Chabner Colloquium: Answering the Big Questions in Cancer Research
2016 STO Annual Meeting

Featuring expert faculty providing updates on the most promising targets for development of new cancer treatments.

November 11-12, 2016
The Liberty Hotel
215 Charles Street
Boston, Massachusetts
### 2016 Chabner Colloquium:
**Answering the Big Questions in Cancer Research**

**2016 STO Annual Meeting**

Friday, November 11, 2016

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| 7:45AM     | Welcome and Introduction          | Martin J. Murphy, DMedSc, PhD, Convener, Society for Translational Oncology  
Bruce A. Chabner, MD, Massachusetts General Hospital Cancer Center, Harvard Medical School |                                                                                       |                                             |
| 8:00-8:45AM| **Session 1: New Insights Into Cancer Drug Resistance**  
Moderator: Antonio “Tito” Fojo, MD, PhD, Columbia University Cancer Center | Bradley E. Bernstein, MD, PhD, Massachusetts General Hospital, Harvard Medical School |                                                                                       |                                             |
| 8:00-8:45AM| Epigenetic Mechanisms of Tumor Initiation and Evolution | Bradley E. Bernstein, MD, PhD, Massachusetts General Hospital, Harvard Medical School |                                                                                       |                                             |
| 8:45-9:30AM| Novel Mechanisms of Drug Resistance | Neal Rosen, MD, PhD, Memorial Sloan Kettering Cancer Center |                                                                                       |                                             |
| 9:30-10:15AM| Studies of Drug Resistance in Targeted Lung Cancer Therapy *This lecture is not certified for CME credit | Jeffrey Engelman, MD, PhD, Novartis Institutes for BioMedical Research |                                                                                       |                                             |
| 10:15-11:00AM| New Approaches to Challenging Targets in Cancer | Nathanael Gray, PhD, Dana-Farber Cancer Institute/ Harvard Medical School |                                                                                       |                                             |
| 11:00-11:15AM| Break |                                                                                       |                                             |
| 11:15-12:00PM| **Session 2: Targets That Defy Effective Therapy**  
Moderator: Neal Rosen, MD, PhD | Michael R. Boyd, MD, PhD, ADT Pharmaceuticals, Inc. |                                                                                       |                                             |
| 11:15-12:00PM| Development of Novel Anti-Ras Therapy *This lecture is not certified for CME credit | Michael R. Boyd, MD, PhD, ADT Pharmaceuticals, Inc. |                                                                                       |                                             |
| 12:00-12:45PM| Optimal MAPK Inhibition as a Key Component of Therapeutic Strategies for KRAS Mutant Cancers | Ryan B. Corcoran, MD, PhD, Massachusetts General Hospital Cancer Center, Harvard Medical School |                                                                                       |                                             |
| 12:45-1:30PM| Lunch Buffet | 5th Floor Rotunda |                                                                                       |                                             |
| 1:30-2:15PM| **Session 3: Hematologic Malignancies**  
Moderator: Susan Bates, MD, Columbia University Cancer Center | Richard M. Stone, MD, Dana-Farber Cancer Institute/ Harvard Medical School |                                                                                       |                                             |
| 1:30-2:15PM| FLT3 Inhibitors in the Therapy of of Acute Myeloid Leukemia | Richard M. Stone, MD, Dana-Farber Cancer Institute/ Harvard Medical School |                                                                                       |                                             |
| 2:15-3:00PM| Checkpoint Blockade in Lymphoma | Philippe Armand, MD, PhD, Dana-Farber Cancer Institute/ Harvard Medical School |                                                                                       |                                             |
| 3:00-3:45PM| Dihydroorotate Dehydrogenase: An Unexpected Metabolic Vulnerability in of Acute Myeloid Leukemia | David B. Sykes, MD, PhD, Massachusetts General Hospital, Harvard Medical School |                                                                                       |                                             |
| 3:45-4:00PM| Break |                                                                                       |                                             |
| 4:00-4:30PM| **Session 4: Fellows Forum**  
Moderator: Joseph R. Bertino, MD, Rutgers Cancer Institute of New Jersey | Raj Gopal, MD, PhD, Massachusetts General Hospital, Harvard Medical School |                                                                                       |                                             |
| 4:00-4:30PM| Genomic Analysis of Mitochondria-Rich Tumors | Raj Gopal, MD, PhD, Massachusetts General Hospital, Harvard Medical School |                                                                                       |                                             |
| 4:30-5:00PM| Germline Defects Underlying Sporadic Cancers | Manish K. Gala, MD, Massachusetts General Hospital, Harvard Medical School |                                                                                       |                                             |
| 5:00-5:30PM| Molecular Analysis of CTCs in Prostate Cancer | David Liu, MD, MPH, MS, Dana-Farber Cancer Institute/ Harvard Medical School |                                                                                       |                                             |
| 5:30-6:00PM| Generation of Models of Human Hematologic Malignancies Using CRISPR Genome Engineering | Zuzana Tothova, MD, PhD, Dana-Farber Cancer Institute/ Harvard Medical School |                                                                                       |                                             |
| 6:00PM     | Summary and Adjourn Day 1 |                                                                                       |                                             |
Saturday, November 12, 2016

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| 7:50-8:00AM | Welcome and Introduction  
Martin J. Murphy, DMedSc, PhD, Convener, Society for Translational Oncology  
Bruce A. Chabner, MD, Massachusetts General Hospital Cancer Center, Harvard Medical School |
| 8:00-8:45AM | The Art of Investing in Science  
Oleg Nodelman, EcoR1 Capital, LLC |
| 8:45-9:00AM | Finding Venture Investment for Academics  
Roger Kitterman, Innovation Fund, Partners HealthCare |
| 9:00-9:45AM | Break |
| 9:45-10:30AM | T-cell Therapy: Current Applications and Future Directions  
Marcela Maus, MD, PhD, Massachusetts General Hospital Cancer Center, Harvard Medical School |
| 10:30-11:12AM | Addressing Clonal Heterogeneity in Chronic Lymphocytic Leukemia: Developing Personalized Neoantigen-Based Cancer Vaccines  
Catherine J. Wu, MD, Dana-Farber Cancer Institute/ Harvard Medical School |
| 11:15-12:00PM | Molecular Tumor Board – Two case presentations and discussion  
Panelists:  
Darrell Borger, PhD, Massachusetts General Hospital, Harvard Medical School  
Leif W. Ellisen, MD, PhD, Massachusetts General Hospital Cancer Center, Harvard Medical School  
Justin F. Gainor, MD, Massachusetts General Hospital, Harvard Medical School  
Neal Rosen, MD, PhD |
| 12:00PM | Closing Remarks and Adjourn Day 2  
Lunch Buffet  
5th Floor Rotunda |

The content of each presentation does not necessarily reflect the views of the Society for Translational Oncology, *The Oncologist*, or The Massachusetts General Hospital or any of its affiliates.

Slides will not be printed for the meeting in an effort to protect the environment. Any requests for slides should be directed to the specific presenter as STO does not have permission to distribute slides on their behalf.
Overview
In the field of oncology, the rapid pace of discovery and a better understanding of prevention, detection, the microenvironment, and treatment of cancer will lead to improved patient outcomes. Accurately tailored cancer treatment and individualized therapy will focus on tumor biology and host factors. The healthcare provider will need to be well informed in order to provide the most effective therapy for a particular patient with the fewest associated risks and toxicities. In oncology, our understanding of the complexity of the disease is expanding at an exponential rate.

Target Audience
This activity is designed to meet the educational needs of physicians and scientists in academic and practice settings who wish to advance their knowledge of the research into new treatments and improve their competence in the care of patients with cancer.

Accreditation
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the Society for Translational Oncology and The Massachusetts General Hospital. The Society for Translational Oncology is accredited by the ACCME to provide continuing medical education for physicians.

Credit Designation
The Society for Translational oncology designates this live activity for a maximum of 9 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

CME Credit
In order to receive CME credit, learners must sign in, review the CME information (accreditation, learning objectives, faculty disclosures, etc.) and attend the CME activity. Learners will be asked to complete an electronic activity evaluation following the meeting to indicate the number of credit hours claimed. Certificates will be provided upon completion of the evaluation.

To obtain CME credit, please visit: http://bit.ly/2016ChabnerCMECredit

ACKNOWLEDGEMENTS
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AbbVie Inc.  Merrimack Pharmaceuticals, Inc.
AstraZeneca LP  Novartis Pharmaceuticals Corporation
Incyte Corporation  Pfizer Inc.

THE PHYSICIAN PAYMENTS SUNSHINE ACT (SUNSHINE ACT) COMPLIANCE
Effective August 1, 2013, The Centers for Medicare & Medicaid Services (CMS) required reporting of any direct or indirect payments made to any US Healthcare Professional by pharmaceutical and device manufacturers and applicable group purchasing organizations (GPOs) under its Open Payments program.

STO will comply with the requirements of those companies who have provided support for this CME activity regarding the appropriate reporting of all direct and indirect payments to healthcare professionals.
In accordance with ACCME Standards for Commercial Support and the policies of the Society for Translational Oncology (STO), persons participating in this activity who are in a position to control the content have disclosed all relevant relationships with any commercial interest. On the basis of disclosed information, STO identifies and resolves all conflicts of interest before delivery of content.

STO staff involved in the development of this activity have nothing to disclose.

The following faculty have indicated that they have had relevant financial relationship(s) with a commercial interest within the past 12 months or that they have nothing to disclose.

CME Faculty Disclosures

Philippe Armand, MD, PhD  
Consultant/advisory role: Bristol-Myers Squibb, Merck, Infinity  
Research Funding: Novartis, Bristol-Myers Squibb, Merck, Pfizer, Affimed, Sequenta

Aditya Bardia, MD, MPH  
Nothing to disclose

Susan Bates, MD  
To be announced

Joseph R. Bertino, MD  
Nothing to disclose

Darrell Borger, PhD  
To be announced

Bradley E. Bernstein, MD, PhD  
Ownership interests: Syros Pharmaceuticals, Fulcrum Pharma PLC, HiFiBiO

Bruce A. Chabner, MD  
Consultant/advisory role: PharmaMar, EMD Serono, Inc., Viamet Pharmaceuticals, Inc., Eli Lilly  
Expert testimony: Eli Lilly  
Ownership interests: AbbVie, BioMarin, Celgene, Gilead, Ignata, PharmaMar, Seattle Genetics, Regeneron

Ryan B. Corcoran, MD, PhD  
Consultant/advisory role: Astex Pharmaceuticals, Avidity Biosciences LLC, GlaxoSmithKline, Merrimack Pharmaceuticals, Inc., N-of-One, Inc., Taiho Oncology  
Research Funding: AstraZeneca

Leif Ellisen, MD, PhD  
To be announced

Antonio “Tito” Fojo, MD, PhD  
To be announced

Justin F. Gainor, MD  
To be announced

Manish K. Gala, MD  
Ownership interests: New Amsterdam Genomics, Inc. (equity and co-founder)

Raj Gopal, MD, PhD  
Nothing to disclose

Nathanael Gray, PhD  
Consultant/advisory role: Syros Pharmaceuticals, C4 Pharmaceuticals, Petra Pharma Corporation  
Research Funding: Astellas, Janssen  
Ownership interests: Syros Pharmaceuticals, C4 Pharmaceuticals, Petra Pharma Corporation

David Liu, MD, MPH  
Nothing to disclose

Marcela Maus, MD, PhD  
Intellectual property rights/inventor or patent holder: Novartis (Inventor on licensed patents)

Neal Rosen, MD, PhD  
To be announced

Richard M. Stone, MD  
Consultant/advisory role: AbbVie, Agio, Celator Pharmaceuticals, Celgene, Janssen, Juno Therapeutics, Karyopharm, Merck, Novartis, Pfizer, Roche, Seattle Genetics, Sunesis Pharmaceuticals, Xenetic Biosciences, Inc.

David B. Sykes, MD, PhD  
Nothing to disclose

Zuzana Tothova, MD, PhD  
Nothing to disclose

Catherine J. Wu, MD  
Consultant/advisory role: Neon Therapeutics (co-founder)

Non-CME Faculty Disclosures

Michael R. Boyd, MD, PhD  
Intellectual property rights/inventor or patent holder: Co-inventor of technology during presentation  
Research Funding: NCI/NIH SBIR  
Ownership interests: ADT Pharmaceuticals, Inc.  
Other: President and CEO of ADT Pharmaceuticals, Inc.

Jeffrey Engelman, MD, PhD  
To be announced

Oleg Nodelman  
Nothing to disclose

Roger Kitterman  
To be announced
Learning Objectives

After successful completion of this educational activity, participants should be able to:

- Describe the relationship between epigenetic lesions and genetic lesions in tumorigenesis.
- Cite and discuss potential therapeutic strategies that target epigenetic regulatory mechanisms and developmental programs.
- Describe the difference between a small molecule degrader versus an inhibitor.
- Compare intervention strategies that involve degradation versus inhibition.
- Explain the need for therapies targeting hyperactive Ras.
- Describe a strategy for developing a Ras-directed therapy.
- Discuss adaptive feedback reactivation as a potential resistance mechanism in KRAS mutant cancers.
- Cite the different classes of MAPK pathway inhibitors and their differing effects on MAPK signaling.
- Explain the rationale for the development of the FLT3 inhibitors.
- Identify the FLT3 inhibitor most likely to move forward first.
- Describe the pre-clinical and clinical data supporting PD-1 blockade in classical Hodgkin lymphoma.
- Delineate the possible roles which checkpoint blockade may have in the treatment of lymphoma.
- Compare and contrast differentiation therapy with traditional cytotoxic chemotherapy.
- Explain the differential sensitivity exhibited by leukemia cells and normal cells to metabolic enzyme inhibitors.
- Describe the genomic basis of oncocytes.
- Discuss the role of complex I in mitochondrial oxidative phosphorylation and how complex I dysfunction may contribute to tumor metabolism.
- Explain the contribution of germline mutations in the predisposition to hereditary and sporadic cancers.
- Describe the important therapeutic consequences of germline mutations.
- Discuss the importance of precision medicine in chemotherapy and how it may change management.
- Discuss markers and mechanisms of susceptibility and resistance to platinum-based chemotherapy in muscle-invasive bladder cancer.
- Describe the current limitations of preclinical models of myeloid malignancies and ways to overcome them.
- Explain how multiplex CRISPR targeting of human hematopoietic stem and progenitor cells can not only recapitulate genetic complexity but also therapeutic vulnerabilities of myeloid malignancies.
- Describe the types of biotech companies and assets that could appear attractive to investors.
- Describe the rationale for cell-based immunotherapy.
- Identify the scientific basis of T cells engineered with chimeric antigen receptors and T cell receptors.
- Explain the mechanisms and types of toxicities that can be expected with T cell therapies, along with current management strategies.
- Describe the impact of clonal evolution on therapeutic response in CLL and cancer in general.
- Explain the concept of neoantigens.
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Select presentations from this year's Colloquium will be available on the STO website early 2017.

Visit http://STO-Online.org/Chabner-Colloquia for new videos or watch the lectures from last year

Featured Presentations and Summaries - 2015

The Changing Nature of Phase I Trials
Lillian L. Siu, MD
Princess Margaret Cancer Center, University of Toronto

Monitoring Cancer Through Circulating Tumor Cells
Daniel A. Haber, MD, PhD
Massachusetts General Hospital Cancer Center, Harvard Medical School

Oncology Drug Development in the Era of Precision Medicine: FDA Perspective
Gideon M. Blumenthal, MD
Office of Hematology and Oncology Products, Center for Drug Evaluation and Research, U.S. Food and Drug Administration (FDA)

Preferentially Targeting the Malignant Hematopoietic Clone in Myeloproliferative Neoplasms (MPN)
Ann Mullally, MD
Dana-Farber/Brigham and Women’s Cancer Center, Harvard Medical School
Special Series from The Oncologist

**Precision Medicine Clinic**
Brief reports of interesting and teachable molecular cases for the general oncologist.

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**Value in Cancer Care**
Opinion-based articles to provide a broad view of all aspects associated with the costs of treating cancer.

ValueInCancerCare.TheOncologist.com

**Global Health**
Studies on cancer concerns from countries and populations where data has historically been limited.

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