アクセスマップ

会　場：六本木アカデミーヒルズ49

49階へのエレベーターは、エントランスフロア（2階）
右奥のエレベーターホールにございます。

宿泊地：グランドハイアット東京

タクシー（「タクシーベイB」とお申し付けください。）
羽田空港から約40分
品川駅・東京駅からは約20分
道路状況により混雑する場合がございます。余裕を持ってお越しください。
到着後、防災センター隣のエスカレーターで2階に上がりますと後方に
「アカデミーヒルズ」の入り口があります。

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日比谷線　六本木駅・徒歩3分（コンコースにて直結）
大江戸線　六本木駅・徒歩6分、麻布十番駅・徒歩9分
南北線　麻布十番駅・徒歩12分
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CHAAO Chugai Academy for Advanced Oncology

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E-mail：chaao@chaao.or.jp　URL：http://www.chaao.or.jp/

Program

INTERNATIONAL ACADEMY FOR ADVANCED ONCOLOGY

IAAO

国際フォーラム2016

Dynamisms in Innovations for Precision Medicine and Novel Approaches for Cancer Therapy

2016年7月22日（金）12:55~17:30
23日（土）　8:45~15:25
六本木アカデミーヒルズ49

CHAAO Chugai Academy for Advanced Oncology

Dynamisms in Innovations for Precision Medicine and Novel Approaches for Cancer Therapy

Friday, Jul 22, 2016　12:55 ～ 17:30

Opening Remarks

12:55 Osamu Nagayama, Chairman (Chugai Academy for Advanced Oncology)

1. Cancer Genome Profiling

13:00 **Personalized Cancer Detection and Monitoring Using Deep Sequencing of Circulating Tumor DNA**
Speaker: Ash A. Alizadeh (Stanford School of Medicine, USA)
Chair/Moderator: Kiyohiko Hatake (Cancer Institute Hospital, Japan)

13:50 **Multiplex and Whole-Genome Approaches Testing for Germline Cancer Susceptibility Gene Mutations**
Speaker: James M. Ford (Stanford School of Medicine, USA)
Chair/Moderator: Mitsuaki Yoshida (Japanese Foundation For Cancer Research, Japan)

14:40 **Challenges of Comprehensive Genomic Profiling, Immunotherapy and the Liquid Biopsy to Inform Treatment Decisions for Patients with Cancer**
Speaker: Philip J. Stephens (Foundation Medicine Inc., USA)
Chair/Moderator: Hiroyuki Mano (The University of Tokyo, Japan)

15:30 Break

2. Cancer Epigenetics

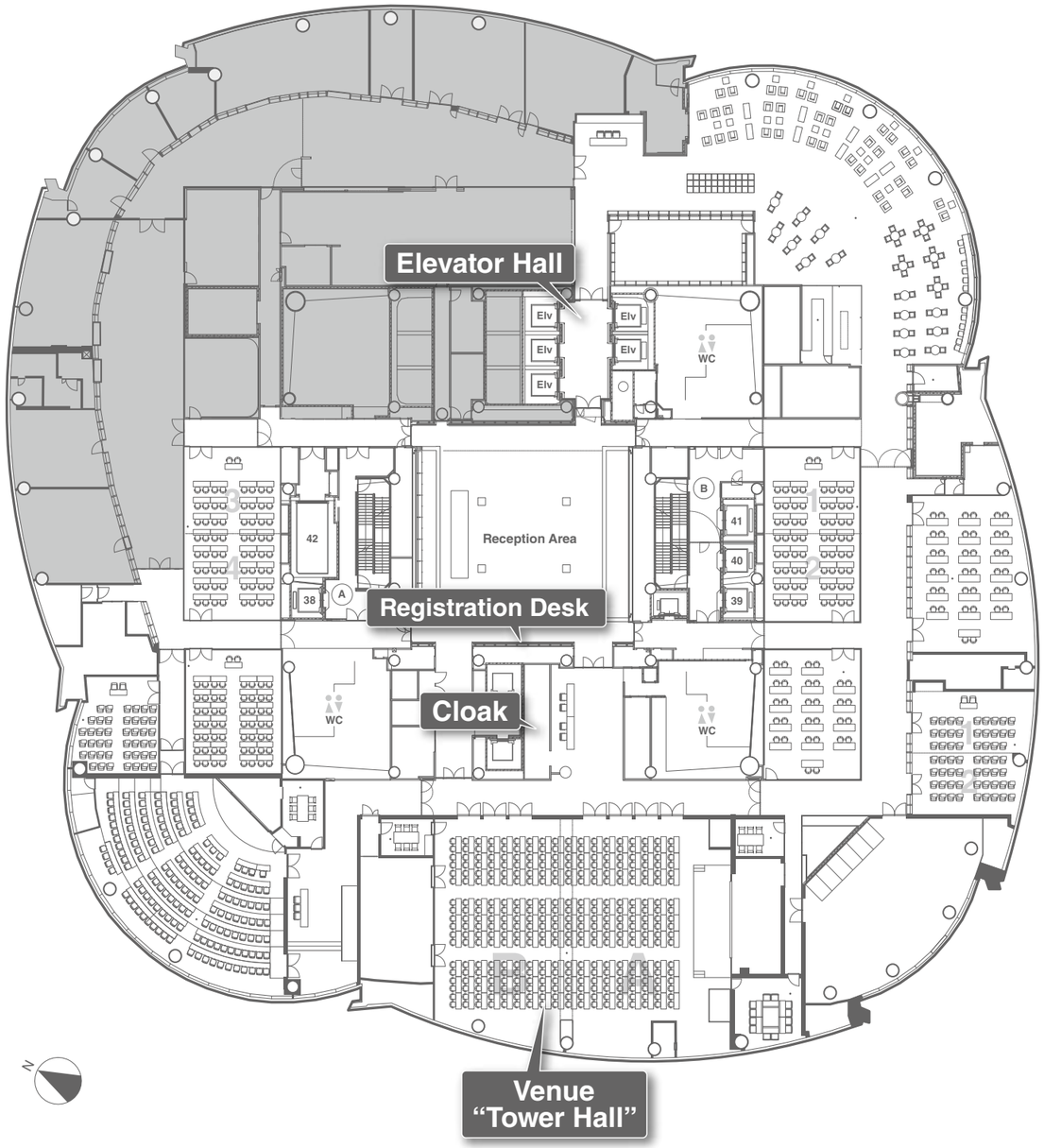
15:50 **The Cancer Epigenome – Scenarios for Designing Therapies**
Speaker: Stephen B. Baylin (Johns Hopkins University, USA)
Chair/Moderator: Chikashi Ishioka (Tohoku University, Japan)

16:40 **Exploiting the Functions of PARP for Novel Therapeutic Strategies in Cancer**
Speaker: Feyruz V. Rassool (University of Maryland School of Medicine, USA)
Chair/Moderator: Masakazu Toi (Kyoto University, Japan)

17:30 **RECEPTION *at Roppongi Hills Club, 51F***

オフィシャル言語 ›› 英　語
ドレスコード ›› ビジネスカジュアル

国際フォーラム2016 講演会場：六本木アカデミーヒルズ49（49階）



ウエルカム レセプション（7月22日17:30 ～）：六本木ヒルズクラブ（51階）
51階へはエレベーターをご利用ください。

Saturday, Jul 23, 2016 8:45 ～ 15:25

3. Advances in Cancer Biology

8:45
- **Video Message from Prof. Weinberg**
- **The Molecular Control of Secondary Tumor Formation: EMT, Experimental Tumor Initiation and Metastatic Colonization**

Speaker: Tsukasa Shibue (Massachusetts Institute of Technology, USA)
Chair/Moderator: Kohei Miyazono (The University of Tokyo, Japan)

9:40 **Organoid Models of Gastrointestinal Cancers**
Speaker: Calvin J. Kuo (Stanford School of Medicine, USA)
Chair/Moderator: Nagahiro Saijo (Japanese Society of Medical Oncology, Japan)

10:25 **Break**

4. Advances in Cancer Therapy

10:45 **New Advances in PDAC Treatment**
Speaker: Manuel Hidalgo (Harvard Medical School, USA)
Chair/Moderator: Yuko Kitagawa (Keio University, Japan)

11:30 **Inhibiting RAS Tumors**
Speaker: Neal Rosen (Memorial Sloan-Kettering Cancer Center, USA)
Chair/Moderator: Hitoshi Nakagama (National Cancer Center, Japan)

12:15 **Lunch**

5. Novel Approaches for Cancer treatment

12:50 **Personalized Cancer Medicine in a Universal Healthcare System**
Speaker: Patrick G. Johnston (Queen's University Belfast, UK)
Chair/Moderator: Yasuhiro Fujiwara (National Cancer Center, Japan)

13:35 **MicroRNA as Versatile Weapon for Diagnostics and Therapeutics in Oncology**
Speaker: Hitoshi Nakagama (National Cancer Center, Japan)
Chair/Moderator: Patrick G. Johnston (Queen's University Belfast, UK)

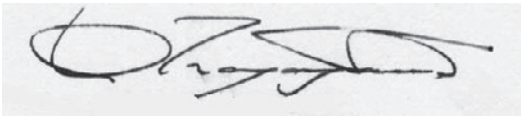
14:20 **Cutting Livers and Genes**
Speaker: Kenneth K. Tanabe (Harvard Medical School, USA)
Chair/Moderator: Ryuzo Ueda (Aichi Medical University, Japan)

6. Future Direction of Cancer Research and Therapy

15:05 **The Landscape for Future Progress Against Cancer**
Speaker: Bruce A. Chabner (Harvard Medical School, USA)
Chair/Moderator: Makoto Ogawa (Aichi Cancer Center, Japan)

Opening Remarks

Osamu Nagayama
Chairman, Chugai Academy for Advanced Oncology
(CHAAO), Incorporated Association



As chairman of Chugai Academy for Advanced Oncology (CHAAO), it is my greatest pleasure and honor to welcome all of the distinguished guests, experts and investigators -- both from overseas and Japan -- to the International Academy for Advanced Oncology (IAAO) 2016.

Each year at IAAO, I am delighted to see that attendance continues to grow larger than the previous time. This year--our seventh meeting--is no exception, with more than 230 people in attendance. We have always been encouraged by the very positive feedback we receive from participants, and feel extremely happy and honored to know that more and more experts are interested in and value this event.

The exceptional program for this year's forum was organized through the active discussions and hard work of the IAAO Advisory Board members, namely Dr. Chabner, Dr. Johnston, Dr. Fujiwara, Dr. Hatake, Dr. Ishioka, Dr. Kitagawa, Dr. Mano, Dr. Toi and Dr. Ueda. I sincerely appreciate and respect the leadership and dedication of these nine board members.

The theme of this year's meeting is "Dynamisms in Innovations for Precision Medicine and Novel Approaches for Cancer Therapy". As in the previous meetings, the program will focus on cancer genomics and epi-genomics, which are the essential research fields in the practice of precision medicine. We will also address a broad range of topics including cancer biology for metastasis, state-of-the-art technologies such as cancer organoid models, oncolytic virus and RNA for cancer therapy, and the future of molecular targeted therapy and pancreatic cancer.

We are very fortunate to have so many world-class experts here to share their experience, knowledge, and insights. I am confident this will spark extensive and wide-ranging discussions. I encourage everyone to seize an opportunity in each session to actively engage in the discussions. Your comment or insight will be found truly valuable to someone else here at the forum.

In closing, allow me to once again thank you for participating this year. CHAAO's sincere wish is that this two-day event will be an extremely informative and fruitful time for everyone. Our ultimate goal is for the IAAO Forum to become an important venue for the exchange of information that advances the fight against cancer and empowers patients to deal with their treatment proactively and with hope.

Session 1

Cancer Genome Profiling

1-1. Personalized Cancer Detection and Monitoring Using Deep Sequencing of Circulating Tumor DNA

Speaker: Ash A. Alizadeh (Stanford School of Medicine, USA)

1-2. Multiplex and Whole-Genome Approaches Testing for Germline Cancer Susceptibility Gene Mutations

Speaker: James M. Ford (Stanford School of Medicine, USA)

1-3. Challenges of Comprehensive Genomic Profiling, Immunotherapy and the Liquid Biopsy to Inform Treatment Decisions for Patients with Cancer

Speaker: Philip J. Stephens (Foundation Medicine Inc., USA)

Title: Personalized Cancer Detection and Monitoring Using Deep Sequencing of Circulating Tumor DNA

Ash A. Alizadeh, MD, PhD
Assistant Professor, Medicine, Stanford School of Medicine, USA

Speaker

Kiyohiko Hatake, MD, PhD
Chief, Department of Hematology, Cancer Institute Hospital, Japanese Foundation for Cancer Research, Japan

Chairman

Dr. Ash A. Alizadeh

Profile

Dr. Alizadeh completed his PhD in Biophysics and MD at Stanford in 2003, under mentorship of Pat Brown (Stanford Biochemistry) and Lou Staudt (NCI/NIH). Supported by the Howard Hughes Medical Institute (HHMI) and NIH Medical Scientist Training Program (MSTP), he built the Lymphochip DNA microarray platform. He and his colleagues used this platform to profile gene expression in diffuse large B cell lymphoma (DLBCL), and many other tumors. This work led to the discovery of DLBCL subtypes, and a framework for their cell of origin.

Following his clinical subspecialty Hematology and Medical Oncology training at Stanford, he completed his postdoctoral studies with Ron Levy and Irv Weissman. During this time he worked on molecular outcome prediction in DLBCL, developing a

statistical framework for identification of small numbers of genes for robust risk stratification and prognosis. Working with Irv Weissman, he identified CD47 expression as an adverse prognostic factor in non-Hodgkin lymphomas, and a therapeutic target of novel monoclonal antibodies that synergize to eradicate tumors.

The Alizadeh lab studies genomic biomarkers of tumors, whether detected through biopsy of primary tissues, or non-invasively through monitoring blood using circulating tumor DNA (ctDNA). His group developed Cancer Personalized Profiling by deep Sequencing (CAPP-Seq) as a novel method for ctDNA detection, and developed a novel cell deconvolution framework (CIBERSORT). His group applies such genomic tools for early detection, diagnosis, and monitoring of diverse tumors. In this effort, his group builds and employ tools from functional genomics, computational biology, molecular genetics, and mouse models.

Recent Publications

Newman AM, Lovejoy AF, Klass DM, Kurtz DM, Chabon JJ, Scherer F, Stehr H, Liu CL, Bratman SV, Say C, Zhou L, Carter JN, West RB, Sledge GW Jr, Shrager JB, Loo BW Jr, Neal JW, Wakelee HA, Diehn M, **Alizadeh AA.** Integrated digital error suppression for improved detection of circulating tumor DNA. *Nat Biotechnol.* 2016 May; 34(5):547-55.

Chaudhuri AA, Binkley MS, Osmundson EC, **Alizadeh AA**, Diehn M. Predicting Radiotherapy Responses and Treatment Outcomes Through Analysis of Circulating Tumor DNA. *Semin Radiat Oncol.* 2015 Oct; 25(4):305-12.

Karmakar S, Harcourt EM, Hewings DS, Scherer F, Lovejoy AF, Kurtz DM, Ehrenschwender T, Barandun LJ, Roost C, **Alizadeh AA**, Kool ET. Organocatalytic removal of formaldehyde adducts from RNA and DNA bases. *Nat Chem*. 2015 Sep; 7(9):752-8.

Gentles AJ, Bratman SV, Lee LJ, Harris JP, Feng W, Nair RV, Shultz DB, Nair VS, Hoang CD, West RB, Plevritis SK, **Alizadeh AA**, Diehn M. Integrating Tumor and Stromal Gene Expression Signatures With Clinical Indices for Survival Stratification of Early-Stage Non-Small Cell Lung Cancer. *J Natl Cancer Inst.* 2015 Aug 18; 107(10).

Alizadeh AA, Aranda V, Bardelli A, Blanpain C, Bock C, Borowski C, Caldas C, Califano A, Doherty M, Elsner M, Esteller M, Fitzgerald R, Korbel JO, Lichter P, Mason CE, Navin N, Pe'er D, Polyak K, Roberts CW, Siu L, Snyder A, Stower H, Swanton C, Verhaak RG, Zenklusen JC, Zuber J, Zucman-Rossi J. Toward understanding and exploiting tumor heterogeneity. *Nat Med.* 2015 Aug; 21(8):846-53

Title: Multiplex and Whole-Genome Approaches Testing for Germline Cancer Susceptibility Gene Mutations

James M. Ford, M.D.
Associate Professor of Medicine, Pediatrics and Genetics
Director, Stanford Program for Clinical Cancer Genetics
Stanford School of Medicine, USA

Speaker

Mitsuaki Yoshida, PhD
Research Unit, Japanese Foundation of
Cancer Research, Japan
Professor Emeritus, The University of Tokyo, Japan

Chairman

Dr. James M. Ford

Profile

Dr. Ford is a medical oncologist and geneticist at Stanford, devoted to studying the genetic basis of breast and GI cancer development, treatment and prevention in families and populations. Dr. Ford graduated in 1984 from Yale University where he later received his M.D. degree from the School of Medicine in 1989. He was an internal medicine resident and oncology fellow at Stanford, and joined the faculty in 1998. He is currently Associate Professor of Medicine (Oncology) and Genetics, and Director of the Stanford Cancer Genetics Clinic and the Cancer Genomics Program at the Stanford University Medical Center.

Dr. Ford's research goals are to understand the role of genetic changes in cancer genes in the risk and development of common cancers. He studies the role of the p53 and BRCA1 tumor suppressor genes in DNA repair. Dr. Ford's clinical interests

include the diagnosis and treatment of patients with a hereditary pre-disposition to cancer. In addition to the Stanford Cancer Genetics Clinic, that sees patients for genetic counseling and testing of hereditary cancer syndromes for prevention and early diagnosis of cancer in high-risk individuals and populations, he directs a program for high-throughput genomic analyses of tumors for personalized targeted treatments. Dr. Ford was recently named the founding Editor-in-Chief of the journal JCO Precision Oncology.

Recent Publications

Kwong A, Shin VY, Au CH, Law FB, Ho DN, Ip BK, Wong AT, Lau SS, To RM, Choy G, **Ford JM**, Ma ES, Chan TL. Detection of Germline Mutation in Hereditary Breast and/or Ovarian Cancers by Next-Generation Sequencing on a Four-Gene Panel. *J Mol Diagn*. 2016 May 5.

Telli ML, Timms KM, Reid J, Hennessy B, Mills GB, Jensen KC, Szallasi Z, Barry WT, Winer EP, Tung NM, Isakoff SJ, Ryan PD, Greene-Colozzi A, Gutin A, Sangale Z, Iliev D, Neff C, Abkevich V, Jones JT, Lanchbury JS, Hartman AR, Garber JE, **Ford JM**, Silver DP, Richardson AL. Homologous Recombination Deficiency (HRD) Score Predicts Response to Platinum-Containing Neoadjuvant Chemotherapy in Patients with Triple-Negative Breast Cancer. *Clin Cancer Res*. 2016 Mar 8.

Liu IH, **Ford JM**, Kunz PL. DNA-repair defects in pancreatic neuroendocrine tumors and potential clinical applications.*Cancer Treat Rev*. 2016 Mar; 44:1-9.

Kwong A, Shin VY, Ho JC, Kang E, Nakamura S, Teo SH, Lee AS, Sng JH, Ginsburg OM, Kurian AW, Weitzel JN, Siu MT, Law FB, Chan TL, Narod SA, **Ford JM**, Ma ES, Kim SW. Comprehensive spectrum of BRCA1 and BRCA2 deleterious mutations in breast cancer in Asian countries. *J Med Genet*. 2016 Jan; 53(1):15-23.

Costa HA, Leitner MG, Sos ML, Mavrantoni A, Rychkova A, Johnson JR, Newton BW, Yee MC, De La Vega FM, **Ford JM**, Krogan NJ, Shokat KM, Oliver D, Halaszovich CR, Bustamante CD. Discovery and functional characterization of a neomorphic PTEN mutation. *Proc Natl Acad Sci U S A*. 2015 Nov 10; 112(45):13976-81.

Robson ME, Bradbury AR, Arun B, Domchek SM, **Ford JM**, Hampel HL, Lipkin SM, Syngal S, Wollins DS, Lindor NM. American Society of Clinical Oncology Policy Statement Update: Genetic and Genomic Testing for Cancer Susceptibility. *J Clin Oncol*. 2015 Nov 1; 33(31):3660-7.

Kwong A, Chen J, Shin VY, Ho JC, Law FB, Au CH, Chan TL, Ma ES, **Ford JM**. The importance of analysis of long-range rearrangement of BRCA1 and BRCA2 in genetic diagnosis of familial breast cancer. *Cancer Genet*. 2015 Sep; 208(9):448-54.

Title: Challenges of Comprehensive Genomic Profiling, Immunotherapy and the Liquid Biopsy to Inform Treatment Decisions for Patients with Cancer

Philip J. Stephens, PhD
Chief Scientific Officer
Vice president of Cancer Genomics
Foundation Medicine, Inc. USA

Speaker

Hiroyuki Mano, MD, PhD
Professor, Department of Cellular Signaling, Graduate School of Medicine, The University of Tokyo, Japan

Chairman

Dr. Philip J. Stephens

Profile

Dr. Stephens studied at Oxford University in the United Kingdom, where he received his Ph.D. Now, as vice president of Cancer Genomics, Dr. Stephens leads research and development at Foundation Medicine. Dr. Stephens is a world-renowned expert in next generation sequencing and cancer genome analysis and has authored numerous publications in high-profile, peer-reviewed journals. Since joining Foundation Medicine in early 2011, Dr. Stephens has overseen the development of FoundationOne™, a comprehensive next generation sequencing diagnostic assay that accurately profiles the entire coding sequence of over 200 cancer-related genes in the CLIA setting. Prior to joining Foundation Medicine, he held various senior research positions during his 11-year tenure with the Cancer Genome Project at the Wellcome Trust Sanger Institute in the UK. During this time, Dr. Stephens was a member of the team that sequenced the

first two comprehensive melanoma and lung cancer genomes, and was co-lead author in the discovery of BRAF in melanoma, ERBB2 in lung cancer, and identified chromothripsis as a novel oncogenic mechanism.

Recent Publications

Joshi M, Vasekar M, Grivas P, Emamekhoo H, Hsu J, Miller VA, **Stephens PJ**, Ali SM, Ross JS, Zhu J, Warrick J, Drabick JJ, Holder SL, Kaag M, Li M, Pal SK. Relationship of smoking status to genomic profile, chemotherapy response and clinical outcome in patients with advanced urothelial carcinoma. *Oncotarget.* 2016 May 18.

Heilmann AM, Subbiah V, Wang K, Sun JX, Elvin JA, Chmielecki J, Sherman SI, Murthy R, Busaidy NL, Subbiah I, Yelensky R, Nangia C, Vergilio JA, Khan SA, Erlich RL, Lipson D, Ross JS, Miller VA, Shah MH, Ali SM, **Stephens PJ**. Comprehensive Genomic Profiling of Clinically Advanced Medullary Thyroid Carcinoma. *Oncology*. 2016 May 21.

Suh JH, Johnson A, Albacker L, Wang K, Chmielecki J, Frampton G, Gay L, Elvin JA, Vergilio JA, Ali S, Miller VA, **Stephens PJ**, Ross JS. Comprehensive Genomic Profiling Facilitates Implementation of the National Comprehensive Cancer Network Guidelines for Lung Cancer Biomarker Testing and Identifies Patients Who May Benefit From Enrollment in Mechanism-Driven Clinical Trials. *Oncologist*. 2016 May 5.

Konduri K, Gallant JN, Chae YK, Giles FJ, Gitlitz BJ, Gowen K, Ichihara E, Owonikoko TK, Peddareddigari V, Ramalingam SS, Reddy SK, Eaby-Sandy B, Vavalà T, Whiteley A, Chen H, Yan Y, Sheehan JH, Meiler J, Morosini D, Ross JS, **Stephens PJ**, Miller VA, Ali SM, Lovly CM. EGFR Fusions as Novel Therapeutic Targets in Lung Cancer. *Cancer Discov.* 2016 Apr 21.

Yakirevich E, Resnick MB, Mangray S, Wheeler M, Jackson CL, Lombardo KA, Lee J, Kim KM, Gill AJ, Wang K, Gowen K, Sun J, Miller VA, **Stephens PJ**, Ali SM, Ross JS, Safran H. Oncogenic ALK Fusion in Rare and Aggressive Subtype of Colorectal Adenocarcinoma as a Potential Therapeutic Target. *Clin Cancer Res*. 2016 Mar 1.

Schrock AB, Frampton GM, Herndon D, Greenbowe JR, Wang K, Lipson D, Yelensky R, Chalmers ZR, Chmielecki J, Elvin JA, Wollner M, Dvir A, Soussan-Gutman L, Bordoni R, Peled N, Braiteh F, Raez L, Erlich R, Ou SI, Mohamed M, Ross JS, **Stephens PJ**, Ali SM, Miller VA. Comprehensive Genomic Profiling Identifies Frequent Drug-Sensitive EGFR Exon 19 Deletions in NSCLC not Identified by Prior Molecular Testing.*Clin Cancer Res*. 2016 Mar 1.

Ross JS, Gay LM, Nozad S, Wang K, Ali SM, Boguniewicz A, Khaira D, Johnson A, Elvin JA, Vergilio JA, Suh J, Miller VA, **Stephens PJ**. Clinically advanced and metastatic pure mucinous carcinoma of the breast: a comprehensive genomic profiling study. *Breast Cancer Res Treat.* 2016 Jan; 155(2):405-13

Session 2

Cancer Epigenetics

2-1. The Cancer Epigenome – Scenarios for Designing Therapies

Speaker: Stephen B. Baylin (Johns Hopkins University, USA)

2-2. Exploiting the Functions of PARP for Novel Therapeutic Strategies in Cancer

Speaker: Feyruz V. Rassool (University of Maryland School of Medicine, USA)

Title: The Cancer Epigenome – Scenarios for Designing Therapies

Speaker

Stephen B. Baylin, MD
Deputy Director, The Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University, USA

Chairman

Chikashi Ishioka, MD
Professor, Institute of Development, Aging and Cancer, Tohoku University, Japan

Dr. Stephen B. Baylin

Profile

Dr. Baylin is the Deputy Director of The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins and the Virginia and D.K. Ludwig Professor of Oncology and Medicine. He is Chief of the Cancer Biology Division and Associate Director for Research of the Center. Born in 1942 in Durham, North Carolina, He attended Duke University, and earned his medical degree at its Medical School, where he completed his internship and first year residency in Internal Medicine. Then he worked for two years at the National Heart and Lung Institute of the National Institutes of Health (NIH). In 1971 he joined the departments of Oncology and Medicine at the Johns Hopkins University School of Medicine.

His research interests include cellular biology and genetics of cancer, specifically epigenetics or genetic modifications other than those in DNA that can affect cell behavior, and silencing of tumor suppressor genes and tumor progression. His research also includes the mechanisms through which variations in tumor cells derive,

and cell differentiation in cancers such as medullary thyroid carcinoma and small cell lung carcinoma.

In 2009, He was recognized by ScienceWatch.com as the most highly-cited scientist in the field of epigenetics. He and colleague Dr. James Herman occupy the top two spots on the citations list, which is a measure for scientific impact and influence. For the last 20 years, He and colleagues have studied the role of epigenetic gene silencing in the initiation and progression of human cancer. His work has emphasized the concept that, from initiation to progression, cancer is an epigenetic, not only a genetic disease.

The studies define gene DNA hypermethylation and associated transcriptional silencing as an alternative to mutations for gene inactivation. He and colleagues have been developing the translational implications of their work. They collaborate in studies aimed at deriving and implementing cancer biomarkers and therapeutic strategies for cancer. This work adds to the understanding of cancer biology, but the potential of the translational implications is to improve screening, diagnostic, prevention, and therapeutic approaches to cancer.

Recent Publications

Baylin SB. Jacob, Monod, the Lac Operon, and the PaJaMa Experiment-Gene Expression Circuitry Changing the Face of Cancer Research. *Cancer Res.* 2016 Apr 15; 76(8):2060-2

Baylin SB, Jones PA. Epigenetic Determinants of Cancer. *Cold Spring Harb Perspect Biol* 2016 May 18. pii: a019505

Chiappinelli KB, Zahnow CA, Ahuja N, **Baylin SB.** Combining Epigenetic and Immunotherapy to Combat Cancer. *Cancer Res*. 2016 Apr 1; 76 (7):1683-9.

Ahuja N, Sharma AR, **Baylin SB**. Epigenetic Therapeutics: A New Weapon in the War Against Cancer. *Annu Rev Med*. 2016; 67:73-89.

Chiappinelli KB, Strissel PL, Desrichard A, Li H, Henke C, Akman B, Hein A, Rote NS, Cope LM, Snyder A, Makarov V, Budhu S, Slamon DJ, Wolchok JD, Pardoll DM, Beckmann MW, Zahnow CA, Merghoub T, Chan TA, **Baylin SB**, Strick R. Inhibiting DNA Methylation Causes an Interferon Response in Cancer via dsRNA Including Endogenous Retroviruses. *Cell*. 2016 Feb 25; 164(5):1073.

Raynal NJ, Lee JT, Wang Y, Beaudry A, Madireddi P, Garriga J, Malouf GG, Dumont S, Dettman EJ, Gharibyan V, Ahmed S, Chung W, Childers WE, Abou-Gharbia M, Henry RA, Andrews AJ, Jelinek J, Cui Y, **Baylin SB**, Gill DL, Issa JP. Targeting Calcium Signaling Induces Epigenetic Reactivation of Tumor Suppressor Genes in Cancer. *Cancer Res*. 2016 Mar 15; 76(6):1494-505.

Title: Exploiting the Functions of PARP for Novel Therapeutic Strategies in Cancer

Feyruz V. Rassool, PhD
Associate Professor, Department of Radiation/Oncology, University of Maryland School of Medicine, Baltimore, USA

Speaker

Masakazu Toi, MD, PhD
Professor, Department of Surgery, Graduate School of Medicine, Kyoto University, Japan

Chairman

Dr. Feyruz V. Rassool

Profile

Dr. Rassool has been an Associate Professor at the University of Maryland, US, since 2005. Previously she was head of Genomic Instability at King's College Hospital in London. Her research focus is elucidating DNA damage and repair pathways and how they lead to genomic instability in myeloid malignancies and solid tumors. Her recent work has focused exploiting DNA repair abnormalities and targeting the intersection of epigenetic and DNA repair pathways, as therapeutic strategies in cancer.

She is an expert in DNA damage and repair in cancers and leukemias. She has spent more than 15 years studying the contribution of DNA damage and altered repair of DNA double strand breaks (DSBs) to genomic instability that leads to the progression of cancers and leukemias to more aggressive forms of disease and/or resistance to standard therapies. In particular, she has reported that cancer cells abnormally “upregulate” a highly error-prone DSB repair pathway, alternative non homologous

end-joining (ALT NHEJ), involving increased expression of DNA repair factor Poly (ADP)- ribose polymerase (PARP-1).

Defects in DNA damage response (DDR) are central to the pathogenesis of human malignancies. Thus, interference with DNA repair processes and blockage of DDR have emerged as important approaches in combination therapy against cancer. Given that DNA repair is a cancer survival mechanism, we are now exploring the therapeutic strategy of targeting DNA repair factors with altered expression in cancer. PARP expression is upregulated in several cancers, in particular those that are therapy resistant. We have effectively treated therapy-resistant derivatives of breast cancer and leukemias to a combination of PARP and DNA ligase III inhibitors. Most recently, our work has focused on the intersection of DNA repair and epigenetic pathways for therapeutic strategies in cancer. We have shown that PARP inhibitors synergize with DNMTi or HDACi to trap PARP in multiple cancers.

Positions and Employment

1994-1996	Research Associate, Section of Hematology/Oncology, University of Chicago, Chicago, US
1996-1998	Research Associate Assistant Professor, Section of Hematology/Oncology, Chicago, US
1998-2004	Lecturer, Department of Hematology, King's College London, London, UK
2005-present	Associate Professor, Department of Radiation/Oncology, University of Maryland, Baltimore, US.
2011-2012	Interim Director of Radiobiology

Recent Publications

Robert C, Nagaria PK, Pawar N, Adewuyi A, Gojo I, Meyers DJ, Cole PA, **Rassool FV**. Histone deacetylase inhibitors decrease NHEJ both by acetylation of repair factors and trapping of PARP1 at DNA double-strand breaks in chromatin. *Leuk Res*. 2016 Jun; 45:14-23.

Muvarak N, Kelley S, Robert C, Baer MR, Perrotti D, Gambacorti-Passerini C, Civin C, Scheibner K, **Rassool FV**. c-MYC Generates Repair Errors via Increased Transcription of Alternative-NHEJ Factors, LIG3 and PARP1, in Tyrosine Kinase-Activated Leukemias. *Mol Cancer Res*. 2015 Apr; 13(4):699-712.

Lapidus RG, Carter-Cooper BA, Sadowska M, Choi EY, Wonodi O, Muvarak N, Natarajan K, Pidugu LS, Jaiswal A, Toth EA, **Rassool FV**, Etemadi A, Sausville EA, Baer MR, Emadi A. Hydroxylated Dimeric Naphthoquinones Increase the Generation of Reactive Oxygen Species, Induce Apoptosis of Acute Myeloid Leukemia Cells and Are Not Substrates of the Multidrug Resistance Proteins ABCB1 and ABCG2. *Pharmaceuticals (Basel)*. 2016 Jan 19; 9(1).

Khatri R, Shah P, Guha R, **Rassool FV**, Tomkinson AE, Brodie A, Jaiswal AK. Aromatase Inhibitor-Mediated Downregulation of INrf2 (Keap1) Leads to Increased Nrf2 and Resistance in Breast Cancer. *Mol Cancer Ther.* 2015 Jul; 14(7):1728-37.

Session 3

Advances in Cancer Biology

3-1. Video Message from Prof. Weinberg
The Molecular Control of Secondary Tumor Formation: EMT, Experimental Tumor Initiation and Metastatic Colonization

Speaker: Tsukasa Shibue (Massachusetts Institute of Technology, USA)

3-2. Organoid Models of Gastrointestinal Cancers

Speaker: Calvin J. Kuo (Stanford School of Medicine, USA)

Title: The Molecular Control of Secondary Tumor Formation: EMT, Experimental Tumor Initiation and Metastatic Colonization

Tsukasa Shibue, MD, PhD
Postdoctoral Researcher at Prof. Bob Weinberg Lab,
Massachusetts Institute of Technology, USA

Speaker

Kohei Miyazono, MD, PhD
Professor and Chair, Department of Molecular Pathology,
Graduate School of Medicine, The University of Tokyo,
Japan

Chairman

Dr. Tsukasa Sibue

Profile

Dr. Shibue was brought up in Tokyo and graduated from the Medical School in the University of Tokyo in 2000. Right after obtaining his medical degree, he started his Ph.D. study with Prof. Tadatsugu Taniguchi in the University of Tokyo, where he studied the function of pro-apoptotic protein Noxa, whose expression in transcriptionally induced by the tumor suppressor p53. In 2005, he came to Whitehead Institute in Boston as a postdoctoral researcher. Since then, under the supervision of Prof. Bob Weinberg, he has been studying the cellular and biochemical bases underlying the process of cancer metastases, doing so with particular focus on understanding the behaviors of carcinoma cells after their dissemination to foreign tissues.

Recent Publications

Mani SA, Guo W, Liao MJ, Eaton EN, Ayyanan A, Zhou AY, Brooks M, Reinhard F, Zhang CC, Shipitsin M, Campbell LL, Polyak K, Brisken C, Yang J, Weinberg RA. The epithelial-mesenchymal transition generates cells with properties of stem cells. *Cell.* 2008; 133(4):704-15.

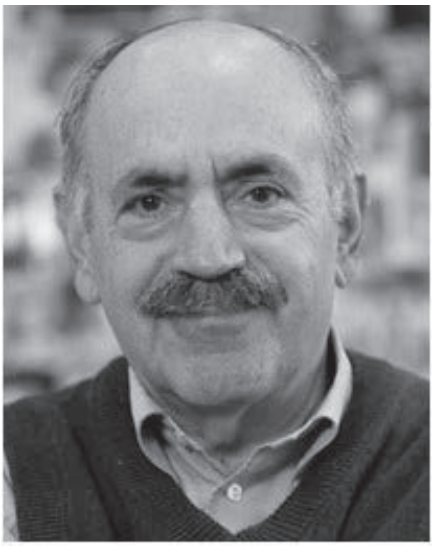
Guo W, Keckesova Z, Donaher JL, **Shibue T**, Tischler V, Reinhardt F, Itzkovitz S, Noske A, Zurrer-Hardi U, Bell G, Tam WL, Mani SA, van Oudenaarden A, Weinberg RA. Slug and Sox9 cooperatively determine the mammary stem cell state. *Cell*. 2012; 148(5):1015-28.

Shibue T, Brooks MW, Inan MF, Reinhardt F, Weinberg RA. The outgrowth of micrometastases is enabled by the formationn of filopodium-like protrusions. *Cancer Discov*. 2012; 2(8):706-21.

Shibue T, Brooks MW, Weinberg RA. An integrin-linked machinery of cytoskeletal regulation that enables experimental tumor initiation and metastatic colonization. *Cancer Cel*l. 2013; 24(2):481-98.

Ye X, Tam WL, **Shibue T**, Kaygusuz Y, Reinhardt F, Ng Eaton E, Weinberg RA. Distinct EMT programs control normal mammary stem cells and tumour-initiating cells. *Nature*. 2015; 525(7568):256-60.

Video Message from Prof. Weinberg



Robert A. Weinberg, PhD
Daniel K. Ludwig Professor for Cancer Research; Member, Whitehead Institute

Bob Weinberg is a Founding Member of the Whitehead Institute for Biomedical Research and Professor of Biology at the Massachusetts Institute of Technology. The Weinberg lab is known for its discoveries of the first human oncogene – the ras oncogene that causes normal cells to form tumors, and the isolation of the first known tumor suppressor gene - the Rb gene.

Title: Organoid Models of Gastrointestinal Cancers

Speaker

Calvin J. Kuo, MD, PhD
Professor of Medicine (Hematology)
Professor of Chemical and Systems Biology, Stanford School of Medicine, USA
Co-lead, Cancer Biology Program, Stanford Cancer Center
Vice Chair for Basic and Translational Research, Department of Medicine, Stanford University, USA

Chairman

Nagahiro Saijo, MD, PhD
Executive Officer of Japanese Society of Medical Oncology, Japan

Dr. Calvin J. Kuo

Profile

Dr. Kuo has been an Associate/Assistant Professor of Medicine in the Hematology of Stanford University School of Medicine since 2001. He serves as Member of Scientific Advisory Board of Athenagen Inc. and CoMentis, Inc. Dr. Kuo serves as Member of Scientific and Clinical Advisory Board of OncoMed Pharmaceuticals Inc. He served as a Member of Scientific Advisory Board at Silence Therapeutics plc. He is principal investigator on numerous NIH grants. He served as Member of Scientific Advisory Board at Intradigm Corporation. He has published extensively in journals including Nature, Science, Cell and Nature Medicine and is an inventor on numerous issued and pending patents. He received junior faculty awards from the Burroughs Wellcome and Kimmel Foundations, and has been elected to the American Society for Clinical Investigation. He performed postdoctoral research at Harvard Children's Hospital. He received his A.B. from Harvard College and his M.D. and Ph.D. degree from Stanford University.

He is a hematologist in Stanford, California. He is currently licensed to practice medicine in California. He is affiliated with Stanford Health Care and VA Palo Alto Health Care System.

Recent Publications

Kuruvilla JG, Kim CK, Ghaleb AM, Bialkowska AB, **Kuo CJ**, Yang VW. Krüppel-like Factor 4 Modulates Development of BMI1(+) Intestinal Stem Cell-Derived Lineage Following γ-Radiation-Induced Gut Injury in Mice. *Stem Cell Reports*. 2016 Jun 14; 6(6):815-24.

Hsu JT, Wang CC, Le PH, Chen TH, **Kuo CJ**, Lin CJ, Chou WC, Yeh TS. Lymphocyte-to-monocyte ratios predict gastric cancer surgical outcomes. *J Surg Res*. 2016 May 15; 202(2):284-90.

Li X, Ootani A, **Kuo C**. An Air-Liquid Interface Culture System for 3D Organoid Culture of Diverse Primary Gastrointestinal Tissues. *Methods Mol Bio*l. 2016; 1422:33-40.

Noda M, Vallon M, **Kuo CJ**. The Wnt7's Tale: A story of an orphan who finds her tie to a famous family. *Cancer* Sci. 2016 May; 107(5):576-82.

Neal JT, **Kuo CJ**. Organoids as Models for Neoplastic Transformation. *Annu Rev Pathol*. 2016 May 23; 11:199-220

Zhang HC, **Kuo CJ**. Personalizing pancreatic cancer organoids with hPSCs. *Nat Med.* 2015 Nov; 21(11):1249-51.

DiMarco RL, Dewi RE, Bernal G, **Kuo C**, Heilshorn SC. Protein-engineered scaffolds for in vitro 3D culture of primary adult intestinal organoids. *Biomater Sci*. 2015 Oct 15; 3(10):1376-85.

Session 4

Advances in Cancer Therapy

4-1. New Advances in PDAC Treatment

Speaker: Manuel Hidalgo (Harvard Medical School, USA)

4-2. Inhibiting RAS Tumors

Speaker: Neal Rosen (Memorial Sloan-Kettering Cancer Center, USA)

Title: New Advances in PDAC Treatment

Speaker

Manuel Hidalgo, MD, PhD
Clinical Director of the Cancer Center and Chief of Hematology-Oncology, Beth Israel Deaconess Medical Center, Harvard Medical School, USA

Chairman

Yuko Kitagawa, MD, PhD
Professor, Department of Surgery, Graduate School of Medicine, Keio University, Japan

Dr. Manuel Hidalgo

Profile

Dr. Hidalgo, an internationally respected oncologist whose groundbreaking work in experimental cancer therapy and tumor model development has led to key advances in the treatment of pancreatic cancer, has been named Director of the Leon V. & Marilyn L. Rosenberg Clinical Cancer Center and Chief of the Division of Hematology-Oncology at Beth Israel Deaconess Medical Center (BIDMC). A native of Spain, He comes to BIDMC from the Centro Nacional de Investigaciones Oncologicas (Spanish National Cancer Center) where he serves as Director of the Clinical Research Program and Vice Director of Translational Research. He holds faculty positions at University CEU San Pablo and Johns Hopkins University.

He received his medical degree from the University of Navarra and his PhD from the University Autonoma of Madrid. He completed a fellowship in anticancer drug development at the University of Texas Health Science Center in San Antonio. In 2001, He joined Johns Hopkins as an associate professor and in 2003, became co-director of its newly created Gastrointestinal Cancer Program. He joined the Spanish National

Cancer Center in 2009. He is a founder of the Pancreatic Cancer Research Team (PCRT), a private nonprofit cooperative group dedicated to rapid drug development in pancreatic cancer.

Recent Publications

Ambrogio C, Gómez-López G, Falcone M, Vidal A, Nadal E, Crosetto N, Blasco RB, Fernández-Marcos PJ, Sánchez-Céspedes M, Ren X, Wang Z, Ding K, **Hidalgo M**, Serrano M, Villanueva A, Santamaría D, Barbacid M. Combined inhibition of DDR1 and Notch signaling is a therapeutic strategy for KRAS-driven lung adenocarcinoma. *Nat Med*. 2016 Mar; 22(3):270-7.

Kim H, Samuel S, Lopez-Casas P, Grizzle W, **Hidalgo M**, Kovar J, Oelschlager D, Zinn K, Warram J, Buchsbaum D. SPARC-Independent Delivery of Nab-Paclitaxel without Depleting Tumor Stroma in Patient-Derived Pancreatic Cancer Xenografts. *Mol Cancer Ther*. 2016 Apr; 15(4):680-8.

Kim H, Samuel S, Lopez-Casas P, Grizzle W, **Hidalgo M**, Kovar J, Oelschlager D, Zinn K, Warram J, Buchsbaum D.SPARC-Independent Delivery of Nab-Paclitaxel without Depleting Tumor Stroma in Patient-Derived Pancreatic Cancer Xenografts. *Mol Cancer Ther*. 2016 Apr; 15(4):680-8.

Xie T, Musteanu M, Lopez-Casas PP, Shields DJ, Olson P, Rejto PA, **Hidalgo M**. Whole Exome Sequencing of Rapid Autopsy Tumors and Xenograft Models Reveals Possible Driver Mutations Underlying Tumor Progression. *PLoS One*. 2015 Nov 10; 10(11):e0142631.

Gomez-Rubio P, Zock JP, Rava M, Marquez M, Sharp L, **Hidalgo M**, Carrato A, Ilzarbe L, Michalski C, Molero X, Farré A, Perea J, Greenhalf W, O'Rorke M, Tardón A, Gress T, Barberà V, Crnogorac-Jurcevic T, Domínguez-Muñoz E, Muñoz-Bellvís L, Alvarez-Urturi C, Balcells J, Barneo L, Costello E, Guillén-Ponce C, Kleeff J, Kong B, Lawlor R, Löhr M, Mora J, Murray L, O'Driscoll D, Peláez P, Poves I, Scarpa A, Real FX, Malats N; PanGenEU Study Investigators. Reduced risk of pancreatic cancer associated with asthma and nasal allergies. *Gut*. 2015 Dec 1. pii: gutjnl-2015-310442.

Hidalgo M, Plaza C, Musteanu M, Illei P, Brachmann CB, Heise C, Pierce D, Lopez-Casas PP, Menendez C, Tabernero J, Romano A, Wei X, Lopez-Rios F, Von Hoff DD. SPARC Expression Did Not Predict Efficacy of nab-Paclitaxel plus Gemcitabine or Gemcitabine Alone for Metastatic Pancreatic Cancer in an Exploratory Analysis of the Phase III MPACT Trial. *Clin Cancer Res*. 2015 Nov 1; 21(21):4811-8.

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Title: Inhibiting RAS Tumors

Neal Rosen, MD, PhD
Director, Center for Mechanism-Based Therapeutics
Enid A. Haupt Chair in Medical Oncology
Member, Program in Molecular Pharmacology and
Chemistry, Memorial Sloan-Kettering Cancer Center, USA

Speaker

Hitoshi Nakagama, MD, PhD
President, National Cancer Center, Japan

Chairman

Dr. Neal Rosen

Profile

Dr. Rosen is the Director of the Center for Mechanism-Based Therapeutics at Memorial Sloan-Kettering Cancer Center, where he is also a Member in the Program in Molecular Pharmacology and Chemistry and the incumbent of the Enid A Haupt Chair in Medical Oncology.

His major interests are the identification and study of the key molecular events and growth signaling pathways responsible for the development of human cancers, and the use of this information for the development of mechanism-based therapeutic strategies. He has played a leading role in the development of inhibitors of tyrosine kinasemediated signaling and has pioneered the concept that feedback reactivation of parallel signaling pathways is a common cause of adaptive resistance to selective pathway inhibitors.

Recent work from the Rosen laboratory included the elucidation of the mechanism whereby RAF inhibitors are selectively effective in mutant BRAF tumors. These mechanistic studies predicted several of the cellular mechanisms whereby tumors develop resistance to vemurafenib and other selective RAF inhibitors. This work, in addition to other recent studies by the Rosen laboratory on the consequences of relief

of negative feedback by oncoprotein inhibitors, has also led to multiple clinical trials of combination therapies at Memorial Sloan-Kettering and other cancer centers in the United States and internationally that have shown promising early results.

He received his undergraduate degree in chemistry from Columbia College and an MD/PhD in Molecular Biology from the Albert Einstein College of Medicine. He completed a residency in Internal Medicine at the Brigham and Women's Hospital, and postdoctoral training and a fellowship in Medical Oncology at the National Cancer Institute. He was on the senior staff of the Medicine Branch at the NCI prior to joining the faculty of Memorial Sloan-Kettering Cancer Center.

Recent Publications

Lito P, Solomon M, Li LS, Hansen R, **Rosen N**. Allele-specific inhibitors inactivate mutant KRAS G12C by a trapping mechanism. *Science*. 2016 Feb 5; 351(6273):604-8.

Diamond EL, Durham BH, Haroche J, Yao Z, Ma J, Parikh SA, Wang Z, Choi J, Kim E, Cohen-Aubart F, Lee SC, Gao Y, Micol JB, Campbell P, Walsh MP, Sylvester B, Dolgalev I, Aminova O, Heguy A, Zappile P, Nakitandwe J, Ganzel C, Dalton JD, Ellison DW, Estrada-Veras J, Lacouture M, Gahl WA, Stephens PJ, Miller VA, Ross JS, Ali SM, Briggs SR, Fasan O, Block J, Héritier S, Donadieu J, Solit DB, Hyman DM, Baselga J, Janku F, Taylor BS, Park CY, Amoura Z, Dogan A, Emile JF, **Rosen N**, Gruber TA, Abdel-Wahab O. Diverse and Targetable Kinase Alterations Drive Histiocytic Neoplasms. *Cancer Discov*. 2016 Feb; 6(2):154-65.

Rathkopf DE, Larson SM, Anand A, Morris MJ, Slovin SF, Shaffer DR, Heller G, Carver B, **Rosen N**, Scher HI. Everolimus combined with gefitinib in patients with metastatic castration-resistant prostate cancer: Phase 1/2 results and signaling pathway implications. *Cancer.* 2015 Nov 1; 121(21):3853-61.

Jhaveri K, Chandarlapaty S, Iyengar N, Morris PG, Corben AD, Patil S, Akram M, Towers R, Sakr RA, King TA, Norton L, **Rosen N**, Hudis C, Modi S. Biomarkers That Predict Sensitivity to Heat Shock Protein 90 Inhibitors. *Clin Breast Cancer*. 2015 Nov 19.

Tiacci E, Park JH, De Carolis L, Chung SS, Broccoli A, Scott S, Zaja F, Devlin S, Pulsoni A, Chung YR, Cimminiello M, Kim E, Rossi D, Stone RM, Motta G, Saven A, Varettoni M, Altman JK, Anastasia A, Grever MR, Ambrosetti A, Rai KR, Fraticelli V, Lacouture ME, Carella AM, Levine RL, Leoni P, Rambaldi A, Falzetti F, Ascani S, Capponi M, Martelli MP, Park CY, Pileri SA, **Rosen N**, Foà R, Berger MF, Zinzani PL, Abdel-Wahab O, Falini B, Tallman MS. Targeting Mutant BRAF in Relapsed or Refractory Hairy-Cell Leukemia. *N Engl J Med*. 2015 Oct 29; 373(18):1733-47.

Yao Z, Torres NM, Tao A, Gao Y, Luo L, Li Q, de Stanchina E, Abdel-Wahab O, Solit DB, Poulikakos PI, **Rosen N**. BRAF Mutants Evade ERK-Dependent Feedback by Different Mechanisms that Determine Their Sensitivity to Pharmacologic Inhibition. *Cancer Cell*. 2015 Sep 14; 28(3):370-83.

Tricker EM, Xu C, Uddin S, Capelletti M, Ercan D, Ogino A, Pratilas CA, **Rosen N**, Gray NS, Wong KK, Janne PA. Combined EGFR/MEK Inhibition Prevents the Emergence of Resistance in EGFR mutant Lung Cancer. Cancer Discov. 2015 Jun 2. pii: CD-15-0063

Session 5

Novel Approaches for Cancer treatment

5-1. Personalized Cancer Medicine in a Universal Healthcare System

Speaker: Patrick G. Johnston (Queen's University Belfast, UK)

5-2. MicroRNA as Versatile Weapon for Diagnostics and Therapeutics in Oncology

Speaker: Hitoshi Nakagama (National Cancer Center, Japan)

5-3. Cutting Livers and Genes

Speaker: Kenneth K. Tanabe (Harvard Medical School, USA)

Title: Personalized Cancer Medicine in a Universal Healthcare System

Patrick G. Johnston, MD, PhD
President and Vice-Chancellor, The Queen's University Belfast, UK

Speaker

Yasuhiro Fujiwara, MD, PhD
Director-General, Strategic Planning Bureau of the National Cancer Center, Japan

Chairman

Dr. Patrick G. Johnston

Profile

Dr. Johnston is President and Vice-Chancellor, Queen's University Belfast. He has published over 250 research articles and 5 books, and holds over 25 patents. His research is focused on cellular signalling pathways in human colorectal cancer, primarily related to molecular targeted cancer, therapeutics, personalised cancer medicine and mechanisms of drug resistance.

He received his medical degree with distinction from University College Dublin in 1982, followed by his PhD in Medicine in 1988. He obtained a fellowship at the National Cancer Institute (NCI USA) in 1987 where he pursued further clinical training in medical oncology and doctoral studies in molecular pharmacology, drug resistance and drug development.

In 1997 he moved to Queen's University Belfast as Professor of Oncology and became Director of the Centre for Cancer Research and Cell Biology in 2004. He became Dean of the School of Medicine, Dentistry and Biomedical Sciences at Queen's University Belfast.in 2007. In 2014 he has become vice-chancellor and President of Queen's University Belfast.

He has been awarded many national and international awards, is a Fellow of the Academy of Medical Sciences, and sits on a number of influential national and international scientific and government advisory boards. He was appointed chair of the Translational Research Group of the Medical Research Council (MRC) in 2012. He received the 2013 international Bob Pinedo Cancer Care Prize. He also serves on the Cancer Research UK (CR-UK) science executive/advisory board. Outside his academic work, Prof Johnston is a founder of Northern-Ireland based Almac Diagnostics and the Society for Translational Oncology which is headquartered in Durham, North Carolina

Recent Publications

Dunne PD, McArt DG, O'Reilly PG, Coleman HG, Allen WL, Loughrey M, Van Schaeybroeck S, McDade S, Salto-Tellez M, Longley DB, Lawler M, **Johnston PG**. Immune-derived PD-L1 gene expression defines a subgroup of stage II/III colorectal cancer patients with favorable prognosis that may be harmed by adjuvant chemotherapy.*Cancer Immunol Res*. 2016 May 13. pii: canimm.0302.2015.

Dunne PD, McArt DG, Bradley CA, O'Reilly PG, Barrett HL, Cummins R, O'Grady T, Arthur K, Loughrey M, Allen WL, McDade S, Waugh DJ, Hamilton PW, Longley DB, Kay EW, **Johnston PG**, Lawler M, Salto-Tellez M, Van Schaeybroeck S. Challenging the cancer molecular stratification dogma: Intratumoral heterogeneity undermines consensus molecular subtypes and potential diagnostic value in colorectal cancer. *Clin Cancer Res.* 2016 May 5. pii: clincanres.0032.2016.

Lawler M, Gavin A, Salto-Tellez M, Kennedy RD, Van Schaeybroeck S, Wilson RH, Harkin DP, Grayson M, Boyd RE, Hamilton PW, McArt DG, James J, Robson T, Ladner RD, Prise KM, O'Sullivan JM, Harrison T, Murray L, **Johnston PG**, Waugh DJ. Delivering a research-enabled multistakeholder partnership for enhanced patient care at a population level: The Northern Ireland Comprehensive Cancer Program. *Cancer*. 2016 Mar 1; 122(5):664-73.

Dunne PD, Dasgupta S, Blayney JK, McArt DG, Redmond KL, Weir JA, Bradley CA, Sasazuki T, Shirasawa S, Wang T, Srivastava S, Ong CW, Arthur K, Salto-Tellez M, Wilson RH, **Johnston PG**, Van Schaeybroeck S. EphA2 Expression Is a Key Driver of Migration and Invasion and a Poor Prognostic Marker in Colorectal Cancer. *Clin Cancer Res.* 2016 Jan 1; 22(1):230-42.

Title: MicroRNA as Versatile Weapon for Diagnostics and Therapeutics in Oncology

Hitoshi Nakagama, MD, PhD
President, National Cancer Center, Japan

Speaker

Patrick G. Johnston, MD, PhD
President and Vice-Chancellor,
The Queen's University Belfast, UK

Chairman

Dr. Hitoshi Nakagama

Profile

Dr. Nakagama graduated from the University of Tokyo in 1982 and received the doctoral degree in Medicine from the University of Tokyo in 1991. Then, he moved to the United State and joined the Center for Cancer Research, MIT, and worked on functional analysis of the tumor suppressor gene, WT1, with Professor David Housman as a postdoctoral fellow. After returning Japan in 1995, he took up a position as Section Head, Carcinogenesis Division, National Cancer Center Research Institute (NCCRI), and then became Chief, Biochemistry Division (1997), Deputy Director (2007), and Director of NCCRI in 2011. From April 1, 2016, he now serves as President of National Cancer Center.

He has long been working on animal cancer models of colon carcinogenesis induced by various environmental carcinogens and on DNA adductome to elucidate genetic and epigenetic modifications which play pivotal roles in driving cancer development. He

also identified several tumor suppressive microRNAs regulating cell cycle arrest and/or apoptosis after exposure to environmental insults, and proved that these tumor suppressive microRNAs are inactivated during colon carcinogenesis, including the phase of liver metastasis. Application of exosomal microRNA in early detection of various cancers in currently ongoing.

Recent Publications

Goto A, Noto H, Noda M, Ueki K, Kasuga M, Tajima N, Ohashi K, Sakai R, Tsugane S, Hamajima N, Tajima K, Imai K, **Nakagama H**. Report of the Japan diabetes society/Japanese cancer association joint committee on diabetes and cancer, Second report. *Cancer Sci*. 2016 Mar; 107(3):369-71.

Ezawa I, Sawai Y, Kawase T, Okabe A, Tsutsumi S, Ichikawa H, Kobayashi Y, Tashiro F, Namiki H, Kondo T, Semba K, Aburatani H, Taya Y, **Nakagama H**, Ohki R. A novel p53 target gene FUCA1 encodes a fucosidase and regulates growth and survival of cancer cells. *Cancer Sci*. 2016 Mar 21.

Yachida S, Wood LD, Suzuki M, Takai E, Totoki Y, Kato M, Luchini C, Arai Y, Nakamura H, Hama N, Elzawahry A, Hosoda F, Shirota T, Morimoto N, Hori K, Funazaki J, Tanaka H, Morizane C, Okusaka T, Nara S, Shimada K, Hiraoka N, Taniguchi H, Higuchi R, Oshima M, Okano K, Hirono S, Mizuma M, Arihiro K, Yamamoto M, Unno M, Yamaue H, Weiss MJ, Wolfgang CL, Furukawa T, **Nakagama H**, Vogelstein B, Kiyono T, Hruban RH, Shibata T. Genomic Sequencing Identifies ELF3 as a Driver of Ampullary Carcinoma. *Cancer Cell*. 2016 Feb 8;29(2):229-40.

Asano Y, Kawase T, Okabe A, Tsutsumi S, Ichikawa H, Tatebe S, Kitabayashi I, Tashiro F, Namiki H, Kondo T, Semba K, Aburatani H, Taya Y, **Nakagama H**, Ohki R. IER5 generates a novel hypo-phosphorylated active form of HSF1 and contributes to tumorigenesis. *Sci Rep*. 2016 Jan 12; 6:19174.

Ishiguro T, Sato A, Ohata H, Ikarashi Y, Takahashi RU, Ochiya T, Yoshida M, Tsuda H, Onda T, Kato T, Kasamatsu T, Enomoto T, Tanaka K, **Nakagama H**, Okamoto K. Establishment and Characterization of an In Vitro Model of Ovarian Cancer Stem-like Cells with an Enhanced Proliferative Capacity. *Cancer Res.* 2016 Jan 1; 76(1):150-60.

Takai E, Totoki Y, Nakamura H, Morizane C, Nara S, Hama N, Suzuki M, Furukawa E, Kato M, Hayashi H, Kohno T, Ueno H, Shimada K, Okusaka T, **Nakagama H**, Shibata T, Yachida S. Clinical utility of circulating tumor DNA for molecular assessment in pancreatic cancer. *Sci Rep*. 2015 Dec 16; 5:18425.

Tominaga N, Kosaka N, Ono M, Katsuda T, Yoshioka Y, Tamura K, Lötvall J, **Nakagama H**, Ochiya T. Brain metastatic cancer cells release microRNA-181c-containing extracellular vesicles capable of destructing blood-brain barrier. *Nat Commun*. 2015 Apr 1; 6:6716.

Title: Cutting Livers and Genes

Kenneth K. Tanabe, MD
Professor of Surgery, Harvard Medical School, USA
Chief, Division of Surgical Oncology, Deputy Clinical Director,
Massachusetts General Hospital Cancer Center, USA

Speaker

Ryuzo Ueda, MD, PhD
Professor Emeritus, Senior Advisor, Nagoya City
University, Japan
Professor, Dept. of Tumor Immunology,
Aichi Medical University, Japan

Chairman

Dr. Kenneth K. Tanabe

Profile

Dr. Tanabe is a Professor of Surgery at Harvard Medical School and Chief of the Division of Surgical Oncology at Massachusetts General Hospital. He is the Deputy Clinical Director of the Massachusetts General Hospital Cancer Center and Director of the MGH Liver Surgery Program. Dr. Tanabe serves on the melanoma committee of the National Comprehensive Cancer Network, and his clinical practice focuses on surgical management of patients with liver tumors and patients with melanoma.

EDUCATION:

1981	B.S., Stanford University, Stanford
1985	M.D., University of California, San Diego

ACADEMIC APPOINTMENTS:

1993 – 1994	Instructor in Surgery, Harvard Medical School, Boston
1994 – 2000	Assistant Professor of Surgery, Harvard Medical School
2000 – 2010	Associate Professor of Surgery, Harvard Medical School
2010 –	Professor of Surgery, Harvard Medical School

HOSPITAL APPOINTMENTS:

The New York Hospital Cornell Medical Center, New York

1986 – 1989	Assistant Surgeon
1989 – 1990	Surgeon
1989 – 1990	Administrative Chief Resident for G. Thomas Shires, M.D., The New York Hospital Cornell Medical Center, New York

M.D. Anderson Cancer Center, Houston

1990 – 1993	Junior Faculty Associate,

Dana Farber Cancer Institute, Boston

1997 – 2010	Attending Surgeon,

Massachusetts General Hospital, Boston

1993 – 1995	Assistant in Surgery
1995 – 2001	Assistant Surgeon
2001 –	Visiting Surgeon
1994 –	Surgical Director, Pigmented Lesion – Melanoma Clinic
2000 –	Chief, Division of Surgical Oncology
2000 – 2009	Director, Surgical Oncology Research Laboratories
2000 –	Deputy Clinical Director, MGH Cancer Center
2007 –	Director, MGH Liver Surgery Program
2008 –	Co-Director, Digestive Health Diseases Center Liver Program
2005 – 2013	Director (MGH), Surgical Oncology Fellowship Training Program
2013 --	MGH Site Director, Complex Fellowship in Complex General Surgical Oncology Training Program

AWARDS AND HONORS:

1992 – 1993	Outstanding Manuscript Annual Award, M.D. Anderson Cancer Center, Houston
1992 – 1993	American Cancer Society Clinical Fellow, M.D. Anderson Cancer Center, Houston
1992	American Association for Cancer Research Scholarship
1993	Outstanding Manuscript Annual Award, M.D. Anderson Cancer Center, Houston
1993	Society of Surgical Oncology Travel Grant
2000 – 2015	Best Doctors of Boston (awarded 16 individual and consecutive years)

Recent Publications

Guimaraes AR, Siqueira L, Uppal R, Alford J, Fuchs BC, Yamada S, **Tanabe K**, Chung RT, Lauwers G, Chew ML, Boland GW, Sahani DV, Vangel M, Hahn PF, Caravan P. T2 relaxation time is related to liver fibrosis severity. *Quant Imaging Med Surg.* 2016 Apr; 6(2):103-14.

DePeralta DK, Wei L, Ghoshal S, Schmidt B, Lauwers GY, Lanuti M, Chung RT, **Tanabe KK**, Fuchs BC. Metformin prevents hepatocellular carcinoma development by suppressing hepatic progenitor cell activation in a rat model of cirrhosis. *Cancer*. 2016 Apr 15; 122(8):1216-27.

Sabbatino F, Villani V, Yearley JH, Deshpande V, Cai L, Konstantinidis IT, Moon C, Nota S, Wang Y, Al-Sukaini A, Zhu AX, Goyal L, Ting DT, Bardeesy N, Hong TS, Fernandez-del Castillo C, **Tanabe KK**, Lillemoe KD, Ferrone S, Ferrone CR. PD-L1 and HLA Class I Antigen Expression and Clinical Course of the Disease in Intrahepatic Cholangiocarcinoma. *Clin Cancer Res.* 2016 Jan 15; 22(2):470-8.

Suenaga M, Yamada S, Fuchs BC, Fujii T, Kanda M, Tanaka C, Kobayashi D, Fujiwara M, **Tanabe KK**, Kodera Y. CD44 single nucleotide polymorphism and isoform switching may predict gastric cancer recurrence. *J Surg Oncol.* 2015 Nov; 112(6):622-8.

Schmidt B, Wei L, DePeralta DK, Hoshida Y, Tan PS, Sun X, Sventek JP, Lanuti M, **Tanabe KK**, Fuchs BC. Molecular subclasses of hepatocellular carcinoma predict sensitivity to fibroblast growth factor receptor inhibition. *Int J Cancer*. 2016 Mar 15; 138(6):1494-505.

Hong TS, Wo JY, Yeap BY, Ben-Josef E, McDonnell EI, Blaszkowsky LS, Kwak EL, Allen JN, Clark JW, Goyal L, Murphy JE, Javle MM, Wolfgang JA, Drapek LC, Arellano RS, Mamon HJ, Mullen JT, Yoon SS, **Tanabe KK**, Ferrone CR, Ryan DP, DeLaney TF, Crane CH, Zhu AX. Multi-Institutional Phase II Study of High-Dose Hypofractionated Proton Beam Therapy in Patients With Localized, Unresectable Hepatocellular Carcinoma and Intrahepatic Cholangiocarcinoma. *J Clin Oncol*. 2016 Feb 10; 34(5):460-8.

Session 6

Future Direction of Cancer Research and Therapy

6-1. The Landscape for Future Progress Against Cancer

Speaker: Bruce A. Chabner (Harvard Medical School, USA)

Title: The Landscape for Future Progress Against Cancer

Bruce A. Chabner, MD
Professor of Medicine, Harvard Medical School
Director of Clinical Research, MGH Cancer Center,
Massachusetts General Hospita, USA

Speaker

Makoto Ogawa, MD
Emeritus President, Aichi Cancer Center, Japan

Chairman

Dr. Bruce A. Chabner

Profile

Dr. Chabner is a Professor of Medicine at Harvard Medical School and Director of Clinical Research at the Massachusetts General Hospital Cancer Center. He graduated *summa cum laude* from Yale College in 1961. He received his M.D. from Harvard University *cum laude* in 1965.

He has had extensive experience in the field of cancer drug discovery and development. After joining the National Cancer Institute (NCI) in 1971, he participated in the training of clinical and research fellows there for the following 24 years, including three years (1976-1979) as Chief of the Clinical Pharmacology Branch; two years (1979-1981) as Director of the Clinical Oncology Program; and, in 1981, one year as Acting Director, and for 13 years as permanent Director of the Division of Cancer Treatment, NCI.

In 1995, he joined the Massachusetts General Hospital as Clinical Director of its cancer center and Chief of Hematology/Oncology. With the formation of the Dana-

Farber/Harvard Cancer Center, he assumed responsibilities as Associate Director for Clinical Sciences of that consortium, which includes the Massachusetts General Hospital, Brigham & Women's Hospital, Dana-Farber Cancer Institute and Beath Israel Deaconess Medical Center. He has authored and edited the numerous textbooks of internal medicine, hematology, oncology and pharmacology.

He has received numerous awards, including Phi Beta Kappa, Alpha Omega Alpha, the Public Health Service's Distinguished Service Medal, the Karnofsky Award of the American Society for Clinical Oncology and the Bruce F. Cain Award for Drug Development of the American Association for Cancer Research. In 2006, he was the first recipient of the Bob Pinedo Award for Contributions to Improvement in the Care of Cancer Patients.

He is a senior editor for the Oncologist and serves on the executive advisory boards for some of the industry's leading innovators in drug development. In 2006, he received a presidential appointment to the National Cancer Advisory Board at the National Cancer Institute.

Recent Publications

Nipp RD, Lee H, Powell E, Birrer NE, Poles E, Finkelstein D, Winkfield K, Percac-Lima S, **Chabner B**, Moy B. Financial Burden of Cancer Clinical Trial Participation and the Impact of a Cancer Care Equity Program.*Oncologist.* 2016 Apr; 21(4):467-74.

Chabner BA. While We're at It, Let's Whack the FDA.*Oncologist*. 2016 Mar; 21(3):259-60.

Chabner BA. Reflections on 2015. *Oncologist*. 2016 Feb; 21(2):129-30.

Singh H, Longo DL, Chabner BA. Improving Prospects for Targeting RAS. *J Clin Oncol*. 2015 Nov 1; 33(31):3650-9.

Chabner B, Richon V. Structural Approaches to Cancer Drug Development. *N Engl J Med.* 2015 Jul 30; 373(5):402-3.

Chabner BA. NCI-60 Cell Line Screening: A Radical Departure in its Time. *J Natl Cancer Inst*. 2016 Jan 11; 108(5).