



2021 STLE Virtual Annual Meeting & Exhibition

KEYNOTE & PLENARY SPEAKERS

The 2021 STLE Virtual Annual Meeting program features eight world-renowned thought-leaders, each presenting their perspectives on the latest emerging trends and technologies impacting the tribology and lubrication industry.

Monday, May 17, 2021 | 8:30 – 10 am EDT

DR. SAID JAHANMIR

Assistant Director of Federal Partnerships,
The National Institute of Standards
Technology (NIST) Office of Advanced
Manufacturing



Dr. Said Jahanmir is assistant director for federal partnerships at the National Institute of Standards Technology (NIST) Office of Advanced Manufacturing. Jahanmir received a

doctorate in mechanical engineering from the Massachusetts Institute of Technology (MIT), where his work in tribology (friction, lubrication and wear) led to a new theory for wear of materials based on the fundamental mechanics and physics of contacts. Jahanmir, an STLE and ASME Fellow and Honorary Member, also served as the 2018-2019 ASME president. Jahanmir is also currently the president and CEO of Boston Tribology Associates, an engineering consulting firm and serves as Adjunct Professor of Mechanical Engineering at Texas A&M University. Jahanmir is a prominent technology leader with extensive scientific, technical, management and policy experience in the U.S. government, industry and academia.

Keynote Presentation

“How Tribology Benefits Technology and Society”

“We don’t get no respect!” I heard this from a senior tribologist giving a keynote address at an STLE Annual Meeting many years ago. This sentiment has always resonated with me. Why is it that our work and contribution as tribologists and lubrication engineers is not recognized? So, what exactly is our contribution to technology and society? In this talk, we will discuss the impact of tribology over the past 75 to 100 years. ASLE, the predecessor of STLE, was formed 75 years ago “to foster the dissemination of lubrication knowledge and to encourage research and the exchange of ideas.” This was well before the term “tribology” was coined in 1966. This was near the end of World War II, often referred to as a “mechanized” war, when planes, automobiles, and mechanical weapons all needed to be lubricated; at a time of rapid expansion of the age of automobiles and planes; with newly emerging lubricant additive technology; and with the need for longer life and higher reliability of mechanical systems. Over the years, our work as tribologists and lubrication engineers has transformed technology and has made our lives much more comfortable and safer. We have made a huge impact through the development of advanced oil refining and treatment processes, new synthetic lubricants, lubricant additives, green lubricants, new materials, high-performance bearings, reliable seals and gears, and solid lubricants, just to name a few. All of us must be proud of what we have accomplished and deserve much respect and accolades.

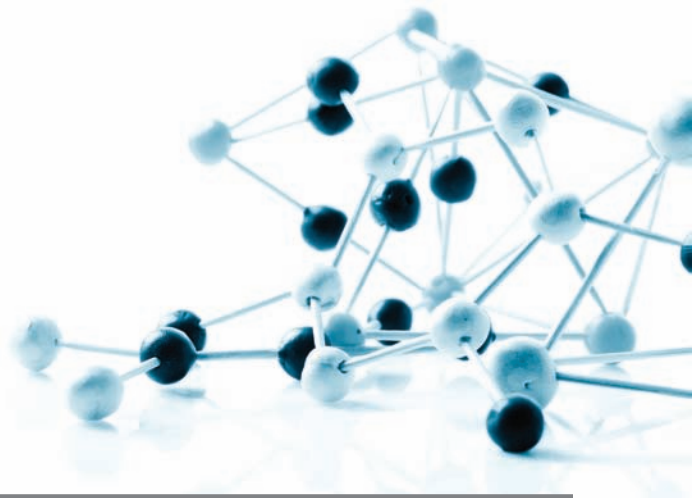
DR. MIKE LOVELL

President, Marquette University



Dr. Michael R. Lovell has served as the 24th president of Marquette University since July 2014. President Lovell holds three degrees in mechanical engineering, including a Ph.D. from the

University of Pittsburgh. Prior to joining Marquette, Lovell served as chancellor at the University of Wisconsin-Milwaukee and held faculty positions at the University of Pittsburgh and the University of Kentucky. As a renowned scholar, Lovell has published more than 100 articles in leading engineering journals, has written a dozen book chapters, and co-authored the book *Tribology for Scientists and Engineers*. President Lovell has received numerous recognitions including a CAREER award from the National Science Foundation, an Outstanding Young Manufacturing Engineer from the Society of Manufacturing Engineers (SME), and the Burt L. Newkirk Award from the American Society of Manufacturing Engineers (ASME). Lovell holds several U.S. and world patents and is a fellow of ASME and the National Academy of Inventors.



Keynote Presentation

“Inflection Point: A New Paradigm for Tribology Education”

Even before the COVID-19 pandemic, the higher education sector was struggling to address a growing financial crisis. With years of shrinking public support, concerns about the value of a degree in today's job market, increasing tuition, and the national student debt crisis, universities were ripe for disruption and needed to restructure. The pandemic accelerated this need for change; students and families have fewer resources to pay for college and universities across the country have lost more than \$120 billion in revenue since March 2020. Higher education is at an inflection point. The disruption in higher education comes at a time when the tribology and lubrication engineering workforce will face necessary turnover. Developing a talent pipeline in the field of tribology represents both a challenge and opportunity. With limited academic programs available and the higher education sector on its head, we must reimagine how tribology education is delivered and how professionals in the field are developed. In this talk, we will examine what this new era of tribology education could look like. New instructional models, many of which are from the private sector, are emerging to replace traditional college education. Their credentials are faster, cheaper, and highly focused on skills and job placement. The field of tribology, with its practical nature and its natural link to the transportation, energy, and manufacturing sectors, can be on the leading edge in a new paradigm for higher education.

DR. KATHY WAHL

Head of Molecular Interfaces and Tribology Section, Naval Research Laboratory



Dr. Kathryn J. Wahl is Head of the Molecular Interfaces and Tribology Section at the Naval Research Laboratory. Wahl received a bachelor's degree in physics and mathematics from

St. Olaf College, and a doctorate in materials science and engineering from Northwestern University. Wahl came to the NRL as a National Research Council postdoctoral fellow in the Tribology Section and studied friction, wear and transfer film formation of model solid lubricant coatings. Since joining the NRL research staff, Wahl's research has focused on fundamental physics and chemistry of sliding and adhesive surfaces for contacts ranging from macroscopic to nanometer-scale. Wahl has served on the Editorial Advisory Board of Review of Scientific Instruments, and currently serves on the editorial boards of Tribology Letters and Wear. Wahl is a fellow of STLE and American Vacuum Society (AVS), and a member of the Materials Research Society (MRS) and American Chemical Society (ACS).

Keynote Presentation

“Advancing Tribology – How Will We Tackle The Next 75 Years?”

Tribology has had a great ride over the past 75 years – becoming a named field and as a science and engineering discipline that can be fairly credited with truly transformational contributions to modern life. So where will we go from here? What challenges will we tackle? One of the most critical aspects of these questions involves time and money: How should we invest our research and development funds and efforts, given an ever-expanding set of technical challenges? Even considering purely tribology-related aspects, it's a complex problem. On one hand we need and want to improve mature engineered systems and, on the other hand, emerging technologies demand solutions from advanced materials and engineering. Further, we simultaneously have unprecedented ability to apply highly advanced analytical tools, models and software to understand mechanics and chemistry of contact phenomena at scales from atoms to geological. How will we as tribologists support and enable the legacy engineered systems that have dominated 20th century life, while embracing science and technology advances to address emerging 21st century opportunities? Should we embrace machine learning, and if so what aspects of our field are best served by this approach? How can we project how advanced manufacturing approaches will influence wear and durability? The future is rich with opportunity, and tribology expertise remains a key science and technology area essential to a majority of modern and emerging technologies.



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Tuesday, May 18, 2021 | 8:30 – 10 am EDT

DR. MELISSA ORME

Vice President, Boeing Additive Manufacturing Aerospace Applications



Dr. Melissa Orme belongs to that small group of engineers who have participated 'hands-on' in the field of additive manufacturing before the term or even the industry of "additive

manufacturing" existed. Her career has been divided between academia and small business. On the academic front, she worked as a professor at University of California, Irvine for 12 years, where she rose to the rank of full professor. She was an early pioneer in the field of 3D printing of metallic parts, resulting in 15 U.S. patents relevant to 3D printing, which are concerned with novel AM methods with molten metal micro-droplets, novel methods of customizing the size distribution of metallic powders, and high-speed direct circuit board printing. Prior to her current position, she served as chief technology officer of Morf3D for four years. Morf3D is a company that is focused on additive manufacturing of metallic components, primarily for the aerospace and defense industry. In that capacity, she oversaw the company's AM development programs for small lot production, which includes new material parameter development, novel AM design implementation, component validation and qualification. Currently serving as vice president of Boeing Additive Manufacturing, Orme continues to grow and scale additive manufacturing capabilities and help to rapidly expand understanding of the unique features that 3D printing can bring to our factories and production lines while improving safety and quality. She helps to drive application scalability for existing products, and mature technology for future franchise platforms across Boeing Commercial Airplanes, Boeing Defense, Space and Security and Boeing Global Services.

Keynote Presentation

"Recent Advancements in Additive Manufacturing at Boeing"

Additive Manufacturing (AM) is a technology that is more than three decades old, and Boeing has been a leader in researching and implementing AM in the aerospace industry since 1997. Metal powder-bed AM technology, however, has only recently begun to demonstrate value for application into critical aerospace products that require high quality and rigorous process and manufacturing control. This presentation will discuss advancements in the AM modality of powder-bed laser fusion and will present two case studies where we have realized added value in converting traditionally manufactured parts to additively manufactured parts. Added value associated with Additive Manufacturing is distinguished into three major categories: part level, product level, and program level. On the part level, we discuss the added value of reduction of cost, lead time, weight, buy-to-fly ratio, and an increase in quality. On the product level, we discuss the ability of AM to enable the fabrication of differentiating products, or vehicles, in the case of Boeing. On a program level, we discuss the ability to enable rapid product development and the sustainable aspects of AM. For production at scale, repeatable and reliable printing and traceability are essential and, hence, a great deal of our background work is focused on establishing repeatable and reliable material properties across machines while enabling strict traceability through the integration of the digital thread.

**Wednesday, May 19, 2021
8:30 – 10 am EDT**

DR. AMIT PARIKH

Research Manager, Smith & Nephew, Inc.



Amit Parikh is a research manager at Smith and Nephew, Inc., a leading portfolio medical technology company. Parikh has global tribology responsibility for the hip and knee business and has worked in the orthopaedic

industry for over 17 years. During that time, he has performed failure analysis, designed new test methods, and conducted coupon and device testing to evaluate novel bearing materials and implant technologies. He has also played a key role in obtaining regulatory clearances and commercializing numerous hip and knee replacement products. In addition, he has been involved in technical marketing and sales training activities in support of new product launches. He is an active member of ASTM and the Orthopedic Research Society and has authored over 35 abstracts and journal articles.

Keynote Presentation

"Implant Materials in Arthroplasty"

Osteoarthritis is a degenerative joint disease that can cause chronic pain and significantly impact daily life. While initial treatment involves conservative, non-surgical options, arthroplasty has increasingly been performed to restore patient mobility. Over the last several decades, innovations related to material and design have significantly improved the performance and longevity of joint replacement devices. Nonetheless, opportunities to improve patient outcomes remain. Greater patient expectations and an increase in the number of young, active patients may also create new challenges in the future. This presentation will discuss materials used in arthroplasty and also highlight current challenges and opportunities.

1 – 2 pm EDT

DR. JACK ZAKARIAN

Consultant, JAZTech Consulting LLC



Jack Zakarian went to work for the Chevron Research Company in 1979 after graduating with a Ph.D. in chemical engineering from the University of California, Berkeley. He spent 37 years working for

Chevron's Lubricants Business in the areas of base oil & lubricants product research & development. He retired from Chevron in 2016 and now works as an independent consultant. In 2019, he was named an STLE Fellow.

Plenary Presentation

“Hit the Right Notes With Your Technical Presentation”

This plenary talk will give valuable advice from a technical expert and STLE Fellow who, throughout his 42 years in the industry, has been known for taking a lighthearted and unconventional approach to teaching people about tribology and lubricants. Zakarian will illustrate techniques for helping people learn, understand, and retain technical information. This presentation will amuse you with song and inspire your thinking about how to make a positive impression with every technical presentation. You can get an advance preview of Jack's songs by visiting his YouTube channel: https://www.youtube.com/channel/UCKMwi6ZeiCgloJVD9DfDa3g?view_as=subscriber

Thursday, May 20, 2021
8:30 – 10 am EDT

DR. CHRISTOPHER WILLIAMS

Professor of Mechanical Engineering,
Virginia Tech



Dr. Christopher Williams is the L.S. Randolph Professor and the Electro-Mechanical Corporation Senior Faculty Fellow in the department of mechanical engineering at Virginia Tech, and is

the director of the Design, Research, and Education for Additive Manufacturing Systems (DREAMS) Laboratory. The lab has published over 185 peer-reviewed articles on topics spanning innovations in additive manufacturing processes and materials, design for additive manufacturing methodologies, and cyber-physical security for AM. Williams is a recipient of a National Science Foundation CAREER Award (2013) and the 2012 International Outstanding Young Researcher in Freeform and Additive Manufacturing Award. He currently serves as the vice chair of the Additive Manufacturing Community Advisors for SME. Dr. Williams holds a Ph.D. and M.S. in mechanical engineering from the Georgia Institute of Technology and a B.S., with high honors in mechanical engineering, from the University of Florida.

Keynote Presentation

“Tribology, Surface Science and Additive Manufacturing: Opportunities for a Symbiotic Relationship”

The core function of additive manufacturing (AM) technologies – forming layers by the selective placement (or forming) of solid material – provides unsurpassed design freedom in both the geometric topology and the material composition of a product. Using AM, engineers have the power to selectively place multiple materials only where they are needed, and thus are afforded the opportunity to realize products that satisfy multiple functions and design objectives. However, broad industrial adoption of AM has been constrained by many open research challenges, many of which are related to topics of relevance to the STLE community. In this talk, we

will provide an overview of the current status, present challenges, and future opportunities of additive manufacturing technologies. The presentation will include a range of opportunities for STLE expertise to engage and improve AM technologies and applications – spanning from characterizing and improving surface finish of printed metals to tuning the tribological performance of printed medical implants. In addition, we will discuss opportunities where the unique traits of AM (e.g., tailored geometries and materials) might find unique use in fields driven by STLE expertise, including offshore oil and gas drilling and self-lubricating components.

1 – 2 pm EDT

DR. JIM MACLEOD

Group Leader, National Research
Council Canada



Jim MacLeod is a NRC Fellow specializing in engine icing and environmental certification at the Gas Turbine Laboratory of the Aerospace Research Centre at the National Research Council of

Canada. He joined NRC in 1982 as a researcher in the Propulsion Group. He has a master of engineering degree in aeronautical engineering from Carleton University, and has been extensively involved in turbine engine icing certification projects for all the major engine manufacturers. He was awarded a Queen Elizabeth II Diamond Jubilee Medal and was the 2015 recipient of the NATO Science and Technology Organization von Karman Medal. He is currently the chairman of the Aircraft Icing Research Alliance (AIRA).

Plenary Presentation

“Engine Icing Certification: Past, Present and Future”

Icing is one of the most difficult certification requirements that a modern gas turbine engine has to pass to obtain a Type Certificate. This presentation will cover the history of engine icing, the airworthiness requirements and the damage that icing can inflict on gas turbine components and engine operability. Issues related to engine design and ice protection will be discussed.



2021 STLE Virtual Annual Meeting & Exhibition

EDUCATION COURSES

New for this year, five education courses are being offered virtually before and after the STLE Annual Meeting. Each course will be offered for one week between **May 3 and June 11, 2021**. No courses will overlap, so for the first time, participants can attend the virtual annual meeting, trade show and sign up for any and all courses they wish to take. Participants can still sign up to reserve a seat to attend any course before the scheduled dates. To register, visit www.stle.org/annualmeeting. Course attendance is not included in the general annual meeting fee.

Basic Lubrication 101

Day 1 (May 4) – 11 am – 3 pm EDT

Day 2 (May 5) – 11 am – 3 pm EDT

STLE Course Instructors:

Yvette Trzcinski (Course Chair), Jake Finn, Ken Hope, Gabe Kirsch, David Turner, Jason Papacek

Basic Lubrication 101 is primarily for the person entering the lubrication field who needs a broad introduction to the field of lubrication, lubrication principles and lubricating materials. This course is also for individuals not directly involved but who need a broad overview of lubricants and basic lubricating components. Basic Lubrication 101 does not require a formal scientific degree or background, although many technical terms and concepts are covered. Experienced people attend the course to be kept up to date on the latest developments, especially in those areas not directly related to their job function or area of expertise. Thus, Basic Lubrication 101 is usually attended by a broad cross section of people such as technical, technical services, sales, marketing, manufacturing, maintenance, and managers who in some way are involved in the industry.

Basic Lubrication 102

Day 1 (May 11) – 11 am – 3 pm EDT

Day 2 (May 12) – 11 am – 3 pm EDT

STLE Course Instructors:

Yvette Trzcinski (Course Chair), Frank Uherek, Nathan Knotts, Gareth Fish, Matthew Hoeffner, Paul Shiller, Hamed Eksiri, Ron LeBlanc

Basic Lubrication 102 is an overview of equipment systems (gears, bearings, seals, compressors, and engines) and their lubrication requirements, including a module on grease. Like Basic Lubrication 101, this course does not require a formal scientific degree or background, although many technical terms and concepts related to the use of lubricants in various mechanical devices are covered. Basic Lubrication 102 is intended for a diverse group, including people involved in technical services, sales, marketing, manufacturing, maintenance, and managers who want to know more about how lubricants work in service. This course assumes fundamental knowledge of lubricants and lubrication principles, as presented in the Basic Lubrication 101 course.

Metalworking Fluids 105

Day 1 (May 25) – 11 am – 3 pm EDT

Day 2 (May 26) – 11 am – 3 pm EDT

STLE Course Instructors:

Brian Hovik (Course Chair), Richard Butler, Neil Canter, Ted McClure, Jennifer Lunn, Fred Passman, John Burke

Metalworking Fluids 105 is designed for those involved in developing, working with and using metal forming fluids in the manufacturing environment. This course is very useful for formulators, technical service representatives, shop floor personnel and coolant service managers who need to know more about the fundamental concepts of metal forming fluids. This course is divided into modules covering metal forming operations, metal forming fluid chemistry, metal forming fluid failure mechanisms, controlling contamination and microbial growth, waste treatment and operator acceptance. Participants will gain a good understanding of metal forming operations, formulation of metal forming fluids, tools for identifying and correcting metal forming fluid failures and waste treatment of metal forming fluids.

Advanced Lubrication 301

Day 1 (June 1) – Noon – 4 pm EDT

Day 2 (June 2) – Noon – 4 pm EDT

STLE Course Instructors:

Alexander Mannion (Course Chair), Kevin De Santis, Anil Agiral, Gene Scanlon, Sona Sivakova

Advanced Lubrication 301 covers the molecular structures and chemistries of lubricant additive types. Additives examined will include antioxidants, rust inhibitors, detergents, dispersants, antiwear additives, extreme pressure additives, friction modifiers and rheology and viscosity modifiers.

Advanced Lubrication 302

Day 1 (June 8) – 11 am – 3 pm EDT

Day 2 (June 9) 2021 – 11 am – 3 pm EDT

STLE Course Instructors:

Babak Lofti (Course Chair), Brendan Miller, Ramoun Mourhatch, Weixue Tian, Vasilios Bakolas, Tim Krantz, Stephen Berkebile, Arup Gangopadhyay, Hamed Ghaednia

Advanced Lubrication 302 goes more in-depth on lubrication regimes, wear, and wear mechanisms, as well as lubricant failure analysis. This course includes a series of lubricant failure analysis case studies on automotive engines, gears and bearings.

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2021 STLE Virtual Annual Meeting & Exhibition AWARD RECIPIENTS

STLE would like to congratulate the following individuals who will be recognized for their outstanding technical achievements in the field of tribology and lubrication at the 2021 STLE Virtual Annual Meeting & Exhibition.

PUBLISHING AWARDS

Given in recognition of outstanding achievement in the field of tribology and lubrication. All publishing awards are for papers printed in *Tribology Transactions*, STLE's peer-reviewed journal.

Edmond E. Bisson Award

The Bisson Award was named in honor of Edmond E. Bisson, a former STLE editor-in-chief who was instrumental in establishing the society's reputation as a technical publisher. Established in 1991, the award is given to STLE members or non-members for the best written contribution published by the society in the year preceding the Annual Meeting. The contribution must deal with tribology, lubrication engineering or allied disciplines.

- **Steven J. Thrush**, U.S. Army CCDC GVSC (USA)
- **Allen S. Comfort**, U.S. TARDEC (USA)
- **James S. Dusenbury**, U.S. Army CCDC GVSC (USA)
- **Yuzan Xiong**, Oakland University (USA)
- **Hongwei Qu**, Oakland University (USA)
- **Xue Han**, Oakland University (USA)
- **J. David Schall**, Oakland University (USA)
- **Gary C. Barber**, Oakland University (USA)
- **Xia Wang**, Oakland University (USA)

"Stability, Thermal Conductivity, Viscosity, and Tribological Characterization of Zirconia Nanofluids as a Function of Nanoparticle Concentration"

Frank P. Bussick Award

The Bussick Award is presented for the most outstanding technical paper written on sealing systems technology and materials. The award is sponsored by the STLE Seals Technical Committee and honors a former committee chair and STLE board member.

- **Jinbo Jiang**, Zhejiang University of Technology (P.R. China)
- **Xudong Peng**, Zhejiang University of Technology (P.R. China)
- **Cong Zong**, Zhejiang University of Technology (P.R. China)
- **Wenjing Zhao**, Zhejiang University of Technology (P.R. China)
- **Yuan Chen**, Zhejiang University of Technology (P.R. China)
- **Ji Yun Li**, Zhejiang University of Technology (P.R. China)

"Enhancing Film Stiffness of Spiral Groove Dry Gas Seal via Shape Modification at Low Speed: Numerical Results and Experiment"

Walter D. Hodson Award

The Hodson Award was established in 1950 and is given to the lead author of the best paper written by an STLE member 35 years of age or younger and published by the society in the year preceding the Annual Meeting. The purpose of the award is to stimulate the interest of young engineers in the science of tribology and lubrication and the activities of STLE.

- **Benjamin M. Fry** (*lead author), **Hugh Spikes**, **Janet S. Wong**, Imperial College London (United Kingdom)
- **Gareth Moody**, Croda Europe Ltd. (United Kingdom)

"Effect of Surface Cleaning on Performance of Organic Friction Modifiers"

Wilbur Deutsch Memorial Award

The Deutsch Award is named for a former STLE president and recognizes the most outstanding technical paper written on the practical aspects of lubrication published by the society in the year preceding the Annual Meeting.

- **Jens E. Johansson**, Luleå University of Technology (Sweden)
- **Mark T. Devlin**, Afton Chemical Corporation (USA)
- **Jeffrey M. Guevremont**, Afton Chemical Corporation (USA)
- **Braham Prakash**, Luleå University of Technology (Sweden)

"Improving Hypoid Gear Oil Pitting Performance Through Friction Reduction"

Captain Alfred E. Hunt Award

Named for ALCOA's first president, this award is given annually to the STLE member or members authoring the best technical paper dealing with the field of lubrication or an allied field.

- **Alexis Bonetto**, **Daniel Nélías**, **Thibaut Chaise**, **Laurent Zampon**, Univ. Lyon, INSA-Lyon (France)

"A Coupled Euler-Lagrange Model for More Realistic Simulation of Debris Denting in Rolling Element Bearings"

Al Sonntag Award

The Sonntag Award was established in 1983 and is given to an STLE member or members authoring the best technical paper on solid lubricants published by the society in the year preceding the Annual Meeting.

- **Charles Miller**, **Dipankar Choudhury**, **Min Zou**, University of Arkansas (USA)

"The Effects of Surface Roughness on the Durability of Polydopamine/PTFE Solid Lubricant Coatings on NiTiNOL 60"

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2021 STLE Virtual Annual Meeting & Exhibition AWARD RECIPIENTS

INDUSTRY SERVICE AWARDS

STLE International Award



Dr. Ali Erdemir, Texas A&M University (USA)

The International Award, which was established in 1948, is STLE's highest technical honor and bestows lifetime honorary membership on the recipient, who need not have been a member of STLE. It is given in recognition of the recipient's outstanding contributions in tribology, lubrication engineering or allied fields.

P.M. Ku Meritorious Award



Dr. Martin Webster, ExxonMobil Research and Engineering (retired) (USA)

The Ku Award was established in 1978 and is given to the STLE member who most typifies the dedicated spirit of the late P.M. Ku, who worked tirelessly to promote and advance the mission of STLE. The award has been established to recognize outstanding and selfless achievement on behalf of STLE. To qualify for the honor, the recipient must have been a member of the society for at least 15 consecutive years and performed extensive active, dedicated service.

Vic Joll Award



Ken Brown, Eco Fluid Center Ltd. (Canada) – STLE Toronto Section

The Vic Joll Award recognizes outstanding and selfless contributions by a member of an STLE local section. It is given to a section member who has worked tirelessly and continuously for the benefit of the section, devoting numerous hours in the performance of many tasks necessary to promote and advance the mission of the section and of STLE. The award is named in honor of the late Vic Joll, 1978-79 STLE president who championed local sections.

Raymond L. Thibault Excellence in Education Award



Daniel Holdmeyer, Chevron Lubricants (retired) (USA)

The Raymond L. Thibault Excellence in Education Award was established in 2020 and is given to an STLE member who has demonstrated dedication to passionate and influential work as an educator in practical aspects of tribology & lubrication engineering which benefits the STLE community.

LOCAL SECTION AWARDS

Outstanding STLE Local Section Awards:

- STLE Detroit, STLE Hamilton, STLE Lower Ohio River Valley

STLE Local Section Achievement Awards:

- STLE Houston, STLE Philadelphia, STLE Toronto

STLE FELLOWS

2021 STLE Fellows

STLE Fellows are persons of outstanding personal achievement in the field of tribology or lubrication engineering who have 20 years of active practice in the science and/or engineering professions and have been an STLE member for 10 years. They are nominated by the Fellows Committee and approved by the STLE board of directors.

- **Dr. David Burris**, University of Delaware (USA)
- **Dr. Daniele Dini**, Imperial College London (United Kingdom)
- **Dr. Mathias Woydt**, MATRILUB (Germany)

2020 STLE Fellows

- **Dr. Vasilios Bakolas**, Schaeffler Technologies AG & Co. KG (Germany)
- **Dr. Seong Kim**, The Pennsylvania State University (USA)
- **Dr. Ashlie Martini**, University of California, Merced (USA)

STUDENT SCHOLARSHIPS

Presidential Awards Program

STLE grants three academic awards through its Presidential Awards Program: The Elmer E. Klaus Fellowship (graduate students), The E. Richard Booser Scholarship (undergraduate students) and The Jeanie S. McCoy Scholarship (female undergraduate or graduate students). These awards are administered by the STLE Presidential Council and are meant to encourage students to pursue an advanced degree or a career in tribology or lubrication engineering by subsidizing a research project related to the field.

The Elmer E. Klaus Fellowship

Eliane Gendreau, Imperial College London (United Kingdom)

The E. Richard Booser Scholarship

Brenden Miller, Gonzaga University (USA)

The Jeanie S. McCoy Scholarship

Jamie Benson, University of Delaware (USA)

EARLY CAREER AWARDS

The Early Career Awards recognize the technical achievements of STLE student members, postdoctoral researchers, junior-level academic faculty and industry professionals and provides financial support for attendance to the STLE Annual Meeting.

Student

Kazi Istiaque Alam, University of Delaware (USA)

Postdoctoral Researcher

Dr. Xin He, Oak Ridge National Laboratory (USA)

Academic Professional

Dr. Filippo Mangolini, University of Texas at Austin (USA)

Industry Professional

Dr. Suvrat Bhargava, TE Connectivity (USA)