

# ***29<sup>th</sup> Annual First Coast Infectious Disease/Clinical Microbiology Symposium***

*Virtual Meeting*

*February 5, 2022*



**29<sup>th</sup> Annual First Coast Infectious Disease/Clinical Microbiology Symposium**  
**February 5, 2022**

**8:15-8:30am**      **Welcome**

**Yvette S. McCarter, PhD**  
University of Florida College of Medicine  
Jacksonville, FL

**D. Jane Hata, PhD**  
Mayo Clinic  
Jacksonville, FL

**Session 1**

**Moderator: Marsha Pace, BS** Baptist Medical Center, Jacksonville, FL

**8:30-9:30 am**      **Artificial Intelligence: Machine Learning for Diagnosing Disease**

**Andrew Norgan, MD, PhD**  
Mayo Clinic  
Rochester, MN

**Moderator: Bruce White, MS** Mayo Clinic, Jacksonville, FL

**9:30-10:30 am**      **It's More Than Just a Number: Best Practices for Reducing Blood Culture Contamination**

**Amanda Harrington, PhD**  
Loyola University Medical Center  
Maywood, IL

**10:30-10:45 am**      **STRETCH BREAK**

**Moderator: Noel Gomez, MMSc** UF Health Jacksonville, Jacksonville, FL

**10:45-11:45 am**      **New AST Technologies – Is the juice worth the squeeze?**

**Romney Humphries, PhD**  
Vanderbilt University Medical Center  
Nashville, TN

**11:45-12:45 pm**      **VIRTUAL EXHIBIT HALL (Zoom Breakout Rooms)**

**Session 2**

**Moderator: Diane Halstead, PhD** Global Infectious Disease Consultants, LLC, Jacksonville, FL

**12:45-1:45 pm**      **Diagnostic Testing Algorithms – Their Impact to Patient Care**

**Raquel Martinez, PhD**  
Geisinger Medical Laboratories  
Danville, PA

**Moderator: Frances Valencia-Shelton, PhD** Baptist Medical Center, Jacksonville, FL

**1:45-2:45 pm**      **Introduction to Phage Therapy**

**Graham Hatfull, PhD**  
University of Pittsburg  
Pittsburgh, PA

**2:45-3:00 pm**      **STRETCH BREAK**

**Moderator: Ann Ruby, MS** UF Health Jacksonville, Jacksonville, FL

**3:00-4:00 pm**      **Case Studies: Cutaneous and Cardiac Quagmires**

**Alexandra Bryson, PhD**  
Virginia Commonwealth University Medical Center  
Richmond, VA

**4:00 pm**      **Closing Remarks**

**Frances Valencia-Shelton, PhD**  
Baptist Medical Center, Jacksonville, FL

**4:10-4:30 pm**      **VIRTUAL EXHIBIT HALL (Zoom Breakout Rooms)**

**29<sup>th</sup> Annual First Coast Infectious Disease/Clinical Microbiology Symposium**  
**Virtual Meeting**  
**February 5, 2022**

**Learning Objectives**

**Upon completion of this activity, participants should be able to:**

1. Describe factors that contribute to blood culture contamination and potential mitigation strategies to minimize contamination
2. Assess practical approaches to implementing rapid antimicrobial susceptibility testing in the clinical microbiology laboratory
3. Review the use of bacteriophages for the treatment of bacterial infections
4. Explain the benefits of diagnostic testing algorithms on patient care
5. Discuss current applications of machine learning and artificial intelligence in the laboratory

**Target Audience**

Specialty physicians, pharmacists, laboratory technologists, supervisors, and managers

**Accreditation**

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education through the joint providership of the University of Florida College of Medicine and the First Coast Infectious Disease/Clinical Microbiology Symposium. The University of Florida College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

**Credit**

The University of Florida College of Medicine designates this live activity for a maximum of 6 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**29<sup>th</sup> Annual First Coast Infectious Disease/Clinical Microbiology Symposium**  
**Virtual Meeting**  
**February 5, 2022**

<b>Planning Committee Members <sup>1</sup> and Moderators <sup>2</sup></b>	
Helai Arsalla, MS <sup>1</sup> Mayo Clinic, Jacksonville, FL	Noel Gomez, MMSc <sup>1,2</sup> UF Health Jacksonville, Jacksonville, FL
Diane C. Halstead, PhD <sup>1,2</sup> Global Infectious Disease Consultants, LLC	D. Jane Hata, PhD <sup>1</sup> Mayo Clinic, Jacksonville, FL
Yvette S. McCarter, PhD <sup>1</sup> University of Florida College of Medicine, Jacksonville, FL	Aaron Odegard, MS <sup>1</sup> Baptist Medical Center, Jacksonville, FL
Marsha Pace, BS <sup>1,2</sup> Baptist Medical Center, Jacksonville, FL	Ann Ruby, MS <sup>1,2</sup> UF Health Jacksonville, Jacksonville, FL
Frances Valencia-Shelton, PhD <sup>1,2</sup> Baptist Medical Center, Jacksonville, FL	Bruce White, MS <sup>1,2</sup> Mayo Clinic, Jacksonville, FL



**29<sup>th</sup> Annual First Coast Infectious Disease/  
Clinical Microbiology Symposium  
Virtual Meeting  
February 5, 2022**

It is the policy of the University of Florida College of Medicine to ensure balance, independence, objectivity, and scientific rigor in all programs it provides. In accordance with the ACCME's Standards for Integrity and Independence in Accredited Continuing Education, the University of Florida College of Medicine is required to disclose to the activity audience the relevant financial relationships of all persons involved in the selection, development, and presentation of CME content. Persons who refuse or fail to disclose conflicts of interest are disqualified from participating in the CME activity.

All relevant financial relationships listed have been mitigated.

**Relevant financial relationships appear below:**

- The following speakers, moderators, and planning committee members have an affiliation/financial interest in the following areas:

Diane C. Halstead, PhD	Ownership Interest – Global Infectious Disease Consultants, LLC
Graham Hatfull, PhD	Consultant – Janssen, Tessera
Romney Humphries, PhD	Research Support – Qiagen, Specific Diagnostics Consultant – Accelerate Diagnostics, Pattern, Specific Diagnostics Stock Shareholder – Accelerate Diagnostics
Raquel Martinez, PhD	Consultant – BioFire Diagnostics, LLC

- The following speakers, moderators, and planning committee members have no relevant financial relationships to disclose:

Helai Arsalla, PhD	Aaron Odegard, MS
Alexandra Bryson, PhD	Andrew Norgan, MD, PhD
Noel Gomez, MMSc	Marsha Pace, BS
Amanda Harrington, PhD	Ann Ruby, MS
Jane Hata, PhD	Frances Valencia-Shelton, PhD
Yvette McCarter, PhD	Bruce White, MS

No one else in a position to control content has any financial relationships to disclose. Conflict of interest information for the CME Advisory Committee members can be found on the following website: <https://cme.ufl.edu/disclosure/>.





## **Andrew Norgan, MD, PhD**

Senior Associate Consultant and Assistant Professor of  
Laboratory Medicine and Pathology  
Mayo Clinic  
Rochester, MN

### **Biography**

Dr. Andrew Norgan is a Senior Associate Consultant and Assistant Professor of Laboratory Medicine and Pathology at Mayo Clinic, Rochester, MN. He completed subspecialty training in Clinical Microbiology at Mayo Clinic in Rochester and is board certified in the subspecialties of Clinical Microbiology and Clinical Informatics. In addition, Dr. Norgan serves as the Assistant Residency Program Director for Clinical Informatics in the Mayo Clinic Pathology Residency program. Dr. Norgan's research interests include placental and infectious disease pathology, metagenomic sequencing approaches for formalin-fixed and paraffin-embedded tissue, and the application of data science and machine learning to problems in Anatomic and Clinical Pathology.

### **Presentation Title: Artificial Intelligence: Machine Learning for Diagnosing Disease**

This presentation will provide an overview of machine learning and artificial intelligence, discuss use cases for the application of ML and AI in the microbiology laboratory, and provide a deep dive into the theory and technique underlying convolutional neural networks - the primary machine learning method used for image-recognition tasks today. Strengths and weaknesses of machine learning algorithms will be discussed, including the concepts of generalizability and overfitting.

### **Presentation Objectives**

At the end of the presentation, participants will be able to:

- describe current applications of machine learning and AI in the laboratory.
- describe and discuss convolutional neural networks and their use in image-based machine learning laboratory tools.
- discuss major considerations for validating / using an ML/AI tool in the lab.



## **Amanda Harrington, PhD**

Director, Clinical Microbiology Laboratory  
Loyola University Medical Center  
Maywood, IL  
Associate Professor of Pathology and Laboratory  
Medicine  
Loyola University Chicago  
Maywood, IL

### **Biography**

Amanda Harrington is an Associate Professor and Vice Chair for Clinical Pathology in the Department of Pathology and Laboratory Medicine and Director of the Loyola Medicine Clinical Microbiology Laboratory at Loyola University Medical Center in Maywood, IL. She is currently serving as the ASM representative to the American Society for Clinical Pathology Board of Certification Board of Governors, Clinical and Public Health Microbiology representative to the ASM Council of Microbial Sciences, and is the immediate Past-President of the Illinois Society for Microbiology.

### **Presentation Title: It's More Than Just a Number: Best Practices for Reducing Blood Culture Contamination**

This session will review factors that contribute to contamination of blood culture and strategies to monitor contamination rates in the laboratory. This session will also provide an overview of current practices for mitigation of blood culture contamination and provide a review of the literature regarding best practices and guidelines.

### **Presentation Objectives**

At the end of the presentation, participants will be able to:

- describe factors that impact and contribute to contamination of blood culture.
- define current benchmarks and metrics for contamination of blood culture.
- discuss mitigation strategies for reduction of contamination of blood culture.



## **Romney Humphries, PhD**

Director, Clinical Microbiology Laboratory  
Vanderbilt University Medical Center  
Nashville, TN  
Professor of Pathology, Microbiology and Immunology  
Vanderbilt University Medical Center  
Nashville, TN

### **Biography**

Romney Humphries, PhD D(ABMM) is a Professor in the Department of Pathology, Microbiology and Immunology at Vanderbilt University Medical Center, where she also serves as the Director of Infectious Diseases Laboratories and the Director of the Division of Laboratory Medicine. Romney received her PhD in bacteriology from the University of Calgary, Canada and a clinical and public health microbiology CPEP fellowship at UCLA.

Dr. Humphries' is passionate about clinical microbiology and antimicrobial resistance in particular. Having spent several years in diagnostic industry, she is a champion for the development of novel diagnostic tests for infectious diseases to transform how patients with infections are managed. She is an editor for the Journal of Clinical Microbiology, and a member of the Clinical and Laboratory Standards Institute (CLSI) Antibiotic Susceptibility Testing (AST) Subcommittee, the College of American Pathologists (CAP) Microbiology Committee, the American Society for Microbiology (ASM) Professional Practices Committee, and vice-chair of the Infectious Diseases Society of America Diagnostics Committee.

### **Presentation Title: New AST Technologies, is the Juice Worth the Squeeze?**

This session will review the novel technologies that are available and forthcoming that provide rapid susceptibility results. The clinical impact of these technologies will be reviewed, as reported in the literature.

### **Presentation Objectives**

At the end of the presentation, participants will be able to:

- describe the approaches to rapid susceptibility testing.
- evaluate the value of rapid susceptibility test results on patient outcomes.
- assess practical approaches to implementing rapid AST into the clinical laboratory.





## **Raquel Martinez, PhD**

System and Core Laboratory Director, Clinical and  
Molecular Microbiology  
Geisinger Medical Laboratories  
Danville, PA  
Clinical Assistant Professor, Geisinger Commonwealth  
School of Medicine  
Scranton, PA

### **Biography**

Raquel Martinez, PhD, D(ABMM), MBA is the System and Core Laboratory Director of Clinical and Molecular Microbiology at Geisinger Health System in Danville, Pennsylvania. She completed her PhD in Microbiology and Immunology, studying the bacterial pathogenesis of *Vibrio cholerae* at Dartmouth College. Dr. Martinez completed a clinical postdoctoral fellowship in Medical and Public Health Laboratory Microbiology at the University of Washington in Seattle. She is a Diplomate of the American Board of Medical Microbiology.

Dr. Martinez's research interests focus on infectious disease diagnostics, specifically rapid molecular technologies for the detection of bloodstream, respiratory, and prosthetic joint infections; as well as antimicrobial resistance. Dr. Martinez is also passionate about laboratory stewardship and the development of testing algorithms, along with integrating diagnostic medicine teams for the overall goal of improving patient care.

### **Presentation Title: Diagnostic Testing Algorithms – Their Impact to Patient Care**

Diagnostic testing algorithms play an important role in patient care. Moreover, testing algorithms can help streamline the ordering process and improve laboratory workflows. This presentation will review examples of testing algorithms, how to implement a testing algorithm, and provide relevant patient impact and outcome data.

### **Presentation Objectives**

At the end of the presentation, participants will be able to:

- discuss testing algorithms. What are they and how do you implement one?
- Build a business case. Review practical examples that show the cost value of implementing testing.
- Describe patient impact and outcome data. Review the benefits of testing algorithms on patient care.



## **Graham F. Hatfull, PhD**

Professor of Biological Sciences, Eberly Family Professor of Biotechnology, Howard Hughes Medical Institute Professor, University of Pittsburgh  
Pittsburgh, PA.

### **Biography**

Dr. Hatfull is Professor of Biological Sciences at the University of Pittsburgh. He received his Ph.D. in Molecular Biology from Edinburgh University in 1981 and did postdoctoral work at Yale University with Dr. Nigel Grindley and at the Medical Research Council at Cambridge University, with Fred Sanger and Bart Barrell. He joined the University of Pittsburgh in 1988 and served as Chair of the Department of Biological Sciences from 2003 to 2011. Dr. Hatfull's research focuses on the molecular genetics of the mycobacteria and their bacteriophages, and their use for educational and clinical uses. Dr. Hatfull has published over 250 peer-reviewed articles, 43 book chapters or reviews, and has co-edited four books. He is a fellow of the American Academy of Microbiology, a fellow of the American Association for the Advancement of Science, and a member of the American Academy of Arts and Sciences. He has been a Howard Hughes Medical Institute Professor since 2002.

### **Presentation Title: Introduction to Phage Therapy**

This presentation will discuss the prospects of using bacteriophages to treat bacterial infections, and as a possible solution for controlling antibiotic resistant pathogens. We will specifically discuss phages to treat mycobacterial infections, including human tuberculosis and non-tuberculous mycobacterium (NTM) infections in Cystic Fibrosis patients. Limitations and opportunities will be discussed.

### **Presentation Objectives**

At the end of the presentation, participants will be able to:

- describe what a bacteriophage is.
- list three desirable features of therapeutically useful phages.
- comment on the outcomes of phage therapy for one case study.



## **Alexandra Bryson, PhD**

Associate Director of Clinical Microbiology  
Assistant Professor of Pathology  
Virginia Commonwealth University Health System  
Richmond, VA

### **Biography**

Dr. Bryson is the Associate Director of Clinical Microbiology at Virginia Commonwealth University Health System in Richmond, Virginia. She completed her PhD in Microbiology, Virology, and Parasitology at the University of Pennsylvania. She completed a clinical postdoctoral fellowship in Medical and Public Health Laboratory Microbiology at the Mayo Clinic in Rochester Minnesota. She is a Diplomate of the American Board of Medical Microbiology.

She is currently serving as a member of the American Board of Medical Microbiology Board Exam Committee and the Clinical and Laboratory Standards Institute Quality Control Working Group.

### **Presentation Title: Diagnostic Case Studies: Cutaneous and Cardiac Quagmires**

This presentation is a series of case studies covering the diagnostic process for a range of bacterial, fungal, and parasitic causes of cutaneous and cardiac infections. Cases are presented in a stepwise fashion to allow the audience to actively think through each stage of the microbiologic workup. These cases highlight how to identify pathogens easily mistaken for normal flora, what should be included in your differential of small, intracytoplasmic organisms, and how to use microorganism pigmentation to help identify potential pathogens.

### **Presentation Objectives**

At the end of the presentation, participants will be able to:

- recognize and identify a pathogen that is easily mistaken for skin flora.
- establish a differential for small, intracytoplasmic organisms.
- use microorganism pigmentation to help identify cutaneous and cardiac pathogens.

A big *Thank You!* to all of our virtual exhibitors!

**Accelerate Diagnostics**

**Affinity Biosensors LLC**

**Cepheid**

**Luminex A DiaSorin Company**

**DiaSorin Molecular**

**MeMed**

**Puritan Medical Products Company**

**Qvella Corporation**

**Roche Diagnostics Corporation**