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Cambridge Healthtech Institute's 5th Annual

# RE-ENTERING ANTIBACTERIAL DISCOVERY AND DEVELOPMENT SUMMIT

**SEPTEMBER 25-28, 2018 | SHERATON BOSTON | BOSTON, MA**

*Part of the 16th Annual* Discovery on TARGET
September 25-28, 2018
Sheraton Boston
Boston, MA

## 2018 CONFERENCE PROGRAMS

- Antibacterial Discovery and Development
- Targeting Gram-Negative Pathogens
- Short Courses

## FEATURED SPEAKERS

**Sean Brady, PhD,**
Associate Professor, The Laboratory of Genetically Encoded Small Molecules, Rockefeller University

**Kevin Outterson,**
Professor of Law, N. Neal Pike Scholar in Health and Disability Law, Boston University, Executive Director, CARB-X

**Steven Projan,**
Senior Vice President, R&D, Innovative Medicines Head of Infectious Diseases & Vaccines, MedImmune

**Richard Colvin, MD, PhD,**
Executive Director, Translational Medicine, Infectious Diseases, Novartis Institutes for Biomedical Research

**Katherine Young, MS,**
Senior Principal Scientist, Richard T. Clark Fellow for Global Health, Infectious Diseases, Merck

**ADVISORS:**
**Lynn Silver,** LL Silver Consulting;
**Ruben Tommasi,** Entasis Therapeutics;
**Joyce Sutcliffe,** Formerly Tetraphase;
**Todd Black,** Merck

**AntibacterialDrugDevelopmentSummit.com**

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RE-ENTERING ANTIBACTERIAL DISCOVERY AND DEVELOPMENT SUMMIT

# About the Summit

We are witnessing rapidly unfolding efforts to reinvigorate the antibacterial pipeline, improve antimicrobial stewardship and bring the multidrug microbial resistance under control. Industry, academia and government entities are working together on sustainable solutions for the antibiotic resistance crisis. Multidrug-resistant Gram-negative bacteria currently pose the biggest threat and attract the most attention from researchers and policy makers. Novel platforms, screening strategies and new drugs as well as new pathways for clinical development and market access are needed to overcome the current state of emergency associated with multidrug-resistant bacteria. Cambridge Healthtech Institute's 5th Annual Re-Entering Antibacterial Discovery and Development Summit is designed as a knowledge and experience exchange for the major stakeholders working in this important area. The Summit features two conferences, Antibacterial Discovery and Development (September 26-27) and Targeting Gram-Negative Pathogens (September 27-28), and several short courses.

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FIFTH ANNUAL | SEPTEMBER 26-27, 2018 | BOSTON, MA

# Antibacterial Discovery and Development

## Helping Antibacterial Development to Move Forward

New discovery platforms, novel screens and approaches are vital for the discovery of new antibacterials and for ceasing the dangerous trend of multidrug microbial resistance. Cambridge Healthtech Institute's 5th Annual Antibacterial Discovery and Development track will focus on the general, strategic issues and solutions that would allow new antibacterial development to move forward. The conference will be held as part of the 5th Annual Re-Entering Antibacterial Discovery and Development Summit, and it will be followed by Targeting Gram-Negative Pathogens.

*Advisors: Lynn Silver, LL Silver Consulting; Ruben Tommasi, Entasis Therapeutics; Joyce Sutcliffe, Formerly Tetraphase; Todd Black, Merck*

### RECOMMENDED ALL ACCESS PACKAGE:

*Choose 2 Short Courses or 1 Symposium and 2 Conferences*

- September 25 Short Course 10: Applications of Artificial Intelligence and Machine Learning in Drug Discovery and Development
- September 26-27 Conference: Antibacterial Discovery and Development
- September 27-28 Conference: Targeting Gram-Negative Pathogens
- September 27 Short Course 17: Technologies to Assess Permeability and Efflux in Gram-Negative Bacterial Pathogens

## WEDNESDAY, SEPTEMBER 26

**7:00 am Registration Open and Morning Coffee**

## DISCOVERY PLATFORMS: NATURAL PRODUCTS AND GENOME MINING

**8:00 Welcome Remarks**
*Mana Chandhok, Associate Conference Producer, Cambridge Healthtech Institute*

**8:05 Chairperson's Opening Remarks**
*Zachary Zimmerman, PhD, CEO, Co-Founder, Forge Therapeutics, Inc.*

**8:10 KEYNOTE PRESENTATION: Culture Independent Discovery of New Antibiotics**

*Sean Brady, PhD, Associate Professor, The Laboratory of Genetically Encoded Small Molecules, Rockefeller University*

Uncultivated microorganisms are an attractive source of potentially new antibiotics. Although there is no easy way to culture most environmental bacteria, it is possible to clone microbial DNA directly from environmental samples and study this DNA in the lab. We are using both functional and sequence-based metagenome screening strategies to identify antibiotics encoded by environmental bacteria. Antibiotics isolated in these studies will be discussed.

**8:40 Forging Novel Classes of Antibiotics**
*Zachary Zimmerman, PhD, CEO, Co-Founder, Forge Therapeutics, Inc.*

Forge Therapeutics is focused on developing small molecule, direct-acting, novel antibiotics that inhibit select metalloenzymes to treat infections caused from high priority drug-resistant bacteria. We are currently in late lead optimization for the first-ever non-hydroxamate inhibitor of LpxC, a bacterial Zn2+ hydrolase, for IV/oral treatment of urinary tract infection ('FG-LpxC-UTI').

**9:10 Antimicrobials for Unmet Medical Needs**
*Kim Lewis, PhD, University Distinguished Professor, Biology; Director of Antimicrobial Discovery Center, Biology, Northeastern University*

We identified compounds with no detectable resistance (Teixobactin, Novo29), and capable of killing persister cells (ADEP, lassomycin). ADC56 is a novel antimicrobial with coverage of Gram negative ESKAPE pathogens. Lyme disease is caused by B. burgdorferi, and we identified compounds acting selectively against this pathogen. Selectively killing pathobionts of the human microbiome is a new area for antimicrobial drug discovery, and we will discuss it as well.

**9:40 Grand Opening Coffee Break in the Exhibit Hall with Poster Viewing**

## DISCOVERY PLATFORMS (CONT.)

**10:25 Mining the Actinomycete Armamentarium for Novel Antibiotics**
*Laurence E. Reid, PhD, CEO, Warp Drive Bio*

Warp Drive Bio is deploying state-of-the-art, genome mining technologies to access natural molecules that have been historically "hidden" within microbes. We have built databases of genomic sequence from over 135,000 strains, encoding more than four million biosynthetic gene clusters. We are exploiting this database to isolate clusters that synthesize natural products that have not been previously studied and which have predicted antimicrobial activity. We will review our results to date regarding discovery of novel antimicrobials.

**10:55 Near Future Prospects from Natural Products**
*Jose Ruben Tormo, PhD, Associate Area Head & Collection Manager, Chemistry, Fundacion MEDINA*

Microbial natural products (NPs) are one of the most prolific sources of new leads for the discovery of novel antibiotics with a large number of molecules and analogs still today in the clinic. NPs present a unique chemical space with potency and selectivity being the result of an extended evolutionary selection. New integrated NPs discovery approaches are playing a key role in the identification of new molecules to be developed to fill the antibiotic pipeline.

**11:25 Progress toward Selective Bacterial Protein Synthesis Antibacterials**
*Chad Testa, PhD, Vice President, Cūrza Global, LLC*

Inspired by a natural product, Cūrza is developing antibiotics that selectively inhibit bacterial protein synthesis by acting on a clinically undrugged binding site on the ribosome. CZ-02s have excellent drug-like properties, do not show cross-resistance to other protein synthesis inhibitors (e.g., aminoglycosides, tetracyclines), are efficacious in murine *E. coli* infection models, have potent selective inhibition of bacterial protein synthesis and are not cytotoxic.

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**11:55 Sponsored Presentation** *(Opportunity Available)*

**12:25 pm Session Break**

**12:35 Luncheon Presentation** *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

**1:15 Refreshment Break in the Exhibit Hall with Poster Viewing**

## ALTERNATIVE THERAPIES

**1:50 Chairperson's Remarks**
*Neeraj (Neil) Surana, MD, PhD, Assistant Professor of Pediatrics, Molecular Genetics and Microbiology, Duke University*

**1:55 The Efficacy, Safety, and Tolerability of Gepotidacin (GSK2140944)**
*David Gardiner, Medicine Development Leader, Gepotidacin, GSK*

**2:15 Cloudbreak Antibody-Drug Conjugates for Treatment of MDR Gram Negative Bacterial Infections**
*Leslie Tari, PhD, Vice President Discovery, Cidara Therapeutics*
Cloudbreak ADCs physically link the pathogen and the immune component to eradicate pathogens via dual killing mechanisms. The engagement of specific innate immune system components confers potential to largely limit resistance development in target pathogens. Furthermore, by linking to an antibody Fc, ADCs possess extended half-lives to support once-weekly or bi-weekly dosing, making them well suited as immunotherapeutic agents to prevent and treat life-threatening multidrug-resistant Gram-negative infections.

**2:35 Anti-Persister Strategy for the Treatment of Chronic, Recurrent Infections**
*Diane Joseph-McCarthy, PhD, Vice President, Translational Science, EnBiotix*
Bacteria can enter into a persister state in response to various stresses including antibiotic treatment. In this metabolically dormant state, bacteria become tolerant or "transiently resistant" to antibiotics, which can lead to chronic, recurrent infections including persistent lung infections. Combinations of aminoglycosides with bacterial metabolites as proton-motive force enhancing potentiators were investigated. Pairwise combinations were screened using the time-kill method as well as biofilm assays. Eliminating bacterial persisters early may be a key to limiting further resistance and prolonging the lifetime of clinically important anti-infective agents.

**2:55 Sponsored Presentation** *(Opportunity Available)*

**3:25 Refreshment Break in the Exhibit Hall with Poster Viewing and Poster Competition Winner Announced**

## UTILIZING THE MICROBIOME

**4:05 Exploiting Host–Microbiome Interactions to Treat Infectious Diseases**
*Neeraj (Neil) Surana, MD, PhD, Assistant Professor of Pediatrics, Molecular Genetics and Microbiology, Duke University*
Although investigators are working on developing new antibiotics, the history of the past ~75 years suggests that success will be short-lived before confronting resistance. An alternative to drugs that directly target the pathogen is to augment the host immune response—in a pathogen agnostic manner—to better contain the infection. Improved understanding of cause-effect relationships between the microbiome and immunity will lead to new treatment modalities that complement conventional antibiotics.

**4:35 Mining the Human Microbiome for Novel Gram-Negative Antibiotics**
*Jessica Ferreyra, PhD, Scientist, Biology, NGM Biopharmaceuticals*
We have identified human microbiota-derived peptides that exhibit antimicrobial activity against human pathogens. Using two bioinformatics discovery pipelines, we identified 1,204 candidate antimicrobial products from 2,161 microbial genomes of bacteria associated with human gut, mouth, skin and urogenital sites.

**5:05 Interactive Breakout Discussion Groups**
Join a breakout discussion group. These are informal, moderated discussions with brainstorming and interactive problem solving, allowing participants from diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic. Details on the topics and moderators are available on the conference website.

**6:05 Welcome Reception in the Exhibit Hall with Poster Viewing**

**7:10 Close of Day**

## THURSDAY, SEPTEMBER 27

**7:30 am Registration Open and Morning Coffee**

## FUNDERS AND ACCELERATORS

**8:00 Chairperson's Remarks**
*Vikas Goyal, Associate, SR One*

**8:05 Replenishing and Enabling the Pipeline for Anti-Infective Resistance (REPAIR)**
*Aleks Engel, PhD, Partner, Novo Seeds, Nova Holdings*
The REPAIR Impact Fund will invest $165m over 3-5 years in novel anti-infective therapies between lead optimization and end of Phase I.

**8:25 Funding Opportunities with CARB-X**
*Kevin Outterson, Professor of Law, N. Neal Pike Scholar in Health and Disability Law, Boston University; Executive Director, CARB-X*
CARB-X is a $455M public-private partnership funded by BARDA, the Wellcome Trust, and NIAID. We provide non-dilutive awards to companies to support innovative preclinical and Phase I development focused on priority bacterial pathogens.

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**8:45 How BARDA Is Addressing the Global Threat of Antimicrobial Resistance by Stimulating the End-to-End Research and Development of Novel Antibacterial Products**

*Christopher Houchens, Branch Chief, Antibacterials Program, Biomedical Advanced Research and Development Authority*

Since 2010, the Biomedical Advanced Research and Development Authority (BARDA) has addressed the rising threat of antimicrobial resistance by providing direct funding, access to core development and manufacturing services, and technical and business support to small biotechs and large, global pharmaceutical companies supporting the clinical development of new antibiotics. In 2016, BARDA, along with the Wellcome Trust and the National Institutes of Health, established the Combatting Antibiotic Resistant Bacteria Accelerator, or CARB-X, a public-private partnership managed by Boston University accelerating the preclinical research and development innovative products addressing the AMR threat. Together, BARDA is providing end-to-end support to developers of novel diagnostics, preventatives and treatments to beat back the growing global threat of antibacterial resistant bacteria.

**9:05 Sponsored Presentation** *(Opportunity Available)*

**9:35 Coffee Break in the Exhibit Hall with Poster Viewing**

**10:20 PANEL DISCUSSION: Filling in the Funding Gaps**

*Vikas Goyal, Associate, SR One (Moderator)*
*Christopher Houchens, Branch Chief, Antibacterials Program, Biomedical Advanced Research and Development Authority*
*Kevin Outterson, Professor of Law, N. Neal Pike Scholar in Health and Disability Law, Boston University; Executive Director, CARB-X*
*Aleks Engel, PhD, Partner, Novo Seeds, Nova Holdings*
*François Franceschi, PhD, Project Leader ¦ Antimicrobial Memory Recovery and Exploratory Programme (AMREP), Global Antibiotic R&D Partnership (GARDP)*

With the past years filled with energetic activism from the antibacterial community, the world is joining together to fight antibacterial drug resistance. This panel will discuss current funding opportunities, challenges to overcome and hope for the future.

**11:20 Luncheon Presentation** *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

**11:50 Conference Registration Open**

**12:20 pm Plenary Keynote Program**

**2:00 Refreshment Break in the Exhibit Hall with Poster Viewing**

**2:45 Close of Conference**

## Conference Hotel & Venue:

**Sheraton Boston Hotel**
39 Dalton Street, Boston, MA 02199
T: 617-236-2000

Reservations: Go to the travel page of AntibacterialDrugDevelopmentSummit.com

**Discounted Room Rate: $329 s/d**
**Discount Cut-off Date: August 29, 2018**

Please visit the travel page of AntibacterialDrugDevelopmentSummit.com for additional information.

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SECOND ANNUAL | SEPTEMBER 27-28, 2018 | BOSTON, MA

# Targeting Gram-Negative Pathogens

## Small Molecules, Biologics and More

Multidrug-resistant Gram-negative bacteria are one of the main challenges for the healthcare system and public health in general. Gram-negative bacteria have specific scientific problems, such as low permeability of the outer membrane that must be overcome, complicated and multiple resistance mechanisms, etc. Cambridge Healthtech Institute's 2nd Annual Targeting Gram-Negative Pathogens conference will be taking place as a part of the 5th Annual Re-Entering Antibacterial Discovery and Development Summit. It will be preceded by the more general Antibacterial Discovery and Development.

*Advisors: Lynn Silver, LL Silver Consulting; Ruben Tommasi, Entasis Therapeutics; Joyce Sutcliffe, Formerly Tetraphase; Todd Black, Merck*

### RECOMMENDED ALL ACCESS PACKAGE:

*Choose 2 Short Courses or 1 Symposium and 2 Conferences*

- September 25 Short Course 12: Clinically Relevant Animal Modeling for the Evaluation of Novel Antibacterial Approaches
- September 26-27 Conference: Antibacterial Discovery and Development
- September 27-28 Conference: Targeting Gram-Negative Pathogens
- September 27 Short Course 17: Technologies to Assess Permeability and Efflux in Gram-Negative Bacterial Pathogens

## THURSDAY, SEPTEMBER 27

**11:50 am Conference Registration Open**

**12:20 pm Plenary Keynote Program**

**2:00 Refreshment Break in the Exhibit Hall with Poster Viewing**

## BREAKING OPEN BARRIERS

**2:45 Welcome Remarks**

*Mana Chandhok, Associate Conference Producer, Cambridge Healthtech Institute*

**2:50 Chairperson's Opening Remarks**

*Richard Colvin, MD, PhD, Executive Director, Translational Medicine, Infectious Diseases, Novartis Institute for Biomedical Research*

**2:55 KEYNOTE PRESENTATION: Staphylococcus aureus mAbs in Development**

*Steven Projan, PhD, Former Senior Vice President, MedImmune; Beat the Reaper, LLC*

There has been an increasing focus on the potential use of immunotherapies for bacterial infections (in what can best be called a back to the future approach as immune anti sera were raised in large animals in the latter part of the nineteenth century with Emil von Behring winning first Nobel Prize for Physiology or Medicine). Now in the 21st century the use of (fully human) monoclonal antibodies are being aggressively investigated in human clinical studies with Staphylococcus aureus being the prime pathogen being target. Can the neutralization of one or a handful of the 300 plus virulence factors that Staph produces have a therapeutic or prophylactic effect? The role of many of these virulence factors is evading the host response to infection but does the bacterium have an achilles heal? Preclinical data suggest this is the case with alpha toxin being one of the prime targets.

## EXTENDED-SPECTRUM BETA-LACTAMASE INHIBITORS: UPDATES

**3:25 Safety and Pharmacokinetics from a First-in-Human Phase I Study of LYS228, a Monobactam with Activity against Extended Spectrum β-Lactamase Expressing and Carbapenem-Resistant Enterobacteriaceae**

*Richard Colvin, MD, PhD, Executive Director, Translational Medicine, Infectious Diseases, Novartis Institutes for Biomedical Research*

LYS228 is being developed for treatment of patients with infections caused by Carbapenem-resistant Enterobacteriaceae (CRE) and extended spectrum β-lactamase (ESBL)-expressing Enterobacteriaceae. LYS228 was studied in a first-in-human, randomized, double-blind, placebo-controlled, single and multiple ascending intravenous dose study to assess the safety, tolerability, and pharmacokinetics. The safety and pharmacokinetics were consistent with other monobactam and β-lactam antibiotics. These data support continued development of LYS228 for the treatment of Gram-negative infections.

**3:55 Sponsored Presentation** *(Opportunity Available)*

**4:25 Refreshment Break in the Exhibit Hall with Poster Viewing**

**5:00 *In vitro* Activity of Imipenem-Relebactam against Gram-Negative ESKAPE Pathogens**

*Katherine Young, MS, Senior Principal Scientist, Richard T. Clark Fellow for Global Health, Infectious Diseases, Merck*

Relebactam (formerly MK-7655) is an inhibitor of class A and C β-lactamases, including Klebsiella pneumoniaecarbapenemase (KPC), and is currently in clinical development in combination with imipenem-cilastatin. Using Clinical and Laboratory Standards Institute (CLSI)-defined broth microdilution methodology, we evaluated the *in vitro* activities of imipenem-relebactam, imipenem, and seven routinely tested parenteral antimicrobial agents against Gram-negative ESKAPE pathogens.

**5:30 Innovation and Challenges in the Development of Beta-Lactamase Inhibitor Combinations**

*Michael N. Dudley, PharmD, FIDSA, Senior Vice President, CSO, Head of Infectious Disease Global Innovation, The Medicines Company*

Development of new antibiotics for resistant gram-negative infections has been most successful by restoring the activity of proven β-lactam antibiotics

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through use of novel β-lactamase inhibitors. However, combination therapy presents challenges in getting the right partner agent as well as getting the PK-PD right. Examples of successes and failures will be discussed.

**6:00 Restoring β-Lactam Efficacy against Methicillin-Resistant Staphylococci**

*Holly Sutterlin, PhD, Director of Biology, Prokaryotics*

β-lactam antibiotics have served as the most impactful class of antibiotics but their efficacy has been eroded by the emergence of MRSA/E. To re-establish β-lactams as a standard of care therapy for MRSA/E infections, we are developing inhibitors of wall teichoic acid biosynthesis that exhibit bactericidal synergy in combination with broad-spectrum β-lactam antibiotics against diverse MRSA/E clinical isolates and show robust efficacy in a murine MRSA infection model.

**6:30 Dinner Short Course Registration**

Click here for details on short courses offered.

**9:30 Close of Day**

## FRIDAY, SEPTEMBER 28

**7:00 am Registration Open**

**7:30 Interactive Breakfast Breakout Discussion Groups**

Grab a cup of coffee and join a breakout discussion group. These are informal, moderated discussions with brainstorming and interactive problem solving, allowing participants from diverse backgrounds to exchange ideas and experiences and develop future collaborations around a focused topic. Details on the topics and moderators are available on the conference website.

## GRAM-NEGATIVE BIOLOGICS

**8:30 Chairperson's Remarks**

*Antonio DiGiandomenico, PhD, Principal Scientist, Microbial Sciences, MedImmune*

**8:35 Immunotherapeutics Targeting Antibiotic-Resistant *Pseudomonas aeruginosa***

*Antonio DiGiandomenico, PhD, Principal Scientist, MedImmune*

*P. aeruginosa* is a major challenge for new antimicrobial drug discovery efforts because of its versatile lifestyle and ability to develop antibiotic resistance. This rise in resistance coupled with the dearth in discovery of new antibiotic classes requires development of alternative antimicrobials, such as pathogen-specific monoclonal antibodies (mAbs). In this presentation, I will introduce novel anti-Pseudomonal mAbs and discuss their mechanisms of action in multiple infection models.

**9:05 Monoclonal Antibody Targeting the β-barrel Assembly Machine of *Escherichia coli* Is Bactericidal**

*Steven Rutherford, PhD, Scientist, Genentech*

Folding β-barrel proteins into the outer membrane is essential in Gram-negative bacteria. We discovered an antibody, MAB1, that inhibits BamA, an outer membrane protein required for β-barrel assembly in *Escherichia coli*. MAB1 is bactericidal when the LPS is truncated and it inhibits β-barrel folding, induces periplasmic stress, and disrupts outer membrane integrity. MAB1 highlights the potential for new mechanisms of antibiotics to inhibit bacterial growth by targeting extracellular epitopes.

**9:35 Next-Generation Approaches to Antibody Discovery for Treatment and Prevention of Infections Caused by Gram-Negative MDR Pathogens**

*Dante Ricci, PhD, Scientist, Early Research, Achaogen*

Cases of neonatal infection are increasingly attributed to Gram-negative pathogens, with multi-drug-resistant *Acinetobacter baumannii* emerging as a major underlying cause of neonatal sepsis and consequent mortality. I will discuss the advantages of antibody-based approaches to prevention and treatment of Gram-negative infections, and describe a platform for the efficient identification of broadly cross-reactive anti-Acinetobacter mAbs that bind live bacteria and forestall infection.

**10:05 Coffee Break in the Exhibit Hall with Poster Viewing and Poster Competition Winner Announced**

## ANTI-GRAM NEGATIVE SMALL MOLECULES: DISCOVERY AND DEVELOPMENT

**10:45 Phenotypic Screening Strategies and Outcomes Directed towards Novel Gram-Negative Targets**

*Carl Balibar, PhD, Principal Scientist, Infectious Diseases, Merck*

The emergence of multi-drug resistant bacteria is eroding the efficacy of existing antibiotics. Although genomics has greatly contributed to the identification of novel antibacterial targets, it has failed to exploit such targets to impact antibiotic discovery. Phenotypic screening remains the primary source for new antibacterial compounds; however, it is imperative to design screens with intent, target bias, and hit-prioritization strategies if high potential inhibitors and targets are to be discovered.

**11:15 On the Design and Optimization of the Pyrrolocytosines**

*Erin M. Duffy, PhD, CSO, Melinta Therapeutics, Inc.*

RX-P2382 is an advanced lead investigational compound from the newly developed pyrrolocytosine class. Pyrrolocytosines were specifically designed by Melinta to target previously untapped binding sites on bacterial ribosomes and optimized for activity against today's "superbugs". RX-P2382 demonstrated strong *in vitro* activity against all ESKAPE pathogens tested.

**11:45 Sponsored Presentation** *(Opportunity Available)*

**12:15 pm Session Break**

**12:25 Luncheon Presentation** *(Sponsorship Opportunity Available)* **or Enjoy Lunch on Your Own**

**1:15 Refreshment Break in the Exhibit Hall with Poster Viewing**

## CASE STUDIES AND COMPUTATIONAL APPROACHES

**1:55 Chairperson's Remarks**

*Sharookh Bomi Kapadia, Senior Scientist, Infectious Diseases, Genentech*

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**2:00 Bacterial Chemical Genomics: A Path of Ceased Resistance**

*Eric Brown, PhD, Professor, Biochemistry and Biomedical Sciences, McMaster University*

Antibiotic drug resistance has reached crisis proportions, owing to a dearth of new antibiotics. In the Brown lab, we are developing chemical-genomic approaches with utility in exploring complex biology and enigmatic processes that are essential for bacterial survival. Efforts to date have resulted in new understanding, platforms, chemical probes and lead compounds for antibacterial research. The ultimate goal is to contribute fresh directions for new antibacterial therapies.

**2:30 The Grim Reaper Is Lurking, What Matters More Death, Efficacy, or Safety?**

*Gary Eldridge, President & CEO, Sequoia Sciences, Inc.*

Sepsis from UTI leads to more deaths annually than breast cancer. Sequoia Sciences is developing a vaccine to reduce the recurrences of UTI. Sequoia has evaluated its vaccine in women with and without a history of recurrent UTI. The vaccine has been well-tolerated and highly immunogenic, and elicited functional antibody responses. The results of these human studies, including preliminary clinical evidence of efficacy, and the design of future clinical studies will be presented.

**3:00 Gram-Negative Lipoprotein Biosynthesis and Transport**

*Sharookh Bomi Kapadia, Senior Scientist, Infectious Diseases, Genentech*

Antibiotic discovery for Gram-negative bacteria pose further challenges due to the impermeability of the asymmetric LPS-containing outer membrane. Here, we will discuss our efforts to better understand the bacterial lipoprotein synthesis and transport pathways and highlight the success and challenges associated with targeting them.

**3:30 Bacterial Outer Membranes and Interactions with Membrane Proteins**

*Wonpil Im, PhD, Presidential Endowed Chair in Health, Science and Engineering, Professor of Biological Sciences and Bioengineering, Lehigh University*

The outer membrane of Gram-negative bacteria is a unique asymmetric membrane bilayer: phospholipids in the inner leaflet and lipopolysaccharides in the outer leaflet. Its function as a selective barrier is crucial for the survival of bacteria, and it also renders gram-negative bacteria resistant to antibiotics. I will present our ongoing molecular modeling and simulation studies on various bacterial outer membranes and their interactions with outer membrane proteins.

**4:00 Close of Conference**

# Present a Poster **& SAVE $50!**

Cambridge Healthtech Institute encourages attendees to gain further exposure by presenting their work in the poster sessions. To secure a poster board and inclusion in the conference materials, your abstract must be submitted, approved and your registration paid in full by August 10, 2018.

Register online, or by phone, fax or mail. Please indicate that you would like to present a poster. Once your registration has been fully processed, we will send an email with a unique link and instructions for submitting your abstract using our online abstract submission tool. Please see below for more information.

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**Note: Posters should be portrait orientation, with maximum dimensions of 36 inches wide (3 feet) x 48 inches high (4 feet).**

** We reserve the right to publish your poster title and abstract in various marketing materials and products.*




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# Short Courses

September 25 & September 27

## PRE-CONFERENCE SHORT COURSES

**Tuesday, September 25 | 2:00 - 5:00 PM**

### SC1: Introduction to GPCR-Based Drug Discovery

This course will provide an understanding for some of the pharmacological complexities of G protein-coupled receptors (GPCRs) as well as for the tools used to study them in a drug discovery setting. The course is well suited for biologists, pharmacologists and medicinal chemists who have recently started working with GPCRs or for those who need a refresher on the latest technological advances and newest paradigms.

*Instructor: Annette Gilchrist, PhD, Professor, Pharmacology, Midwestern University*

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more Short Course options

## PRE-CONFERENCE DINNER SHORT COURSES

**Tuesday, September 25 | 6:00 - 8:30 PM**

### SC10: Applications of Artificial Intelligence and Machine Learning in Drug Discovery and Development - Detailed Agenda

This course aims to educate a diverse group of scientists-chemists, biologists, toxicologists, and those involved in translational and clinical research, about the growing use and applications of AI and ML. Talks start with explaining the basic terminology used and what it means, followed by discussions separating the hope from the hype. It goes into the caveats and limitations in AI and ML, while exploring ways in which it can be successfully applied in the drug discovery and development pipeline. There will be experts from various areas presenting case studies on how they have used AI/ML tools for lead optimization, target discovery, visualizing and classifying large datasets, patient stratification and more.

*Instructors: Arvind Rao, PhD, Associate Professor, Department of Computational Medicine and Bioinformatics, University of Michigan*

*Deepak K. Rajpal, PhD, Senior Scientific Director, Computational Biology, GlaxoSmithKline R&D*

*Nicholas P. Tatonetti, PhD, Herbert Irving Assistant Professor of Biomedical Informatics and Director of Clinical Informatics, Herbert Irving Comprehensive Cancer Center, Columbia University*

## DINNER SHORT COURSES

**Thursday, September 27 | 7:00 - 9:30 PM**

### SC17: Technologies to Assess Permeability and Efflux in Gram-Negative Bacterial Pathogens

Our lack of understanding of the molecular basis for compound penetration into and efflux out of gram-negative bacteria has been identified as a key bottleneck for the rational discovery of novel antibacterial compounds. A main driver of this knowledge gap is the historical lack of assays, tools, and/or predictive models to provide medicinal chemists with structure-activity relationships that could guide optimization of whole cell penetration (and efflux avoidance). However, there have been some recent, promising advances in the field which set the stage for future innovative approaches.

*Instructors: David Six, PhD, Investigator III, Infectious Diseases, Novartis Institutes for BioMedical Research*

*Ram Iyer, PhD, Principal Scientist (Bacteriology), Entasis Therapeutics, Inc.*

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# Sponsorship, Exhibit & Lead Generation Opportunities

Comprehensive sponsorship packages allow you to achieve your objectives before, during, and long after the event. Signing on earlier will allow you to maximize exposure to hard-to-reach decision-makers.

### Podium Presentations – Available within the Main Agenda!

Showcase your solutions to a guaranteed, targeted audience through a 15- or 30-minute presentation during a specific conference program, breakfast, lunch, or separate from the main agenda within a pre-conference workshop. Package includes exhibit space, on-site branding, and access to cooperative marketing efforts by CHI. For the luncheon option, lunches are delivered to attendees who are already seated in the main session room. Presentations will sell out quickly, so sign on early to secure your talk!

### One-on-One Meetings

Select your top prospects from the pre-conference registration list. CHI will reach out to your prospects and arrange the meeting for you. A minimum number of meetings will be guaranteed, depending on your marketing objectives and needs. A very limited number of these packages will be sold.

### Invitation-Only VIP Dinner/Hospitality Suite

Sponsors will select their top prospects from the conference pre-registration list for an evening of networking at the hotel or at a choice local venue. CHI will extend invitations and deliver prospects, helping you to make the most out of this invaluable opportunity. Evening will be customized according to sponsor's objectives. (i.e.: Purely social, Focus group, Reception style, Plated dinner with specific conversation focus.

### Exhibit

Exhibitors will enjoy facilitated networking opportunities with 1,200+ qualified delegates, making it the perfect platform to launch a new product, collect feedback, and generate new leads from around the world. Exhibit space sells out quickly, so reserve yours today!

### Additional branding & promotional opportunities include:

- Hotel Room Keys
- Footprint Trails
- Conference Tote Bags
- Badge Lanyards
- Literature Distribution (Tote Bag Insert or Chair Drop)
- Padfolios
- Program Guide Advertisement

### Looking for additional ways to drive leads to your sales team?

CHI's Lead Generation Programs will help you obtain more targeted, quality leads throughout the year. We will mine our database of 800,000+ life science professionals to your specific needs. We guarantee a minimum of 100 leads per program!

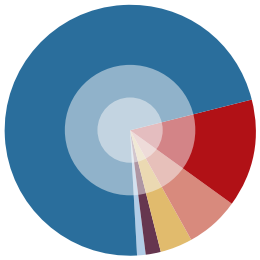
**Opportunities include:**

- Live Webinars • White Papers • Market Surveys
- Podcasts and More!

**For more information, please contact:**
Rod Eymael | Business Development Manager
781-247-6286 | reymael@healthtech.com

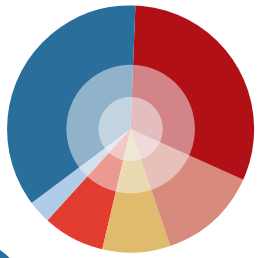
## 2017 ATTENDEE DEMOGRAPHICS

Attendees included industry leaders, innovators and decision makers from many different backgrounds



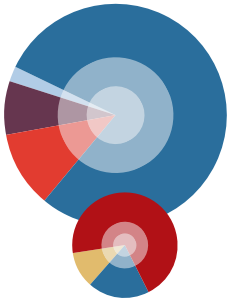
**COMPANY TYPE**

72% Biotech & Commercial
14% Academic & Government
7% Healthcare
4% Service & Societies
2% Financial
1% Press



**DELEGATE TITLE**

36% Executive & Director
31% Scientist/Technologist
13% Sales & Marketing
9% Professor
8% Manager
3% Assistant



**LOCATION**

79% United States
11% Europe
8% Asia
2% Rest of World

**US BREAKDOWN**

70% East Coast
19% West Coast
11% Midwest

REGISTER BY AUG. 31st AND SAVE UP TO $300



CLICK HERE TO **REGISTER ONLINE**

Cambridge HEALTHTECH Institute

A Division of Cambridge Innovation Institute

# HOW TO REGISTER:

# AntibacterialDrugDevelopmentSummit.com


reg@healthtech.com • P: 781.972.5400 or Toll-free in the U.S. 888.999.6288


Please use keycode **BAC F** when registering!

## Pricing and Registration Information

### SHORT COURSE ONLY PRICING

| | Commercial | Academic, Government, Hospital-affiliated |
|---|---|---|
| 1 Short Course | $699 | $399 |
| 2 Short Courses | $999 | $699 |
| 3 Short Courses | $1,199 | $899 |

### SYMPOSIUM PRICING

| | Commercial | Academic, Government, Hospital-affiliated |
|---|---|---|
| 1 Symposium - Tue Sep 25, 2018 | $999 | $699 |

❑ S1: Antivirals: Targeting HBV and Beyond ❑ S2: Targeting Autophagy ❑ S3: Regenerative Medicine

### CONFERENCE PRICING

| | | |
|---|---|---|
| **ALL-ACCESS PACKAGE** *(Choose 2 Short Courses or 1 Symposium and 2 Conferences)* | | |
| Advance Registration until August 31 | $3,199 | $1,849 |
| Registrations After August 31, 2018 and On-Site | $3,399 | $2,049 |
| **STANDARD PACKAGE** *(Choose 2 Conferences (Excludes Short Courses and Symposia)* | | |
| Advance Registration until August 31 | $2,749 | $1,329 |
| Registrations After August 31, 2018 and On-Site | $3,049 | $1,429 |
| **SINGLE PACKAGE** *(Choose 1 Conference (Excludes Short Courses and Symposia)* | | |
| Advance Registration Rate Until August 31, 2018 | $1,799 | $979 |
| Registrations After August 31, 2018 and On-Site | $1,999 | $1,099 |

### CONFERENCE DISCOUNTS

**Poster Submission - Discount ($50 Off):** Dedicated poster sessions for Symposia and Conference Programs.

Poster abstracts are due by August 10, 2018. Once your registration has been fully processed, we will send an email containing a unique link allowing you to submit your poster abstract. If you do not receive your link within 5 business days, please contact jring@healthtech.com.

**REGISTER 3 - 4th IS FREE:** Individuals must register for the same conference or conference combination and submit completed registration form together for discount to apply.

**Alumni Discount - SAVE 20%:** CHI appreciates your past participation at Re-Entering Antibacterial Discovery and Development Summit . As a result of the great loyalty you have shown us, we are pleased to extend to you the exclusive opportunity to save an additional 20% off the registration rate. Register 3 - 4th is Free! Individuals must register for the same conference or conference combination and submit completed registration form together for discount to apply.

**Group Discounts are Available!** Special rates are available for multiple attendees from the same organization. For more information on group discounts contact Jeff Knight at 781-247-6264.

**Additional registration details:**
Each registration includes all conference sessions, posters and exhibits, food functions, and access to the conference proceedings link.

**Handicapped Equal Access:**
In accordance with the ADA, Cambridge Healthtech Institute is pleased to arrange special accommodations for attendees with special needs. All requests for such assistance must be submitted in writing to CHI at least 30 days prior to the start of the meeting.

**To view our Substitutions/Cancellations Policy, go to healthtech.com/regdetails**

### SHORT COURSES

**September 25**

**SC1:** Introduction to GPCR-Based Drug Discovery

**SC2:** Drug Metabolism and Its Role in Discovery and Drug Development

**SC3:** How to Best Utilize 3D Cells, Spheroids, and PDX Models in Oncology

**SC8:** Targeting of Ion Channels with Monoclonal Antibodies

**SC9:** CNS Translational Strategies

**SC10:** Applications of Artificial Intelligence and Machine Learning in Drug Discovery and Development

**SC11:** Mechanistic Understanding of Pharmacological Probes for the Ubiquitin-Proteasome System

**September 27**

**SC13:** GPCR Structure-Based Drug Discovery

**SC14:** Advancing Tools and Technologies for Fragment-Based Design

**SC15:** Introduction to Targeted Covalent Inhibitors

**SC16:** Immunology Basics

**SC17:** Technologies to Assess Permeability and Efflux in Gram-Negative Bacterial Pathogens

**SC18:** Practical Phenotypic Screening

If you are unable to attend but would like to purchase the Antibacterial Drug Development Summit CD for $750 (plus shipping), please visit AntibacterialDrugDevelopmentSummit.com. Massachusetts delivery will include sales tax.

*Video and or audio recording of any kind is prohibited onsite at all CHI events.*