

# $\Delta$ Gibbs<sub>38</sub>



## Fall for Thermo

**Organizers – Lauren L. Porter & Janice L. Robertson**

**38<sup>th</sup> Annual Gibbs Conference on Biothermodynamics**

**Touch of Nature Outdoor Education Center • Carbondale, IL, USA**

**September 28 – October 1, 2024**

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**Sponsors** - Applied Photophysics, Bruker, Daedalus Innovations, Genentech, Horiba Scientific, ISS, JASCO, LUMICKS, Malvern Panalytical, New England Biolabs, Nicoya, National Science Foundation, OLIS, Protein Society, Refeyn, University of Iowa, Washington University in St. Louis, Waters

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This file contains the Sponsor & Donor Information for the Conference.

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## **Individual Donors**

*Serge N. Timasheff Scholarships - James C. Lee & Jack Correia*

*Selected Commemorative Items for Conference - Madeline Shea*

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*We thank the National Science Foundation for very generous support of trainee participation in the Annual Gibbs Conference on Biothermodynamics. All students and postdocs benefited from this support (NSF Division of Molecular and Cellular Biosciences). Award Number: 2437673 (\$7,000)*

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*Talk with Sherry, Wayne & Forrest at the Poster Sessions.  
Our poster is Monday.*

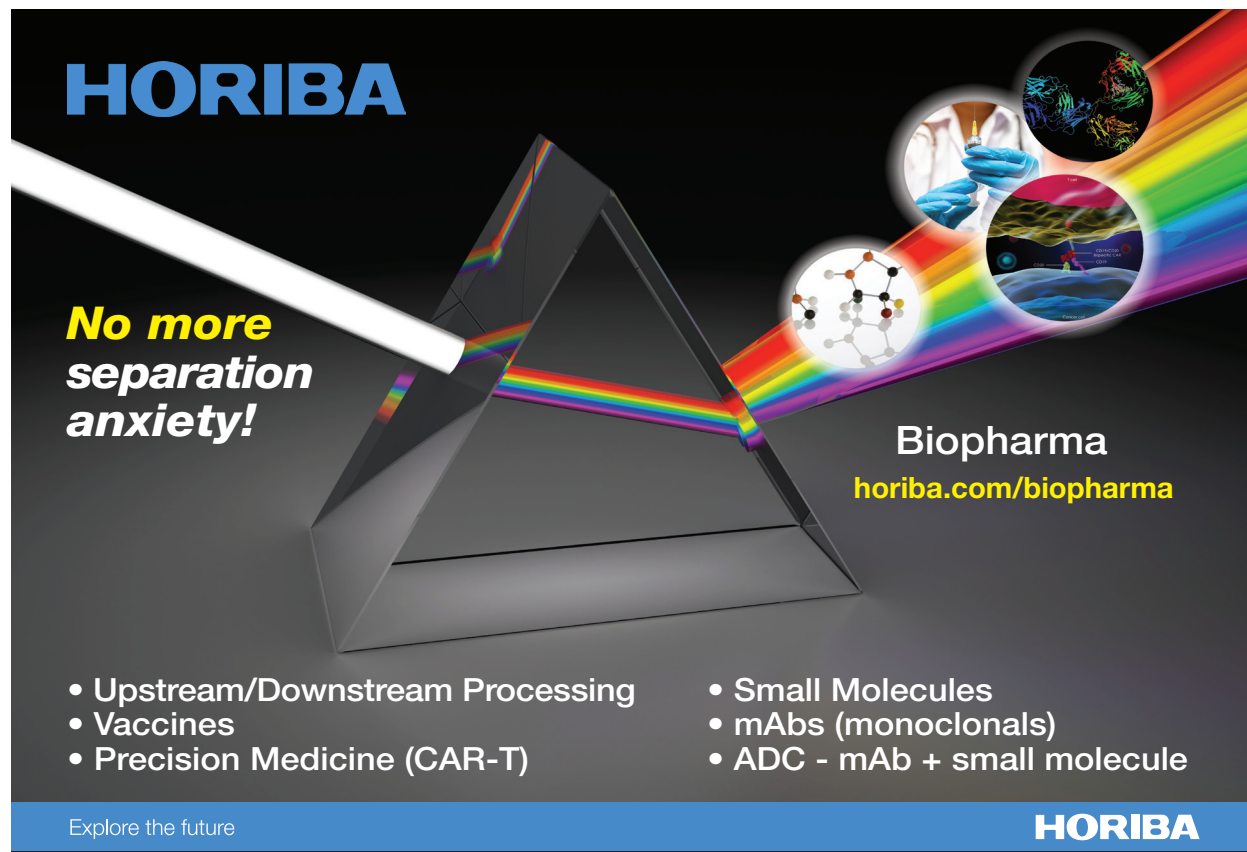
**M29 Estimating Monoclonal Antibodies Secondary Structure using JASCO Spectra Manager™ BeStSel** Satoko Suzuki, Forrest R. Empey-Kohl, Taiji Oyama, Ai Yamane, András Micsonai, József Kardos, and Ken-ichi Akao, JASCO, Inc.

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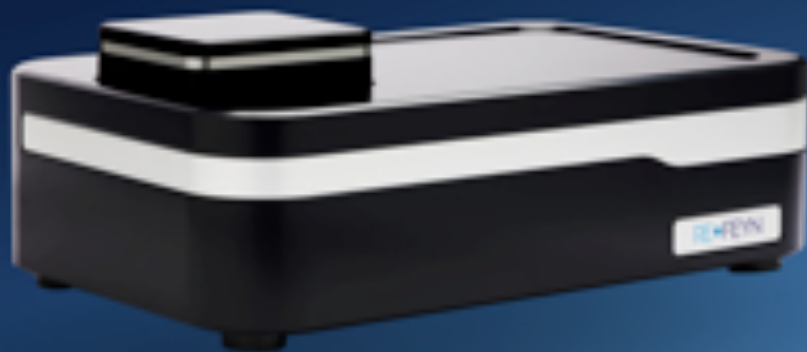
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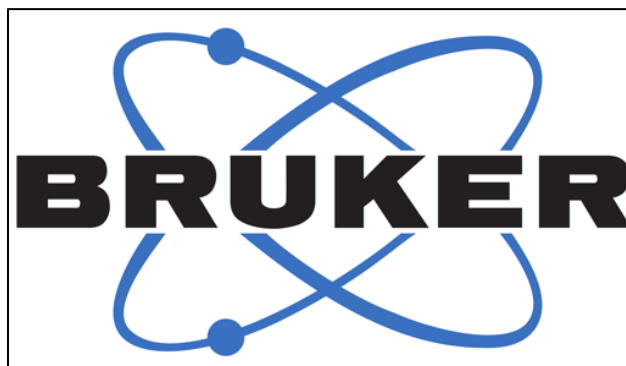
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## **Serge N. Timasheff Scholarships Support for First-Time Student Attendees & Saturday Night Thermo Career Panels**

Scientific progress is built on the foundations laid by the pioneering scholars of diverse scientific disciplines. The Gibbs Conference on Biothermodynamics was established for the purpose of assembling scientists from different disciplines in order to synergize their diverse experiences applying thermodynamic principles. These principles were built on the basic laws of the quantitative sciences, and their applications have played enormous roles in elucidating the phenomena that govern biology. In 2019, our friend and mentor Serge Nicholas Timasheff – one of the founders of biological thermodynamics and a humble visionary with high integrity – died after seventy years successfully advancing the disciplines of protein-solvent interactions, linked equilibria, and macromolecular assembly.

Serge began studying protein-solvent interactions upon the completion of his postdoctoral fellowship with J. G. Kirkwood. He dedicated a significant part of his career to elucidating the mechanisms of this young discipline. He had the foresight to recognize that biological reactions are not well-represented by the interactions of a protein and its ligand in vacuum. Biological reactions occur in solvent and in extreme conditions, e.g., high/freezing temperatures, across a wide range of pH, and/or in fluctuating salinity. Thus, the physical principles enabling correct protein function must be understood in the context of water, salt, or other components. He led his lab to successfully elucidate these mechanisms via insightful applications of basic thermodynamic principles and carefully chosen experimental approaches. The contributions of his lab are critical to current biotechnology companies, who must formulate precise solvents to preserve the activities of their important drugs.

Over the last few decades, the Timasheff lab focused on elucidating the quantitative biophysical parameters of brain tubulin-microtubule assembly and disassembly. These processes comprise many linked-equilibria, including ligand-dependent conformational changes and multiple assembly and disassembly pathways and are modulated by vinblastine, colchicine,  $Mg^{2+}$ , GDP, GTP and temperature. Their published studies on vinblastine- and colchicine-tubulin interactions provide state-of-the-art examples for the power of applying linked-function theory. The judicious choice of experimental approaches of sedimentation and turbidity provide excellent examples for those who are interested in tackling complex biological problems.

Serge was not only a thoughtful and visionary scientist, he was a gentleman scholar of integrity. He had the reputation of publishing rigorous manuscripts that withstand the test of time. He was very supportive of his colleagues and patiently insisted on acquiring high quality data, no matter how much time it took.

These values are shared by the many excellent scientists who regularly attend the Gibbs Conference. The Serge N. Timasheff Scholarships were offered for the first time in 2022 to encourage student scientists of the next generation to attend this annual meeting where they can learn from each other in a friendly and helpful community.

*The Gibbs Society gratefully acknowledges founding organizer **James C. Lee** for major contributions to honor Serge N. Timasheff by providing scholarships to first-time student attendees and supporting the career panel that is held in conjunction with Saturday Night Thermo. The Society also thanks **Jack Correia** for his financial contribution to these goals.*