



38TH ANNUAL MEETING OF THE SOCIETY FOR THERMAL MEDICINE

THINKING OUTSIDE THE BOX

APRIL 24 – 27, 2023 • SAN DIEGO, CALIFORNIA

2023 PROGRAM & ABSTRACT BOOK



SCAN ME

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INTERNATIONAL JOURNAL OF
HYPERTHERMIA
and thermal therapies



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38TH ANNUAL MEETING APRIL 24 – 27, 2023

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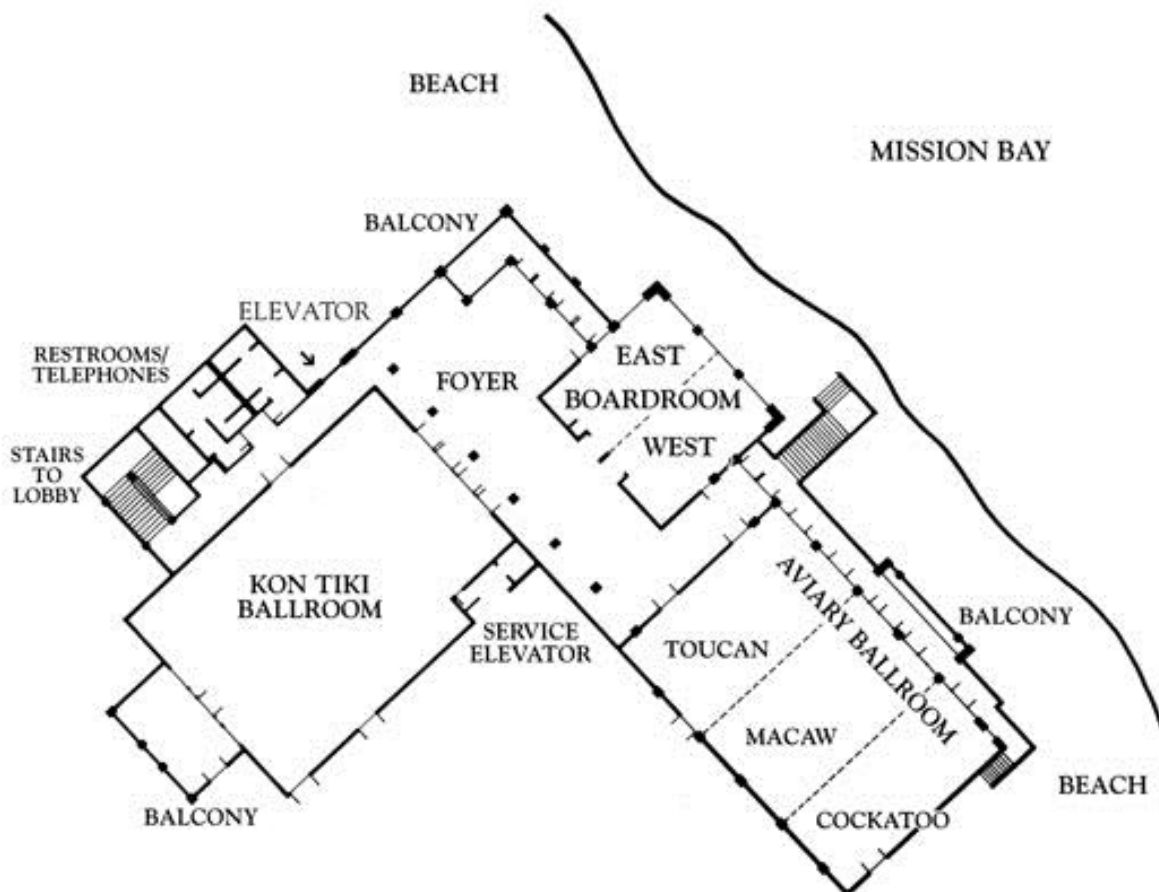
MEETING INFO/MAPS

Registration Desk Hours of Operation in the
KON TIKI FOYER ▶

Monday, April 24th	7:00AM – 7:00PM
Tuesday, April 25th	7:00AM – 7:00PM
Wednesday, April 26th	7:00AM – 7:00PM
Thursday, April 27th	7:00AM – 12:00PM



MEETING SPACE MAP



PROPERTY MAP



LETTER FROM THE PROGRAM CHAIR



ALIREZA MOHAMMADI, MD

Dear colleagues, friends and sponsors of the Society for Thermal Medicine,

On behalf of the STM Governing Council and meeting Planning Committee, it is my pleasure to welcome you to the 38th Annual Meeting of the Society for Thermal Medicine in San Diego, California, USA, at the beautiful Catamaran Resort, April 24-27, 2023.

The 38th Annual Meeting of the Society for Thermal Medicine will provide an arena for presentations of latest data, concepts, and breakthroughs in our ever-expanding understanding of thermal medicine in the context of medicine, engineering, physics, materials science, biology and immunology.

Keynote and Plenary speakers will highlight the extensive connections among clinical applications of thermal medicine, oncoimmunology, physics, biology, imaging, and the thermal state. International thought leaders will lead breakout sessions on:

- Clinical trials in cancer and other diseases
 - Traditional hyperthermia
 - HIPEC
 - Ablative thermal therapy
 - Cryotherapy
 - Thermal modeling
 - Nanotechnology
 - Tissue engineering and immune engineering
 - Functional imaging
 - Cellular response to stress to thermal therapy
 - Immunology/immunotherapy in thermal medicine
 - Combination therapies with hyperthermia and cryotherapy
 - Thermal medicine in infectious diseases
- ...and many more!

This is a diverse meeting with presenters from all around the world encompassing subjects from basic science to physics to clinical medicine. This would not be possible without the generous support from our membership and our sponsors. We look forward to this exciting conference, and we are delighted to have you join.

Sincerely,

Alireza Mohammadi, MD

STM Vice President

2023 Meeting Program Chair

Cleveland Clinic

MISSION STATEMENT

The Society for Thermal Medicine is a 501(c)(3), non-profit organization whose mission is to significantly improve patient treatment outcomes by advancing the science, development and application of Thermal Therapy.

OUR SOCIETY STRIVES TO:

1. To encourage the advancement of thermal medicine in all areas of natural and medical sciences.
2. To facilitate cooperative research among the disciplines of physics, engineering, biology, chemistry, and medicine in the study of the properties and effects of thermal medicine.
3. To promote dissemination of knowledge in these and related fields through publications, meetings and educational symposia.



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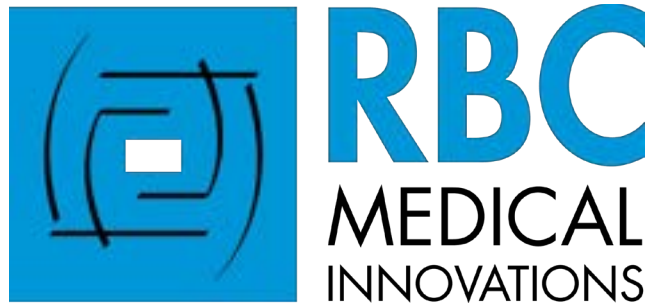


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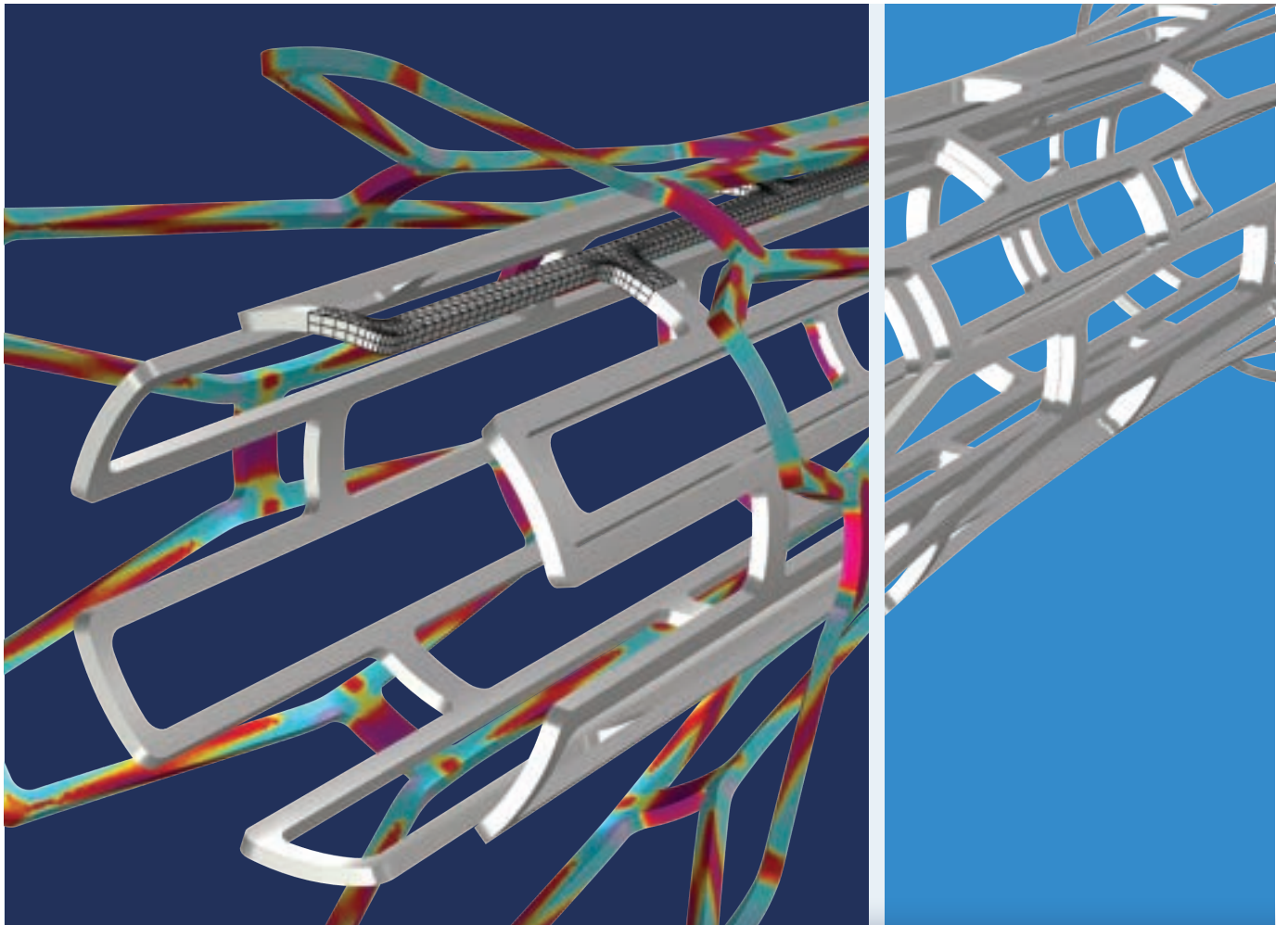
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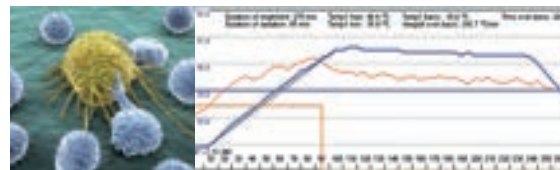
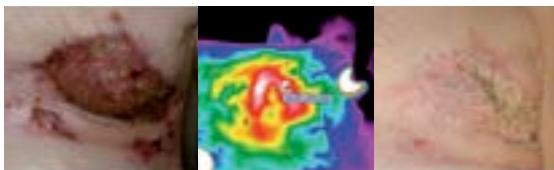
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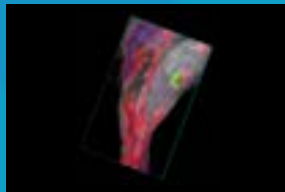
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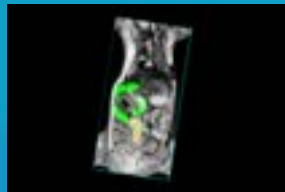
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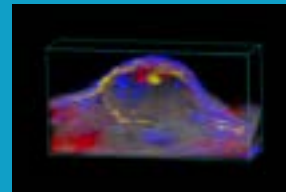
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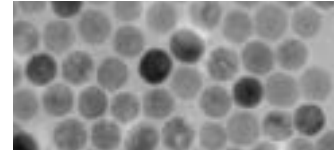
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KEYNOTE SPEAKER #1



DR. ERIC LEUTHARDT, MD

1:00pm-2:00pm Monday, 24 April, 2023, Toucan

ERIC C. LEUTHARDT, M.D. is a neurosurgeon who is currently a professor with the Department of Neurological Surgery and the Department of Biomedical Engineering at Washington University in St. Louis. He is Director of the Center for Innovation in Neuroscience and Technology. His research has focused on neuroprosthetics – devices linked to the brain that may lead to cures for paralysis, allow patients to move artificial limbs, or restore other neurological functions. Dr. Leuthardt uses an integrated approach by employing multiple domains of expertise ranging from biomedical engineering, clinical neurosurgery, mathematical modeling, complex signal analysis, and computer programming. In addition to numerous peer reviewed publications, Leuthardt has numerous patents on file with the U.S. Patent and Trademark Office for medical devices and brain computer interface technologies.

KEYNOTE SPEAKER #2



DR. ALIREZA SHAMSHIRSAZ, MD, FACOG

11:30am-12:30am Tuesday, 25 April, 2023, Kon Tiki Ballroom

ALIREZA SHAMSHIRSAZ (09R—obstetrics and gynecology) ranks among the world’s foremost experts in fetal surgery and in the treatment of abnormally adherent placenta, a rare pregnancy complication also known as placenta accreta spectrum. He has pioneered novel surgical techniques for neural tube defects and twin-to-twin transfusion syndrome, and he was part of the team that performed the first successful fetoscopic repair to treat spina bifida in the U.S. Shamsirsaz is board certified in OB-GYN and maternal fetal medicine and an appointed reviewer of 22 medical journals. He has published more than 250 peer-reviewed manuscripts in English language journals and 18 in Farsi. Shamsirsaz serves as director of the Maternal Fetal Medicine Care Center at Boston Children’s Hospital, part of Harvard Medical School.

DR. ALEX Y. HUANG, MD, PHD



11:30am-12:30pm Wednesday, 26 April, 2023, Kon Tiki Ballroom

In 2006, **DR. HUANG** joined the Case Western Reserve University School of Medicine faculty as an Assistant Professor in the Division of Pediatric Hematology / Oncology at Rainbow Babies & Children's Hospital - Rainbow / Ireland Cancer Center with a secondary faculty appointment in the Department of Pathology, Biomedical Engineering and General Medical Sciences, with membership in the Case Comprehensive Cancer Center. Currently, Dr. Huang is also the director of clinical fellowship program in Pediatric Hematology / Oncology, and the holder of the Theresia G. & Stuart F. Kline Family Foundation Chair in Pediatric Oncology since 2014. Dr. Huang was promoted to Associate Professor in 2012, tenured in 2014, and Professor in 2017. Currently, Dr. Huang is a member of the St. Baldrick's Foundation Scientific Advisory Board, Executive Scientific Committee of the Harrington's Discovery Institute, leader of the Tumor Immunology & Immunotherapy interest group, leader of the Cancer Immunotherapy Initiative, as well as co-leader of the Hematopoiesis & Immune Cell Biology Program at the Case Comprehensive Cancer Center.

2023 GEORGE M. HAHN AWARD & LECTURE AWARD WINNER



DR. HANS CREZEE, PHD

Academic Medical Center Amsterdam

4:30PM-7:00PM TUESDAY, 25 APRIL, 2023, KON TIKI BALLROOM

The George M. Hahn Award is presented every other year to an investigator whose research has contributed in a significant way to new clinical applications in thermal therapy. This lecture is named in honor of Dr. George Hahn who received the first Robinson Award in 1989. Dr. Hahn led a highly productive clinical program grant at Stanford for many years and his fundamental work in the heat shock response and in how hyperthermia modifies chemotherapy sensitivity still stand today as foundational work. His highly productive career exemplifies the translational attributes of this award.

Hans Crezee received his MSc degree in Experimental Physics from the Free University Amsterdam in 1986 and his PhD degree from Utrecht University in 1993.

From 1988 to 2000 he was with the University Medical Center, University of Utrecht, engaged on several hyperthermia projects, including development and experimental verification of advanced hyperthermia treatment planning and development, clinical implementation and certification of interstitial hyperthermia methods.

Since 2000, he has been with the Department of Radiation Oncology, Academic Medical Center (AMC) of the University of Amsterdam, now part of Amsterdam University Medical Centers. He became Principal Investigator in 2008 with a focus on multidisciplinary hyperthermia research, focusing on (1) development and clinical implementation of new hyperthermia equipment, (2) advanced hyperthermia treatment planning, (3) preclinical research on the radiosensitizing and chemosensitizing effects of hyperthermia, (4) clinical hyperthermia studies. Locoregional Hyperthermia equipment developed at AMC has been successfully commercialized to facilitate and

promote high quality application of hyperthermia. A number of hospitals in Europe and Asia are now using hyperthermia equipment developed at AMC. He published >230 papers in peer reviewed journals, h-index: 50. He is presently president of the European Society for Hyperthermic Oncology (ESHO) and editor at the International Journal of Hyperthermia.

He is coordinator for the European HYPERBOOST project (H2020-MSCA-ITN-2020-955625) in which 14 ESRs in 6 countries are trained to become hyperthermia professionals. He is or was project leader or PI for 14 Dutch Cancer Society KWF projects and two Dutch Research Council NWO projects covering a range of hyperthermia-related research topics. Ongoing research projects include development and validation of a small animal device for targeted locoregional hyperthermia; development of advanced adaptive, biological and MR guided hyperthermia treatment planning; optimization of efficacy of hyperthermia and HIPEC drug delivery in preclinical models; and prospective/retrospective analysis of the clinical results of hyperthermia treatment delivery for various tumor sites including breast, cervix, bladder, rectum and pancreatic cancer.

33RD J. EUGENE ROBINSON AWARD & LECTURE AWARD WINNER

DR. ROBERT IVKOV, PHD

Johns Hopkins University, School of Medicine,
Department of Radiation Oncology



4:30PM-7:00PM TUESDAY, 25 APRIL, 2023, KON TIKI BALLROOM

The J. Eugene Robinson Award is presented annually to an investigator who has made outstanding contributions to the field of hyperthermic oncology in one or more of the three main disciplines: Medicine/Clinical, Biology/Physiology, and Physics/Engineering. It is the highest and most prestigious award of the Society for Thermal Medicine. The award is named after J. Eugene Robinson who was a pioneer of hyperthermia research from the 1960's through the 1980's and a strong proponent of combined radiation and hyperthermia for cancer therapy.

Dr. Ivkov has a primary appointment of Associate Professor in the Department of Radiation Oncology and Molecular Radiation Sciences at the Johns Hopkins School of Medicine. He holds joint appointments in the Department of Oncology at the Sydney Kimmel Comprehensive Cancer Center, Johns Hopkins School of Medicine; Department of Mechanical Engineering, and the Department of Materials Science and Engineering, both in the Whiting School of Engineering at Johns Hopkins University. He also holds a Guest Researcher position at the National Institute of Standards and Technology's (NIST) Center for Neutron Research (NCNR) in Gaithersburg, MD.

Upon his arrival to the Department of Radiation Oncology and Molecular Radiation Sciences at The Johns Hopkins University School of Medicine in early 2008, Dr. Ivkov began a program developing magnetic nanoparticles and devices that exploit magnetic hysteresis to generate therapeutic heat in models of human cancer. More recently, his research focus has expanded to include effects of systemic exposure to nanoparticles, and local thermal therapy combinations on systemic anti-cancer immune responses.

Dr. Ivkov's formal training includes a BSc in Chemistry from Andrews University, MI, an MSc in Chemistry

from the University of Toronto with an emphasis in statistical mechanics of charged colloids. He obtained his PhD in Chemistry from the University of Maryland, College Park after characterizing the polymerization of actin as a "living" polymer using small angle neutron scattering. After completing his Ph.D., Dr. Ivkov was awarded a NRC Postdoctoral Research Award to perform basic materials research at NIST (Polymers Division). He later moved to the NCNR where he continued his research as an instrument scientist on the NG7 horizontal reflectometer. In 2001, he moved to the private sector to develop oncology products using magnetic nanoparticle hyperthermia. He co-founded Triton BioSystems, Inc. and was its Vice President of Research and Development.

He has published over 100 scientific papers, patents (issued and pending) in nanotechnology, nanobiotechnology, materials science, magnetic devices, colloid and interface science, neutron scattering, and targeted cancer therapy. He currently serves as an editor of the *International Journal of Hyperthermia*, and the *International Journal of Molecular Sciences*.

2023 STM SCHOLAR-IN-TRAINING TRAVEL AWARDS

We are pleased to announce that The Society for Thermal Medicine, is providing travel grants to 10 Scholars-in-Training to encourage participation at the 2023 STM annual meeting.

Awardees will receive a \$500 travel grant.

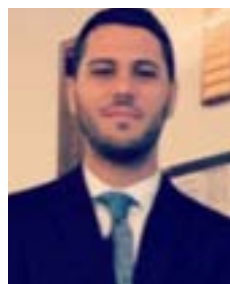
Travel Awards recipients are based upon a competitive evaluation of their submitted abstracts and Scholar-in-Training Award applications.



Johns Hopkins

HAYDEN CARLTON

Method to Evaluate Merit of Magnetic Nanoparticles for Applications with Magnetic Particle Imaging and Magnetic Nanoparticle Hyperthermia



Kansas State University

FARAZ CHAMANI

Modeling of temperature dependent release of HSP70, HSP90, and HMGB1 from pancreatic cancer cells



Cleveland Clinic

GOUTAM DEY

Heating Up Immune Cells In Direct Contact With Ovarian Cancer Cells Induces DNA Damage and Suppresses Chemoresistance



Erlangen University

RUPALI KHATUN

Improvements of highly undersampled MR hyperthermia using complex-valued convolutional networks



University of California San Diego

DEBBIE LEDEZMA

The immunogenicity of Prussian blue nanoparticle-based photothermal ablation of solid tumors



Mount Sinai

DANIEL RIVERA

Magnetic Hyperthermia Therapy in Combination with Chemoradiation for the Treatment of Glioblastoma

2023 STM SCHOLAR-IN-TRAINING TRAVEL AWARDS



Amsterdam UMC

PAOLA TELLO VALVERDE

The probability of locoregional control in recurrent breast cancer patients treated with postoperative re-irradiation combined with hyperthermia shows a continuous thermal dose-effect relationship



Wake Forest

ERICA MONETTE VARGAS

Eradication of *Staphylococcus aureus* Biofilms on Photothermal Silicone Nanocomposites



Cleveland Clinic

JOSEPHINE VOLOVETZ

Predictors of Survival after Laser Interstitial Thermal Therapy in Patients with Recurrent Glioblastoma



Duke

LUCAS WACHSMUTH

Gold nanostars enhance the efficacy and safety of laser interstitial therapy for the treatment of intracranial tumors

STANDARDIZATION WORKSHOP IN CLINICAL HYPERTHERMIA & PANEL DISCUSSION

2:00PM-5:00PM MONDAY, 24 APRIL, 2023, TOUCAN

Abstract: Clinical hyperthermia is booming, but lessons from the past must be well present to guarantee effective hyperthermia treatments for maximum benefit of cancer patients. This workshop aims to promote standardization in hyperthermia therapy by discussing fundamental hyperthermia terminology, patient selection, treatment quality assurance, treatment reporting, certification, and reimbursement. Participants will also have the opportunity to share their experiences and insights.

Chairs:

- Dr. Dario Rodrigues, University of Maryland School of Maryland, Baltimore MD
- Dr. Jennifer Yu, Cleveland Clinic, Cleveland OH

Panel:

- Dr. Mark Hurwitz (Physician), Westchester Medical Center, Valhalla NY
- Dr. Jason Molitoris (Physician), University of Maryland School of Maryland, Baltimore MD
- Dr. Paul Stauffer (Physicist), Thomas Jefferson University, Philadelphia PA
- Dr. Chris Diederich (Physicist), University of California San Francisco, San Francisco CA
- Dr. Elizabeth Repasky (Biologist), Roswell Park Comprehensive Cancer Center, Buffalo NY
- Dr. Rüdiger Wessalowski (Physician), Heinrich Heine University, Düsseldorf, Germany
- Dr. Markus Notter (Physician), Lindenhofspital, Bern, Switzerland
- Dr. Arlene Oei (Biologist), Amsterdam University Medical Center, Amsterdam, The Netherlands
- Dr. Hans Creee (Physicist), Amsterdam University Medical Center, Amsterdam, The Netherlands
- Dr. Gerard van Rhooon (Physicist), Erasmus Medical Center, Rotterdam, The Netherlands

Format: panel discussion with no concurrent sessions

Timing: Monday, April 24, 2-5PM

Duration: 3h with 10min break

Follow-up plan: Continue these discussions in ESHO2023 (Sep 26–29, Cologne , germany) and generate a consensus paper similar to the one published by Myerson et al. Int J Hyperthermia 2014 Feb;30(1):1-5. PMID: 24350642: “Components of a hyperthermia clinic: recommendations for staffing, equipment, and treatment monitoring.”

Topics of discussion include, but are not limited to:

- Hyperthermia therapy definitions
- Clinical
 - Patient selection
 - Managing complications
 - Number of sessions per week
- Treatment quality assurance
 - How to calculate start and end of therapeutic time
 - How to calculate timing between radiation and hyperthermia
 - Thermal dose parameters and their clinical relevance
 - Interpretation of superficial HT probes
 - Maximum temperature (T_{max}) per tissue and maximum time-at-T_{max}
 - Indirect (surrogate) tumor measurements
- Staff guidelines
 - Who should deliver treatments
 - What training is required
- Certification
 - Which entity can/should provide certification
- Reimbursement
 - Launch the challenge
 - Bring reimbursement specialists for HT in 2024



STANDARDIZATION IN THERMAL MEDICINE WORKSHOP





**38TH ANNUAL SOCIETY FOR THERMAL MEDICINE MEETING,
SAN DIEGO, CALIFORNIA**

7:00-9:00 AM | APRIL 23, 2023

Chairs: Dario Rodrigues, PhD and *Colleen Crouch, PhD*

TIME (local)	TALK DESCRIPTION AND SPEAKER
7:00am	<p>Introduction to the Thermal Medicine Standards Committee <i>Dario Rodrigues, PhD, University of Maryland</i> Chair of the Thermal Medicine Standards Committee</p> <p>The ASME Thermal Medicine Standards Committee was established in 2021 with the goal to develop, review and maintain guidelines/standards for requirements to improve quality of care in thermal medicine applications. This committee is currently developing standards for the standardization of language and tissue properties measurements relevant to the Thermal Medicine community.</p>
7:05am	<p>Updates from the Thermal Medicine Lexicon Subcommittee <i>Dario Rodrigues, PhD, University of Maryland</i> Assistant Professor, Department of Radiation Oncology, University of Maryland School of Medicine, Maryland</p> <p>The Thermal Medicine Lexicon project aims to address an unmet need in the Thermal Medicine community that is the lack of standard terminology. The resulting subcommittee addressing this issue is balanced as it includes stakeholders from industry, academia, and government as well as experts within the key fields representing STM: clinical, physics & engineering, and biology. Currently, the lexicon subcommittee consists of seven groups: hyperthermia, ablation, cryotherapy, thermometry & image guidance, thermal physics, thermal biology & physiology, and tissue properties. This talk will provide an update on each group's efforts and how the Thermal Medicine Lexicon will be developed and presented to the Thermal Medicine community.</p>
7:10am	<p>Open discussion – group stage Groups formation for revision of the definitions thermal dose, hyperthermia, and ablation</p>
7:40am	<p>Open discussion Each group will provide feedback regarding the definitions under analysis</p>
7:55am	Break



TIME (local)	TALK DESCRIPTION AND SPEAKER	
8:05am	<p>Updates from the Tissue Properties Measurement (TPM) Subcommittee <i>Colleen Crouch, PhD, University of Tennessee</i> <i>Assistant Professor, Mechanical, Aerospace, and Biomedical Engineering, University of Tennessee, Knoxville</i></p> <p>There are currently no standards to evaluate the thermal performance of medical devices or procedures that induce tissue heating and/or cooling as an intended or unintended consequence of device use/procedure. Evaluation of thermal performance includes verification of device parameters, assessment of tissue effects (e.g., thermal damage, tissue appearance, tissue/organ function), and the related spread of thermal energy. The tissue properties subcommittee's purpose is to establish definitions, measurements, and validation techniques for thermal medicine terms. The subcommittee consists of seven groups: thermal-high temperature, thermal-cryo, physiology, mechanical, electromagnetics, optics, acoustics/ultrasound, and MRI. This talk will provide an update on each group's efforts.</p>	
	<p>Towards measurement standardization of <u>electromagnetic</u> tissue properties <i>Sergio Curto, PhD, Erasmus MC</i> <i>Assistant Professor, Radiotherapy Department, Erasmus Medical Center (MC), Rotterdam, The Netherlands</i></p>	
	<p>Towards measurement standardization of <u>physiological</u> tissue properties <i>Colleen Crouch, PhD, University of Tennessee</i> <i>Assistant Professor, Mechanical, Aerospace, and Biomedical Engineering, University of Tennessee, Knoxville</i></p>	
	<p>Towards measurement standardization of <u>thermal</u> tissue properties <i>Harry Vine, BSc, MBA</i> <i>Sales Engineer, Beacon Technical Sales, Inc., Nashua, New Hampshire</i></p>	
	<p>Towards measurement standardization of <u>optical</u> tissue properties <i>Gal Shafirstein, DSc, Roswell Park Comprehensive Cancer Center</i> <i>Professor, Department of Cell Stress Biology, Roswell Park Comprehensive Cancer Center, Buffalo, New York</i></p>	
	<p>Cryo tissue properties Mechanical tissue properties MRI tissue properties <i>Speakers TBD</i></p>	
8:55am	End	

PROGRAM

MONDAY, APRIL 24TH

- 08:00 - 19:00 **Sponsor Exhibits** | Board Room
- 08:00 - 19:00 **Registration** | Kon Tiki Foyer
- 08:00 - 09:00 **Breakfast** | Aviary Foyer
- 09:00 - 12:00 **Career Development Workshop** | Kon Tiki Ballroom
Presentation type Oral
Chair(s): Jennifer Yu
- Part 1: Getting funded**
Chair: Jennifer Yu
NIH Grant writing tips - *Jennifer Yu*
Panelists: Jennifer Yu, Elizabeth Repasky,
Dieter Haemmerich, Erik Cressman
- Part 2: Finding your first job**
Chair: Nicole Levi
Tips on finding your first job - *Mark Hurwitz*
Do's and don'ts of a job talk - *Ofer Reizes*
Startup packages/what can be negotiated - *Nicole Levi*
Panelists: Mark Hurwitz, Ofer Reizes,
Nicole Levi, Rohan Fernandes
- Part 3: Opportunities for Improving Diversity, Equity, and Inclusion**
Sponsored by the Women and Minorities in STM Committee
Chairs: Jennifer Yu and Nicole Levi
Panelists: Sharon Evans, Arlene Oei, Debbie Ledezma,
Punit Prakash, David Fuentes
- 09:00 - 12:00 **Extracellular Stress Session** | Toucan
Presentation type Oral
Chair(s): Antonio De Maio, Michael Graner
- Talk 1 Stressed Exosomes (SEXOSOMES) in Glioblastoma Therapeutic Resistance**
Jasmina Redzic, Arin Graner, Justin Hellwinkel,
Laura Russell, Michael Graner
*University of Colorado Denver School of Medicine,
Department of Neurosurgery, Boulder, CO, USA*
- Talk 2 The Presence of HSP70 on Exosome Membranes, a Historical Perspective**
Antonio De Maio
*Division of Trauma, Surgical Critical Care, Burns, and Acute Care
Surgery, Department of Surgery, University of California San Diego,
School of Medicine, La Jolla, CA, USA*
- Talk 3 Release of mitochondria in extracellular vesicles as a cellular quality control pathway**
Asa Gustafsson
University of California San Diego, La Jolla, CA, USA

Talk 4 The Other Shoe to Drop: Fear, Anxiety, and Cancer Extracellular Microvesicular Biomarkers
Monika Fleshner, Tel Kelly, Shelby Hopkins, Lida Beninson
Center for Neuroscience, University of Colorado Boulder, Boulder, CO, USA

Talk 5 The Effects of Heat Stress on the Transcriptome of Human Cancer Cells: A Meta-Analysis
 Enzo M Scutigliani^{1,2}, Fernando Lobo Cerna^{1,2}, Sergio Mingo Barba^{3,4,5}, Stephan Scheidegger³, Przemek M Krawczyk^{1,2}
¹*Amsterdam University Medical Centers, Amsterdam, Netherlands.*
²*Cancer Center Amsterdam, Amsterdam, Netherlands.* ³*ZHAW School of Engineering, Winterthur, Switzerland.* ⁴*University of Fribourg, Fribourg, Switzerland.* ⁵*Adolphe Merkle Institute, Fribourg, Switzerland*

12:00 - 13:00	Lunch	Beach
13:00 - 14:00	Keynote - Eric Leuthardt Presentation type Oral Chair(s): Alireza Mohammadi Title: Laser Interstitial Thermal Therapy – A Sea Change for the Treatment of Brain Tumors	Toucan
14:00 - 17:00	Standardization Workshop in Clinical Hyperthermia & Panel Discussion Presentation type Oral Chair(s): Dario Rodrigues	Toucan
17:00 - 19:00	Reception	Aviary Foyer

TUESDAY, APRIL 25TH

07:00 - 19:00	Sponsor Exhibits	Board Room
07:00 - 19:00	Registration	Kon Tiki Foyer
07:00 - 09:00	Breakfast	Aviary Foyer
07:00 - 09:00	ASME Workshop Chair(s): Dario Rodrigues	Toucan
09:00 - 11:00	Nanotechnology Session I Chair(s): Samir Jenkins, Daniel Rivera	Toucan

Talk 6 Photothermal Cytotoxicity of Silver Nanoparticles on Melanoma Cells Harboring Intracellular Infection

Mr. Marco A. Benavides-Taylor, Dr. Sijia Liu PhD, Spencer Phillips MS, Scott Northrup BS, Dr. Nicole H. Levi PhD
Wake Forest University School of Medicine, Winston-Salem, NC, USA

Talk 7 Liver cancer treatment through intrahepatic triggered drug release from thermosensitive liposomes using local mild hyperthermia

Marjolein I Priester¹, Ann L.B. Seynhaeve¹, Sergio Curto¹, Pegah Faridi², Punit Prakash², Gerard C. van Rhooon¹, Timo L.M. ten Hagen¹
¹Erasmus MC, Rotterdam, Netherlands. ²Kansas State University, Manhattan, Kansas, USA

Talk 8 Reduced Toxicities by Extracorporeal Removal of Thermosensitive Liposomal Doxorubicin

Dieter Haemmerich¹, Dan Newton¹, Anjan Motamarry¹, A Marissa Wolfe¹, Krishna K. Ramajayan¹, Miguel T. Troncoso¹, Kristine Deleon-Pennell¹, Thomas Benton¹, Yuri Peterson¹, Pegah Faridi², Punit Prakash², Katherine Twombly¹
¹Medical Univ. of South Carolina, Charleston, SC, USA. ²Kansas State Univ., Manhattan, KS, USA

Talk 9 Systemic Treatment with Iron Oxide Nanoparticles Inhibits Progression of Metastatic Cancer by Altering the Host Immune Profile in Mouse Models of Breast Cancer

Preethi Korangath¹, Lu Jin², Chun-Ting Yang¹, Sean Healy¹, Xin Guo¹, Suqi Ke¹, Chen Hu¹, Kathleen Gabrielson¹, Jeremy Foote³, Robert Clarke², Robert Ivkov¹
¹Johns Hopkins University, Baltimore, Maryland, USA. ²The Hormel Institute, University of Minnesota, Minneapolis, Minnesota, USA. ³University of Alabama, Tuscaloosa, Alabama, USA

***Talk 10 Magnetic Hyperthermia Therapy in Combination with Chemoradiation for the Treatment of Glioblastoma**

Dr Maria Anastasiadou PhD¹, Daniel Rivera BS^{1,2}, Dr Alexandros Bouras MD^{1,2}, Tori Channenчук MSI, Alexander Schupper MD¹, Caroline Rizea BS¹, Gabrielle Price MS¹, Dr Hayden Carlton PhD³, Dr Robert Ivkov PhD^{3,4,5,6}, Dr Constantinos G Hadjipanayis MD, PhD^{1,2}
¹Icahn School of Medicine at Mount Sinai, Department of Neurological Surgery, New York, NY, USA. ²University of Pittsburgh, Department of Neurological Surgery, Pittsburgh, PA, USA. ³Johns Hopkins University, Department of Radiation Oncology and Molecular Radiation Sciences, Baltimore, MD, USA. ⁴Johns Hopkins University School of Medicine, Department of Oncology, Baltimore, MD, USA. ⁵Johns Hopkins University, Department of Mechanical Engineering, Whiting School of Engineering, Baltimore, MD, USA. ⁶Johns Hopkins University, Department of Materials Science and Engineering, Whiting School of Engineering, Baltimore, MD, USA

Talk 11 Enhanced cellular and tumor uptake of nanoparticles via exosome membrane-coatings

Samir V. Jenkins¹, Gabriel Fletcher², Deborah Okyere², Jingyi Chen², David Huitink², Robert J. Griffin¹
¹University of Arkansas for Medical Sciences, Little Rock, AR, USA.
²University of Arkansas, Fayetteville, AR, USA

09:00 - 11:00 **LITT Session**

| Macaw

Chair(s): Jennifer Yu, Peter Fecci

Talk 12 INVITED SPEAKER - Immunologic Consequences of LITT for Glioblastoma Patients

David Tran
Chief of Neuro-Oncology and co-Director of the USC Brain Tumor Center, Los Angeles, CA, USA

Talk 13 Development of a treatment planning tool for Laser Interstitial Thermal Therapy

Yash Lad Master's¹, Avesh Jangam Master's², Anirudh Sharma³, Brad Zacharia⁴, Constantinos Hadjipanayis⁵, Robert Ivkov³, Anilchandra Attaluri¹
¹Pennsylvania State University, Harrisburg, Pennsylvania, USA.
²Pennsylvania State University, Harrisburg, Pennsylvania, USA. ³The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.
⁴Pennsylvania State Health, Hershey, Pennsylvania, USA. ⁵University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania, USA

Talk 14 Socioeconomic Barriers in Access to Laser Interstitial Thermal Therapy: A Role for Targeted Referral

Aden P Haskell-Mendoza MS¹, Ariel T Gonzalez BS¹, Aditya A Mohan BS¹, Emily C Lerner MHS¹, Dr. Ethan S Srinivasan MD², Dr. Joshua D Jackson MD, PhD³, Dr. Peter E Fecci MD, PhD⁴
¹Duke University School of Medicine, Durham, NC, USA. ²Department of Neurosurgery, Johns Hopkins Hospital, Baltimore, MD, USA.
³Department of Neurosurgery, Duke University Medical Center, Durham, NC, USA. ⁴Preston Robert Tisch Brain Tumor Center, Duke University Medical Center, Durham, NC, USA

* SITA Winner

***Talk 15 Gold nanostars enhance the efficacy and safety of laser interstitial therapy for the treatment of intracranial tumors**

Lucas Wachsmuth BS¹, Pakawat Chongsathidkiet MD¹, Yang Liu PhD¹, Ren Odion BS¹, Ethan Srinivasan MD^{1,2}, Aden Haskell-Mendoza BS¹, Ryan Edwards¹, Adian Canning BS¹, Gavin Willoughby¹, Joseph Hinton¹, Stephen Norton PhD¹, Tuan Vo-Dinh PhD¹, Peter Fecci MD, PhD¹
¹Duke University, Durham, NC, USA. ²Johns Hopkins, Baltimore, MD, USA

Talk 16 Adapting Laser Interstitial Thermal Therapy (LITT) for Treatment of Intracranial Lesions in Dogs

Dr. Christopher L Mariani DVM, PhD¹, Dr. Peter E Fecci MD, PhD²
¹North Carolina State University, Raleigh, NC, USA. ²Duke University, Durham, NC, USA

11:00 - 11:30	Break	Aviary Foyer
11:30 - 12:30	Keynote - Alireza Shamshirsaz Chair(s): Alireza Mohammadi Title: Past, present and future of fetal surgery	Kon Tiki Ballroom
12:30 - 14:00	Lunch	Beach
14:00 - 16:30	Biology Session I Chair(s): Arlene Oei, Allison Payne	Kon Tiki Ballroom

Talk 17 APPLYING OPTIMAL STEREOTACTIC DOSES OF RADIATION WITH HYPERTHERMIA TO TREAT SOLID TUMORS IN A PRECLINICAL IN VIVO MODEL

Mr Folefac C. Asonganyi, Ms. Biomedical Sciences¹, Mr Priyanshu N Sinha, Ms. Biomedical Engineering¹, Mateusz K. Sitarz, Ph.D.², Prof Niels Bassler, Ph.D.², Prof Michael R. Horsman, Ph.D.¹
¹Department of Experimental Clinical Oncology, Aarhus University Hospital, Aarhus, Denmark. ²Department of Clinical Medicine - DCPT - Danish Center for Particle Therapy, Aarhus, Denmark

Talk 18 The effect of hyperthermia on radiation-induced epithelial-mesenchymal transition (EMT) signaling

Timo L.M. ten Hagen PhD¹, Arlene L. Oei PhD^{1,2,3,4}
¹Precision Medicine in Oncology (PrMiO), Department of Pathology, Erasmus MC Cancer Institute, Rotterdam, Netherlands. ²Department of Radiotherapy Oncology, Amsterdam UMC, location University of Amsterdam, Amsterdam, Netherlands. ³Center for Experimental and Molecular Medicine (CEMM), Laboratory for Experimental Oncology and Radiobiology (LEXOR), Amsterdam, Netherlands. ⁴Cancer Center Amsterdam, Cancer Biology and Immunology, Amsterdam, Netherlands

Talk 19 Contrast-Enhanced Ultrasound Study of the Effect of Acute Heat Stress on Mice Liver Perfusion

Amin Jarrahi, Dr. A. Colleen Crouch PhD
University of Tennessee, Knoxville, Tennessee, USA

* SITA Winner

Talk 20 Liver tumor or liver tumor? Initial Experience with the Oncopig Model for Hyperthermic Therapies

Dr. Danielle L. Stolley PhD, Dr. Natalie W. Fowlkes DVM, PhD, Ms. Maria S. Stenkamp B.S., Mr. Steve Parrish B.S., Dr. Erik N. K. Cressman PhD, MD

MD Anderson Cancer Center, Houston, TX, USA

Talk 21 INVITED SPEAKER - Comparison of Heating Techniques in Hyperthermia on 3D tumor spheroids of two different cancer cell line

Robin A. Nadar PhD^{1,2}, Rogier van Oossanen I, Ioannis Androulakis¹, Kristina Djanashvili PhD³, Antonia G. Denkova PhD², Gerard C. van Rhoon PhD^{1,2}

¹Erasmus MC Cancer Institute, Dept. Radiotherapy, Rotterdam, Netherlands. ²Delft University of Technology, Dept. Radiation Science and Technology, Delft, Netherlands. ³Delft University of Technology, Dept. Biotechnology, Delft, Netherlands

Talk 22 RF-hyperthermia to modulate tumor interstitial fluid pressure: an in vivo pilot study

Anna Bottiglieri PhD¹, Malea Williams², Santosh K. Mandal², Jun Ying Tan³, Aabila Tharzeen⁴, Jungkwun Kim³, Balasubramaniam Natarajan⁵, Rahul A. Sheth², Punit Prakash⁴

¹Kansas State University, Manhattan, Kansas, USA. ²Department of Interventional Radiology, The University of Texas MD Anderson Cancer Center, Houston, Texas, USA. ³Department of Electrical Engineering, University of North Texas, Denton, Texas, USA. ⁴Department of Electrical and Computer Engineering, Kansas State University, Manhattan, Kansas, USA. ⁵Department of Electrical and Computer Engineering, Manhattan, Kansas, USA

14:00 - 16:30 **Clinical Session I**

| Toucan

Chair(s): Rudi Wessalowski, Hans Crezee

Talk 23 A midterm evaluation of HYPERBOOST (Hyperthermia boosting the effect of Radiotherapy)

Hans Crezee PhD^{1,2}, Sergio Curto PhD³, Hana Dobsicek Trefna PhD⁴, Rainer Fietkau MD, PhD⁵, Benjamin Frey PhD⁵, Udo Gaipl PhD⁵, Pirus Ghadjar MD, PhD⁶, Michael Robert Horsman PhD⁷, Petra Kok PhD^{1,2}, Przemek M. Krawczyk^{8,2}, Thoralf Niendorf PhD⁹, Oliver J. Ott⁵, Pierfrancesco Pavoni¹⁰, Gerard C. van Rhoon PhD³, Oliver Riesterer MD, PhD^{11,12}, Stephan Scheidegger PhD¹³, Martin Ben Wadepohl¹⁴, Ben J. Slotman MD, PhD^{15,2}

¹Department of Radiation Oncology, Amsterdam University Medical Centers, University of Amsterdam, Amsterdam, Netherlands. ²Cancer Center Amsterdam, Amsterdam, Netherlands. ³Department of Radiation Oncology, Erasmus MC Cancer Institute, Rotterdam, Netherlands.

⁴Department of Electrical Engineering, Chalmers University of Technology, Gothenburg, Sweden. ⁵Department of Radiation Oncology, Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany. ⁶Department of Radiation Oncology, Charité-Universitätsmedizin Berlin, Berlin, Germany. ⁷Experimental Clinical Oncology - Department of Oncology, Aarhus University Hospital, Aarhus, Denmark. ⁸Department of Medical Biology, Amsterdam University Medical Centers, University of Amsterdam, Amsterdam,

Netherlands. ⁹Berlin Ultrahigh Field Facility, Max-Delbrück-Center for Molecular Medicine, Berlin, Germany. ¹⁰Medlogix srl, Rome, Italy. ¹¹Centre for Radiation Oncology KSA-KSB, Cantonal Hospital Aarau, Aarau, Switzerland. ¹²University of Zurich, Zurich, Switzerland. ¹³ZHAW School of Engineering, University of Applied Sciences, Winterthur, Switzerland. ¹⁴Dr. Sennewald Medizintechnik GmbH, Munich, Germany. ¹⁵Department of Radiation Oncology, Amsterdam University Medical Centers, Vrije Universiteit Amsterdam, Amsterdam, Netherlands

Talk 24 Regional hyperthermia as salvage treatment added to radiation in malignant pediatric tumors

MD Ruediger Wessalowski MD¹, Hana Dobsicek-Trefna PhD², Christiane Matuschek MD¹, Katrin Harder¹, Oliver Mils¹, Farid Ziayee MD¹, Christiane Staude MD¹, Ronald Richter MD³, Gerard van Rhoon PhD⁴, Wilfried Budach MD¹

¹Heinrich-Heine-University, Medical Faculty, Düsseldorf, Germany.

²Chalmers University of Technology, Department of Electrical Engineering, Göteborg, Sweden. ³University Hospital Essen, WPE, Essen, Germany. ⁴Erasmus MC Cancer Institute, Rotterdam, Netherlands

Talk 25 Whole-body Hyperthermia (WBH) as an Additional Treatment for Depression: The HEATBED Study

Dr. Ashley E Mason PhD^{1,2}, Dr. Charles Raison MD, MA^{3,4}, Dr. Wendy Hartogensis PhD⁵, Dr. Chelsea J Siwik PhD⁵, Dr. Leena Pandya ND⁵, Ms. Anoushka Chowdhary BA¹, Dr. Rhonda Patrick PhD⁶, Dr. Patricia J Moran PhD¹, Ms. Claudine Anglo BS¹, Ms. Stefanie Roberts BS¹, Dr. Osnat Lupesko-Persky PhD¹, Dr. Christopher A Lowry PhD⁷, Dr. Frederick M Hecht MD^{1,8}

¹Osher Center for Integrative Health, University of California San Francisco, San Francisco, CA, USA. ²Department of Psychiatry, University of California San Francisco, San Francisco, CA, USA. ³School of Human Ecology, University of Wisconsin-Madison, Madison, WI, USA. ⁴Department of Psychiatry, School of Medicine and Public Health, University of Wisconsin-Madison, Madison, WI, USA. ⁵Osher Center for Integrative Health, University of California, San Francisco, San Francisco, CA, USA. ⁶FoundMyFitness, San Diego, CA, USA. ⁷Department of Integrative Physiology, University of Colorado Boulder, Boulder, CA, USA. ⁸Division of General Internal Medicine, San Francisco, CA, USA

Talk 26 Patients with fungating recurrent breast cancer: Long-term follow-up after combined wIRA-hyperthermia and re-irradiation

Dr Markus Notter MD¹, Dr Andreas R. Thomsen MD^{2,3}, Prof. Dr. Peter Vaupel MD^{2,3}

¹Lindenhofspital, Bern, Bern, Switzerland. ²University Medical Center Freiburg, Freiburg, Germany. ³German Cancer Consortium (DKTK), Partner Site Freiburg and German Cancer Research Center (DKFZ), Freiburg, Germany

Talk 27 Hyperthermia thermal dose-effect in patients with non-muscle-invasive bladder cancer treated with chemohyperthermia

Drs. C. Paola Tello Valverde MSc^{1,2}, Drs. Elisabeth D. Geijsen MD¹, Dr. Akke Bakker PhD¹, Dr. Jorg R. Oddens MD, PhD¹, Dr. H. Petra Kok PhD¹, Dr. Theo M. de Reijke MD, PhD¹, Dr. Hans Crezee PhD¹
¹Amsterdam UMC, location University of Amsterdam, Department of Radiation Oncology, Amsterdam, North Holland, Netherlands.
²Amsterdam UMC, location Vrije Universiteit Amsterdam, Department of Radiation Oncology, Amsterdam, North Holland, Netherlands

Talk 28 The CARES project: systemic therapy incorporating loco-regionally controlled delivery using thermosensitive liposomes and hyperthermia.

Prof Timo LM ten Hagen PhD¹, prof Grerard C van Rhoon PhD¹, Prof Maarten Paulides PhD², Dr Clemens Bos PhD³, PhD Roel Deckers PhD³, Dr Juan Hernandez Tamames PhD¹, Dr Lambertus W Bartels PhD³, Dr Hans Crezee PhD⁴, Dr Petra Kok PhD⁴, Dr Arlene L Oei PhD⁴, Prof Maurice Heemels PhD², Dr Sergio Curto PhD¹
¹Erasmus MC, Rotterdam, Netherlands. ²TUe, Eindhoven, Netherlands.
³UMCU, Utrecht, Netherlands. ⁴AUMC, Amsterdam, Netherlands

14:00 - 16:30 **Neuro-Oncology Session**

| Macaw

Chair(s): Josie Volovetz, Michael Graner

Talk 29 Laser Interstitial Thermal Therapy (LITT) Versus Resection for Lesions In or Near the Primary Motor Cortex: Comparison of Functional Outcomes

Dr. Ethan S Srinivasan MD¹, Emily C Lerner MHS², Aden P Haskell-Mendoza MS², Ryan M Edwards BA², Lucas P Wachsmuth BS², Dr. Joshua D Jackson MD, PhD³, Dr. David Huie MD, MS³, Dr. Peter E Fecci MD, PhD⁴

¹Department of Neurosurgery, Johns Hopkins University School of Medicine, Baltimore, MD, USA. ²Duke University School of Medicine, Durham, NC, USA. ³Department of Neurosurgery, Duke University Medical Center, Durham, NC, USA. ⁴Preston Robert Tisch Brain Tumor Center, Department of Neurosurgery, Duke University Medical Center, Durham, NC, USA

Talk 30 Treatment of Recurrent Brain Metastases with Laser Interstitial Thermal Therapy (LITT) in Combination with Stereotactic Radiosurgery (SRS): Retrospective Outcomes and Prospective Clinical Trial Design

Dr. Joshua D Jackson M.D., Ph.D., Aden P Haskell-Mendoza B.S., Dr. Peter E Fecci M.D., Ph.D.
Duke University, Durham, NC, USA

Talk 31 Volumetric Analysis of Brain Metastasis After Treatment with Laser Interstitial Thermal Therapy (LITT)

Dr Erion J de Andrade MD, MsC, Dr. Gene Barnett MD., Dr Alireza M Mohammadi MD.
Cleveland Clinic, Cleveland, OH, USA

Talk 32 Brain Tumor Tract Seeding is Associated with Ablation Technique and Occurs Rapidly Following Laser Interstitial Thermal Therapy

Aden P Haskell-Mendoza MS¹, Dr. Ethan S Srinivasan MD^{2,1}, Emily C Lerner MHS¹, Ryan M Edwards BA¹, Allison M. Schwalb BS¹, Dr. Joshua D Jackson MD, PhD³, Dr. Andrew A Hardigan MD, PhD³, Dr. Eugene J Vaios MD, MBA⁴, Dr. Peter E Fecci MD, PhD⁵

¹Duke University School of Medicine, Durham, NC, USA. ²Department of Neurosurgery, Johns Hopkins University School of Medicine, Baltimore, MD, USA. ³Department of Neurosurgery, Duke University Medical Center, Durham, NC, USA. ⁴Department of Radiation Oncology, Duke University Medical Center, Durham, NC, USA. ⁵Preston Robert Tisch Brain Tumor Center, Department of Neurosurgery, Duke University Medical Center, Durham, NC, USA

***Talk 33 Predictors of Survival after Laser Interstitial Thermal Therapy in Patients with Recurrent Glioblastoma**

Josephine Volovetz MD¹, William Leidig², Omar H Butt MD, PhD², Tehila Kaisman-Elbaz MD, PhD¹, Matthew Grabowski MD¹, Ruth G Nakiwala Katumba MPH², Tanner M Johanns MD, PhD², Milan G Chheda MD², Jian L Campian MD, PhD^{2,3}, Jon T Willie MD, PhD², Jiayi Huang MD², Eric C Leuthardt MD², Albert H Kim MD, PhD², Alireza M Mohammadi MD¹

¹Cleveland Clinic, Cleveland, Ohio, USA. ²Washington University in St. Louis, St Louis, Missouri, USA. ³Mayo Clinic, Rochester, Minnesota, USA

16:30 - 19:00 **STM Awards Presentations/Ceremony and Poster Session & Mixer** | Kon Tiki Ballroom
Chair(s): Michael Graner

2023 STM George M. Hahn Award Talk:

Hans Crezee, PhD, Academic Medical Center Amsterdam
Title of talk: Unlocking the full potential of clinical hyperthermia

2023 STM J. Eugene Robinson Award (Physics) Talk:

Robert Ivkov, PhD, Johns Hopkins University, School of Medicine, Department of Radiation Oncology

Title of talk: How do we transform magnetic nanoparticle hyperthermia into a precision medicine tool for cancer therapy?

Poster Session:

Poster 1 Effects of α PD-1 immunotherapy and MR-guided Focused Ultrasound in a Murine Breast Cancer Model

Undergraduate student Josh Hillyard Biomedical engineering, Dr. Allison Payne Mechanical Engineering, Dr. Sara Johnson Biomedical Engineering
University of Utah, Salt Lake City, Utah, USA

Poster 2 Cellular and molecular characterization of clinically utilizable targets of hyperthermic potentiation in B16-F10 melanoma cells

Kaci Kopec B.S.¹, Nicole DeSouza B.S.¹, Danielle Quaranto M.S.¹, Tara Jarboe M.S.¹, Michelle Carnazza B.S.¹, Thomas Gagliardi¹, Joseph Conti¹, Raj K Tiwari Ph.D.¹, Jan Geliebter Ph.D.¹, Mark D Hurwitz M.D.^{2,1}

¹New York Medical College, Valhalla, NY, USA. ²Westchester Medical Center, Valhalla, NY, USA

* SITA Winner

Poster 3 Temperature impact on B16-F10 melanoma in vitro model: mapping the carcinogenic phenotype and morphological characterization

Nicole DeSouza B.S.¹, Danielle Quaranto M.S.¹, Kaci Kopec B.S.¹, Tara Jarboe M.S.¹, Michelle Carnazza B.S.¹, Thomas Gagliardi¹, Joseph Conti¹, Raj K Tiwari Ph.D.¹, Jan Geliebter Ph.D.¹, Mark D Hurwitz^{2,1}
¹New York Medical College, Valhalla, NY, USA. ²Westchester Medical Center, Valhalla, NY, USA

Poster 4 Thermal Therapeutic Efficacy of Multifunctional Biomembrane-Coated Hybrid Nanoparticles

Gabriel J Fletcher¹, Samir V Jenkins², Geletu Qing¹, Deborah Okyere¹, Jingyi Chen¹, Robert J Griffin², David Huitink¹
¹University of Arkansas, Fayetteville, AR, USA. ²University of Arkansas for Medical Sciences, Little Rock, AR, USA

Poster 5 Survival analysis for modeling proliferation of Escherichia coli biofilms following photothermal treatment

Mr Bradley Burden MS, Dr. Juan Sebastian Rodriguez-Alvarez MD, Dr. Nicole Levi PhD, Dr. F. Scott Gayzik PhD
Wake Forest University School of Medicine, Winston-Salem, NC, USA

Poster 6 Image-analysis technique for characterization of microwave ablation zones

Jan Sebek Ph.D., Dr. Punit Prakash Ph.D.
Kansas State University, Manhattan, KS, USA

Poster 7 A Sensitivity Study Evaluating Heating at the Skull-brain Interface During Transcranial MRgFUS Surgery

Amanda K Dame¹, Jordan T Grow¹, Steven P Allen PhD¹, Henrik Odéen PhD², Christopher R Dillon PhD¹
¹Brigham Young University, Provo, UT, USA. ²University of Utah, Salt Lake City, UT, USA

19:00 - 22:00 **Robinson Award Dinner**

| Cockatoo

WEDNESDAY, APRIL 26TH

08:00 - 19:00	Sponsor Exhibits	Board Room
08:00 - 19:00	Registration	Kon Tiki Foyer
08:00 - 09:00	Breakfast	Aviary Foyer
09:00 - 11:00	Nanotechnology Session 2 Chair(s): Nicole Levi, Erica Vargas	Toucan

***Talk 41 Eradication of Staphylococcus aureus Biofilms on Photothermal Silicone Nanocomposites**

Erica Monette M Vargas BS¹, Bradley Burden MS², Nicole Levi PhD¹, Scott Gayzik PhD²

¹Wake Forest University School of Medicine, Winston-Salem, NC, USA. ²Virginia Tech and Wake Forest University Center for Injury Biomechanics, Winston-Salem, NC, USA

Talk 42 Evaluation of a Balloon Implant for Simultaneous Magnetic Nanoparticle Hyperthermia and High-Dose-Rate Brachytherapy of Brain Tumor Resection Cavities

Dr. Shuying Wan PhD¹, Dr. Dario B Rodrigues PhD², Prof. Paul R Stauffer MSEE, CCE¹, Janet Kwiatkowski³, Dr. Omaditya Khanna MD¹, Dr. Kevin D Judy MD¹, Marty Overbeek Bloem⁴, Robert Goldstein FASM⁵, Dr. Yan Yu PhD, MBA¹, Dr. Wenyin Shi MD, PhD¹, Dr. Mark D Hurwitz MD⁶

¹Thomas Jefferson University Hospital, Philadelphia, PA, USA.

²University of Maryland School of Medicine, Baltimore, MD, USA. ³MAE Group, Deerfield, NH, USA. ⁴Phoenix DeVentures, Morgan Hill, CA, USA. ⁵AMF LifeSystems, Auburn Hills, MI, USA. ⁶Westchester Medical Center Health Network, Valhalla, NY, USA

Talk 43 Effect of mild magnetic nanoparticle hyperthermia on the clearance of beta-amyloid plaques for Alzheimer's Disease

Eric Dyne PhD, Byeongtak Jeon PhD, Woo-Yang Kim PhD, Min-Ho Kim PhD

Kent State University, Kent, OH, USA

Talk 44 Small is beautiful and powerful: The Power of Nanomagnets in Cancer Therapy

Professor Ahmed A. El-Gendy PhD in Physics

University of Texas at El Paso, El Paso, TX, USA

Talk 45 Analysis of Perfusion-Based Convection during Transient Pulsed Heating

Hayden Carlton PhD¹, Preethi Korangath PhD¹, Nageshwar Arepally², Anilchandra Attaluri PhD², Robert Ivkov PhD¹

¹The Johns Hopkins School of Medicine, Baltimore, MD, USA. ²Penn State Harrisburg, Middletown, PA, USA

* SITA Winner

***Talk 46 Improvements of highly undersampled MR hyperthermia using complex-valued convolutional networks**

MS Rupali Khatun¹, Dr. Soumick Chatterjee PhD², Dr. rer. nat. Manfred Schmid³, Prof. Dr. rer. nat. Christoph Bert⁴, Mr Martin wadepohl⁵, Prof. Dr. med. Rainer Fietkau⁴, Prof. Dr Andreas Nürnberger², Prof. Dr. Udo S. Gaipl⁴, PD Dr.-Ing Benjamin Frey⁴
¹Department of Radiation Oncology, Universitätsklinikum Erlangen, Erlangen, Bavaria, Germany. ²Data and Knowledge Engineering Group, Faculty of Computer Science, Otto von Guericke University Magdeburg, Magdeburg, Germany. ³Department of Radiation Oncology, Universitätsklinikum Erlangen, Erlangen, Germany, Erlangen, Germany. ⁴Department of Radiation Oncology, Universitätsklinikum Erlangen, Erlangen, Germany. ⁵Dr. Sennewald Medizintechnik GmbH, Munich, Germany

Talk 47 Potential therapeutic benefit for turmeric in low grade pseudomyxoma peritonei (PMP)

Morgan Sainsbury BS, MS¹, Elizabeth Norton BS, MS, MD¹, Somnath Singh BPharm, MPharm, PhD², Alekha Dash RPh, PhD², Peter Thomas Ph.D¹, Venkatesh Govindarajan PhD¹, Brian Loggie MD, CM, FRCSC, FACS¹
¹Creighton University School of Medicine, Omaha, NE, USA.
²Creighton University School of Pharmacy and Health Professions, Omaha, NE, USA

Talk 48 Metal and device implants during RF-heating: can we learn from MRI guidelines?

Prof.Dr. Gerard C. van Rhoon PhD, Mr. Anton Rink, Dr. Sergio Curto-Ramos PhD
Erasmus MC Cancer Institute, Dept. Radiotherapy, Rotterdam, Netherlands

Talk 49 MUSCLE EQUIVALENT PHANTOM AT DEEP AND SUPERFICIAL HYPERTHERMIA FREQUENCIES

Flavia Liporace, Marta Cavagnaro
Dept. of Information Engineering, Electronics and Telecommunications Sapienza University, Rome, Italy

Talk 50 A feasibility study: The value of non-invasive temperature measurements during hyperthermia treatment in practice; validation, sense of comfort and quality of treatment

Martine Franckena¹, Patrick Granton¹, Anton F. Rink¹, Juan Hernandez Tamames², Remi A. Nout¹, Sergio Curto¹
¹Erasmus MC Cancer Institute, dept. Radiation Oncology, Rotterdam, Netherlands. ²Erasmus MC, dept. of Radiology & Nuclear Medicine, Rotterdam, Netherlands

11:00 - 11:30 **Break**

| Aviary Foyer

11:30 - 12:30 **Keynote - Alex Huang**
Chair(s): Alireza Mohammadi

| Kon Tiki Ballroom

Title of talk: Tumor-intrinsic Innate Sensors Drive Host Antitumor Adaptive Immune Responses Following Solid Tumor Cryotherapy

* SITA Winner

12:30 - 14:00 **Lunch**

| Beach

14:00 - 16:30 **Biology Session 2**

| Kon Tiki Ballroom

Chair(s): Lucas Wachsmuth, Ofer Reizes

Talk 51 Sex-specific differences in response to hyperthermia and radiotherapy in a mouse model of glioblastoma

Dr. Jing Hao M.D. PhD.¹, Dr. Defne Bayik Watson PhD.¹, Dr. Peng Qi Ph.D.², Dr. Haidong Huang PhD.¹, Dr. Xiangzi Han MD. PhD.¹, Dr. Justin Lathia PhD.¹, Dr. Jennifer Yu MD. PhD.¹

¹Cleveland Clinic Lerner Institute, Cleveland, Ohio, USA. ²Cleveland Clinic, Cleveland, Ohio, USA

Talk 52 The influence of hyperthermia on epigenetic signaling in dysbiotic tumor vasculature

Hailey Kristian, Robert J. Griffin Ph.D., Samir V. Jenkins Ph.D., Ruud P.M. Dings Ph.D.

UAMS, Little Rock, AR, USA

Talk 53 Radiotherapy and hyperthermia of cervical cancer: Timing matters

Xionge Mei MSc.^{1,2,3}, H. Petra Kok PhD^{1,3}, Barbara C. Snoek PhD^{1,2,3}, Hans M. Rodermond BSc.^{1,2,3}, Gregor G.W. van Bochove MSc.^{1,2,3}, Caspar M. van Leeuwen PhD^{1,3}, Ekaterina S. Jordanova PhD⁴, Nicolaas A.P. Franken PhD^{1,2,3}, Timo L.M. ten Hagen PhD⁵, Johannes Crezee PhD^{1,3}, Louis Vermeulen PhD^{2,3,6}, Lukas J.A. Stalpers PhD^{1,2,3}, Arlene L. Oei PhD^{1,2,3}

¹Department of Radiotherapy Oncology, Amsterdam UMC, location University of Amsterdam, Amsterdam, Netherlands. ²Center for Experimental and Molecular Medicine (CEMM), Laboratory for Experimental Oncology and Radiobiology (LEXOR), Amsterdam, Netherlands. ³Cancer Center Amsterdam, Cancer Biology and Immunology, Amsterdam, Netherlands. ⁴Center for Gynecologic Oncology Amsterdam, Amsterdam UMC, Amsterdam, Netherlands. ⁵Precision Medicine in Oncology (PrMiO), Department of Pathology, Erasmus MC Cancer Institute, Rotterdam, Netherlands. ⁶Department of Gastroenterology endocrinology metabolism, Amsterdam UMC, location University of Amsterdam, Amsterdam, Netherlands

Talk 54 The role of ROS and Nrf2 in the induction of an adaptive stress response during mild heat at 40°C

Dr Diana A Averill-Bates PhD¹, Mr Georges Hraoui MSc¹, Dr Mélanie Grondin PhD¹, Dr Sophie Breton PhD²

¹Université du Québec à Montréal, Montreal, Quebec, Canada.

²Université de Montréal, Montreal, Quebec, Canada

Talk 55 Advances in Anti-CD137 Coated Prussian Blue Nanoparticles as Immunostimulatory Photothermal Agents for Melanoma

Jacob A Medina BS, BA¹, Debbie K Ledezma Ph. D.¹, Jie Chen Ph. D.¹, Preethi B Balakrishnan Ph. D.², Elizabeth E Sweeney Ph. D.¹, Rohan Fernandes Ph. D.¹

¹George Washington University, Washington, DC, USA. ²ArsenalBio, San Francisco, Ca, USA

***Talk 56 HEATING UP IMMUNE CELLS IN DIRECT CONTACT WITH OVARIAN CANCER CELLS INDUCES DNA DAMAGE AND SUPPRESSES CHEMORESISTANCE**

Goutam Dey PhD, Rashmi Bharti PhD, Olivia Huffman, Tyler Alban, Timothy A Chan, Justin D Lathia, Robert DeBernardo, Dr. Ofer Reizes PhD
Cleveland Clinic Foundation, Cleveland, OH, USA

14:00 - 16:30 **Clinical Session 2**

| Toucan

Chair(s): Paola Tello Valverde, Jason Molitoris

***Talk 57 The probability of locoregional control in recurrent breast cancer patients treated with postoperative re-irradiation combined with hyperthermia shows a continuous thermal dose-effect relationship**

Drs. C. Paola Tello Valverde MSc^{1,2}, Dr. Konstantinos Pateras PhD³, Dr. Akke Bakker PhD¹, Dr. H. Petra Kok PhD¹, Prof. Dr. Ben J. Slotman MD, PhD², Dr. H. J. G. Desirée van den Bongard MD, PhD¹, Dr. Hans Crezee PhD¹

¹Amsterdam UMC, location University of Amsterdam, Department of Radiation Oncology, Amsterdam, North Holland, Netherlands.

²Amsterdam UMC, location Vrije Universiteit Amsterdam, Department of Radiation Oncology, Amsterdam, North Holland, Netherlands.

³University of Thessaly, Faculty of Public and One Health, Laboratory of Epidemiology & Artificial Intelligence, Karditsa, Thessaly, Greece

Talk 58 Clinical Outcomes of Re-irradiation with Concurrent Deep Hyperthermia Therapy for Prostate Cancer

Dr Muhammad A Hamza MD¹, Ms Leah Chen², Dr Justin Cohen MD¹, Dr Dario Rodrigues PhD³, Dr Sina Mossahebi PhD³, Dr Nrusingh C Biswal PhD³, Dr Mark Zakhary PhD³, Dr Zeljko Vujaskovic MD PhD³, Dr Dan Kunprayoon MD³, Dr Zaker Rana MD³, Dr Jason K Molitoris MD PhD³

¹University of Maryland Medical Center, Baltimore, MD, USA.

²Georgetown University, Washington D.C., Washington D.C., USA.

³University of Maryland School of Medicine, Baltimore, MD, USA

Talk 59 Long term results of initial cohort treated with pencil beam scanning proton therapy and deep hyperthermia therapy

Jason K Molitoris MD, PhD¹, Justin Cohen MD², Muhammad Hamza MD², Sina Mossahebi PhD¹, Mark Zakhary PhD¹, Nrusingh Biswal PhD¹, Kara Lehman CMD², Dan Kunaprayoon MD¹, Zaker Rana MD¹, Dario B Rodrigues PhD¹

¹University of Maryland School of Medicine, Baltimore, MD, USA.

²University of Maryland Medical Center, Baltimore, MD, USA

Talk 60 Complete remission of stage IV prostate cancer by new non-invasive brain temperature-titrated brain-body hyperthermia

Dr. Marc Abreu MD¹, Dr. David G Silverman MD², Dr Victor H Spitz MD¹

¹BTT Medical Institute, Aventura, Florida, USA. ²Yale University School of Medicine, New Haven, Connecticut, USA

* SITA Winner

Talk 61 Superficial and internal thermometry assessment in patients treated with deep hyperthermia concurrent with proton therapy for lower gastrointestinal malignancies

Dario B. Rodrigues PhD¹, Justin Cohen MD¹, Santanu Samanta MD², Sina Mossahebi PhD¹, Nrusingh Biswal PhD¹, Mark Zakhary PhD¹, Dan Kunaprayoon MD¹, Zaker Rana MD¹, Jason K. Molitoris MD, PhD¹

¹University of Maryland School of Medicine, Baltimore, MD, USA.

²University of Arkansas for Medical Sciences, Little Rock, AR, USA

Talk 62 Development of Magnetic Hyperthermia for the Systemic Treatment of Endometriosis

Youngrong Park¹, Ananiya Demessie¹, Addie Luo², Olena R Taratula¹, Abraham S Moses¹, Peter Do¹, Leonardo Campos³, Younes Jahangiri³, Cory R Wyatt⁴, Hassan A Albarqi¹, Khashayar Farsad³, Oy D Slayden², Oleh Taratula¹

¹College of Pharmacy, Oregon State University, Portland, OR, USA.

²Division of Reproductive and Developmental Sciences, Oregon National Primate Research Center, Oregon Health & Science University, Beaverton, OR, USA. ³Dotter Interventional Institute, Department of Interventional Radiology, Oregon Health & Science University, Portland, OR, USA. ⁴Department of Diagnostic Radiology, Oregon Health & Sciences University, Portland, OR, USA

Talk 63 The CARES project: Development of personalized MR-guided thermo-chemotherapy for breast conserving surgery

Sergio Curto¹, Gerard C. van Rhoon¹, Maarten Paulides², Clemens Bos³, Roel Deckers³, Juan Hernandez Tamames⁴, Lambertus W. Bartels³, Hans Crezee⁵, Petra Kok⁵, Timo ten Hagen¹, Arlene Oei⁵, Maurice Heemels²

¹Erasmus MC Cancer Institute, Rotterdam, Netherlands. ²Eindhoven University of Technology, Eindhoven, Netherlands. ³UMC Utrecht, Utrecht, Netherlands. ⁴Erasmus MC, Rotterdam, Netherlands.

⁵Amsterdam UMC, Amsterdam, Netherlands

14:00 - 16:30 **Computational Modeling Session**
Chair(s): Faraz Chamani, David Fuentes

| Macaw

Talk 64 Impact quantification of tissue property and perfusion uncertainties on hyperthermia treatment planning using polynomial chaos expansion.

Jort Groen MSc^{1,2}, dr. Johannes Crezee PhD^{1,2}, Prof. dr. Hanneke van Laarhoven PhD^{2,3,4}, dr. Maarten Bijlsma PhD^{2,5}, dr. Petra Kok PhD^{1,2}

¹Amsterdam UMC location University of Amsterdam, Radiation Oncology, Amsterdam, Netherlands. ²Cancer Center Amsterdam, Cancer biology and immunology, Treatment and quality of life, Amsterdam, Netherlands.

³Cancer Center Amsterdam, Imaging and Biomarkers, Amsterdam, Netherlands. ⁴Amsterdam UMC, location University of Amsterdam, Department of Medical Oncology, Amsterdam, Netherlands. ⁵Amsterdam UMC location University of Amsterdam, Center for Experimental and Molecular Medicine, Laboratory for Experimental Oncology and Radiobiology, Amsterdam, Netherlands

Talk 65 Thermal impact of photobiomodulation therapy on the therapeutic efficacy

Laxmigayathri Challa MSc, Fateme Esmailie PhD
University of North Texas, Denton, Texas, USA

***Talk 66 Modeling of temperature dependent release of HSP70, HSP90, and HMGB1 from pancreatic cancer cells**

Faraz Chamani¹, Marla Pyle I, Tej Shrestha PhD¹, Anna Bottiglieri PhD¹, Stefan H Bossmann PhD², Subhrajit Saha PhD², Rahul A Sheth MD³, Punit Prakash PhD¹

¹Kansas State University, Manhattan, Kansas, USA. ²University of Kansas Medical Center, Kansas city, Kansas, USA. ³University of Texas MD Anderson Cancer Center, Houston, Texas, USA

Talk 67 Robust optimization and evaluation of radiotherapy combined with hyperthermia based on equivalent enhanced radiation dose

Timoteo D Herrera M. Sc.^{1,2}, Jakob Ödén PhD³, Johannes Crezee PhD^{4,5}, Andrea Lorenzo Polo M. Sc.³, H. Petra Kok PhD^{4,6}

¹Amsterdam UMC location University of Amsterdam, Radiation Oncology, Amsterdam, Noord Holland, Netherlands. ²Cancer Center Amsterdam, Cancer biology and immunology, Treatment and quality of life, Amsterdam, Noord Holland, Netherlands. ³RaySearch Laboratories AB, Stockholm, Sweden. ⁴Amsterdam UMC location University of Amsterdam, Radiation Oncology, Amsterdam, Netherlands. ⁵Cancer Center Amsterdam, Cancer biology and immunology, Treatment and quality of life, Amsterdam, Netherlands. ⁶Cancer Center Amsterdam, Cancer biology and immunology, Treatment and quality of life, Amsterdam, Netherlands

Talk 68 Validation of a temperature-feedback controlled automated magnetic hyperthermia device

Dr. Anirudh Sharma PhD¹, Mr. Avesh Jangam², Mr. Julian L.Y. Shen², Mr. Aiman Ahmed², Mr. Nageshwar Arepally², Mr. Benjamin Rodriguez³, Mr. Joseph Borrello³, Dr. Alexandros Bouras MD⁴, Dr. Lawrence Kleinberg MD⁵, Dr. Kai Ding PhD⁵, Dr. Constantinos G Hadjipanayis MD, PhD⁴, Dr. Dara L Kraitchman DVM, PhD¹, Dr. Robert Ivkov PhD¹, Dr. Anilchandra Attaluri PhD²

¹Johns Hopkins University School of Medicine, Baltimore, MD, USA. ²Pennsylvania State University, Harrisburg, PA, USA. ³Mount Sinai School of Medicine, New York, NY, USA. ⁴University of Pittsburgh Medical Center, Pittsburgh, PA, USA. ⁵Johns Hopkins Medicine, Baltimore, MD, USA

16:30 - 17:00 **Break**

| Aviary Foyer

17:00 - 18:00 **STM Presidential Symposium - Quality of Life**

| Kon Tiki Ballroom

Chair(s): Rohan Fernandes, Nicole Levi

Please join us for talks by:

Dr. Rüdiger Wessalowski

Dr. Markus Notter

* SITA Winner

THURSDAY, APRIL 27

08:00 - 12:00	Sponsor Exhibits	Board Room
08:00 - 12:00	Registration	Kon Tiki Foyer
08:00 - 09:00	Breakfast	Aviary Foyer
09:00 - 11:00	Nanotechnology Session 3 Chair(s): Robert Ivkov, Hayden Carlton	Kon Tiki Ballroom

Talk 69 Response of Infected/Non-infected Breast Cancer Cells to Silver Nanoparticle-induced Photothermal Therapy

Sijia Liu PhD, Scott Northrup, Nicole Levi PhD

Wake Forest University School of Medicine, Winston-Salem, NC, USA

***Talk 70 Method to Evaluate Merit of Magnetic Nanoparticles for Applications with Magnetic Particle Imaging and Magnetic Nanoparticle Hyperthermia**

Hayden Carlton PhD¹, Marzieh Salimi PhD¹, Gabriela Bentolila¹, Nageshwar Arepally², Anirudh Sharma PhD¹, Adnan Bibic PhD³, Matt Newgren⁴, Patrick Goodwill PhD⁴, Anilchandra Attaluri PhD², Jeff W. M. Bulte PhD¹, Preethi Korangath PhD¹, Robert Ivkov PhD¹

¹*The Johns Hopkins School of Medicine, Baltimore, MD, USA.* ²*Penn State Harrisburg, Middletown, PA, USA.* ³*Kennedy Krieger Institute, Baltimore, MD, USA.* ⁴*Magnetic Insight, Alameda, CA, USA*

Talk 71 Heating power of dual-material radioactive magnetic nanoparticles for thermobrachytherapy

Rogier van Oossanen¹, Alexandra Maier², Antonia G. Denkova PhD³, Jeremy Godart PhD¹, Kristina Djanashvili PhD², Gerard C. van Rhooen PhD¹

¹*Erasmus MC Cancer Institute, Dept. Radiotherapy, Rotterdam, Netherlands.* ²*TU Delft, Dept. Biotechnology, Delft, Netherlands.* ³*TU Delft, Dept. Radiation Science and Technology, Delft, Netherlands*

Talk 72 Magnetic Particle Imaging Guided Bioheat Transfer Simulations to Optimize Magnetic Nanoparticle Hyperthermia Treatment

Nageshwar Arepally MS¹, Joshua Vannam MS¹, Dr Hayden Carlton PHD², Dr. Robert Ivkov PHD^{2,3}, Dr Anilchandra Attaluri PHD¹

¹*Penn State Harrisburg, Middletown, Pennsylvania, USA.* ²*The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.* ³*Johns Hopkins University, Baltimore, Maryland, USA*

Talk 73 MNP hyperthermia treatment planning approach using combine virtual human model, electromagnetic and bio-heat solvers

Dr. Levan Shoshiashvili Ph.D¹, Dr. Irma Shamatava Ph.d², Dr David Kakulia Ph.D¹, Dr. Fridon Shubitidze Ph.D²

¹*Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia, Tbilisi, Georgia.* ²*Dartmouth College, Hanover, NH, USA*

* SITA Winner

Talk 74 Magnetic hyperthermia treatment planning for glioblastoma

Dr. Anirudh Sharma¹, Mr. Julian L.Y. Shen², Mr. Avesh A. Jangam², Dr. Kai Ding PhD³, Dr. Anilchandra Attaluri PhD², Dr. Lawrence Kleinberg MD³, Dr. Constantinos Hadjipanayis MD, PhD⁴, Dr. Robert Ivkov PhD¹, Dr. Dara L. Kraitchman DVM, PhD¹

¹Johns Hopkins University School of Medicine, Baltimore, MD, USA.

²Pennsylvania State University, Harrisburg, PA, USA. ³Johns Hopkins

Medicine, Baltimore, MD, USA. ⁴University of Pittsburgh Medical Center, Pittsburgh, PA, USA

09:00 - 11:00

Immunotherapy Session

| Toucan

Chair(s): Sharon Evans, Debbie Ledezma

Talk 75 INVITED SPEAKER - Remote Control of the Genetics within Tumors via Focused Ultrasound for Cancer Immunotherapy

Professor Yingxiao Wang PhD

USC, Los Angeles, CA, USA

***Talk 76 The immunogenicity of Prussian blue nanoparticle-based photothermal ablation of solid tumors**

Debbie K Ledezma Ph.D., Rohan Fernandes Ph.D.

George Washington University, Washington, D.C., District of Columbia, USA

Talk 77 Engineering glioblastoma-specific T cells for adoptive therapy using immunostimulatory photothermal Prussian blue nanoparticles

Dr. Rohan Fernandes

George Washington University, Washington, DC, USA

Talk 78 Thermal Regulation of the Immune Landscape in the Tumor Microenvironment

Dr Daniel T Fisher PhD, Dr. Joseph J Barbi PhD, Dr. Sharon S Evans PhD
Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA

Talk 79 The importance of ambient housing temperature on baseline tumor growth and function of CD8+ T cell-dependent anti-tumor immunity in murine models of cancer: is there an impact on thermal therapy outcomes?

Caitlin M James, Cameron MacDonald, Jee Eun Choi, Dr. Scott H Olejniczak PhD, Dr. Elizabeth A Repasky PhD

Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA

09:00 - 11:00

Ablation Session

| Macaw

Chair(s): Colleen Crouch, Jason Stafford

Talk 80 Thermal Ablation Terms and Definition – Initial Report from the ASME Lexicon Group

Principal Scientist Rebecca Vincelette PhD¹, Professor Marta Cavnagaro PhD², Professor Chris Diederich PhD³, Senior Lecturer Lourdes Farrugia PhD⁴, Professor Gal Shafirstein D.Sc.⁵

¹Medtronic, Louisville, CO, USA. ²Sapienza University, Rome, Italy.

³UCSF, San Francisco, CA, USA. ⁴University of Malta, Msida, Malta.

⁵Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA

* SITA Winner

Talk 81 In-vivo evaluation of the TheraVision interstitial ultrasound system for prostate focal thermal ablation

Pragya Gupta¹, Tamas Heffter², Peter D Jones¹, Muhammad Zubair¹, Paul Neubauer², Emery Williams², I-Chow Hsu¹, E. Clif Burdette², Chris J. Diederich¹

¹University of California San Francisco, San Francisco, CA, USA.

²Acoustic MedSystems, Savoy, IL, USA

Talk 82 HeatSYNCTM Gel: Mechanism of Action as Thermal Accelerant and Development of Drug-Eluting System for Anti-tumor Agents Post-Ablation

William KC Park PhD

Theromics, West Bridgewater, MA, USA

Talk 83 Tuning Thermal and Ablative Effects of Acid Anhydrides in Thermoembolization

Dr. Danielle L. Stolley PhD, Dr. Natalie W. Fowlkes DVM, PhD, Dr. Erik N. K. Cressman PhD, MD

MD Anderson Cancer Center, Houston, TX, USA

Talk 84 Characterization of ex-vivo ovine lung tissue in relation to density at microwave frequencies

Klementina Vidjak MsC¹, Dr. Laura Farina PhD², Prof. Marta Cavagnaro PhD¹

¹Department of Information Engineering, Electronics and

Telecommunications, Sapienza University of Rome, Rome, Italy.

²Endowave Ltd, Galway, Ireland

11:00 - 13:00 **STM Business Lunch**

| Kon Tiki Ballroom

13:00 - 13:30 **Closing Comments & Adjourn**

| Kon Tiki Ballroom