ASME ICE DIVISION NEWS

ASME
SETTING THE STANDARD

INTERNAL COMBUSTION ENGINE DIVISION

JANUARY 2024

IN THIS ISSUE

The American Society of Mechanical Engineers®
ASME®

ASME
SETTING THE STANDARD

Message from the Division Chair

Kelly Senecal

I am honored to step into the role of your new Division Chair, effective January 1, 2024. As we embark on this new chapter together, I am excited about the opportunities and advancements that await our esteemed division.

First and foremost, I want to express my gratitude to each of you for your dedication and commitment to the Internal Combustion Engine Division. Your passion and expertise are the driving forces behind our collective success, and I feel privileged to lead such a dynamic and accomplished group of individuals.

Reflecting on the accomplishments of the past year, our 2023 ICE Forward conference in Pittsburgh was a tremendous success. My sincere appreciation goes to conference chair, Professor Sundar Krishnan, and conference co-chair, Dustin Osborne, for their leadership in organizing the event. The conference not only showcased cutting-edge advancements in the field but also fostered meaningful connections among professionals from diverse backgrounds. Prof. Krishnan will provide a detailed synopsis of the event later in this newsletter.

I am delighted to share that our webinar series, "*The Future of the Internal Combustion Engine*," continues to thrive, serving as a valuable platform for knowledge exchange and professional development. This success is a testament to the active engagement and enthusiasm of our members. I encourage you to participate in these insightful sessions to stay informed about the latest industry trends. A special thank you to the webinar committee for their efforts in ensuring quarterly content.

At the core of our division is a commitment to creating an environment where participants can freely discuss and exchange information related to the science and engineering of internal combustion engines and net-zero carbon fuels. We take pride in advocating for diversity in gender, race, and thoughts within our leadership and associates, demonstrating our steadfast dedication to inclusivity.

Looking ahead, we envision our division playing a pivotal role in accelerating innovation and facilitating international collaboration. To contribute to the decarbonization goals set by nations worldwide, we plan to expand our reach within Europe and Asia. Despite the challenges and discussions surrounding combustion engines, our division and associates continue to grow, underscoring the resilience and significance of our shared mission.

As we move forward, I urge each of you to actively participate in our division's activities and consider volunteering your time when possible. Your involvement is crucial to maintaining the vibrancy of our community and furthering our impact in the field.

In closing, I am immensely thankful for the opportunity to serve on the Executive Committee of the ICE Division over the past several years. It has been a journey of continuous learning, collaboration, and, most importantly, fun. Together, let us embrace the future with enthusiasm and dedication to the advancements that await us. Together, let's keep moving ICE forward.

ASME Scholarships

ASME has several scholarships available, and we're looking for outstanding engineering students to take advantage of this opportunity and contribute to the mechanical engineering community.

Deadlines

Undergraduate Student Applicant Deadline
February 15
Graduate Student Application Deadline
February 29
Notification of Scholarship Application Results
July 31

Join the Q&A Sessions on Zoom

If you have questions about the ASME Scholarship Program, eligibility and/or other related questions, please join our Q&A scheduled Zoom sessions when the application opens for the 2024–25 academic school year funding cycle. Join the Zoom meeting during one of the dates/times listed below.

Date	Time
January 19	2:00 – 2:30 PM EST
February 2	2:00 – 2:30 PM EST
February 9	2:00 – 2:30 PM EST

ICEF 2024

The ICE Forward Conference

San Antonio, Texas USA

October 20-23, 2024

ICE Forward 2024 will be heading to San Antonio, Texas at the Westin Riverwalk. Come see the famous San Antonio Riverwalk, visit the Alamo, and help guide the future of internal combustion engines with leading experts from across the world.

CALL FOR ABSTRACTS

Submit your abstracts for ICE Forward 2024 now!

Abstract submission deadlines are as follows:

Technical Papers	**February 16**
Presentation Only	**April 22**
Posters	**April 22**

Locally Hosted by:

SwRI

SOUTHWEST RESEARCH INSTITUTE

The Westin Riverwalk, San Antonio
ICEF 2024 Conference Venue

ICE Forward 2023: A "Pitt-Stop" in Pittsburgh

Sundar Krishnan

From October 8–11, 2023, nearly 220 researchers, experts, students, and enthusiasts met in Pittsburgh, Pennsylvania for the 2023 ASME ICE Forward (ICEF) Conference. Following an exceptional ASME ICE Forward 2022 conference at which we celebrated the 100th year anniversary of the ASME Internal Combustion Engine Division (ICED), the goal for ICEF2023 was to build on the momentum achieved in 2022 with all "eyes forward."

Pittsburgh was chosen as the conference location due to its proximity to our local host, Wabtec Corp. The Marriot City Center Hotel served as an excellent venue in downtown Pittsburgh with easy access to the riverfront and other local attractions. Keynote lectures were held in the spacious Grand Ballroom and technical presentations were held on the same floor, ensuring no concurrent sessions with the keynotes. Along with several exhibits, showing of the latest ICE-related technologies from our sponsors and exhibitors, Wabtec exhibited their "huggable" Tier 4/IMO III marine engine in the main foyer. ICEF2023 began at 5 pm Sunday, October 8 with a technical poster session, organized by Professor Kalyan Srinivasan. Eleven posters from university and national laboratory research groups were on display during the Welcome Reception, sponsored by Caterpillar, which also doubled as an informal and relaxing venue for pre-conference networking for all attendees.

ICEF2023 was formally kicked off on Monday, October 9 with opening remarks from **Tom Costabile**, ASME's Chief Executive Officer, **Sibendu Som**, ICE Division Chair, and **Sundar Krishnan**, ICE Forward 2023 Conference Chair. Subsequently, **Jim Gamble** of Wabtec delivered the first keynote lecture of ICEF2023 titled "The Role of the ICE in Decarbonizing Freight Rail." Jim eloquently laid out the unique demands, challenges, and opportunities in decarbonizing ICEs used in the freight rail industry and set the stage very well for the technical presentation sessions that followed.

Jim Gamble *(Wabtec)*

ICEF2023 had seven technical tracks, with multiple concurrent sessions spread over two days, including: (1) Off-Road Systems; (2) Fuels and Carbon Management; (3) Advanced Combustion; (4) Powertrains and Hybridization; (5) Emissions Control (CLEERS at ICE Forward); (6) Modeling and Simulation; and (7) Design, Lubrication, and Thermal Management. We were excited to start a new technical track (Track 5) with emissions control as the primary focus. This track featured technical presentations from the CLEERS (Cross-Cut Lean Exhaust Emissions Reductions Simulations) research community, along with those of other emissions control researchers. Overall, ICEF2023 featured nearly 100 high-quality paper presentations and presentation-only contributions, a clear indication of the continuing vibrancy and relevance of ICE research across the world.

Monday's luncheon, which featured presentations from the two winners of the annual ASME ICED undergraduate research competition, was sponsored by the Engine Technology Forum. Every year, up to two undergraduate competition winners are selected to receive free conference registration and paid travel and lodging

expenses to present their research results at the ICE Forward conference. The winners for ICEF2023 were **Nicholas Dillon** from Georgia Southern University and **Ziming Zhou** from the University of Michigan–Shanghai Jiao Tong University Joint Institute. Professor **Noah Van Dam** of University of Massachusetts Lowell chaired the competition this year.

*Keynote Speakers **Mike Rochford** (Caterpillar) and Dr. **Carlo Bussi** (Scuderia Ferrari) share in their love for engines.*

Monday's luncheon was followed by the second keynote lecture of the day. **Mike Rochford** of Caterpillar delivered an engaging lecture titled "Preparing for a Reduced Carbon Future" that provided an excellent overview of relevant ICE strategies in decarbonizing off-road applications. Mike infused some well-received levity into his technical discussion by comparing the unique features of Caterpillar ICEs used in large mining truck applications with a Ferrari sports car, setting the stage for some interesting banter with the Tuesday Luncheon Keynote Speaker, Dr. **Carlo Bussi** of Ferrari.

On Monday evening we gathered for our Annual Honors and Awards Banquet, sponsored this year by Aramco Americas, where we recognized and celebrated the achievements of several remarkable individuals in the ICE research community. This year's awards are highlighted elsewhere in this newsletter and therefore will not be repeated here. Congratulations to all of the winners!

Tuesday's program began with our 4th Annual Student and Early Career Networking Breakfast, organized by Dustin Osborne. Students, postdocs, and early career engineers within the first 2–3 years after graduation were invited to participate in the breakfast. The breakfast event is designed to specifically provide early career engineers an opportunity to network with key leaders from academia, industry, and national labs in an informal setting. We were fortunate to have the following leaders participate in the event: **Matthew Hart** (Wabtec Corp.), **Christopher Stoos** (Southwest Research Institute), **Yuanjiang Pei** (Aramco Americas), **David Rutledge** (Cummins), **Josh Pihl** (Oak Ridge National Laboratory), **Muhsin Ameen** (Argonne National Laboratory), **Cosmin Dumitrescu** (West Virginia University), **Hunter Mack** (University of Massachusetts Lowell), **Hailin Li** (West Virginia University), and **Vittorio Ravaglioli** (University of Bologna).

*Professor **Dave Foster** (University of Wisconsin–Madison)*

Breakfast was followed by the much-anticipated 2nd annual ICE Division Distinguished Lecture delivered by Emeritus Professor **Dave Foster** of the University of Wisconsin–Madison. Professor Foster, a widely respected pioneer in the ICE community, chose the intriguing title "Where do we go from here?" and delivered an excellent lecture in his own inimitable style. The ensuing Q&A session elicited many questions from the audience and interesting answers from Professor Foster, possibly inspiring the audience members to pursue new ICE research topics.

The final keynote at ICEF2023 was presented during Tuesday's lunch by Dr. **Carlo Bussi** of Scuderia Ferrari (the Formula One Division of Ferrari). Dr. Bussi spoke on "ICE Technology Evolution in F1 – The Pathway Toward Sustainable Power Units," a topic that has rarely been discussed at previous ICEF conferences. Dr. Bussi's lecture was very well received and led to extended post-lecture informal discussions with the audience.

Hydrogen ICE Panelists (L–R)*: **Li Qiao** (Purdue), **Lee Stark** (Cummins), **Gupreet Singh** (DoE), **Thomas Howell** (AVL), **Brent Keppy** (Bosch), **Arvind Thiruvengadam** (PACCAR)*

The final technical event on Tuesday afternoon was a special panel session titled "Opportunities and Challenges for Hydrogen ICE". This panel session was organized by a committee of ICED volunteers, including Dr. **Yuangjiang Pei** of Aramco, Dr. **Sibendu Som** of Argonne National Laboratory, Dr. **Yu Zhang** of Cummins, and Dr. **Kelly Senecal** of Convergent Science. Invited panelists included: **Thomas Howell** of AVL, **Brent Keppy** of Bosch North America, **Gurpreet Singh** of the US Department of Energy, **Lee Stark** of Cummins, and **Arvind Thiruvengadam** of PACCAR. The panel session was moderated by Professor **Li Qiao** of Purdue University. The panel session began with each panelist invited for a 5-minute introductory presentation, followed by the much anticipated question and answer session. Professor Qiao did an excellent job of balancing focused technical discussions on various hydrogen ICE technologies with more general questions that elicited broader answers from the panelists. Overall, the panel session was a well attended and engaging event at ICEF2023.

Tuesday's conference activities concluded with the annual ICED Associates Meeting. This meeting, open to all, gave attendees the opportunity to learn more about the ASME and the ICE division organizational structures, as well as volunteer and other opportunities.

The ICEF2023 conference concluded on Wednesday morning with technical tours of Wabtec's facilities in Grove City near Pittsburgh. Attendees had their choice between the Grove City Main (GRV) plant tour and the Grove City Remanufacturing (GRR) tour. While the GRV plant tour covered component machining, engine assembly, and engine testing aspects of Wabtec's new engines, the GRR plant tour covered the entire engine and component remanufacturing process of locomotive engines, from incoming inspections to rebuild and full assembly. Both tours were well received, and Wabtec's hospitality as the local host of ICEF2023 was much appreciated.

Wabtec Tour (L–R)*: **Jim Gamble** (Wabtec), **Taylor Gray** (Wabtec), **Kelly Senecal** (Convergent Science)*

ICE Forward 2023 was a very successful conference due to the untiring efforts of many volunteers who ensured the conference's high technical standards and engaging program. This conference was made possible by the contributions of our track and session chairs and organizers, technical reviewers, paper authors, attendees, and sponsors. We are thankful to all the speakers for participating and sharing their expertise and knowledge with the ICE community. We look forward to an even better ICE Forward 2024 in San Antonio, Texas!

THANK YOU AGAIN TO OUR ICEF 2023 SPONSORS!

AWARDS BANQUET SPONSOR

aramco

LUNCHEON SPONSOR

Engine Technology Forum™

WELCOME RECEPTION SPONSOR

CATERPILLAR®

PLATINUM SPONSOR

Stanadyne®

GOLD SPONSOR

CONVERGE CFD SOFTWARE

SILVER SPONSORS

Cambustion

ASEM

UT99 SMART FILTRATION

THANKS TO OUR TOUR HOST

Wabtec CORPORATION

Upcoming ASME Events

AIM-CI

Asset Integrity Management of Critical Infrastructure
February 5–6, 2024
Orlando, FL USA

OTC Asia 2024

Offshore Technology Conference Asia
February 27–March 1, 2024
Kuala Lumpur, Malaysia

MEEd 2024

ASME Mechanical Engineering Education Summit
March 18–21, 2024
Atlanta, GA USA

RFIM 2024

Robotics for Inspection Maintenance Summit
March 19–21, 2024
Houston, TX USA

CARD 2024

Conference for Advanced Reactor Deployment
March 26–28, 2024
Charlotte, NC USA

SSDM 2024

Aerospace Structures, Structural Dynamics, and Materials Conference
April 29–May 1, 2024
San Diego, CA USA

OTC 2024

Offshore Technology Conference
May 6–9, 2024
Houston, TX USA

JRC 2024

Joint Rail Conference
May 13–15, 2024
Columbia, SC USA

OMAE 2024

International Conference on Ocean, Offshore and Arctic Engineering
June 9–14, 2024
Singapore, Republic of Singapore

MSEC 2024

Manufacturing Science and Engineering Conference
June 17–21, 2024
Knoxville, TN USA

Turbo Expo 2024

Turbomachinery Technical Conference & Exposition
June 24–28, 2024
London, England United Kingdom

ES 2024, SHTC 2024, FEDSM 2024

Joint Conference—International Conference on Energy Sustainability, Summer Heat Transfer Conference, Fluids Engineering Division Summer Meeting
July 15–17, 2024
Anaheim, CA USA

ASME TEC Talks

Planes, Trains & Automobiles: Can We Move Without Emissions?

March 21, 2024
12:00 – 1:00 PM EST

Looking to understand the transportation of tomorrow? Dive deep into the heart of decarbonization efforts in the transportation sector, with a special focus on the automotive and aviation industries.

What Will You Learn?
The Current Landscape: Unravel the challenges and significance of reducing carbon emissions in transportation.
Toward Zero: Discover the truth behind "zero emission vehicles" by delving into their lifecycle analysis and understanding how they compare to traditional and alternative-fueled combustion systems.
Innovations Ahead: Explore the groundbreaking research happening aimed at minimizing the transportation sector's carbon footprint. Get insights into:

- Advanced combustion strategies
- The potential of bio-fuels and electro-fuels
- The role of hydrogen in future mobility
- The progress and prospects of electrification
- Why a technology mix is needed to meet environmental targets

Who Should Attend: Transportation industry professionals, researchers, policy makers, students, and anyone dedicated to navigating the path to more sustainable transportation.

Complimentary Registration!

Speakers

Dr. **Jacqueline O'Connor**
Professor of Mechanical Engineering
Pennsylvania State University

Dr. **Kelly Senecal**
Co-founder and Owner
Convergent Science

TEC Sector News and ICED Updates

TEC Sector FY24 Strategic Goals

1. Improve clarity and optimize the TEC portfolio to deliver the ASME mission.
2. Expand the TEC portfolio to position us as a leader in emerging technologies.
3. Strengthen portfolio to effectively use resources and engage and deliver value to our communities.
4. Continue and increase engagement with the groups under TEC.
5. Continue to grow and improve our toolkit.

TEC Sector Core Values

- **Engagement**

  We value engagement among our members and volunteers because it encourages collaboration and leads to valuable opportunities for growth.

- **Network**

  We encourage our members to build their professional network by offering unique networking opportunities throughout the entire range of their professional experience. These opportunities promote growth of leadership skills, increase technical knowledge, and build lasting connections

- **Diversity, Equity & Inclusion**

  We respect and celebrate the diversity of our members and volunteers and believe that those differences help us learn from others, both personally and professionally, and promote innovative solutions to global challenges.

- **Transparency**

  We practice transparency by openly communicating guidelines, metrics, and expectations, and providing a platform for feedback from our members and volunteers.

Learn more about the ASME Technical and Engineering Communities (TEC) Sector or contact the TEC Sector.

TOP ROW (L–R):
***Damian Vogt**, Member at Large; **Bob Stakenborghs**, Senior Vice President; **Tom Lavertu**, Vice Chair*

BOTTOM ROW (L–R):
***Columbia Mishra**, Member at Large; **Vicki Risinger**, Vice Chair*

TEC Sector Volunteer Spotlight

The purpose of the volunteer spotlight is to recognize volunteers who have contributed to the success of an ASME group. The spotlight volunteers will be published in the quarterly TEC Newsletter. Any TEC volunteer can nominate.

Nominate a peer today!

Webtool Feedback Update

A new feedback/feature request form was implemented in the Spring of 2023. All webtool users were encouraged to provide feedback.

51 Total Requests Submitted

- 25 requests were approved. Most approved items were for *reviewer opt-in* and *reviewer invitation accept/decline function.* Other approved requests included updating existing reports, updating review forms, and improved author instructions.
- 14 requests were not Approved. Those not approved were either conference specific or not webtool related such as looking for copyright technical support or access to the website.
- 5 requests are currently under review.
- 2 requests were made where the functionality already exists.
- 5 requests were duplicates.

Updates for 2024

- Co-Author Login Requirement Returns. (In Production)
  - Automatically enforced.
  - Authors will receive two reminders before removal.
- New Reviewer Opt-in Requirement Removed. (In Production)
- Review Invitation Accept/Decline Option. (Dec. 14)
- Reviewers can accept or decline review invitation without logging in.

Submitted requests and status can be viewed at:
https://asmetraining.wpengine.com/feedback-and-feature-requests-received/

Webtool Help for ICEF 2024

Connect to the live office hours for webtool related questions. View the schedule at https://asmetraining.wpengine.com/live-help-center/

Resources for authors and organizers can be found here.

Contact the ICEF 2024 webtool staff.

ICED Webinar Series

The Future of the Internal Combustion Engine

The ASME Internal Combustion Engine (ICE) Division Executive Committee has been holding a complimentary webinar series titled “The Future of the Internal Combustion Engine”. The goal of this series is to communicate the role of the ICE in our decarbonized society.

Topics include

- Light Duty
- Heavy Duty
- Combustion
- Hybridization
- Alternative Fuels
- Computer Simulations
- AI, and much more!

Watch the on-demand webinars!

The American Society of Mechanical Engineers®
ASME®

ASME
SETTING THE STANDARD

2023 Honors and Awards

The Internal Combustion Engine Division recognizes the outstanding achievements in the internal combustion engine field through its honors and awards program. ICEF hosted the annual Awards Dinner, this year sponsored by Aramco Americas, where these remarkable individuals were recognized. Recipients were presented with awards plaques by Dr. Sibendu Som, Division Chair, and Prof. Sundar Krishnan, ICE Forward 2023 Conference Chair.

Click here for more information on the ICE awards or to complete a nomination packet. Special thanks to the numerous volunteers that serve on ICE's award committees. Without their expertise, time, and dedication, this would not be possible.

2023 ASME INTERNAL COMBUSTION ENGINE AWARD

The Internal Combustion Engine Award recognizes eminent achievement or distinguished contribution over a substantial period of time, which may result from research, innovation, or education in advancing the art of engineering in the field of internal combustion engines; or in directing the efforts and accomplishments of those engaged in engineering practice in the design, development, application, and operation of internal combustion engines. In 1966, by bequest, the Diesel and Gas Engine Power Division established this award.

Citation: "For advancing the state-of-the-art of internal combustion engines for over 40 years through tremendous contributions in engine development, industry-leading analysis techniques, and educating and mentoring engineers."

Jeffrey D. Naber

Richard & Elizabeth Henes Professor
Michigan Tech University

ASME FELLOW

The ASME Committee of Past Presidents confers the Fellow grade of membership on worthy candidates to recognize their outstanding engineering achievements.

Nominated by ASME Members and Fellows, an ASME Member has to have 10 or more years of active practice and at least 10 years of active corporate membership in ASME.

"A Fellow, one who has attained a membership grade of distinction, at the time of advancement shall be a corporate member of the Society, shall have been responsible for significant engineering achievements, and shall have not less than 10 years of active practice and 10 years of corporate membership in ASME"

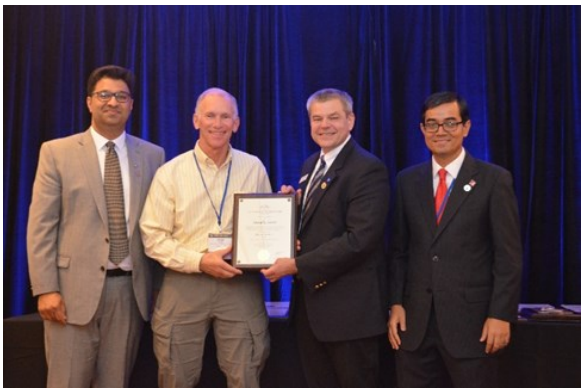
Sibendu Som

Director of Advanced Propulsion and Power
Argonne National Laboratory

INVITED LECTURE APPRECIATION

Each year we invite a distinguished member of the ICE community to provide an lecture at the ICE Forward Conference.

Title: “Where do we go from here?”



David E. Foster

Phil and Jean Myers Professor Emeritus
University of Wisconsin–Madison

BEST PAPER AWARD — 2022 ICE FORWARD

Pedro Piqueras — Univ. Politècnica València, CMT
Benjamín Pla Moreno —Univ. Politècnica València, CMT
Enrique José Sanchis — Univ. Politècnica València, CMT
Elena García — Univ. Politècnica València, CMT

“Control Oriented Reduced Order Modelling of Conversion Efficiency in Dual Layer Washcoat Catalyst with Accumulation and Oxidation Functions”


ASME
THE INTERNAL COMBUSTION ENGINE DIVISION
Presents This Best Paper Award
To
Pedro Piqueras, Benjamín Pla, Enrique José Sanchis and Elena García
For the 2022 ICE Forward Conference Most Valuable Technical Paper Contribution titled:
"Control Oriented Reduced Order Modelling of Conversion Efficiency in Dual Layer Washcoat Catalysts with Accumulation and Oxidation Functions"
Presented at the
2023 ICE Forward Technical Conference
October 8-11, 2023

BEST PRESENTATION AWARD — 2022 ICE FORWARD

Katherine J. Asztalos — Argonne National Laboratory

“Application of Modal Decomposition Techniques to Characterize the Internal Nozzle Flow of a Medium-Duty Diesel Injector Operating with Gasoline-Like Fuels”


ASME
THE INTERNAL COMBUSTION ENGINE DIVISION
Presents This Best Presentation Award
To
Katherine J. Asztalos
For the Excellent Presentation of Technical Paper titled:
"Application of Modal Decomposition Techniques to Characterize the Internal Nozzle Flow of a Medium-Duty Diesel Injector Operating With Gasoline-Like Fuels"
at the
2022 ASME ICE Forward Conference
Presented at the
2023 ICE Forward Conference
October 8-11, 2023

BEST STUDENT PRESENTATION — 2022 ICE FORWARD

Myles Hicks — University of Minnesota

“Temperature Dependent Removal Efficiency of Crankcase Emission Control Devices”


ASME
THE INTERNAL COMBUSTION ENGINE DIVISION
Presents This Best Student Presentation Award
To
Myles Hicks
For the Excellent Presentation of Technical Paper titled:
"Temperature Dependent Removal Efficiency of Crankcase Emission Control Devices"
at the
2022 ASME ICE Forward Conference
Presented at the
2023 ICE Forward Conference
October 8-11, 2023

2023 ASME DEDICATED SERVICE AWARD

The ASME Dedicated Service Award honors unusual dedicated voluntary service to the Society marked by outstanding performance, demonstrated effective leadership, prolonged and committed service, devotion, enthusiasm and faithfulness.

Kalyan Srinivasan
Professor, University of Alabama

2023 MERITORIOUS SERVICE AWARD

The Meritorious Service Award honors loyal service, guidance, leadership, and worthy contributions to the progress of the Division.

Charles Finney
Senior R&D Staff
Oak Ridge National Laboratory

Christopher Stoos
Lead Engineer
Southwest Research Institute

Dan E. Richardson
Senior Technical Advisor
Cummins, Inc.

2023 ENGINE IMPACT AWARD

This Division award honors internal combustion engine related research and development that has been put into practice towards a commercial product developed by industry. This award is specifically created to recognize researchers in industry who have made tremendous contributions to the ICE community.

Paul Najt
Retired, General Motors Research

Robert McDavid
Manager—Combustion Research, Caterpillar

Undergraduate Student Competition

The ICE Forward Undergraduate Student Competition showcases some of the best work in IC engines performed by undergraduate researchers. Students must submit a 10-minute presentation of their work, along with a 2-page extended abstract and a letter of recommendation from their research mentor. Each year 2 students are selected as winners who are able to attend the conference for free and give their presentations at lunch during the conference. This year the two winners were Nicholas Dillon of Georgia Southern University and Ziming Zhou of the Shanghai Jiao Tong University–University of Michigan Joint Institute, the first international winner we have on record. Nicholas presented his work on "Investigations of Low-Reactivity X-98 Ethanol in Reactivity Controlled Compression Ignition with High-Reactivity Jet-A for Performance and Emissions Improvement," and Ziming showed his work on "Planar In-cylinder Flow Field Prediction based on Physics-inspired Automated Machine Learning Framework." Both students gave excellent presentations during the conference and were well received by the attendees. The tradition will continue next year with the next installment of the competition.

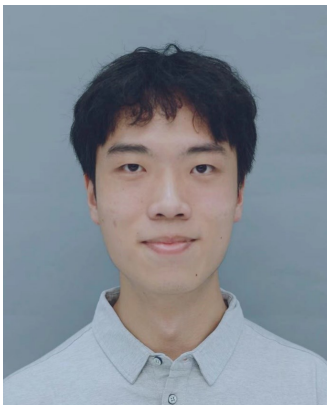
Dr. **Noah Van Dam**

ICED Student Activities Chair
Assistant Professor, University of Massachusetts Lowell

2023 UNDERGRADUATE COMPETITION WINNERS

Citation: "In testimony of the high regard and the deep appreciation of the Society for your valued services in advancing the engineering profession as an Undergraduate Student Competition winner at the 2023 ASME ICE Forward Conference October 8–11, 2023."

Nicholas Dillon



Ziming Zhou

All undergraduate students working on IC engine research are encouraged to submit, and those who are no longer undergraduates themselves but work with undergraduates are encouraged to let the undergraduates know about the competition. The top two entries will be selected to be present at the ASME ICE Forward 2024 Conference. This welcoming environment is a great opportunity for students currently involved in research that are considering pursuing a career or graduate school in the Internal Combustion Engine field. Many of the past winners have made connections during the conference that lead to recruitment for career and graduate school opportunities. For senior undergraduate students who may have already accepted a full-time position or begun graduate school by the time the conference is held, it is also a great way to be introduced directly to a large portion of the engine research community that you may be a part of for many years to come. Additionally, as a conference attendee, you'll get to attend other researchers' presentations and network with people working in this exciting and important field. Applicants not selected as winners will be invited to present their work at a student poster session to be held during the conference. The two students who led the winning entries will receive free conference registration for the conference along with paid travel and lodging expenses for the conference up to $1,500.

For full details about the 2024 competition check out the call for presentations on the ICEF conference website or email Dr. Van Dam at Noah_VanDam@uml.edu.

From the Archives

Charles Finney

The founding of ASME's first technical division

In previous newsletters, I have highlighted the role of Charles Edward Lucke in organizing a session on gas power for the 1907 ASME Annual Meeting and in leading a petition to the ASME Council during that meeting for the formation of a section based on technical interests, not geography, utilizing a recently adopted constitutional change. This petition with 28 signatories was presented to Council on December 6, 1907, a date which was considered by the earliest members to be start of Lucke's tenure, aligning with the ASME office terms.

Council charged a committee, chaired by the past president, to work out the rules for such a technical section, and Council approved the rules on January 14, 1908. A date for the organizational meeting for the new Gas Power Section was set for February 11, 1908, taking over the regular Society agenda.

Below is an account of this organizational meeting as published in the March 1908 ASME *Proceedings*†. Descriptions of the papers and discussions have been omitted for brevity, but I choose to include the text verbatim rather than paraphrase, to preserve the original sense.

Pursuant to the call[0], members and others interested in the forming of a Gas Power Section assembled in the rooms of the Society at 7.30 p.m., February 11.

The meeting was called to order, and Dr. C. E. Lucke[1] was chosen Chairman and Mr. H. H. Suplee[2], Secretary.

The Secretary of the meeting then read the rules for the formation of Professional Sections prepared by a special committee of the Society, consisting of Messrs. Hutton[3], Fernald[4], Humphreys[5], Suplee and Taylor[6].

These had been previously approved by the Council and the prospective members of the section also approved and proceeded to organize under them.

These rules were published in the February Proceedings. In substance they stated that a section must be officered by members of the Society and that all ordinary expenses will be borne by the Society. Extraordinary activities may be carried on as a section may elect, but at its own expense.

The intent of the Society is to give opportunity for any of its members to specialize without being obliged to form a new body. It further provides that persons not members of the Society may enroll themselves as affiliates of a section. Thus the Society places at the disposal of sections or affiliated bodies the benefit of the organization of the Society.

An executive committee of five was chosen as follows, the Chair appointed Mr. Jesse M. Smith and Mr. Albert A. Cary, a committee to prepare nominations; Messrs. R. H. Fernald, G. Rockwood[7], F. H. Stillman[8], F. R. Low[9] and H. H. Suplee were nominated, and no further nominations being offered, these names were put to a vote and unanimously elected.

The name of Dr. Chas. E. Lucke was then presented for President of the Section and he was unanimously elected to serve one year from December 6, 1907.

The meeting then adjourned to reassemble in the main auditorium where professional papers were presented and discussed ... [pp. 216–218]

The papers were as follows:

- "A Continuous Gas Calorimeter" by C. E. Lucke
- "Recent French Experimental Gas Turbines" by H. H. Suplee
- "A Gas Electric Car" by H. G. Chatain[10]
- "Gas Engine and Producer Guarantees" by C. E. Lucke

The Section formed it first committee to recommend practices for guarantees for gas engines and producers as a result of the last talk. The meeting adjourned at 10:30 PM, and the papers were published in the April 1908 ASME *Proceedings.*

The June 1908 ASME *Proceedings* published what may be considered the Section's mission statement, in which it reiterated the spirit of inclusiveness which drove the petition to form a technical section a half year prior [emphases mine]:

The developments of the past few years have demonstrated the possibility of commercial power generation by gas engines and producers direct from the fuel, and the data obtained from the operation of the various units installed have shown that future progress is to depend on a more detailed study of the various phases of the general problem than might interest any one of the great engineering societies. **To permit free discussion of all sorts of questions at issue, in however minute a detail, or in however general a manner, and to secure every point of view in the discussion, the Gas Power Section of The American Society of Mechanical Engineers was organized.** Attention is particularly called to the fact that papers may be prepared, meetings attended, papers discussed and copies of Proceedings received by persons who are not members of The American Society of Engineers or not qualified to become members. This will permit participation in the discussions of gas power problems not only by engineers, but also by mechanics, draftsmen, salesmen and executive officers. **An invitation is extended to all of these classes to take part in the work, which has for its sole object the development of what has proved to be the most efficient method of power generation from fuel.** [*Proceedings*, vol. 30, p. 647]

This purposeful broadening of participation was an innovation of Lucke and the Section within ASME but remained a point of friction between the later Oil and Gas Power Division and ASME well into the 1930s.[11] The intentional democratization of the discipline was also evident in section and division leadership — Suplee and Low were magazine editors, and Low, while an associate and not full member of ASME, served as the Section's second chairman. Even into the 1980s non-combustion people, such as sales managers and petroleum company managers, acted as division chairs. This approach was by design from the Division's conception and served as a model of intentional inclusiveness, to move the ICE forward.

†The *Proceedings* was succeeded by (renamed as) the ASME *Journal* in 1908, which was succeeded by *Mechanical Engineering* magazine in 1919. [0]*Proceedings*, February 1908, p. 112. [1]**Charles Edward Lucke**, Professor of Mechanical Engineering, Columbia University. [2]**Henry Harrison Suplee**, Editor, *Cassier's Magazine;* ASME Manager 1897–1900; Secretary, Gas Power Section, 1908. [3]**Frederick Remsen Hutton**, Professor of Mechanical Engineering, Columbia University; ASME Secretary 1883–1906, ASME President 1906–7; Chairman, Gas Power Section 1912–15. [4]**Robert Heywood Fernald**, Professor of Mechanical Engineering, Washington University, St. Louis; Chairman, Gas Power Section 1910–11. [5]**Alexander Crombie Humphreys**, President, Stevens Institute of Technology; ASME Manager 1907–10. [6]**Frederick Winslow Taylor**, consulting engineer; ASME President 1905–6; nicknamed the "Father of Scientific Management". [7]**George Ichabod Rockwood**, consulting engineer, Worcester, Massachusetts; ASME Manager 1903–6. [8]**Francis Hill Stillman**, President, Watson–Stillman Company; President, Bridgeport Motor Company. [9]**Frederick Rollins Low**, Editor, *Power Magazine;* Chairman, Gas Power Section 1908–9; ASME President 1924–5. [10]**Henri George Chatain**, Engineer, the General Electric Company. [11]Bruce Sinclair (1980). **A Centennial History of the American Society of Mechanical Engineers**, p. 133.

2024 Executive Committee

Chair

Dr. **Kelly Senecal**
Convergent Science, Inc

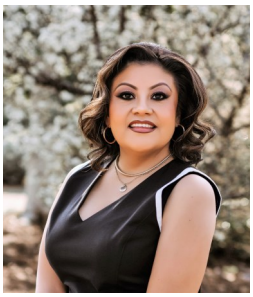
Vice-Chair

Dr. **Sundar Krishnan**
University of Alabama

Past Chair

Dr. **Sibendu Som**
Argonne National Laboratory

ICED Staff Liaison



Laura Herrera
ASME

Conference Chair

Dustin Osborne
Southwest Research Institute

Conference Co-Chair

Dr. **Scott Curran**
Oak Ridge National Laboratory

Industry Advisor

Dr. **Ronald Grover**
General Motors

Events Management

Colleen Seaver
ASME

Member

Dr. **Andrea Strzelec**
USCAR

Treasurer

Dr. **Kalyan Srinivasan**
University of Alabama

Secretary

Dr. **Thomas Lavertu**
Wabtec Corporation

Associates Nominating Chair:	**William Northrop**
Honors and Awards Chair:	**Riccardo Scarcelli**
Best Paper Award Chair:	**Jim Cowart**
Best Presentation Award Chair:	**Dustin Osborne**
ICE Award Chair:	**Sibendu Som**
Honda Medal Committee Rep:	**David Foster** & **Ron Grover**
Westinghouse Medal Committee Rep:	**Kalyan Srinivasan**
Long Range Planning:	**William Northrop**
History and Heritage Liaison:	**Charles Finney**
Ops Guide:	**Dustin Osborne** & **Will Northrop**
Student Activities Chair:	**Noah Van Dam**
IMECE ICED Rep:	**Andrea Strzelec**
ICED Newsletter Editors:	**Chris Stoos** & **Charles Finney**