

November 2015

Since 1996, the **Institute for Transportation (InTrans)** has had a special relationship with its primary sponsor, the **Iowa Department of Transportation (Iowa DOT)**, through ongoing agreements for the management of research and the support of core program elements. This unique-in-the-nation partnership enables InTrans to

- Conduct applied, fast-track, and basic research projects,
- Provide technical support services,
- Oversee statewide asset management programs,
- Facilitate focus groups to set the Iowa DOT's research agenda,
- Share faculty and staff expertise to conduct research in the Iowa DOT's high-priority areas (concrete, asphalt, bridges and structures, traffic engineering, earthworks, construction, and safety).

As the current Iowa DOT Director and American Association of State Highway and Transportation Officials (AASHTO) President, **Paul Trombino** is a driving force behind these efforts as well as the ongoing attempt to further **develop the next generation of transportation professionals.**

Both the Iowa DOT and InTrans desire to become more involved in **K-12 education**, which includes partnering on everything from concept collaboration to providing speakers and volunteers at family-friendly and student events happening now and in the future.

Making a Real Difference

Iowa Department of Transportation

... in Iowa and Beyond

Ready, Set, Build: Central Iowa's Bridge Building Challenge

"It definitely was a great day. They **worked really well together, made a strong bridge**, and even came up with their own cheer. I'm so proud of them."

– Dena Ford, chaperone for Team Bumble Squirt

Goal

To introduce Iowa students and families to the complex world of engineering and bridge design while educating students on how to effectively work in teams.

Objective

To provide hands-on learning opportunities about engineering to K-12 students and families from across the state of Iowa.

About

Ready, Set, Build: Central Iowa's Bridge Building Challenge took place at the Science Center of Iowa (SCI) on November 7th from 8:00 a.m.–4:00 p.m. Groups, ranging from two to four students to even families, had three hours to build a bridge out of provided materials (e.g., Popsicle sticks, wooden dowels, masking tape, glue, string, and poster board). Awards were given for bridge efficiency, most innovative bridge, and teamwork.

Participants had the opportunity to talk with engineering professionals from the Iowa Department of Transportation (Iowa DOT) and Institute for Transportation (InTrans) and learn more about bridges and other transportation-related topics.

Through hands-on learning booths at the main entrance, the Iowa DOT and InTrans also provided over 1,200 SCI attendees with learning opportunities about transportation and bridges.



Family team, The Bridge Builders, watch as their bridge is tested during judging





Team Bumble Squirt designs their bridge with chaperone Dena Ford



The Pink Fluffy Unicorns race the clock to finish their bridge



Teams share joint workstations equipped with saws and hot glue



Team Paris Truss accepts the award for Highest Structural Efficiency

Participation

Participants were divided into four categories: 1st–3rd grades, 4th–6th grades, 7th–8th grades, and family. There were a total of **76 participants the day of the event** and **over 50 people to observe the teams and participate in other event activities.**

Participating students came from five school districts or organizations:

- Southeast Polk Community School District
- Adel DeSoto Minburn Community School District
- West Des Moines Community School District
- Waukee Community School District
- Iowa 4-H with Iowa State University Extension

Participant Quotes

“I like building bridges! I want to do it forever.”
– Nathan Wenham, Team Chuzzie Works, Inc.

“We learned that triangles are the strongest shape and that **strong bridges need a strong base.**”
– Jahanvi Chawla, Team Paris Truss

“The hardest part was putting all the pieces together—the base and the two sides. **We all had a lot of fun.**”
– Logan Westin, Team Penguin