

James V. Beck

Memorial Symposium 2ND EDITION

Inverse Problems · Parameter Estimation · Heat Conduction

ASME Summer Heat Transfer Conference

Hyatt Regency Bellevue, WA, USA

July 26–29, 2026

In Honor Of Prof. James V. Beck (1930–2022)

A pioneer and founding figure in inverse heat transfer and parameter estimation. His methods, developed over 50+ years at Michigan State University, remain foundational to the field. This symposium, held every three years, is organized by the K20 Computational Heat Transfer Technical Committee in his honor.



Best Paper Award

The authors of the best paper will be recognized for their outstanding work during the SHTC 2026 Awards Luncheon.

Journal Special Issue

Selected submissions will be considered for review and publication in a Special Issue of the ASME Journal of Heat and Mass Transfer.

01

Analytical & Forward Methods in Heat Conduction

Room: Evergreen A – Monday, July 27, 10:25 AM - 12:05 PM

Chair: Prof. Hamidreza Najafi

1	Exact Analysis of Diffusion Problems in Irregular Geometries	Prof. Ankur Jain ★Invited Talk
2	Improved Model for Heat Conduction in a Band Heater	Prof. Keith Woodbury
3	Piecewise Linear-in-Time Approximation of the Surface Heat Flux for Forward & Inverse HCP	Prof. Filippo de Monte
4	Asymptotic Models for Transient Thermal Spreading Resistance in Multi-Layered Flux Tubes & Halfspace Regions	Prof. Yuri Muzychka

02

Inverse Problems: Innovations in Methods and Tools

Room: Evergreen A – Monday, July 27, 1:35 PM - 3:15 PM

Chair: Prof. Keith Woodbury

1	A Physics-Guided Neural Filter Approach for Inverse Heat Conduction Problems	Prof. Hamidreza Najafi
2	Spatial Dynamic Mode Decomposition: A Data-Driven Approach to Thermal Monitoring	Jeffrey Magee
3	Inverse Heat Transfer Using Simscape and Simulink Design Optimization	Dr. Andrew Greff
4	Design of a Thermal Conductivity Test Bench Using Numerical Analysis & Inverse Heat Conduction Techniques	Prof. Freddy Jervis
5	Design & Validation of a Test Bench for Liquid-Cooled CPU Heat Sinks With Indirect Heat Flux Estimation	Prof. Eduardo Castillo-Orozco

03

Modeling, Characterization & System Optimization

Room: Evergreen A – Monday, July 27, 3:35 PM - 5:15 PM

Chair: Prof. Filippo de Monte

1	Thermal Properties & Heat Flux Estimation in Composite Cylindrical Systems: A Case Study of a Band Heater	Prof. Keith Woodbury
2	Appropriate Thermal Models of Wire-Arc Additive Manufacturing	Prof. Kevin D. Cole
3	Numerical Investigation of Thermal Performance of Axially Graded Structured Metal Foams Integrated With Phase-Change Material	Prof. Forooza Samadi
4	Pulse-Based Inverse Estimation of Thermal Conductivity for Adaptive Thermal Therapy Planning	Shreeniket Pawar
5	Performance Optimization of Staggered Finned Tube Heat Exchangers for Sustainable Indirect Evaporative Cooling Systems	Talha Bin Nadeem