vaccine delivery to the skin'

Kate Broderick, Trevor Smith, Jay McCoy and Niranjana Y. Sardesai

(INOVIO Inc., Blue Bell, Pennsylvania, USA)

10.10-10.30

'Intradermal priming with DNA plasmids containing HIV-1 genes with the Biojector is safe and superior to intramuscular priming'

Eric Sandstrom

(Karolinska Institute, Stockholm, Sweden – for HIVIS/TaMoVac Study Group)

10.30-10.50

'Co-localizing nanopatch-mediated skin damage with adjacent live cells and vaccine enhances systemic immunogenicity'

A. Depelsenaire, F. Pearson, O. Haigh, C. McNeilly, C. Flaim and M. Kendall

(University of Queensland, Brisbane, Queensland, Australia)

10.50-11.10

Coffee Break & Posters

**SESSION 6:
MICRONEEDLE SYSTEMS I**

Moderator: Nathalie Garcon *(GSK Biologicals, Rixensart, Belgium)*

11.10-11.40

'Nanopatches: Improving the reach of vaccines with targeted delivery to skin and thermostability'

Mark Kendall *(University of Queensland, Brisbane, Queensland, Australia)*

11.40-12.10

'Chemical modification of silicon microneedle arrays with ionizable surface groups for pH-triggered dermal vaccination'

Joke A. Bouwstra, Huixin Yu, Karen Sliedregt, Alexander Kros, Wim Jiskoot and Koen van der Maaden

(Leiden/Amsterdam Center for Drug Research, Leiden, The Netherlands)

12.10-12.40

'Simplifying vaccine administration with transdermal MicroCor®'

Bobby Singh *(Corium International, Menlo Park, California, USA)*

12.40-13.00

'Developing and scale-up of a coated microneedle patch'

Kristine Hansen, David Wirtanen, Kevin Puckett, Ryan Simmers,

Ed Truskoluski and Daniel Dohmeier

(3M Drug Delivery Systems, St. Paul, Minnesota, USA)

13.00-14.00

Lunch Break & Posters

**SESSION 7:
MICRONEEDLE SYSTEMS II**

Moderator: Bobby Singh *(Corium International, Menlo Park, California, USA)*

14.00-14.30

'ImmuPatch microneedle systems for addressing unmet needs in immunization programmes'

A. Moore, E. Allen, C. O'Mahony and A. Crean

(University College Cork, Cork, Ireland)

14.30-15.00

'A microneedle patch for influenza vaccine: US policy considerations and cost modeling'

Courtney Jarrahian *(PATH, Seattle, Washington, USA)*

15.00-15.20

'Safety and efficacy of influenza vaccine delivered intracutaneously from a microneedle-based device'

Renee L. Herber *(FluGen Inc., Madison, Wisconsin, USA)*

15.20-15.40

'Title to be confirmed'

Philippe Laurent

(BD Medical Pharmaceutical Systems, Le Point de Clair, France)

15.40-16.00

Tea Break & Posters

**SESSION 8:
NOVEL APPLICATIONS VIA THE SKIN**

Moderator: John D. Clements

(Tulane University School of Medicine, New Orleans, USA)

16.00-16.30

'Skin immunization of non-human primates with influenza subunit vaccine'

Ioanna Skountzou, Chris Ibegbu, Priya Kalluri, Devin McAllister, E. Stein Esser, Misha Taherbha, Elena Vassilieva, Chris Edens, Joanna Pulit-Penalosa,

Surinder P. Kaur, Dimitrios Koutsonanos, Mark R. Prausnitz

and Richard Compans *(Emory University, Atlanta, Georgia, USA)*

16.30-17.00

'Immunogenicity of plant-made influenza VLP vaccines administered intradermally'

Sonia Trepanier and Nathalie Landry *(Medicago, Ste-Foy, Quebec, Canada)*

17.00-17.20

'Depth controlled microinjections for dermal vaccination: A study with polio vaccine in rats'

Koen van der Maaden, Bas Trietsch, Wim Jiskoot and Joke A. Bouwstra

(Leiden/Amsterdam Center for Drug Research, Leiden, The Netherlands)

17.20-17.40

'Antibiotic-free plasmid vectors with improved transgene expression after intradermal delivery'

Jim Williams *(Nature Technology Corporation, Lincoln, Nebraska, USA)*

17.40-18.00

'Ultrasound-assisted transcutaneous immunization'

Matthias A. Oberli, Diviya Sinha, Gregory L. Szeto, Carmen Gerlach,

Ulrich H. Von Andrian, Robert Langer and Daniel Blankschtein

(MIT, Cambridge, Massachusetts, USA)

Free Evening for SVS 2013 Delegates

**SESSION 9:
DISEASE AND PATHOGEN TARGETED
FOR CUTANEOUS VACCINATION I**

Moderator: Steve Reed (*IDRI, Seattle, Washington, USA*)

09.00-09.30

'Transcutaneous immunization with a patch resolves active experimental otitis media'

Laura A. Novotny, Kathleen A. Stuller, John D. Clements and Lauren O. Bakaletz
(*The Research Institute at Nationwide Children's Hospital, Columbus, Ohio, USA*)

09.30-09.50

'Measles vaccination of non-human primates using a microneedle patch'

Chris Edens, M.L. Collins, J. Goodson, P.A. Rota and M.R. Prausnitz
(*Georgia Institute of Technology, Atlanta, Georgia, USA*)

09.50-10.10

'Skin immunization against rotavirus using microneedles'

Baoming Jiang (*Centers for Disease Control, Atlanta, Georgia, USA*)

10.10-10.40

Coffee Break & Posters

**SESSION 10:
DISEASE AND PATHOGEN TARGETED
FOR CUTANEOUS VACCINATION II**

Moderator: Steve Reed (*IDRI, Seattle, Washington, USA*)

10.40-11.10

'Needle-free, cutaneous jet injection of reduced-dose, influenza vaccine in >= 6 to < 24-month-old children'

Bruce G. Weniger
(*Chiang Mai University, Chiang Mai, Thailand*), and the Jet-Injected Cutaneous Influenza Vaccination Study Group)

11.10-11.40

'Alternative intradermal administration methods for BCG and novel TB vaccines'

Hennie Geldenhuys (*University of Cape Town, Cape Town, South Africa*)

11.40-12.00

'Assessment of dose-sparing of pandemic, monovalent A/California/7/2009 H1N1 influenza vaccine administered intradermally by needle-free disposable-syringe jet injector (DSJI)'

Glacus de Souza Brito
(*Faculdade de Medicina da USP, University of Sao Paulo, Sao Paulo, Brazil*)

12.00-13.30

Lunch Break & Posters Breakdown

**SESSION 11:
OPEN FORUM: THE FUTURE OF SKIN**

13.30-15.00

PANEL & AUDIENCE

Moderator: Bruce G. Weniger (*Chiang Mai University, Chiang Mai, Thailand*)

Panel Members:

Mark Prausnitz
(*Georgia Institute of Technology, Atlanta, Georgia, USA*)

Darin Zehrung
(*PATH, Seattle, Washington, USA*)

Mark A.F. Kendall
(*University of Queensland, Brisbane, Queensland, Australia*)

Nathalie Garcon
(*GSK Biologicals, Rixensart, Belgium*)

John Clements
(*Tulane University, New Orleans, Louisiana, USA*)

Closing Remarks

Bruce G. Weniger (*Chiang Mai University, Chiang Mai, Thailand*)

15.00

Conference Close & Departure

** This final programme is correct at the time of printing. However the organisers reserve the right to make any alterations that may be required in the interests and integrity of the final programme.*

FINAL CONFERENCE PROGRAMME · POSTER SESSION

Poster 101

'Microparticulate-encapsulated antigen with split topical CpG oligodeoxynucleotide adjuvant as a single-injection immunization strategy'

Jacqueline Lai et al.
(*University of British Columbia, Vancouver, British Columbia, Canada*)

Poster 102

'Development of a human skin stimulant for microneedle insertion profiling'

S.A. Ranamukhaarachchi et al.
(*University of British Columbia, Vancouver, British Columbia, Canada*)

Poster 103

'Topical CpG adjuvant enhances immune response to subcutaneous antigen by modulating the expression of homing molecules on T cells'

Wing Ki Cheng et al.
(*University of British Columbia, Vancouver, British Columbia, Canada*)

Poster 104

'Formulation of H1N1 hemagglutinin and silica nanoparticles in sugar-based microparticles for epidermal powder immunisation'

Julia Engert et al. (*Ludwig-Maximilians-University, Munich, Germany*)

Poster 105

'Improving vaccine targeting to skin using mathematical model-driven design and application of microprojection arrays'

S.C. Meliga et al. (*The University of Queensland, Brisbane, Queensland, Australia*)

Poster 106

'Ultrasound-assisted transcutaneous immunization'

Diviya Sinha et al. (*MIT, Cambridge, Massachusetts, USA*)

Poster 107

'New micro-needle auto-insertion device for ID vaccine injection of up to 500l in less than 5 seconds'

Astrid Cachemaille et al. (*Debiotech S.A., Lausanne, Switzerland*)

Poster 108 – To be confirmed