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# AMLCI MATERIALS DAY 2025

**60<sup>TH</sup> ANNIVERSARY OF THE (AM)LCI**  
***established by Glenn H. Brown***  
**1965 – 2025**

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Hosted by



Advanced Materials and  
Liquid Crystal Institute

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***A CELEBRATION OF AND WITH OUR***  
***ALUMNI***

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**Dear Alumni, Colleagues, & Honorable Guests,**

To commemorate the 60<sup>th</sup> Anniversary of the Glenn H. Brown Liquid Crystal Institute (LCI; now Advanced Materials & Liquid Crystal Institute or AMLCI) the directors of the (AM)LCI (past & present) cordially welcome you to our celebration of the Institute on April 25-26, 2025 on the occasion of our 2025 AMLCI Materials Day.

In 1965, Kent State University’s Board of Trustees authorized the formation of the Liquid Crystal Institute under Glenn H. Brown’s direction. Over the past 60 years, the (AM)LCI has catalyzed countless scientific breakthroughs and created impactful innovations, thereby firmly establishing itself as the global leader in liquid crystal science. The most significant impact on liquid crystal science the institute and associated graduate programs have made, however, are you—our alumni, and that includes everyone from around the globe who has called the (AM)LCI home. You are now leaders in industry and academia, innovators in start-up companies, and overall fantastic ambassadors for liquid crystal science worldwide.

Thank you for joining us!

The Family of Glenn H. Brown  
 Director (LCI; 1965 - 1983)

John L. West  
 Director (AMLCI; 1996 - 2003, 2016 - 2019)

Hiroshi Yokoyama  
 Director (LCI; 2011 - 2016)

J. William Doane  
 Director (LCI; 1983 - 1996)

Oleg D. Lavrentovich  
 Director (LCI; 2003 - 2011)

Torsten Hegmann  
 Director (AMLCI; since 2019)



## PROGRAM

Friday, April 25<sup>th</sup>, 5:00 pm - AMLCI, Samsung Auditorium (LCM Building)

Time	
5:00 - 5:20 pm	Refreshments
5:20 - 5:25 pm	Opening Remarks for AMLCI Fellowship Session: Torsten HEGMANN (Director, AMLCI)

## AMLCI Fellowships - Award Presentations

Friday, April 25<sup>th</sup>, 5:30 pm - AMLCI, Samsung Auditorium (LCM Building)

**Glenn H. Brown Fellowship:** For outstanding graduate students who are engaged in research on biological or biology related topics of liquid crystals.

**Alfred Saupe Fellowship:** For outstanding graduate students working on physics or material sciences of liquid crystals

**James Fergason Fellowship:** For outstanding graduate students working on applied research using liquid crystals.

Time	Speaker "Title"	Session Chair: Torsten HEGMANN
5:30 - 5:40 pm	<b>Vanessa JIRÓN</b> - <u>Winner - Glenn H. Brown Fellowship</u> ; Presented by members of the Glenn Brown family: Larry, Nancy, Don, Barb, and Caitlin + statement by thesis supervisor: Prof. Lavrentovich  TED Talk: " <i>Cancer Cell Survival in Orientational Patterns of Living Tissues Predesigned by Liquid Crystal Elastomers</i> "	
5:45 - 5:55 pm	<b>Matthew DEUTSCH</b> - <u>Winner - Alfred Saupe Fellowship</u> ; Presented by members of the Saupe family: Welf, Ellis, Maya, Axel, and Arne + statement by thesis supervisor: Prof. R. Selinger  TED Talk: " <i>Chirality from Fluctuations: Why Achiral Liquid Crystals Twist</i> "	
6:00 - 6:10 pm	<b>Ashley GILMOR</b> - <u>Winner - Glenn H. Brown Fellowship</u> ; Presented by members of the Glenn Brown family: Larry, Nancy, Don, Barb, and Caitlin + statement by thesis supervisor Prof. E. Hegmann  TED Talk: " <i>Mimicking Fish Skin as an Endogenous Model for Wound Healing Applications using Liquid Crystal Elastomers</i> "	
6:15 - 6:25 pm	<b>Ryan WILLIAMS</b> <u>Winner - James Fergason Fellowship</u> ; Presented by T. Hegmann (also thesis supervisor)  TED Talk: " <i>Zero-Power, Optical Toxic Gas and Vapor Sensors for the Safety of Firefighters Utilizing Printed Nematic Liquid Crystal Patterns</i> "	
6:30 pm	<b>Closing Day 1</b>	

## Dinner / Reception

Friday, April 25<sup>th</sup>, ~ 6:30 pm - Henry & Louise Timken Atrium (College of Aeronautics & Engineering Building)

Time	Dinner / Reception
~ 6:30 pm	Henry & Louise Timken Atrium (College of Aeronautics & Engineering Building) (All Attendees)



**Map/Image indicating the Location of the Henry & Louise Timken Atrium and the AMLCI**  
 (Parking can be found in the R-8 LCI/Nursing lot, directly in front of the AMLCI in the Liquid Crystals Materials Science Building (LCM); the Timken Atrium is at 1400 Lefton Esplanade, Kent, Ohio 44242 (take Summit Street and proceed around the small roundabout to exit onto Johnston Drive; the first parking lot on the left is the C-Science/R-8 parking lot.

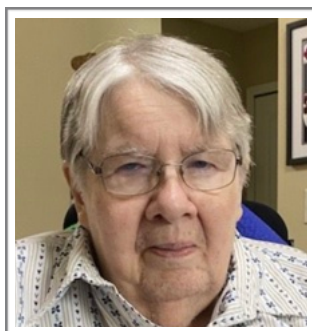
## (AM)LCI Lifetime Achievement Award Recipients



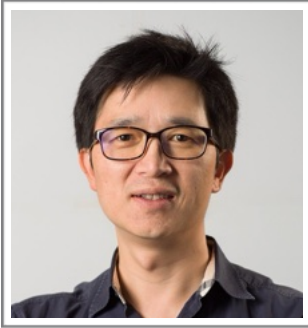
**Jack M. WILSON**, Ph.D. '72, M.A. '70, trained as a physicist and began his career as a research and teaching professor of physics using high-performance computing to model complex systems. His work led him to focus on high-performance computing, and he founded the computer software company, ILinc, which eventually was purchased by CISCO as part of its BroadSoft acquisition in 2019. He was the founding chair of the Massachusetts Green High Performance Computing Center—a joint venture with Harvard, MIT, BU, UMass, and Northeastern. Wilson had a long career in administration, and computing, and has advised many top technology corporations including IBM and AT&T, the FBI, the CIA, the United States Army, and other smaller new ventures. Wilson has received numerous national awards for his work, including the FBI Award for Exceptional Service in the Public Interest. He served as president of the University of Massachusetts from 2003-2011.



**Gregory P. CRAWFORD**, Ph.D. '91, M.A. '88, B.S. '87, president of Ohio's Miami University, earned his bachelor's (physics), master's (physics), and doctorate (chemical physics) degrees from Kent State University. He completed two postdoctoral fellowships and was a researcher at the Xerox Palo Alto Research Center before joining the faculty of Brown University. His work includes more than 400 research and education publications, review articles and book chapters and 21 U.S. patents and patent applications. Before joining Miami University, Crawford was vice president and associate provost at the University of Notre Dame. He joined Notre Dame's faculty in 2008, serving as the William K. Warren Foundation Dean of the College of Science. He previously served as the dean of engineering at Brown, where he joined the physics and engineering faculty in 1996. Crawford met his wife, Renata, while both were studying for their doctorate degrees in physics at Kent State.

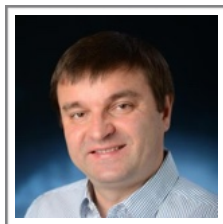


**Mary NEUBERT**, Ph.D., began working at the Liquid Crystal Institute in 1972 as a postdoctoral fellow and became a senior research fellow in 1979. Her work at the institute involved the design and synthesis of a significant number of liquid crystalline materials for researchers within the institute and throughout the world and resulted in the publication of more than 100 papers in refereed journals. Her retirement, in 2002, after 30 years at the institute, coincided with the honor of her receiving the Fredericks Medal at the 19th International Liquid Crystal Conference in Edinburgh, Scotland.



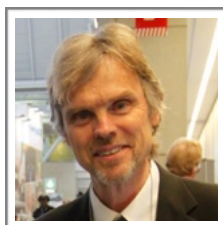
**Cheng CHEN**, Ph.D. '06, is an executive in Apple's Hardware Technology team, where he has led a diverse technical portfolio spanning liquid crystal display and organic light-emitting diode displays, optics, perceptual computing and vision science. His contributions and leadership have played a key role in the development of numerous iconic Apple products, including the first iPad and Apple Vision Pro. Cheng is widely recognized as a distinguished technologist and leader in the field of display technology. In recognition of his contributions, he was named a fellow of the Society for Information Display in 2022.

## (AM)LCI Distinguished Alumni Award Recipients



**Ivan SMALYUKH**, Ph.D. '03, studied chemical physics at Kent State after completing his undergraduate studies at Lviv Polytechnic National University in Ukraine. He is a tenured professor at the Department of Physics at the University of Colorado at Boulder, which he joined in 2007. He is director of the International Institute for Sustainability with Knotted Chiral Meta Matter, headquartered in Hiroshima, Japan, and is a founding fellow of the Renewable Sustainable Energy Institute, a joint institute of CU-Boulder and National Renewable Energy Laboratory. He is an elected fellow of the International Society for Optics and Photonics, the American Physical

Society, the American Association for the Advancement of Science and Optica (the Optical Society of America). He has received numerous awards, including the Bessel Award, the Glenn Brown Award, the Gray Medal, NASA's iTech Award, the Mid-Career Award of the International Liquid Crystal Society, the PECASE Award from the Office of Science and Technology of the White House and the GSoft Award from the American Physical Society.



**Phil BOS**, Ph.D. '78, M.A. '75, is a professor of physics and a member of the AMLCI at Kent State. Before joining Kent State in 1994, Bos was a principal scientist in the Display Research Laboratory of Tektronix Inc. He has authored more than 150 papers in the field of liquid crystals and liquid crystal displays, has more than 30 issued patents, and has supervised 29 graduate students. His field of interest is electro-optical applications of liquid crystals. He was twice the general chair of the International Display Research Conference, is a fellow of the Society for Information Display, and is recipient of Kent State's Distinguished Scholar Award.



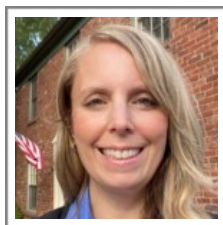
**Lu LU**, Ph.D. '12, is a research scientist at Meta Reality Labs, specializing in the development and commercialization of augmented and mixed reality glasses and liquid crystal polarization hologram technology. She earned her doctorate in chemical physics at Kent State and holds more than 120 U.S. patents, reflecting her passion for advancing cutting-edge technologies that shape the future of the augmented reality and mixed reality industry.



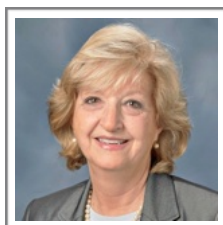
**Jianlin LI**, Ph.D. '94, earned his doctorate in physics at Kent State, with previous work at Peking University and the University of Akron, which served as a backdrop to his research work with his doctoral advisor Professor Peter Palffy-Muhoray, Ph.D. He served a post-doctoral fellowship with Professor Phil Bos, Ph.D., also at the Liquid Crystal Institute. A holder of multiple U.S. patents, Li is currently the president of Polytronix, Inc., a leading manufacturer of liquid crystal displays in the United States.



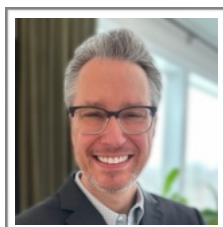
**Jianmin CHEN**, Ph.D. '95, has 31 years of professional experience in the display industry with an excellent track record, particularly in challenging environments. His unique combination of technical knowledge and business acumen has served him well throughout his career. He holds 31 U.S. patents, has published more than 70 scientific papers, and has coauthored a book. Chen has developed liquid crystal display design software that is widely used in the display industry. For the past 16 years, he has served in vice president positions at RealD Inc.



**Erica MONTBACH**, Ph.D. '03, is the manager of the Planetary Exploration Science Technology Office at NASA, where she crafts the technology investment strategy for future planetary science missions, manages all pre-mission planetary science technology development, coordinates with other technology development programs, and infuses technology into planetary science. Montbach's experience has focused on research and development, entrepreneurship, small business innovation, industry trend analysis, public private partnerships, patent portfolio maturation and grants management. She has led multi-disciplinary teams to develop solutions for a sustained presence on the Moon, as part of In-Situ Resource Utilization technologies. Her technical background includes designing advanced manufacturing environments, materials development, creating flexible electronics and evolving display technologies for consumer products. Montbach has co-authored a published book chapter, written over 35 technical papers, 22 patents, and has presented technical results along with technology direction and program management. Montbach has a bachelor's degree in physics from the College of Wooster, a master's degree in physics from Colorado State University, and a doctorate in chemical physics from Kent State.



**Maria Joao VAZ**, Ph.D. '81, M.A. '78, retired in 2020 as Professor Emeritus of physics and vice president for academic affairs and provost from Lawrence Technological University, in Southfield, Michigan. Vaz joined the Lawrence Tech faculty in 1984. Her professional career at Lawrence Tech included serving as chair of the Department of Natural Sciences, associate dean of the College of Arts and Sciences, associate provost and dean of graduate programs. In addition to Lawrence Tech's four colleges, Vaz oversaw the library, and the offices of e-Learning, Student Affairs, Enrollment Management, and Corporate and Community Partnerships. Vaz established Lawrence Tech's leadership curriculum program required for all undergraduate students and has been an advocate of entrepreneurial-minded engineering education, project- and research-based education. Maria Vaz is married to Nuno Vaz, who also received his doctorate degree from Kent State and is an alumnus of the Liquid Crystal Institute.



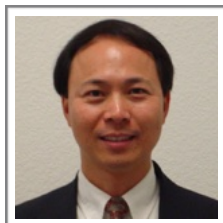
**James ANDERSON**, Ph.D., '00, M.A. '97, B.S. '97, is recognized for driving technological innovation and strategic growth. With a proven track record of managing high-impact initiatives, he has overseen a \$1.5 billion technology portfolio, generated over \$1 billion annually in new opportunities, and played a pivotal role in commercializing more than 20 breakthrough products. His ability to define strategy, execute complex projects and collaborate with Fortune 100 executives has positioned him as a leader in global innovation. Over his 25-year career, Anderson has led large, cross-functional teams and pioneered advancements in more than 10 industries. His experience spans over 35 technology platforms, including artificial intelligence, metamaterials, advanced optical films, and next-generation privacy solutions. At 3M, he has played a critical role in establishing new corporate IP structures, developing state-of-the-art research laboratories and spearheading transformative special projects. Currently serving as special projects director in 3M's Corporate Research Laboratory, Anderson leads initiatives in innovation strategy, university relations, PFAS remediation, government partnerships and AI development. He is instrumental in shaping 3M's technological roadmap and has represented the company's innovations to investors, analysts, and global stakeholders. A recipient of multiple awards, Anderson is a member of 3M's Technical Council, reinforcing his standing as a leader in science, technology, and corporate innovation. His dedication to advancing research and fostering industry collaboration continues to drive meaningful impact on a global scale.



**Philip WATSON**, Ph.D. '00, B.S. '94, is a collaborative scientist, advisor and technology executive with a passion for building high-trust, fun and effective teams. An inventor with more than 50 U.S. patents across the fields of displays, optics, sensors, neuroscience, generative AI and other domains, he loves collectively solving hard problems with people from varied backgrounds. Following Watson's completion of his doctorate in chemical physics at Kent State under Professor Phil Bos, Ph.D., Watson was a key player in multiple display, optics and technology integration projects at 3M – including startup and leadership of a new lab in Singapore to develop pico-projection modules and assemblies. He additionally served multiple years on 3M's storied "Genesis Committee" responsible for seed-funding of new technology projects across the company. Watson joined Google X (now X the Moonshot Factory) in 2014. As research and development director and leader of the new projects team, he was responsible for formation and early incubation of multiple successful ventures including human augmentation company Skip (skipwithjoy.com) and audio computer company Iyo (iyo.audio). More recently, as general manager of Alphabet's "AI for Photonics Design" platform, Watson shaped and led the team that developed the world's first product-ready and fabrication-ready inverse designed CWDM demultiplexer, a critical need and missing link for the next generations of high-bandwidth data communications. Outside of work, he enjoys running the trails of the Santa Cruz Mountains, improvising music, keeping vintage old cars alive and running an award-winning winery with his wife Amy.



**Charles WANG**, Ph.D. '03, is the chief executive officer and chief technology officer of LXD Research and Display LLC, in Raleigh, North Carolina. LXD's predecessor, ILIXCO (International Liquid Xtal Company), was the first manufacturer of commercial twisted nematic display in the world, using technology discovered by the late Jim Fergason at Kent State's Liquid Crystal Institute in 1971. Prior to serving in the role of CEO, Wang was LXD's vice president of Development and International Business. During his tenure at LXD, Wang has led a successful transformation of LXD from the oldest liquid crystal display manufacturer in the U.S. to a global player in customized displays with customers spanning the world. Wang also spent more than two years with the display global operation team at Apple, where he was DRI in the development, delivery and support of new Apple product introductions, including iPad2, iPad3 Retina, iPad mini, Macbook Pro Retina and Slim Unibody iMac displays. Wang obtained his doctorate under the supervision of Professor Phil Bos, Ph.D., at Kent State's Liquid Crystal Institute and has obtained more than 14 U.S. patents during his 30 years in the field of liquid crystal and display.



**Haiji (Jim) YUAN**, Ph.D. '91, M.A. '88, has served as the vice president and general manager of WSS (Wavelength Selective Switches) at Coherent since 2018 after merging CoAdna into II-VI (now Coherent Corp.). Yuan has served as the chair, chief executive officer and president of CoAdna Photonics, Inc., a company he co-founded in 2000 and took public in 2011. Prior to co-founding CoAdna, Yuan was a general manager at Philips Components, where he successfully built a global team and completed a significant joint venture. His team has successfully developed leading-edge electro-optic technologies and commercialized the Rainbow Spectrum 3750 that won the "Product of the Year" Gold Award from the Society of Information Displays in 2000. Prior to Philips, Yuan held senior positions at dpiX/Xerox, AlliedSignal/Honeywell, KDS and Crystaloid Electronics. Yuan has been awarded more than 15 U.S. patents with additional pending. He also served as the chair of the Electro-Optics Association from 1999-2000. In addition to his doctorate in physics from Kent State, Yuan completed the Leadership and Management Program at the University of California.

## Alumni Award Ceremonies, Tours, and Open Mic Sessions

Saturday, April 26<sup>th</sup>, 8:30 am - 12:00 noon - Henry & Louise Timken Atrium  
(College of Aeronautics & Engineering Building)

Time	Speaker (Affiliation) "Title"	Emcee: John WEST
08:30 - 09:00 am	<b>Coffee &amp; Refreshments</b>	
09:00 - 09:10 am	<b>President Todd DIACON</b> (KSU) - Introduction of President Diacon by Torsten Hegmann "President's Welcome Remarks"	
09:10 - 09:30 am	<b>Bill DOANE, John WEST, Oleg LAVRETOVICH, Hiroshi YOKOYAMA, and Torsten HEGMANN</b> "(AM)LCI Directors' Welcome"	
09:30 - 10:00 am	<b>Open Mic Session 1 - Networking</b> Kick-Off by Previous Distinguished Alumni Award Recipients: <b>Renate CRAWFORD</b> , Miami University's Ambassador and Adjunct Professor of Physics, PhD with Bill Doane in 1993	
10:00 - 10:30 am	<b>Coffee Break</b>	
		Emcee: John WEST
10:30 - 11:10 am	Presentations of <b>Lifetime Achievement Awards</b> and Awardee Comments <b>Jack M. WILSON</b> - PhD with Glenn Brown in 1972 - Award presented by Bill Doane <b>Gregory P. CRAWFORD</b> - PhD with Bill Doane in 1991 - Award presented by John West <b>Mary NEUBERT</b> - LCI Synthesis Facility - Award presented by Torsten Hegmann <b>Cheng CHEN</b> - PhD with Phil Bos in 2006 - Award presented by Phil Bos	
11:10 - 11:50 am	<b>Open Mic Session 2 - Networking - Tours of AMLCI Round 1</b>	
11:50 am - 12:00 noon	Group Photo (in front of LCM Building)	

Saturday, April 26<sup>th</sup>, 12:00 noon - 01:30 pm - Henry & Louise Timken Atrium  
(College of Aeronautics & Engineering Building)

Time	Dinner / Reception
12:00 noon - 1:30 pm	<b>Lunch &amp; Hands-on Presentations from our AMLCI Research Labs</b>



**Saturday, April 26<sup>th</sup>, 1:30 pm - 4:45 pm - Henry and Louise Timken Atrium  
(College of Aeronautics & Engineering Building)**

	<b>Speaker</b> (Affiliation) <i>"Title"</i>	<i>Emcee: John WEST</i>
01:30 - 01:50 pm	<b>Matthew CRAWFORD</b> (KSU, Department of History) <i>"Lives in Liquid Crystals: Reflections from the Liquid Crystal Oral History Project"</i>	
01:50 - 02:20 pm	<b>Open Mic Session 3 - Networking</b> <i>Kick-Off by Previous Distinguished Alumni Award Recipients:</i> <b>Asad KHAN</b> , CEO Kent Displays, PhD with Bill Doane in 2003 <b>Bahman TAHERI</b> , CEO, AlphaMicron, Postdoc with Peter Palffy-Muhoray, 1995 to 1997	
02:20 - 02:40 pm	<b>Coffee Break</b>	
02:40 - 04:20 pm	<i>Presentations of <b>Distinguished Alumni Awards</b> and Awardee Comments</i> <b>Ivan SMALYUKH</b> , PhD with Oleg Lavrentovich in 2003 - Award presented by Sam Sprunt <b>Philip J. BOS</b> , PhD with Bill Doane in 1978 - Award presented by Bill Doane <b>Lu LU</b> , PhD with Phil Bos in 2012 - Award presented by Deng-Ke Yang <b>Jianlin LI</b> , PhD with Peter Palffy-Muhoray in 1994 - Award presented by Peter Palffy-Muhoray <b>Jianmin CHEN</b> , PhD with David L. Johnson in 1995 - Award presented by John West <b>Erica MONTBACH</b> , PhD with Phil Bos in 2003 - Award presented by Hiroshi Yokoyama <b>Maria Joao VAZ</b> , PhD with Bill Doane in 1981 - Award presented by Elda Hegmann <b>James ANDERSON</b> , PhD with Phil Bos in 2000 - Award presented by Robert Clements <b>Philip E. WATSON</b> , PhD with Phil Bos in 2000 - Award presented by Marianne Prévôt <b>Charles WANG</b> , PhD with Phil Bos in 2003 - Award presented by Robin Selinger <b>Haiji (Jim) YUAN</b> , PhD with Peter Palffy-Muhoray in 1991 - Award presented by Peter Palffy-Muhoray	
04:20 - 05:00 pm	<b>Open Mic Session 4 - Networking - <i>Tours of AMLCI Round 2</i></b>	
05:00 - 05:30 pm	<i>Presentations of <b>Distinguished Mentor Awards</b></i> <b>Antal JÁKLI</b> - Award presented by Md Sakhawat Hossain Himel <b>Philip J. BOS</b> - Award presented by Jianmin Chen & Charles Wang <b>Oleg D. LAVRETOVICH</b> - Award presented by Mojtaba Rajabi <b>John WEST</b> - Award presented by Ebru Buyuktanir <b>Mary NEUBERT</b> - Award presented by Sandy Borders & Carol Kanters <u>Honorable mention:</u> Peter Palffy-Muhoray, Elda Hegmann, Elizabeth Mann, Deng-Ke Yang, Taras Turiv, and Glenn Brown	
~ 05:30 pm	<b>Closing Day 2</b>	



# VIP Dinner

Saturday, April 26<sup>th</sup>, ~ 06:00 pm - Laziza

Time	VIP Dinner
~ 06:00 p.m.	Laziza (for invited VIP guests only; see name tag)



Map/Image of Downtown Kent indicating Laziza's Location (Parkade right across)

## Organizing Committee

Torsten HEGMANN, Director AMLCI; (Co-Chair)

Bill DOANE, John WEST, Oleg LAVRETOVICH, Hiroshi YOKOYAMA, former LCI Directors (Co-Chairs)

Ashley SHALHOUP, AMLCI (Event Secretary)

Kyle NEISS, AMLCI (Treasurer)

Jack DAUPHARS, AMLCI (IT Specialist)

Julie MILLER, Associate Director - Communications, Division of Philanthropy and Alumni Engagement

## Sponsors



Stay Tuned for Next Year's AMLCI Materials Day (April 2026)

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# AMLCI MATERIALS DAY 2026

## *POLYMERS AND ELASTOMERS*

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Hosted by



Advanced Materials and  
Liquid Crystal Institute

(pending) Co-hosted by



The University of Akron  
School of Polymer Science  
and Polymer Engineering

