



AGBT 2017™

ADVANCES IN GENOME BIOLOGY AND TECHNOLOGY 2017 GENERAL MEETING

The Diplomat
Beach Resort
Hollywood Beach, Florida

MONDAY, FEBRUARY 13TH

11:00 AM – 8:00 PM

MEETING REGISTRATION

Great Hall Registration Desk

PLENARY SESSION:

GENOMICS I (ERIC GREEN, NHGRI, CHAIR)

Great Hall 4-6

5:00 PM – 5:30 PM

EIMEAR KENNY, PhD, Icahn School of Medicine at Mount Sinai
“Embracing global diversity for improving genomic medicine”

5:30 PM – 6:00 PM

ANDREW KUNG, MD, PhD, Memorial Sloan Kettering Cancer Center

6:00 PM – 6:30 PM

STIRLING CHURCHMAN, PhD, Harvard Medical School

6:30 PM – 7:00 PM

WILLIAM GREENLEAF, PhD, Stanford University School of Medicine

7:00 PM – 10:00 PM

WELCOME RECEPTION, Lagoon Lower Pool Decks

TUESDAY, FEBRUARY 14TH, MORNING

7:30 AM – 9:00 AM

BREAKFAST

South Palm Court

8:00 AM – 3:00 PM

MEETING REGISTRATION

Great Hall Registration Desk

PLENARY SESSION:

GENOMICS II: BETH SHAPIRO, UNIVERSITY OF CALIFORNIA, SANTA CRUZ, CHAIR Great Hall 4 – 6

9:00 AM – 9:30 AM

DANIEL DE CARVALHO, PhD, Princess Margaret Cancer Centre, University of Toronto
“Highly sensitive tumor detection and classification using Methylome Analysis of plasma DNA”

9:30 AM – 10:00 AM

OLIVER PYBUS, DPhil, BSc, MSc, University of Oxford

TUESDAY, FEBRUARY 14TH, MORNING CONT.

- 10:00 AM – 10:30 AM **MARTIN JONES, PhD**, BC Cancer Agency Genome Sciences Centre
- 10:30 AM – 11:00 AM **COFFEE BREAK**
Great Hall 3
- * Denotes abstract selected talk
- 11:00 AM – 11:20 AM ***EDDY RUBIN, MD, PhD**, Metabiota
“The Global Virome Project”
- 11:20 AM – 11:40 AM ***RITA COLWELL, PhD**, University of Maryland and CosmosID
“Metagenomics of hospitalized diarrheal patients and healthy individuals in Kolkata, India”
- 11:40 AM – 12:00 PM ***FEDERICA DI PALMA, PhD**, Earlham Institute
“Evolution of tissue specific regulatory programs in Cichlid fishes”

TUESDAY, FEBRUARY 14TH, AFTERNOON

- 12:00 PM – 1:00 PM **BD SPONSOR WORKSHOP** (Complimentary Lunch Provided)
Grand Ballroom
- 12:00 PM – 1:00 PM **AGBT LUNCH**
South Palm Court
- 1:00 PM – 2:30 PM **POSTER SESSION WITH COFFEE & DESSERT**
Great Hall 3
- PLENARY SESSION:** **EVOLUTIONARY GENOMICS (LEN PENNACCHIO, LAWRENCE BERKELEY NATIONAL LABORATORY, CHAIR)**
Great Hall 4 – 6
- 2:30 PM – 3:00 PM **LEIF ANDERSSON, PhD**, Uppsala University
- 3:00 PM – 3:30 PM **DORIS BACHTROG, PhD, MSc**, The University of California, Berkeley
- 3:30 PM – 3:50 PM ***EDWIN CUPPEN, PhD**, University Medical Center Utrecht
“Tissue-specific mutation accumulation in human adult stem cells during life”
- 3:50 PM – 4:10 PM ***ALEXANDER HOISCHEN, PhD**, Radboud University Medical Center
“Ultra-sensitive mosaic mutation detection in blood DNA of healthy individuals – new insights into age-related clonal hematopoiesis”
- 4:10 PM – 5:10 PM **ILLUMINA SPONSOR WORKSHOP**, Grand Ballroom
(Complimentary refreshments provided)
“The next era of sequencing starts now”

TUESDAY, FEBRUARY 14TH, EVENING

5:15 PM – 7:15 PM

DINNER ON YOUR OWN

5:30 PM – 7:15 PM

WOMEN'S NETWORKING EVENT

South Palm Court

**CONCURRENT
SESSION:**

**GENOME TECHNOLOGY (KEN DEWAR, MCGILL UNIVERSITY AND
GÉNOME QUÉBEC INNOVATION CENTRE, CHAIR)**

Great Hall 4 – 6

7:30 PM – 7:50 PM

VIVEK BHALLA, Stanford University Medical Center

"Single cell resolution of highly diverse subpopulations in the mammalian kidney achieved with high throughput single cell RNA-sequencing"

7:50 PM – 8:10 PM

ANDREW ADEY, Oregon Health & Science University

"Construction of thousands of single cell genome sequencing libraries using combinatorial indexing"

8:10 PM – 8:30 PM

JOCHEN WEILE, University of Toronto

"Building a functional atlas of all possible human disease gene variants"

8:30 PM – 8:50 PM

YUSUKE GOTO, HITACHI LTD., Research & Development Group

"Solid-state Nanopore DNA sequencing: Single-nucleotide discrimination and bidirectional DNA translocation"

8:50 PM – 9:10 PM

CHRISTOPHER WHELAN, Stanley Center for Psychiatric Research, Broad Institute

"Exploring 50 whole genomes with linked read technology"

9:10 PM – 9:30 PM

ERIC VILAIN, University of California, Los Angeles

"Use of next generation mapping in undiagnosed genetic disorders"

**CONCURRENT
SESSION:**

**HUMAN GENETICS, (PAUL FLICEK, EUROPEAN BIOINFORMATICS
INSTITUTE, CHAIR)** Great Hall 1

7:30 PM – 7:50 PM

CATHERINE COTTRELL, INSTITUTE FOR GENOMIC MEDICINE,

Nationwide Children's Hospital, Columbus, OH and Washington University School of Medicine, St. Louis, MO

"Clinical application of next-generation sequencing for detection of somatic mosaicism"

7:50 PM – 8:10 PM

YOSHIHIKO SUZUKI, The University of Tokyo

"Metagenome, metatranscriptome and meta-methylome of the human gut flora"

8:10 PM – 8:30 PM

DEANNA CHURCH, 10X Genomics

"More complete genome analysis"

TUESDAY, FEBRUARY 14TH, EVENING CONT.

- 8:30 PM – 8:50 PM **SHAWN LEVY**, HudsonAlpha Institute for Biotechnology
“From Olympians to Muscular Dystrophies: Advancements in variant detection and de novo assembly for the analysis of complex human phenotypes”
- 8:50 PM – 9:10 PM **TAYLOR JENSEN**, Sequenom
“Genome-wide sequencing of cell-free DNA identifies copy number alterations that can be used for prediction and monitoring response to immunotherapy in cancer patients”
- 9:10 PM – 9:30 PM **CHRISTINA FAN**, BD
“Application of high throughput single cell transcriptomics for analysis of rare populations present in bronchoalveolar lavage samples”
- CONCURRENT SESSION:** **GENERAL BIOLOGY (BETH SHAPIRO, UNIVERSITY OF CALIFORNIA SANTA CRUZ, CHAIR)**
Great Hall 2
- 7:30 PM – 7:50 PM **JASON UNDERWOOD**, Pacific Biosciences/University of Washington
“Long-read genome assembly and full-length transcript profiling of stem cells from great apes”
- 7:50 PM – 8:10 PM **DANIEL NEAFSEY**, Broad Institute of MIT and Harvard
“A community effort using multiple technologies to produce a dramatically improved genome assembly of the Zika virus mosquito vector”
- 8:10 PM – 8:30 PM **CHRISTIAN MATRANGA**, Broad Institute of Harvard and MIT
“Genomic survey of origin and transmission of Zika virus in the Americas”
- 8:30 PM – 8:50 PM **DAWN THOMPSON**, Ginkgo Bioworks
“The synergy of rational design and natural genetic variation in a high throughput biological foundry for industrial strain improvement”
- 8:50 PM – 9:10 PM **STEPHANIE HAO**, Johns Hopkins University
“Antimicrobial resistance detection in Illumina and Nanopore Sequencing”
- 9:10 PM – 9:30 PM **CARLOS CRUCHAGA**, Washington University School of Medicine
“Novel rare variants in known genes, a look into the Familiar Alzheimer Sequencing (FASe) project”
- PASSPORT PARTY** **SPONSORS’ PROMENADE**
9:30 PM

WEDNESDAY, FEBRUARY 15TH, MORNING

7:30 AM – 9:00 AM

BREAKFAST
South Palm Court

PLENARY SESSION:

TECHNOLOGY I (ELAINE MARDIS, THE INSTITUTE FOR GENOMIC MEDICINE AT NATIONWIDE CHILDREN'S HOSPITAL, CHAIR)
Great Hall 4 – 6

9:00 AM – 9:30 AM

NADA JABADO, MD, PhD, McGill University Health Center

9:30 AM – 10:00 AM

EMMA TEELING, PhD, MSc, BSc, University College Dublin
“Comparative genomics of bats: the secret of extended longevity?”

10:00 AM – 10:20 AM

***JOSHUA LEVIN, PhD**, Broad Institute of MIT and Harvard
“Single cell profiling the thalamic reticular nucleus (TRN) to understand a brain region strongly implicated in schizophrenia and autism”

10:20 AM – 10:55 AM

COFFEE BREAK
Sponsors' Promenade—South Tower

11:00 AM – 11:20 AM

***JUSTIN CHU, PhD**, BC Cancer Agency Genome Sciences Centre
“10x genomics chromium fragment assembly and scaffolding”

11:20 AM – 11:40 AM

***A. MCGARRY HOUGHTON, MD**, Fred Hutchinson Cancer Research Center
“3D Biology™ view of cancer: Simultaneous detection of somatic DNA mutations and expressed fusion transcripts plus expression profiling of phospho and total signaling proteins from lung-tumor FFPE samples”

11:40 AM – 12:00 PM

***BENJAMIN RUBIN**, University of California San Diego
“The Essential Gene Set of a Photosynthetic Organism”

WEDNESDAY, FEBRUARY 15TH, AFTERNOON

12:00 AM – 2:00 PM

NANOSTRING SPONSOR WORKSHOP
(Complimentary Lunch Provided)
Grand Ballroom

TRANSLATING NGS INSIGHTS INTO CLINICAL IMPACT

HYB & SEQ TECHNOLOGY: A NO AMP, NO LIBRARY, SINGLE MOLECULE SEQUENCER DESIGNED FOR THE CLINIC
Joseph Beechem, PhD, SVP R&D Nanostring.

THE FUTURE-HISTORY OF NEXT-GEN SEQUENCING
Chad Nusbaum, PhD, Director of the Broad Technology Labs.

NEXT GENERATION SEQUENCING FOR BIOMARKER DISCOVERY AND COMPANION DIAGNOSTICS DEVELOPMENT
Hirdesh Uppal, PhD, Head of Companion Diagnostics, Pfizer.

WEDNESDAY, FEBRUARY 15TH, AFTERNOON CONT.

12:00 PM – 2:00 PM

AGBT LUNCH
South Palm Court

PLENARY SESSION:

GENETICS (JOHN MCPHERSON, UNIVERSITY OF CALIFORNIA, DAVIS, CHAIR)
Great Hall 4 – 6

2:00 PM – 2:30 PM

GONCALO ABECASIS, DPhil, University of Michigan

2:30 PM – 3:00 PM

DANIEL MACARTHUR, PhD, Harvard Medical School

3:00 PM – 3:30 PM

JOHN MARIONI, PhD, CRUK Cambridge Institute

3:40 PM – 4:40 PM

PACBIO SPONSOR WORKSHOP
(Complimentary coffee and snack provided)
Grand Ballroom

4:45 PM – 6:10 PM

POSTER SESSION AND SOFTWARE DEMO WITH WINE RECEPTION
Great Hall 3

WEDNESDAY, FEBRUARY 15TH, EVENING

6:15 PM – 7:25 PM

AGBT DINNER
South Palm Court

CONCURRENT SESSION:

INFORMATICS (MICHAEL ZODY, NEW YORK GENOME CENTER, CHAIR) Great Hall 4 – 6 / General Session Room

7:30 PM – 7:50 PM

MARK DEPRISTO, Verily Life Sciences
“Mastering variant calling of SNPs and small indels with deep neural networks”

7:50 PM – 8:10 PM

EVAN MAXWELL, Regeneron Genetics Center, Regeneron Pharmaceuticals
“Detection and analysis of copy number variation and aneuploidy from 100,000 exomes”

8:10 PM – 8:30 PM

MICHAEL SCHATZ, Cold Spring Harbor Laboratory and Johns Hopkins University
“Personalized phased diploid genomes of the EN-Tex samples”

8:30 PM – 8:50 PM

PREYAS SHAH, 10x Genomics
“Local assemblies from one library drive completeness of diploid genomes”

8:50 PM – 9:10 PM

GIUSEPPE NARZISI, New York Genome Center
“Lancet: somatic variant calling using localized colored DeBruijn graphs”

WEDNESDAY, FEBRUARY 15TH, EVENING CONT.

9:10 PM – 9:30 PM

JIMMIE YE, University of California, San Francisco
*“Multiplexing droplet-based single cell RNA-seq using
“genetic barcodes”*

CONCURRENT SESSION:

**CANCER (JOHN MCPHERSON, UNIVERSITY OF CALIFORNIA, DAVIS,
CHAIR)** Great Hall 1

7:30 PM – 7:50 PM

JOSEPH BEECHEM, NanoString Technologies
*“Library-free, targeted sequencing of native gDNA from FFPE
samples using Hyb & Seq™ technology – the hybridization based
single molecule sequencing system”*

7:50 PM – 8:10 PM

JOSEPH BOLAND, National Cancer Institute
*“A novel whole genome sequencing method to comprehensively
map all HPV16 integration events across multiple human genomes”*

8:10 PM – 8:30 PM

RANJAN PERERA, Sanford Burnham Prebys Medical Discovery Institute
*“Systems level investigation of urine enriched RNA and
metabolites, and their use as combinatorial biomarkers for
early prostate cancer detection”*

8:30 PM – 8:50 PM

JESSICA NORDLUND, Uppsala University
*“Dissection of the Heterogeneous Fusion Gene Landscape in
Pediatric Acute Lymphoblastic Leukemia”*

8:50 PM – 9:10 PM

ANN-CHRISTINE SYVÄNEN, Uppsala University
*“Deep-targeted sequencing in pediatric acute l lymphoblastic
leukemia unveils distinct mutational patterns between genetic
subtypes and novel relapse-associated genes”*

9:10 PM – 9:30 PM

GABOR MARTH, University of Utah
*“Tracking the evolution of a patient’s tumor across multiple time
points or multisite metastases”*

CONCURRENT SESSION:

**TRANSCRIPTOME & EPIGENOMICS (ROBERT LYONS, UNIVERSITY
OF MICHIGAN, CHAIR)** Great Hall 2

7:30 PM – 7:50 PM

OSCAR HARARI, Washington University School of Medicine
*“Cell-type specific transcriptomic downstream events triggered by
Alzheimer Disease Mendelian mutations”*

7:50 PM – 8:10 PM

ANTHONY GRISWOLD, University of Miami
*“Identification of extracellular RNA biomarkers of osteoarthritis in
synovial fluid following traumatic knee l injury”*

8:10 PM – 8:30 PM

LI JIA, National Cancer Institute
*“Single-cell RNA-seq data analysis to discover gene expression
profiles involved in the persistence of T cells following cell transfer
cancer immunotherapy”*

WEDNESDAY, FEBRUARY 15TH, EVENING CONT.

- 8:30 PM – 8:50 PM **RAHUL SATIJA**, New York Genome Center
“Drop-seq analysis of early fate decisions in human hematopoiesis”
- 8:50 PM – 9:10 PM **ZORA MODRUSAN**, Genetech
“Advances in RNA-seq enable highly parallel transcriptional profiling of hundreds of single cells”
- 9:10 PM – 9:30 PM **THEODORE DAVIS**, New England Biolabs
“APOBEC-Seq: An enzymatic method for methylome analysis at single-base resolution without bisulfite treatment”

THURSDAY, FEBRUARY 16TH, MORNING

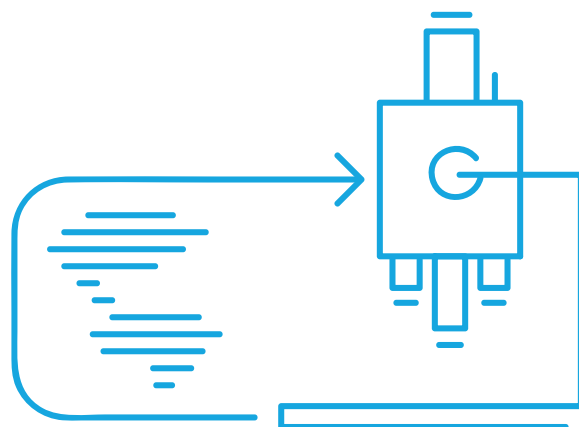
- 7:30 AM – 9:00 AM **BREAKFAST**
South Palm Court
- BRONZE SPONSOR WORKSHOPS**
Great Hall 4 - 6
- 9:00 AM – 9:20 AM **FLUIDIGM**
“Scaling NGS library preparation with automated microfluidics to achieve significant cost efficiencies at production scale”
Ramesh Ramakrishnan, PhD, Senior Director, R&D
- 9:20 AM – 9:40 AM **ROCHE**
“Roche Sequencing Solutions: An integrated approach to NGS sample prep”
Maryke Appel, Sr. International Product Manager, Library Prep
- 9:40 AM – 10:00 AM **NEW ENGLAND BIOLABS**
“Next generation DNA library construction for high-throughput genomics”
Peter Ellis, PhD, Wellcome Trust Sanger Institute, Cambridge, UK
- 10:00 AM – 10:20 AM **ADVANCED ANALYTICAL**
“FEMTO Pulse™ Automated Pulsed-Field CE Instrument for femtogram detection sensitivity with accurate HMW DNA sizing”
Steve Siembieda, VP Commercialization
- 10:20 AM – 10:40 AM **PERKIN ELMER**
- 10:40 AM – 11:05 AM **COFFEE BREAK**
Great Hall Foyer
- 11:05 AM – 11:20 AM **LEXOGEN**
“Getting the most out of gene expression profiling with QuantSeq: high multiplexing, sensitivity, and reproducibility with lowest costs and efforts”
Lukas Paul, Lexogen

THURSDAY, FEBRUARY 16TH, MORNING CONT.

- 11:20 AM – 11:35 AM **THERMO FISHER**
“Advancing precision genomics using ion torrent technology”
Simon Cawley, PhD, Senior Director, Software and Informatics
Clinical Sequencing Division, Thermo Fisher Scientific
- 11:35 AM – 11:50 AM **PROMEGA**
“Next generation integrative life science research: Looking into the future”
Thomas J. Livelli, Vice President Life Sciences, Promega Corporation
- 11:50 AM – 12:05 PM **DDN**
- 12:05 PM **PASSPORT GRAND PRIZE WINNER ANNOUNCED**

THURSDAY, FEBRUARY 16TH, AFTERNOON

- 12:05 PM – 1:15 PM **AGBT LUNCH**
South Palm Court
- PLENARY SESSION:** **TECHNOLOGY II (MARTIN HIRST, UNIVERSITY OF BRITISH COLUMBIA, CHAIR),** Great Hall 4 - 6
- 1:30 PM – 2:00 PM **IDO AMIT, PhD,** Weizmann Institute of Science
“The power of one: Immunology in the age of single cell genomics”
- 2:00 PM – 2:30 PM **JARED SIMPSON, PhD,** Ontario Institute for Cancer Research
- 2:30 PM – 2:50 PM ***CHRISTOPHER MASON, PhD,** Weill Cornell Medicine
“DNA sequencing, genome assembly, and epigenetics on the international space station”
- 2:50 PM – 3:10 PM **COFFEE BREAK**
Great Hall Foyer
- 3:10 PM – 3:30 PM **GARY NOLAN, PhD,** Stanford University School of Medicine
- 3:30 PM – 3:50 PM ***JEFFREY ROSENFELD RUTGERS, PhD,** Cancer Institute of NJ
“Single-cell RNA sequencing in sperm from fathers of autistic children”
- 3:50 PM – 4:10 PM ***EVAN DAUGHARTHY, PhD,** Harvard University
“RNA sequencing in situ: A revolutionary new technology”
- 4:10 PM – 4:40 PM **CLOSING COMMENTS AND MEETING FEEDBACK**
- 7:00 PM – 12:00 AM **FAREWELL DINNER PARTY**
Great Hall 1-4



THE GENOME
PARTNERSHIP™