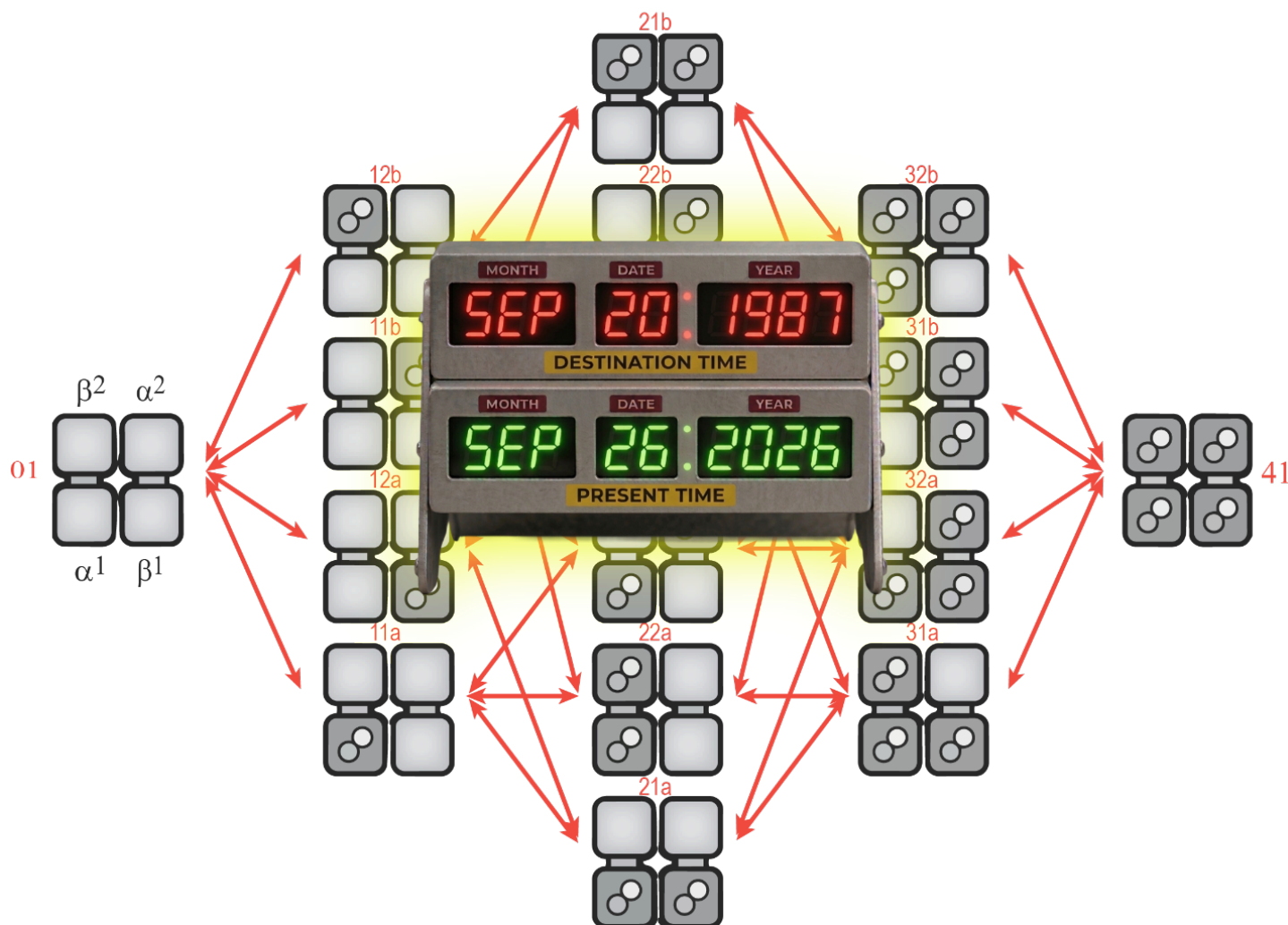


BACK Δ G TO THERMO

Gibbs40 2026

40th Gibbs Conference on Biothermodynamics



26-29 September 2026

Touch of Nature Outdoor Education Center, Carbondale IL

Organizers: Loren Hough & Hui-Ting Lee

Sponsors: BioAnalysis LLC • Bruker • CUNY • Daedalus Innovations •
Genentech • Univ. Iowa • JASCO • LUMICKS • NSF • Nicoya • Waters

ΔGibbs₄₀ Table of Contents

Conference Venue	2
<i>Touch of Nature Education Center - Driving Directions, Maps & Facilities</i>	2
Introduction to the Gibbs Society	3-8
<i>A Brief History of Gibbs Conference on Biothermodynamics</i>	3-6
<i>Gibbs Society Governance and Conference Organization</i>	7
<i>Gibbs Society Mission and Policies</i>	8
The Gary K. Ackers Lecture in Biothermodynamics	9-10
The Madeline A. Shea Poster Sessions	11
Schedule of Events	12-27
Saturday	<i>Information for All Participants</i>
	12
	<i>Saturday Night Thermo Schedule – for Trainees Only</i>
	13
Sunday	<i>Platform Session I – Morning – Keynote Lecture</i>
	14-15
	<i>Platform Session II – Late Afternoon and Poster Session I</i>
	16
Monday	<i>Platform Session III – Morning – Ackers Lecture</i>
	17-18
	<i>Platform Session IV – Late Afternoon and Poster Session II</i>
	19
Tuesday	<i>Platform Session V - Morning</i>
	20
General Information about Shea Poster Sessions	21
Sunday	<i>Alphabetical list for Shea Posters Session I</i>
	22-24
Monday	<i>Alphabetical list for Shea Poster Session II</i>
	25-27
Abstracts for Platform and Poster Presentations	28-85
<i>Abstracts for Platform Session Talks – Presented in Chronological Order</i>	29-55
<i>Abstracts for Poster Session I – Sunday - S1 to S58</i>	56-70
<i>Abstracts for Poster Session II – Monday - M1 to M58</i>	71-85
Directories of Participants	86-93
<i>Listed Individually with Email Addresses</i>	87-91
<i>Listed by Affiliation</i>	92-93
Support	94-102
<i>Commercial & Academic Sponsors</i>	94-101
<i>Timasheff Scholarships</i>	102
Compact schedule and Map	Back Cover

Copyright This book is provided for the personal, educational and non-commercial use of attendees. Images are copyrighted materials owned by copyright holders or the Gibbs Society of Biological Thermodynamics.©

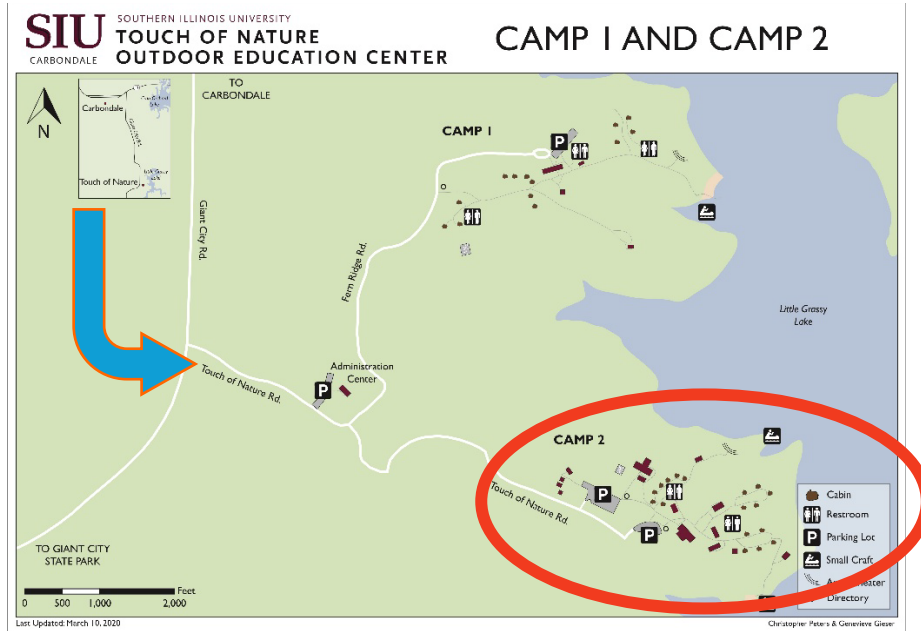
Touch of Nature (ToN) Outdoor Education Center Southern Illinois University – Carbondale

History: <https://ton.siu.edu/about-us/history.php>

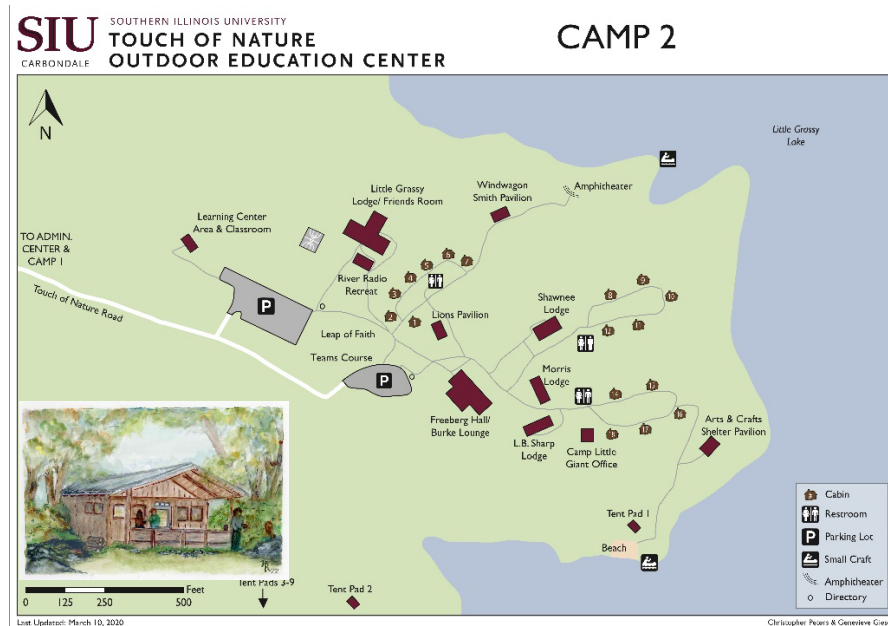
GPS Address: 1206 Touch of Nature Road, Makanda, IL 62958

Driving Directions: *Going south on Giant City Rd., turn left onto Touch of Nature Rd. and proceed to Camp 2.*

Map of ToN Camps 1 & 2 with Carbondale Inset



Camp 2 – Most activities will take place here.



A Journey Through the History of the Gibbs Conference on Biothermodynamics

1986: Where It All Began

Set the Thermo-Time Circuit to **Fall 1986**. At the Gill residence in Vail, Colorado, a small group of pioneers gathered to discuss a bold idea: **Thermodynamics in Biological Systems**. Like Doc Brown sketching out the flux capacitor, Gary Ackers, Wayne Bolen, Ernesto Freire, Stan Gill, and Jim Lee envisioned a forum dedicated to quantitative understanding of biological processes through thermodynamics.

February 1987: The First Public Launch

The discussion next occurred at **The Gumbo Shop in New Orleans** during the 31st Annual Biophysical Society Meeting. Over good food and great science, Gary Ackers, Norma Allewell, Wayne Bolen, Ken Breslauer, Ken Dill, Ernesto Freire, Stan Gill, and Jim Lee helped chart the future course of the field and the conference.

September 1987: Arrival at the Future Home

The first official Gibbs Conference landed at **Touch of Nature Environmental Center** in southern Illinois. Remarkably, after four decades—and despite a 2022 name change to the **Touch of Nature Outdoor Educational Center**—the conference continues to return to the same location, proving that some coordinates in spacetime are simply ideal.

1987–1993: The Next Generation Takes the Stage

In its earliest years, the conference focused entirely on the future. Every scientific presentation was given by **students and postdoctoral fellows**, creating a unique environment where emerging scientists could test ideas, build collaborations, and shape the future of biothermodynamics.

1994: A New Timeline Emerges

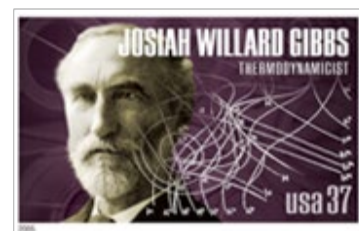
At the **8th Gibbs Conference**, principal investigators joined the speaker lineup. The resulting mix of established leaders and rising scientists created a richer scientific dialogue—a tradition that continues today.

1997: Looking Back at the First Decade

Ten years after the first conference, Gary Ackers and Wayne Bolen documented the origins of the meeting in *"The Gibbs Conference on Biothermodynamics: Origins and Evolution"* (Biophysical Chemistry 64, 1997). Like finding an old almanac, the article preserved the story of how a small gathering became a scientific institution.

2005: Honor for the Conference's Namesake

The timeline intersects with the legacy of **J. Willard Gibbs (1839–1903)** when the United States Postal Service issued a commemorative stamp honoring the founder of modern chemical thermodynamics. More than a century after Gibbs transformed science, his influence continued to guide the conference that bears his name.



2011: Twenty-Five Years in the Thermo-Time Continuum

On the conference's silver anniversary, Madeline Shea, John Correia, and Michael Brenowitz published *"Introduction: Twenty-five years of the Gibbs Conference on Biothermodynamics"* (Biophysical Chemistry 159, 2011), documenting the growth and impact of the meeting over its first quarter-century.

2020–2021: The Virtual Timeline

A global pandemic temporarily altered the course of events. For the first time, the Gibbs Conference left its traditional home and traveled into cyberspace, meeting virtually via Zoom. Though participants were separated by distance, the exchange of ideas remained as energetic as ever.

2022–Present: Back to Touch of Nature

With in-person gatherings once again possible, the conference returned to its longtime home at Touch of Nature. The setting may be familiar, but the science continues to push toward the future, exploring new frontiers in biothermodynamics while honoring the traditions established nearly forty years ago.

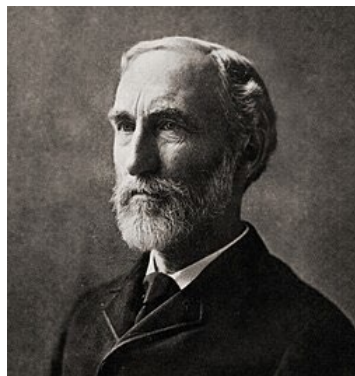
The Moral of the Story

Whether in 1986, 2026, or beyond, the Gibbs Conference has always been powered by the same fuel source: **curiosity, collaboration, and a passion for understanding biological systems through thermodynamics.**

As Doc Brown might say:

"Your future hasn't been written yet. No one's has. Your scientific future is whatever you make it. So, make it a good one."

Back to Thermo... and forward to the next Gibbs Conference!



Josiah Willard Gibbs (1839–1903) was an American mathematician, physicist, and chemist whose work laid the foundation for modern thermodynamics, physical chemistry, and statistical mechanics. A professor at Yale University for nearly his entire career, Gibbs developed many of the concepts that scientists use today to describe energy transformations, chemical equilibrium, and phase behavior.

Among his most important contributions were the concepts of **chemical potential**, **free energy (Gibbs free energy)**, the **phase rule**, and the rigorous application of thermodynamics to chemical systems. His landmark work, *On the Equilibrium of Heterogeneous Substances* (1876–1878), established the theoretical framework that

transformed chemistry from a largely descriptive science into a quantitative and predictive discipline.

Although his genius was not widely recognized during his lifetime, Gibbs is now regarded as one of the greatest scientists in American history. His ideas continue to influence fields ranging from biochemistry and materials science to engineering and physics. In honor of his profound contributions, the annual **Gibbs Conference on Biothermodynamics** bears his name.

Year Conference Organizers

Keynote Speaker(s)

1987	Jim Lee and Wayne Bolen	<i>Philosophical Talks by Gary K. Ackers and Ken Dill</i>
1988	Gary Ackers and Michael Johnson	<i>All talks by trainees.</i>
1989	Susan G. Frasier and Michael Johnson	<i>All talks by trainees.</i>
1990	Michael Johnson and Marty Straume	<i>All talks by trainees.</i>
1991	Gary Ackers and Tim Lohman	Ernesto Freire
1992	Jim Lee and Tomasz Heyduk	Serge Timasheff & John Schellman
1993	Maurice Eftink and Glen Ramsay	Peter von Hippel & Julian Sturtevant
1994	Enrico Di Cera and Madeline Shea	Gary Ackers & Kathleen Matthews
1995	Kenneth P. Murphy and Michael D. Brenowitz	Victor Bloomfield & Mario Amzel
1996	Jonathan B. Chaires and Michael L. Doyle	J. Michael Schurr & Allen Minton
1997	Dorothy Beckett and Jack Correia	Adrian Parsegian
1998	Andy Robertson	David Draper
1999	Bertrand García-Moreno E. and John Shriver	Wayne Bolen & Gary Ackers
2000	George Turner and Kim Sharp	Steve White
2001	Margaret A. Daugherty and Luis A. Marky	George Rose
2002	Michael Mossing and George Makhatadze	Rodney Biltonen
2003	Vince Hilser and Dick Sheardy	James C. Lee
2004	Doug Barrick and Kathleen Hall	Nacho Tinoco
2005	Trevor Creamer and Clay Clark	Carl Frieden
2006	Karen Fleming and Rohit V. Pappu	Madeline Shea & Timothy Lohman
2007	Brian M. Baker and Michael T. Henzl	Jamie Williamson
2008	Jannette Carey and David Bain	Dorothy Beckett and Ken Dill
2009	Nathan Baker and Liskin Swint-Kruse	Linda Jen-Jacobson
2010	Elisar Barbar and Vince J. LiCata	C. Nick Pace
2011	Gibbs Society Board of Directors	Bertrand E. García-Moreno
2012	Aaron L. Lucius and Patricia L. Clark	Terry G. Oas
2013	James L. Cole and Aron W. Fenton	Doug Barrick
2014	Andrew B. Herr and Steven T. Whitten	Karen G. Fleming
2015	Ernesto J. Fuentes and James R. Horn	Rohit V. Pappu
2016	Sarah Bondos and Nick Fitzkee	Patricia L. Clark
2017	Scott Showalter and Ana Maria Soto	Enrique de la Cruz
2018	Chiwook Park and David Draper	Kevin Plaxco
2019	Matthew Auton and Carlos Castañeda	Cathy Royer
2020	Roberto Galletto and Karen A. Lewis	Kathleen Hall
2021	Gibbs Society Board of Directors	Brian Baker
2022	Aaron L. Lucius and James R. Horn	Liskin Swint-Kruse
2023	Tonya Zeczycki and Krishna Mallela	Daniel Herschlag
2024	Lauren L. Porter and Janice L. Robertson	Susan Marqusee
2025	Eda Koculi and Andrea Soranno	Gary Pielak
2026	Loren Hough and Hui-Ting Lee	Karissa Sanbonmatsu

The Annual Gary K. Ackers Lecture in Biothermodynamics

Since 2009, the Gibbs Society Board of Directors sponsors an annual lecture honoring the scientific contributions of founding organizer Gary K. Ackers (1939-2011) to the field of biothermodynamics.

Lecture	Year	Ackers Lecturer
1	2009	Michael Brenowitz
2	2010	Timothy Lohman
3	2011	Madeline Shea
4	2012	Enrico Di Cera
5	2013	Bertrand García-Moreno E.
6	2014	David E. Draper
7	2015	Walter S. Englander
8	2016	Ken Dill
9	2017	Dorothy Beckett
10	2018	James C. Lee
11	2019	Jack Correia
12	2020	Doug Barrick
13	2021	David Bain
14	2022	Tobin Sosnick
15	2023	Karen Fleming
16	2024	Patricia L. Clark
17	2025	George Makhatadze
18	2026	Josh Wand

Gibbs Society Governance

Current Officers and Terms

President Ernesto Fuentes, 2025 – 2026
Past-President Nick Fitzkee, 2025 – 2026
President-Elect Aron Fenton, 2025-2026
Vice President Aron Fenton, 2021 – present
Secretary Andrew Herr, 2019 – 2028
Treasurer Karen A. Lewis, 2022 – 2027

Current Board Members-at-Large

Vince J. LiCata (2017) current term expires 2027
Liskin Swint-Kruse (2024) current term expires 2030

2026 - 27 Board of Directors (listed alphabetically by last name)

Aron Fenton, Nick Fitzkee, Ernesto Fuentes, Andrew Herr, Karen A. Lewis, Vince J. LiCata, Liskin Swint-Kruse

Gibbs₄₀ Conference Organization

Organizers:

Loren Hough and Hui-Ting Lee

Ackers Lecturer Selection Committee

Vince J. LiCata (Chair) and *current Gibbs Society Board of Directors*

Speaker Nominating Committee

Organizers, Tobin Sosnick, David Bain

Fundraising Committee

Vincenzo Venditti, Ron Koder, Kurt Piepenbrink

Jotform Account Management

Nick Fitzkee (license), James R. Horn and Karen A. Lewis

Jotform Application Survey (revision) & Registration Survey (revision)

Nick Fitzkee and *Organizers*

Local Arrangements Committee

Faculty –Tori Dunlap, Carlos Castañeda, Emma Morrison, and *Treasurer*

Program Book and Poster Committee

Faculty – Clarissa Durie, Joe Emerson, Moriah Beck, *President*, and *Organizers*

Presentation Logistics Committee

Faculty –Elizabeth Duran (Chair)

Trainee –Tyrese Boddie, Justin Lovett, Jonathan Montgomery, Ella Mozier, Emily Sumrall, Devin Vides

Trainee Moderators – Nathan Clack, Carter Gray, Luis Gracia Mazuca, Shwetha Sreenivasan, Tongyin Zheng

Registration – PayPal

Nick Fitzkee and Karen A. Lewis

Saturday Night Thermo Co-organizers

Faculty –Vince J. LiCata and Ana Maria Soto

Trainees – Kathryn D. Power and Luke Shafik

SharePoint Guru

James R. Horn

Webmasters

Sarah E. Bondos and Trevor Creamer

Gibbs Society Mission and Policies

Mission Statement

The Gibbs Society of Biological Thermodynamics is committed to:

- advancing the development and application of thermodynamic principles to understand biological systems;
- fostering the professional growth of early-career trainees;
- promoting an equitable, accessible, and inclusive biothermodynamics community; and
- hosting an annual conference that includes significant opportunities for trainee oral presentations.

All participants accepted the following policies during the application process.

Code of Conduct

The Gibbs Society of Biological Thermodynamics is committed to providing a safe and inclusive environment that fosters open dialogue and the exchange of scientific ideas, promotes equal opportunities and treatment for all participants, and is free of harassment and discrimination

Harassment includes speech or behavior that is not welcome or is personally offensive, whether it is based on ethnicity, age, gender, religion, age, body size, disability, veteran status, marital status, sexual orientation, gender identity, or any other reason. It includes stalking, unnecessary touching, and unwelcome attention. The Gibbs Society condemns harassment, inappropriate behavior, or comments demeaning another person by reason of their ethnicity, age, gender, religion, age, body size, disability, veteran status, marital status, sexual orientation, gender identity, or any other reason.

Behavior that is acceptable to one person may not be acceptable to another, so use discretion to be sure that respect is communicated. Harassment intended in a joking manner still constitutes unacceptable behavior.

Anyone experiencing conduct that violates the Code should report this conduct immediately to the conference organizers or any member of the Gibbs Society Board (<https://www.gibbssociety.org/>).

Confidentiality Statement

Abstracts: Please remember that the abstracts, talks and posters for this meeting are confidential material and may contain unpublished results. Full abstracts will be available only in the printed program book and will not be posted online; only the titles and authors will be shared publicly online.

Posters: Please ask permission from the authors before taking photos of posters or poster material.

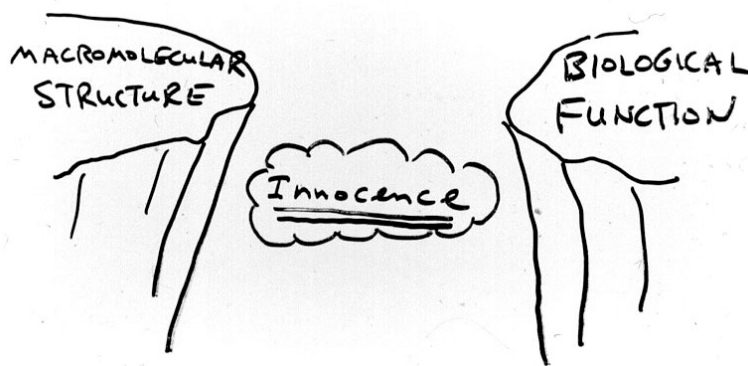
Talks: Please do not record or take pictures of the talks or talk material unless a speaker has given you explicit permission to do so.

18th Annual Gary K. Ackers Lecture in Biothermodynamics

2026 Lecturer
Josh Wand, Texas A&M University

This lecture honors the scientific contributions of Gary K. Ackers (1939-2011) to the field of Biological Thermodynamics. He served on the faculty at the University of Virginia, Johns Hopkins University and Washington University in St. Louis School of Medicine. He was a Fellow of the Biophysical Society and was one of the founding organizers of the Gibbs Conference.

Gary demonstrated a lifelong commitment to the growth and development of an intellectual community of scholars devoted to furthering the field of biothermodynamics. Gary was an active member of the Biophysical Society throughout his career and served as President of the Society, as well as Organizer of the annual meeting. While on the faculty of the University of Virginia, he was a leader in the graduate biophysics training program. When on the faculty in the Department of Biology at the Johns Hopkins University, he conceived and organized the Institute for Biophysical Studies of Macromolecular Assemblies, a university-wide training program in molecular biophysics that has continued for decades. While at Johns Hopkins, he also played a leading role in the establishment of the Gibbs Conference on Biothermodynamics, an annual meeting organized to promote innovative development of biophysical principles applied to current problems in biology and to train the next generation of molecular biophysicists to tackle hard problems rigorously. After moving to St. Louis to chair the Department of Biochemistry and Molecular Biophysics at Washington University, he spearheaded a new graduate program in biophysics and hired many faculty who have joined the community of regular contributors to the Gibbs Conference.

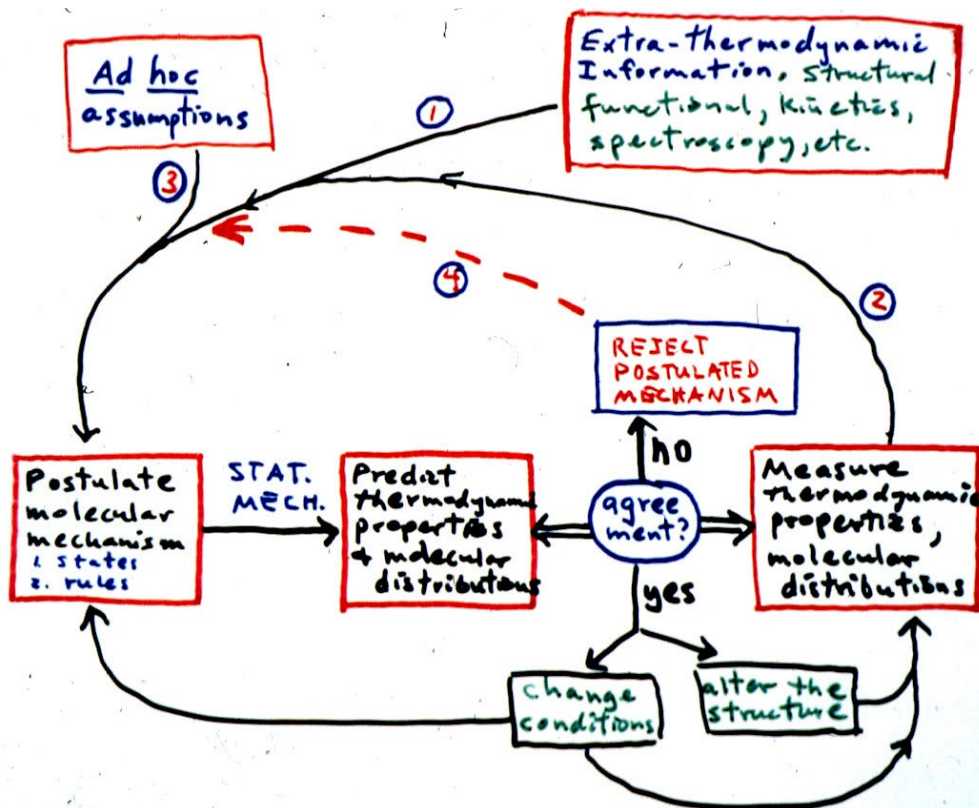


Gary was a pioneer in the development of methods and application of principles of equilibrium thermodynamics to the study of linkage in complex macromolecular assemblies. Studies from his laboratory on the energetics of self-association and ligand binding in human hemoglobin proved unequivocally that the classic and elegant MWC model of intersubunit allostery was insufficient to explain cooperative oxygen binding: the position, as well as the number, of ligands matters. His contributions in this area greatly enhanced our understanding of the relationship between structure, energy and function in hemoglobin, and in multimeric allosteric systems in general. By probing ever more deeply into the molecular mechanism of

cooperativity, he demonstrated a beautiful, useful, and general strategy for dissecting functional energetics in macromolecular assemblies.

His quantitative study of the interactions between proteins and nucleic acids in the bacteriophage lambda system included the development of quantitative DNase footprinting methods for measuring free energies of repressor-operator interactions. The footprinting assay remains an effective tool for measuring the extremely tight binding constants that are often encountered in site-specific interactions between proteins and nucleic acids. Those studies paved the way for similar methods to study protein-nucleic acid interactions in more complex systems, including time-resolved studies of the kinetics of RNA folding. Based on his experimental studies of phage lambda, his group developed statistical thermodynamic models to simulate the lysogenic-to-lytic growth switch: the series of macromolecular events that determine the fate of bacteriophage lambda during infection of *E. coli*. This work demonstrated how a complex biological function could be predicted quantitatively, strictly from the kinetics of transcription and translation, and the Gibbs free energy of interactions between the key macromolecular components in the genetic switch.

During Gary's early career, he developed methods to measure association constants in self-associating systems based on analytical gel permeation chromatography. Those methods have since become standard tools in the field. His group was also responsible for modifications of the cryo-gel electrophoresis methods, moving from applying them to hemoglobin to protein-DNA interactions. These contributions focused on developing the capacity to quantify intermediate states that are only transiently populated during the course of a biochemical process. His more than 200 articles and chapters changed our view of the molecular mechanisms that govern complex biochemical reactions.



Images courtesy of Gary K. Ackers

The Madeline A. Shea Poster Sessions

In recognition of more than 36 years of leadership and service to the Gibbs Society of Biological Thermodynamics, the poster sessions are named in honor of Madeline Shea, Ph.D. As a professor at the University of Iowa, Madeline is well known for her rigorous thermodynamic approach to research and her innovation and dedication as a teacher and mentor.

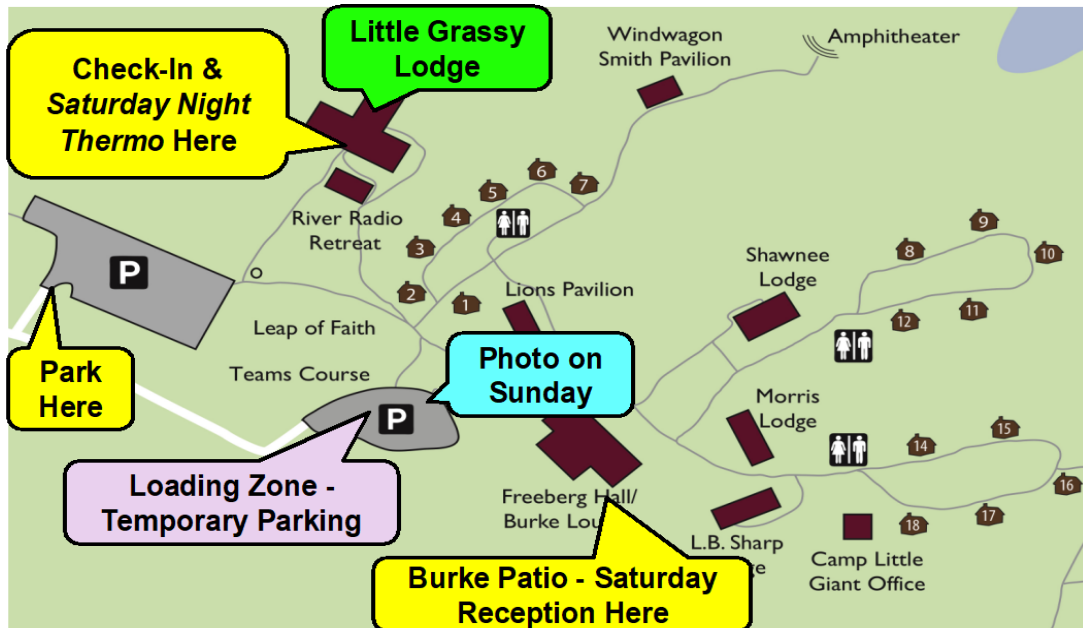
From her earliest days as a scientist, Madeline applied the thermodynamic concepts of linkage and cooperativity to multi-component systems. As a graduate student and postdoctoral fellow in the laboratory of Gibbs co-founder Gary Ackers, she studied the assembly of tobacco mosaic virus, cooperative binding of repressor proteins to multi-site DNA operators, and hemoglobin allostery. She developed the first statistical thermodynamic model of the bacteriophage lambda lysogenic-to-lytic growth switch. Her own laboratory focused on the complex calcium-mediated signaling pathways regulated by non-equivalent calmodulin domains binding enzymes (calcineurin and CaMKII) and membrane proteins (ion channels and receptors). She has given the Gibbs Keynote (2006), Ackers Lecture (2011) and plenary session talks. By sharing her work at Gibbs Society meetings, countless trainees have been exposed to these exemplary studies.

Madeline's passion for training permeates all aspects of her professional life. Her novel contributions to teaching and mentoring have been recognized by awards from the University of Iowa and by the Biophysical Society's Emily M. Gray Award. She recruited many new members to the Gibbs community and is a trusted mentor for many. She founded the FUTURE in Biomedicine Program, in which faculty and students from primarily undergraduate institutions collaborate with research laboratories at the University of Iowa. Several of the FUTURE participants have presented their research at Gibbs Conferences.

The list of Madeline's "official" service to the Gibbs Society is long. She presented her postdoctoral research at the first Gibbs Conference in 1987 (it was known simply as "Biothermodynamics" then), and subsequently served as conference organizer (1994), President (2004-2005) and Long-term Board member (2006-2024). Her organizational contributions have touched all aspects of the Gibbs Conference including the mailing list, legal incorporation, and transitioning from paper to online registration. She oversaw the program book committee, chaired the selection committee for the Ackers Lecture and developed the Gantt chart that is now indispensable for running the Annual Conference. With Jack Correia and Michael Brenowitz, she co-authored a publication in Biophysical Chemistry that preserved the history and philosophy of the Gibbs Conference as of its 25th anniversary (DOI: 10.1016/j.bpc.2011.07.002).

Madeline's contributions have been critical to guiding the growth of the Gibbs Society and shepherding it through the COVID-19 pandemic, all while holding fast to the founding goals of the Gibbs Conference – to ensure that future generations of scientists are well-trained in the central science of thermodynamics.

Saturday ♦ September 26, 2026



3:00 – 8:00 pm Check-in at Little Grassy Lodge for those staying on-site. Everyone - Collect name badge & program book in Little Grassy Lodge. If you need to park in the Loading Zone near Freeberg to unload luggage or displays, please move cars **before noon on Sunday** to accommodate setup of the conference photo that will be held there.

Attractions in Southern Illinois (<https://southernillinoistourism.org>) include Giant City State Park, orchards with apple cider, doughnuts, apple butter & pumpkins (Rendleman Orchards & Market and Flamm Orchards are popular), and plenty of small town charm in Makanda.

5:30 – 8:15 pm **Saturday Night Thermo**
Event for trainees only – full schedule on next page

7:30 – 10:00 pm **Opening Reception on Burke Patio**
Light refreshments, beer, wine, and soft drinks will be served. Participants are expected to make dinner arrangements independently.

8:30 PM **Little Grassy Lodge “Friends Room”**
Meeting of Presentation Logistics Committee and Moderators of Platform Sessions to review AV setup.

Saturday Night Thermo ♦ September 26, 2026

Saturday Night Thermo – Event for trainees only

Trainee Moderators and Co-Organizers

Kathryn D. Power, Emerson Lab, Mississippi State University

Luke Shafik, Braselmann Lab, Georgetown University

Faculty Co-Organizers

Ana Maria Soto, Towson University

Vince J. LiCata, Louisiana State University

5:30 pm	Dinner for trainees who registered in advance Little Grassy Lodge “Friends Room”
6:00 – 7:00 pm	Flash Talks in Little Grassy Lodge “Friends Room” <i>Open to trainees only. No registration required.</i> <i>Speakers - please work with Moderators to test your presentation in advance.</i> <i>AV support by Tyrese Boddie, Lee Lab, Univ. Alabama at Birmingham</i> 1. Structural and Dynamic Basis of KRAS Neoantigen Recognition by TCRS Bassant Y. Eldaly, Baker Lab, University of Notre Dame 2. Lipid phase and composition govern lipid-binding and conformational ensemble of Apolipoprotein E Anshuman Jaysingh, Soranno Lab, Washington University in St. Louis 3. Zinc (II) Binding of a γ-CA-Like Protein from a Hyperthermophilic Archaeon Luis Manuel Caballero Choy, Emerson Lab, Mississippi State University 4. How Folding Stability and Kinetics Influence Protein Homeostasis Senjuti Banerjee, Clark Lab, University of Notre Dame 5. Visualizing Protein and RNA Unfolding in Biomolecular Condensates Using NMR Tongyin Zheng, Fawzi Lab, Brown University 6. Protein-Dependent Physicochemical Microenvironments Dictate Biomolecular Transfer into Cellular Condensates Thomas S. Hennigan, Riback Lab, Baylor College of Medicine 7. Configuration Dependent Regulation of ATP Binding and Hydrolysis in the DNA Helicase RepA Nathan L. Finegold, Foster Lab, Ohio State University
7:00 – 7:15 pm	Refreshment Break
7:15 – 8:15 pm	Career Panel in Little Grassy Lodge “Friends Room” <i>Session open to all trainees but not PIs.</i> <i>Sponsored by the Serge N. Timasheff Scholarship Donors</i> Sherry Hemmingsen, Molecular Spectroscopy Product Specialist, Jasco Inc. Giselle Jacobson, Biophysics Instrumentation Core Facility, Univ. of Notre Dame Paul Sapienza, Research Assistant Professor, Univ. of North Carolina

8:15 pm Adjourn to join ongoing reception for all participants.

Sunday Morning ♦ September 27, 2026

♦ Posters in Poster Session I may be mounted on Sunday morning. Use assigned number.

7:00 – 8:20 am **Breakfast in Freeberg & Burke & Surrounding Area**
Individuals who requested special meals in advance because of dietary restrictions should follow signage in Freeberg to a separate serving area, & ask staff for assistance.

Platform Session I

8:15 am **Speakers - Please connect your laptop in advance of the session.**
AV support by *Emily Sumrall*, Duran Lab, Univ. Alabama at Birmingham

8:30 – 8:40 am **President's Welcome – Ernesto Fuentes**, University of Iowa

8:40 – 8:50 am **Opening Remarks by Organizers**
Hui-Ting Lee, University of Alabama at Birmingham
Loren Hough, University of Colorado Boulder

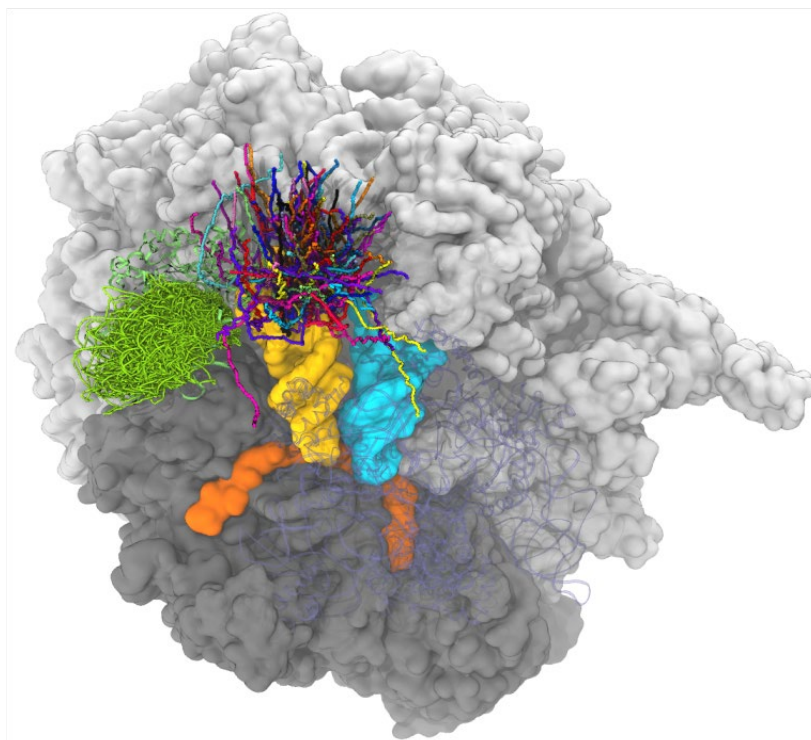
Moderator **Luis Gracia Mazuca**, Koculi Lab, UTEP

40th Annual Gibbs Conference Keynote Lecture

8:50 – 9:00 am **Speaker Introduction**
Loren Hough, University of Colorado Boulder

9:00 – 9:50 am **Simulating Movement of tRNA Through the Ribosome**
Karissa Sonbonmatsu, Los Alamos National Lab

9:50 – 10:00 am Questions for Keynote Speaker



Platform Session I - continued

10:00 – 10:30 am Break – Refreshments in River Radio Retreat

Please move cars in parking lot near Freeberg before noon to accommodate setup of the conference photo.

10:30 – 10:55 am Measuring RNA Structure, Recognition, and Remodeling through Chemical Probing

Lauren Hagler, Texas A&M University

10:55 – 11:00 am Questions for speaker

11:00 – 11:15 am Transcription Regulation through Coupled R-loop and G-Quadruplex Dynamics

Chun-Ying Lee, Myong Lab, Boston Children's Hospital

11:15 – 11:20 am Questions for speaker

11:20 – 11:35 am Optimizing Selection Systems for Deep Mutational Scanning of NSAR/OSBS Enzymes

Gladys Owusu-Addo, Glasner Lab, Texas A&M University

11:35 – 11:40 am Questions for speaker

11:40 – 11:50 am **General Discussion for Session**

11:50 am **Session Closing Announcements by Organizers – Hui-Ting Lee & Loren Hough**

**12:00 pm Conference Photo near Freeberg Hall
Photographer - Andy Herr**

Gather on hill near parking lot by Freeberg Hall

Please move cars in parking lot before noon to accommodate setup of the conference photo.



12:15 pm Lunch in Freeberg & Burke & Surrounding Tents

Individuals who identified dietary restrictions should follow signage in Freeberg to separate serving area, and ask staff for assistance.

1:00 – 2:45 pm Free Time until Afternoon Session

Look near the check-in counter in Little Grassy Lodge for information about on-site organized events. Information about local parks and attractions is also available near the entrance to Little Grassy Lodge.

Attractions in Southern Illinois (<https://southernillinoistourism.org>) include Giant City State Park, orchards with apple cider, doughnuts, apple butter & pumpkins (Rendleman Orchards & Market and Flamm Orchards are popular), and plenty of small town charm in Makanda.

Sunday Afternoon ♦ September 27, 2026

Platform Session II

2:45 pm	Speakers - Please connect your laptop in advance of the session. AV support by Justin Lovett , Fitzkee Lab, Mississippi State Univ.
Moderator	Shwetha Sreenivasan , Ross Lab, NIST
3:00 – 3:25 pm	Palm-reading for Your Phase Diagram: Disentangling Multi-phase Effects in Biomolecular Condensates Jeremy Schmit , Kansas State University
3:25 – 3:30 pm	Questions for speaker
3:30 – 3:45 pm	Characterizing the Role of Conformational Disorder in Catalytic Activity of <i>E. Coli</i> AlkB Sayan Das , Venditti Lab, Iowa State University
3:45 – 3:50 pm	Questions for speaker
3:50 – 4:05 pm	<i>In Vivo</i> Biochemical Assay for High-throughput Measurements of Dihydrofolate Reductase Kinetic Parameters Karolina Filipowska , Reynolds Lab, Johns Hopkins University
4:05 – 4:10 pm	Questions for speaker
4:10 – 4:40 pm	Break – Refreshments in River Radio Retreat
4:40 – 5:05 pm	CryoEM Studies of Photoreceptor Kinases: Structural Dynamics and Light Signaling Xiaojing Yang , University of Illinois Chicago
5:05 – 5:10 pm	Questions for speaker
5:10 – 5:25 pm	Collective Stabilization and Compositional Control in Multicomponent Condensates Suman Pal , Mittag Lab, St. Jude Children's Research Hospital
5:25 – 5:30 pm	Questions for speaker
5:30 – 5:55 pm	Temperature Compensation by the KaiB Protein in the Cyanobacterial Circadian Clock Andy LiWang , University of California, Merced
5:55 – 6:00 pm	Questions for speaker
6:00 – 6:10 pm	General Discussion
6:10 pm	Introduction of Attending Commercial Sponsors Hui-Ting Lee & Loren Hough
6:30 pm	Dinner in Freeberg & Burke & Surrounding Area

Sunday Evening ♦ September 27, 2026

Poster Session I - Presenters Last Names - A - Le

8:00 – 11:00 pm	Posters on display in Freeberg Hall and Burke Lounge Instructions & assigned numbers are listed after the schedule of talks. Displays by Sponsors in Freeberg Hall (upper level) Please set up displays near beer, wine, and soft drinks.
-----------------	--

Monday Morning ♦ September 28, 2026

- ♦ Posters in Poster Session II may be mounted on Monday morning. Use assigned number.
- ♦ A white board will be available in Little Grassy Lodge, near the check-in window.

If you can offer someone a ride, please write your name, the time when you are leaving Touch of Nature, number of people you can accommodate and which airport you are using.

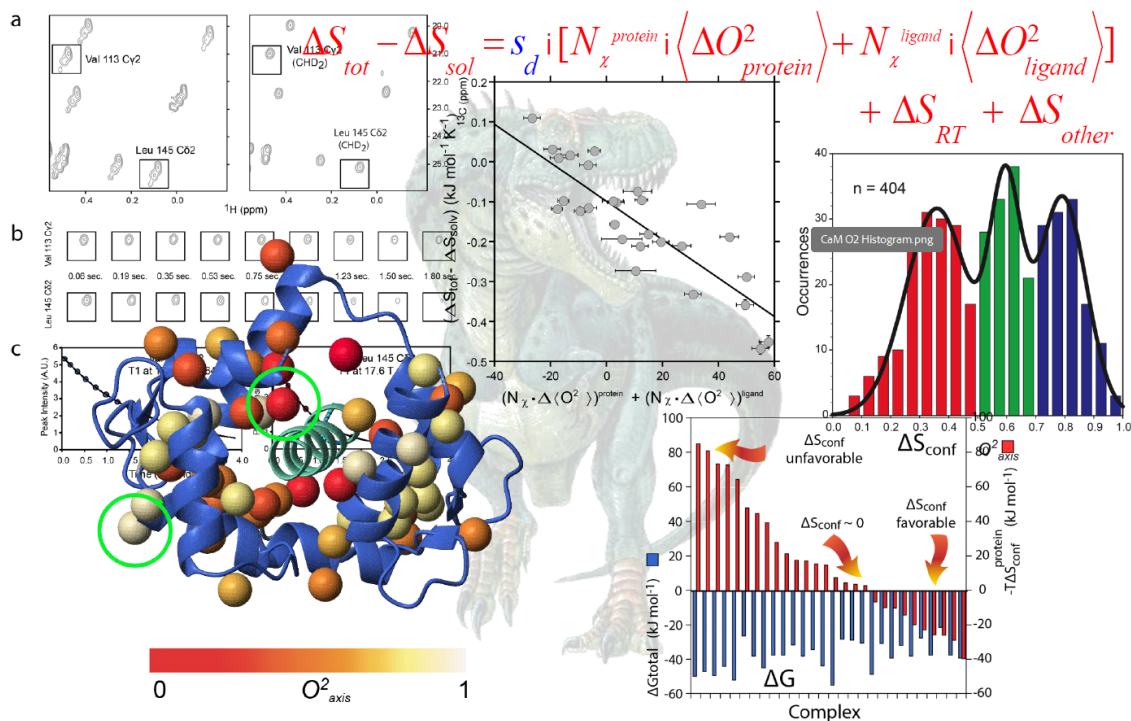
7:00 – 8:20 am Breakfast in Freeberg & Burke & Surrounding Area

Platform Session III

8:15 am **Speakers - Please connect your laptop in advance of the session.**
 AV support by **Jonathan Montgomery**, Foster Lab, Ohio State Univ
Moderator **Tongyin Zheng**, Fawzi Lab, Brown Univ.
 8:30 – 8:40 am **Announcements by Organizers –**
Hui-Ting Lee & Loren Hough

18th Annual Gary K. Ackers Lecture in Biothermodynamics

8:40 – 8:50 am **Speaker Introduction**
Doug Barrick Johns Hopkins University
 8:50 – 9:40 am **A Disordered Life: Entropy in Protein Structure, Stability and Function**
Josh Wand, Texas A & M University
 9:40 – 9:50 am **Questions for Ackers Lecturer**



Platform Session III - continued

9:50 – 10:20 am	Break – Refreshments in River Radio Retreat
10:20 – 10:35 am	Characterization and Interaction Mapping of RNA Aptamers Targeting HIV-1 Capsid Assemblies Miles Mayer , Lange Lab, University of Missouri
10:35 – 10:40 am	Questions for speaker
10:40 – 11:05 am	Mapping the Elastic Proteome: Thermodynamic and NMR Fingerprints of Disordered Protein Springs Ron Koder , The City College of New York
11:05 – 11:10 am	Questions for speaker
11:10 – 11:25 am	The Hidden Structure of Membranes Around Membrane Proteins Gladys Díaz Vázquez , Robertson Lab, Washington University in St. Louis
11:25 – 11:30 am	Questions for speaker
11:30 – 11:45 am	Visualizing Alternative mRNA Splicing in Live Mammalian Cell with a Split-fluorescent RNA Sensor Bindu Modi , Braselmann Lab, Georgetown University
11:45 – 11:50 am	Questions for speaker
11:50 – 12:00 am	General Discussion
12:00 – 12:10	Session Closing Announcements by Organizers – Hui-Ting Lee & Loren Hough Reminder of Meeting of Conference PI Volunteers & Past Organizers

12:15 pm Lunch in Freeberg & Burke & Surrounding Area

1:00 – 2:45 pm	Free Time until Afternoon Session Look near the check-in counter in Little Grassy Lodge for information about possible organized events. Information about local parks and attractions is also available near the entrance to Little Grassy Lodge.
----------------	--

Attractions in Southern Illinois (<https://southernillinoistourism.org>) include Giant City State Park, orchards with apple cider, doughnuts, apple butter & pumpkins (Rendleman Orchards & Market and Flamm Orchards are popular), and plenty of small town charm in Makanda.

1:15 – 2:15 pm	Business Meeting of Past Organizers and Committee PIs Little Grassy Lodge - Friends Room <i>Note - Area will be unavailable to other attendees during this time.</i>
----------------	---

Monday Afternoon ♦ September 28, 2026

Platform Session IV

2:45 pm	Speakers - Please connect your laptop in advance of the session. AV support by Ella Mozier , Greenberg Lab, Washington Univ. in St. Louis
Moderator	Nathan Clack , Mandala Lab, University of Iowa
3:00 – 3:25 pm	When Shape Does Not Predict Mechanism: Rewiring of Allostery in Homologous CRP Proteins Rodrigo Maillard , Georgetown University
3:25 – 3:30 pm	Questions for speaker
3:30 – 3:45 pm	smFRET Study of G-Quadruplex Conformational Rearrangement Kinetics in Different Telomeres Md Ibnul Rifat Rahman , Lee Lab, Univ. of Alabama at Birmingham
3:45 – 3:50 pm	Questions for speaker
3:50 – 4:05 pm	A Noncanonical Active Site and Nucleotide-specific Misincorporation by a Reverse Transcriptase from a DNA Virus Lynden Voth , Burke Lab, University of Missouri
4:05 – 4:10 pm	Questions for speaker
4:10 – 4:40 pm	Break – Refreshments in River Radio Retreat
4:40 – 5:05 pm	Dissecting the Role of PCNA and Pif1 in Replication of Individual DNA Molecules by DNA Polymerase Delta Roberto Galletto , Washington University School of Medicine, Saint Louis
5:05 – 5:10 pm	Questions for speaker
5:10 – 5:25 pm	Physical Basis Of pKa Shift for Ionizable Lipids in an LNP-like Environment Akshara Sharma , Grossfield Lab, University of Rochester
5:25 – 5:30 pm	Questions for speaker
5:30 – 5:55 pm	Architectural Regulation of Metabolic Enzyme Complexes in Bacteria Clarissa Durie , University of Missouri
5:55 – 6:00 pm	Questions for speaker
6:00 – 6:10 pm	General Discussion
6:10 pm	Announcements – Officers for 2026-27 & Organizers for Gibbs41 Ernesto Fuentes , President, University of Iowa
6:30 pm	Dinner in Freeberg & Burke & Surrounding Area

Monday Evening ♦ September 28, 2026

Poster Session II - Presenters Last Names - Lo-Z

8:00 – 11:00 pm	Posters on display in Freeberg Hall and Burke Lounge Instructions & assigned numbers are listed after the schedule of talks. Displays by Sponsors in Freeberg Hall (upper level)
-----------------	--

Tuesday Morning ♦ September 29, 2026



When you leave Touch of Nature, please leave your room key at the counter in Little Grassy Lodge.



7:00 – 8:20 am Breakfast in Freeberg & Burke & Surrounding Area

Platform Session V

- 8:25 am** *Speakers - Please connect your laptop in advance of the session.*
AV support by **Devin Vides**, Horn Lab, Northern Illinois Univ
- 8:30 – 8:35 am** **Announcements by Organizers**
- 8:35 – 8:45 am** **Introduction of Touch of Nature & Catering Staff**
Hui-Ting Lee & Loren Hough
- Moderator* **Carter Gray**, Swint-Kruse Lab, University of Kansas Medical Center
- 8:45 – 9:10 am** **A Role for DNA Phosphate Energetics in Damage Recognition**
Gary Meints, Missouri State University
- 9:10 – 9:15 am** Questions for speaker
- 9:15 – 9:30 am** **Decoding the Structural Basis of Molecular Cross-Reactivity**
Jasmine Singh, Baker Lab, University of Notre Dame
- 9:30 – 9:35 am** Questions for speaker
- 9:35 – 10:00 am** **Effects of Alpha Synuclein on PEP19 Disorder and its Ability to Regulate Calcium Signaling Through Calmodulin**
Tori Dunlap, University of Central Arkansas
- 10:50 – 10:05 am** Questions for speaker

10:05 – 10:20 am Short Break – Refreshments in River Radio Retreat

- 10:20 – 10:35 am** **Characterizing Folding Stabilities Along Stepwise Mutation Paths Between Two Protein Folds**
Charles Millard, Barrick Lab, Johns Hopkins University
- 10:35 – 10:40 am** Questions for speaker
- 10:40 – 10:55 am** **A Conserved Dynamic IDR Facilitates Transcription in Mycobacterium Tuberculosis**
Drake Jensen, Soranno Lab, Washington University in St. Louis
- 10:55 – 11:00 am** Questions for speaker
- 11:00 – 11:25 am** **Mechanistic Insights into Enzyme Catalyzed Protein Unfolding from Model AAA+ Molecular Motors**
Aaron Lucius, University of Alabama at Birmingham
- 11:25 – 11:30 am** Questions for speaker
- 11:30 – 11:35 am** **Closing Remarks by Incoming President Aron Fenton**
- 11:35 am** **Lunch-to-Go - Pickup in Freeberg Hall**



Please fill the post-conference survey using this QR code:

Shea Poster Sessions - General Information

Dates and Locations

Posters will be presented during evening sessions (8-11 PM) on Sunday and Monday in both Burke Lounge and Freeberg Dining Hall. Free beverages will be served.

8-9 PM	<i>Odd-numbered posters will be presented in the first hour.</i>
9-10 PM	<i>Even-numbered posters will be presented in the second hour.</i>
10-11 PM	<i>Social hour to further discuss science together</i>

Session I - Sunday evening "A –Le"

Posters with **presenting authors** with last names ranging from A to Lewis.

Session II - Monday evening "Lo –Z"

Posters with **presenting authors** with last names ranging from Lovett to Z.

Poster Numbers

Board #1 will be available for posting job openings and training program information.

Boards from #2 on are numbered according to the **last name of the presenting author**.

Presenters are asked to place their poster on the board that corresponds to the numeral in their poster listing for Sunday (S2, S3, etc.) or Monday (M2, M3, etc.). That listing follows these instructions.

Poster Sizes & Boards

Width: Please make posters 36 to 40 inches wide and up to 48" tall.

Mounting: Pushpins will be provided, and most boards will be foam core material. You may bring your own Velcro (hook and loop) buttons for mounting your poster.

Sharing boards - The poster boards come from a variety of sources and are variable in size. Most boards need to hold 2 narrow posters and will be labeled as such.

Times for mounting and removing posters

Posters may be mounted in the morning for viewing during the day,

Posters should be taken down by midnight of the assigned session day.

Confidentiality – **No photos or recording without permission**

Please remember that the content of all presentations (both talks and posters) for this meeting is confidential material and may contain unpublished results. Abstracts will not be posted online.

Please ask permission from authors before taking photos of posters or poster materials.

Please do not record talks, posters, or any presented material unless a presenter has given you explicit permission.

SHEA POSTER SESSION I

Sunday Evening September 27, 2026

S1	Job Openings and Training Programs
S2	NIGMS-Supported Resources and Centers and NIH Funding Opportunities for Individual Researchers, <u>Beckett D.</u>; <i>NIGMS, NIH</i>
S3	Biophysical Characterization of Divalent Cations Interaction with Calmodulin, <u>Abayawardana S.</u>, Mbata E., Johnson C.; <i>Mississippi State Univ.</i>
S4	ALS-linked mutation impairs UBQLN2 Chaperone activity for RTL8, <u>Acharya N.</u>, Dao T., Brown M., Rappold T., Loh S., Castañeda C.; <i>Syracuse Univ.</i>
S5	Biochemical Characterization of Self-Activating Mutations in <i>Staphylococcus aureus</i> Histidine Kinase SrrB, <u>Adindu C.</u>, Hammons N., Kavanaugh J., Horswill A., Fuentes E.; <i>Univ. of Iowa</i>
S6	Defining the Myopalladin–Actin Interaction Using Integrative Structural Restraints, <u>Ajiboye O.</u>, Liu D., Vazquez S., Joseph C., Harader J., Beck M.; <i>Wichita State Univ.</i>
S7	Composition Governs Protein Binding and Stability at the Lipid Nanoparticle Interface, <u>Alcantara G.</u>; <i>Mississippi State Univ.</i>
S8	Modulating Linker Architecture of Fluorogenic Ligands in an RNA / ligand Complex and Assessing Biophysical Characteristics, <u>Anderson J.</u>, Braselmann E.; <i>Georgetown Univ.</i>
S9	Structural Characterization of Cytosolic Ion Channel Components by Solution NMR, <u>Appiah S.</u>; <i>Mississippi State Univ.</i>
S10	How Folding Stability and Kinetics Influence Protein Homeostasis, <u>Banerjee S.</u>, Murrin S., Diehl J., Clark P.; <i>Univ. of Notre Dame</i>
S11	Characterizing Adhesive Tip Proteins of the Type IV Pilus, <u>Bauer R.</u>, Piepenbrink K.; <i>Univ. of Nebraska-Lincoln</i>
S12	Simultaneous Measurement of the Translocation and Unfolding Kinetics of ClpA and ClpAP using Single Molecule TIRF Microscopy, <u>Bexley W.</u>, Maluf N., Lucius A.; <i>Univ. of Alabama at Birmingham</i>
S13	Active Biomolecular Condensates: Encoding Non-equilibrium Phase Behavior through Enzymatic Control, <u>Bhatta T.</u>, Wadsworth G., Dao T., Casteneda C., Banerjee P.; <i>Univ. at Buffalo</i>
S14	Sequence Dependent Recombination During Nidoviral Transcription, <u>Boddie T.</u>; <i>UAB</i>
S15	pH-Dependent VHH Domains through Introduction of Acidic and Basic Residues in the Homodimeric and Binding Interfaces, <u>Bojan J.</u>; <i>Northern Illinois Univ.</i>
S16	Examination of Substrate Binding and ATP Usage of DEAD-box Helicase DDX41, <u>Bold A.</u>, Sumrall E., Duran E.; <i>Univ. of Alabama at Birmingham</i>
S17	Condensate Morphology as a Readout of Palladin-Driven Actin Organization, <u>Bradford C.</u>, Beck M.; <i>Wichita State Univ.</i>
S18	Structural Characterization of lcmSW Binding Sites on Effector Proteins in <i>Legionella pneumophila</i>, <u>Brodeur C.</u>, Somarathne R., Wing-Cheung L., Durie C.; <i>Univ. of Missouri</i>
S19	Investigating Changes in Compaction of PEP-19 by Neurodegenerative Proteins, <u>Brown E.</u>, Dunlap T.; <i>Univ. of Central Arkansas</i>
S20	Thermodynamics of Engineered Riboswitch-derived RNA Tag Variants Binding to Fluorogenic Ligands, Buan A., Braselmann E.; <i>Georgetown Univ.</i>
S21	Zinc (II) Binding of a γ-CA-Like Protein from a Hyperthermophilic Archaeon, <u>Caballero Choy L.</u>, Emerson J.; <i>Mississippi State Univ.</i>
S22	Structural Origins of Protein Folding Cooperativity, <u>Carey J.</u>; <i>Princeton Univ.</i>

S23	Comparing Flexibility of Simulated vs Experimental Single-stranded RNA Using Molecular Dynamics and Time-resolved Fluorescence , <u>Carhart A.</u> ; <i>RNA Institute</i>
S24	Gel-based Lipid Quantification for Proteoliposome Optimization , <u>Clack N.</u> , Kallure G., Pace M., Mandala V.; <i>Univ. of Iowa</i>
S25	Contributions to Protein Stability are Governed by Conserved Position Roles Within Tertiary Structures , <u>Cleveland H.</u> , Liu D., Sreenivasan S., Swint-Kruse L.; <i>Univ. of Kansas Medical Center</i>
S26	Rapid Thermal Stability Screening and Selection of Monoclonal Antibody Drug Products , <u>Costa V.</u> ; <i>Waters Materials Sciences</i>
S27	Optimized Expression and Temperature-Dependent Structural Dynamics of Recombinant Human Tropoelastin , <u>Crump G.</u> , Koder R., Wittebort R.; <i>City College of New York</i>
S28	Mechanistic Insights into the Multiple Enzymatic Activities and DNA Substrate Specificity of Human ALKBH1 , <u>Dissanayake D.</u> ; <i>Iowa State Univ.</i>
S29	Structural and Dynamic Basis of Kras Neoantigen Recognition by Tcrs , <u>Eldaly B.</u> , Dasgupta M., Chandran S., Klebanoff C., Baker B.; <i>Univ. of Notre Dame</i>
S30	Robust Evaluation of Higher Order Structural Differences in Bispecific Antibodies by Circular Dichroism Spectroscopy , Oyama T., <u>Empey-Kohl F.</u> , Yamane A., Akao K., Suzuki S., Tsumoto K.; <i>JASCO Inc.</i>
S31	Conformational Dynamics and Functional Characterization of Human ALKBH7 , <u>Faal B.</u> ; <i>Iowa State University</i>
S32	From Phase Behavior to Protein-Mediated Drug Delivery: Physicochemical Characterization of Antimicrobial Bromophene (C58) , <u>Faulk B.</u> , Munoz-Medina R., Agobe F., Jons A., Cannon C., Bondos S.; <i>Texas A&M Univ.</i>
S33	Configuration Dependent Regulation of ATP Binding and Hydrolysis in the DNA Helicase RepA , <u>Finegold N.</u> , Benedek M., Moeller W., Yarawwsy A., Paul L., Wysocki V., Foster M.; <i>Ohio State Univ.</i>
S34	Input Sequence Heterogeneity Determines Consensus Homeodomain Stability and Function , <u>Fin M.</u> , Barrick D.; <i>Johns Hopkins</i>
S35	Energetics of Biomembrane Remodeling from Direct Computations of Interatomic Forces , <u>Fiorin G.</u> , Park Y., Faraldo-Gómez J., Forrest L.; <i>NIH / NINDS</i>
S36	Effects of Mutations on Gene Expression Level , <u>Frazier B.</u> , Diehl J., Clark P.; <i>Univ. of Notre Dame</i>
S37	Structural Changes in DotA and IcmX Before and After Secretion in the Dot/Icm Type IV Secretion System of Legionella pneumophila , <u>Froderman H.</u> , Lai W., Shrestha R., Durie C.; <i>Univ. of Missouri-Columbia</i>
S38	Determining the Binding of Effectors with IcmSW from Legionella pneumophila , <u>Garcia J.</u> ; <i>Univ. of Missouri-Columbia</i>
S39	Role of Palladin in Actin Dynamics Revealed by Quantitative TIRF Microscopy , <u>Ghimire S.</u> , Baliel C., Beck M.R.; <i>Wichita State Univ.</i>
S40	Epitranscriptome Rewiring of Ribosomal RNA in Breast Cancer Cells , <u>Gracia Mazuca L.</u> , Koculi E.; <i>The Univ. of Texas at El Paso</i>
S41	RheoScale 2.0: Revealing the Hidden Roles of Protein Positions via Substitution Patterns , <u>Gray C.</u> , Liu D., Sreenivasan S., Swint-Kruse L.; <i>Kansas</i>
S42	Adenosine Triphosphate Modulates Amyloid Beta 40 Aggregation via Protein-Ligand Interactions , <u>Griggs S.</u> , Okuno Y.; <i>Washington Univ., STL</i>
S43	Environment of Ionizable Residues in Proteins , <u>Gunner M.</u> , Ranapura G., Mao J., deFlorio V., Chenel C., Rocchia W.; <i>City College of New York CUNY</i>
S44	C-di-GMP Regulates Type IV pili Chemotaxis in P. aeruginosa , <u>Hammons N.</u> , Yarrington K., Ptak C., Lopes C., Fuentes E., Limoli D.; <i>Univ. of Iowa</i>

S45	Effect of Region Swapping on the Conformation of an RNA Riboswitch, <u>Headley P.</u> , Soto A.; <i>Towson Univ.</i>
S46	Predicting GB3 Adsorption Orientation on Polystyrene Nanoparticles, <u>Hellard N.</u> , Kariyawasam C., Fitzkee N.; <i>Mississippi State Univ.</i>
S47	Protein-dependent Physicochemical Microenvironments Dictate Biomolecular Transfer into Cellular Condensates, <u>Hennigan S.</u> , Riback J.; <i>Baylor College of Medicine</i>
S48	Spacer-Encoded DNA Mechanics Govern Stepwise Cre-loxP Synaptic Complex Assembly, <u>Howard J.</u> , Akbari E., Montgomery J., Poirier M., Foster M.; <i>The Ohio State Univ.</i>
S49	Lipid Phase and Composition Govern Lipid-binding and Conformational Ensemble of Apolipoprotein E, <u>Jaysingh A.</u> , Stuchell-Brereton M., Frieden C., Soranno A.; <i>Washington Univ. in St Louis, School of Medicine</i>
S50	Investigation of the MutS α Interaction with Recombination Intermediates: An Alternate Binding Mechanism? <u>Jimenez Benitez A.</u> , <i>City College of New York</i>
S51	IQ motif Sequence Can Allosterically Control pH Sensitivity of Calmodulin Ca^{2+}-binding, Agee T., Garcia S., Knotts G., Young H., Webster E., <u>Johnson C.</u> ; <i>Mississippi State Univ.</i>
S52	Kv2.1–Toxin Complex Structure in Membranes, <u>Kallure G.</u> ; <i>Univ. of Iowa</i>
S53	Using ^{19}F-NMR to Track Conformational Changes in Anthrax Protective Antigen during Prepore to Pore Transition, <u>Karimi R.</u> , Bann J.; <i>Wichita State Univ.</i>
S54	Synchrotron Footprinting Maps IDR-driven Aβ42 Assembly and HOX Conformational Switching, <u>Klinger A.</u> ; <i>Decipher Hydro</i>
S55	Separation of Condensate and Fibril Formation Mechanisms in RNA-binding Protein FUS, <u>Korsh R.</u> , Davis R., Gindra B., Banerjee P.; <i>Univ. at Buffalo</i>
S56	Elucidating the Roles of the Two Nucleotide Binding Domains in E. coli ClpB-Catalyzed Translocation and Unfolding, <u>LeClair T.</u> , Lucius A.; <i>Univ. of Alabama at Birmingham</i>
S57	Ribozyme-Mediated Genetic Code Expansion, Kazmierczak R., Wamsley M., Kraus L., <u>Lewis A.</u> , Dunn R., Lupták A., Golden B., Burke D., Brown P.; <i>Univ. of Missouri</i>
S58	Linker Prolines Modulate Active RNA-binding Conformations of the LaRP6 La Module, Martinez Hernandez M., Cabrera A., Vargas Gutierrez A., Johnson M., <u>Lewis K.</u> ; <i>Texas State Univ.</i>

SHEA POSTER SESSION II

Monday Evening September 28, 2026

M1	Job Openings and Training Programs
M2	Point of Contact: Mapping the Binding Interface of Complement C3d to Polystyrene Nanoparticles , <u>Lovett J.</u> , Shaikh T., Fitzkee N.; <i>Mississippi State Univ.</i>
M3	<i>In vitro</i> Validation of <i>in silico</i>-designed Protein Binders Targeting PilZ Domain proteins , <u>Luedtke N.</u> , Hammons N., Heckman E., Claire A., Yarrington K., Limoli D., Fuentes E.; <i>Univ. of Iowa</i>
M4	Long-range Allosteric Communication, Double Mutant Cycles, and Energetic Coupling in SARS-CoV-2 Spike Protein , Lucas A., Rayaprolu V., <u>Mallela K.</u> ; <i>Univ. of Colorado Anschutz Medical Campus</i>
M5	Molecular Mechanisms of Electrical Signaling , <u>Mandala V.</u> ; <i>Univ. of Iowa</i>
M6	Interrogating the Chemistry That Governs Ca²⁺ Mediated Calmodulin Conformational Change and Allosteric Communication. , <u>Mbuta E.</u> ; <i>Mississippi state university</i>
M7	Cross-linked UvrD-family Dimers Form Constitutively Active DNA Helicases with Greatly Increased DNA Unwinding Processivity , <u>Mersch K.</u> , Nguyen B., Kozlov A., Lohman T.; <i>Washington Univ. in St. Louis</i>
M8	Modeling Structural Dynamics in RNA Tetraloops , <u>Mongin K.</u> , Nowzari R., Gupta M., Bevilacqua P., Chen A.; <i>Univ. at Albany</i>
M9	Stress-Triggered Biomolecular Condensates are Stabilized by Amyloid-Like Structures , <u>Montgomery J.</u> , Glauninger H., Cuevas-Zepeda E., Sosnick T., Drummond A., Squires A.; <i>Univ. of Chicago</i>
M10	Assembly of Neuromuscular Junctions , <u>Morrison K.</u> , Mandala V.; <i>Univ. of Iowa</i>
M11	Dissecting the Multivalent Interactions Mediating Phase Separation in Arabidopsis Dsk2, a Ubiquitin-binding Shuttle Protein , <u>Mousazadeh F.</u> , Castaneda C.; <i>Syracuse University</i>
M12	Decoding the Role of Intrinsic Disorder in the C-terminus of Cardiac Troponin T , <u>Mozier E.</u> , Greenberg L., Emenecker R., Holehouse A., Soranno A., Greenberg M.; <i>Washington Univ. in St. Louis</i>
M13	Effects of Hydrophobic Sequence Patterns on the Self-association of Disordered Protein Conformational Ensembles , <u>Mukinay C.</u> , Baxa M., Sosnick T., Clark P.; <i>Univ. of Notre Dame</i>
M14	Harnessing a Vast Natural Dataset to Comprehensively Characterize Biological Protein Condensation , <u>Murphy C.</u> , Whitten S., Lewis K., Hough L.; <i>Univ. of Colorado, Boulder</i>
M15	A sequence-encoded thermodynamic grammar of elastic protein recoil mechanism , Desai R., Pople D., Jain S., Musale A.; <i>Rutgers Univ.</i>
M16	A Conserved Mechanism for Dimerization and Activation of Superfamily 1A UvrD-family Helicases , <u>Nguyen B.</u> , Mersch K., Chadda A., Galburt E., Lohman T.; <i>Washington Univ. School of Medicine</i>
M17	Exploring How Sequence Information Reshapes Dihydrofolate Reductase Stability, Catalysis, and Structure , <u>Nguyen J.</u> , Barrick D.; <i>Johns Hopkins Univ.</i>
M18	Modulating the Observed pH-Dependent Binding Profile for a VHH/Antigen Interaction with Proximate Charged Residues in Linked Histidine Protonation Equilibria , <u>Ogundare S.</u> ; <i>Northern Illinois Univ.</i>

M19	Probing Low-pH LFn Conformational States During Anthrax Toxin Translocation, <u>Ogunnaike K.</u> ; <i>Wichita State Univ.</i>
M20	Ionizable Residue Substitutions within Antibody Interfaces in the Creation of pH-Dependent Antibody Interactions, <u>Oguntokun P.</u> , Laughlin T., Eom H., Horn J.; <i>Northern Illinois Univ.</i>
M21	Force-Dependent DNA Hairpin Unwinding by Dimeric UvrD-Family Helicases, <u>Orlowski A.</u> , Mersch K., Nguyen B., Lohman T., Galburt E.; <i>Washington Univ. in St. Louis</i>
M22	Noncanonical Role of the Potassium Channel Kv2.1 in Forming ER-PM Junctions, <u>Pace M.</u> , Mandala V.; <i>Univ. of Iowa</i>
M23	Characterizing Folding and Unfolding of a Model Riboswitch on the Single Molecule Level Using Optical Tweezers, <u>Pakade S.</u> ; <i>Georgetown Univ.</i>
M24	Investigating the Fold-switching Pathway of a Model Metamorphic Protein, <u>Pearce M.</u> , Toe E., Russel J., Hilser V.; <i>Johns Hopkins Univ.</i>
M25	Single-molecule Tools for Biophysical Characterization of Riboswitch RNAs, <u>Penkauskas T.</u> , Stickelman Z., Pakade S., Robertson J., Braselmann E.; <i>Georgetown Univ. Department of Chemistry</i>
M26	Molecular Mechanisms of Differentiated Colonization Phenotypes in <i>Clostridioides difficile</i>, <u>Perdomo J.</u> ; <i>Univ. of Nebraska-Lincoln</i>
M27	Targeting NRAS-Derived Neoantigens in T Cell-Based Cancer Immunotherapy, <u>Perera G.</u> , Etxeberria I., Klebanoff C., Baker B.; <i>Univ. of Notre Dame</i>
M28	Characterization of PaaY, a Putative γ-Carbonic Anhydrase from <i>Pyrococcus furiosus</i>, <u>Power K.</u> , Choy L., Stokes S., Emerson J.; <i>Mississippi State Univ.</i>
M29	Structural Basis Underlying Modulation of hSlo1-Toxin Interaction by Auxiliary β Subunits, <u>Prather G.</u> , Kallure G., Chowdhury S.; <i>Univ. of Iowa</i>
M30	Photophysical Characterization of Red-emitting Fluorophores Conjugated to a Membrane Protein within Membranes, <u>Pyne S.</u> , Chadda R., Mahoney-Kruszka R., Robertson J.; <i>WashU</i>
M31	Structure and Dynamics of Myopalladin Ig3 in Actin Binding, <u>Rankoth Arachchige A.</u> , Tran J., Beck M. R.; <i>Wichita State Univ.</i>
M32	AI-Enabled Maps of Cellular Organization and Thermodynamics from Single-Reporter Images, <u>Jaafari H.</u> , Hennigan T., <u>Riback J.</u> ; <i>Baylor College of Medicine</i>
M33	Determining the Impact of Alpha-synuclein on the PEP-19/CaM Complex, <u>Roessler C.</u> , Dunlap T.; <i>Univ. of Central Arkansas</i>
M34	Material Properties of Biomolecular Condensates Across Time and Length Scales tuned by molecular interactions, <u>Samanta N.</u> , Stuchell-Brereton M., Soranno A.; <i>WashU</i>
M35	Allosteric Loss of Order in a Dimeric Binding Intermediate, <u>Sapienza P.</u> ; <i>Univ. of North Carolina at Chapel Hill</i>
M36	Developing Quantitative Fluorescence Lifetime Imaging Workflows for Multicellular Systems, <u>Shafik L.</u> , Francis G., Barnes O., Barnes K., Chitu G., Darendsburg S., Early I., Elsfari J., Elder E.; <i>Georgetown Univ.</i>
M37	A Dynamic Architecture of two Subunit Biotin Carboxylase Complex in <i>Legionella pneumophila</i>, <u>Shrestha R.</u> , Lai W., Durie C.; <i>Univ. of Missouri</i>
M38	A Framework of Protein Positions' Substitution Sensitivity Reveals Epistasis patterns, <u>Sivchenko A.</u> , Swint-Kruse L.; <i>KUMC</i>
M39	Quantifying the Thermodynamic Landscape and Mutational Tolerance of a Hyperstable De Novo beta-Barrel Scaffold, <u>Zhong Q.</u> , <u>Solomon L.</u> ; <i>George Mason Univ.</i>

M40	Comprehensive Functional Landscapes Reveal Pervasive Positional Tunability Across Three Bacterial Transcription Repressors, <u>Sreenivasan S.</u>; <i>NIST</i>
M41	Characterizing RNA Conformations of <i>In Vitro</i> Selected RNAs via the Riboglow-FLIM Sensor, <u>Stickelman Z.</u>, Braselmann E.; <i>Georgetown Univ.</i>
M42	Single Molecule Spectroscopy and Modeling of SARS CoV-2 Nucleocapsid Protein-RNA Fuzzy Complexes, <u>Stringer M.</u>, Cubuk J., Hall K., Stuchell-Brereton M., Soranno A.; <i>Washington Univ. in St. Louis</i>
M43	Domain Context and Ser/Arg-Rich Region Dynamics Fine-Tune LRH-Mediated Oligomerization of SARS-CoV-2 Nucleocapsid, <u>Stuwe H.</u>, Reardon P., Yu Z., Towers L., Barbar E.; <i>Oregon State Univ.</i>
M44	Defining the Mechanisms of DDX5/DDX17 R-Loop Unwinding with Single-Molecule Resolution, <u>Sumrall E.</u>, Duran E.; <i>Univ. of Alabama at Birmingham</i>
M45	Probing Aβ40 Monomer-to-Dimer Conversion in Reverse Micelles by Residue-Resolved NMR, <u>Sun H.</u>, Yang J., Agoglia T., Hong J., Okuno Y.; <i>Washington Univ. in St. Louis</i>
M46	Coiled-Coil Domains as Drivers of Phase Separation in Human Pericentrin, Ramirez D., <u>Flores A.</u>, Tonk R., Shirts M., Hough L.; <i>Univ. of Colorado Boulder</i>
M47	Specific Contacts in Coiled-Coil Domains As Predicted by Amino Acid Sequence, Ramirez D., <u>Tonk R.</u>, Flores A., Shirts M., Hough L.; <i>Univ. of Colorado Boulder</i>
M48	Effect of Telomeric Repeat Length on RNA and Protein Expression, <u>Tran V.</u>, Boddie, T. Lee, H-T.; <i>Univ. of Alabama at Birmingham</i>
M49	Tuning Membrane Protein Dimerization through Lipid Chain Unsaturation, <u>Turke M.</u>, Mahoney-Kruszka R., Robertson J.; <i>Washington Univ. School of Medicine</i>
M50	Generating and Characterizing a VHH library and Enhancing Stability and Function of Proteins Using VHH Domains, <u>Vides D.</u>, Patel N.¹, Horn J.R.; <i>Northern Illinois Univ.</i>
M51	NMR Characterization of GriE: Establishing a Foundation for Structure-Function Studies, <u>Walby A.</u>; <i>Iowa State Univ.</i>
M52	Resolving '6s and 7s': Functional Implications of Negative Design Unveiled by Bayesian Inference, <u>Walker D.</u>, Otten L., Case S., Zuckerman D., Barbar E.; <i>Oregon State Univ.</i>
M53	Understanding the Molecular Basis for Substrate-Specific Activation of SPOP, <u>Wang L.</u>, Mittag T.; <i>St. Jude Children's Research Hospital</i>
M54	Investigation of the Linkage between ClpB Disaggregase Hexamerization and Nucleotide Binding and Hydrolysis, <u>Weatherly E.</u>, Lucius A.; <i>The Univ. of Alabama at Birmingham</i>
M55	NMR Characterization of ClpC Ligand Binding for Targeted Protein Degradation Drug Discovery, <u>Wolfe D.</u>, Erickson H., Ronning D., Roche J.; <i>Iowa State Univ.</i>
M56	Exploiting Compound-induced Dimerization to Benefit Ternary Complex Formation in Protein Degradation Therapeutics, <u>Yarawsky A.</u>, Ronau J., Thibaudeau T., Rouhimoghdam M., Ehlinger A., Korepanova A., Estrada M., Woller K., Nevins A.; <i>BioAnalysis, LLC</i>
M57	Visualizing Protein and RNA Unfolding in Biomolecular Condensates using NMR, <u>Zheng T.</u>, Fawzi N.; <i>Brown Univ.</i>