Public Health and Emerging Microbial Threats

14th Annual International Conference ♦ September 19, 2016

Gozzo Student Center at Albany College of Pharmacy and Health Sciences
106 New Scotland Avenue, Albany, NY 12208, USA

Free Conference ♦ No Registration Required ♦ $250 Poster Awards
Bring Your Posters ♦ Free Parking ♦ Coffee Breaks ♦ Free Lunch ♦ Raffles

Conference Overview

This free international conference is the 14th annual conference in the series that explores recent advances in medicine and pharma. This year's conference is focussed on emerging microbial threats, both natural and man-made. Technologies for the early detection of infectious diseases, environmental pathogens and bioterrorism threats will be emphasized. A special workshop will highlight critical topics like patent law, regulatory science, legal issues, translational medicine and commercialization activities. The conference will offer networking opportunities to physicians, scientists, engineers, lawyers, business professionals, technology transfer specialists, policy makers and venture capitalists. All PowerPoint presentations will be fast-paced and focussed, relying upon extensive color graphics and animations to reach the diverse audience. Coffee breaks and lunch will be provided. Free parking will be available adjacent to the conference venue. There is a very large selection of lodging available close by. The closest airport is in Albany, NY, a 20-minute taxi ride to the conference site. Numerous books, Lindt chocolate boxes, Wiley $150 book certificate, etc. will be raffled. Poster awards in the amount of $250 will be given. This competition is open to any student, medical fellow, pre or postdoctoral fellow, etc. Posters may be brought to the conference site on September 19 (no prior submission or registration required). Conference reports will be published in *Future Science OA* as well as *Journal of Interdisciplinary Nanomedicine.* All speakers/attendees are invited to contribute to these publications as well as to the *Pan Stanford Handbook of Clinical Nanomedicine* series (volumes 2 and 3).

Organizing Committee

Brian Reese, PhD, JD, MBA, Choate, Hall & Stewart LLP (Boston, MA)
Thomas J. Webster, PhD, Northeastern University (Boston, MA)
Neil Gordon, BEng, MBA, Guanine, Inc. (Salt Lake City, UT and Montreal, Canada)
Susan Gilbert, PhD, Rensselaer Polytechnic Institute (Troy, NY)

Conference Chairs

Raj Bawa, MS, PhD
Patent Agent | Bawa Biotech LLC | Ashburn, VA
Adjunct Professor | Rensselaer Polytechnic Institute | Troy, NY
Scientific Advisor | Teva Pharma | Israel
T: 703.582.1745 | bawa@bawabiotech.com

Shaker A. Mousa, PhD, MBA
Vice Provost and Professor |Albany College of Pharmacy and Health Sciences | Albany, NY
Chairman & Executive Vice President | The Pharmaceutical Research Institute | Rensselaer, NY
T: 518-694-7397 | shaker.mousa@acphs.edu

Networking and Coffee: 9:30 AM – 10:00 AM

Welcome and Introductions: 10:00 AM

Raj Bawa, MS, PhD
Shaker A. Mousa, PhD, MBA

Plenary Keynote: 10:15 AM – 10:45 AM

Advancing Public Health Through Molecular Technologies
Jill Taylor, PhD, Director, Wadsworth Center, New York State Department of Health (Albany, NY)

Emerging Microbial Threats: 10:45 AM – Noon

Moderator: Neil Gordon, BEng, MBA, CEO, Guanine Inc. (Salt Lake City, UT and Montreal, Canada)

Environmental Pathogen Surveillance of Airborne Dust Samples
William Shek, DVM, PhD
Senior Scientific Director-Research, Animal Diagnostic Services, Charles River Laboratories (Wilmington, MA)

Single Domain Camelid Antibodies for Biodefense Therapeutics and Diagnostics
Nicholas Mantis, PhD
Professor and Chair, Department of Biomedical Sciences, School of Public Health, University at Albany (Albany, NY)

Beyond Antibodies: Chemical Nanomachines to Combat Emerging Virus Threats
Anil R. Diwan, PhD
President & Chairman, NanoViricides, Inc. (West Haven, CT)

Amplify Ultra-low Bioanalyte Signals by Attaching Millions of Tags
Neil Gordon, BEng, MBA
CEO, Guanine Inc. (Salt Lake City, UT and Montreal, Canada)


Panel Discussion (10-15 minutes)

Keynote: Noon – 12:30 PM

Catheter-Associated Infection and Thrombosis – A Proven Relationship: Prevention Strategy
Robert Linhardt, PhD, Senior Constellation Professor of Biocatalysis and Metabolic Engineering, Rensselaer (Troy, NY)
Shaker A. Mousa, PhD, MBA, Vice Provost and Professor, Albany College of Pharmacy and Health Sciences (Albany, NY); Chairman & Executive Vice President, The Pharmaceutical Research Institute (Rensselaer, NY)


Networking Lunch and Poster Viewing: 12:30PM – 1:30 PM

Raffles: 1:30 PM – 1:40 PM *(items include: books, Lindt chocolate boxes, Wiley $150 book certificate)*

American Bar Association Workshop on Science and Technology Law: 1:40 PM – 3:10 PM

Moderator: Brian Reese, PhD, JD, MBA, Patent Attorney and Counsel, Choate, Hall & Stewart LLP (Boston, MA); Co-Chair, Nanotech Committee, American Bar Association (Chicago, IL)

Inventions and Patents: A Primer for Academia
Brian Reese, PhD, JD, MBA
Patent Attorney and Counsel, Choate, Hall & Stewart LLP (Boston, MA)

From the Bench to the Bedside: Issues in Translational Medicine
Raj Bawa, MS, PhD
Patent Agent, Bawa Biotech LLC (Ashburn, VA); Scientific Advisor, Teva Pharma (Israel); Adjunct Professor, Rensselaer (Troy, NY)

Protecting your Intellectual Property Abroad: Practical Advice
Jeffery P. Langer, PhD, JD
Partner, Osha Liang LLP (Alexandria, VA)

Obtaining FDA Approval of Nanodrugs for Infectious Diseases
Thomas J. Webster, MS, PhD
The Arthur W. Zafiropoulo Chair and Professor of Chemical Engineering, Northeastern University (Boston, MA)

Nanomedicine Drug Development Regulatory Processes: Critical Issues
Anil R. Diwan, PhD
President & Chairman, NanoViricides, Inc. (West Haven, CT)

 Q&A with Audience (10 minutes)

 **Coffee Break 3:10 AM – 3:25 PM**

 **Young Scholar Award Ceremony: 3:25 PM – 3:30 PM**
Check for $250 for each poster award and plaque presented by Dr. Thomas J. Webster, Editor of the International Journal of Nanomedicine and the Arthur W. Zafiropoulo Chair and Professor of Chemical Engineering at Northeastern University (Boston, MA)

Keynote Introduction: Lawrence S. Sturman, M.D., Ph.D., former Director, Wadsworth Center, NY State Department of Health (Albany, NY)
Keynote: 3:30 PM – 4:00 PM
Mechanisms of Induced Resistance against Lethal Pulmonary Tularemia
Dennis W. Metzger, PhD, Professor and Theobald Smith Alumni Chair, Department of Immunology and Microbial Disease, Albany Medical College (Albany, NY)

Emerging Microbial Threats: 4:00 PM – 5:00 PM
Moderator: Lawrence S. Sturman, M.D., Ph.D., former Director, Wadsworth Center, NY State Department of Health (Albany, NY)

A Short History of Biowarfare: Classical, Medieval and Modern Times
Charles W. Boylen, PhD
Professor Emeritus, Rensselaer Polytechnic Institute (Troy, NY)

Use of PK/PD to Inform Antibiotic Dose Selection
Thomas Lodise, PharmD, PhD
Professor of Pharmacy Practice, Albany College of Pharmacy and Health Sciences (Albany, NY)

Repurpose Existing Drugs for Zika Virus with Nanomolar Efficacy
Hongmin Li, PhD
Associate Professor of Biomedical Sciences, University at Albany (Albany NY); Research Scientist V, Wadsworth Center, New York State Department of Health (Albany NY)

The Increasing Global Threat of Emerging Viruses
Laura D. Kramer, PhD
Professor of Biomedical Sciences, University at Albany (Albany, NY); Director of the Arbovirus Laboratory, Wadsworth Center, New York State Department of Health (Albany, NY)

 **Conference Chair's Closing Remarks – 5:00 PM**

 **Speaker Dinner – 6:15 PM**

Sponsors and Media Partners

14th Annual International Conference ♦ September 19, 2016

Gozzo Student Center at Albany College of Pharmacy and Health Sciences
106 New Scotland Avenue, Albany, NY 12208, USA

Bawa Biotech LLC
PATENT LAW • NANOMEDICINE • BIODEFENSE

Pharmaceutical Research Institute
ALBANY COLLEGE OF PHARMACY AND HEALTH SCIENCES

Albany College of Pharmacy and Health Sciences

CHOATE

ABA Section of Science & Technology Law

Connecting the World of Biomedical Science
KARGER
Medical and Scientific Publishers

the international journal of nanomedicine

CEG
Center for Economic Growth
anything's possible™

WILEY
Interdisciplinary Reviews
NANOMEDICINE AND NANOBIOTECHNOLOGY

Pan Stanford Publishing

NanoViricides Incorporated

WILEY

OSHALiANG
Intellectual Property Law

American Society For Nanomedicine

MORTON
PUBLISHING

CfPA
THE CENTER FOR PROFESSIONAL ADVANCEMENT

Nanotechnology Law & Business

Future Science OA

weSRCH
technology = opportunity
High Tech
Med Tech
Green Tech

ABA
AMERICAN BAR ASSOCIATION

Journal of Interdisciplinary Nanomedicine

FUTURE SCIENCE

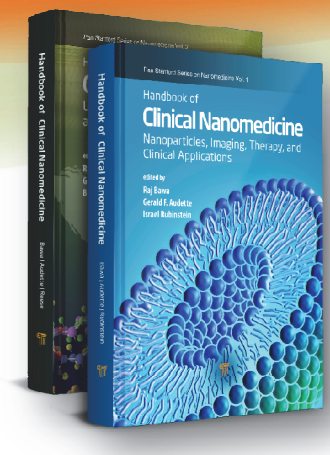
BRITISH SOCIETY FOR NANOMEDICINE

Rensselaer

Rensselaer Biological Sciences

Handbook of Clinical Nanomedicine

Two-Volume Set



Available in Two Volumes
Vol. 1: 9789814669207 (Hardcover), 9789814669214 (eBook)
Vol. 2: 9789814669221 (Hardcover), 9789814669238 (eBook)
Set: 9789814316170 (Hardcover), 9789814411660 (eBook)
3,000 pages (approx.)
January 2016
US$999.95/ £637 (Individual volumes are available separately at US$590 / £376)

Readership

clinicians, researchers, engineers, physicians, lawyers, business professionals, regulators, policy makers, and venture capitalists

Pan Stanford Series on Nanomedicine

Diversity within the broad and evolving arena of nanomedicine and nanopharma is reflected in the expertise of the distinguished contributing authors. The chapters contain key words, figures in full-color and an extensive list of references. As compared to texts on the market, each handbook in the series is comprehensive and intended to be a stand-alone reference resource, presented in a user-friendly format for easy access. The editors have skillfully curated each chapter to reflect the most relevant and current information possible. The range of topics covered as well as the multidisciplinary approach of the handbooks will attract a global audience. The handbooks are essential reading for both the novice and expert in fields ranging from medicine, biotechnology, pharmaceutical sciences, engineering, FDA law, intellectual property, policy, future studies, ethics, licensing, commercialization, risk analysis, and toxicology.

How to Order

SAVE 20% with FREE standard shipping when you order online at **www.crcpress.com** and enter Promo Code **PAN01**

Alternatively, you can contact our distributor as follows:

CRC Press (*Taylor & Francis*)
6000 Broken Sound Parkway NW, Suite 300
Boca Raton, FL 33487, USA
Tel: +1 800-272-7737
Fax: +1 800-374-3401
Email: orders@taylorandfrancis.com

Series Editor
Raj Bawa, MS, PhD
(*Bawa Biotech LLC, USA, and Rensselaer Polytechnic Institute, USA*)

Key Features

- Examines the entire "product wheel" from creation of nanomedical products to final market introduction in a stand-alone, easily accessible format
- Serves as an essential reference for the novice and expert alike in fields such as medicine, law, biotechnology, pharmaceutical sciences, engineering, policy, future studies, ethics, licensing, and toxicology
- Addresses critical topics such as personalized medicine, ethics, environmental health, nomenclature, nano-economics, business strategy, licensing, intellectual property, FDA law, EPA law, and governmental policy issues

***Handbook of Clinical Nanomedicine.* Vol. 1. *Nanoparticles, Imaging, Therapy, and Clinical Applications,* Raj Bawa, PhD, Gerald F. Audette, PhD, and Israel Rubinstein, MD (Editors)**

This handbook (55 chapters) provides a comprehensive roadmap of basic research in nanomedicine as well as clinical applications. However, unlike other texts in nanomedicine, it not only highlights current advances in diagnostics and therapeutics but also explores related issues like nomenclature, historical developments, regulatory aspects, nanosimilars and 3D nanofabrication. While bridging the gap between basic biomedical research, engineering, medicine and law, the handbook provides a thorough understanding of nano's potential to address (i) medical problems from both the patient and health provider's perspective, and (ii) current applications and their potential in a healthcare setting.

***Handbook of Clinical Nanomedicine.* Vol. 2. *Law, Business, Regulation, Safety, and Risk*, Raj Bawa, PhD (Editor), Gerald F. Audette, PhD, and Brian E. Reese, PhD, MBA, JD (Assistant Editors)**

This unique handbook (60 chapters) examines the entire "product life cycle," from the creation of nanomedical products to their final market introduction. While focusing on critical issues relevant to nanoproduct development and translational activities, it tackles topics such as regulatory science, patent law, FDA law, ethics, personalized medicine, risk analysis, toxicology, nano-characterization and commercialization activities. A separate section provides fascinating perspectives and editorials from leading experts in this complex interdisciplinary field.

PAN STANFORD PUBLISHING

Reviews for *Handbook of Clinical Nanomedicine: Nanoparticles, Imaging, Therapy, and Clinical Applications* (*Volume 1*)

"*Dr. Bawa and his team have meticulously gathered the distilled experience of world-class researchers, clinicians and business leaders addressing the most salient issues confronted in product concept development and translation. Knowledge is power, particularly in nanomedicine translation, and this handbook is an essential guide that illustrates and clarifies our way to commercial success.*"

Gregory Lanza, MD, PhD
Professor of Medicine and Oliver M. Langenberg Distinguished Professor
Washington University Medical School, USA

"*This is an outstanding, comprehensive volume that crosscuts disciplines and topics fitting individuals from a variety of fields looking to become knowledgeable in medical nanotech research and its translation from the bench to the bedside.*"

Shaker A. Mousa, PhD, MBA
Vice Provost and Professor of Pharmacology
Albany College of Pharmacy and Health Sciences, USA

"*Masterful! This handbook will have a welcome place in the hands of students, educators, clinicians and experienced scientists alike. In a rapidly evolving arena, the authors have harnessed the field and its future by highlighting both current and future needs in diagnosis and therapies. Bravo!*"

Howard E. Gendelman, MD
Margaret R. Larson Professor and Chair
University of Nebraska Medical Center, USA

"*It is refreshing to see a handbook that does not merely focus on preclinical aspects or exaggerated projections of nanomedicine. Unlike other books, this handbook not only highlights current advances in diagnostics and therapies but also addresses critical issues like terminology, regulatory aspects and personalized medicine.*"

Gert Storm, PhD
Professor of Pharmaceutics
Utrecht University, The Netherlands

Reviews for *Handbook of Clinical Nanomedicine: Law, Business, Regulation, Safety, and Risk* (*Volume 2*)

"The distinguished editors have secured contributions from the leading experts in nanomedicine law, business, regulation and policy. This handbook represents possibly the most comprehensive and advanced collections of materials on these critical topics. An invaluable standard resource."

Gregory N. Mandel, JD
Peter J. Liacouras Professor of Law and Associate Dean
Temple University Beasley School of Law, USA

"This is an outstanding volume for those looking to become familiar with nanotechnology research and its translation from the bench to market. Way ahead of the competition, a standard reference on any shelf."

Shaker A. Mousa, PhD, MBA
Vice Provost and Professor of Pharmacology
Albany College of Pharmacy, USA

"The editors have gathered the distilled experience of leaders addressing the most salient issues confronted in R&D and translation. Knowledge is power, particularly in nanotechnology translation, and this handbook is an essential guide that illustrates and clarifies our way to commercial success."

Gregory Lanza, MD, PhD
Professor of Medicine and Oliver M. Langenberg Distinguished Professor
Washington University Medical School, USA

"The title of the handbook reflects its broad-ranging contents. The intellectual property chapters alone are worthy of their own handbook. Dr. Bawa and his coeditors should be congratulated for gathering the important writings on nanotech law, business and commercialization."

Richard J. Apley, JD
Chief Patent Officer
Litman Law Offices/Becker & Poliakoff, USA

"It is clear that this handbook will serve the interdisciplinary community involved in nanomedicine, pharma and biotech in a highly comprehensive way. It not only covers basic and clinical aspects but the often missing, yet critically important, topics of safety, risk, regulation, IP and licensing. The section titled 'Perspectives and Editorials' is superb."

Yechezkel (Chezy) Barenholz, PhD
Professor Emeritus of Biochemistry and Daniel Miller Professor of Cancer Research
Hebrew University-Hadassah Medical School, Israel

Poster Submissions (as of September 7, 2016): Posters will be accepted until September 19, 2016

Molecular Regulation of Host Inflammation during Influenza: A Virus Infection
Eric Yager, PhD, Assistant Professor, Microbiology, Albany College of Pharmacy and Health Sciences (Albany, NY)

Sulforaphane Blocks HIV Infection of Macrophages through Nrf2
Hamayun Sharifi, PhD, Assistant Professor, Basic and Social Sciences, Albany College of Pharmacy and Health Sciences (Albany, NY)

The Suppression of HIV Infection by p53 Depends on Host Cell Status
Binshan Shi, PhD, Assistant Professor, Health Sciences, Albany College of Pharmacy and Health Sciences (Albany, NY)

A Salicylate Enhanced Antimicrobial Activity of Synthetic Peptides Against Pseudomonas Aeruginosa
Ebot Tabe, PhD Instructor, Health Sciences, Albany College of Pharmacy and Health Sciences (Albany, NY)

Innate control of pneumonic Francisella tularensis infection through macrophage depletion and polarization
Don Steiner and Dennis W. Metzger, Albany Medical College (Albany, NY)

Immune tolerance against pulmonary F. tularensis infection
Alicia Soucy, Graduate Student, DR. Dennis W. Metzger's lab, Department of Immunology and Microbial Disease, Albany Medical College (Albany, NY)

Role of glycosaminoglycans in pathogenic flaviviruses, in particular ZIKV
So-Young Kim, Doctoral Student, Dr. Linhardt's lab, Rensselaer Polytechnic Institute (Troy, NY)

A comparative study for identifying the presence of ricin toxin in environmental matrices
Michael Perry, MS, Research Scientist II, Biodefense Laboratory, Wadsworth Center (Albany, NY)

Implementing MALDI-TOF/MS in the public health laboratory for C. botulinum neurotoxin detection
Dominick Centurioni, MS, Research Scientist I, Biodefense Laboratory, Wadsworth Center (Albany, NY)

Engineering a Targeted Vaccine Platform in Francisella tularensis
Kristen Holland and Karsten Hazlett, PhD., Albany Medical College (Albany, NY)

HIV and the Antioxidant Transcription Factor, Nrf2: An Evolutionary Arms Race
Jesse Rabinowitz, Albany Medical College (Albany, NY)

Whole-genome Sequencing of Shiga toxin-producing E. coli to Identify Serogroup, Virulence Factors, and Genomic Clusters
S.E. Wirth, T. Quinlan, D.J. Baker, D. Bopp, T. Halse, E. Lasek-Nesselquist, P. Lapierre, K.A. Musser and W.J. Wolfgang, Division of Infectious Diseases, Wadsworth Center, NYSDOH (Albany, NY)

Impact of Whole Genome Sequencing of Mycobacterium tuberculosis Isolates in a Public Health Laboratory
Joseph Shea, T. Halse, P. Lapierre, M. Shudt, M. Isabelle, P. Van Roey, V. Escuyer and K. A. Musser Wadsworth Center, NYSDOH (Albany, NY)