

National Human Genome Research Institute

Future Opportunities for Genome Sequencing and Beyond: A Planning Workshop for the National Human Genome Research Institute

July 28-29, 2014

Bethesda North Marriott Hotel and Conference Center Bethesda, Maryland

PARTICIPANT LIST

Goncalo Abecasis, Ph.D.

Professor Center for Statistical Genetics University of Michigan goncalo@umich.edu

Mark Adams, Ph.D.

Scientific Director and Professor Department of Genomic Medicine J. Craig Venter Institute madams@jcvi.org

Beena Akolkar, Ph.D.

Senior Advisor National Institute of Diabetes and Digestive and Kidney Diseases National Institutes of Health akolkarb@mail.nih.gov

David Altshuler, M.D., Ph.D.

Deputy Director and Chief Academic Officer Broad Institute Professor of Genetics and of Medicine Harvard Medical School and Massachusetts General Hospital Professor of Biology (Adjunct) Massachusetts Institute of Technology altshuler@molbio.mgh.harvard.edu

Katrina Armstrong, M.D.

Physician in Chief Massachusetts General Hospital Jackson Professor of Clinical Medicine Harvard Medical School Harvard University karmstrong6@partners.org

Mike Bamshad, M.D.

Chief Division of Genetic Medicine Seattle Children's Hospital Professor Department of Pediatrics School of Medicine University of Washington mbamshad@uw.edu

Steven Benowitz, M.A.

Associate Director of Communications Extramural Research Program National Human Genome Research Institute National Institutes of Health steven.benowitz@nih.gov

Shannon Biello

Scientific Program Analyst National Human Genome Research Institute National Institutes of Health shannon.biello@nih.gov

Leslie Biesecker, M.D.

Chief and Senior Investigator Medical Genomics and Metabolic Genetics Branch National Human Genome Research Institute National Institutes of Health Bloomberg School of Public Health John Hopkins University Iesb@mail.nih.gov

Ewan Birney, Ph.D. Associate Director European Bioinformatics Institute European Molecular Biology Laboratory birney-request@ebi.ac.uk

Toby Bloom, Ph.D.

Deputy Scientific Director, Informatics New York Genome Center tbloom@nygenome.org

Michael Boehnke, Ph.D.

Richard G. Cornell Distinguished University Professor of Biostatistics Director Center for Statistical Genetics Director Genome Science Training Program School of Public Health University of Michigan boehnke@umich.edu

Eric Boerwinkle, Ph.D.

Director Center for Human Genetics Professor Division of Epidemiology School of Public Health Baylor College of Medicine Associate Director Human Genome Sequencing Center The University of Texas Health Science Center at Houston eric.boerwinkle@uth.tmc.edu

David Botstein, Ph.D.

Professor Princeton University botstein@princeton.edu

Philip Bourne, Ph.D.

Associate Director for Data Science Office of the Director National Institutes of Health philip.bourne@nih.gov

James Broach, Ph.D.

Professor Department of Biochemistry and Molecular Biology Director Penn State Institute for Personalized Medicine College of Medicine Pennsylvania State University jbroach@hmc.psu.edu

Lawrence Brody, Ph.D.

Director Division of Genomics and Society Senior Investigator Medical Genomics and Metabolic Genetics Branch National Human Genome Research Institute National Institutes of Health Chief Scientific Officer Center for Inherited Disease Research Johns Hopkins University Ibrody@mail.nih.gov

Carol Bult, Ph.D.

Professor and Cancer Center Deputy Director Mammalian Genetics The Jackson Laboratory for Genomic Medicine carol.bult@jax.org

Carlos Bustamante, Ph.D.

Professor of Genetics Department of Genetics Founding Director Center for Computational, Evolutionary, and Human Genomics Bustamante Laboratory Stanford University cdbustam@stanford.edu

Stephen Chanock, M.D.

Director Division of Cancer Epidemiology and Genetics National Cancer Institute National Institutes of Health chanocks@mail.nih.gov

Rex Chisholm, Ph.D., M.S.

Adam and Richard T. Lind Professor of Medical Genetics Feinberg School of Medicine Northwestern University r-chisholm@northwestern.edu

Mildred Cho, Ph.D. Associate Professor of Pediatrics Division of Medical Genetics Associate Director Stanford University Center for Biomedical Ethics Stanford University micho@stanford.edu

Andrew Clark, Ph.D. Professor Cornell University ac347@cornell.edu

Deborah Colantuoni

Scientific Program Analyst Extramural Research Program Division of Genomic Medicine National Human Genome Research Institute National Institutes of Health deborah.colantuoni@nih.gov

Nancy Cox, Ph.D.

Professor and Chief Section of Genetic Medicine Departments of Medicine and of Human Genetics The University of Chicago ncox@bsd.uchicago.edu

Catherine Crawford

Scientific Program Analyst National Human Genome Research Institute National Institutes of Health catherine.crawford@nih.gov

Mark A. DePristo, Ph.D.

Vice President of Informatics SynapDx Corporation mdepristo@synapdx.com

Christopher Donohue

Historian National Human Genome Research Institute National Institutes of Health donohuecr@mail.nih.gov

Joseph Ecker, Ph.D.

Professor Plant Biology Laboratory Director Genomic Analysis Laboratory Howard Hughes Medical Institute and Salk Institute for Biological Studies ecker@salk.edu

Evan E. Eichler, Ph.D.

Professor Department of Genome Sciences Howard Hughes Medical Institute University of Washington eee@gs.washington.edu

James Philip Evans, M.D., Ph.D.

Bryson Distinguished Professor of Genetics and Medicine Genetics Department School of Medicine The University of North Carolina at Chapel Hill jpevans@med.unc.edu

Elise Feingold, Ph.D.

Program Director, Genome Analysis Division of Genome Sciences National Human Genome Research Institute National Institutes of Health feingole@mail.nih.gov

Adam Felsenfeld, Ph.D.

Program Director Large Scale Sequencing and Analysis Centers National Human Genome Research Institute National Institutes of Health adam_felsenfeld@nih.gov

Paul Flicek, Sc.D.

Professor European Bioinformatics Institute European Molecular Biology Laboratory flicek@ebi.ac.uk

Stephen Fodor, Ph.D.

Chief Executive Officer Cellular Research, Inc. sfodor@cellular-research.com

Simon Foote, M.B.B.S., Ph.D., D.Sc.

Professor and Dean Australian School of Advanced Medicine Faculty of Human Sciences Macquarie University simon.foote@mq.edu.au

Kelly Frazer, Ph.D.

Professor of Pediatrics Division of Genome Information Sciences Institute for Genomic Medicine University of California, San Diego kafrazer@ucsd.edu

Stacey Gabriel, Ph.D.

Director Genomics Platform Broad Institute stacey@broadinstitute.org

Weiniu Gan, Ph.D.

Director Genetics, Genomics, and Advanced Technologies Program Division of Lung Diseases National Heart, Lung, and Blood Institute National Institutes of Health ganw2@mail.nih.gov

Levi Garraway, M.D., Ph.D.

Senior Associate Member Broad Institute Harvard University Dana-Farber Cancer Institute levi_garraway@dfci.harvard.edu

William M. Gelbart, Ph.D.

Professor Department of Molecular and Cellular Biology Harvard University gelbart@morgan.harvard.edu

Mark Gerstein, Ph.D.

Albert L. Williams Professor of Biomedical Informatics Computational Biology and Bioinformatics Program Yale University piaa@gersteinlab.org

Richard A. Gibbs, Ph.D.

Director Human Genome Sequencing Center Baylor College of Medicine aqibbs@bcm.edu

Maria Y. Giovanni, Ph.D.

Associate Director of Genomics and Bioinformatics National Institute of Allergy and Infectious Diseases National Institutes of Health mgiovanni@niaid.nih.gov

Katrina A.B. Goddard, Ph.D.

Senior Investigator Kaiser Permanente Center for Health Research katrina.ab.goddard@kpchr.org

Peter Joseph Good, Ph.D.

Director Genome Informatics and Computational Biology Program Division of Genome Sciences National Human Genome Research Institute National Institutes of Health goodp@mail.nih.gov

Bettie J. Graham, Ph.D.

Director Division of Extramural Operations National Human Genome Research Institute National Institutes of Health bettie_graham@nih.gov

Eric Green, M.D., Ph.D.

Director Office of the Director National Human Genome Research Institute National Institutes of Health egreen@nhgri.nih.gov

Robert C. Green, M.D., M.P.H.

Director G2P Research Program Associate Director for Research Partners Center for Personalized Genetic Medicine Division of Genetics Department of Medicine Harvard University and Brigham and Women's Hospital rcgreen@genetics.med.harvard.edu

Susan Kathryn Gregurick, Ph.D.

Director Division of Biomedical Technology, Bioinformatics, and Computational Biology National Institute of General Medical Sciences National Institutes of Health susan.gregurick@nih.gov

Ross C. Hardison, Ph.D.

T. Ming Chu Professor of Biochemistry and Molecular Biology Director Center for Comparative Genomics and Bioinformatics Pennsylvania State University rch8@psu.edu

David Haussler, Ph.D.

Principal Investigator, Biomolecular Engineering Howard Hughes Medical Institute Professor of Biomolecular Engineering University of California, Santa Cruz haussler@soe.ucsc.edu

Lucia Hindorff, Ph.D., M.P.H.

Program Director Division of Genomic Medicine National Human Genome Research Institute National Institutes of Health hindorffl@mail.nih.gov

Richard J. Hodes, M.D.

Director Office of the Director National Institute on Aging National Institutes of Health hodesr@nia.nih.gov

Tim Hubbard, Ph.D.

Head and Professor of Bioinformatics Department of Medical and Molecular Genetics Director of Bioinformatics King's Health Partners Genomics England Wellcome Trust Sanger Institute King's College London tim.hubbard@kcl.ac.uk

Thomas Hudson, M.D.

President and Scientific Director Ontario Institute for Cancer Research tom.hudson@oicr.on.ca

Chanita Hughes-Halbert, Ph.D.

Professor of Psychiatry and Behavioral Sciences Department of Psychiatry Hollings Cancer Center Medical University of South Carolina hughesha@musc.edu

Michael W. Hunkapiller, Ph.D.

Chief Executive Officer Pacific Biosciences of California, Inc. mhunkapiller@pacificbiosciences.com

Carolyn M. Hutter, Ph.D.

Program Director Division of Genomic Medicine National Human Genome Research Institute National Institutes of Health huttercm@mail.nih.gov

Howard J. Jacob, Ph.D.

Director Human and Molecular Genetics Center Warren P. Knowles Chair in Genetics Professor Departments of Physiology and of Pediatrics Medical College of Wisconsin jacob@mcw.edu

Cashell Elizabeth Jaquish, Ph.D.

Program Director National Heart, Lung, and Blood Institute National Institutes of Health cj68r@nih.gov

Gail P. Jarvik, M.D., Ph.D.

Head Division of Medical Genetics Joint Professor Departments of Medicine and of Genome Sciences School of Medicine University of Washington pair@u.washington.edu

Hanlee P. Ji, M.D. Assistant Professor of Medicine School of Medicine Senior Associate Director Stanford Genome Technology Center Stanford University genomics_ji@stanford.edu

Steven Joffe, M.D., M.P.H. Vice Chair of Medical Ethics Emanuel and Robert Hart Associate Professor Department of Medical Ethics and Health Policy Perelman School of Medicine University of Pennsylvania joffes@upenn.edu

Dan Kastner, M.D., Ph.D. Scientific Director Division of Intramural Research NIH Distinguished Investigator Metabolic, Cardiovascular, and Inflammatory Disease Genomics Branch Head Inflammatory Disease Section National Human Genome Research Institute National Institutes of Health kastnerd@mail.nih.gov

Dave Kaufman, Ph.D. Program Director Division of Genomics and Society National Human Genome Research Institute National Institutes of Health dave.kaufman@nih.gov

Manolis Kellis, Ph.D. Professor Computer Science and Artificial Intelligence Laboratory Massachusetts Institute of Technology Broad Institute kellis-admin@mit.edu

Stephen F. Kingsmore, M.B., D.Sc. Director Center for Pediatric Genomic Medicine Children's Mercy Hospital Kansas City sfkingsmore@cmh.edu

Bruce R. Korf, M.D., Ph.D.

Wayne H. and Sara Crews Finley Chair of Medical Genetics Professor Department of Genetics Director Heflin Center for Genomic Sciences Department of Genetics The University of Alabama at Birmingham bkorf@uabmc.edu

Eric Lander, Ph.D.

President and Director Broad Institute Professor of Biology Massachusetts Institute of Technology Professor of Systems Biology Harvard Medical School Harvard University Iander@broadinstitute.org

Suzanne Leal, Ph.D. Professor and Director Center for Statistical Genetics Baylor College of Medicine sleal@bcm.edu

David H. Ledbetter, Ph.D. Executive Vice President and Chief Scientific Officer Institute for Genomic Medicine Geisinger Health System dhledbetter@geisinger.edu

Charles Lee, Ph.D. Director and Professor The Jackson Laboratory for Genomic Medicine charles.lee@jax.org

Thomas Lehner, Ph.D.

Director Office of Genomics Research Coordination National Institute of Mental Health National Institutes of Health tlehner@mail.nih.gov

Richard Lifton, M.D., Ph.D.

Chair and Sterling Professor of Genetics Howard Hughes Medical Institute School of Medicine Yale University richard.lifton@yale.edu Jon Lorsch, Ph.D. Director Office of the Director National Institute of General Medical Sciences National Institutes of Health jon.lorsch@nih.gov

James R. Lupski, M.D., Ph.D., D.Sc. (hon) Professor Department of Molecular and Human Genetics Baylor College of Medicine jlupski@bcm.edu

Allison Mandich, M.S. Special Assistant to the Director Office of the Director National Human Genome Research Institute National Institutes of Health mandicha@mail.nih.gov

Teri Manolio, M.D., Ph.D. Director Division of Genomic Medicine National Human Genome Research Institute National Institutes of Health manolio@nih.gov

Elizabeth Mansfield, Ph.D.

Director Personalized Medicine Staff Office of In Vitro Diagnostics and Radiological Health Center for Devices and Radiological Health U.S. Food and Drug Administration elizabeth.mansfield@fda.hhs.gov

Elaine Mardis, Ph.D.

Robert E. and Louise F. Dunn Distinguished Professor of Medicine School of Medicine Co-Director The Genome Institute Washington University in St. Louis emardis@wustl.edu

Gabor Marth, Sc.D. Professor Department of Human Genetics Utah Science Technology and Research Initiative Center for Genetic Discovery The University of Utah gabor.marth@gmail.com

Daniel Masys, M.D.

Affiliate Professor of Biomedical and Health Informatics Department of Biomedical Informatics and Medical Education School of Medicine University of Washington dmasys@u.washington.edu

Jean Elizabeth McEwen, Ph.D.

Director Ethical, Legal, and Social Implications Program Division of Genomics and Society National Human Genome Research Institute National Institutes of Health jm522n@nih.gov

Amy Lynn McGuire, Ph.D., J.D.

Leon Jaworski Professor of Biomedical Ethics Director Center for Medical Ethics and Health Policy Baylor College of Medicine amcguire@bcm.edu

Roderick McInnes, M.D., Ph.D.

Director Lady Davis Institute for Medical Research Jewish General Hospital sgiannopoulos@jgh.mcgill.ca

Keith McKenney, Ph.D.

Health Science Administrator Scientific Review Branch National Human Genome Research Institute National Institutes of Health mckenneyk@mail.nih.gov

Howard McLeod, Pharm.D.

Medical Director The DeBartolo Family Personalized Medicine Institute Senior Member Division of Population Sciences H. Lee Moffitt Cancer Center and Research Institute howard.mcleod@moffitt.org Marilyn Miller, Ph.D. Director Genetics of Alzheimer's Disease Program Division of Neuroscience National Institute on Aging National Institutes of Health millerm@nia.nih.gov

Patrice Milos, Ph.D. Chief Executive Officer Claritas Genomics, Inc. patrice.milos@claritasgenomics.com

Jeannine Mjoseth

Acting Chief of Communications National Human Genome Research Institute National Institutes of Health mjosethj@mail.nih.gov

Cynthia Casson Morton, Ph.D.

William Lambert Richardson Professor of Ob/Gyn and Reproductive Biology Professor of Pathology Director of Cytogenetics Departments of Ob/Gyn and Reproductive Biology and of Pathology Brigham and Women's Hospital Harvard Medical School Harvard University cmorton@partners.org

Jim Mullikin, Ph.D.

Director NIH Intramural Sequencing Center National Human Genome Research Institute National Institutes of Health mullikin@mail.nih.gov

Richard Myers, Ph.D.

President, Director, and Faculty Investigator HudsonAlpha Institute for Biotechnology rmyers@hudsonalpha.org

Ken Nakamura, Ph.D.

Health Science Administrator Scientific Review Branch National Human Genome Research Institute National Institutes of Health nakamurk@mail.nih.gov

Debbie Nickerson, Ph.D.

Professor Northwest Genomics Center School of Medicine University of Washington debnick@uw.edu

Kenneth Offit, M.D., M.P.H.

Chief Clinical Genetics Service Vice Chairman, Academic Affairs Department of Medicine Co-Leader Program in Cancer Survivorship, Outcomes, and Risk Weill College of Medicine Cornell University Memorial Sloan-Kettering Cancer Center offitk@mskcc.org

Lucila Ohno-Machado, M.D., Ph.D.

Associate Dean for Informatics Division of Biomedical Informatics Professor of Medicine Department of Medicine Clinical and Translational Research Institute University of California, San Diego machado@ucsd.edu

Diane Jofuku Okamuro, Ph.D.

Program Director Division of Integrative Organismal Systems Biological Sciences Directorate National Science Foundation dokamuro@nsf.gov

Maynard Olson, Ph.D.

Professor of Genome Sciences and of Medicine Departments of Medicine and of Genome Sciences School of Medicine University of Washington mvo@u.washington.edu

James Ostell, Ph.D.

Distinguished Investigator and Chief Information Engineering Branch National Center for Biotechnology Information National Library of Medicine National Institutes of Health ostell@ncbi.nlm.nih.gov

Mike Pazin, Ph.D.

Program Director, Functional Genomics Division of Genome Sciences National Human Genome Research Institute National Institutes of Health pazinm@mail.nih.gov

Len Pennacchio, Ph.D.

Deputy of Genomic Technologies DOE Joint Genome Institute Senior Staff Scientist Genomic Division Lawrence Berkeley National Laboratory Iapennacchio@lbl.gov

Ulrike Peters, Ph.D., M.P.H.

Member Public Health Sciences Division Fred Hutchinson Cancer Research Center upeters@fhcrc.org

Ajay Pillai, Ph.D.

Director Computational Sciences Program Division of Genome Sciences National Human Genome Research Institute National Institutes of Health ajay.pilai3@nih.gov

Sharon Emma Plon, M.D., Ph.D.

Professor Departments of Pediatrics and of Molecular and Human Genetics Baylor College of Medicine splon@bcm.edu

Rudy Pozzatti, Ph.D.

Scientific Review Officer Division of Extramural Operations National Human Genome Research Institute National Institutes of Health pozzattr@exchange.nih.gov

Lita Proctor, Ph.D.

Coordinator Human Microbiome Project National Human Genome Research Institute National Institutes of Health lita.proctor@nih.gov

Arti Rai, J.D.

Elvin R. Latty Professor of Law Duke Law School Director Duke Law Center for Innovation Policy Duke University rai@law.duke.edu

Erin Ramos, Ph.D., M.P.H.

Program Director Division of Genomic Medicine National Human Genome Research Institute National Institutes of Health ramoser@mail.nih.gov

Aviv Regev, Ph.D.

Principal Investigator and Core Member Investigator Howard Hughes Medical Institute Broad Institute aregev@broadinstitute.org

Heidi Rehm, Ph.D.

Chief Laboratory Director Laboratory for Molecular Medicine Partners Healthcare Personalized Medicine Partners Healthcare Associate Professor of Pathology Brigham and Women's Hospital and Harvard Medical School Harvard University hrehm@partners.org

Clifford Reid, Ph.D., M.B.A.

Chief Executive Officer Complete Genomics, Inc. creid@completegenomics.com

Dan Roden, M.D.

Assistant Vice-Chancellor for Personalized Medicine Professor of Medicine and Pharmacology School of Medicine Director Oates Institute for Experimental Therapeutics Vanderbilt University dan.roden@vanderbilt.edu

Laura Lyman Rodriguez, Ph.D.

Director Division of Policy, Communications, and Education National Human Genome Research Institute National Institutes of Health Iaura.rodriguez@nih.gov

Marc Salit, Ph.D.

Leader Genome Scale Measurements Group Material Measurement Laboratory Biosystems and Biomaterials Division ABMS Program Stanford University National Institute of Standards and Technology salit@nist.gov

Pamela Sankar, Ph.D.

Associate Professor Department of Medical Ethics and Health Policy Perelman School of Medicine University of Pennsylvania sankarp@mail.med.upenn.edu

John Satterlee, Ph.D.

Director NIH Common Fund Epigenetics Program National Institute on Drug Abuse National Institutes of Health satterleej@nida.nih.gov

Jeffery A. Schloss, Ph.D.

Director Division of Genome Sciences Extramural Research Program National Human Genome Research Institute National Institutes of Health schlossj@exchange.nih.gov

Sheri D. Schully, Ph.D.

Team Lead Knowledge Integration Team Division of Cancer Control and Population Sciences Office of the Associate Director National Cancer Institute National Institutes of Health schullys@mail.nih.gov

Jay Shendure, M.D., Ph.D.

Professor Department of Genome Sciences University of Washington shendure@uw.edu

Stephen Sherry, Ph.D.

Senior Scientist and Chief Reference Collections Section National Center for Biotechnology Information National Library of Medicine National Institutes of Health sherry@ncbi.nlm.nih.gov

Tania Simoncelli, M.S.

Assistant Director for Forensic Science Science Division Office of Science and Technology Policy Executive Office of the President tsimoncelli@ostp.eop.gov

Michael W. Smith, Ph.D.

Program Director Genome Technology Program Division of Genome Sciences National Human Genome Research Institute National Institutes of Health smithmw@mail.nih.gov

Michael Snyder, Ph.D.

Professor and Chair of Genetics Genetics Department Director Stanford Center for Genomics and Personalized Medicine School of Medicine Stanford University mpsnyder@stanford.edu

Heidi Sofia, Ph.D.

Program Director, Computational Biology Division of Genomic Medicine National Human Genome Research Institute National Institutes of Health heidi.sofia@nih.gov

Nicole Soranzo, Ph.D.

Group Leader, Human Genetics Wellcome Trust Sanger Institute ns6@sanger.ac.uk

David Valle, M.D.

Henry J. Knott Professor and Director McKusick-Nathans Institute of Genetic Medicine School of Medicine Johns Hopkins University dvalle@jhmi.edu

Yekaterina Vaydylevich

Scientific Program Analyst National Human Genome Research Institute National Institutes of Health vaydylevichy@mail.nih.gov

Lu Wang, Ph.D.

Director Genome Sequencing Program National Human Genome Research Institute National Institutes of Health wanglu@mail.nih.gov

Robert Hugh Waterston, M.D., Ph.D.

William Gates III Endowed Chair in Biomedical Sciences Professor and Chair Department of Genome Sciences School of Medicine University of Washington watersto@uw.edu

Chris Wellington

Scientific Program Analyst National Human Genome Research Institute National Institutes of Health wellingtonc@mail.nih.gov

Kris Wetterstrand, M.S.

Scientific Liaison to the Director for Extramural Activities Office of the Director National Human Genome Research Institute National Institutes of Health wettersk@mail.nih.gov

Alan R. Williamson, Ph.D. Consultant arwill37@btinternet.com

Richard K. Wilson, Ph.D.

Director The Genome Institute The Alan A. and Edith L. Wolff Distinguished Professor of Medicine School of Medicine Washington University in St. Louis rwilson@wustl.edu

Anastasia Wise, Ph.D.

Program Director Division of Genomic Medicine National Human Genome Research Institute National Institutes of Health anastasia.wise@nih.gov

Xun Xu

Executive Director Science and Technology Department BGI Shenzhen xuxun@genomics.cn

Richard Young, Ph.D.

Member Whitehead Institute for Biomedical Research young@wi.mit.edu