BioData WORLD WEST 2018

March 13-14, 2018
Hotel Kabuki, San Francisco, CA

PRE-CONFERENCE WORKSHOP DAY
March 12, 2018
NASA Ames Research Center Mountain View, CA

HARNESSING THE POWER OF BIG DATA IN PRECISION MEDICINE

Bought to you by:

SPARK SOMETHING TERRAPINN

In conjunction with:

Roche

http://www.terrapinn.com/biodatawest

OUR STORY

In 2017, we held the inaugural BioData West, with an incredible speaker faculty transferring bleeding edge technology into pharmaceutical development and healthcare. The event featured presentations from the likes of **Jeff Dean**, Senior Fellow, **Google** - Google's 20th employee and co-founder at Google Brain, **Atul Butte**, Director, Institute for Computational Health Science, **UCSF** and **John Mattison**, the Chief Medical Information Officer and Assistant Medical Director for **Kaiser Permanente**.

The revolutionary AI stream of the event was initially commissioned by **Merck** in order to implement a global AI strategy and live-streamed to their executive board. This year we are working alongside **Roche** to drive game changing technologies in drug development and healthcare.

We are pleased to announce a partnership with **NASA** for 2018. Due to a federal partnership seeded between NASA and the **NCI (National Cancer Institute)** along with a pre-conference workshop taking place at NASA on March 12th. These sessions are designed to bring together the world's thought leaders and learn about new sources of data and collaboration with an open mind.

Our partners include **Roche**, **American Heart Association**, **GSK**, **NCI**, **NASA**, **Google**, **Merck**, **CLSA**, **UCSF** and **D-Wave** amongst others.

On March 13th and 14th we will focus on three streams that will inject new technologies into your industry:

1. Artificial Intelligence
2. Genomics and Health
3. Precision Medicine

> "It was greatly appreciated by every single attendee I spoke with. And big for Merck, as it opened the org's eyes in ways I was hoping"
> **Mathai Mammen,** Global Head of R&D, **J&J**

Register to hear from over 150 speakers from the leading pharma, biotech, healthcare and tech experts.

See you in San Francisco!

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Michael Shackil
Business Development Manager
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http://www.terrapinn.com/biodatawest

2018 SPEAKERS

150+ SPEAKERS INCLUDING

Pharma/ Biotech:

Slava Akmaev
Senior Vice President & Chief Analytics Officer
BERG

Mark DePristo
Head of deep learning for genetics and genomics
Google Inc

Manuel Corpas
Scientific Lead
Repositive

Riccardo Sabatini
Co-Founder, Chief Data Officer
Orionis

Iraneus Ogu
Africa AI, Blockchain and Longevity
Insilico Medicine

Yaron Mazor
Senior VP, Technology
Lifemap Sciences

Martin Akerman
CTO
Envisagenics

Thomas Clozel
Co-Founder
Owkin

Alex Zhavoronkov
(CSO, The Biogerontology Research Foundation)
CEO
InSilico Medicine Inc

Aubrey de Grey
Chief Science Officer and Co-Founder
SENS Foundation

Mathew Pletcher
Head of Rare Disease Discovery
Roche

Shanrong Zhao
Director, Computational Biology and Bioinformatics, Worldwide R&D
Pfizer

Martin Sjoholm
Senior Enterprise Architect
Bayer

Govinda Bhisetti
Head of Computational Chemistry
Biogen

Megan Doerr
Principal Scientist
Sage Bionetworks

Morten Sogaard
Vice President and Head, Genome Sciences & Technologies, Worldwide R&D
Pfizer

Greg Corrado
Co-founder
Google Brain

Matthew Nelson
Head of Genetics
GSK

Verner De Biasi
Head Emerging Platforms
GSK

Karen Hurst
Chief Innovation Officer and Cyber Security Analyst
Moonshot Projects

Nadeem Sarwar
President AiM Institute
Eisai

Karim Galil
CEO
Mendel Health

Steve Gullans
Managing Director, **Excel Ventures,**
CEO, **Gemphire**

Lara Mangravite
President
Sage

Vikram Bajaj
Co- Founder, **Google Life Sciences,** Former CSO, **GRAIL,** Managing Director, **Forsythe Capital**

Naveen Jain
Founder & CEO
Viome

Kristen Fortney
CEO
BioAge Labs

Attila Csordas
Founder
AgeCurve Limited

Chris Boone
Vice President, Real World Data and Analytics
Pfizer

Preston Estep
CSO
Veritas Genetics

David Milward
Chief Technology Officer (CTO)
Linguamatics

Chris Gibson
Co-Founder and CEO
Recursion

Munther Baara
Head of New Clinical Paradigm
Pfizer

Mauricio Carneiro
Head of Scientific Software
Verily (Google Life Sciences)

Arnaud Desfeu
Founder
omicX

Gunaretnam (Guna) Rajagopal
VP - Global Head, Computational Sciences, Discovery Sciences
Janssen, Pharmaceutical Companies of Johnson and Johnson

Mathai Mammen
Global Head of R&D
Janssen Pharmaceutical Companies of Johnson & Johnson

Abraham Heifets
CEO
Atomwise

Chris Probert
Founder
Elastic Genomics (in stealth mode)

Gregory Bailey
Co-founder & partner
Mediqventures

Adrien Rousset
Innovation Manager
Amgen

Prasun Mishra
Founder and CEO
Agility Pharmaceuticals
CEO
American Association for Precision Medicine

John Martinis
Lead for Google's Quantum Computing
Google

Yasaman Soudagar
CEO and Founder
Neurescence Inc

Mark Fingerhuth
CEO and Founder
ProteinQure Inc

Andrew Stewart
CEO and Founder
Autism Diagnostics

Peter Wittek
Chief, Quantum Machine Learning
Creative Destruction

Handol Kim
General Manager, Quadrant Machine Learning Business Unit
D-Wave Systems, Inc

WANT TO JOIN THIS SPEAKER LIST? Contact Michael Shackil now at +1 646 619 1809

Government/Non Profit:

Jean Claude Zenklusen
Director, The Cancer Genome Atlas, Centre for Cancer Genomics, Office of the Director
National Cancer Institute

Sylvain Costes
Lead scientist for GeneLab
NASA

Ronald Przygodzki
Director, Genomic Medicine Implementation
VA

Elizabeth Baca
Senior Health Advisor Governor's Office of Planning and Research
State of California Governor's Office of Planning and Research

Michael Sekora
Ex Director, Socrates Project
White House under Ronald Reagan

Sara Radcliff
President and Chief Executive Officer
California Life Sciences Association

Mintu Turakhia
Executive Director, Center for Digital Health, **Stanford**
Director, Cardiac Electrophysiology,
Palo Alto VA

Amy Pienta
Associate Research Scientist, Director, Data Acquisitions, Director, National AIDS & HIV Data Archive Program
ICPSR

Jennifer Hall
President
American Heart Association

Christina Waters
President & Chief Executive Officer
R.A.R.E. Science

Chris Riley
Research Mgr - Institute for Precision CV Medicine
American Heart Association

Patrick Wayte
SVP, Center for Health Technology & Innovation
American Heart Association

Duygu Tosun-Turgut
Assistant Professor and Co-Director of the Center for Imaging of Neurodegenerative Diseases (CIND)
San Francisco Veterans Affairs Medical Center

Ian Dunham
Scientific Director, Open Targets
EMBL-EBI

Julie Waters
Founder
Raremark

Kay Firth-Butterfield
Head Artificial Intelligence and Machine Learning
World Economic Forum

Health System:

Robert Burton
Founder and CEO
Center for Genomic Interpretation

Adam Berger
Senior Fellow, Department of Health and Human Service
FDA

Andreas Kogelnik
President and Founder
Open Medicine Institute

Benson Hsu
Chief Medical Analytics Officer
Sanford Health

Scott Brandon
Executive Director
Open Med Access

Nazneen Aziz
Executive Director
Kaiser Permanente Research Bank

James Dzierzanowski
Executive Director
Kaiser Permanente

Jim Broach
Director of the Penn State Institute for Personalized Medicine,
University of Pennsylvania School

Noel Burt
Program Manager
Broad Institute

Ashley Winslow
Sr. Director, Translational Research & Portfolio Development, Orphan Disease Center
University of Pennsylvania

Amit Rastogi
SVP for Strategy, Growth and Innovation
Inova Health System

Catherine Brownstein
Scientific Director
Manton Center for Orphan Disease Research

Kullo Iftikhar
Professor
Mayo Clinic

John Weinstein
Professor and Chairman for Department of Bioinformatics and Computational Biology
MD Anderson Cancer Center

Pravin Mishra
Director, Precision Genomics Core Laboratory & R&D
Intermountain Healthcare

David Smith
Professor of Laboratory Medicine and Pathology Chairman of the Technology Assessment Group Center for Individualized Medicine
Mayo Clinic

James Mills Barbeau
Assoc. Professor, Brown University Alpert Medical School, Director of Laboratory Medicine
Lifespan Academic Medical Center

Anna Berry
Scientific Director of Personalized Medicine and Medical Director of Molecular Diagnostics
Swedish Cancer Institute

Katie (Lintner) Miller
IT Project Scientist
Nationwide Children's Hospital

Westyn Branch-Elliman
Instructor in Medicine
Harvard Medical School

Matthew Trunell
Chief Information Officer & VP of IT
Fred Hutch Cancer Research Centre

Vipul Kashyap
Chief Enterprise Information Architect
Northwell Health

Ron Dixon
Medical Director
Massachusetts General Hospital

Paul Avillach
Assistant Professor
Harvard Medical School & i2b2 tranSMART Foundation

Russ Waitman
Director of Medical Informatics
University of Kansas Medical Center & i2b2 tranSMART Foundation

Rudy Potenzone
Vice President
i2b2 tranSMART Foundation

Peter Goodhand
President
Ontario Institute for Cancer Research (OICR)
Executive Director
Global Alliance for Genomics and Health (GA4GH)

Alysson Muotri
Professor, Director of the Stem Cell Program
Institute for Genomic Medicine, Rady Children's Hospital Sanford Consortium

Samuel "Sandy" Aronson
Executive Director IT
Partners Personalized Medicine

Elia Stupka
Senior Director, Data Science and Bioinformatics
Dana-Farber Cancer Institute

Academic:

Atul Butte
Director, Institute for Computational Health Sciences
University of California, San Francisco

Benedict Paten
Director of Data Management
UCSC

Olivier Elemento
Associate Professor, Head, **Laboratory of Cancer Systems Biology,** Director, **Englander Institute for Precision Medicine,** Associate Director, **Institute for Computational Biomedicine, Cornell**

Gordon Okimoto
Co-Director
University of Hawaii Cancer Center

Ali Torkamani
Director of Genome Informatics, Drug Discovery, Integrative Structural & Computational Biology
The Scripps Translational Science Institute

Sergio Baranzini
Professor
UCSF

Gerald Higgins
Research Professor of Computational Medicine and Bioinformatics,
University of Michigan Medical School

Olexandr Isayev
Professor
University Of North Carolina

Vikash Mansinghka
Principal Investigator, MIT Probabilistic Computing Project
MIT

Veronica Weiner
CEO and Co-Founder
Resiliance Therapeutics
Director of Special Projects
MIT Probabilistic Computing Project

Lead for the largest-scale cancer genomics project to date

Jean Claude Zenklusen
Director, The Cancer Genome Atlas, Centre for Cancer Genomics, Office of the Director
National Cancer Institute

First man to conduct genomic experiments in space

Sylvain Costes
Lead scientist for GeneLab
NASA

Bringing AI and microbiome together for the first time

Naveen Jain
Founder & CEO
Viome

Producer of the world's largest cardiac dataset

Mintu Turakhia
Executive Director, Center for Digital Health, **Stanford,** Director, Cardiac Electrophysiology, **Palo Alto VA**

Collating DNA and health data from 1 million Veterans

Ronald Przygodzki
Director, Genomic Medicine Implementation
VA

GAME CHANGERS

The brains behind the Reagan administration's "Star Wars" initiative

Michael Sekora
Ex Director, Socrates Project
White House under Ronald Reagan

Rare Diseases - Bringing big data and genomics to unlock cures

Atul Butte
Director, Institute for Computational Health Sciences
University of California, San Francisco

Founder of the world's most watched genomics start-up

Vikram Bajaj
Co- Founder, **Google Life Sciences,** Former CSO, **GRAIL,** Managing Director, **Foresite Capital**

Developed a first-of-its-kind quantum-enabled molecular comparison application

Govinda Bhisetti
Head of Computational Chemistry
Biogen

Co-founder of Google's large scale deep neural networks project

Greg Corrado
Co-founder
Google Brain

PHARMA

Fuelling R&D productivity & innovation with AI

Morten Sogaard
Vice President and Head, Genome Sciences & Technologies, Worldwide R&D
Pfizer

- How Pfizer uses advanced analytics and AI to drive forwards pharmaceutical development
- Use cases ranging from business process engineering and automation to insights from healthcare data and genomics
- What are the key obstacles to AI implementation?

Understanding the power of Quantum Computing in Drug Discovery

Govinda Bhisetti
Head of Computational Chemistry
Biogen

- Using Quantum computing to transform traditional R&D drug discovery processes, improve speed and productivity alongside significantly reducing costs and accelerating access to new therapies for patients
- Unveiling a first-of-its-kind quantum-enabled molecular comparison application that could significantly improve advanced molecular design to speed up drug discovery for complex neurological conditions
- Solving complex business problems millions of times faster than classical computing by leveraging the properties of quantum physics in computing

Matthew Nelson
Head of Genetics
GSK

The genetics of drug efficacy: Opportunities and challenges

Mark DePristo
Head of Deep Learning for Genetics and Genomics
Google Inc

Brain Genomics and machine learning- How to get a deep dive into the world of brain genomics using AI?

Mathew Pletcher
Head of Rare Disease Discovery
Roche

Rare Diseases in Precision Medicine

Nadeem Sarwar
President AiM Institute
Eisai

Establishing modern enterprise architecture in a pharmaceutical R&D division

Chris Boone
Vice President, Real World Data and Analytics
Pfizer

PANEL: Where does emerging technology such as AI, precision medicine and next generation diagnostics fit into a health system- What is the value? Where is the evidence? How do you persuade us to implement?

Verner De Biasi
Head Emerging Platforms
GSK

Understanding the new blockchain ecosystem - empowering research and data democratization in a secure manner

HEALTHCARE

AI - The Ethical Debate

James Dzierzanowski
Executive Director
Kaiser Permanente

- With unprecedented data sharing via the cloud we have been provided with vast data lakes at our fingertips
- Harnessing meaning from this data is possible through AI
- However, as AI advances we are unable to always disseminate why or how it has deduced meaning from the data
- With garbage in garbage out does AI become biased?

Developing the Inova Precision Medicine Roadmap: Convergence of implementation science, precision medicine, and the learning healthcare system

Amit Rastogi
SVP for Strategy, Growth and Innovation
Inova Health System

- What are the challenges faced when implementing a system wide precision medicine platform across a healthcare system?
- Developing a harmonized roadmap for the implementation of precision medicine- Real world case studies on implementation of precision medicine at Inova
- What were the financial implications and how can the model benefit your precision medicine implementation strategy?
- Collaborations and partnerships with vendors to make the process work How to make it a success story through developing early stage frameworks?

Where does emerging technology such as AI, precision medicine and next generation diagnostics fit into a health system- What is the value? Where is the evidence? How do you persuade us to implement?

Benson Hsu
Chief Medical Analytics Officer
Sanford Health

Vipul Kashyap
Chief Enterprise Information Architect
Northwell Health

Matthew Trunell
Chief Information Officer & VP of IT
at Fred Hutch Cancer Research Centre

John Weinstein
Professor and Chairman for Department of Bioinformatics and Computational Biology
MD Anderson Cancer Center

New analytical tools for OMICS How to get the best out of your data!

Pravin Mishra
Director, Precision Genomics Core Laboratory & R&D
Intermountain Healthcare

Intermountain Precision Genomics for Everyday Patients

Nazneen Aziz
Executive Director
Kaiser Permanente Research Bank

Biobanks - propelling precision medicine into the clinic in the fastest way possible

David Smith
Professor of Laboratory Medicine and Pathology Chairman of the Technology Assessment Group Center for Individualized Medicine
Mayo Clinic

Using different whole genome sequencing platforms to characterize cancer genomes and their clinical impact

Anna Berry
Scientific Director of Personalized Medicine and Medical Director of Molecular Diagnostics
Swedish Cancer Institute

Integrating gene panels and EMR records to develop treatment pathways and cancer cure frameworks on large scales

Lara Mangravite
President
Sage

Electronic Consent - How to develop an electronic e-trial strategy effectively?

TECHNOLOGY

Next Generation Diagnostics

Vikram Bajaj
Co- Founder, **Google Life Sciences,** Former CSO, **GRAIL,** Managing Director, **Foresite Capital**

FORESITE CAPITAL

Deep Neural Networks - AI

Greg Corrado
Co-founder
Google Brain

Google

Drug Discovery

Govinda Bhisetti
Head of Computational Chemistry
Biogen

Biogen

Blockchain

Munther Baara
Head of New Clinical Paradigm
Pfizer

Pfizer

Quantum Computing

Handol Kim
General Manager, Quadrant Machine Learning Business Unit
D-Wave Systems, Inc

D:Wave
The Quantum Computing Company™

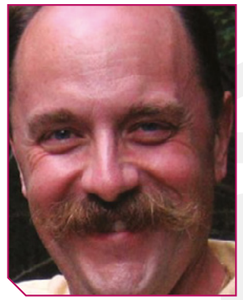
Microgravity Biology

Sylvain Costes
Lead scientist for GeneLab
NASA

NASA

GOVERNMENT & NON-PROFIT

Developing an ecosystem in which EHR and genomic data can flow freely



Ronald Przygodzki
Director, Genomic Medicine Implementation
VA

- Elements of MVP (Million Veterans Program): The direction for the future, and strategies to transform genomic efforts into the clinic
- Building one of the world's largest medical databases by safely collecting blood samples and health information from one million Veteran volunteers
- How to manipulate one of the largest genomic data sets in the world
- Future use of MVP data to enhance the health of veterans

Developing trials of the future

Mintu Turakhia
Executive Director,
Center for Digital Health,
Stanford
Director, Cardiac Electrophysiology,
Palo Alto VA

- How wearables are changing patient centeredness and compliance for clinical trials
- Digital Biomarkers and Digital Therapeutics: See how digitalization leads to better efficiency and insights
- Developing large wearables trials - the lessons learned from building arrhythmia data sets through wearables

Jennifer Hall
President
American Heart Association

Collaboration: How to enable researchers to use data and collaborate easier?

Elizabeth Baca
Senior Health Advisor
Governor's Office of Planning and Research
State of California Governor's Office of Planning and Research

California's Initiative to advance Precision Medicine from the bench to the bedside

Sara Radcliff
President and Chief Executive Officer
California Life Sciences Association

CLSA California: Partnering and driving a hot bed of translational medicine in California

Christina Waters
President & Chief Executive Officer
R.A.R.E. Science

Developing translational medicine through the three main pillars: benchside, bedside and community

Michael Sekora
Ex Director, Socrates Project
White House under Ronald Reagan

The next evolutionary leap of technology exploitation- unprecedented speed, efficiency and agility

Pre-conference Workshop

Ian Dunham
Scientific Director, Open Targets
EMBL-EBI

DATATHON ON OPEN TARGETS

Pre-conference Workshop

Julie Waters
Founder
Raremark

What would patients say if you asked them?

PRE-CONFERENCE WORKSHOP

NASA AMES OPEN SOURCE

Collaborative Scientific Innovation & Translational Medicine Stream

08:45

MORNING BRIEFING:

The next evolutionary leap of technology exploitation- unprecedented speed, efficiency and agility

- Why have present process improvements in technology exploitation only addressed peripheral aspects of the process - sociological, psychological, and financial - and therefore at best only had a minor positive impact?
- How does the automated innovation revolution enable us to address technology exploitation directly?
- How the Automated Innovation Process developed in the U.S. intelligence community and was used on highest priority White House initiatives including: Stealth, Star Wars, resurrection of the U.S. IC industry, advanced materials and the dismemberment of the Soviet Union

Michael Sekora, Ex Director, Socrates Project, **White House under Ronald Reagan**

09:15

KEYNOTE:

How Google's quantum computing efforts could change the world

- Understand exactly where we are in the efforts to build a quantum computer?
- Hype or Reality- What are the true capabilities of quantum computing
- Should we be worried about quantum computing as a threat to blockchain?

John Martinis, Lead for Google's Quantum Computing, **Google**

10:00

Blockchain Disruption & Data Donation: How Blockchain Will Change Our Industry

- Developing a smart-contract between patient and healthcare stakeholders that makes it easy to aggregate health data in a secure, trusted, automated, and error-free way to enforce rules, privacy, and regulations in a mutually agreed upon manner
- Enabling patients to aggregate their data from diverse health sources and share what they choose to with their physicians and researchers
- Putting the patient in control of their health and well-being, rather than being along for the ride

Munther Baara, Head, New Clinical Paradigm, **Pfizer**

AHA Precision Medicine Platform Hands-on Workshop

This workshop looks to introduce the AHA Precision Medicine Platform that has been developed to encourage open sourced collaboration and ease of access and sharing of data. You will be guided through the course through two instructors who will provide hands on education into how to use the platform and get you up and running in no time.

American Heart Association
Instructors TBC

American Heart Association. life is why™

10:30

PANEL:

Integrating data sets across communities

- How tranSMART and I2B2 are connecting communities
- Case studies on tranSMART and its benefits
- How can you integrate tranSMART into your industry?

Chair: Rudy Potenzone, Vice President, **i2b2 tranSMART Foundation**

Keith Elliston, CEO, **i2b2 tranSMART Foundation**

Preston Estep, CSO, **Veritas Genetics**

Paul Avillach, Assistant Professor, **Harvard Medical School & i2b2 tranSMART Foundation**

Russ Waitman, Director of Medical Informatics, **University of Kansas Medical Center & i2b2 tranSMART Foundation**

11:00

Cross ecosystem collaboration for Precision Medicine

- How will intelligent formularies with tiers based on cohorts of genomic profiles, adherence characteristics and EHR records will change health systems?
- Integrated and cross-matched data from claims, EMR combined with pre-approval safety and efficacy data and post marketing surveys to better stratify the patient population into subgroups to design specific interventions including but not limited to: Modification of Formulation, Companion Diagnostics, supplementary drugs to ameliorate side effects, Medication Adherence Reminders, Education
- How could interventions in the context of a targeted Phase IV trials be used to negotiate agreements on drug pricing and formulary placement?

Vipul Kashyap, Chief Enterprise Information Architect, **Northwell Health**

11:20

Open source collaboration and the cloud- Building next generation infrastructure for the world's researchers

- Understanding the power of the cloud infrastructure to bolster collaboration efforts
- How to transfer from latent infrastructure into the cloud
- Sharing data lakes - where we are and what we have to do to progress

Benedict Paten, Director of Data Management, **UCSC**

11:40

How open source platforms and collaboration are changing the work carries out between NASA and NCI?

- What are the advantages of partnerships
- Discussing different partnering models
- Understanding how to share data in a fair manner

NASA & NCI

12:00 Lunch

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PRE-CONFERENCE WORKSHOP

Collaborative Scientific Innovation & Translational Medicine Stream

1:00

Cardio Genomics eXchange commons (CGX): A cloud-based collaboration platform for the analysis and exchange of genome sequencing data

- Development of a 'Genome Dashboard' that allows users to interactively explore genome sequencing data and identify disease-causing variants in individuals with cardiovascular disease (CVD).
- Integrating informatics resources that provide information about the clinical interpretation of specific genomic findings previously reported in humans?
- How to merge Genome Dashboard into the cloud-based American Heart Association Precision Medicine Platform to create a genomics platform called CardioGenomics eXchange commons (CGX).
- Creating a cloud-based data commons where researchers can collaboratively analyze and share genomic data from CVD patients to advance precision medicine initiatives and accelerate genetic findings associated with heart disease

Katie (Lintner) Miller, IT Project Scientist, **Nationwide Children's Hospital**

1:20

A FAIR guide for data providers to maximise sharing of human genomic data

- Data sharing is critical. For every sharing transaction, a successful How treating data like a currency will increase sharing and enable ground breaking research in a FAIR manner?
- How providers of human genomic data fulfil their social contract with data donors when their shareable data conforms to FAIR (Findable, Accessible, Interoperable, Reusable) principles.
- Defining guidelines for data providers wishing to maximise their shared data's FAIR-ness.

Manuel Corpas, Scientific Lead, **Repositive**

1:40

PANEL: Pre-competitive collaboration

- How to effectively partner with other industry members to advance research whilst maintaining a competitive edge?
- Case studies of operative frameworks and precompetitive collaboration between industry partners.
- Technologies used to assist with pre-competitive collaboration

Chair: Nadeem Sarwar, President AiM Institute, **Eisai**

Mauricio Carneiro, Head of Scientific Software, **Verily (Google Life Sciences)**

Bertrand Bodson, Chief Digital Officer, **Novartis**

Gunaretnam (Guna) Rajagopal, VP - Global Head, Computational Sciences, Discovery Sciences, **Janssen, Pharmaceutical Companies of Johnson and Johnson**

2:20

Leveraging private information retrieval techniques to enable interrogation of protected genomic data

- How to maintain genomic and e-health information animosity and security while stored, in transit, and in use.
- How have advances in private information retrieval (PIR) opened doors for the use of protected data without the need to expose the underlying information?
- How will Homomorphic encryption and other PIR methods be best leveraged to enable multi-party genomic comparisons while maintaining data privacy?

Alexander Titus, Biomedical Data Scientist **- B.Next/ In-Q-Tel**

Hackathon GSK Open Targets

DATATHON ON OPEN TARGETS: In partnership with EMBL- EBI and Sanger Institute

Part 1: **Educating on the open targets platform**

Open Targets is an innovative, large-scale, multi-year, public-private partnership that uses human genetics and genomics data for systematic drug target identification and prioritisation.

Visit the Open Targets Platform which provides an integration of public domain data to enable target identification and prioritisation.

Generating and interpreting the data required to identify a good drug target demands a diverse set of skills, backgrounds, evidence types and technologies, which do not exist today in any single entity. Open Targets brings together expertise from four complementary institutions to systematically identify and prioritise targets from which safe and effective medicines can be developed.

Our goals are to:

- Systematically find the best targets to safely & effectively treat disease
- Help others find good targets
- Get those targets adopted into drug discovery pipelines

We currently focus on oncology, immunology and neurodegeneration through an R&D framework that can be applied to all aspects of human disease

Instructors and Leaders:

Ian Dunham, Scientific Director, Open Targets, **EMBL-EBI**

Matthew Nelson, Head of Genetics, **GSK**

Part 2: Advance module-

Integrating your expertise and AI approaches into the Open Targets platform

2:40

Precision FDA- Taking Genomic Testing to the Next Level

- How the FDA is creating a modern, flexible and dynamic regulatory system for NGS
- Ways to develop these standards, which can be used by test developers to ensure their tests produce accurate and reliable results
- How the aggregation of clinical information in curated databases will create a "data commons" that will serve as a reliable source of scientific evidence that test developers could use to demonstrate that NGS test results are relevant to a person's disease or outcome

Adam Berger, Senior Fellow at the Department of Health and Human Services, **FDA**

3:10

PANEL:
Investing in healthcare- What you need to be successful with a VC

- What do pharmaceutical companies and VC's want to invest in?
- How are we seeing digital investments paying off across pharma and healthcare?
- What factors are required to gain successful investment from pharmaceuticals?

Chair: Steve Gullans, Managing Director, **Excel Ventures,** CEO, **Gemphire**

Vikram Bajaj, Co- Founder, **Google Life Sciences,** Former CSO, **GRAIL,** Managing Director, **Foresite Capital Management**

Gregory Bailey, Co-Founder & Partner, **Mediqventures**

Peter Wittek, Chief Quantum Machine Learning, **Creative Destruction**

VC and Investors Showcase

3:50 **SpliceCore: Drug Target Discovery with Splicing AI**
Martin Akerman, CTO, Cofounder, **Envisagenics**

4:00 **Autism Diagnostics Technologies**
Andrew Stewart, CEO and Founder, **Autism Diagnostics**

4:10 **Mendel.AI**
Karim Galil, CEO and Founder, **Mendel.AI**

4:20 **Elastic Genomics**
Chris Probert, Founder, **Elastic Genomics (in stealth mode)**

4:30 **Improve patient identification in cardiovascular by using machine learning - concrete case**
Adrien Rousset, Innovation Manager, **Amgen**

4:40 **Neuroscence Inc**
Yasaman Soudagar, CEO and Founder, **Neurescence Inc**

4:50 **ProteinQure Inc**
Mark Fingerhuth, CEO and Founder, **ProteinQure Inc**

5:40 Close

Part 2 continued

http://www.terrapinn.com/biodatawest

CONFERENCE DAY 1

TUESDAY, MARCH 13TH 2018

OPENING KEYNOTE PLENARY

08:30 Chairman's Opening Remarks

08:40 J&J FUTURE VISION IN AI AND COMPUTATIONAL BIOLOGY

Mathai Mammen, Global Head of R&D, **Janssen Pharmaceutical Companies of Johnson & Johnson**

09:00 Rare Diseases - Bringing big data and genomics to unlock cures

- the current state of the field and how have new techniques in data analytics allowed us to probe deeper into data sets to gain understanding of rare disease morphologies?
- How do we connect millions of disease specific data points using novel statistical machine learning techniques to develop new therapies?
- The time is now - how does UCSF leverage the power of supercomputing infrastructure, once reserved for astrophysicists, to develop new pathways to cures?

Atul Butte, Director, Institute for Computational Health Sciences, **University of California, San Francisco**

09:20 PANEL: Where does emerging technology such as AI, Blockchain, Precision Medicine and next generation diagnostics fit into a health system- What is the value? Where is the evidence? How do you persuade us to implement?

- Is the clinic ready for the influx of new precision medicines?
- What are CIOs at large healthcare systems looking for to drive precision medicine into the clinic?
- What value has been generated to health systems through precision medicine? Are we focusing on the right priorities?

James Dzierzanowski, Executive Director, **Kaiser Permanente**
Matthew Trunell, Chief Information Officer & VP of IT, **Fred Hutch Cancer Research Centre**
Vipul Kashyap, Chief Enterprise Information Architect, **Northwell Health**
Benson Hsu, Chief Medical Analytics Officer, **Sanford Health**
Vikram Bajaj, Co- Founder, **Google Life Sciences,** Former CSO, **GRAIL,** Managing Director, **Foresite Capital Management**
Chris Boone, Vice President, Real World Data and Analytics, **Pfizer**
Gunaretnam (Guna) Rajagopal, VP - Global Head, Computational Sciences, Discovery Sciences, **Janssen**
Adam Berger, Senior Fellow, Department of Health and Human Services, **FDA**

10:00 TITLE SPONSORSHIP AVAILABLE

Do you have a solution you would like to share with our audience?
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10:20 Speed networking

10:40 Morning Coffee

CONFERENCE DAY 1

TUESDAY, MARCH 13TH 2018

	GENOMICS AND HEALTH	PRECISION MEDICINE	ARTIFICIAL INTELLIGENCE SPONSORED AND CO-PRODUCED BY ROCHE
	Sequencing Populations	Cancer Diagnostics	AI in Drug Discovery and Development
11:20	**Developing "DAVE": a simple way to visualize large datasets in the battle against cancer** • How new tools and platforms developed by the NCI are changing the paradigm of data accessibility across the country • How these tools allow us to keep up with the exponential worldwide growth of genomic datasets • How to carry out complex analysis at the data source whilst allowing the user to explore the data and download the desired facets **Jean Zenklusen,** Director, The Cancer Genome Atlas, Centre for Cancer Genomics, Office of the Director, **National Cancer Institute**	**Using different whole genome sequencing platforms to characterize cancer genomes and their clinical impact** • How do we balance the equation of Speed: Depth: Cost across genomic sequencing options • Covering Illumina and high throughput whole genome sequencing including mate-pair sequencing • What is the impact of BGI's proposed $100 whole genome on the clinician and what is the value add to preemptive care? **David Smith,** Professor of Laboratory Medicine and Pathology Chairman of the Technology Assessment Group Center for Individualized Medicine, **Mayo Clinic**	**Rethinking predictive modelling in the age of AI** • How Numerate's platform drives programs by following signals and unlocking low through-put / high content biology • Applying similar modeling techniques with publicly available data in order to successfully model a vast number of sources of preclinical attrition (ADME and tox) • Why pharma and health systems need to start sharing data to guarantee the success of predictive modelling **Brandon Allgood,** CTO and a cofounder, **Numerate Inc**
11:40	**New analytical tools for OMICS How to get the best out of your data!** • Tackling the new emerging field of integrating disparate omic data from genomics, proteomics andglycomics • Identifying the technical and biological barriers to omic integration, with solutions to build a consensus towards data integration in bioscience and better defined phenotypes • What is being done to facilitate the integration effort in an effective manner? **John Weinstein,** Professor and Chairman for Department of Bioinformatics and Computational Biology, **MD Anderson Cancer Center**	**Integrating gene panels and EMR records to develop treatment pathways and cancer cure frameworks on large scales** • What impacts will the expansion of the Swedish Precision medicine program have on healthcare across the system? • Implementing new technologies - How we are implementing the roadmap for the delivery of next generation precision medicine into the Providence Health System? • What evidence is there for universal genetic testing of cancer patients and will it bring the expected value? **Anna Berry,** Scientific Director of Personalized Medicine and Medical Director of Molecular Diagnostics, **Swedish Cancer Institute**	**Augmenting Drug Discovery with Artificial Intelligence at Massive Scale** • Bringing substantial improvements to the efficiency of discovery and development efforts through the expansion and acceleration of traditional approaches • How Recursion views the use of AI in discovery and development – from strategies to accelerate discovery and imaged-based phenotypic screening platforms • Overviews of internal successes in rare disease, immunology, and immuno-oncology alongside partnerships with large pharmaceutical companies including Sanofi and Takeda • Recursion's 5-7 year vision to leverage technology and massive proprietary datasets to build a map of human cellular biology **Chris Gibson,** Co-Founder and CEO, **Recursion**
12:00	SPONSORSHIP AVAILABLE Do you have a solution you would like to share with our audience? Contact **Michael Shackil** now on: **michael.shackil@terrapinn.com** or call at **+1 646.619.1809**	SPONSORSHIP AVAILABLE Do you have a solution you would like to share with our audience? Contact **Michael Shackil** now on: **michael.shackil@terrapinn.com** or call at **+1 646.619.1809**	**Extracting precise biodata through the power of text mining** • Empowering high-value knowledge discovery and decision support • Improving risk stratification through the characterization of patient populations based on social determinant data • Supporting clinical document improvement through NLP **David Milward,** Chief Technology Officer (CTO), **Linguamatics**

INTERACTIVE ROUNDTABLES

12:20

1. Integrating EMR: Integration of electronic medical records with a biomedical knowledge network to predict medical outcomes
Chair: **Sergio Baranzini,** Professor, **UCSF**

2. Collaboration: How to enable researchers to use data and collaborate easier?
Chair: **Christopher Riley,** Research Administration Manager, **American Heart Association**

3. Quantum Computing: Where are we and what we are doing?
Chair: **D- Wave (sponsored)**

4. CLSA California: Partnering and driving a hot bed of translational medicine in California
Chair: **Sara Radcliff,** President and Chief Executive Officer, **California Life Sciences Association**

5. Electronic Consent - How to develop an electronic e-trial strategy effectively?
Chair: **Megan Doerr,** Principal Scientist, **Sage Bionetworks**
Sarah Meeder, Research Compliance Specialist, **CUNY**

6. Personal genetic testing - What are the impacts and implications?
Chair: **Westyn Branch-Elliman,** Instructor in Medicine, **Harvard Medical School**

7. Drug Discovery - Expediting the drug development through genomics, structural and cultural changes
Chair: **Nadeem Sarwar,** President, AiM Institute, **Eisai**

8. Big Data and the CNS - using big data datasets and approaches in the development of medicines for CNS indications including NDDs and pain/ migraine disorders
Chair: **Michael Burczynski,** Senior Director and Head of Translational Biomarker Research, Early Stage Development, **Teva**

9. Stem cells & Rare Diseases - How to develop an infrastructure in which researchers can be connected with patients and tools to develop therapies

10. Text mining and image recognition - Developing new tools
Chair: **Karim Galil,** CEO, **Mendel**

11. Translational Medicine - Developing infrastructure for precision medicine

12. Federal Partnerships - How to work with federal bodies and gain access to data

1:00 Networking Lunch

Blockchain

2:20

Understanding the new blockchain ecosystem - empowering research and data democratization in a secure manner

- Improve drug traceability between drug manufacturers, wholesalers, pharmacists and patients through tracking and verification of secure product information
- Improving authentication of health records and protocols on record sharing
- Empowering clinical trials where altering or modifying data from clinical trials fraudulently can be eradicated
- Precision medicine - where patients, researchers and providers can collaborate to develop individualised care

Verner De Biasi, Head Emerging Platforms, **GSK**

Policy and Governance

Risk management for precision medicine and big biodata

- How to implement a risk mitigation process amongst a complex healthcare system
- Essential parts of the risk management program and case studies on they were implemented at Lifespan
- What are the advantages of systematic frameworks to identifying, assessing, and addressing risks in the implementation of precision medicine?

James Mills Barbeau, MD, JD, Director of Laboratory Medicine, **Brown University/Lifespan Academic Medical Center**

AI in Drug Discovery and Development

A computational cpproach for identifying synergistic drug combinations- fueling a new generation of drug combinations to treat cancers

- Identification of the right combinations through trial and error, a labor and resource intensive process whose scale quickly escalates as more drugs can be combined
- Engaging in the development of a broad computational approach for predicting synergistic combinations using easily obtainable single drug efficacy.
- How does this allow you to forego a detailed mechanistic understanding of drug function, and limited drug combination testing?
- Why is this method impactful for identification of drug synergy to drive new effective cancer cures into the clinic?

Olivier Elemento, Associate Professor, Head, **Laboratory of Cancer Systems Biology,** Director, **Englander Institute for Precision Medicine,** Associate Director, **Institute for Computational Biomedicine, Cornell**

2:40

Blockchain: how to make it work for emerging and less-developed healthcare systems

- Exploring options using blockchain to achieve better health data storage and applications
- Discussing clinical data access, exchange, interoperability, privacy issues and regulatory concerns
- How applications for pharma focus on aging and longevity research, which could enable Africa to make more original contributions to healthcare
- How optimizing processes for emerging and less-developed healthcare systems like in Africa could be helpful in the acceleration of progress for more developed healthcare systems

Iraneus Ogu, Africa AI, Blockchain and Longevity, **Insilico Medicine**

California's Initiative to advance Precision Medicine from the bench to the bedside -

- Hear how the Governor of California's interest and leadership in the field led to statewide collaborative models to realize the potential of precision medicine
- How the state established multi-sector collaborative teams to advance efforts in precision medicine
- Examples from the eight demonstration projects that range from heart disease to pediatric cancer

Elizabeth Baca, Senior Health Advisor Governor's Office of Planning and Research, **State of California Governor's Office of Planning and Research**

Sara Radcliff, President and Chief Executive Officer, **California Life Sciences Association**

Novel CNS drug targets in the regulome identified by deep learning

- How to use domain expert knowledge-driven deep learning of pharmaco-phenomic datasets to yield abundant human CNS drug targets
- Moving beyond the known "reader, writer and eraser" proteins: usingcomputational methodologies to identify more selective candidates
- Utilizing a spatial, longitudinal and biomechanical dynamical analysis of the output to reveal previously unknown network-based drug targets

Gerald Higgins, Research Professor of Computational Medicine and Bioinformatics, **University of Michigan Medical School**

3:00

High impact applications of AI in pharma

Richard Wendell, Founder and CEO, **tellic LLC**

Sequencing And Omics

3:20

Computational identification of isoform switch and alternative splicing events in ZSF1 fa/faCP rats, a model of human type 2 diabetes: How new isoform technologies could transform research and healthcare

- Identification of predictive biomarkers of disease progression using isoform level sequencing- what are the potential implications for the clinic?
- Why are we not moving to isoform level resolution that could provide us with real biological insights?
- With a greater understanding of isoform switching we can remove the chance of false signals for cancer states - how significant is isoform level sequencing in removing signal noise?

Shanrong Zhao, Director, Computational Biology and Bioinformatics, Worldwide R&D, **Pfizer**

Aging And Drug Development

Developing new drug targets for aging through novel insilico methodologies

- Aging has become a major risk factor for many diseases including cancer, diabetes, heart disease and dementia
- Defining new tools for the applications of aging research and information technology
- Empowering new business models, regulation, comprehensive and integrated set of aging biomarkers
- New engagements with large pharmaceutical companies and investors to fully drive the field forwards

Alex Zhavoronkov, (CSO, The Biogerontology Research Foundation) CEO, **InSilico Medicine Inc**

Multimodel Integration

Multimodel data analysis for single cell multiuse data for immunotherapy

- Predictive biomarkers for ovarian and liver cancer developed through novel self-leaning algorithms to provide actionable cures
- How to translate an equation into a cure in less than a year using new algorithms
- Predicting response to blockade to specific immune checkpoint genes
- Multimodel data analysis for biomarker discovery

Gordon Okimoto, Co-Director, **University of Hawaii Cancer Center**

CONFERENCE DAY 1

TUESDAY, MARCH 13TH 2018

3:40

Systems biology approaches to determine the cell-specific gene regulatory potential of genetic associations in complex diseases

- Genetic association studies identify risk DNA variants but fall short of providing a biological context
- How UCSFe integrated GWAS data with regulatory information from ENCODE and REP and built cell-specific biological risk networks
- How UCSF employed this approach to create individualized cell-specific risk networks to characterize risk in more than 2000 patients

Sergio Baranzini, Professor, **UCSF**

Molecular signatures of human mortality: Biomarkers and therapies

- Accelerating drug testing by developing molecular signatures of mortality
- Attaining the best signatures by deeply phenotyping large human cohorts
- High-throughput omics data, coupled with innovative machine learning, is revealing new biomarkers and drug targets

Kristen Fortney, CEO, **BioAge Labs**

Fuelling R&D productivity & innovation with AI

- How Pfizer uses advanced analytics and AI to drive forwards pharmaceutical development
- Use cases ranging from business process engineering and automation to insights from healthcare data and genomics
- What are the key obstacles to AI implementation?

Morten Sogaard, Vice President and Head, Genome Sciences & Technologies, Worldwide R&D, **Pfizer**

4:00

MyGeneRank: A digital platform for Next-Generation genetic studies

- Building a fully digital ecosystem for community-based participatory genetics research: what are the societal benefits and how could this inspire a new generation of preventive health technology platforms?
- Linking genetic + digital health data for health and behavioral insights and understanding how lifestyle factors affect non-communicable diseases such as CHD
- Implementing at-home diagnostics for those at high-risk of non-communicable disease through combined genetic & health data to enable doctors to prescribe and monitor patient centric personalized apps in realtime

Ali Torkamani, Director of Genome Informatics, Drug Discovery, Integrative Structural & Computational Biology, **The Scripps Translational Science Institute**

Viome - our moonshot of creating a world where chronic illness can truly be a matter of choice

- Why human microbiome is influential if not outright responsible for most chronic diseases
- Hear about thetechnology that enables us to analyze microbial ecosystems, biochemical activities and immune system responses with AI and modulate these activities with food and nutrition
- How exponential technologies are now making it possible for consumers to get insights into their bodies and act on them to prevent and reverse chronic conditions

Naveen Jain, CEO, **Viome**

Programmable biology: Empowering the Pocketome

- The design and engineering of molecular, cellular and population-based computation
- Domain-specific languages for the specification of biological computation
- Theories and applications of biological computation

Riccardo Sabatini, Co-Founder, Chief Data Officer, **Orionis**

4:20

Combining artificial intelligence and collective intelligence to democratize bioinformatics

- Designing the future of bioinformatics thanks to the OMICtools community
- How to find the right pipeline of tools thanks to AI-based decision-making solutions?
- Making bioinformatics accessible without the need for advanced IT skills

Arnaud Desfeu, Founder, **omicX**

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4:40 Afternoon refreshments

5:10

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CONFERENCE DAY 1

TUESDAY, MARCH 13TH 2018

5:30

PANEL: Establishing modern enterprise architecture in a Pharmaceutical R&D division

- Scale your R&D pipeline whilst enabling innovation
- How to enable speed and agility alongside increasing business and IT efficiency and effectively
- Case study: How implementation efforts within IT infrastructure empower researchers

Chair: Martin Sjoholm, Senior Enterprise Architect, **Bayer**

Bertrand Bodson, Chief Digital Officer, **Novartis**

6:00

PANEL: AI - The Ethical Debate

- With unprecedented data sharing via the cloud we have been provided with vast data lakes at our fingertips.
- Harnessing meaning from this data is possible through AI.
- However, as AI advances we are unable to always disseminate why or how it has deduced meaning from the data.
- With garbage in garbage out does AI become biased?

Chair: James Dzierzanowski, Executive Director, **Kaiser Permanente**

John Havens, Executive Director, **Global Initiative on Ethics of Autonomous and Intelligent Systems**

Greg Corrado, Co-founder, **Google Brain**

Kay Firth-Butterfield, Head Artificial Intelligence and Machine Learning, **World Economic Forum**

6:30 Networking cocktail reception

YOUNG TALENT IN AI AWARD 2018

To nominate yourself or a colleague for the Young Talent in AI Award, please contact Edward Glanville at +1 646 619 1713 or edward.glanville@terrapinn.com

Proposed by our partners in the field, this award will be presented to the most innovative and impressive example of AI research in BioData

7:00 END OF CONFERENCE DAY ONE

CONFERENCE DAY 2

WEDNESDAY, MARCH 14TH 2018

OPENING KEYNOTE PLENARY

08:45

Producers opening remarks

Edward Glanville, Project Director, **Terrapinn**

08:50

NASA GeneLab Project: using multi-omics to understand how space impacts life

- Inferring knowledge from diverse datasets using new NASA tools
- GeneLab data: factors influencing life in the space shuttle and the ISS including radiation and microgravity and what this means for humans back on earth
- How to engage a larger community via higher order data and analysis working group
- How to transfer the power of NASA based technologies into healthcare through collaborative efforts like NCI and NASA

Sylvain Costes, Lead Scientist for GeneLab, **NASA**

09:00

Large Scale Deep Neural Networks to empower diagnostics and drug development: learnfrom the company at the bleeding edge of AI

- Developing Google's largest deep scale network – How do 16,000 computers studying 10 million images of cats help towards developing early diagnostics for disease?
- Understand the power of deep neural networks and develop new targets and implement powerful deep learning networks to empower drug discovery
- Open source tensor flow platforms -taking your drug development full steam through the world's most powerful open AI chip

Greg Corrado, Co-founder, **Google Brain**

09:40

Developing the Inova Precision Medicine Roadmap: Convergence of implementation science, precision medicine, and the learning healthcare system

- What are the challenges faced when implementing a system wide Precision Medicine platform across a healthcare system ?
- Developing a harmonized roadmap for the implementation of precision medicine- Real world case studies on implementation of precision medicine at Inova
- What were the financial implications and how can the model benefit your precision medicine implementation strategy?
- Collaborations and partnerships with vendors to make the process work How to make it a success story through developing early stage frameworks?

Amit Rastogi, SVP for Strategy, Growth and Innovation, **Inova**

10:00

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10:20 Morning refreshments

GENOMICS AND HEALTH	PRECISION MEDICINE	ARTIFICIAL INTELLIGENCE
Data Infrastructure	Rare Disease	Text Mining and Image Recognition
08:45		
Chair: Ronald Przygodzki, Director, **Genomic Medicine Implementation, VA**	**Chair: Catherine Brownstein,** Scientific Director, **Manton Center for Orphan Disease Research**	**Chair: Mark DePristo,** Head of deep learning for genetics and genomics, **Google Inc**

CONFERENCE DAY 2

WEDNESDAY, MARCH 14TH 2018

GENOMICS AND HEALTH	PRECISION MEDICINE	ARTIFICIAL INTELLIGENCE
Data Infrastructure	Rare Disease	Text Mining and Image Recognition
11:00		
How do you use metadata to unlock the true potential of health data? • Taming the stream of bytes- why disseminating data is not enough- How tagging and curating maximizes the capability of your data • New directions in data curation- how new strategies have been developed out of ICPSR to allow for easy accessibility and retrieval of data • How metadata enhances discovery, use, and preservation- maintenance of data is key – do you do enough? **Amy Pienta,** Associate Research Scientist, Director, Data Acquisitions, Director, National AIDS & HIV Data Archive Program, **ICPSR**	**Collaborations with Industry to accelerate rare disease discoveries in the fastest way possible** • How to structure relationships to protect the interests of all parties when dealing with rare diseases • What are the required infrastructure to make partnerships work? • Understanding the importance of phenotyping, transparency, and patient engagement **Catherine Brownstein,** Scientific Director, **Manton Center for Orphan Disease Research**	**Brain Genomics and machine learning- How to get a deep dive into the world of brain genomics?** • Review of the history and taxonomy of machine learning and artificial intelligence • Introducing deep learning- How is its power increasing and how will it will change the face of healthcare? • Concrete applications of AI to life sciences problems (calling SNP and indel variants in next-generation sequencing data & detection of diabetic retinopathy from fundus images of the eye) **Mark DePristo,** Head of Deep Learning for Genomics and Genetics, **Google Inc**
11:20		
IT infrastructure to speed the delivery of Precision Medicine into the clinic • How to develop an efficient network architecture to empower research across your institution • New requirements for the big data era are chancing - how are you preparing • Customized working environments:using multi scenario prioritization to put the dollars back into the researcher's pocket and save computing power **Jim Broach,** Director of the Penn State Institute for Personalized Medicine, **University of Pennsylvania School of Medicine**	**Biobanks - propelling precision medicine into the clinic in the fastest way possible** • Hear how Kaiser Permanente has implemented precision medicine within its existing nationwide healthcare system • How biobanks with research ready biospecimens and associated EMR data pave the way for the development of further physical tied to EMR databases • How digitalization of biobanks allows efficient access to specimens empowering researchers to get what they need in the fastest and efficient way possible **Nazneen Aziz,** Executive Director, **Kaiser Permanente Research Bank**	**Developing trials of the future** • How wearables are changing patient centeredness and compliance for clinical trials • Digital Biomarkers and Digital Therapeutics: See how digitalization leads to better efficiency and insights • Developing large wearables trials - the lessons learned from building arrhythmia data sets through wearables **Mintu Turakhia,** Executive Director, Center for Digital Health, **Stanford University**; Director, Cardiac Electrophysiology, **Palo Alto VA**
11:40		
Developing an ecosystem in which EHR and genomic data can flow freely • Elements of MVP (Million Veterans Program): the direction for the future, and strategies to transform genomic efforts into the clinic • Building one of the world's largest medical databases by safely collecting blood samples and health information from one million Veteran volunteers • How to manipulate one of the largest genomic data sets in the world • Future use of MVP data to enhance the health of veterans **Ronald Przygodzki,** Director, Genomic Medicine Implementation, **VA**	**Rare Diseases and Precision Medicine** • Accelerating development of novel therapeutics through the transition of genomic data into the AI based drug development • Driving patient centricity through big data to drive cures to the patient in the fastest way possible • Intercalating genomics and EHR records in an efficient and secure manner to drive forwards trail recruitment **Mathew Pletcher,** Head of Rare Disease Discovery, **Roche**	**Computational Drug Discovery using Artificial Intelligence** • Learn novel Deep Learning for design of new molecules • Benefits of AI for increasingly more accurate property predictions • Combining multi-modal data streams into predictive modeling workflow • ADME/Tox and off-target property optimization with AI methods **Olexandr Isayev,** Professor, **University Of North Carolina**
12:00		
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CONFERENCE DAY 2

WEDNESDAY, MARCH 14TH 2018

12:20 Networking Lunch

Quantum Computing	Technologies In The Clinic	Translational Medicine
Chair: Karen Hurst, Chief Innovation Officer and Cyber, **Moonshot Projects**	**Chair: Matthew Nelson,** President & Chief Executive Officer, **GSK**	**Chair: Christina Waters,** President & Chief Executive Officer, **R.A.R.E. Science**

1:40

"Quantum Technology and QuantumBio" - an analysis

- Hear the background and history of quantum and how it relates to the future of medicine
- Understand the potential and the benefits of quantum tech in healthcare?
- Who are the Discuss key research teams, vendors, technologies and the most forward-thinking research?

Karen Hurst, Chief Innovation Officer and Cyber Security Analyst, **Moonshot Projects**

Scaling real world collective intelligence

- Prediction: Gaining insights into new platforms to drive a new paradigm of AI
- Precision: Develop a new understanding of the precision machine learning techniques that empower precision.
- Prevention: Stabilizing patients before symptomatic onsets

Thomas Clozel, Co-Founder, **Owkin**

Developing translational medicine through the three main pillars: benchside, bedside and community

- How to enable the transition of knowledge between the three pillars of translation
- Utilizing digital technologies to empower collaboration to accelerate research
- Understanding the educational road map and processes across the translational field

Christina Waters, President & Chief Executive Officer, **R.A.R.E. Science**

Ashley Winslow, Sr. Director, Translational Research & Portfolio Development, Orphan Disease Center, **University of Pennsylvania**

2:00

Scalable quantum simulation of molecular energies : Towards an exact (quantum) description of chemistry

- Understanding the advantages of the discipline in the acceleration of research
- How molecular energy functions can be be defined by quantum computing faster than by classical models
- Understand the advantages of quantum for your drug development process and assess the impact on computing power

Ryan Babbush, Quantum Software Engineer Google, **Quantum A.I. Lab**

The genetics of drug efficacy: opportunities and challenges

- How efficacy has become the most common cause of attrition in late-phase drug development
- Driving the application of efficacy pharmacogenetics into drug discovery and development across industry
- Defining the value of routine, early and cumulative screening for genetic predictors of efficacy, as an integrated component of clinical trial analysis

Matthew Nelson, Head of Genetics, **GSK**

Tools to accelerate testing of new Parkinson's treatments by assisting in trial design and subject stratification

- Identifying early clinical markers of rate of progression – how to benefit clinical care and testing of new therapies
- Characterizing subgroups based on clinical symptoms – how to allow trial sponsors to test new therapies
- Developing new avenues for investigations – how pathophysiology can be targeted in a more efficient way through AI

Duygu Tosun-Turgut, Assistant Professor and Co-Director of the Center for Imaging of Neurodegenerative Diseases (CIND), **San Francisco Veterans Affairs Medical Center**

Please visit the website for the most up to date agenda

http://www.terrapinn.com/biodatawest

CONFERENCE DAY 2

WEDNESDAY, MARCH 14TH 2018

2:20

Understanding the power of Quantum Computing in Drug Discovery

- Using Quantum computing to transform traditional R&D drug discovery processes, improve speed and productivity alongside significantly reducing costs and accelerating access to new therapies for patients
- Unveiling a first-of-its-kind quantum-enabled molecular comparison application that could significantly improve advanced molecular design to speed up drug discovery for complex neurological conditions
- Solving complex business problems millions of times faster than classical computing by leveraging the properties of quantum physics in computing

Govinda Bhisetti, Head of Computational Chemistry, **Biogen**

Intermountain Precision Genomics for Everyday Patients

- Developing efficient and rapid diagnostic processes using WGS and gene panels
- Comparing WGS and gene panels in areas such as cost vs time implications and he future of the technology
- Navigating care pathways with the guidance of genomics data to provide economic value to institutions

Pravin Mishra, Director, Precision Genomics Core Laboratory & R&D, **Intermountain Healthcare**

What would patients say if you asked them?

- How patient experience is changing the way pharma thinks about drug development
- What patients can share with pharma: now and in the future
- What are the key lessons learnt from the frontline of patient engagement?

Julie Waters, Founder, **Raremark**

2:40

3:00 Afternoon refreshments

POST CONGRESS SHORT COURSES

3:40

Data democratization and usibility

- Solving the dilemma of data democratization: current methodologies for freeing data from stasis
- Dollars vs Altruism: Utilizing novel technologies such as block chain to provide a financial ecosystem to allow for data sharing
- How to leverage usability of phenotypic and genotypic data through computational efforts to create a graphical database

Noel Burt, Program Manager, **Broad Institute**

Scott Brandon, Executive Director, **Open Med Access**

Precision medicine 101

- An overview of the clinical applications of genomic medicine, skills to evaluate clinical validity and utility of new tests, and the associated ethical and social issues inherent to genomics
- Conceptual and practical information about real-world applications of genomics

Westyn Branch-Elliman, Instructor in Medicine, **Harvard Medical School**

Ai & quantum tools

Round Table 1 Utilising Blockchain - Data security and ownership

Round Table 2 Tensor Flow - Developing a greater understanding of the chip and its possibilities

Round Table 3 Hadoop- Developing new big data infrastructure on a scalable level

Round Table 4 Bayes DB- Understanding systems for implementing AI for the layman

Round Table 5 Graph Databases - A short introduction

Round Table 6 Sequencing Populations- How to make it effective and fast

Round Table 7 AI in Drug Discovery- Partnering with new AI and tech companies

Round Table 8 Policy and Governance- Update on current legal implications

Round Table 9 Aging and Drug Development- How investment in aging is becoming an essential topic

Round Table 10 Policy and Governance

Round Table 11 Cancer Diagnostics- Liquid biopsies

Round Table 12 Multimodel Integration- New AI methods

5:10 CONFERENCE ENDS

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