

# NEWSLETTER

January 2018

Tire Society – What’s Happening

## The Tire Society: Volunteers invested in tire science and technology

Executive Committee Officers and Members. Conference Chairs. Awards Committee members. Session Chairs. Journal Editor – and Associate Editors and Reviewers. And the list goes on. All are volunteers – willing to invest their time and efforts in carrying on the Tire Society’s mission of disseminating knowledge of the science and technology of tires. Throughout this month’s newsletter, you’ll read about many different roles in which volunteers are contributing to the Society’s success and opportunities for you to help as well. As a Tire Society member, you will find the more involved you are, the more you will benefit from being a member. But volunteering is not only a great experience for you, it is vitally important for our Society to achieve its mission and goals. So, please take a look at the volunteer opportunities described on the [Volunteer](#) page of our website and become an even more involved member of the Tire Society!

About us: Volunteers that make it all happen...

## The role of the Tire Society President

Since the establishment of the Tire Society in 1978, one of the key factors in its success has been the leadership of the [volunteers](#) who have been willing to serve the Society as President. The process for nominating and electing the President, as well as the duties of the office, are outlined in the Society’s [Constitution](#) and [Bylaws](#) (as are those for all of the Society’s officers including Vice President, Secretary, and Treasurer). The role of the President is to “exercise general care and supervision over the affairs of the Society subject to the direction and approval of the Executive Committee and shall perform all acts usually incident to the office of President.”

Specific responsibilities of the [President](#) include:

- Managing the operation of the Tire Society.
- Organizing and chairing Executive Committee (XCOM) meetings regarding Tire Society strategy and operations
- Working for the continuity of the Tire Society; keeping it viable and financially solvent
- Producing and delivering an Annual Report to the membership at the Annual Meeting
- Keeping the [Advisory Board](#) informed of the Tire Society activities and issues; conducting at least one Board meeting each year
- Appointing a Nominating Committee for the nomination and election of Officers
- Announcing results of the election process at the Annual Meeting
- Signing contracts for service providers to the Tire Society and handling contractual negotiations and disputes
- Managing discussion and votes on proposals brought to the President or Executive Committee
- Working to provide value to the Tire Society membership and subscribers

Years	Tire Society President
1979-84	Harold Schwartz (DuPont)
1985-86	F. Cecil Brenner
1987-88	Daniel I. Livingston, Goodyear (ret)
1989-90	Richard G. Bauman, Uniroyal-Goodrich (ret)
1991-92	David Benko, Goodyear
1993-94	Paul S. Shoemaker, General Tire
1995-96	Raouf Ridha, Goodyear
1997-98	Michael Berzins, Bridgestone-Firestone
1999-2000	Robert Pelle, Goodyear
2001-02	John Luchini, Cooper Tire
2003-04	Marion Pottinger, Smithers
2005-06	Hamid Aboutorabi, Kumho
2007-08	Hans Dorfi, Bridgestone (BATO)
2009-10	Bob Wheeler, Hankook
2011-12	Dale Mosely, Goodyear
2013-14	Ric Mousseau, Michelin
2015-16	Saied Taheri, Virginia Tech
2017-18	Randy Jenniges, MTS

The Tire Society has been served by 18 Presidents. Our current President is Randy Jenniges (pictured below with the 2016 Award winners). The bi-annual election of officers will be conducted later this year and new officers will be announced at the Tire Conference in September who will assume their duties immediately upon the close of the Conference.

## Mark Your 2018 Calendars

As you're planning your schedules for the new year and updating your 2018 calendars, be sure to note these upcoming Tire Society events and deadlines:

- **March 16** - Deadline for submitting abstracts for the 2018 Tire Society Conference
- **August 1** – Deadline for submitting final papers for the 2018 Conference.
- **August 17** – Last date for “Early Bird” Conference registration (Registration increases \$25 after August 17<sup>th</sup>.)
- **August 28** – Last date for Conference registration refund if you need to cancel
- **September 11 & 12** – 37<sup>th</sup> Annual Meeting and Conference on Tire Science and Technology

More information about the 2018 Tire Society Conference is available at the [Conference Web Page](#), as well as instructions for [Submitting Abstracts](#) and eligibility requirements for the [Student Paper Award](#).

## Tire Science and Technology Conference Paper Awards

A feature of the annual Tire Society Conference is recognition of the best papers from the preceding Conference. Throughout the conference proceedings, volunteer members of the Society's Awards Committee recruit attendees to judge the papers presented during each session based on a set of objective and subjective criteria. Authors are evaluated on the clarity of their presentation, the development of their topic, the novelty of their contribution – and adhering to the allotted time. The judges' scores are tallied by the Awards Committee after the Conference and the winners are announced at the Awards Dinner the following year.

Winners announced this year for their presentations at the 2016 Conference include an Honorable Mention Award to Yusheng Chen (Cooper Tire) for his paper titled “Study of Steel Cord-Rubber Adhesion with SEM/EDX” presented during the Materials session that was chaired by Janice Tardiff (Ford). Also receiving an Honorable Mention Award was Dennis Kelliher (Hankook Tire) for his paper on “Calculating Energy Release Rate as a Function of Crack



**Yusheng Chen (left), Dennis Kelliher (middle), and Gautam Sagar (right) receive their award plaques from Tire Society President Randy Jenniges.**

Length Using a Multiple Step Crack Closure Technique in Tire Finite Element Models”. Gautam Sagar (Continental AG) was recognized for his paper titled “Understanding of Bead Unseating Mechanism using Finite Element Computations” with an Honorable Mention Award as well. Dennis' and Gautam's papers were both presented in the Simulations session chaired by Jan Terziyski (Nexen Tire).

Thank you to the [Awards Committee](#) and to everyone who aided in judging these presentations. When a member of the Awards Committee approaches you at the Conference and hands you a scoring sheet for a session, your willingness to help with judging is a valuable contribution that is part of the [volunteer](#) effort that makes the Tire Society successful in accomplishing our mission to increase and disseminate knowledge of the science and technology of tires. A special thank you goes out to long time Awards Chairman Gary Tubbs for his year over year volunteerism in service to the Tire Society.

## Did you know?

Did you know that, along with your membership in the Tire Society, you have online access not only to current issues of ***Tire Science and Technology***, but to the entire archive of the journal going back to Vol. 1, No. 1 from February 1973?

- **Search** – Quick Search by author, title, keyword
- **Most Read (Top) papers** – see at a glance a list of the most read articles.
- **Most Cited papers** – and the most cited articles.
- **Alerts** – sign up for an email alert each time a new issue is available online

# Investigation of Snow Milling Mechanics to Optimize Winter Tire Traction

Linke, T., Wiese, K., Wangenheim, M., Wies, B., and Wallaschek, J., *Tire Science and Technology*, TSTCA, Vol. 45, No. 3, July–September 2017, pp. 162–174

A detailed understanding of effects occurring in the contact patch between tire tread and snow surface is needed to maximize tire grip in winter conditions. The main focus of this study is quantifying the snow milling effects of individual tire tread block elements during sliding. Tests are carried out using the high-speed linear friction tester (HiLiTe), located at the Institute of Dynamics and Vibration Research at Leibniz University of Hannover, Germany. Test tracks are prepared using artificially produced snow.

To solely investigate snow milling effects and exclude material properties of rubber, in a first instance the tread block samples are made of polytetrafluoroethylene (PTFE). Because PTFE is at the same time rigid and hydrophobic, known friction mechanisms such as adhesion and hysteresis can be neglected, leaving only the tread pattern milling mechanics to transmit frictional forces to the snow track. The PTFE samples are shaped in such a way that they mimic the geometry of different siped rubber tread blocks under load, varying the sipes' number, shape, and tilt angle.

Results show the benefit of multiple sipes and give information on the evolution of transmittable forces with respect to sliding distance. It is found that the block element shape and tilt angle are directly linked to the frictional force, showing a distinct optimum for specific angle and shape combinations. In addition, forces are not depending on sliding speed, but on sliding distance.

The snow milling results of PTFE block elements are then compared to siped rubber block samples. Corresponding high-speed videos show that PTFE sample snow milling mechanics can be directly applied to rubber samples.

*Members can read the [entire paper](#) in the most recent issue of the Online Journal.*

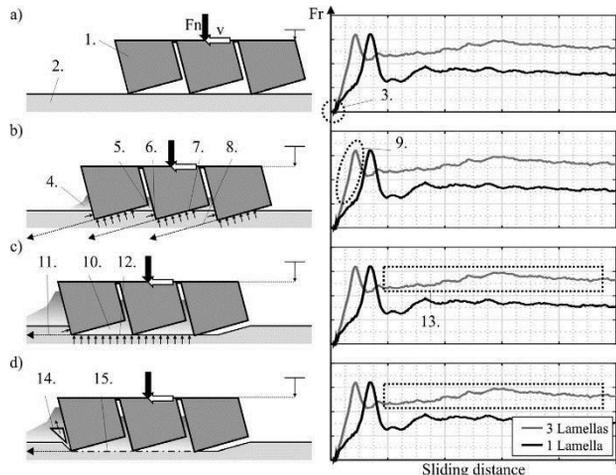
Meet your Tire Society colleagues:

## Nathan Billy

Rubber, and more specifically tires, have been a part of Nathan Billy's life for all of his adult years. While still a student at Florida State University, Nathan interned as an engineering co-op student at a Southern U.S. tire factory. Like many in the Tire Industry, Nathan has worked at more than one tire company and his career moves have taken him through several relocations. After graduating with a BS in Chemical Engineering and Chemical Science, Nathan joined Cooper Tire where his career included stints as a factory process chemist, a compound development chemist, and Chief Chemist at a tire plant. He even gained experienced in custom mixing along the way.

Since 2012, Nathan has worked with Nexen Tire where he currently serves as Manager of Compound Development at their Richfield, Ohio Technology Center. He and his wife, along with their two sons, are residents of Medina, Ohio where Nathan enjoys coaching youth soccer.

Nathan is the [Program Chair](#) for this year's Tire Society Conference having previously volunteered to serve on the Conference Awards Committee and as Co-Chair for the 2017 Tire Conference. *"I am very excited for the 2018 meeting. We hope to use this conference as a forum to discuss the latest technologies being explored in tires today and for the future. All types of technologies will be explored: testing, materials, tire design, and modeling will be covered plus maybe some discussions on what the tire will look like for the of the future of transportation. We welcome all people involved in the technology of tires to attend and for the adventurous type we welcome volunteers who want to more involved with the conference."*



**FIG. 8 — Comparison of penetration process and frictional force development for three lamellas. (left) schematic penetration process; (right) qualitative frictional force development.**



**Nathan Billy**