

Translation Machinery in Health & Disease

Gordon Research Conference

Decoding Translation for Homeostasis

Dates

March 19-24, 2017

Location

Hotel Galvez
Galveston, TX

Organizers

Chair:

Sunghoon Kim

Vice Chair:

Susan L. Ackerman

Application Deadline

Applications for this meeting must be submitted by **February 19, 2017**. Please apply early, as some meetings become oversubscribed (full) before this deadline. If the meeting is oversubscribed, it will be stated here. *Note:* Applications for oversubscribed meetings will only be considered by the Conference Chair if more seats become available due to cancellations.

Meeting Description

Protein translation is one of the most fundamental and important biological processes, involving numerous cellular components and energy. Although this process has been intensively studied for several decades, the regulation and pathophysiological relevance of translation to other cellular processes and diseases are not clearly understood. A broad spectrum of diseases—including cancer, infectious and immunological diseases, hematological and vascular diseases, neurological diseases, and metabolic diseases—are caused by defective translation and alterations in the translation apparatus. Thanks to the rapid technological advances in the studies of translational machinery including the ribosome, research on translation is rapidly expanding. This conference provides the best platform in which scientists and clinicians can exchange and obtain state-of-the-art information on the relevance of translation to human disease and health. The 2017 Translation Machinery in Health and Disease Gordon Research Conference is the first disease-focused conference for the broad field of protein translation. It covers areas that are not addressed by any existing conferences that are mainly focused on the fundamental mechanisms of components in protein synthesis and regulation. By bringing diverse research communities to a single site and facilitating the communication and translation of basic research to clinical applications, this conference will have significant value to the research community. Each session will focus on a specific disease area, and blend basic science on translation and the translational machinery with dysregulation of these pathways in pathological processes. Thus overlapping interests of both clinicians and basic scientists in translation-related molecules and diseases will be discussed at this meeting, with the likely synergistic emergence of new ideas, new avenues of research, and new leads for development of therapeutics.

Related Meeting



This GRC will be held in conjunction with the "**Translation Machinery in Health & Disease**" Gordon Research Seminar (GRS). Those interested in attending both meetings must submit an application for the GRS in addition to an application for the GRC. Refer to the [associated GRS program page](#) for more information.

Contributors



Meeting Program

Sunday

- 4:00 pm - 8:00 pm Arrival and Check-in
- 6:00 pm Dinner
- 7:30 pm - 7:40 pm Welcome / Introductory Comments by GRC Site Staff
- 7:40 pm - 9:30 pm **Keynote Session: Opening the New World of Translation**
- Discussion Leader: **Sunghoon Kim** (Seoul National University, South Korea)
- 7:40 pm - 8:25 pm **Nahum Sonenberg** (McGill University, Canada)
"Translational Control of Cancer and Neurodevelopmental Disease via eIF4E"
- 8:25 pm - 8:35 pm Discussion
- 8:35 pm - 9:20 pm **C. Thomas Caskey** (Baylor College of Medicine, USA)
"Genetic Risk Identification for Disease Prevention"
- 9:20 pm - 9:30 pm Discussion

Monday

- 7:30 am - 8:30 am Breakfast
- 8:30 am Group Photo
- 9:00 am - 12:30 pm **Post-Transcriptional Regulation in Cancer**
- Discussion Leader: **Robert Schneider** (New York University School of Medicine, USA)
- 9:00 am - 9:05 am Introduction by Discussion Leader
- 9:05 am - 9:25 am **Katherine Borden** (University of Montreal, Canada)
"Targeting the Multiple Lives of eIF4E in Leukemia"

- 9:25 am - 9:30 am Discussion
- 9:30 am - 9:50 am **Raul Mendez** (Institute for Research in Biomedicine (IRB Barcelona), Spain)
"The CPEB-Family of RNA-Binding Proteins, New Functions in Cell Cycle and Cancer"
- 9:50 am - 9:55 am Discussion
- 9:55 am - 10:05 am Short Talk Selected from Poster Abstracts
- 10:05 am - 10:10 am Discussion
- 10:10 am - 10:35 am Coffee Break
- 10:35 am - 10:55 am **Davide Ruggero** (University of California, San Francisco, USA)
"Translating the Cancer Genome One Codon at a Time and Its Therapeutic Implications"
- 10:55 am - 11:00 am Discussion
- 11:00 am - 11:20 am **Estela Jacinto** (Robert Wood Johnson Medical School, Rutgers University, USA)
"mTORC2 in Cell Metabolism"
- 11:20 am - 11:25 am Discussion
- 11:25 am - 11:45 am **Jung Min Han** (Yonsei University, South Korea)
"Leucyl-tRNA Synthetase as a Novel Target Against Rapamycin-Resistant Cancers"
- 11:45 am - 11:50 am Discussion
- 11:50 am - 12:10 pm **Maria Barna** (Stanford University, USA)
"Ribosome Heterogeneity in Translating the Genetic Code"
- 12:10 pm - 12:15 pm Discussion
- 12:15 pm - 12:25 pm Short Talk Selected from Poster Abstracts
- 12:25 pm - 12:30 pm Discussion
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm
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- Metabolic Diseases**
- Discussion Leader: **Andrew Weyrich** (University of Utah School of Medicine, USA)
- 7:30 pm - 7:35 pm Introduction by Discussion Leader
- 7:35 pm - 7:55 pm **John Blenis** (Weill Cornell Medicine, USA)
"mTOR, Metabolism and Therapeutic Opportunities"
- 7:55 pm - 8:05 pm Discussion
- 8:05 pm - 8:25 pm **Vadim Gladyshev** (Harvard Medical School, USA)
"Translation in Aging and Selenium Metabolism"
- 8:25 pm - 8:30 pm Discussion
- 8:30 pm - 8:50 pm **Scot Kimball** (Penn State College of Medicine, USA)
"Modulation of Protein Synthesis as a Mechanism for Regulating Skeletal Muscle Growth and Atrophy"
- 8:50 pm - 9:00 pm Discussion
- 9:00 pm - 9:20 pm **Paul Fox** (Cleveland Clinic, USA)
"Glu-Pro tRNA Synthetase in mTOR Signaling and Adiposity"
- 9:20 pm - 9:30 pm Discussion

Tuesday

7:30 am - 8:30 am Breakfast

9:00 am - 12:30 pm **Infectious and Inflammatory Diseases**

Discussion Leader: **Michael Ibba** (The Ohio State University, USA)

9:00 am - 9:05 am Introduction by Discussion Leader

9:05 am - 9:25 am **Nancy Woychik** (Rutgers University, USA)
"tRNAs, Translation and Tuberculosis"

9:25 am - 9:35 am Discussion

9:35 am - 9:55 am **Mirim Jin** (Gachon University, South Korea)
"Secretion of a Protein Synthesis Enzyme as a Primary Defense Mechanism Against Pathogenic Challenges"

9:55 am - 10:05 am Discussion

10:05 am - 10:15 am Short Talk Selected from Poster Abstracts

10:15 am - 10:20 am Discussion

10:20 am - 10:45 am Coffee Break

10:45 am - 11:05 am **Alexander Mankin** (University of Illinois at Chicago, USA)
"An Antibiotic That Inhibits Termination of Translation by Trapping Release Factors on the Ribosome"

11:05 am - 11:15 am Discussion

11:15 am - 11:35 am **Karin Musier-Forsyth** (The Ohio State University, USA)
"Role of Aminoacyl-tRNA Synthetases in Retroviral Replication"

11:35 am - 11:45 am Discussion

11:45 am - 12:05 pm **Andrew Mouland** (Lady Davis Institute / McGill University, Canada)
"Identifying the Locales for Retroviral mRNA Translation"

12:05 pm - 12:15 pm Discussion

12:15 pm - 12:25 pm Short Talk Selected from Poster Abstracts

12:25 pm - 12:30 pm Discussion

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm Dinner

7:30 pm - 9:30 pm **Translational Control of Cancer Cells**

Discussion Leader: **Davide Ruggero** (University of California, San Francisco, USA)

7:30 pm - 7:35 pm Introduction by Discussion Leader

7:35 pm - 7:55 pm **Jerry Pelletier** (McGill University, Canada)
"Targeting eIF4F-Dependencies in Cancer"

7:55 pm - 8:05 pm Discussion

8:05 pm - 8:25 pm **Robert Schneider** (New York University School of Medicine, USA)
"Translational Control of the Breast Cancer Initiating Cell"

8:25 pm - 8:35 pm Discussion

8:35 pm - 8:55 pm **Stephane Pyronnet** (Cancer Research Center of Toulouse, France)
"Translational Control of Pancreatic Function and Carcinogenesis"

8:55 pm - 9:05 pm Discussion

9:05 pm - 9:25 pm **Ivan Topisirovic** (Lady Davis Institute, McGill University, Canada)
"Translational Control of Cancer Energetics"

9:25 pm - 9:30 pm Discussion

Wednesday

7:30 am - 8:30 am Breakfast

9:00 am - 12:30 pm **Neurological Disorders**

Discussion Leader: **Tao Pan** (The University of Chicago, USA)

9:00 am - 9:05 am Introduction by Discussion Leader

9:05 am - 9:25 am **Susan Ackerman** (University of California, San Diego, USA)
"Translational Defects and Neurodegeneration"

9:25 am - 9:35 am Discussion

9:35 am - 9:55 am **Samie Jaffrey** (Weill Cornell Medicine, USA)
"Control of Neuronal mRNA Translation by m6A and m6Am"

9:55 am - 10:05 am Discussion

10:05 am - 10:15 am Short Talk Selected from Poster Abstracts

10:15 am - 10:20 am Discussion

10:20 am - 10:45 am Coffee Break

10:45 am - 11:05 am **Joel Richter** (University of Massachusetts Medical School, USA)
"Translational Control of the Fragile X Syndrome"

11:05 am - 11:15 am Discussion

11:15 am - 11:35 am **J. Paul Taylor** (St. Jude Children's Research Hospital, USA)
"RNA Granule Dynamics in Neurological Disease"

11:35 am - 11:45 am Discussion

11:45 am - 12:05 pm **Xiang-Lei Yang** (The Scripps Research Institute, USA)
"Aminoacyl-tRNA Synthetase in Charcot-Marie-Tooth Disease"

12:05 pm - 12:15 pm Discussion

12:15 pm - 12:25 pm Short Talk Selected from Poster Abstracts

12:25 pm - 12:30 pm Discussion

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm Poster Session

6:00 pm Dinner

7:00 pm - 7:30 pm Business Meeting

Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair

7:30 pm - 9:30 pm **Translational Responses to Stress**

Discussion Leader: **Xiang-Lei Yang** (The Scripps Research Institute, USA)

7:30 pm - 7:35 pm Introduction by Discussion Leader

7:35 pm - 7:55 pm **Nilabh Shastri** (University of California, Berkeley, USA)
"Translational Control in Immune Surveillance"

- 7:55 pm - 8:05 pm Discussion
- 8:05 pm - 8:25 pm **Tao Pan** (The University of Chicago, USA)
"Dynamic tRNA Biology in the Microbiome"
- 8:25 pm - 8:35 pm Discussion
- 8:35 pm - 8:55 pm **Shu-Bing Qian** (Cornell University, USA)
"Translational Control in Heat Shock Response"
- 8:55 pm - 9:05 pm Discussion
- 9:05 pm - 9:25 pm **Michael Ibba** (The Ohio State University, USA)
"Translation Quality Control and Stress Response in Bacteria"
- 9:25 pm - 9:30 pm Discussion

Thursday

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **Innovative Technologies for Translation Research**
Discussion Leader: **Robert Singer** (Albert Einstein College of Medicine, USA)
- 9:00 am - 9:05 am Introduction by Discussion Leader
- 9:05 am - 9:25 am **Hiroaki Suga** (University of Tokyo, Japan)
"A RaPID Way to Discover Pseudo-Natural Peptides Against Non-Druggable Targets"
- 9:25 am - 9:35 am Discussion
- 9:35 am - 9:55 am **Wenshe Liu** (Texas A&M University, USA)
"Study Posttranslational Nucleosomal Modifications with an Expanded Genetic Code"
- 9:55 am - 10:05 am Discussion
- 10:05 am - 10:15 am Short Talk Selected from Poster Abstracts
- 10:15 am - 10:20 am Discussion
- 10:20 am - 10:45 am Coffee Break
- 10:45 am - 11:05 am **Bin Wu** (Johns Hopkins University School of Medicine, USA)
"Watching mRNA Translate"
- 11:05 am - 11:15 am Discussion
- 11:15 am - 11:35 am **Jeffrey Chao** (Friedrich Miescher Institute for Biomedical Research, Switzerland)
"A TRICK for Imaging Translation"
- 11:35 am - 11:45 am Discussion
- 11:45 am - 12:05 pm **Nicholas Ingolia** (University of California, Berkeley, USA)
"Global Profiling of Translation Regulation and Dysregulation"
- 12:05 pm - 12:15 pm Discussion
- 12:15 pm - 12:25 pm Short Talk Selected from Poster Abstracts
- 12:25 pm - 12:30 pm Discussion
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm **Vascular and Hematologic Disorders**
Discussion Leader: **Paul Fox** (Cleveland Clinic, USA)

- 7:30 pm - 7:35 pm Introduction by Discussion Leader
- 7:35 pm - 7:55 pm **Andrew Weyrich** (University of Utah School of Medicine, USA)
"Translational Functions of Anucleate Platelets in Health and Disease"
- 7:55 pm - 8:05 pm Discussion
- 8:05 pm - 8:25 pm **Myung Hee Kim** (Korea Research Institute of Bioscience and Biotechnology (KRIBB), South Korea)
"Control of Translational Initiation by a Human tRNA Synthetase"
- 8:25 pm - 8:35 pm Discussion
- 8:35 pm - 8:55 pm **Jie Jia** (Cleveland Clinic, USA)
"Co-Translational Complex Assembly in Macrophages"
- 8:55 pm - 9:05 pm Discussion
- 9:05 pm - 9:15 pm Short Talk Selected from Poster Abstracts
- 9:15 pm - 9:20 pm Discussion
- 9:20 pm - 9:30 pm Closing Remarks

Friday

- 7:30 am - 8:30 am Breakfast
- 9:00 am Departure