

Report: Second Britton Chance International Symposium on Metabolic Imaging and Spectroscopy on June 11-13, 2018

To honor the 105th Birthday of Britton Chance, the Second International Symposium on Metabolic Imaging and Spectroscopy was successfully held at the Perelman School of Medicine, University of Pennsylvania on June 11-13th, 2018. The symposium commemorated the life, times, and legacy of Dr. Britton Chance, whose scientific career spanned eight decades at Penn. Dr. Chance excelled in many fields, winning high profile awards, including the U.S. National Medal of Science and an Olympic gold medal. As one of the founding fathers of the fields of bioenergetics and functional and metabolic imaging/spectroscopy for studying energetics in life systems, Dr. Chance made an extraordinary range of research discoveries, technical innovations, and clinical translations. In honor of this diverse work, the symposium covered interdisciplinary topics at the frontiers of research, ranging from imaging physics and engineering (e.g., optics, NMR, nuclear medicine) to biology and medicine with emphasis on technical innovation and clinical translation. The symposium was sponsored by the University of Pennsylvania Department of Radiology, University of Research Foundation, Institute of Translational Medicine and Therapeutics, Johnson Research Foundation, Department of Biochemistry and Biophysics, Laboratory for Research on the Structure of Matter, Center of Magnetic Resonance and Optical Imaging, and The Oxygen Club of California, and financially supported by Hamamatsu, Inc., National Institute of Biomedical Imaging and Bioengineering, National Cancer Institute, and National Institute of Diabetes and Digestive and Kidney Diseases, and presented in cooperation with SPIE—The International Society for Optics and Photonics.

Over 200 participants from North America, Europe, and Asia attended the conference, which featured about 100 abstracts, 48 invited/proffered talks, and a panel discussion on critical issues in the field of metabolic imaging and spectroscopy. In addition to the scientific program, the conference included well-attended workshops on grant writing and biostatistics. Eight keynote speakers discussed cancer metabolic plasticity, molecular imaging of cancer metabolism and cancer theranostics, imaging pancreatic islets, redox biology, stimulated Raman scattering microscopy, radiation therapy, magnetic resonance spectroscopy studies of mitochondrial neuroenergetics, and brain function. Twelve conference sessions covered topics in metabolism and function (3), cancer (3), muscle, pancreas, and others (1), brain (1), novel techniques and applications (3), radiation therapy and immunotherapy (1). All authors of 50 posters were able to present orally the 'flash' highlights on their posters. To encourage the participation of students and young researchers, substantial travel stipends (covering 50-85% of full expenses) were granted to 24 students, postdoctoral fellows and junior faculty from all over the world. Poster awards were also granted to the top five poster presenters. In the Dinner Reception at the University Museum, a number of former students, colleagues and collaborators of Dr. Chance shared their wonderful memories/experiences about working with and learning from Dr. Chance. Photos, videos of the talks, and more can be found at our web site: <https://www.med.upenn.edu/chance>. Finally, about 15 manuscripts have been submitted to, and are undergoing peer-review prior to inclusion, in special sections in the Journal of Biomedical Optics and Molecular Imaging and Biology commemorating the 105th Birthday of Britton Chance.

Based on post-symposium surveys, the response for this Symposium from the scientific community was very positive. Many people were impressed by the high-quality talks and integrative science and found it positive to see more participation of young researchers than the 1st Chance Symposium. Looking forward,

the majority of participants (~95% in survey responders) hope to continue this great venue for scientific exchange in the future and thus carry on the legacy of Dr. Chance.

Many thanks to the members of the Chance Symposium Organizing Committee and Advisory Board, the speakers, panelists, moderators, sponsors, supporters, collaborators, and all the people who have given us invaluable help and support!

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