

2nd Annual NGS Data Analysis & Informatics Conference

Upcoming trends in data processing, computational consideration and applications of NGS data

**6th - 7th February 2017,
San Diego-CA, USA**



Event Overview:

Next - generation sequencing (NGS) technology revolution has brought influx of large-scale data where storage and management, processing and integration, validation for quality, has become a challenge in biomedical industry. FDA and other regulatory bodies have been working to develop a regulatory framework for NGS applications in various fields based on validated analytical standards that would ensure that NGS tests produce accurate and reliable results.

In order to find answers to biomedical questions ranging from evolutionary heritage to the functioning of cellular molecular machinery and address the challenges faced, NGS data analysis and bioinformatics solutions has to be discussed among all the stakeholders.

After the overwhelming response from our last annual, MarketsandMarkets is pleased to announce the '**2nd Annual NGS Data Analysis and Informatics Conference**' to be held on **6th -7th February 2017** in **San Diego-CA, USA** will be a platform to combines unique perspectives from a variety of researchers, engineers, biostatisticians and software developers from pharma and research community involved in NGS data analysis.

Key Highlights:

- ✓ Upcoming challenges and solutions for Data storage and management
- ✓ Processing and Integration of NGS data
- ✓ Methods and tools for Interpretation and analysis
- ✓ New area of application of NGS data- diagnostics & immuno-oncology
- ✓ Standardization and benchmarking of NGS tools & soft wares
- ✓ Third generation sequencing tools and data generated from them

Who Should Attend?

From pharmaceutical and biopharmaceutical companies, computational biology, system biology and bioinformatics laboratories and research institutes

Designations:

VP, Director, COO, CSO, Scientist, Data Architect, Investigator, Professor, Instructor, Scientific director, Project manager, Lab technician / Head, Head of department, Software specialist working in

Departments:

- Bioinformatics
- Biostatistics
- Computational Biology
- Pharmacogenetics & pharmacogenomics
- Computational Medicine & Bioinformatics
- Biomedical Informatics
- Computer Science
- Systems Biology
- Metagenomics & Microbial Genomics
- Clinical Development
- Research & Development

Why attend?

- Find out new case studies of application of Next Generation Sequencing in various upcoming fields
- Contribute to interactive roundtables with your peers to deliberate key topics most relevant to you
- Explore the latest platforms and technologies on the market for development
- Discuss the best tool for your research in data analysis
- Share your work and achievements with your industry peers in the Poster Session



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Advisory Panel:



Shanrong Zhao
Director, Computational Biology
Pfizer, Massachusetts

Speaker Panel:



Gunaretnam Rajagopal
VP Global Head, Computational
Sciences Discovery Sciences
**Janssen Research &
Development, Johnson &
Johnson Company, New Jersey**



Susan Gregurick,
Director, Division of Biomedical
Technology, Bioinformatics, and
Computational Biology (BBCB).
**National Institute of General
Medical Science, NIH, Maryland**



Shanrong Zhao
Director, Computational Biology
Pfizer, Massachusetts



Marko Miladinov
Informatics Lead
**Bristol-Myers Squibb,
New York**



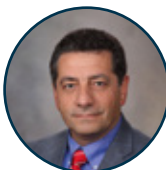
Bhanu Bahl
Director, Clinical and
Translational Science Centre,
**Harvard Medical School,
Massachusetts**



Ravi K Madduri
MCS, Argonne National
Laboratory, Computation
Institute, **University of Chicago,
Illinois**



Junping Jing
Manager, Bioinformatics/
Translational Medicine, Oncology
R&D
GlaxoSmithKline, Pennsylvania



George Vasmatazis
Co-director, Biomarker
Discovery Program -Centre for
Individualized Medicine
Mayo Clinic, Minnesota



David W. Craig
Prof. & Vice Chair, Translational
Genomics &
Co-Director, Institute of Translational
Genomics, **Keck School of Medicine
of USC, California**



Jonathan Keeling
Head , Data analysis -
Production Bioinformatics
**Mount Sinai Genetic Testing
Lab -Icahn School of Medicine
at Mount Sinai, New York**



Richard H. Scheuermann
Director, Informatics
**J. Craig Venter Institute,
California**



Jiang Zhu
Assistant Professor, Department
of Immunology and Microbial
Science , **The Scripps Research
Institute, California**



Nicolas Robine
Assistant Director,
Computational Biology
**New York Genome Center,
New York**



Nazneen Aziz
Executive Director, Precision
Medicine
**Kaiser Permanente Research
Bank, California**



Yong Yue
Director, Computational Biology
**Boehringer Ingelheim,
California**



Guru Ananda
Scientist, Computational
Sciences Group
**The Jackson Laboratory
for Genomic Medicine,
Connecticut**



Nitin S. Baliga
Professor &SVP & Director,
Research and Education
**Institute for Systems Biology,
Washington**



Christopher Roberts
Associate Director,
Computational Biology
Biogen Idec, Massachusetts



Amanda Birmingham
Senior Bioinformatics Engineer
**Centre for Computational Bi-
ology and Bioinformatics, Uni-
versity of California, California**



Fengzhu Sun
Professor, Molecular and
Computational Biology
**University of Southern
California, California**



Julio Fernández Banet
Principal Scientist
Pfizer, California



Zhenyu Xu
Chief Technology Officer
Sophia Genetics



Janusz Dutkowski
CEO
Data4Cure, Inc., California

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Day 1, 6th February 2017

08:15 Registration

08:55 Welcome note from MarketsandMarkets

09:00 Opening Remarks from the Chairman

09:10 **Keynote Presentation: Novel Computational Technologies for Next-Generation Sequencing Data Analysis**
Gunaretnam Rajagopal, VP Global Head, Computational Sciences Discovery Sciences, **Janssen Research & Development, Johnson & Johnson Company, New Jersey**

Data Management, Processing & Interpretation

09:35 **Globus Genomics and several other cloud-based solution in data storage and management**

- Practical methodologies that enable reliable, large-scale execution analysis on AWS cloud.
- Profiling service that generates computational profiles for all the analysis tools
- Provisioning service that creates and manages execution plans based on the computational profiles from the service

Ravi K Madduri, MCS, Argonne National Laboratory, Computation Institute, **University of Chicago, Illinois**

10:00 **Optimal RNA-seq data analysis**

- Mapping
- Quantification
- Normalization

Shanrong Zhao, Director, Computational Biology, **Pfizer, Massachusetts**

10:25 **The Biomedical Intelligence Cloud – a data-driven network biology platform for biomarker and target discovery.**

- CURIE(TM) - integrating multimodal genomic and clinical data to build a dynamic data-driven knowledge graph spanning hundreds of disease conditions.
- Deep NGS-based molecular and immune-infiltrate characterization and subtyping of tumors to aid clinical drug development.
- Biologically-informed machine learning models predicting response to single agents and drug combinations.

Janusz Dutkowski, CEO, **Data4Cure, Inc. USA**

10:55 Morning Refreshments | Poster Presentations | One-to-One Networking

11:40 **Vaccine design and antibody discovery: the next generation**

- Developmental pathway of broadly neutralizing antibodies during HIV-1 infection
- Unbiased, longitudinal analysis of B-cell responses to HIV-1 vaccine in non-human primates
- Rapid identification of antiviral monoclonal antibodies by digital panning of antibody phage libraries

Jiang Zhu, Assistant Professor, Department of Immunology & Microbial Science, **The Scripps Research Institute, California**

12:05 **Introduction to the OASIS cancer genomics portal.**

- Omics data integration.
- Extracting value from public data.
- Data curation challenges.

Julio Fernández Banet, Principal Scientist, **Pfizer, California**

12:30 **Panel Discussion: Combining primary, secondary and tertiary data analysis for quicker analysis – need of the hour**

- Understanding the basic concepts of the analysis
- Developing informatics work flows to reduce the processing time
- Current bioinformatics strategies and computational tools

Panellist:

Nicolas Robine, Assistant Director, Computational Biology, **New York Genome Centre, New York**

Shanrong Zhao, Director, Computational Biology, **Pfizer, Massachusetts**

Guru Ananda, Scientist, Computational Sciences Group, **The Jackson Laboratory for Genomic Medicine, Connecticut**

Jonathan Keeling, Head , Data analysis - Production Bioinformatics, **Mount Sinai Genetic Testing Lab –Icahn School of Medicine at Mount Sinai, New York**

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13:00 Lunch | Poster Presentations | One-to-One Networking

14:00 **Challenges in Cancer genomics in**

- Sample extraction
- Clinical reporting

Nicolas Robine, Assistant Director, Computational Biology, **New York Genome Center, New York**

14:25 *Solution Provider Presentation; please contact Steve at steve.h@marketsandmarkets.com*

14:40 **Enabling reproducible analysis of NGS experiments through automated Jupyter pipelines**

- The challenge of reproducible data analysis
- Jupyter notebooks: friend or foe?
- A sample self-documenting automated NGS quantification pipeline

Amanda Birmingham, Senior Bioinformatics Engineer, **Centre for Computational Biology and Bioinformatics, University of California, California**

15:05 **Clinical Interactive Report Pipeline (CIRP): bring the right information to clinical director to make the right decision and generate clinical report.**

- The challenge and bottleneck in today's NGS clinical testing
- Turn raw data into clinical report accurately and with ease
- Regulatory and other concerns for the tool

Jonathan Keeling, Head, Data analysis - Production Bioinformatics, **Mount Sinai Genetic Testing Lab -Icahn School of Medicine at Mount Sinai, New York**

15:30 **Bioanalytical Sample Analysis and Method Validation studies of NGS data.**

Marko Miladinov, Informatics Lead, **Bristol-Myers Squibb, New York**

16:00 Evening Refreshments | Poster Presentations | One-to-One Networking

16:45 *Solution Provider Presentation; please contact Steve at steve.h@marketsandmarkets.com*

17:00 **Quality control of single nuclei RNA-seq**

- Informative quality metrics
- Machine learning
- High throughput single cell analysis

Richard H. Scheuermann, Director, Informatics, **J. Craig Venter Institute, California**

17:25 **Comprehensive Genome Analytics in the Clinical space:**

- A reproducible and traceable bioinformatics system
- Clinical genomics menu
- Data report and interpretation using clinical knowledgebase

Guru Ananda, Scientist, Computational Sciences Group, **The Jackson Laboratory for Genomic Medicine, Connecticut**

17:50 **Closing Remarks by the Chairman**

18:00 **Drinks Reception & Networking**

End of Day 1

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Day 2, 7th February 2017

08:15 Registration

08:55 Welcome note from MarketsandMarkets

09:00 Opening Remarks from the Chairman

09:10 **Keynote Presentation: Next generation sequencing data analysis revolutionizing the Cancer research and diagnostics.**

- Current programmatic highlights from NIH funded activities in NGSequencing analytics
- Challenges and opportunities in NGSequencing data and informatics
- Future Data Science Directions at NIH

Susan Gregurick, Director, Division of Biomedical Technology, Bioinformatics, and Computational Biology (BBCB),
National Institute of General Medical Science, NIH, Maryland

Next-Generation Sequencing analysis for Diagnostics

09:35 **Next Generation Sequencing in the clinic- Case studies**

Nazneen Aziz, Executive Director-Precision Medicine, Kaiser Permanente Research Bank, California

10:00 **Using NGS data to profile immune cell distribution in human tumors;**

- Guide indication and patient population for immune therapies;
- Rational combination of immune therapies;
- Cancer antigens.

Dr Junping Jing, Manager, Bioinformatics/Translational Medicine, Oncology R&D GlaxoSmithKline, Pennsylvania

10:25 **Presentation by Sophia Genetics**

Zhenyu Xu, Chief Technology Officer, Sophia Genetics

10:40 *Solution Provider Presentation; please contact Steve at steve.h@marketsandmarkets.com*

10:55 **Morning Refreshments | Poster Presentations | One-to-One Networking**

11:40 **Semantic-search based network to promote collaborative research and discovery**

- Ontology-based research data sharing network for cross-institutional search
- Linked open data repository using Resource description framework
- Decentralized data governance via Federated system architecture

Bhanu Bahl, Director, Clinical and Translational Science Centre, Harvard Medical School, Massachusetts

12:05 *Solution Provider Presentation; please contact Steve at steve.h@marketsandmarkets.com*

12:20 **Precision Biology – Use Patient Molecular Profiling**

- To Identify Better Drug Targets
- Improve the Translatability of Disease Models
- Biomarkers

Yong Yue, Director, Computational Biology, Boehringer Ingelheim, Connecticut

12:45 **Panel Discussion: Standardization and benchmarking of NGS tools and softwares**

- Performance of open-source alignment programs
- Reduce false positives and increase the sensitivity
- Current status and solutions for big data management, analysis

Panellist:

Susan Gregurick, Director, Division of Biomedical Technology, Bioinformatics, and Computational Biology (BBCB),
National Institute of General Medical Science, NIH, Maryland

13:15 **Lunch | Poster Presentations | One-to-One Networking**

14:15 *Solution Provider Presentation; please contact Steve at steve.h@marketsandmarkets.com*

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Emerging Applications of NGS data analysis

14:30 Systems biology approach to personalized cancer therapies

- A novel SYGNAL discovery platform for mining patient multi-omics data to decipher actionable network models for complex diseases
- Utility of SYGNAL will be illustrated with a case-study on application to Glioblastoma multiform
- SYGNAL identifies driver mutations and uncovers how they alter cancer phenotypes and clinical outcomes by perturbing specific gene networks within tumors
- SYGNAL enables a network-based strategy to target single and combination therapies based on which networks are altered within patients

Nitin S. Baliga, Professor &SVP & Director, Research and Education, **Institute for Systems Biology, Washington**

14:55 MPseq and data integration for cancer targeted therapy

- MPseq is a robust method to detect rearrangements and CNVs in tumor genomes
- Integration of MPseq, RNAseq and Exome sequencing results in reduced and more relevant gene list
- Identification of novel targets in tumors to facilitate precision medicine

George Vasmatazis, Co-director, Biomarker Discovery Program - Centre for Individualized Medicine, **Mayo Clinic, Minnesota**

15:20 Evening Refreshments | Poster Presentations

15:55 Analytical validation of platforms for evaluating integrated exome and RNA sequencing in precision oncology.

- Analytical validation in precision medicine
- Exome sequencing, and RNA sequencing
- Standards

David W. Craig, Prof. and Vice Chair, Translational Genomics & Co-Director, Institute of Translational Genomics, **Keck School of Medicine of USC, California**

16:20 Applications of NGS technologies to Drug Discovery and Development

- Using NGS for characterization of pre-clinical models for biomarker discovery
- Mining large NGS data sets to support novel target discovery
- Application of NGS to bioprocess research to improve productivity in manufacturing

Christopher Roberts, Associate Director, Computational Biology, **Biogen Idec, Massachusetts**

16:45 Alignment-free genome and metagenome comparison based on NGS and applications

- Genome and metagenome comparison
- Virus-bacterial host interaction
- Association network construction

Fengzhu Sun, Professor, Molecular and Computational Biology, **University of Southern California, California**

17:10 Closing Remarks by the Chairman

End of Conference

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