TR NEWS
March–April 2020
NUMBER 326

# A Century of Progress Foundation for the Future

PLUS

Can Research Processes Keep Up?

TRB Committees Through the Years

MaaS Study Mission

100 YEARS MOVING IDEAS: ADVANCING SOCIETY

The National Academies of
SCIENCES • ENGINEERING • MEDICINE
TRB
TRANSPORTATION RESEARCH BOARD

*The National Academies of*
SCIENCES • ENGINEERING • MEDICINE

The **National Academy of Sciences** was established in 1863 by an Act of Congress, signed by President Lincoln, as a private, nongovernmental institution to advise the nation on issues related to science and technology. Members are elected by their peers for outstanding contributions to research. Dr. Marcia McNutt is president.

The **National Academy of Engineering** was established in 1964 under the charter of the National Academy of Sciences to bring the practices of engineering to advising the nation. Members are elected by their peers for extraordinary contributions to engineering. Dr. John L. Anderson is president.

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The three Academies work together as the National Academies of Sciences, Engineering, and Medicine to provide independent, objective analysis and advice to the nation and conduct other activities to solve complex problems and inform public policy decisions. The National Academies also encourage education and research, recognize outstanding contributions to knowledge, and increase public understanding in matters of science, engineering, and medicine.

Learn more about the National Academies of Sciences, Engineering, and Medicine at **www.nationalacademies.org**.

The **Transportation Research Board** is one of seven major programs of the National Academies of Sciences, Engineering, and Medicine. The mission of the Transportation Research Board is to increase the benefits that transportation contributes to society by providing leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. The Board's varied activities annually engage about 7,000 engineers, scientists, and other transportation researchers and practitioners from the public and private sectors and academia, all of whom contribute their expertise in the public interest. The program is supported by state transportation departments, federal agencies including the component administrations of the U.S. Department of Transportation, and other organizations and individuals interested in the development of transportation.

Learn more about the Transportation Research Board at **www.TRB.org.**

TRB


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* Membership as of February 2020.

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**3** HIGHLIGHTS FROM THE TRB ANNUAL MEETING 2020
## A Century of Progress: Foundation for the Future
TRB launched its Centennial celebration at the 99th TRB Annual Meeting, January 12–16, 2020, in Washington, D.C. More than 14,000 transportation professionals, researchers, policy makers, and others convened for technical presentations, poster sessions, workshops, committee meetings, networking events, award presentations, and exhibits.

**15** ## Can Our Research Processes Keep Up?
*Mark R. Norman*
In an era of rapidly evolving transformational technologies, can traditional research projects and processes provide needed answers quickly and accurately? The author describes TRB and National Academies of Sciences, Engineering, and Medicine initiatives to integrate and adapt research processes to the fast pace of technological disruption and innovation.

**19** ## Centennial Papers: Tracing TRB's History Through Its Standing Committees
*Karen Febey*
This article highlights the history, activities, and missions of six of TRB's standing technical committees. As part of TRB's Centennial celebration, all 200-plus standing committees were invited to submit a Centennial Paper detailing their development and accomplishments. Offered is a glimpse at the breadth of topics and expertise among TRB's volunteers.

**25** ## Driver Training for Advanced Driver Assistance Systems: Who Needs It, Who Wants It, and Will It Make a Difference?
*Steve Casner*
Real-world experience with automotive technology—from backup cameras to automated driving—has shown that safety engineering alone is unlikely to solve issues of human error and overreliance on technology. Drivers and technology need to work together as a team, something that will likely require training. The author examines the research currently under way that explores driver training for automated vehicles and increased safety outcomes.

**30** ## More Than Just Cameras: Video-Based Onboard Monitoring Systems for Fleet Safety
*Eric Cohen*
This article examines a driver monitoring and crash risk mitigation system that could provide significant safety benefits for trucking fleets. Research helps to develop and integrate hardware and software for a comprehensive, low-cost, easy-to-install driver monitoring and assistance system, which offers driver and administrator feedback on crash risk factors.

**36** RAIL SAFETY IDEA PROJECT
## Standards for Accessible Rail Sleeper Compartments
*Katharine Hunter-Zaworski*
Addressed in this article is a Rail Safety IDEA project that designed, modeled, and validated new design standards for an accessible sleeper compartment for long-distance passenger rail. The sleeper compartment accommodates people with disabilities traveling together and would enable access to the upper level of the car as well as to the train from the platform, allowing passengers with reduced mobility to access the sightseeing or lounge cars and improving their train travel experience.

COVER This issue features photo highlights from TRB's 99th Annual Meeting in Washington, D.C., in January 2020. (Photo: Risdon Photography)

**38** RAIL SAFETY IDEA PROJECT

## Drones and Lasers Enable Safe Railroad Bridges Operations

*Fernando Moreu, Roya Nasimi, Mahmoud Reda Taha, Piyush Garg, Velvet Basemera-Fitzpatrick, David L. Mascareñas, and Martita Mullen*

Monitoring bridge displacements under freight traffic can provide bridge managers with an objective indicator of bridge safety and performance, but obtaining an accurate and safe measurement is difficult. The authors detail a Rail Safety IDEA project that uses drones to measure bridge displacement.

**40** NATIONAL ACADEMIES WORKSHOP

## Implications of the California Wildfires for Health, Communities, and Preparedness

*Steve Olson*

The author highlights transportation-related findings of a report from a June 2019 workshop of the National Academies of Sciences, Engineering, and Medicine. The workshop explored the population health, environmental health, emergency preparedness, and health equity consequences of increasingly common—and dangerous—wildfires, especially in California.

**43** MaaS Ready: International Study Mission for Mobility-as-a-Service

*Petra Mollet and Katherine Kortum*

In June 2019, an American Public Transportation Association study mission visited the European cities of Vienna, Austria; Hamburg, Germany; and Helsinki, Finland, to investigate the approaches these cities have taken to integrate new mobility services and to become truly mobility-as-a-service—or MaaS—ready.


## Coming Next Issue

The May–June 2020 issue of *TR News* is a special edition illuminating the many hidden aspects of tunnels as well as the benefits of tunnel technology to modern transportation systems. Articles highlight the contribution of tunnels to the economy and how transportation operators use the best technology to keep tunnels efficient and safe.

Photo courtesy Steve Ernst and Jeff Western

*Alaskan Way Tunnel, the world's largest bored highway tunnel.*

### *Also in This Issue:*


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*Stacey G. Bricka, MacroSys, and Bouzid Choubane, Florida DOT*

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*Matthew Beamer*

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**TR NEWS**

features articles on innovative and timely research and development activities in all modes of transportation. Brief news items of interest to the transportation community are also included, along with profiles of transportation professionals, meeting announcements, summaries of new publications, and news of Transportation Research Board activities.

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