

# HFC MEETING: Novel Statistical Concepts for HF Drug and Device Development Friday, November 1, 2024, 8:15 am ET – 1:15 pm ET | Remote Meeting: Zoom

8:15 – 8:20am WELCOME AND OVERVIEW

Scott Solomon, MD, Christopher O'Connor, MD, Janet Wittes, PhD

Part One: 8:20 – 10:40am	Part One: Trial Data "Borrowing"  Moderators: JoAnn Lindenfeld, MD, Christopher O'Connor, MD
8:20 – 9:00	Background and Concept Introductory briefings: - Applying Bayesian vs. Frequentist Approaches to various problems (John Bittl) (8:20 – 8:30) - What is borrowing? Bayesian borrowing for Dummies (Jason Connor) (8:30 – 8:40)
	- Pros/Cons of each approach: Janet Wittes (Frequentist) (8:40 – 8:50); Scott Berry (Bayesian) (8:50 – 9:00)
9:00 – 9:40	<ul> <li>Examples (Tentative)</li> <li>RESPONDER-HF, CORVIA (Amy Crawford, Jan Komtebedde,) (9:00 – 9:10)</li> <li>Galactic 2.0, Cytokinetics (Fady Malik) (9:10 – 9:20)</li> <li>Optimizer Device – Frequentist "Borrowing" Example vs. Bayesian approach that was used (William Abraham, JoAnn Lindenfeld, Ben Saville) (9:20 – 9:30)</li> <li>Bayesian re-analysis of PARAGON (John Bittl, Brian Claggett) (9:30 – 9:40)</li> </ul>
9:40 – 10:40	Part One Open Discussion, Regulatory Perspectives and Implementation - ALL HFC MEMBERS (9:40 – 10:40)
	Statistical Panel: Scott Berry, Brian Claggett, Jason Connor, David DeMets, Thomas Fleming, Folke Folkvaljon, Telba Irony, Eric Leifer, Devan Mehrotra, Natasha Muhlemann, Ben Saville, LJ Wei, Janet Wittes
	Clinical Panel: William Abraham, John Bittl, Maria Borentain, Biykem Bozkurt, Javed Butler, Akshay Desai, Jan Komtebedde, Anu Lala, Fady Malik, Robert Mentz, Milton Packer, Lothar Roessig, Scott Solomon, John Teerlink, Muthiah Vaduganathan
	FDA Panel: Keith Aaronson, Gregory Alexander, Jennifer Clark, Andrew Farb, Charu Gandotra, Mori Krantz, Laura Lu, Nelson Lu, Li Ming Dong, Jordan Pomeroy, Mitch Psotka, Mark Rothmann, Yanping Qu, Lilly Yue, Jialu Zhang, Yu (Audrey) Zhao, Norman Stockbridge, Bram Zuckerman
10:40 - 10:50	BREAK



Part Two: 10:50 – 11:40am	Part Two: Interim Analysis  Moderators: Janet Wittes, PhD, Scott Solomon, MD
10:50 – 11:10	Interim Analysis – Who is paying for the free lunch? What does it mean that Bayesian analysis has "no alpha penalty"? (Telba Irony) (10:50 – 11:10)
11:10 – 11:40	Part Two Discussion - ALL (11:10 – 11:40)
Part Three: 11:40 – 1:15pm	Part Three: Expanded endpoints in HF – "other things that matter"  Moderators: Janet Wittes, PhD, Scott Solomon, MD
11:40 – 12:10	Expanded endpoints in HF – "other things that matter" (Scott Solomon, Muthiah Vaduganathan) (11:40 – 12:10) ex: initiation or augmentation of oral diuretics, other clinically meaningful events
12:10 – 1:15	Part Three Open Discussion, Regulatory Perspectives and Implementation – ALL HFC MEMBERS (12:10 – 1:15)
	Statistical Panel: Scott Berry, Brian Claggett, Jason Connor, David DeMets, Thomas Fleming, Folke Folkvaljon, Telba Irony, Eric Leifer, Natasha Muhlemann, Frank Rockhold, Ben Saville, LJ Wei, Janet Wittes
	Clinical Panel: William Abraham, Amrut Ambardekar, Ankeet Bhatt, Vanessa Blumer, Bobbi Chapman, Ricardo Rocha, Javed Butler, Maria Rosa Costanzo, Barry Greenberg, Carine Hamo, Jim Januzzi, Mariell Jessup, Marv Konstam, Anu Lala, JoAnn Lindenfeld, Robert Mentz, Rhonda Monroe
	FDA Panel: Keith Aaronson, Gregory Alexander, Jennifer Clark, Charu Gandotra, Mori Krantz, Laura Lu, Nelson Lu, Li Ming Dong, Jordan Pomeroy, Mitch Psotka, Yanping Qu, Mark Rothmann, Fortunato Fred Senatore, Norman Stockbridge, Aliza Thompson, Lilly Yue, Jialu Zhang, Yu (Audrey) Zhao, Bram Zuckerman
1:15pm	CLOSING REMARKS AND ADJOURN

Scott Solomon, MD, Christopher O'Connor, MD, Janet Wittes, PhD



#### **PROGRAM CHAIRS**

### Mona Fiuzat, PharmD

Associate Professor of Medicine Duke University Senior Scientific Advisor, CDER, U.S. FDA

#### Christopher O'Connor, MD

President, Inova Schar Heart and Vascular Professor of Medicine Duke University School of Medicine

#### Scott Solomon, MD

The Edward D. Frohlich Distinguished Chair Professor of Medicine, Harvard Medical School Director, Noninvasive Cardiology Brigham and Women's Hospital

# Janet Wittes, PhD

Principal Wittes LLC

#### **INVITED FACULTY AND STATISTICAL PANEL**

#### Keith Aaronson, MD

Medical Officer CDRH, U.S. FDA

## William Abraham, MD

Professor of Medicine, Physiology, Cell Biology College of Medicine Distinguished Professor Division of Cardiovascular Medicine Ohio State University

#### **Gregory Alexander, PhD**

Director, Biostatistics Division U. S. FDA, CDRH

#### Amrut Ambardekar, MD

Medical Director Cardiac Transplant Program Director of Clinical Research Division of Cardiology, University of Colorado

# Scott Berry, PhD

President and Senior Statistical Scientist Berry Consultants

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Cariologist, Kaiser Permanente San Francisco Medical Center Research Scientist, Kaiser Permanente Northern California Division of Research Assistant Professor, Kaiser Permanente Bernard J. Tyson School of Medicine Adjunct Professor, Stanford University School of Medicine

#### John Bittl, MD

Senior Associate Editor, Journal of American College of Cardiology

#### Vanessa Blumer, MD

Advanced Heart Failure and Transplant Cardiologist Associate Director, Heart Failure Research Medical Co-Director, Heart Failure Research Inova Schar Heart and Vascular

## Bobbi Chapman, MD

Vice President, Heart Failure Abiomed

# Maria Borentain, MD

Head of Cardiovascular & Renal Scientific Department Bayer AG

# Biykem Bozkurt, MD, PhD

Professor of Medicine Director, Winters Center for Heart Failure Research Associate Director, Cardiovascular Research Institute Vice-Chair of Medicine, Baylor College of Medicine

## Javed Butler, MD, MPH, MBA

SVP, Baylor Scott & White Health System, President, Baylor Scott & White Research Institute

# Brian Claggett, PhD

Chief Statistician, Cardiac Imaging Core Laboratory and Clinical Trials Endpoints Center Brigham and Women's Hospital Associate Professor Harvard Medical School



#### Jennifer Clark, PhD

Statistical Team Leader for the Cardiology & Nephrology Statistical Review Team CDER, U.S. FDA

#### Jason Connor, PhD

President & Lead Statistical Scientist ConfluenceStat LLC

#### Thomas Cook, PhD

Professor (CHS)
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## Maria Rosa Costanzo, MD

Medical Director, Advocate Medical Group-Midwest Heart Specialists Medical Director, Edward Hospital Center for Advanced Heart Failure

## Amy Crawford, PhD

Statistical Scientist Berry Consultants

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Max Halperin Emeritus Professor of Biostatistics University of Wisconsin – Madison

## Akshay Desai, MD, MPH

Medical Director, Cardiomyopathy and Heart Failure Program Brigham and Women's Hospital Associate Professor Harvard Medical School

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Medical Officer CDRH, U.S. FDA

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Professor Biostatistics and Statistics University of Washington

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HTA Statistics and Data Science BioPharmaceuticals AstraZeneca

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Senior Scientific Director, Qualitative Sciences Janssen Pharmaceutical

#### James Januzzi, MD

Hutter Family Professor of Medicine Harvard Medical School

# Mariell Jessup, MD

Emeritus Professor of Medicine University of Pennsylvania Chief Science and Medical Officer American Heart Association

# Jan Komtebedde, DVM

Senior Vice President and Chief Medical Officer Corvia Medical Inc.

## Marvin Konstam, MD

Chief Physician Executive, The Cardiovascular Center Tufts Medical Center

# Mori Krantz, MD

Medical Officer CDER, U.S. FDA

## Anu Lala-Trindade, MD

Assistant Professor of Medicine Icahn School of Medicine at Mount Sinai

#### Eric Leifer, PhD

Mathematical Statistician NHLBI



#### JoAnn Lindenfeld, MD

Professor of Medicine Samuel S. Riven, MD Director in Cardiology Director, Section of Advanced Heart Failure and Transplantation Vanderbilt Heart and Vascular Institute

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## Nelson Lu, PhD

Assistant Director for Biostatistics CDRH, U.S. FDA

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Executive VP, R&D Cytokinetics

# Devan Mehrotra, PhD

Vice President, Biostatistics, Merck & Co. Adjunct Professor, Biostatistics University of Pennsylvania

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#### **Rhonda Monroe**

Patient Representative

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Vice President, Stategic Consulting Cytel

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## Ben Saville, PhD

President and Lead Statistical Scientist Adaptix Trials LLC

# Fortunato Fred Senatore, MD, PhD

Lead Physician DCN, U.S. FDA

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# John Teerlink, MD

Professor of Medicine, University of California, San Francisco (UCSF) Director of the Heart Failure Program and of the Clinical Echocardiography Laboratory San Francisco Veterans Affairs Medical Center

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