Stanford University School of Medicine

Genome Analysis Technologies:
Implications for Research, Training and the Future of Medicine

Tuesday, December 8, 2009 • Program 3-6pm, Reception 6-7pm
Fisher Conference Center, Frances C. Arrillaga Alumni Center

PANEL:
Rade Drmanac, Chief Science Officer and Co-founder, Complete Genomics
Kelly Ormond, Associate Professor of Genetics, and Director, MS in Human Genetics and Genetic Counseling, Stanford
Mike Snyder, Chair of Genetics, Stanford University
Stephen Turner, Founder, Pacific Biosciences
Vance Vanier, Chief Medical Officer, Navigenics

MODERATORS:
Moira Gunn, Host of Tech Nation, National Public Radio
Robert Lee Kilpatrick, Partner, TVG LLC

PROGRAM
2:30-3:00 Check-in
3:00-3:15 Introductions
3:15-4:15 Overview of the Industry, Technologies and Companies
  • Client interface (i.e. direct-to-consumer, pharma, clinician)
  • Compatibility (i.e. collective, cooperative, competition)
4:15-4:30 Break
4:30-5:00 Rationale for Research Funding: Government & Private Investment
  • Promoting scientific and technological advancement
  • Expanding jobs/employment
  • Significant opportunity for returns
5:00-5:30 Promise and Potential
  • Greater precision
  • Improved healthcare
  • Decreased healthcare spending
5:30-6:00 Implications
  • Practice of medicine - counseling and clinical adoption
  • Training of physicians and scientists - approaches/methods
  • Research initiatives & directions- examples and prospects
  • Privacy and protection - navigating uncharted waters
6:00-7:00 Reception
Welcome to the Genome Analysis Technologies Symposium at Stanford. The Bay Area is home to many companies recognized across the globe for their ground-breaking technological advances and contributions to the field of genomics. We are pleased to be hosting the pioneers of several such companies here today, along with scientific, legal, financial, and business professionals who bring their own relevant interests in these technologies. Stanford University is a logical place for hosting such a symposium, given its long-standing history and tradition as a global leader in technological development, entrepreneurship, and both clinical and research training. In the area of genomics, the Stanford Genome Technology Center has been training world-class scientists and developing transformational technologies since 1993, and we are excited to proceed in this spirit with the advent of our new Center for Genomics and Personalized Medicine. These Centers and our M.S. program in Genetic Counseling are a few examples of how Stanford is continuing to move forward in these rapidly evolving fields. We hope that by bringing industry and academic leaders together in this format, we will collectively contribute to our understanding of genomics and its potential.

Best regards,

Michael A. Alvarez
Director, School of Medicine Career Center

Agenda

3:00-3:15 INTRODUCTIONS

3:15-4:15 OVERVIEW OF THE INDUSTRY, TECHNOLOGIES AND COMPANIES
- Client interface (i.e. direct-to-consumer, pharma, clinician)
- Compatibility (i.e. collective, cooperative, competition)

4:15-4:30 BREAK

4:30-5:00 RATIONALE FOR RESEARCH FUNDING: GOVERNMENT & PRIVATE INVESTMENT
- Promoting scientific and technological advancement
- Expanding jobs/employment
- Significant opportunity for returns

5:00-5:30 PROMISE AND POTENTIAL
- Greater precision
- Improved healthcare
- Decreased healthcare spending

5:30-6:00 IMPLICATIONS
- Practice of medicine – counseling and clinical adoption
- Training of physicians and scientists – approaches/methods
- Research initiatives & directions – examples and prospects
- Privacy and protection – navigating uncharted waters
Our Moderators

Moira Gunn, PhD
HOST OF Tech Nation, National Public Radio

Dr. Moira Gunn hosts BioTech Nation, a regular segment of Tech Nation, heard six times weekly on the National Public Radio channels on XM-SIRIUS Satellite Radio. It is also carried on over 200 public radio stations nationwide, to 177 countries via American Forces Radio International, and through popular podcasts through the Internet. Since the biotech segment started in 2004, Gunn has interviewed some 500 guests from the global biotech sector. These include many of the most familiar faces in biotech business as Biotechnology Industry Organization CEO Jim Greenwood, science researcher Ian Wilmut, and merchant banker and venture capitalist Steve Burrill, as well numerous CEO’s, including J. Craig Venter, George Scangos, Pierre Cassignol, and Paul Hastings.

Gunn has also founded the MBA Biotechnology sequence in the School of Business and Professional Studies at the University of San Francisco. It is designed specifically for the adult professional student and focuses on the business of biotech. A former NASA engineer and scientist, Gunn holds a software patent in Nutrition Science, and was recently awarded an honorary doctorate of science by Purdue University for her contributions in science communications in today’s globalized society. Her book “Welcome to BioTech Nation ... My Unexpected Odyssey into the Land of Small Molecules, Lean Genes, and Big Ideas” was cited by the Library Journal to their “Best Science Books of 2007”.

Robert Lee Kilpatrick, PhD
PARTNER, TVG LLC

Dr. Robert Lee Kilpatrick is Co-Founder and Partner of Technology Vision Group LLC (TVG). Since 1992, Dr. Kilpatrick along with TVG has been connecting innovators and leaders in the life science industry across the US, Canada, China, Europe, Australia, Latin America, India, and Asia. The 18-year track record of success is founded by a deep industry knowledge, integrity in business, and powerful network of valuable relationships - fulfilling the vision to be Your Global Life Science Network™.

Dr. Kilpatrick was educated at the University of California, Berkeley and Cambridge University, where he received a Doctorate in the History and Philosophy of Science and Medicine. He is on the Board of Directors of the BayBio Institute, a non-profit think tank in San Francisco focused on issues related to the bio-economy. Professional memberships include: BayBio Life Science Assoc., BIOTECanada, and the Biotechnology Industry Organization (BIO). His hobbies include fly fishing, music, reading, and sustainable organic gardening.
Our Panelists

Rade Drmanac, PhD
Chief Science Officer and Co-founder
Complete Genomics

Dr. Radoje (Rade) Drmanac, chief scientific officer and co-founder of Complete Genomics since 2006, is one of the leading research scientists and inventors in the field of DNA sequencing-by-hybridization (SBH) and genomic microarrays. In 1994, he co-founded Hyseq (later Nuvelo) where, as chief scientific officer, he led the effort to discover and patent thousands of genes which formed the basis of Nuvelo’s drug development pipeline. Prior to Hyseq, Rade was a group leader at Argonne National Labs from 1991 to 1994 as part of the Department of Energy’s Human Genome Project. He completed his postdoctoral studies in 1990 in Hans Lehrach’s group at the Imperial Cancer Research Fund in London. He earned his PhD in molecular biology for the conception and pioneering development of SBH technology from Belgrade University, where he also received BS and MS degrees in molecular biology.

Kelly Ormond, MS, CGC
Associate Professor, Department of Genetics
Program Director, MS, in Human Genetics and Genetic Counseling, Stanford University

Kelly Ormond is the inaugural program director for the MS in Human Genetics and Genetic Counseling, and oversees all aspects of the program’s development. Her research and education interests focus on the impact of genetics on perceptions of disabilities, ethical issues in genetics (specifically informed consent) and integrating genetics into internal medicine practice.

From 1999-2007 Kelly served as program director at Northwestern University for the genetic counseling program where she was involved in prenatal genetic counseling, coordinated a population-based carrier screening program for cystic fibrosis and diseases prevalent among Ashkenazi Jews, and provided neurogenetics counseling for patients with a family history of Huntington disease, dementias, ataxias and other adult-onset disorders.

Kelly received her bachelor’s degree in biology and psychology from Bucknell University, and a Master of Science degree in genetic counseling from Northwestern University; she completed a post-doctoral fellowship certificate in Clinical Medical Ethics at the MacLean Center of the University of Chicago in 2001. She is also certified by the American Board of Genetic Counseling (ABGC; 1996).
Michael Snyder, PhD  
PROFESSOR AND CHAIR OF GENETICS, STANFORD UNIVERSITY  
DIRECTOR OF THE CENTER OF GENOMICS AND PERSONALIZED MEDICINE

Michael Snyder is the Stanford Ascherman Professor and Chair of Genetics and the Director of the Center of Genomics and Personalized Medicine. Dr. Snyder received his PhD training at the California Institute of Technology and carried out postdoctoral training at Stanford University. He is a leader in the field of functional genomics and proteomics. His laboratory study was the first to perform a large-scale functional genomics project in any organism, and currently carries out a variety of projects in the areas of genomics and proteomics both in yeast and humans. These include the large-scale analysis of proteins using protein microarrays and the global mapping of the binding sites of chromosomal proteins. His laboratory built the first proteome chip for any organism and the first high resolution tiling array for the entire human genome.

Stephen Turner, PhD  
FOUNDER, PACIFIC BIOSCIENCES

Dr. Turner founded Pacific Biosciences (formerly Nanofluidics) and secured its Series A funding in 2004.

He was awarded a PhD in Physics by Cornell University in 2000, where he worked with Prof. Harold Craighead to study the behavior of biomolecules in nano-fabricated structures. His work contributed to the establishment of the Nanobiotechnology Center at Cornell. He was a member of the project team at Cornell which developed the technology now employed by Pacific Biosciences and was co-author of the cover story in Science magazine (January 31, 2003) that introduced the technology to the scientific community.

Dr. Turner's undergraduate work was at the University of Wisconsin, Madison, where he received a Bachelor of Science in Applied Mathematics, Electrical Engineering and Physics.

He is the author of over 30 scientific papers in fields ranging from nanofluidics, genetics, cell attachment to chemically- and topographically-modified surfaces, x-ray lithography and process modeling. He is listed as the inventor on nine U.S. patents and more than 20 published patent applications.

He oversees the scientific and technical direction of Pacific Biosciences and is a member of its Board of Directors.
Dr. Vance Vanier is the Chief Medical Officer of Navigenics and a clinical faculty member of Stanford University Medical Center. As a former partner at venture capital firm, Mohr Davidow Ventures, he has spent years in the molecular diagnostics industry bringing new genomic technologies into clinical practice. Dr. Vanier received his medical degree from the Johns Hopkins School of Medicine and did his residency training at the University of California, San Francisco, and Highland Hospital in Oakland, Calif. He serves as a member of the Personalized Medicine Coalition's Clinical Science Committee, Stanford Hospital's Pharmacy and Therapeutics Committee, and the American College of Preventive Medicine. During his medical career, he has had a strong commitment to international medicine -- including traveling to Kosovo after the war to work with the World Health Organization in creating the nation's first ambulance system. He received an MBA from Stanford University, as well as dual bachelor's degrees with honors.
ACKNOWLEDGEMENTS

With Special Thanks to:

Complete Genomics

Navigenics

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http://med.stanford.edu/careercenter

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