

10th International Sample Prep Technologies Conference 2016

Sample Preparation for Virus, Toxin and
Pathogen Detection and Identification

Held at the 2nd Annual Biodefense World Summit 2016

Baltimore, Maryland, USA
28 - 29 June 2016

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The Knowledge Foundation's 10th International

Sample Prep Technologies

Sample Preparation for Virus, Toxin & Pathogen Detection & Identification

June 28-29, 2016

Tuesday, June 28

12:15 pm Conference Registration

ADVANCES IN PREANALYTICAL PROCESSING

1:40 Chairperson's Opening Remarks

Michael Heller, Ph.D., Professor, Departments of Bioengineering and Nanoengineering, University of California, San Diego

1:45 KEYNOTE PRESENTATION: Ebola Outbreak 2014-2015: Experiences from the Field in Sample Preparation and Rapid Diagnosis.....1

Lt. Col. Kurt Schaecher, Ph.D., Deputy Director, Division of Medicine, U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID)

2:15 Tissue Prints for High Quality RNA and DNA Samples without Damaging the Original Tissue.....18

Sandra Gaston, Ph.D., Principal Investigator, Tufts Medical Center, and Scientific Director of the TMC Biorepository, Director of Urological Research, New England Baptist Hospital

2:45 System Integration as a Critical Requirement for Microfluidic Sample Processing.....33

*Maxim Shusteff, Ph.D., Principal Investigator, Microfluidic Sample Preparation Project, Lawrence Livermore National Lab**

3:05 Rapid Vaccine Technologies – Therapeutics for Emerging and Re-Emerging Infectious Diseases.....N/A

Willy Valdivia-Granda, Ph.D., CEO, Orion Integrated Biosciences

3:25 Biological Sampling and Detection in a Functional Training Exercise Using a Non-Threat Surrogate Material in Place of Attenuated Biothreat Agents.....42

Nancy J. Lin, Ph.D., Biomedical Engineer, Biomaterials Group, Biosystems and Biomaterials Division, Material Measurement Laboratory, National Institute of Standards and Technology

3:45 Refreshment Break in the Exhibit Hall with Poster Viewing

ADVANCES IN PREANALYTICAL PROCESSING (Cont.)

4:15 Engineered Protein Nanopores for Challenging Tasks in Molecular Diagnosis.....N/A

Liviu Movileanu, Ph.D., Director of Structural Biology, Biochemistry and Biophysics Graduate Program, Director of Undergraduate Program in Biophysical Science, Syracuse University

4:45 Purifying High Molecular Weight DNA from Challenging Samples.....53

Thomas Lum, Manager, Aurora Product Specialist, Boreal Genomics

5:15 End of Day



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June 28-29, 2016

Wednesday, June 29

8:00 am Morning Coffee

TARGET ENRICHMENT AND CLINICAL TEST VALIDATION

8:25 Chairperson's Opening Remarks

Alexis Sauer-Budge, Ph.D., Senior Research Scientist, Fraunhofer Center for Manufacturing Innovation and Adjunct Research Assistant Professor, Biomedical Engineering, Boston University

8:30 Rapid Phenotypic Methods for Diagnosing Infections and Antibiotic Susceptibility Testing.....67

Alexis Sauer-Budge, Ph.D., Senior Research Scientist, Fraunhofer Center for Manufacturing Innovation and Adjunct Research Assistant Professor, Biomedical Engineering, Boston University

9:00 System for Rapid Isolation and Detection of DNA/RNA/Exosome Biomarkers: "Sample to Answer" Molecular Diagnostics.....84

Michael Heller, Ph.D., Professor, Departments of Bioengineering and Nanoengineering, University of California, San Diego

9:30 Developing Biospecimen Evidence-Based Practices.....105

Helen M. Moore, Ph.D., Chief, Biorepositories and Biospecimen Research Branch, Cancer Diagnosis Program, Division of Cancer Treatment and Diagnosis, National Cancer Institute

10:00 Coffee Break in the Exhibit Hall with Poster Viewing

10:45 High Efficiency Plasma Separation and Smartphone-Based Molecular Diagnostics at Point-of-Care.....125

Changchun Liu, Ph.D., Research Assistant Professor, Department of Mechanical Engineering and Applied Mechanics, University of Pennsylvania

11:15 Smartphone-Operated Handheld Microfluidic Liquid Handling System for Biodetection.....N/A

Zhenyu Li, Ph.D., Assistant Professor, School of Engineering & Applied Science, The George Washington University

12:15 pm Networking Luncheon



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June 28-29, 2016

SYSTEMS ADVANCEMENTS FROM SAMPLE TO DIAGNOSIS

- 1:40 Chairperson's Opening Remarks**
Michael Connolly, CEO, Integrated Nano-Technologies
- 1:45 3D Microfluidic Combinatory Chip for High-Throughput Drug Screening.....140**
Weihua Guan, Ph.D., Assistant Professor, Electrical Engineering, Pennsylvania State University
- 2:05 Sample Preparation for Rapid Pathogen Detection and Antimicrobial Susceptibility Testing.....148**
Vincent Gau, Ph.D., President, Genefluidics, Inc.
- 2:25 Biostabilization Methods in Sample Preparation, Banking, Storage, and Shipment: Comparison of Different Approaches.....N/A**
Igor I. Katkov, Ph.D., Chief Scientific Officer, Celltronix
- 2:45 High Throughput Simple Sample Preparation for Rapid High Resolution Glycan Analysis by Capillary Electrophoresis on DNA Sequencers.....157**
Jenkuei Liu, Ph.D., Senior Staff Scientist, Thermo Fisher Scientific
- 3:15 Dessert Break in the Exhibit Hall with Poster Viewing**
- 4:00 PANEL DISCUSSION: Challenges and Opportunities in Advanced Sample Preparation System.....169**
Moderator:
Michael Connolly, Ph.D., CEO, Integrated Nano-Technologies
Panelists:
Dave Alberty, CEO, InnovaPrep
Zhenyu Li, Ph.D., Assistant Professor, School of Engineering & Applied Science, The George Washington University
- 5:00 Close of Conference**

ADDITIONAL PAPER

Development of Countermeasures against Rift Valley Fever and Highly Pathogenic Avian Influenza in Target Animals.....180

Juergen A. Richt, DVM, Ph.D., Kansas State University College of Veterinary Medicine