



Eighth Annual Botulinum Research Symposium, 2014

Final Program

Wednesday, August 13, 2014

- 1-4 PM Arrival and check-in at hotels
- 4:00-5:00 PM Registration and Welcome, **Wamsutta Club**, 427 County Street
New Bedford, MA
- 5:00 PM Social and dinner
- 7:00PM Welcome to the evening program
- 7:05 PM Lab Concert –Jon Bogdan, Koyel Ghosal, Gowri Chellappan, Anuradha Tata,
Alessandra Geffner-Smith, others

Session I Session Chair– Klaus Fink, MERZ, Germany

- 7:45 PM **Featured Speech–**Keith Foster, Syntaxin Ltd, IPSEN, UK; ***Recombinant
Engineering of Botulinum Neurotoxins and Next Generation Toxin
Therapeutics***
- 8:30 PM Q&A

Thursday, August 14, 2014, Wamsutta Club, First Floor Conference Room

8:00 AM Registration and Continental breakfast,

8:30 AM *Introduction*, Dr. Bal Ram Singh, Botulinum Research Center

Session II Session Chair –Suzanne Kalb, Centers for Disease Control, Atlanta, GA

8:45 AM **Symposium Speech –Nigel Minton**, University of Nottingham; **Forward and Reverse Genetics in *Clostridium botulinum***

9:30 AM *Functional characterization of a novel BoNT A/F hybrid*, **Suzanne R. Kalb**, Jakob Baudys, Brian H. Raphael, Janet K. Dykes, Carolina Lúquez, Susan E. Maslanka, and John R. Barr, Centers of Disease Control, Atlanta, GA.

10:00AM *Identification of ion-channel forming structural determinants in botulinum neurotoxins*, **Dhaliwal HK^{1,2*}**, Thirunavukkarasu N², Kienker PK³, Ravichandran E², Kumar R², Finkelstein A³, Cai S^{1,2}, Singh BR⁴, ¹Biomedical Engineering and Biotechnology Program, UMass Dartmouth, Dartmouth, MA; ²Department of Chemistry and Biochemistry, University of Massachusetts Dartmouth, MA; ³Department of Physiology and Biophysics and Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY; ⁴Botulinum Research Center and Institute of Advanced Sciences, Dartmouth, MA

10:30 AM **Coffee/Tea break**

Session III Session Chair – **Terry Bowlin**, Microbiotix, Worcester, MA

11:00 AM *The Use of Endopep-MS for the Detection of Botulinum Toxins A, B, E, and F in Food Samples*, J Suzanne R. Kalb¹, Joan C. Krilich², Janet K. Dykes¹, Carolina Lúquez¹, Susan E. Maslanka¹, and **John R. Barr¹**, ¹Centers for Disease Control and Prevention, Atlanta, GA, USA, ²Battelle Memorial Institute under contract at the Centers for Disease Control and Prevention, Atlanta, GA.

11:30 Noon *Making More Effective Antibodies Type A Complex Detection*, Ajay K. Singh, David R. Hodge¹ and **Shashi K. Sharma**, Divisions of Microbiology, Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, MD; ¹Chemical and Biological Defense Division, Science and Technology Directorate, U.S. Department of Homeland Security, Washington, D.C.

12:00 Noon *Botulinum and other biodefense programs at DHS*, **David Hodge**, Department of Homeland Security

- 12:15PM **Group Photo**
- 12:30 PM **Lunch**
- Session IV** **Session Chair** – Shuowei Cai, Department of Chemistry and Biochemistry, UMass Dartmouth
- 1:30PM Poster session
- Session V** **Session Chair** –Dr. John A. Bogdan, NIAID, National Institutes of Health
- 2:30 PM *Broad-spectrum, cell-based detection of all clostridial neurotoxins with improved speed, specificity and sensitivity over the mouse lethality assay, **Patrick McNutt**, Megan Lyman and Phillip Beske, US Army Medical Research Institute of Chemical Defense*
- 3:00PM *Functional network- and synapse-level responses to botulinum neurotoxin A in stem cell-derived neurons: a rapid and ultra-sensitive cell-based platform, **Phillip Beske**, Christopher Fifty, and Patrick McNutt, US Army Medical Research Institute of Chemical Defense*
- 3:30 PM *Role of NAPs in the transcytosis of botulinum neurotoxin across intestinal and bronchial epithelial barriers, **Koyel Ghosal**^{1,2}, Martha Hale^{2,3,4}, Shuowei Cai^{1,2}, and Bal Ram Singh⁴, ¹Biomedical Engineering and Biotechnology Program, UMass Dartmouth, Dartmouth, MA; ²Department of Chemistry and Biochemistry, UMass Dartmouth, Dartmouth, MA; ³US Army Medical Research Institute of Infectious Diseases, Frederick, MD; ⁴Botulinum Research Center and Institute of Advanced Sciences, Dartmouth, MA*
- 4:00 PM *Variations in VAMP1 across vertebrates suggest a potential selective pressure from botulinum neurotoxins **Lisheng Peng**¹, Michael Adler^{2†}, Ann Demogines³, Andrew Borrell², Huisheng Liu⁴, Liang Tao¹, William H. Tepp⁵, Su-Chun Zhang⁴, Eric A. Johnson⁵, Sara L. Sawyer^{3†} and **Min Dong**^{4†1} Department of Microbiology and Immunobiology, Harvard Medical School and Division of Neuroscience, New England Primate Research Center, ²Neurobehavioral Toxicology Branch, U.S. Army Medical Research Institute of Chemical Defense, ³ Department of Molecular Biosciences, University of Texas, Austin, ⁴ Waisman Center, Department of Neuroscience, Department of Neurology, University of Wisconsin, Madison*
- 4:30 PM **Break**

Thursday, August 14, 2014, Evening Program: Wamsutta Club

5:00 PM Social and the Game of BoNTfeud©, Students and Staff of the Botulinum Center

6:30 PM Dinner

Session VI Session Chair – **Andy Pickett**, Toxin Science Ltd., Wrexham, UK

7:30 PM **Symposium Banquet Speech** – *Dr. Dirk Dressler, Hannover Medical School*
Medical Aspects of Botulinum Neurotoxins (tentative)

8:15 PM Q&A

Friday, August 15, 2014, Wamsutta Club, First Floor

8:00 AM – Breakfast

Session VII Session Chair – Patrick McNutt, US Army Medical Institute of Chemical Defense, Aberdeen Proving Ground, MD

8:30 AM *A novel potent cyclic peptide inhibitor of Clostridium botulinum neurotoxin serotype A*
Desigan Kumaran¹, Michael Adler², Matthew Levit², Richard Sweeney², and Subramanyam Swaminathan¹, ¹Department of Biosciences, Brookhaven National Laboratory, Upton, NY, ²U.S. Army Medical Research Institute of Chemical Defense, APG, MD.

9:00AM *Aptamers in Diagnostics and Treatment of Botulism*, **Shuowei Cai**, Department of Chemistry and Biochemistry, University of Massachusetts Dartmouth

9:30AM *Advancing botulinum toxin use in aesthetics and dermatology, 2014*, **Andy Pickett**, Toxin Science Ltd., Wrexham, UK

10:00 AM *DTRA botulinum countermeasure program*, **Giora Feuerstein**, Defense Threat Reduction Agency, DoD

10:15 AM **Coffee/Tea break**

Session VIII Session Chair – John Barr, CDC, Atlanta

10:30 AM *Prospects of funding for botulinum toxin research*, **Robert Hall**, NIAID, NIH

10:45 AM **Panel on New Serotype of Clostridium botulinum**

Robert Hall, NIAID, NIH
Andy Pickett, Toxin Science
Venkat Kodumudi, OmniArray Biotechnology, Inc.
Shashi Sharma, USFDA
David Hodge, DHS
Patrick McNutt, USAMRICD
Suzanne Kalb, CDC
Shuowei Cai, UMass Dartmouth

12:00 Noon Symposium conclusion, lunch, networking, departure