AdMeTech FOUNDATION the manogram® project precision prostate care for every man

Sixth Global Summit
PRECISION DIAGNOSIS AND TREATMENT OF PROSTATE CANCER

SAVE THE DATES
SEPTEMBER 22-24, 2022

Creating the Future of Patient Care

GLOBAL SUMMIT AND BRAIN TRUST ON PRECISION DIAGNOSIS AND TREATMENT OF PROSTATE CANCER:
Overview, Background and Current Plans

(Updated November 1, 2021)

I. Annual Global Summit and Brain Trust on Precision Diagnosis and Treatment for Prostate Cancer (PC) and their Impact (2016-2021); and

II. Recap and Highlights of the Summit 2021 and Planning for the 6th Global Summit Scheduled for September 22-24, 2022, Boston

Background

AdMeTech Foundation's Annual Global Summit and Brain Trust on Precision Diagnosis for PC took place starting in September 2016 and brought together – for the first time - the key international opinion leaders of every clinical subspecialty involved in patient care to bridge the gap between in-vivo imaging, in-vitro diagnostics (liquid and tissue biomarkers) and novel therapeutics.

This program has become seminal in shaping the state of the art and future vision for precision care by:
1) Educating the key healthcare stakeholders;
2) Creating and supporting a sustained cross-disciplinary dialogue and consensus on the best emerging clinical practices and research priorities; and
3) Expediting clinical adoption of promising novel diagnostics and therapeutics.

Our public Summit has been integrated with a private Brain Trust and recognized as one of the most influential educational and strategic efforts in prostate cancer for stimulating development and implementation of a comprehensive, multimodality approach to diagnostic patient evaluation and its integration with precision treatment.

In addition to stimulating new groundbreaking ideas and collaborations, this program has had extensive participation from the members of the professional and non-profit organizations playing a central role in:
1) Developing clinical guidelines for early detection and treatment (e.g., National Comprehensive Cancer Network, AUA, American College of Radiology, ASTRO, ASCO, etc.); and
2) Creating national and global scientific strategy and related infrastructure (e.g., VP Joe Biden's 1.8 billion Cancer Moonshot Program, National Cancer Institute, etc.).

Brain Trust on Precision Diagnostics and Therapeutics, established following the First Summit, was convened in February and May 2017, October 2017, August 2018, October 2019, October 2020 and September 2021. This program included the leaders of national and international programs in precision biomarkers, imaging and therapeutics from academia, industry, government and non-profit organizations.

Our Brain Trust participants are the key pioneers and opinion leaders of multiple clinical disciplines (radiology, urology, radiation oncology, pathology and medical oncology), including, but not limited to:
1. Dr. Gerald Andriole, University of Washington, St. Louis;
2. Drs. Wassim Abida, Sigrid Carlsson, Amita Dave, Hedvig Hricak, Steve Larson, Michael Morris, Howard Scher, Andrew Vickers and Michael Zelefsky, Memorial Sloan Kettering Cancer Center;

3. Drs. Jelle Barentsz and Jurgen Futterer, Nijmegen/Radboud University, The Netherlands;
4. Drs. Matthew Cooperberg, Mack Roach, Thomas Hope, Antonio Westphalen and Susan Noworolski, UCSF;
5. Dr. David Crawford, University of California, San Diego;
6. Drs. Angelo DeMarzo, Martin Pomper, Daniel Song and Steven Rowe of Johns Hopkins;
7. Drs. Masoom Haider, Sanjeet Ghai and Laurence Klotz, University of Toronto, Canada;
8. Drs. Ashesh Jani, David Schuster, Christopher Filson and Mehrdad Alemozaffar, Emory University;
9. Drs. Adam Kibel, Clare Tempany, Marc Garnick, Christopher Sweeney, Jason Efstathiou, Adam Feldman, Heather Jacene and Quoc Dean Trinh, Harvard Medical School;
10. Drs. Richard Babayan, Mark Katz and Jennifer Rider, Boston University;
11. Dr. Eric Klein of Cleveland Clinic;
12. Drs. Neil Bander, James Hu, David Margolis and David Nanus of Cornell Weill/Columbia;
13. Dr. Peter Nelson, Washington University;
14. Drs. Daniel Petrylak, Preston Sprenkle and Jeffrey Weinreb, Yale;
15. Drs. Alan Pollack, Sanoj Punnen and Radka Stoyanova, University of Miami;
16. Dr. Art Rastinehad, Mount Sinai School of Medicine;
17. Dr. Minhaj Siddiqui, University of Maryland;
18. Dr. Thomas Wheeler, Baylor College of Medicine.
19. Dr. Wolfgang Weber, Technical University of Munich, Germany;
20. Drs. Paul Boutros, Robert Reiter and Steven Raman, UCLA;
21. Dr. Ethan Halpern, Jefferson University;
22. Dr. Liang Wang, Beijing Friendship Hospital, China
23. Dr. Mitchell Sokoloff, University of Massachusetts;
24. Drs. Sadhna Verma, University of Cincinnati;
25. Dr. Aytekin Oto, University of Chicago;
26. Dr. Philip Koo, Banner MD Anderson Cancer Center;
27. Drs. Peter Choyke, Peter Pinto and Baris Turkbey, National Cancer Institute;
28. Drs. Edward Schaeffer and Adam Murphy, Northeastern University;
29. Dr. Kelvin Moses, Vanderbilt University Medical Center

2) Drs. Kibel, Moses, Nelson, Roach, Schaeffer, Sprenkle, Vickers and others are members of the National Cancer Comprehensive Network's (NCCN) Panels on Prostate Cancer Detection and Treatment, developing the cutting-edge clinical guidelines for patient care;
3) Drs. Choyke, Pinto, Siddiqui, Turkbey, and Summit Chair Dr. Faina Shtern of the AdMeTech Foundation participate in the US VP Joseph Biden's $1.8 Billion Cancer Moonshot Program, developing national strategy for cancer research and related infrastructure; and
4) Dr. Mark Buzza, former Director of Global Biomedical Research Programs for Movember Foundation (headquartered in Australia) led international scientific strategy, with specific interest in advanced PC.

The goal of the Brain Trust is to review the current and emerging data in imaging, fluid-based molecular diagnostics, tissue-based genomics, radiogenomics and proteomics, drug development and novel approaches to treatment and observation strategies, and reach consensus on the best emerging clinical practices and priority needs in research, medical education, clinical training and public awareness[2]. Our primary goal is to outline clinical, research and educational priorities, including statistically powered pilot studies on clinical role of radiogenomics in patient selection for appropriate care (observation strategy, image-targeted minimally invasive, whole gland or systemic treatment).

Annual Global Summit has emerged as the seminal scientific and educational event in recognizing integrated diagnostics, such as radiogenomics, as the future of PC care. The program of these events, which took place in 2017, 2018 and 2019 respectively. was structured to review recent clinical advances and related scientific data in radiomics (quantitative imaging) and molecular diagnostics (including genomics), their integration into the emerging field of radiogenomics and its impact on patient selection for, design and monitoring of clinical interventions (e.g., biopsy and management strategy).

Virtual 5th Global Summit of 2021 and Plans for Virtual Summit 2022: Summit 2021 took place on September 23-25, 2021. Building on the success between 2016 and 2020, Summit 2021 had over 250 registrants, representing every key clinical expertise and expanding a cross-disciplinary dialogue. Over 50 presentations and winning abstracts of the Summit were published by the Ground Rounds of Urology, reaching over 15,000 multi-disciplinary genito-urinary experts.

Summit 2021 examined emerging promising innovations and the pathways for their expedited clinical validation and adoption. The Summit Program had the following scientific sessions and panels:

- Session 1 was dedicated to men prior to diagnosis of prostate cancer, including:
  1) "Smart" screening in asymptomatic general population; and
  2) Diagnostic evaluation of men with abnormal screening or clinical suspicion of PC, to improve risk assessment in order to reduce unnecessary biopsies and improve tissue sampling;
- Session 2 was focused on men with localized PC (including initial or recurrent disease):
  1) To improve early diagnosis, staging and biologic characterization of aggressive prostate cancer (including non-metastatic disease), requiring immediate treatment;
  2) To increase confidence in sub-clinical (indolent) disease, requiring observation strategy (e.g., active surveillance) and related monitoring;
  3) To review the emerging role of image-targeted, minimally invasive treatment vs. active surveillance and whole gland treatment;
- Session 3 was dedicated to men with advanced PC, including oligometastatic disease and systemic metastases caused by castrate-sensitive and castrate-resistant disease, and emerging advances in diagnosis, biologic characterization and treatment;
- Session 4 reviewed the state of the art and future directions in image-guided, minimally invasive treatment, including patient selection, target definition, monitoring and local outcomes;
- Panel on Health Disparities examined the emerging data on the role of the environment, genetics and access to care, including screening, precision diagnostics and therapeutics;
- Panel on Bioinformatics, Machine and Deep Learning, Artificial Intelligence highlighted the importance of these technologies for every aspect of patient care and related research.

Summit 2021 highlighted the following Emerging Important Trends, and the related review and discussion will be expanded in the Virtual Summit 2022:

1. "Smart" Screening, including baseline PSA as a critical tool for age-appropriate, individualized risk assessment.
2. Multiple promising in vitro novel liquid and tissue biomarkers and in vivo imaging tools have emerged recently for improved prediction and early diagnosis of clinically significant PC that require further research.
3. Increased utilization of liquid biomarkers (e.g., phi, 4K Score, EPI, germline testing, etc.) based on clinical validation and/or consensus - and their integration (including the appropriate sequencing) with imaging for improved selection of patients for biopsy and improved tissue sampling for both standard histology and genetic tissue profiling.
4. Several areas of advanced imaging, including their standardization and evaluation of clinical utility of single imaging tools and multi-modality image fusion:
   a. Real-time, high resolution and contrast-enhanced Ultrasound, emerging as a promising tool for early detection of PC;
   b. Multi-parametric MRI, which is currently widely used before and after diagnosis of PC; and
   c. Rapid evolution of molecular imaging and its emerging role in advanced metastatic PC, but also in improved diagnostic assessment prior to and after diagnosis of the localized PC, as well as in early detection of recurrence, and in the definition and treatment of the oligometastatic disease.
5. While standard histology has been the primary tool for patient assessment, emerging data indicate the importance of biologic information (e.g., liquid biomarkers, in vivo imaging, genetic tissue profiling) for diagnostic evaluation, prediction of clinical course and clinical outcomes, treatment planning and monitoring.
6. Radiogenomics as a specific example of the integrated, multi-modality, comprehensive approach to precision diagnosis and its impact on precision care, including patient selection for the appropriate clinical interventions for localized, recurrent and advanced PC.
7. Rapidly expanding discovery of new genetic and molecular targets for both early and advanced PC, which are critical for further development and integration of in vitro diagnostics with dedicated drugs for novel in vivo imaging and therapeutics.
8. In addition to transcriptome, proteome is emerging as the information-dense source for the development of new in vitro and in vivo imaging biomarkers.
9. Phenotypical cancer profiling as an emerging tool for prostate cancer characterization.
10. Image-Guided, Minimally Invasive Focal Treatment is emerging as a promising albeit experimental patient care option for localized disease. However, further consensus and research is needed to define its clinical utility compared to Active Surveillance and Whole-Gland Treatment.

11. Further discussion, expert consensus and research is needed to define clinical indications and large-scale implementation of genetic cancer profiling on the biopsy and post-surgical tissue samples for optimizing prediction of progression and long-term outcomes. This biologic tool appears to be particularly relevant to low-risk, large-volume and intermediate-risk, small-volume PC.
12. Evaluation of advanced histopathology, including staining for molecular, genetic, immunohistochemical and other markers.
13. The importance of the access to high quality care for eliminating health disparities in Black men.
14. Bioinformatics, Machine Learning and Deep Learning and related tools for multi-factorial, multi-modality, information-intense data analysis, including predictive modeling (e.g., nomograms); and
15. Design and implementation of health-care economic analyses, including cost-benefits of novel diagnostics and therapeutics.

The following additional recommendations have been made for Summit 2022:

1. Due to the COVID-19 pandemic, to hold the 6th Annual Summit as a virtual event, unless and until the infection rates decrease to a low level of the community transmission.
2. To continue and expand the Panels on Health Disparities and Bioinformatics.
3. To prepare and submit a Summit 2022 multi-disciplinary overview, including a Consensus Statement, per invitation from *Urology's Editor-in-Chief;* and
4. To invite organizations leading research funding, accreditation, regulatory and reimbursement policies and/or commercial product development to stimulate discussion on creating a facilitated pathways for clinical validation and adoption of promising diagnostics and therapeutics.

Impact on Clinical Community, National and International Scientific Strategy (2016-2019)

The First Global Summit and related "Brain Trust" meetings were instrumental in shifting integrated, multi-modality approach to PC Diagnosis and its impact on patient management strategies from the fringe to the center of strategic planning for medical education and research, both nationally and internationally. As a direct result of this event, our outstanding faculty members ensured that US Vice President Joe Biden's $1.8B Cancer Moonshot Program prioritized prostate cancer in general and precision oncology specifically, including radiogenomics. This program invited AdMeTech to take part in a strategic planning for national research agenda and related infrastructure, starting in early 2017.

The Second, Third and Fourth Annual Summit exceeded everyone's expectations even further. These events brought into a sharp focus the groundbreaking potential of the emerging field of radiogenomics for patient care:

1) Several the Summit presentations on imaging were featured in the 39th International Prostate Cancer Update (IPCU) in January 2019, and its many participants identified imaging as the most promising emerging clinical and research area;
2) Summit Overview (presented by Dr. Shtern of AdMeTech at IPCU 2019) was published online by Grand Rounds of Urology (3). This video was requested by Whitney Tilton, Medical Director at VuMedi (YouTube for Physicians). VuMedi is an online community with over 220,000 registered physicians;
3) Members of the National Comprehensive Cancer Network's Panels on Detection and Treatment of PC will continue to be involved in the Summit in 2020 and 2021; and
4) Participants of the VP Biden's Cancer Moonshot Program will continue to take part in the Summit in 2020 and 2021.

***Impact on Public Awareness/Opinion/Consumer Demand*:** Annual Summit has been covered by the major media, including but not limited to, Boston Globe/STAT medical news, National Public Radio, Boston Business Journal, and Associated Press. This coverage has had a groundbreaking impact on public awareness of novel diagnostic tools and their transformational impact on the current state of patient care and reducing concerns about PSA screening, including unnecessary procedures.

AdMeTech Foundation is a 501c3 non-profit organization, which has established the Manogram® Project and provides international leadership in creating a new standard of care for prostate cancer, including precision screening, diagnosis, and treatment. To fulfill on this mission, the Manogram® Project has been designing, developing, managing, and implementing groundbreaking programs in research, education, awareness, advocacy and improve access to high-quality care (www.admetech.org).