



The Short Course in Medical Thermography

will take place online on 1st September 2021, immediately prior to the XV Congress of the EAT.

• Main themes of the 2021 syllabus will include:

- Physical principles of heat transfer (Ricardo Vardasca)
- Principles of thermal physiology and skin blood perfusion (James Mercer)
- Standardization of thermal imaging, recording and analysis (Kurt Ammer)
- Quality assurance for thermal imaging systems (Kevin Howell)
- Producing a thermographic report (Kurt Ammer)
- Provocation tests (James Mercer and Manuell Sillero)
- Image analysis (Kurt Ammer and Ricardo Vardasca)
- Image capture and analysis example (Aderito Seixas and Ricardo Vardasca)
- Educational resources (Aderito Seixas)



Online Programme

Thursday 2nd September 2021

All times CEST (Central European Summer Time)

Chair: Dr. Kevin Howell, President, EAT
Royal Free Hospital, London, UK.

12:45-13:00 Conference Opening.

13:00-13:30 **KEYNOTE: COMFORT, THERMAL STRESS, AND CLOTHING**
Prof George Havenith, Professor of Environmental Physiology and Ergonomics, Loughborough University, UK.

13:30-13:40 Discussion.

13:40-13:55 **PROGRESS IN IMPROVING BODY TEMPERATURE MEASUREMENT ON A GLOBAL BASIS.**
G. Machin, X. Lu, D. del Campo, M. Martin, I. Pušnik, W. Li.

13:55-14:00 Discussion.

14:00-14:15 **THE USE OF THE CAMERA FLIR T530sc TO IDENTIFY PATIENTS WITH FEVER IN A TERTIARY HOSPITAL IN BRASÍLIA - BRAZIL.**
T.H.T. Carvalho, T. Miliou, H.S. Luz, I.A.G. Oliveira.

14:15-14:20 Discussion.

14:20-14:35 **SYSTEMATIC REVIEWS AND META-ANALYSIS ABOUT INFRARED THERMOGRAPHY IN MUSCULOSKELETAL RESEARCH - TRENDS AND CRITICAL APPRAISAL.**
A. Seixas.

14:35-14:40 Discussion.

14:40-14:55 **SELECTING DOMINANT PERFORATING BLOOD VESSELS FOR AUTOLOGOUS BREAST RECONSTRUCTION: A COMPARATIVE STUDY USING DYNAMIC INFRARED THERMOGRAPHY, LASER FLUORESCENCE ANGIOGRAPHY OF INDOCYANINE GREEN, ULTRASOUND DOPPLER AND CT ANGIOGRAPHY.**
J.B. Mercer, M. Chaudhry, S. Weum, L. de Weerd.

14:55-15:00 Discussion.

- 15:00-15:15 THERMORECOVERY PROJECT: EFFECT OF A 10KM RUN ON SKIN TEMPERATURE AND THERMAL PARAMETERS AFTER A COLD-STRESS TEST IN THE SUBSEQUENT 24H.
J.I. Priego-Quesada, I. Catalá-Vilaplana, J.L. Bermejo-Ruiz, A. Gandia-Soriano, M.T. Pellicer-Chenoll, A. Encarnación-Martínez, R. Cibrián Ortiz de Anda, R. Salvador-Palmer.
- 15:15-15:20 Discussion.

Friday 3rd September 2021

Chair: Dr. Maria Soroko, Chair of XV Congress Organising Committee
Wroclaw University of Environmental and Life Sciences, Wroclaw, Poland.

10:00-10:05 **Welcome to Day 2.**

- 10:05-10:20 BLOOD SUPPLY VISUALIZATION BY INFRARED THERMOGRAPHY AND INDOCYANINE GREEN FLUORESCENCE IMAGING IN OPEN
E. Staffa, V. Bernard, J. Pokorna, T. Juza, V. Can, M. Farkasova, S. Richter, V. Mornstein, Z. Kala
- 10:20-10:25 Discussion.

- 10:25-10:40 THERMAL IMAGING IN RHEUMATOID ARTHRITIS KNEES JOINTS AND ist CORRELATION WITH POWER DOPPLER ULTRASOUND.
V. Vasdev, R. Singh.

10:40-10:45 Discussion.

- 0:45-11:00 PLANTAR FOOT ASSESSMENT USING LIQUID CRYSTAL THERMOGRAPHY.
P. Plassmann, B. Kluwe.

11:00-11:05 Discussion.

- 11:05-11:20 THE USE OF INFRARED THERMOGRAPHY TO EVALUATE THE EFFECT OF HIGH INTENSITY LASER THERAPY ON THE SURFACE TEMPERATURE OF THE HINDLIMB'S FLEXOR TENDON AREA IN CLINICALLY HEALTHY RACEHORSES
M. Godlewska, M. Soroko, P. Zielinska, K. Dudek.

11:20-11:25 Discussion.

- 11:25-11:40 APPLICATION OF INFRARED THERMOGRAPHY IN THE ASSESMENT OF
N. Cebulj-Kadunc, R. Frangež, P. Kruljc.

11:40-11:45 Discussion.

- 11:45-12:00 CHANGES OF BODY SURFACE TEMPERATURE ASSOCIATED WITH HIGH-SPEED TREADMILL EXERCISE IN BEAGLE DOGS BY USE OF INFRARED THERMOGRAPHY.
M.Soroko, W. Górnjak, K.J. Howell P. Zielinska, K. Dudek, M. Eberhardt, P. Kalak, M. Korczynski.

12:00-12:05 Discussion

12:05-12:20 Award ceremony: The Francis Ring and Kurt Ammer prizes.

12:20 Close of conference.

Online video presentations

View "on-demand" at our website from 2nd September.

EVALUATING THE APPLICATION OF INFRA-RED THERMOGRAPHY TO MEASUREMENT OF SKIN TEMPERATURE DURING ROAD-RACE COMPETITION.

P.E. Aylwin, S. Racinais, P-E. Adami, J-M. Alonso, S. Bermon, N. Bouscaren, S. Buitrago, M. Cardinale, C. Esh, F. Garrandes, J. Gomez-Ezeiza, S. Hodder M. Ihsan, M. Labidi G.Lange, A. Lloyd, S. Moussay, K. Mtibaa, L. Taylor, N. Townsend, M. Wilson, G. Havenith.

IRT IMAGE EVALUATION VARIABILITY - EFFECT OF SUBJECTIVE PLACEMENT OF THE REGION OF INTEREST.

V. Bernard, E. Staffa.

PAINFUL SHOULDER SYNDROME IN THERMAL AND SONOGRAPHIC IMAGING.

J. Gabrhel, Z. Popracová, Z. Tauchmannová.

BODY TEMPERATURE MEASURED BY A FOREHEAD THERMOMETER IN AFEBRILE SUBJECTS ATTENDING A HOSPITAL CLINIC DURING THE COVID-19 PANDEMIC.

K. J. Howell, R.E. Smith.

EFFECTIVENESS OF HYDROTHERAPY APPLIED ON VARIOUS BODY PARTS IN SUPPORTING SKIN COOLING OF HORSES TRAINED IN DIFFERENT AMBIENT TEMPERATURES DURING SUMMER PERIOD.

A. Winiowska, W. Janicka, E. Tkaczyk, R. Kusy.

APPLICATION OF THERAPEUTIC MUD IN EQUESTRIAN PHYSIOTHERAPY.

E. Jastrzebska, J. Makowska.

IMAGE ANALYSIS AND MACHINE LEARNING CLASSIFICATION FOR SKIN CANCER THERMAL IMAGES USING OPEN SOURCE TOOLS.

C. Magalhaes, J. Mendes, R. Vardasca.

INFLUENCE OF TWO DIFFERENT MILITARY COMBAT JACKETS ON FACE TEMPERATURE.

D. Mello, E. Borba Neves, B. H. Canabarro, J. V. Poiatti, G. Rebouças, J. Mendes, V. Azeredo, A. Lino-Samianigo; M. Sillero-Quintana.

UNCERTAINTY OF THERMAL IMAGERS FOR BODY CORE TEMPERATURE SCREENING.

V.Mlacnik, I.Pušnik.

APPLICATION OF DYNAMIC THERMOGRAPHY AFTER A FATIGUING STRENGTH EXERCISE.

M. Muñoz-Alcami, M. Gimeno-Raga, J. I. Priego-Quesada, A. Durán-Lozano, R.J González-Peña, M. Gil-Calvo.

INFRARED THERMOGRAPHY TO CONFIRM THE CORRECT PLACEMENT OF THE NEEDLE IN THE PERFORMANCE OF LUMBAR SYMPATHETIC BLOCKS FOR COMPLEX REGIONAL PAIN SYNDROME.

M. Cañada, M. Bovaira, C. García-Vitoria, R. Salvador Palmer, R. Cibrián Ortiz de Anda, D. Moratal, J. I. Priego-Quesada.

DYNAMICS OF THE LOCAL TEMPERATURE OF BLOOD, PUS, MUCUS AND CATALASE SOLUTION WHEN THEY INTERACT WITH HYDROGEN PEROXIDE IN VITRO.

A.L. Urakov, A.P. Stolyarenko, M.V. Kopitov, L.I. Bashirov.

TEMPERATURE DYNAMICS OF THE MUSICIAN'S FINGERS WHEN PLAYING THE SAXOPHONE IN COLD CONDITIONS. A.L.Urakov, A.P.Stolyarenko.

MACHINE LEARNING TECHNIQUES ON PANDEMIC FEVER SCREENING.

R. Vardasca.

COMPARISON OF HIGH INTENSITY LASER THERAPY (HILT) EFFECT ON SURFACE TEMPERATURE AND VEIN DIAMETER IN PIGMENTED AND NON-PIGMENTED SKIN IN HEALTHY RACEHORSES.

P. Zielinska, M. Soroko, M. Godlewska, W. Hildebrand, K. Dudek, K.J. Howell.

View at our website from 2nd September.

EXPLORATIONS IN SKIN TEMPERATURE AND OBJECTIVE SKIN COLOUR MEASUREMENTS IN RAYNAUD'S PHENOMENON: A PILOT STUDY.

J. Allen, B. Griffiths.

CONVENTIONAL AND NOVEL APPROACH FOR THE ASSESSMENT OF FLANK TEMPERATURE OF POLISH NATIVE BREED MARES DURING PREGNANCY.

M. Masko, T. Jasinski , L. Zdrojkowski, M. Domino.

ATHLETES' FACE TEMPERATURE RESPONSE DURING AN ENDURANCE TRIATHLON RACE.

W. Romão, D. Mello, E. Borba Neves, G. Rosa, R. Vale.

THERMOGRAPHIC MEASUREMENTS IN THE TOPIC OF THESES OF STUDENTS OF HEALTH CARE STUDY PROGRAMS. H. Sochorova.

THE EFFECT OF TRAINING ON INFRARED THERMOGRAPHIC IMAGES OF THE FORELIMB AND HINDLIMB JOINTS OF HEALTHY RACEHORSES.

M. Soroko, K. Howell, M. Godlewska, W. Górniak.

DYNAMICS OF THERMOGRAPHIC AND NEUROLOGICAL DATA IN ASSESSING THE EFFECTIVENESS OF REHABILITATION OF CHILDREN 5-8 YEARS OLD WITH SPASTIC FORMS OF CEREBRAL PALSY.

M.G. Volovik, G.E. Sheiko, A.N. Kuznetsov.

THERMAL IMAGING SIGNS OF SPASTIC FORMS OF CEREBRAL PALSY IN CHILDREN 4-7 YEARS: PRELIMINARY RESULTS.

M.G. Volovik, G.E. Sheiko, A.N. Kuznetsov.

The XV Congress of the EAT is supported by:

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2021



28th-30th September 2021

XIV International Conference THERMOGRAPHY
AND THERMOMETRY IN INFRARED
in Kazimierz Dolny nad Wisla, Poland **-online**

Due to the possible worsening of the epidemiological conditions, the Organising Committee decided to organise the TTP 2021 Conference online. Technical details of the internet connection will be sent to participants prior to the conference.

The organisers kindly ask for registration

Further information

<http://thermo.p.lodz.p/ttp>

1st-3rd October 2021

AAT 2021 Annual Scientific Session

Virtual and Live Streaming Presentations

About The Event

The 2021 Annual Scientific Session will be a Virtual Meeting consisting of both recorded presentations and live sessions. Those who register for the full meeting with next year's membership will be given 60 days post-meeting access to the recorded presentations.

Separate registration is required for the Pre-Meeting Physician's Thermography Interpretation Course. It will be held between 8:30am and 5:00pm (Eastern Time) on Friday, October 1st, 2021. This meeting will be a live virtual session

Further information at the AAT-website
<https://annualmeeting.aathermology.org/>

Programme

Day 1 - Friday, October 1st, 2021

Pre-Meeting Physician Member Interpretation
Course (separate registration required):

8:30 am - 4:00 pm

By Robert Schwartz, MD AAT COB, Greenville, SC

Day 2 - Saturday, October 2nd, 2021

General Sessions

7:30 am

Virtual Log In Open

Registration would be started by 8:00 am.

7:45 am - 9:30 am

From Artificial Intelligence to Fundamental Physics
for Medical Thermology

7:45 am - 8:00 am

Welcoming Remarks

By Robert Schwartz, MD AAT COB, Greenville, SC

8:00 am - 8:20 am

The AAT Medical Thermography Artificial Intelligence
Initiative

By Robert Schwartz, MD AAT COB, Greenville, SC

8:20 am - 9:00 am

Clinical Applications of PACS in Thermal Imaging

By Marcos Brioschi, MD, PhD Sao Paulo, Brazil

9:00 am - 9:30 am

Fundamentals of Infrared Imaging Systems

By Javier Gonzalez PhD AAT Member, Orlando Florida

9:30 am - 11:30 pm

Neuro-Musculoskeletal Thermology

9:30 am - 10:00 am

SSR Medical Thermography and Neuromodulation

By Behnum Habibi, MD AAT Board, Philadelphia, PA

10:00 am - 10:30 am

Medical Thermography Applications In a MSK Pain Practice

By Matthew Terzella, MD AAT Board, Greenville, SC

10:30 am - 10:45 am

Clinical Applications of Thermography in Complex Regional Pain Syndrome

By Jason Hamamoto, MD Resident, Dept of PMR, Temple University

10:45 am - 11:00 am

Clinical Applications of Thermography in Complex Regional Pain Syndrome (Continued)

By Jay Darji, DO Resident, Dept. of PMR, Temple University

11:00 am - 11:30 am

Use of Medical Thermography In Craniocervical Junction Disorders

By Robert Schwartz, MD AAT COB, Greenville, SC

11:30 am - 12:00 am

Virtual Exhibit Hall

12:00 pm - 1:00 pm

Lunch

1.00 pm - 3.00 pm

Clinicians Corner: Breast Thermography

1:00 pm - 1:20 pm

Defining Specific Applications of Breast Thermography

By Robert Kane, DC AAT Member, San Francisco, CA

1:00 pm - 3:00 pm

1:20 pm - 1:40 pm

Updates in Breast Guidelines, Thermal Signs Assessment, and A Case Report

By Robert Schwartz, MD AAT COB, Greenville, SC

1:40 pm - 2:10 pm

Thermography, Ultrasonography And Elastography In Breast Cancer

By Severino Tadeu de Menezes Lima, MD ABTHERM Member, Serra Telhada, Brazil

2:20 pm - 2:40 pm

Breast Thermography and the Practice of Gynecology

By Rita de Cassia Dantas Monteiro, MD ABTHERM Member, Ponta Verde, Brazil

2:40 pm - 3:00 pm

Addressing Challenges of Outsourced Thermography Services

By Nina Rea Atlanta, GA

3:00 pm - 3:30pm

Virtual Exhibit Hall

3:30 pm - 5:00 pm

Veterinary Session: Thermology Presentations

3:30 pm - 3:55 pm

Infrared Thermal Imaging For The Diagnosis/Assessment Of Back Pain In Horses

By Tracy Turner, DVM Past President, AAT, Elk River, MN

3:55 pm - 4:20 pm

Infrared Thermography As A Means Of Screening And Preventing Injury In Elite Equine Athletes

By Ken Marcella, DVM AAT Member, Canton, GA

4:20 pm - 4:40 pm

Combining Thermal Imaging and Musculoskeletal Ultrasound to Identify Sports Medicine Injuries in Working and Performance Dogs

By Kim Henneman, DVM Park City, Utah

4:40 pm - 5:00 pm

Use of Thermal Imaging in Equine Integrative Sports Medicine

By Sara s Le Jeune, DVM UC Davis, CA

5:00 pm

Saturday Session Ends

5:30 pm - 6:00 pm

Virtual Meet and Mingle Reception

Day 3 - Sunday, October 3rd, 2021

General Sessions and Annual Business Meeting

8:00 am - 10:30 am

Oral Systemic Session

8:00 am - 8:20 am

Thermographic Imaging of Gastroenterology Patients

By Richard Brownstein, MD AAT Member, Clarksdale, MS

8:20 am - 8:40 am

Medical Thermology in Family Practice

By Eric Ehle, DO AAT Member, Amarillo, TX

8:40 am - 9:00 am

Thermal Imaging to Monitor Laser Therapy Treatment Effects

By John Godbold, Jr., DVM AAT Member, Jackson, TN, Ronald Riegel, DVM Marysville, OH

9:00 am - 9:40 am
Virtual Exhibit Hall

9:40 am - 10:00 am
Software as a Medical Device (SaMD)
By Robert Schwartz, MD AAT COB, Greenville, SC

10:00 am - 10:20 am
Machine Learning Applied to the Korean Temperature
Data Base for Oral Systemic Conditions
By Ho Yeol Zhang, MD, PhD NHIS Ilsan Hospital, Seoul,
Korea

10:20 am - 10:30 am
Why The AAT Is Needed In The SaMD Space
By Barry Hix MBA, MPH Birmingham, AL

10:30 am - 10:45 am
Missed Breast Pathology: A Problem With The Test Or
The Report?

By Rebecca Peden, B.C.N.D., D.A.Hom., L.E.H.P. AAT
Member, Lawrenceville, GA

10:45 am - 11:00 am
Equine Thermography Versus Symptoms, PE, & Other
Studies

By Irma Wensink, Paraveterinair AAT Member, Epe, The
Netherlands

11:00 am
General Session Ends

11:00 am - 1:00 pm
Board of Directors Meeting (Board Members Only)