

10th Annual

# Future of Genomic Medicine

March 2 - 3, 2017 | Scripps Institution of Oceanography | La Jolla, CA



*Presented in partnership with*



Scripps Translational  
Science Institute

Science  
Translational  
Medicine



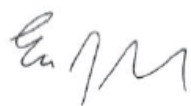
# Course Introduction

## Course Overview

In collaboration with AAAS/Science Translational Medicine we invite you to another exciting two day program on Thursday, March 2 and Friday, March 3, 2017 in beautiful San Diego, California. The 2017 program will again be held at Scripps Institution of Oceanography.

The 10th annual Future of Genomic Medicine course will be the next iteration of taking genomic knowledge to transform the daily practice of medicine. To do this, we have patients present their story of how genomics affected their medical status, and have a faculty of experts in genomics, science and medical journalism, and the life science industry provide critical perspective. This year we will be paying particular attention to the exciting area of genomic editing to treat particular diseases, cancer (a disease of the genome), and the genomics of rare and unknown diseases. Furthermore, we will delve into the hot topics of the microbiome, genomic-guided drug therapies and genomic analytics. The overarching goal of the course is to spearhead efforts to use genomic knowledge to change medicine and make it far more precise and individualized.

We look forward to your participation and another successful conference.



Eric J. Topol, MD  
Course Director

## Course Highlights

- Voice of the patient represented throughout the conference
- Renowned faculty representing the country's leading institutions
- Multiple panel discussion segments with ample question and answer time with faculty
- Additional networking opportunities

## Educational Objectives

**After attending this activity, participants should be able to:**

- Demonstrate the unmet needs of medicine today with respect to more targeted, individualized prevention and treatments.
- Discuss the opportunities of the genome, proteome, and metabolome discovery to change medical practice as it exists today.
- Assess how changes and advances in technology are rapidly ushering in a whole array of new pathways for individualized medicine of the future.
- Explore specific strategies in cancer, idiopathic and pharmacogenomic disease interventions.

## Target Audience

- Physicians
- Human geneticists
- Genomic scientists
- Researchers
- Health care professionals of all disciplines interested in the future of medicine, especially with respect to individualized therapies

# Disclosures and About Scripps

## Disclosure

### Commercial Support

This course is supported, in part, by educational grants from industry. At the time of printing, a complete listing of commercial supporters was not available. Appropriate acknowledgement will be given to all supporters at the time of the educational activity.

### Cultural and Linguistic Competency

This activity is in compliance with California Assembly Bill 1195 which requires that all CME activities comprising a patient care element include curriculum addressing the topic of cultural and linguistic competency. The intent of this bill is to ensure that health care professionals are able to meet the cultural and linguistic concerns of a diverse patient population through effective and appropriate professional development. Cultural and linguistic competency was incorporated into the planning of this activity.

## About Scripps Translational Science Institute

The **Scripps Translational Science Institute (STSI)** aims to replace the status-quo of one-size-fits-all-medicine with individualized health care that is based on the known genetic factors influencing health and disease and that takes advantage of advances in digital technology for real-time health monitoring.

Since its founding in 2006 by Scripps Health, STSI has been distinguished by its leadership in translational genomics and for harnessing digital, or wireless, medical technology for health monitoring of individual patients. In addition, it is the only member of the National Institutes of Health's Clinical and Translational Science Award (CTSA) consortium that is not affiliated with a university.

STSI hybridizes The Scripps Research Institute (TSRI)'s considerable biomedical science expertise with Scripps Health's exceptional patient care and clinical research. As a translational bridge between TSRI and Scripps Health, STSI fosters innovative programs and methodology, provides an optimal setting for training and education and accelerates the conduct of studies that will have the greatest potential impact on the practice of health care in the clinic and the community.

For more information on Scripps Translational Science Institute, visit [www.stsiweb.org](http://www.stsiweb.org).

# Faculty

## Course Director

### **Eric J. Topol, MD**

Founder & Director  
Scripps Translational Science Institute  
Chief Academic Officer, Scripps Health  
Professor of Genomics  
The Scripps Research Institute

## Planning Committee

### **Kristian G. Andersen, PhD**

Director, Infectious Disease Genomics  
Scripps Translational Science Institute  
Assistant Professor  
The Scripps Research Institute

### **Laura Nicholson, MD, PhD**

Co-Director, Education  
Scripps Translational Science Institute  
Associate Program Director  
Medicine Residency, Scripps Health

### **Emily Spencer, PhD**

Director, Clinical Genomics Program  
Assistant Professor  
Scripps Translational Science Institute

### **Steven R. Steinhubl, MD**

Director, Digital Medicine  
Scripps Translational Science Institute  
Associate Professor of Genomic Medicine  
The Scripps Research Institute

### **Andrew Su, PhD**

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Associate Professor  
The Scripps Research Institute

### **Ali Torkamani, PhD**

Director, Genome Informatics and Drug Discovery  
Scripps Translational Science Institute  
Assistant Professor, Molecular and Experimental  
Medicine, The Scripps Research Institute

### **Nathan E. Wineinger, PhD**

Director, Biostatistics  
Assistant Professor  
Scripps Translational Science Institute



## Faculty

### **Jehannine Austin, PhD, CGC**

Associate Professor and Genetic Counselor  
Departments of Psychiatry and  
Medical Genetics  
The University of British Colombia

### **Ed Boyden, PhD**

Associate Professor  
Media Lab and McGovern Institute  
Massachusetts Institute of Technology

### **Atul Butte, MD, PhD**

Director and Distinguished Professor  
Institute for Computational Health Sciences  
Executive Director for Clinical Informatics  
University of California, San Francisco

### **Eric Dishman, MD, PhD**

Director  
Precision Medicine Initiative (PMI)  
National Institutes of Health

### **Brian J. Druker, MD**

Director, Knight Cancer Institute  
Oregon Health & Science University  
JELD-WEN Chair of Leukemia Research  
Investigator, Howard Hughes Medical Institute

### **Michael B. Eisen, PhD**

Investigator, Howard Hughes Medical Institute  
Professor of Genetics  
Genomics and Development  
University of California, Berkeley

### **Laura J. Esserman, MD, MBA**

Professor, Department of Surgery and Radiology  
Director, Carol Franc Buck Breast Care Center  
Co-Leader, Breast Oncology Program  
University of California, San Francisco

### **Jeff Huber**

Chief Executive Officer  
GRAIL

### **Sekar Kathiresan, MD**

Cardiologist, Human Geneticist  
Director, Preventive Cardiology  
Massachusetts General Hospital  
Associate Member, Program of Medical  
and Population Genetics  
Associate Professor of Medicine  
Harvard School of Medicine

### **Paul Knoepfler, PhD**

Professor  
Department of Cell Biology and  
Human Anatomy  
University of California, Davis

### **Razelle Kurzrock, MD**

Chief, Division of Hematology and Oncology  
UCSD School of Medicine  
Senior Deputy Director, Clinical Science  
Director, Center for Personalized Cancer Therapy  
Director, Clinical Trials Office  
UCSD Moores Cancer Center

### **Erez S. Lieberman Aiden, PhD**

Assistant Professor  
Molecular and Human Genetics  
Assistant Professor, Computer Science  
Assistant Professor  
Computational and Applied Mathematics  
Baylor College of Medicine

### **Bill Lundberg, MD**

Chief Scientific Officer  
CRISPR Therapeutics

### **Daniel MacArthur, PhD**

Assistant Professor  
Massachusetts General Hospital  
Co-Director of Medical and Population Genetics  
The Broad Institute of MIT and Harvard

### **Siddhartha Mukherjee, MD**

Assistant Professor of Medicine  
Columbia University  
Physician, Columbia University Medical Center  
Author, *The Gene: An Intimate History*

### **Eric M. Reiman, MD**

Executive Director  
Banner Alzheimer's Institute (BAI)  
Chief Executive Officer, Banner Research  
Clinical Director, Neurogenomics  
Translational Genomics Research Institute (TGen)  
Professor of Psychiatry, University of Arizona  
Director, Arizona Alzheimer's Consortium

### **Pardis C. Sabeti, MD, DPhil**

Professor, Center for Systems Biology  
Professor, Department of Organismic  
and Evolutionary Biology  
Faculty, Center for the  
Communicable Disease Dynamics  
Harvard University

### **Eric Schadt, PhD**

Professor and Chair  
Genetics and Genomic Sciences  
Director, Icahn Institute for Genomics  
and Multiscale Biology

### **Jay Shendure, MD, PhD**

Professor of Genome Sciences  
University of Washington  
School of Medicine

### **Ramji Srinivasan**

Chief Executive Officer  
Counsyl

### **Beth Stevens, PhD**

Institute Member, The Broad Institute  
of MIT and Harvard  
Assistant Professor, Harvard Medical School  
Research Associate  
Neurobiology at Boston Children's Hospital

### **Ed Yong**

Science Writer  
The Atlantic

### **Feng Zhang, PhD**

Core Institute Member  
The Broad Institute of MIT and Harvard  
Investigator, The McGovern Institute, MIT  
Associate Professor, Department of  
Brain and Cognitive Sciences, MIT  
Associate Professor, Department of  
Biological Engineering, MIT  
Robertson Investigator  
New York Stem Cell Foundation

### **Carl Zimmer**

Columnist  
The New York Times  
Contributing National Correspondent  
STAT





# Agenda

## Thursday, March 2, 2017

7:30 a.m. *Registration and Breakfast*

8:00 a.m. **Welcome and Opening Remarks**  
Eric Topol

8:15 a.m. **Patient # 1**

### Session I: Genome Editing

8:55 a.m. Feng Zhang/Genome Editing

9:15 a.m. Bill Lundberg/Genome Editing

9:35 a.m. **Question and Answer**

9:55 a.m. *Break, View Exhibits and Networking*

### Session II: Progress in Medical Specialties

10:25 a.m. Pardis Sabeti/Infectious Disease

10:45 a.m. Kristian Andersen/Infectious Disease

11:05 a.m. **Question and Answer**

11:15 a.m. Sekar Kathiresan/Cardiovascular

11:35 a.m. **Question and Answer**

11:45 a.m. *Lunch, View Exhibits and Networking*



12:30 p.m. Brian Druker/Cancer

12:50 p.m. Laura Esserman/Cancer

1:10 p.m. Razelle Kurzrock/Cancer

1:30 p.m. **Question and Answer**

1:45 p.m. Beth Stevens/Neuro

2:05 p.m. Eric Reiman/Neuro

2:25 p.m. **Question and Answer**

2:45 p.m. *Break, View Exhibits and Networking*

### Session III: Perspectives and Controversies in Genomic Medicine

3:15 p.m. Daniel MacArthur

3:35 p.m. Carl Zimmer

3:55 p.m. Jehannine Austin

4:15 p.m. Michael Eisen

4:35 p.m. **Question and Answer**

5:00 p.m. *Adjourn*

### Thursday Evening Welcome Reception at Scripps Seaside Forum

*Reception will take place until 7:30 p.m.*



## Friday, March 3, 2017

7:30 a.m. *Registration and Breakfast*

8:00 a.m. **Opening Remarks**  
Eric Topol

8:05 a.m. **Patient #2**

8:45 a.m. Siddhartha Mukherjee/The Gene

### Session I: Precision Medicine

9:25 a.m. Eric Dishman/ The Precision  
Medicine Initiative

9:55 a.m. Ali Torkamani/Healthspan

10:15 a.m. Eric Topol/Individualized Medicine

10:35 a.m. **Question and Answer**

10:50 a.m. *Break, View Exhibits and Networking*

### Session II: New Frontiers

11:20 a.m. Ed Yong/Microbiome

11:50 a.m. Paul Knoepfler/iPSCs

12:20 p.m. Ed Boyden/Optogenetics

12:50 p.m. **10th Annual Genomic Medicine Award**

1:00 p.m. *Lunch, View Exhibits and Networking*

### Session III: Data Science and System Medicine

1:45 p.m. Atul Butte

2:05 p.m. Erez Lieberman Aiden

2:25 p.m. Eric Schadt

2:45 p.m. **Question and Answer**

### Session IV: Future Directions in Cancer and Liquid Biopsy

3:45 p.m. Jeff Huber/Cancer Detection in  
Healthy Individuals

4:05 p.m. Jay Shendure/Liquid Biopsy

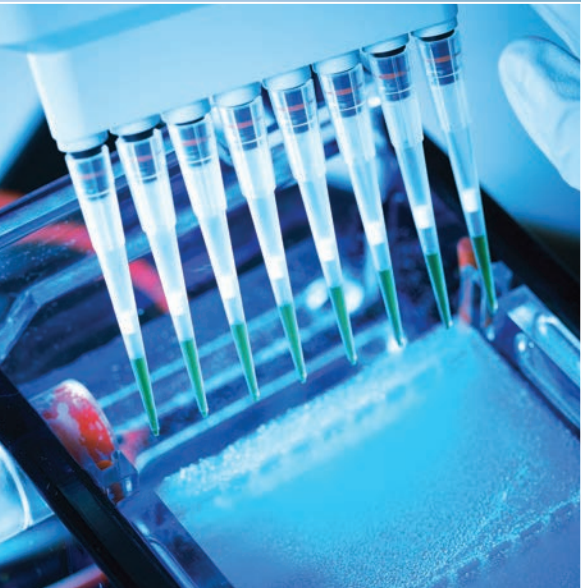
4:25 p.m. Ramji Srinivasan

4:45 p.m. **Question and Answer**

5:00 p.m. *Adjourn*

### Friday Evening Closing Reception at Scripps Seaside Forum

*Reception will take place until 7:30 p.m.*





# Course Location & Hotel Information



Robert Paine Scripps Forum for Science  
Society and the Environment  
Samuel H. Scripps Auditorium  
8610 Kennel Way, La Jolla, California 92037



## Parking and Transportation

- **IMPORTANT!** You **CAN NOT** park in the lots outside of Scripps Seaside Forum. You will be ticketed.
- Directional parking signs will be displayed and additional information regarding available parking will be provided upon registration.
- **Parking is available in the following locations:**
  - **The Pangea Parking Garage** located across the street from The Estancia La Jolla Hotel & Spa. The cost is \$8/day. If this parking option is utilized you may walk across the street to The Estancia La Jolla Hotel & Spa to take advantage of the shuttle to the conference venue or take the UCSD shuttle to SIO.
  - The underground parking lot at La Jolla Shores Hotel (\$10/vehicle/day) **Please see the front desk at the hotel and mention you are attending the Scripps Genomic Medicine Conference in order to obtain a parking pass to receive the discounted rate.**
  - **Kellogg Park** (free)
  - **Streets** around Scripps Institution of Oceanography (Free). Please note that street sweeping takes place on El Paseo Grande every Thursday from 8 – 11 a.m. Please read signs regarding this following carefully.
  - **UCSD Employees/Faculty/Students** are encouraged to park in a UCSD parking lot and take the SIO shuttle to/from Scripps Seaside Forum.
  - You may also park and walk to/from La Jolla Shores Hotel and Kellogg Park to Scripps Seaside Forum (approx. 15 minutes).
  - Handicap parking is available in the lots outside of the forum. These spots are marked and appropriate signage must be displayed.
- There will be a looping shuttle on Thursday, March 2 and Friday, March 3 between Scripps Translational Science Institute, The Estancia Hotel, The La Jolla Shores hotel, Kellogg Park and Scripps Seaside Forum.

## Recommended Lodging

### Estancia La Jolla Hotel & Spa

9700 N. Torrey Pines Road  
La Jolla, California 92037

**Make your reservations early!** A specially priced block of rooms is being held until **February 20, 2017**. After that time, reservations will be accepted on a space and rate availability basis only. Be sure to request the Scripps reduced rate of \$209 per night plus tax. This low rate also includes:

- Discounted parking: \$10/overnight and \$8/day
- Complimentary guestroom internet service
- 10% Spa Discount, Monday – Friday for conference attendees
- Discounted Hospitality Services Fee of \$10
- Complimentary shuttle within a 10 mile radius

### Reservations:

Online: [www.estancialajolla.com](http://www.estancialajolla.com) (Enter code: **FOGMX** when making your reservation online in order to receive the reduced rate)

Phone: (877) 437-8262 (Reference **“Scripps Genomic Medicine Conference”** when making your reservation in order to receive the reduced rate.)

### La Jolla Shores Hotel

8110 Camino Del Oro  
La Jolla, California 92037

**Make your reservations early!** A specially priced block of rooms is being held until **February 17, 2017**. After that time, reservations will be accepted on a space and rate availability basis only. Be sure to request the Genomic Medicine Conference reduced rate of \$205 per night plus tax for the Garden View Hotel room w/ Kitchenette, \$219 per night plus tax for the Coast View room or \$249 per night plus tax for the Beach Front room. This low rate also includes:

- Discounted parking: \$10/day and \$18/ overnight (*self-only*)
- Complimentary guestroom internet service

### Reservations:

**Online:** [www.ljshoreshotel.com](http://www.ljshoreshotel.com) (Enter group code: **FOGMX** when you “click here for special rates.”)

**Phone:** (866) 392-8762 (Reference **“The Genomic Medicine Conference”** when making your reservation in order to receive the reduced rate.)

**Please note:** Attendees who book their room through an online, third-party service (Hotels.com®, Expedia.com®, Priceline.com®, etc.) are not eligible to receive the amenities listed above.

All conference information including a detailed agenda, faculty listing, faculty disclosures, industry support, attendee list, and course materials will be found on the course webpage: <http://www.stsiweb.org/event/fogm17/>



# Course Fees & Registration

## Course Fees

**Space is limited, so register early!**

**Included:** Course tuition, access to course materials (via the course website), internet in meeting space, breakfasts, breaks, lunches and evening functions associated with this course.

**Not Included:** Travel costs, lodging, parking, and dinners

*Please note, this course does not offer Continuing Medical Education (CME) credits.*

## Main Course

	Until Feb. 17	On-site after Feb. 17
Registration Fee	___ \$200	___ \$225
Scripps Translational Science Institute employees (Registration staff will verify)	___ \$50	___ \$75
Students, Residents, Fellows (Clinical – registration staff will verify)	Please call Scripps Conference Services & CME at (858) 652-5400 to inquire about the student, resident, fellow registration process.	

**Please print clearly. Should we have any conference communications or updates please provide your direct contact information.**

FIRST, MI, LAST NAME DEGREE (MD, DO, PHD, RN, ETC)

BADGE NAME (if different from above)

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DIRECT MAILING ADDRESS

CITY STATE ZIP

OFFICE TELEPHONE CELL PHONE

FAX

E-MAIL (This is required and will be your user name when accessing your online account.)

ASSISTANT NAME ASSISTANT DIRECT TELEPHONE

ASSISTANT E-MAIL

**PLEASE INDICATE ANY SPECIAL NEEDS (INCLUDING DIETARY RESTRICTIONS). Special requests will be considered and accommodated in full compliance with the Americans with Disabilities Act (ADA).**

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CREDIT CARD NUMBER EXPIRATION DATE SECURITY CODE on Card (Required)

NAME ON CARD

BILLING ADDRESS IF DIFFERENT FROM ABOVE

SIGNATURE DATE

## WAYS TO REGISTER

**Online** [www.stsiweb.org/event/fogm17/](http://www.stsiweb.org/event/fogm17/)

**Mail** Scripps Conference Services & CME  
Future of Genomic Medicine Conference  
11025 North Torrey Pines Road  
Suite 200, Maildrop: SCRC200  
La Jolla, California 92037

**Fax** (858) 652-5565

## ATTENDANCE POLICIES

### Registration Confirmation

A confirmation letter will be e-mailed to you upon receipt of the conference registration form and payment. If you have not received it within two weeks, please contact the Scripps Conference Services & CME office at (858) 652 – 5400.

### Attendee Cancellation, Substitution, Refund

The course tuition is refundable, minus a \$50 processing fee, if your cancellation is received in writing no later than **February 23, 2017**. Attendee substitutions are allowed, but notification must be made in writing by **February 23, 2017**. After this date, under no circumstances will refunds, credits, or substitutions be granted. No refunds or credits will be given to “no shows.”

### Guest Attendance Policy

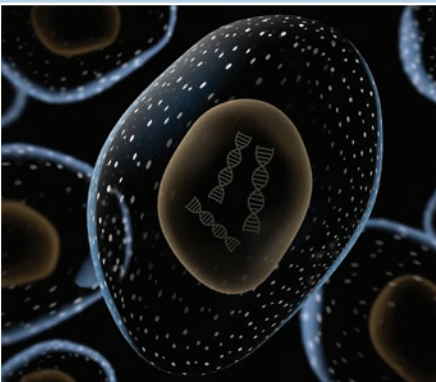
All conference activities (including educational sessions, meal functions, exhibit hall, etc.) are exclusively reserved for conference attendees. Non-registered guests (including children, family members, colleagues, etc.) are not allowed in the conference areas. Badges provided at registration are required for entrance into all functions and will be strictly enforced.

### Scripps Conference Modification or Cancellation

Scripps reserves the right to modify the course's schedule or program as necessary. Scripps also reserves the right to cancel this conference, in which case a full refund of the registration fee will be provided. We are unable to refund any travel costs (flight, hotel, etc.) in the case of Scripps cancellation.

### Recording and Photography Clause

Scripps reserves exclusive rights to record (audio and video) and/or photograph all conference proceedings for use in marketing materials, presentations and course content sales.





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## *10th Annual* The Future of Genomic Medicine

Thursday, March 2, and Friday, March 3, 2017  
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Robert Paine Scripps Forum for  
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