http://gensc.org



**The 15th Genomic Standards Consortium meeting**   
Standards-enabled Research in Genomics

April 22-24th, 2013

Natcher Conference Center, NIH

**April 22-23**: GSC15 Plenary and Poster Sessions.

**April 24:** GSC Working groups and GSC Hackathon.

**April 25-26:** GSC15 Satellite Meeting: Genomic Observatories (Smithsonian)

**GSC 15 Sponsors**

    

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**Organizing Committee**: Lynn Schriml and Ilene Mizrachi (co-hosts, local organizers),

Peter Sterk, Dawn Field, Lynette Hirschman, Tatiana Tatusova, Susanna Sansone, Jack Gilbert, David Schindel, Neil Davies, Chris Meyer, Folker Meyer, and George Garrity

**Standards-enabled Research in Genomics**

The 15th Genomic Standards Consortium (GSC15) meeting will be held at NIH (Bethesda, Maryland) from April 22-24th. This meeting will highlight the utilization of genome metadata standards for the enhancement of our biological understanding of microbes, the interaction between microbial genomes, human health and disease. GSC15 will provide a forum for standards developers, genome and metagenome researchers and biological database developers to discuss their research, initiate collaborations, join GSC working groups and engage in panel discussions. The conference will include two days of plenary talks featuring GSC projects and community standards efforts along with a keynote speaker, discussion of standards among a government panel and groups discussion panel. Day 3 of GSC15 will include concurrent GSC working groups **open to GSC15 participants**.

Agenda

**Monday, April 22nd**

**8:00-9:00** Arrival, Registration, Poster setup, Coffee & Breakfast

**9:00-9:15 Meeting Opening:**

**Lynn Schriml** (University of Maryland School of Medicine, USA) **&**

**Ilene Mizrachi (**National Center for Biotechnology Information (NCBI)

**Jim Ostell** (NCBI)NCBI opens GSC15

**9:15-9:45 Standards in the INSDC**

Ilene Mizrachi (National Center for Biotechnology Information) and

Petra Ten Hoopen (European Bioinformatics Institute)

**9:45-10:00 GSC Introduction**

Dawn Field (NERC Centre for Ecology and Hydrology, UK)

**10:00-10:30 GSC Groups I**: Success stories of GSC standards in Environmental Genomics

Session Chair: Dawn Field

**Konstantinos Liolios** (DOE Joint Genomes Institute, USA)

The Genomes OnLine Database (GOLD) v.5: Status of Genomic and Metagenomic Projects and Their Associated Metadata

**Jack Gilbert** (Argonne National Laboratory and University of Chicago, USA)

The Hospital Microbiome Project – Understanding Microbial Transmission and Ecology in a Health Care Environment.

**Frank Oliver Glöckner** (Max Planck Institute Bremen and Jacobs University Bremen, Germany)

Micro B3: Marine Microbial Biodiversity, Bioinformatics, Biotechnology

**10:30-11:00 Coffee Break & Poster Session**

**11:00-12:30 Standards in the HMP and Human Microbiome Research**

Session Chairs: Rob Knight and Owen White

**Rob Knight** (University of Colorado Boulder, USA)

Using Standards-Compliant Metadata to Combine Human Microbiome Studies

**Curtis Huttenhower** (Harvard School of Public Health, USA)

Cataloging Genes and Pathways in the Human Microbiome

**Jack Gilbert** (Argonne National Laboratory & University of Chicago, USA)

The Earth Microbiome Project and the Importance of Data Standards in Modeling the Planets Microbiome

**Susan Holmes** (Stanford University, USA)

Reproducible Research for Data Normalization, Analyses and Simulations

**Owen White** (University of Maryland School of Medicine, USA)

Utilization of Standardized Vocabularies in the Management of Human Microbiome Data

**12:30-13:30 Lunch**

**13:30-14:15** Introduction: Owen White

**Keynote Speaker: Steven Salzberg**

(Johns Hopkins University School of Medicine, USA)

The Challenges of Big Data in Next-Generation Genomics

**14:15-15:00 GSC Groups II**: GSC Standards ImplementationSession Chair: Frank Oliver Glöckner

**Renzo Kottmann** (Max Planck Institute Bremen, Germany)

Earth Sampling App for Ocean Sampling Day

**George Garrity** (Michigan State University, USA)

Standards in Genomic Sciences (SIGS)

**Antonio Gonzalez** (University of Colorado Boulder, USA)

Next Generation Software Pipelines and Reproducibility for Microbial Community Analysis

**Pelin Yilmaz** (Max Planck Institute Bremen, Germany)

Phylogeny, Ecology and Biogeography of Marine Bacterial and Archaeal Clades

**15:00-15:30 Coffee Break & Poster Session**

**15:30-17:00 GSC Outreach I**: Standards Development and Implementation in Genomic and Metagenomic Research (Submitted Abstracts)Session Chair: Susanna-Assunta Sansone

**Anjantte Johnston** (National Center for Biotechnology Information, USA)

GSC-Compliance at NCBI

**Heather Huot-Creasy** (University of Maryland School of Medicine, USA)

The Human Microbiome Project Metadata Catalog

**Tonia Korves** (The MITRE Corporation, USA)

Applying Publicly Available Genomic Metadata to Disease Outbreak Investigation

**Adam Phillippy** (National Biodefense Analysis and Countermeasures Center, USA)

Sequencing and Analysis Standards for Microbial Forensics

**Junhua Li** (BGI, China)

A New Version of Human Gut Microbial Gene Catalog Integrating with 3 Continent Populations and Human Gut-Related Bacterial Genomes.

**17:00-17:30 Poster Session Flash talks** (2 min, 1 slide)

**18:00 Day 1 Wrap Up**

**GSC15 Reception: 18:30-21:00**

Evening reception, food and drink provided by the GSC.

Lebanese Taverna Restaurant

7141 Arlington Road, Bethesda, MD

**Tuesday, April 23rd**

**8:00-9:00** **Coffee & Breakfast**

**9:00-10:30 GSC Outreach II:** Standards Development and Implementation in Genomic and Metagenomic Databases and Applications (Submitted Abstracts)Session Chair: Norman Morrison

**Judith Blake** (The Jackson Laboratory, USA) & **Suzanna Lewis** (Lawrence Berkeley National Laboratory, USA)

Gene Ontology: Functional Annotation for Comparative Genomics

**Evangelos Pafilis** (Hellenic Center of Marine Research, Greece)

ENVIRONMENTS: identification of Environment Descriptive Terms in Text

**Susanna-Assunta Sansone** (University of Oxford & Nature Publishing Group, UK)

The ISA Commons: Curate, Visualize, Analyze, Share and Publish

**Trish Whetzel** (BMIR Stanford University, USA)

NCBO Technology: Powering Semantically Aware Applications to Enable Standards Driven Research

**K. Eric Wommack** (University of Delaware, USA)

The VIROME Compare-inator: A Web Tool for Exploring the Diversity of Viral Communities

**10:00-10:30 Coffee Break & Poster Session**

**10:30-12:00 GSC Outreach III:** Standards Development and New Standards in Genomic and Metagenomic Databases and Applications (Submitted Abstracts)Session Chair: Linda Amaral-Zettler

**Granger Sutton** (J. Craig Venter Institute, USA)

Standards for Pan-Genome Data Repositories

**Tatiana Tatusova** (National Center for Biotechnology Information, USA) &

**Folker Meyer** (Argonne National Laboratory and University of Chicago, USA)

Pan-genome: A New Paradigm in Microbiology

**Cynthia Parr** (Smithsonian Institution, USA)

Encyclopedia of Life: Applying Concepts from Amazon.com and LEGO to Biodiversity Informatics

**Katharine Barker** (Smithsonian Institution, USA)

The Global Genome Biodiversity Network (GGBN) and the Global Genome Initiative (GGI): Building the Infrastructure for the Future of Genomics

**Marnix Medema** (Max Planck Institute Bremen, Germany)

MIBiG: Minimal Information about a Biosynthetic Gene Cluster

**Markus Göker** (DSMZ, Germany)

Proposal for a Minimum Information on a Phenotype MicroArray Study (MIPS) standard

**Michael Schneider** (Max Planck Institute Bremen, Germany)

A MIxS and DwC Compliant Biodiversity Reference Data Model to Support the Community in Implementing the Database Layer

**12:00-13:30 Lunch**

**13:30- 15:30 Government Panel**

Discussion Topic: Where are Standards in Genomics Most Needed Now?Session Chairs: Lynette Hirschman and Lynn Schriml

Panel Chair: Dan Drell (DOE)

Session Members: Susan Gregurick (DOE), Adam Phillippy (DHS), Alison Yao (NIAID), Ann Lichens-Park (NIFA/USDA), Lita Proctor (Common Fund), Marc Allard (FDA), Marc Salit (NIST), Patricia Reichelderfer (NICHD), Vivien Bonazzi (NHGRI), Sylvia Spengler (NSF/CISE)

**15:30- 16:00 Coffee Break & Poster Session**

**16:00-17:00 Panel Discussion**

Proposed Topics:1. The need for new standards: PanGenomes

2. Genome Sequence Annotation Standards

**17:00 Day 2 Wrap Up. Close of GSC15 plenary sessions.**

Official Handoff of GSC15 to GSC16 to be held in Brisbane, Australia

**Wednesday, April 24th**

**Working Group Sessions:** OPEN to ALL GSC15 Participants

**8:00** Breakfast & Coffee

**8:30-12:00 Morning Session**

Morning Session: Genomic Observatories (GOs) Session [Balcony B]

(all groups in GOs session), Program: See **http://tinyurl.com/axh44uq**

**10:15-10:45** Morning Coffee Break

**12:00-1:00** Lunch [working lunch]**13:00-15:00 Afternoon Concurrent Session I**:

GOs core group meeting [Balcony B]

M5 Working Group [Room H]  
    GSC Biodiversity Hackathon &   
                     Compliance and Interoperability Working Group [Room C1/C2]

**14:45-15:15** Afternoon Coffee Break

**15:15-17:00 Afternoon Concurrent Session II**

GOs core group meeting [Balcony B]

M5 Working Group [Room H]  
    GSC Biodiversity Hackathon &   
                     Compliance and Interoperability Working Group [Room C1/C2]

GSC Board Meeting [Closed Session] [Room B]

**April 25-26th**

**GSC15 Satellite Meeting: Genomic Observatories 2nd**

**(GOs2) International Meeting (Smithsonian)**

Please see Genomic Observatories Network workshop (GOs2) for details of the meeting, and <http://genomicobservatories.org>/ for more information about the Genomic Observatories Network in general.

**GSC15 Poster Presenters**

Poster Number, Presenter/Authors, Title

1. **Lita Proctor**

The trans-NIH Microbiome Working Group (TMWG)

1. **Yemin Lan**, Nivedita Clark, Christopher Blackwood and Gail Rosen

Identifying functional signatures in microorganism genomes related to polymer decomposition

1. Michael Vyverman, Bernard De Baets, Veerle Fack and **Peter Dawyndt**

ALFALFA: a Novel Algorithm for Long Fragment Mapping and Alignment

1. Hubert Denise, **Peter Sterk,** Matt Corbett, Matthew Fraser, Craig McAnulla, Alex Mitchell, Gift Nuka, Sebastien Pesseat, Maxim Scheremetjew and Sarah Hunter

The Metagenomics Resource at the European Bioinformatics Institute

1. Daniel Nasko, Jaysheel Bhavsar, Shawn Polson and **K. Eric Wommack**

Assessing patterns of CRISPR spacer composition using the CASC discovery and validation tool

1. **Takatomo Fujisawa**, Toshiaki Katayama, Shinobu Okamoto, Hiroshi Mori, Yasunori Yamamoto and Yasukazu Nakamura

Development of an Ontology for the INSDC Feature Table Definition

1. Adam Arkin, Robert Cottingham, Sergei Maslov, Rick Stevens, Thomas Brettin, Dylan Chivian, Paramvir Dehal, Christopher Henry, Folker Meyer, Jennifer Salazar, Doreen Ware, David Weston, Brian Davison and **Elizabeth M. Glass**

Using Data Standards in KBase: The DOE Systems Biology Knowledgebase

1. **Elizabeth M. Glass**, Yekaterina Dribinsky, Pelin Yilmaz, Hal Levin, Robert Van Pelt, Doug Wendel, Andreas Wilke, Jonathan Eisen, Sue Huse, Anna Shipanova, Mitch Sogin, Jason Stajich, Rob Knight, Folker Meyer and Lynn Schriml

Meta Data Standards for the Built Environment - MIxS-BE

1. Anna Klindworth, Elmar Pruesse, Timmy Schweer, Joerg Pelpies, Christian Quast and **Frank Oliver Glöckner**

In silico Evaluation of Primer and Primer Pairs for 16S Ribosomal RNA Biodiversity

1. Bart Mesuere, Bart Devreese, Griet Debyser, Maarten Aerts, Peter Vandamme and **Peter Dawyndt**

Unipept: Exploring Biodiversity of Complex Metaproteome Samples

1. **Bing Ma**, Arthur Brady, Owen White and Jacques Ravel

Organism-Centric Approach to Study Paired Metagenome and Metatranscriptome Profiles of Vaginal Microbial Community

1. **Peter Sterk**: GSC Projects
2. NCBI
3. Anjanette Johnston, **John Anderson**, Tanya Barrett and Ilene Mizrachi

GSC-Compliance at NCBI

1. **Evangelos Pafilis**, Sune Frankild, Lucia Fanini, Sarah Faulwetter, Christina Pavloudi, Katerina Vasileiadou, Christos Arvanitidis and Lars Juhl Jensen

ENVIRONMENTS: identification of environment descriptive terms in text

1. **Trish Whetzel**

NCBO Technology: Powering Semantically Aware Applications to enable Standards Driven Research

1. **Marnix Medema**, Pelin Yilmaz, Renzo Kottmann, Frank Oliver Glöckner, Rainer Breitling and Eriko Takano

MIBiG: Minimal Information about a Biosynthetic Gene Cluster