AI IN PHARMA SUMMIT

Data-Driven, People-Powered.

Unlocking the full potential of AI in Drug Discovery and Development

October 9th, 2019 – Boston, MA

Wednesday, October 9th 2019

8:00 Registration, Breakfast & Networking

9:00 **Chair's Opening Remarks & Setting the Scene**

- A look at the day ahead - what will be the key takeaways we should achieve by the end of this event?
- Where is AI in its current lifecycle in pharma and how have we arrived at this point?

Lina Williamson, Founder & Chief Innovation Officer, **Translational Medicine Accelerator**

9:10 Keynote Presentation: Intelligent Systems for Discovery, Translation and Implementation

- Outlining the key progression steps we have taken in the industry
- A look at the work in using AI systems for drug discovery, development and patient implementation
- Understand how we can re-imagine medicine from within with the help of AI

Calum Macrae, Vice Chair for Scientific Innovation, **Brigham and Women's Hospital & Harvard Medical School**

9:35 Presentation by Cyclica

Naheed Kurji, President and CEO**, Cyclica**

10:00 Panel Discussion: Is AI Always Going to be Limited by Data and is Collaboration the Key to Tackle this Issue?

As with most things, results tend to be only as good as the data you initially begin with - as the saying goes "Rubbish in - Rubbish out". This panel will discuss if the true capabilities of AI across the industry are being held back as a result of limited, one dimensional data and explore how we can overcome this.

- How is artificial intelligence being held back by the availability of clean and usable data?
- Is most data inherently bias and how can we work to change this to make data more usable for everyone?
- What are the data attributes necessary for successful closed loop analytics-structured collection for AI systems?
- Is collaboration and sharing of data the way forward?
- Should the focus lie more on how we can push drugs through the market rather than on BIG DATA?

Pat Walters, Senior Vice President, Computation, **Relay Therapeutics**
Gabriel Musso, Chief Scientific Officer, **BioSymetrics**
Vanita Sood, Global Head of Drug Structure, Prediction & Design**, EMD Serono**

10:40 **Morning Refreshments** & **Speed Networking**

Utilize this "speed-dating" style networking session to make connections with over half the audience and speaker faculty in under an hour. Introduce and swap business cards with as many peers as possible to follow-up later on for a more detailed conversation

11:30 Presentation: Unconventional Machine Learning of Genome-wide Human Cancer Data

- We evaluated several unconventional machine learning (ML) strategies on actual human tumor data and showed for the first time the efficacy of multiple annealing-based ML algorithms for classification of high-dimensional, multi-omics human cancer data from the Cancer Genome Atlas.
- To assess algorithm performance, we compared these classifiers to a variety of standard ML methods and results indicate the feasibility of using annealing-based ML to provide comparable classification of human cancer types and associated molecular subtypes and superior performance with smaller training datasets.
- Our results provide compelling empirical evidence for the potential future application of unconventional computing architectures in the biomedical sciences.

Tom Chittenden, Chief AI Scientist, **WuXi NextCODE**

11:55 Presentation: How to Ensure we are Using AI the 'Right' Way

- A discussion as to what the best approach is when using AI for drug discovery and development
- How can we organisationally embrace and attack bringing AI into Pharma?
- Looking at how we can turn drug pipelines into drug feedback cycles using AI

Brian Martin, Head of AI, **AbbVie**

12:20 Panel Discussion: When and Where is the Right Time to use AI?

With artificial Intelligence being made more available and accessible and there being no shortage of talent, one of the key questions the industry now faces is identifying when and where to best implement AI. With AI reaching the peak of its hype curve, it is important that the industries biggest players to disambiguate themselves from the background noise and establish effective AI for drug discovery and development.

- What is the importance of fully educating the industry on the true capabilities and limitations of AI and where best to implement this tech?
- AI has demonstrated its capabilities when used to its full potential, how can we ensure we are asking the tech the "Right" questions?
- With AI so accessible, how can we ensure that the right tools are being used for the right job?
- How can what we've learnt when using AI in the field of drug discovery benefit other areas?
- How can we utilize AI to leap beyond incremental gains within the industry?

Bino John, Associate Director, Data Science – Clinical Pharmacology and Safety Sciences, **AstraZeneca**
Kyle Flickinger, Vice President, BioPharmaceutical Solutions, **Deep Lens**
Sameen Desai, Director of Pharmacovigilance Innovation, **Celgene**
Leo Rodrigues, Vice President, AI and Machine Learning, **Berg Health**

1:00 Long-Table Lunch & Networking

Interactive Workshops

During these intimate breakout sessions, attendees will discuss the key questions surrounding AI in Pharma. Through deep-dive discussions, examples and peer-to-peer learning, these interactive workshops will allow attendees to uncover answers to questions that are not possible through presentations and panels. The topics in session A and B will remain the same; giving you the opportunity to participate in two sessions. You are spoilt for choice!

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<tr><td>2:00

Workshop 1a:
Leveraging Artificial Intelligence to Advance Healthcare

Led by one of the industry's most passionate leaders, this workshop will bring in your own real world data to help demonstrate the true capabilities of AI when applied to healthcare

Emmanuel Fombu, Global Strategy and Digital Innovation Leader, Johnson & Johnson</td><td>Workshop 2a:
Understanding the Importance of Clean, Usable Data and Underpinning the Significance of Data Sharing

This workshop will allow you to be fully clued up on the importance of using quality data to produce quality results and also discuss if data sharing is truly the way forward for the industry.

Janak Joshi, Chief Technology Officer, Life Image</td></tr>
<tr><td colspan="2">Time to Switch!</td></tr>
<tr><td>2:40

Workshop 1b:
Leveraging Artificial Intelligence to Advance Healthcare

Led by one of the industry's most passionate leaders, this workshop will bring in your own real world data and demonstrate the true capabilities of AI when applied to healthcare

Emmanuel Fombu, Global Strategy and Digital Innovation Leader, Johnson & Johnson</td><td>Workshop 2b:
Understanding the Importance of Clean, Usable Data and Underpinning the Significance of Data Sharing

This workshop will allow you to be fully clued up on the importance of using quality data to produce quality results and also discuss if data sharing is truly the way forward for the industry.

Janak Joshi, Chief Technology Officer, Life Image</td></tr>
<tr><td>3:20</td><td>Afternoon Refreshments & Networking</td></tr>
<tr><td colspan="2">Use Cases - How is AI Being Used in the Field for More Specialised Tasks?</td></tr>
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4:00 Presentation: Inventing Better Drug - Use of AI & Machine Learning in Small Molecule & Biologics Discovery

- A look at the work EMD Serono are doing with artificial intelligence in drug discovery
- How EMD Serono are using AI to further elevate the quality of drugs in their pipeline

Vanita Sood, Global Head of Drug Structure, Prediction & Design**,** **EMD Serono**

4:25 Presentation: Personalized Precision Medicine, a Patient-Scientist Perspective

- How artificial intelligence can be leveraged to accelerate the process of personalised medicine
- Looking at the transition from invention to patient using AI

Lina Williamson, Founder & Chief Innovation Officer, **Translational Medicine Accelerator**

Looking Ahead and Critical Questions

4:50 Panel Discussion: With Artificial Intelligence at the Peak of its Hype Curve, Can Machine Learning Live Up to Expectations?

Artificial Intelligence has been an established piece of tech in the drug discovery/development field for a number of years now and has demonstrated its worth. However, as its counterpart that is machine learning begins to take center stage, can it live up to the hype? This panel will discuss where machine learning is in its life cycle and what we can truly expect from it.

- How is machine learning making an impact in the drug discovery industry?
- With such a narrow application focus, can machine learning ever fully live up to its hype?
- How can we refine the machine learning process to make it more effective?
- How has machine learning to improved drug feedback cycles?
- What are the next crucial steps in the industry to fully establish effective AI and ML?

Birgit Schoeberl, Global Head Modeling and Simulation, PK Sciences, **Novartis**
Armaghan Naik, AVP R&D Scientific & Digital Innovation, **Sanofi**
Constantine Kreatsoulas, Director of Molecular Design US, **GSK**

5:30 Chair's Closing Remarks

- What have been the key learnings from today?
- Summary message of how best to implement these learnings moving forward

Lina Williamson, Founder & Chief Innovation Officer, **Translational Medicine Accelerator**

5:40 Drinks Reception

6:40 End of AI in Pharma Summit 2019