

# Master Protocols and Complex Innovative Design

November 4-5 | Virtual



## PROGRAM CHAIRS

### Daniel Millar, MBA

Senior Director, Strategic Business Transformation,  
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### Fanni Natanegara, PhD

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## PROGRAM COMMITTEE

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### Pritibha Singh, BS, MBA, MS

Global Program Associate Director - Oncology Hematology  
Development Unit  
Novartis, Switzerland

### Rui (Sammi) Tang, PhD

Vice President, Global Head of Biometric of Oncology  
Servier Pharmaceuticals

## Overview

The evolution of clinical trial designs has accelerated since the onset of the pandemic to meet patient and logistical need. While elements of randomized control trials remain a gold standard, clinical trials continue to transform, building on innovations in study design and statistical approaches, as well as regulatory flexibilities, with the promise of bringing new medicines to patients more quickly than ever.

Supported by advancement in clinical trial operations, development of digital technologies along with strong partnerships and collaborations amongst key stakeholders, clinical trials are poised to reach more people and add efficiency to clinical drug development. Master protocol and complex innovative designs continue to provide frameworks that hold enormous promise for engaging patients more productively, increasing overall efficiency and improving successful outcomes.

DIA's *Master Protocols and Complex Innovative Design* Meeting will bring together a truly multidisciplinary group of experts in clinical trial planning, execution, and analysis to share and discuss both the common and unique challenges and opportunities in the adoption of master protocols and complex innovative design. Join industry, patient, regulatory agency, other government, and NGO representatives to examine the growing body of knowledge, experience, and resources available to better meet patient needs through successful implementation of innovation in clinical trial designs.

## Who Should Attend?

Professionals within biopharmaceutical and medical device research, regulatory agencies, and patient organizations, who are involved in:

- Clinical Data Management, Clinical Operations, Clinical Research
- Good Clinical Practice
- Health Economics and Outcomes Research
- Medical Affairs
- Pharmacology
- Patient Engagement
- Regulatory Affairs
- Research and Development
- Rare/Orphan Diseases
- Statistics
- Strategic Planning
- Trial Design

**DAY ONE | FRIDAY, NOVEMBER 4**

<b>10:00-10:15AM</b>	<b>Welcome and Opening Remarks</b>
<b>10:15-10:45AM</b>	<b>Session 1:</b> Keynote – Patient Advocacy
<b>10:45-11:00AM</b>	Break
<b>11:00AM-12:15PM</b>	<b>Session 2:</b> Decision Making for Master Protocols
<b>12:15-12:45PM</b>	Break
<b>12:45-2:00PM</b>	<b>Session 3:</b> The Art of Implementing and Conducting Platform Trials
<b>2:00-2:15PM</b>	Break
<b>2:15-3:30PM</b>	<b>Session 4:</b> Innovative Uses of Alternative Data Sources
<b>3:30-3:45PM</b>	Break
<b>3:45-5:00PM</b>	<b>Session 5:</b> Challenges in the Integration of Digital Data and Telemedicine to Clinical Trials

**DAY TWO | FRIDAY, NOVEMBER 5**

<b>9:50-10:00AM</b>	Welcome Remarks
<b>10:00-11:15AM</b>	<b>Session 6:</b> Global Regulatory Discussion - Perspectives from Cross-Region Regulatory Authorities
<b>11:15AM-11:30AM</b>	Break
<b>11:30-12:45PM</b>	<b>Session 7:</b> Complex Innovative Trial Designs: From Pilot to Practice
<b>12:45-1:30PM</b>	Break
<b>1:30-2:45PM</b>	<b>Session 8:</b> Innovative Designs for Acute Myeloid Leukemia: Patient, Sponsor, and Investigator Perspectives
<b>2:45-3:00PM</b>	Break
<b>3:00-4:15PM</b>	<b>Session 9:</b> Clinical Research in a Global Pandemic: Lessons Learned for Drug Development
<b>4:15-4:30PM</b>	Closing Remarks

## Learning Objectives

At the conclusion of this activity, participants should be able to:

- Articulate the challenges and opportunities for the use of complex innovative design and master protocols
- Explain how master protocols and CIDs contribute to increased efficiency and other enhancements of medical product research to ultimately accelerate patient access to innovative therapies
- Describe the purpose, anticipated outcomes, and progress to date of the FDA CID Pilot Program
- Discuss the views of global regulatory authorities (e.g., FDA, EMA, etc.) on CIDs and their suitability/applicability for clinical research in their respective regions; explore aspects and further opportunities for alignment among global regulatory agencies in regard to CID adoption
- Examine several examples of master protocol designs, complex adaptive designs, and designs using Bayesian techniques, and discuss their regulatory suitability, potential challenges, and benefits for patients and medical product developers
- Summarize learnings from the use of master protocols to develop vaccines and therapeutics for COVID-19 and how they apply to developing interventions for other indications

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**ACPE CREDIT REQUESTS MUST BE  
SUBMITTED BY FRIDAY,  
DECEMBER 17, 2021**

## Continuing Education Allocation

**November 4 Day 1:** Master Protocol and Complex Innovative Design: 5.5 contact hours or .55 CEUs Type of Activity: Knowledge, 0286-0000-21-084-L04-P

**November 5 Day 2:** Master Protocol and Complex Innovative Design: 5.25 contact hours or .525 CEUs Type of Activity: Knowledge, 0286-0000-21-085-L04-P

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## DAY ONE | FRIDAY, NOVEMBER 4

Sessions held in ET

10:00-10:15AM

### Welcome and Opening Remarks

#### Speakers/Session Chairs

**Robert Beckman, MD**, Professor of Oncology, Biostatistics, Bioinformatics, & Biomathematics-Adjunct Track, Georgetown University Medical Center

**Daniel Millar, MBA**, Senior Director, Strategic Business Transformation Quantitative Sciences, Janssen Research & Development, United States

**Fanni Natanegara, PhD**, Research Advisor, Eli Lilly and Company

10:15-10:45AM

### Session 1: Keynote – Patient Advocacy

#### Session Co-Chairs

**Zoran Antonijevic, MSc**, Vice President, Statistical Consulting, Abond CRO Inc.

**Daniel Millar, MBA**, Senior Director, Strategic Business Transformation, Quantitative Sciences, Janssen Research & Development, United States

Families in the rare disease community are familiar with the complicated, and often frustrating, clinical trial process. How can we make clinical trials faster, less burdensome, and open to all comers, no matter the stage of disease? Would it be possible to understand the individual's response to a compound or biologic (intervention) more quickly? Would it be possible to have less exposure to placebo? To initiate testing of combinations of promising therapeutics earlier? To get to a go/no-go more quickly? Could we learn from our recent experience with COVID-19?

One potential pathway to overcoming obstacles in clinical trials for rare disease therapeutics is to address trial protocols, and a master protocol is one innovative approach that may have advantages. Experiences from their use for COVID-19 and in the development of approaches for Duchenne Muscular Dystrophy can inform their uses for rare indications.

### Learning Objectives

- Recognize the benefits of master protocols from a patient perspective
- Explain core patient-centric principles that can drive meaningful outcomes and uptake
- Evaluate existing opportunities to create further efficiency in clinical trials

### Speaker

**Patricia Furlong, BSN**, Founding President and CEO, Parent Project Muscular Dystrophy

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**10:45-11:00AM**

### Break

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**11:00AM-12:15PM**

### Session 2: Decision Making for Master Protocols

#### Session Co-Chairs

**Robert Beckman, MD**, Professor of Oncology, Biostatistics, Bioinformatics, & Biomathematics-Adjunct Track, Georgetown University

**Zoran Antonijevic, MSc**, Vice President, Statistical Consulting, Abond CRO Inc.

The session will present basic principles of decision analysis for optimization of clinical trials, programs and portfolios with an emphasis on efficiency. Example applications will include standard protocols and portfolios but will also focus on master protocols. A perspective on this topic from Europe's EU-Pearl Program will also be presented. Finally, the roles of patients and trial participants as decision makers will be discussed.

### Learning Objectives

- Understand key concepts related to decision making for clinical trials, master protocols, and portfolios
- Apply selected aspects of decision making with emphasis on master protocols
- Understand Europe's EU PEARL program and approach to decision making in master protocols.
- Define the role of patients as decision makers

**Zoran Antonijevic, MSc**, Vice President, Statistical Consulting, Abond CRO Inc.

**Robert Beckman, MD**, Professor of Oncology, Biostatistics, Bioinformatics, & Biomathematics-Adjunct Track, Georgetown University Medical Center

**Martin Posch, PhD**, Professor, Medical University of Vienna

**Gianna McMillan, PhD**, Bioethics Institute, Associate Director, Loyola Marymount University

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**12:15-12:45PM**

### Break

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**12:45-2:00PM**

### Session 3: The Art of Implementing and Conducting Platform Trials

**Michelle Detry, PhD**, Director, Adaptive Trial Execution & Senior Statistical Scientist, Berry Consultants LLC

**Anne-Marie Duliege**, Pancreatic Cancer ActionNetwork, Chief Medical Officer

This session will present the main strategic and operational considerations during the preparation and implementation of platform trials. Platform trials require an intense collaboration among numerous groups that differs from the standard clinical trial infrastructure. Their viewpoints must be integrated to meet the common goal of the platform. The speakers will describe their roles in the design and conduct of various ongoing platform trials, as well as some of the challenges they may face.

### Learning Objectives

- Understand the role of the various partners required to conduct a platform trial, and their contributions to the value of this trial
- Identify the unique perspectives and operational challenges involved in conducting a platform trial
- Understand the importance of an intense collaboration between the partners to address these challenges and contribute to an optimal conduct of a platform trial

### Identifying the Right Industry Partners: The Role of the Sponsor

**Meredith Buxton, PhD, MPH**, Chief Operating Officer, Global Coalition For Adaptive Research

### Advancing the Science: The Perspective of an Investigator

**Vince Picozzi**, Virginia Mason Franciscan Health

### Advancing the Science: Joining a Platform Trial: The Perspective of the Biopharma Partner

**Ewa Carrier**, Executive Director, Fibrogen

### Sponsor and the CRO

**Len Rosenberg, PhD, RPh**, Head of Clinical Operations, Beat AML, a division of The Leukemia and Lymphoma Society

### The Critical Role of the Blinded Statistician: Role and Interactions with the FDA

**Melanie Quintana, PhD**, Statistical Scientist, Berry Consultants, LLC

### The Patient's Perspective and the Role of Patients Advisory Group

**Sabrina Paganoni, MD, PhD**, Assistant Professor, Harvard Medical School, Healey Center for ALS at Mass General

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**2:00-2:15 PM**

**Break**

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**2:15-3:30PM**

## **Session 4: Innovative Uses of Alternative Data Sources**

### Session Chairs

**Pritibha Singh, MBA, MSc, PMP**, Global Program Associate Director - Oncology Hematology Development Unit, Novartis, Switzerland

Advancements in use of big data, including applications such as historical controls and synthetic arms, enabled by applications of AI and machine learning, continue to transform clinical trials and research. While the aim continues to be to leverage all data to generate insights, these new approaches come with challenges due to use of data from multiple modalities. Emerging examples of combining multimodal data to generate insights and drive decision making will be shared, and the possibilities that exist through use of these advancements in data use and application will be explored.

### Learning Objectives

Describe what different types of data modalities in healthcare can be combined Recognize what sorts of insights drive decision-making from multimodal data Discuss applications of AI and Machine Learning in healthcare

### Speakers

**Pritibha Singh, MBA, MSc, PMP**, Global Program Associate Director - Oncology Hematology Development Unit, Novartis, Switzerland

### HOME: A Pilot Natural History Study of Metachromatic Leukodystrophy to Augment Controls for Regulatory Consideration

**Hussein Ezzeldin, PhD**, Senior Staff Fellow, U.S. Food and Drug Administration (FDA)

### Historical Control Borrowing in Clinical Trial Analyses

**Duncan Rotich, PhD**, Senior Manager Biostatistics, Bristol Myers Squibb

### Speaker

**Jo Aggarwal**, Founder and CEO, Wysa

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**3:30-3:45PM**

**Break**



**Session Co-Chairs****Fanni Natanegara, PhD**, Research Advisor, Eli Lilly and Company**Rui (Sammi) Tang, PhD**, Vice President, Global Head of Biometric, Oncology, Servier Pharmaceuticals

The digital revolution has transformed many areas of our life including pharmaceutical drug development to enhance efficiency and optimize value in clinical trials. The session is meant to draw more attention in the face of the coronavirus disease 2019 (COVID-19) outbreak, which has caused unprecedented disruption in the conduct of clinical trials and presented considerable challenges and opportunities for clinical trialists and data analysts. Speakers will present opportunities with virtual, remote, digital, or decentralized clinical trials as viable options to enhance efficiency in drug development and, more importantly, in offering diverse patients easier and attractive means to participate in clinical trials. Case studies will be shared to highlight benefit and challenges in using digital data and telemedicine to clinical trials including data acquisition, processing, and analysis in a virtual trial setting. Issues of patient safety, measurement validity, and data integrity will be reviewed, and considerations are put forth with reference to the mitigation of underlying regulatory and operational barriers.

**Learning Objectives:**

- Articulate principles of decentralized clinical trials and remote data collection in clinical trials
- Develop and evaluate options for implementing telemedicine and digital health tools
- Identify challenges and potential solutions to remote data collection
- Describe ownership and sharing of digital data when multiple sponsors are involved in master protocol
- Identify benefit and obstacles of bringing the trials to the patients; technique status in DCT trials constrain and advancement

**Venkat Sethuraman, PhD, MBA**, Senior Vice President, Global Biometrics and Data Sciences, Bristol Myers Squibb**Mercedeh Ghadessi, MS, MSc**, Principal Statistician in Biomarker and Data Insight Bayer**Linda Simba**, Eli Lilly and Company**DAY TWO | FRIDAY, NOVEMBER 5**

9:50-10:00AM

**Welcome Remarks**

10:00-11:15AM

**Session 6:** Global Regulatory Discussion - Perspectives from Cross-Region Regulatory Authorities**Session Co-Chairs****Daniel Millar, MBA**, Senior Director, Strategic Business Transformation, Quantitative Sciences, Janssen Research & Development**Pritibha Singh, MBA, MSc, PMP**, Global Program Associate Director - Oncology Hematology Development Unit, Novartis, Switzerland

Master Protocols and Complex Innovative Designs have been increasingly embraced by drug developers, patient advocates and regulators to overcome limitations of traditional clinical development approaches. Experience from the COVID-19 pandemic as well as sponsor consultation with multiple global regulator authorities has highlighted the importance of harmonized regulatory processes and standards which enable innovation for patients. This session will address important aspects of regulatory requirements.

**Learning Objectives**

- Identify similarities and differences in regulator experience, procedures, and opportunities for consultation

- Understand how the regulatory environment for Master Protocols and Complex Innovative Designs has evolved
- Identify specific points of attention to be successful with Master Protocol approaches and Complex Innovative Designs to meet regulatory requirements

#### Speakers

**Nicholas Richardson, DO, MPH**, Medical Officer, Division of Hematologic Malignancies, FDA

**Kazuhiko Mori**, Managing Director, Japan Pharmaceutical Manufacturers Association (JPMA)

#### Effective use of Complex Innovative Designs; MHRA Experience with Platform Trials

**Kirsty Wydenback, DrMed, MSc**, Expert Medical Assessor at Medicines and Healthcare products, MHRA, United Kingdom

11:45AM-12:15PM

#### Break

11:30-12:45PM

#### Session 7: Complex Innovative Trial Designs: From Pilot to Practice

##### Session Co-Chairs

**Kristin Dolinski**, Deputy Vice President, Science and Regulatory Advocacy, PhRMA

**Yi Liu, PhD**, Executive Director Biostatistics, Nektar Therapeutics,

**Dionne Price, PhD**, Director of Division of Biometrics IV in the Office of Biostatistics, CDER/FDA

Complex innovative designs (CIDs) for clinical trials provide sponsors the opportunity to design and implement more efficient trials that can enhance and potentially expedite the drug development process compared to conventional designs, thereby bringing new medicines to patients sooner. The U.S. Food and Drug Administration demonstrated its encouragement for such clinical trial innovations through the creation of the CID Pilot Meeting Program; the purpose of the pilot is to support the goal of facilitating and advancing the use of complex adaptive, Bayesian, and other novel clinical trial designs. The pilot, agreed to as a performance goal under PDUFA VI, gives sponsors whose meeting requests are granted by the Agency an important opportunity to have increased interaction with FDA staff to discuss their proposed CID approaches. Since its introduction, many sponsors have interacted with FDA through this program to gain alignment on their proposed novel CIDs. This session will provide attendees with an overview of the FDA CID Pilot Meeting Program and feature discussion of specific case examples. Recent advances in novel design concepts will also be discussed.

#### Learning Objectives

- Discuss the status of the FDA CID Pilot Meeting Program and outline its future directions
- Summarize case examples of the FDA CID Pilot Meeting Program and identify areas that may require additional discussion with FDA
- Describe and apply novel clinical trial design concepts and explain how they can increase efficiency in drug development

#### PDUFA VI CID Pilot Program Update

**Dionne Price, PhD**, Director of Division of Biometrics IV in the Office of Biostatistics, CDER/FDA

#### Label Enabling Dynamic Borrowing with External Control for OS – FDA Complex Innovative Designs Pilot

**Jiawen Zhu, PhD**, Senior Principal Statistical Scientist, Genentech/Roche

**Herbert Pang, PhD, MBA**, Expert Statistical Scientist, Genentech/Roche

#### A Bayesian phase I/II platform design for co-developing drug combination therapies for multiple indications

**Ying Yuan, PhD**, Bettyann Asche Murray Distinguished Professor, University of Texas MD Anderson Cancer Center

#### The 2-in-1 Design and its Extensions and Applications

**Cong Chen, PhD**, Director, Early Oncology Development Statistics, Merck Co., & Inc.



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12:45-1:30PM

**Break**

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1:30-2:45PM

**Session 8:** Innovative Designs for Acute Myeloid Leukemia: Patient, Sponsor, and Investigator Perspectives

**Session Chairs**

**Robert Beckman, MD**, Professor of Oncology, Biostatistics, Bioinformatics, & Biomathematics-Adjunct Track, Georgetown University Medical Center

The session will introduce the audience to two innovative clinical study designs for acute myeloid leukemia (AML), an n-of-1 design (Multiomics Precision Medicine) and a master protocol (BEAT AML) and culminate in a panel discussion which will use these examples to illuminate complex innovative designs from the perspectives of patients, trial participants, sponsors, and investigators.

**Learning Objectives**

- Understand the concept of n-of-1 designs
- Understand how patients and trial participants view n-of-1 designs; how they may benefit and what are potential pitfalls
- Understand how investigators might work with patient communities and trial participants when designing and executing master protocols and n-of-1 designs
- Understand the view of the Sponsor participating in a complex innovative design

**Precision Medicine Treatment in Older AML**

**Amy Burd, PhD**, Vice President, Research Strategy, The Leukemia & Lymphoma Society

**Multi-Omic and Functional Drug Screening Approach to Treatment**

**Pamela Becker, MD, PhD**, Professor of Clinical Medicine University of California Irvine

**Speakers**

**Uma Borate, MD**, Associate Professor the Ohio State University

**Kevin Harrang, JD**

**Jorge DiMartino, MD**, Chief Medical Officer, Kronos Bio

**Tony Blau, MD**, Founder and Chief Executive Officer All4 Cure

**Ken Dixon, MD**, Founder, Chief Medical Officer, Specicare

**Crystal Reinhart, PhD**, Center for Prevention Research and Development, School of Social Work, University of Illinois at Urbana-Champaign

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2:45-3:00PM

**Break**

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3:00-4:15PM

**Session 9:** Clinical Research in a Global Pandemic: Lessons Learned for Drug Development

**Session Co-Chairs**

**Cristiana Mayer, DrSc, PhD**, Head of Biostatistics, Johnson & Johnson Vision

**AnnCatherine Downing, PharmD**, Senior Research Advisor – Clinical, Eli Lilly and Company

**Rui (Sammi) Tang, PhD**, Vice President, Global Head of Biometric, Oncology, Servier Pharmaceuticals,

Traditional ethical principles that guide clinical research remain the guiding compass for physicians, patients, public health officials, investigators, drug developers, and the public. Accelerating the process of delivering safe and effective treatments and vaccines for areas of unmet medical need is a moral imperative. The COVID-19 pandemic has resulted in innovative new approaches in clinical research and brought vaccine and drug development into mainstream consciousness. Some of the innovations offer new insights into trial design, conduct, data sharing, and regulatory interactions that are broadly applicable. This session will highlight COVID-19 clinical research examples with an emphasis on practices that should be carried forward to speed new therapies to patients.

### Learning Objectives

- Outline multiple research efforts for the prevention and treatment of COVID-19
- Describe innovative approaches utilized and found most efficient driven by the COVID-19 pandemic
- Identify transferable learnings from COVID-19 research into other research programs

### Speakers

#### The Race Towards the COVID-19 Vaccine: The Janssen Example

**An Vandebosch, PhD**, Senior Scientific Director, Statistical Modeling and Methodology, Janssen R&D, Belgium

#### Developing and Registering a Treatment for COVID-19 (Bamlanivimab): Program Lessons Learned from the first FDA Emergency Use Authorization Treatment for COVID

**Kristi Huntington, MS**, Sr. Advisor, Pharmaceutical Project Management, Eli Lilly and Company

**Lisa LaVange, PhD**, Professor and Associate Chair, Department of Biostatistics, University of North Carolina at Chapel Hill

**Steve Webb**, The George Institute for Global Health, Australia

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4:15-4:30PM

### Closing Remarks