OMAHA--The ITS Heartland Fourth Annual meeting was highlighted by speeches by ITSA's Neil Schuster, FHWA's Jeff Paniati and NDOR Director John Craig. In all, three general sessions with 11 presenters and four breakout sessions with 13 presenters were attended by more than 200 attendees at the Doubletree Hotel in downtown Omaha. Twenty-eight vendors displayed and demonstrated their wares in the exhibition hall.

Maybe ITS is really a study in contrasts. Neil Schuster, Executive Director of ITSA, entertained the 200 plus conference attendees with the tale of "The Lonely ITS Engineer." Will ITS in the Heartland become more than the program of a few dedicated champions and pioneers, the lonely zealots in the otherwise seemingly indifferent organizations and communities? Mr. Schuster thinks so. (See more of his comments on page 6.)

FHWA's Jeff Paniati also expressed optimism about ITS as he outlined the US DOT's priorities and directions for the future. While the specifics were "top secret" and "classified," he also expressed optimism about the future of ITS funding, especially for management and operations.

ITS Minnesota's Dennis Foderberg invited the audience to attend the ITSA annual meeting in Minneapolis on May 18-22, 2003. In anticipation of the ice being off the lakes, Mr. Foderberg promised a warm reception at the ITS Minnesota's Ice Breaker Reception to be held on Sunday evening.

Erin Flanigan presided over the annual business meeting as the new ITS Heartland President.

See Annual Meeting, Page 7
A Message from the past ITS Heartland President

Matt Volz
ADDCO, Inc.
Past President, ITS Heartland

I would like to take this opportunity to thank all of the membership of ITS Heartland for a great year as President. From the 2002 meeting in Des Moines where I took over the reins from Tom Ryan to the 2003 meeting in Omaha where they were passed to Erin Flanigan, the year has been an absolute blur of activity. I know that we were able to advance the chapter in many ways and hopefully serve you, the members, better. The fact that our Annual Meeting in Omaha drew over 200 people and had such a vibrant vendor area in this year of tight travel budgets is proof of how important ITS is to everyone in the Heartland.

I will now move to the role as Past President and let Erin Flanigan take the lead. Erin has been a good friend of mine for several years and did a great job as Vice-President this past year. I have no doubt that the Chapter will be stronger than ever through her leadership. The new Vice President, Leslie Spencer Fowler, has been the Chapter’s legal resource since inception and a strong advocate of ITS for many years. Good luck to both Erin and Leslie.

As a final thought, I would like to encourage everyone to get involved in some aspect of Chapter activity. Whether it is helping recruit new members, assisting with the annual meeting, becoming a Chapter officer, or contributing an article to the Chapter newsletter, your assistance will be appreciated and will benefit ITS Heartland as a whole. I can definitely say that it has been a very rewarding experience for me to be involved with the ITS Heartland Chapter board and its members and I will continue that involvement. Thank you for a great year.

Matt Volz
Past President, ITS Heartland

Greetings from the new ITS Heartland President

Erin Flanigan
TransCore
President, ITS Heartland

The ITS Heartland Chapter of ITS America is off and running in a new year. Have you given any thought as to how we can make differences in our Chapter? Your Chapter officers would like to hear what you are concerned about. Feel free to contact any board member. Our information can be found on the ITS Heartland website including our seven new board members.

This year’s 4th Annual ITS Heartland Meeting in Omaha was a big success. Thank you to all who attended and participated. It was a great meeting and I heard many excellent comments about the sessions and exhibit hall. We had over 200 ITS professionals attend, eight information-filled sessions, and more than 51 sponsors and exhibitors at this event. Most importantly, I want to acknowledge and thank the wonderful work of the organizing committee, supported by NDOR and MATC, for this very successful conference. This conference could not have happened without the commitment and hard work of Jim McGee,

See President, Page 4
Alliance for Transportation Research and Applied Development

ATRAD is a cooperative research and development alliance established to facilitate the exchange of knowledge and expertise from non-traditional transportation engineering disciplines to the transportation industry. The alliance started in the fall of 2000 as a joint venture between the Kansas Department of Transportation (KDOT) and Kansas State University (KSU) Electrical Engineering and Computer Engineering (EECE) Department.

The past decade has witnessed substantial growth in the use of automation and communications technologies in the transportation industry. Such technologies as Global Positioning Systems (GPS), wireless and wired data networks, optical landline communications, and digital video surveillance are becoming increasingly integrated into the day-to-day operations of our transportation infrastructure. This fundamental shift in practice combined with the rapid developments in computer, sensing, control, and communication technologies called for a fresh approach to leverage these advances to the benefit of the transportation industry.

Since its beginning in the fall of 2000, ATRAD has grown from a fledgling idea to a consortium of interested parties representing academia, government and industry. Several research projects have been initiated as a result of the collaboration. These projects include:

- **Assessment and modeling of Automated Small Vehicle Transit (ASVT) on a university campus.** ASVT is a transit concept that promises to efficiently transport people in and around areas with closely spaced activity centers such as university campuses, shopping districts, and downtown business areas. Trip lengths between 1/4 and 2 miles, common to these types of areas, are too long for pedestrian travel and too short for efficient use of automobiles due to the proximity and amount of parking. By developing a sophisticated transportation model, ATRAD is evaluating the ability that an ASVT system has to meet this mobility need in a university setting.

- **Integration of magnetic tomography technology into concrete paving processes for the purpose of monitoring the placement accuracy of steel dowel bars and tie bars.** Current verification methods are manpower intensive and not adaptable to real-time process control. Magnetic pulse induction is used to spatially map the depth and orientation (tilt along both axes) of steel bars. The initial goal of the project is to demonstrate a prototype verification instrument with the ultimate goal of integrating the sensing technology into the paving operation for process control.

- **Development of a 3D spatial model of the Kansas highway system from GPS data.** Two projects are in the early stages of development. The first project is a system to notify drivers of expected delay during paving operations requiring a pilot car for traffic control. The second involves the use of digital infrared photography for use in non-invasive structural inspection and asphalt paving process control.

Developing a 3D Spatial Model of the Kansas Highway System using GPS

GPS has increased productivity in many sectors of our economy. This project further exploits GPS for the development of a contiguous, end-to-end, 3D geometric model of the existing Kansas Highway infrastructure. With such a model, geometric attributes of roadways, such as sub-standard stopping sight distance (SSSD) and passing sight distance, can be assessed automatically.

Using GPS data collected since 1997, researchers are using data mining, data extraction, statistical methods, and other artificial intelligence techniques to construct the spatial model. Once complete, the model will not only contain spatial coordinates to describe the highway (such as latitude, longitude, and elevation) but will also provide error confidence limits.

A proof-of-concept was demonstrated earlier in 2002 resulting in follow-up funding to

See *ATRAD News*, Page 4
**A TRAD News**

*continued from page 3*

complete the model by September 2002. The first application will be to re-assess SSSD on the entire state system of roadways. The traditional method of assessing SSSD involves either manual calculations from design plans, or experimental field measurements using vehicles. The use of the spatial model will reduce costs without sacrificing accuracy. Additionally, this approach can adapt quickly to any changes in governing standards.

Additional applications of the model that are foreseen include passing sight distance calculations, extraction of road design geometry (lines, arcs, parabolas, etc.), and automatic conversion between the various referencing systems used in databases across KDOT.

**FUTURE GOALS of ATRAD**

Moving forward, ATRAD goals include:

- serve as a liaison between the transportation industry and academic researchers, field experts, and technologists;
- broaden the perspective on transportation problems, and thus expand the spectrum of possible solutions;
- provide a forum to evaluate new ideas quickly, fairly, and effectively; and
- identify, propose, and manage interdisciplinary projects efficiently by obtaining the appropriate mix of expertise from the outset.

Ultimately, we hope to develop innovative and cost effective solutions for the transportation industry through appropriate application of technology.

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**President's Message**

*continued from page 2*

Jamie Huber and Laura Perkins from NDOR and Kathy Glenn and Lynn DeShon from MATC. If you didn’t get to this year’s meeting, make a note to attend next year’s meeting March 23-24, 2004 in Kansas City.

Speaking of a wonderful conference, did you have the opportunity to meet the President of ITS America, Neil Schuster, in Omaha? For the second year in a row, Mr. Schuster attended our event. He opened our meeting with a great discussion that the "once lonely ITS engineer" is becoming mainstreamed in our organizations and transportation environment. Mr. Schuster was quite complimentary about our meeting and I have included an article Mr. Schuster authored regarding his thoughts on the human element of getting involved in our Chapter activities (see page 6).

At the annual meeting luncheon we welcomed new officers and members to the Board including:

- Leslie Spencer Fowler, Kansas DOT as Vice President (one-year term);
- Jim McGee, Nebraska DOR as Secretary/Treasurer (one-year term);
- Tom Dancey, City of Springfield, MO as Missouri Director (two-year term);
- Jaimie Huber, Nebraska DOR as Nebraska Director (two-year term);
- Bill Troe, URS Corp as Private Sector Director #2 (two-year term);
- Elizabeth Jones, University of Nebraska as Academic Sector Director #2 (two-year term); and
- Mary Ridgeway*, FHWA-Missouri Division as FHWA Ex-Officio Director (one-year term).

This will be an exciting year for ITS Heartland. Each year our four states are deploying more and more ITS leading to additional discussion topics for sessions at our meetings. As the chapter continues to grow and expand, additional emphasis will be placed on these outreach activities during the coming year. We welcome your input, energy and involvement in ITS Heartland.

*Editor’s Note: Bob Thomas has recently accepted a transfer to FHWA-South Carolina. The Board welcomes Mary Ridgeway, FHWA-Missouri, who has accepted Bob's duties.*
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www.itsheartland.org  ITS Pulse Page 5
The Heartland and Minnesota: The Personal Element of ITS
by Neil Schuster, President, ITS America

Last month, I had an opportunity to attend two ITS America state chapter meetings – ITS Heartland, whose members are ITS professionals in Iowa, Kansas, Missouri and Nebraska; and ITS Minnesota. The two have many things in common: both groups are vibrant, successful organizations that tackle a large number of challenges that must be overcome to make ITS successful, and both are magnets for the best and the brightest – ITS champions in the public and private sector.

What struck me most about the two meetings, however, was the human element of ITS, an element that came through in conversations with delegates during the exhibits and networking events.

Certainly, the programs reflected uncompromising dedication of using ITS to solve transportation, safety, and security challenges. Incident management, safety, operations, benefits, rural issues, legal challenges, highway-rail intersection safety, and regional transit were common topics. And yes, safety was never far from the center of discussion on how ITS is transforming travel and freight movements. But it was the unexpected conversations I had with rural transit professionals that brought home the human element of ITS.

The operator of a rural transit service – essentially a small fleet of vehicles that provides travel to and from doctors and hospitals over a wide rural area for those without personal mobility – spoke with passion about the individuals who rely on him to receive needed medical attention in emergencies and on a regular basis.

His customers, and he knows most by their first names, are generally elderly citizens who cannot drive or cannot afford to own a vehicle. They need to go to the doctor for routine appointments, to the hospital for kidney dialysis sessions, and sometimes require emergency transportation. Yet, without this rural transit operator, many would have no affordable alternative to get to their health care professional.

So where does ITS come into the picture? That was the first question I asked, of course. His answer united the passion to serve those in need with the passion to use ITS as a tool to do it more effectively. Fleet management and automatic vehicle location allows this rural transit service to reduce its operating cost, to serve the same population with a smaller fleet and to shift more of his employees from behind desks, where they serve as schedulers and dispatchers, to behind the wheel.

ITS means he can alter vehicle schedules on the fly. If a patient’s dialysis session runs longer one day (a common occurrence), the van that normally would be sitting at the hospital, waiting to take that patient home, could be put immediately into productive service, with another vehicle rescheduled later to take that patient home at the appropriate time.

I came away from the ITS Heartland and ITS Minnesota meetings impressed, as usual. But, I also went home from each of these meetings with a newfound admiration for those who gather at ITS conferences to harness the power of technology to solve real-world problems.

5th Annual Conference
Join us in...
KANSAS CITY, MO
At the Hilton Kansas City Airport
March 23-24, 2004

- Vendor Exhibits
- Conference Presentations on ITS in the Heartland
- Technical Tours of KC SCOUT Traffic Management System and much, much more!

For more information, contact Lisa Vieth @ viethl2@mail.modot.state.mo.us or 573-751-1323
Highlights from the Annual Meeting

continued from page 1

thanks to NDOR and the University of Nebraska for their key roles to plan and deliver an excellent meeting. She outlined goals for the next year including reaching a larger membership and developing a great conference in Kansas City in 2004.

Jim McGee from NDOR was overall program chair for this year’s annual meeting. Jim displayed his usual good humor and candor as he moderated the opening session and hosted the Nebraska transportation consultants reception at the Durham Western Heritage Museum.

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Annual Meeting general session participants

ITS Album ‘03

Far left: Matt Volz displays the prestigious ITS America State Chapter Award won by ITS Heartland in 2002. Left: Meeting participants mingle around the vendors’ area Below: Members at the reception

Above: Participants at one of the general sessions Right: NDOR Director John Craig

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ITS Heartland is assisting with a survey of transportation professionals in Iowa, Kansas, Missouri and Nebraska to assess interest in future ITS training opportunities. The survey will also seek information on preferred training locations, methods of course delivery, affordability and desire course length. ITS Heartland respectfully requests your assistance with this project. The survey will be available online and should take approximately ten minutes to complete. You are also encouraged to forward this information to any other transportation professionals in the region.

Go to http://www.matc.unl.edu/education/survey/survey1.asp to access the survey.

It's requested all surveys be submitted no later than July 18, 2003 in order to make plans for possible fall training opportunities.

Thank you very much for your assistance and watch for updates in future editions of ITS Pulse.