

22nd International Conference on Biodetection Technologies 2014

**Technological Advances in Detection &
Identification of Biological Threats**

**Baltimore, Maryland, USA
10 – 11 June 2014**

ISBN: 978-1-63266-825-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2014) by the Knowledge Foundation
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the Knowledge Foundation
at the address below.

Knowledge Foundation
18 Webster Street
Brookline, Massachusetts 02446-4938

Phone: (617) 232-7400
Fax: (617) 232-9171

custserv@knowledgefoundation.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Cell Phone Based Molecular Diagnostics.....	1
<i>A. Asanov</i>	
Optimization of a Lateral Flow Immunoassay (LFI) for the Rapid Diagnosis of Melioidosis.....	16
<i>D. AuCoin</i>	
A Fully Autonomous Biodetection System for Environmental Surveillance	32
<i>M. Burton</i>	
Bioaerosol Standoff Detection Using Lidar Technology Allowing Cloud Mapping And Spectrometric LIF Classification	39
<i>S. Buteau</i>	
Direct Multiplexed Virus Detection.....	52
<i>N/A</i>	
SoundStream – A Microfluidic-Based Assay Platform for Rapid Portable Diagnostics.....	68
<i>A. Doria</i>	
Increased Discrimination Of Pathogens And Blood Donor Sample Multiplex Testing With An OpenArray Platform	85
<i>R. Duncan</i>	
How Bee Venom, Pig Leaches and Electrified Rooster Comb May Lead to Solving the Otherwise Elusive Bacteria in Blood Diagnostic and Sepsis Treatment Challenge	96
<i>M. Ewert</i>	
Biomimetic Lipid Nanoparticles As Scavengers For Biotoxins And Paralyzing Agents.....	111
<i>L. Foit, R. Glassenberg, C. Thaxton</i>	
Enabling Point-of-Care Test Development for the STD Market	112
<i>J. Jackman</i>	
Host-Response-Based Biodetection by Immunosignatures	123
<i>S. Johnston</i>	
DNA Signatures for Identifying Laboratory Pathogens and Data Tools for Disease Outbreak Investigations	138
<i>T. Korves, M. Peterson, E. Chang</i>	
Disease Forecasting using Open-source Indicators.....	139
<i>S. Lefantzi, J. Ray, G. Lambert, P. Finley, H. Smith</i>	
Tool Box of Engineered Microfluidic Functions Speeds Development and Lowers Risk in Point of Care Diagnostic Product Development	140
<i>L. Levine</i>	
Automatic Online Real-Time Detection Of Microcystin-LR Based On Optical Biosensing System.....	151
<i>H. Shi, B. Song, F. Long, X. Zhou</i>	
Thermostable Viral DNA Polymerase for Point of Care Molecular Detection of DNA and RNA Targets.....	161
<i>D. Mead</i>	
Integrative Biosurveillance	178
<i>H. Mukundan</i>	
Biosurveillance of Acute Gastroenteritis at a Singapore Military Sentinel Site	193
<i>F. Neo, K. Lee, M. Heng, J. Ong, P. Wong, B. Tan, C. Ng</i>	
Sematrix™-Enabled Antibiotic Resistance Element Reporting via Criteriome™.....	194
<i>S. Nitcher, B. Yang, R. Bobko, M. Beebe, R. Rebeil, G. Godbold, B. McClelland</i>	
A Portable Biochip Based Platform For Detection Of Biothreat Agents	195
<i>C. Pohlmann</i>	
Self-Assembled Monolayers, As Optical Transducers, Using Spiropyran Photochromic Material.....	208
<i>O. Ramirez, D. Macuil</i>	
Magneto-Hydrodynamic Focusing for Point of Care Applications	209
<i>C. Reis</i>	
Enabling Energy Mobility Via the Cloud	226
<i>N. Reva</i>	
Application Of A Recombinant Topoisomerase For The Specific Enrichment Of Prokaryotic DNA.....	236
<i>N. Sandetskaya</i>	
Rapid Development of Burkholderia Molecular Diagnostics.....	245
<i>P. Schaudies</i>	

Evaluation of Seven Different First Responder Ricin Detection Assays	254
<i>N. Sparding, H. Slotved, N. Steenhard</i>	
Towards PCR-Free, Visual DNA Detection.....	255
<i>M. Uttamchandani</i>	
Integrated System for Rapid Countermeasure Development: From Attribution to Rational Reagent Development.....	269
<i>W. Valdivia</i>	
ApoH a Tool to Reach Unmet Ultrasensitive Diagnostics Needs to Detect Pernicious Microorganisms	287
<i>F. Veas</i>	
Microcantilever Enabled Biodetection	303
<i>R. Venedam</i>	
Point-of-Care Diagnostic Analysis of Samples in Complex Backgrounds.....	310
<i>B. Wright</i>	
Author Index	