

ABJ50 AND RELATED SUB- COMMITTEE'S 2017 ACTION PLAN

Shannon Barnes, Chair ABJ50 Information Systems and Technology
Colin Brooks, Chair ABJ50 (1) Sensing Sub-Committee
Nora El-Gohary, Chair AFH10 (1) Information Systems in Construction
Management Subcommittee

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ABJ50 Information Systems and Technology Committee and Related Sub-Committee's 2017 Action Plan

Planned Actions

Committee and sub-committees planned actions are organized below under the six goals established for the committee in our 2014-2017 Triennial Strategic Plan. Highest priority items will be marked with an asterisk (*)

1.1. Research Goal

Engage a diverse mix of researchers and transportation agency staff to identify critical research questions, develop research agendas, issue calls for papers and pursue avenues for advancing research projects.

Call for Papers and Paper Review Process

ABJ50 Information Systems and Technology Committee – Guohui Zhang

- *Conduct paper review and provide relevant results at the 2018 TRB Annual Meeting

ABJ50 (1) Sensing Subcommittee - Colin Brooks

- Call for papers: Sensing technologies for traffic data collection. Richard Li (Louisville) & Zhong-Ren Peng (UFL)
- Conduct paper review and provide relevant results at the 2018 TRB Annual Meeting

ABJ50 Planned Synthesis Statements

ABJ50 Information Systems and Technology Committee –Shannon Barnes

- Transportation Infrastructure to Infrastructure Connectivity - John Corbin and Shannon Barnes
 - ✓ The purpose of this synthesis statement is to survey and analyze transportation system infrastructure connectivity with other types of civic infrastructure systems
- Assessing the Changing and Transformational Roles of Information Technology Executives in State Departments of Transportation
 - ✓ The objective of the proposed synthesis study is to identify current research, and document unique approaches and best practices regarding transformative leadership models being used at state DOTs to meet today's technology demands

AFH10 (1) Information Systems in Construction Management Subcommittee – Nora El-Gohary

- "State of Practice in e-Construction among DOTs".

- ✓ The purpose of this synthesis statement is to provide a survey and analysis of the states of practice among different DOTs.

2017 - 2018 Planned Research Needs Statements (RNS)

ABJ50 Information Systems and Technology Committee –Shannon Barnes

- Refine research needs statement and conduct related outreach for data interoperability - Edgar Kraus

ABJ50 (1) Sensing Subcommittee - Colin Brooks

- Move forward with obtaining backing for 2016 RNS on “Increasing Understanding of Unmanned Aerial System (UAS) Capabilities to Address Transportation Infrastructure Issues”
- *Develop new RNS: Data collection to organization to analysis on a cost-efficient basis. Colin Brooks and Amlan Mukherjee (Michigan Tech)

AFH10 (1) Information Systems in Construction Management Subcommittee – Nora El-Gohary

- *RNS-1 Alternative Technologies for Mitigating the Risk of Accidents in the Work Zone (AFH10(1)) -- Behzad Esmaili (UNL)
- *RNS-3: A Guide to Automate Project Progress Control by Leveraging LiDAR and 3D/4D information models (AFH10(1)) -- Yelda Turkan (OSU) and Yongwei Shan (OSU)
- *RNS-4: How to Integrate and Enhance Existing Project Management Systems in Managing Construction Field Data for Different Project Delivery Methods (AFH10(1)) -- Asregedew Woldesenbet (UNL)
- *RNS-5: Material Tracking in the Transportation Construction Industry (AFH10(1)) -- Deepak Sharma (CSU Fullerton), and Katherine Holtz (TxDOT)
- RNS-6 (new): Alignment of efforts to standardize data interoperability. Aaron Costin and Dan Tran.
- RNS-7 (new): A standardized information model to accurately represent the majority of construction management tasks. Aaron Costin, Amlan Mukherjee, Danny Kahler
- RNS-8 (new): Big Data Analytics: How to turn the collected data into insights. Nora El-Gohary, Dan Tran, and Amlan Mukherjee
- RNS-9 (new): A centralized repository for benchmarking the use of data models in transportation construction. Jiansong Zhang and Chuck Jahren

1.2. Collaboration Goal

Work with other TRB committees and Task Forces on cross-cutting issues to provide a broad perspective, avoid duplicative efforts and maximize involvement of interested parties.

ABJ50 Information Systems and Technology Committee –Shannon Barnes

- *Increase collaboration and information sharing with relevant TRB committees:
 - ✓ Define committees and liaisons
 - Cyber Security – Doug Couto
 - Critical Infrastructure – Doug Couto
 - ABJ70 – Standing Committee on Artificial Intelligence and Advanced Computing Applications

- ABJ60 - Graphic Information Systems and Applications
- AHB15- Intelligent Transportation Systems
- AHB30 –Vehicle –Highway Automation
- Data Privacy, Security, and Protection Policy
- Task Force on Knowledge Management
- ✓ Request committee liaisons
- ✓ Establish information sharing and pursue opportunities for joint sponsorship of sessions, paper review, and workshops.
- Sponsor/participate in sessions at the Automated Vehicle Symposium 2017 Symposium
 - ✓ Sponsor session titled *Testing Highly Automated Vehicles (HAV)- Accelerating innovation, integration and deployment*
 - ✓ Cyber Security

1.3. Information Sharing Goal

Provide opportunities – in person, by phone and online - for exchange of best practices, research findings and ideas among researchers and practitioners.

ABJ50 Information Systems and Technology Committee –Shannon Barnes

- Plan the flagship session for TRB 2018 Annual (TBD)
- Sponsor the ABJ50 Committee meeting at the 2018 TRB Annual Meeting
- *Plan mid-year ABJ50 Committee meeting
 - ✓ Joint ABJ50 and State DOT CIO meeting

Sensing Technologies Subcommittee ABJ50(1) – Colin Brooks

- *Sponsor a webinar on UAV sensing technologies for transportation applications. – Colin Brooks, Jarlath O’Neill-Dunne (U-Vermont), Keith Cunningham (Mobile Mapping)
- Sponsor a webinar on InSAR for pavement condition and construction monitoring – Brian Bruckno (VDOT), Linbing Wang (Virginia Tech), Ed Hoppe (Virginia Tech)
- *Co-sponsor a lectern session with a call for papers for the 2018 TRB Annual Meeting on implementing sensing technologies into day-to-day transportation agency operations – Colin Brooks, Richard Li (U.Louisville) & Zhong-Ren Peng (UFL)
- Host sub-committee meeting at the 2018 TRB Annual Meeting – Colin Brooks

AFH10 (1) Information Systems in Construction Management Subcommittee - Nora El-Gohary

- *Sponsor the subcommittee’s 3rd Webinar titled “Opportunities and Challenges of Big Data Applications in Transportation Project Delivery and Management”
- *Host the 15th Annual Workshop during the 2018 TRB Annual Meeting. Tentative title of the workshop: “Painpoints in Using Big Data Analytics for Transportation Project Delivery” - Amlan Mukherjee, Yelda Turkan, Aron Costin, David Unkefer, Janice Zahn
- *Host an on-line mid-year sub-committee meeting in June 2017
- *Host sub-committee meeting at the 2018 TRB Annual Meeting
- Create a report on the “Grand Challenges for Data Management and Information Systems in Construction”.
 - ✓ Develop a report/publication similar to the Engineering Grand Challenges by NAE.
 - ✓ Conduct a survey of DOTs, identify the top grand challenges and pain points

1.4. Agency and Industry Liaison Goal

Maintain strong liaisons with both transportation agency information technology executives and information technology industry leaders to ensure that the committee stays current on key issues of concern and to maximize opportunities for technology transfer across agencies, and from research into practice.

ABJ50 Information Systems and Technology Committee –Shannon Barnes

- Sponsor a session at the 2017 AV Symposium in San Francisco
- *Co-sponsor the ABJ50 mid-year committee meeting with the annual State DOT CIOs meeting. – Mike Bousliman and Shannon Barnes
- Extend invitation to USDOT CIO for the ABJ50 meeting at the 2018 TRB Annual Meeting - Shannon Barnes
- Organize the 4rd annual CIO roundtable for the ABJ50 meeting at the 2018 TRB Annual Meeting - Doug Couto

1.5. Communication Goal

Keep committee members and friends informed about committee activities and opportunities for participation.

ABJ50 Information Systems and Technology Committee –Shawn Blaesing- Thompson

- Continue development and improve content on the ABJ50 website; take better advantage of Wordpress multi-user editing capability
- Continue to use LinkedIn to communicate with committee and friends of the committee
- Include Friends of the committee in correspondence

AFH10 (1) Information Systems in Construction Management Subcommittee - Nora El-Gohary

- *Improve website, LinkedIn Group, etc.
- Continue to communicate with the members and friends of the subcommittee

1.6. Member Involvement Goal

Attract a diverse and active membership representing key areas of interest and provide opportunities for committee members to take on leadership roles to strengthen the capabilities and reach of the committee.

ABJ50 Information Systems and Technology Committee –Shannon Barnes

- Update ABJ50 Triennial Strategic Plan at mid-year meeting- Shannon
- Update committee membership and recruit additional members as needed – Shannon Barnes
- Increase participation and communication with the Friends of ABJ50 –Shannon Barnes

1.7. Obstacles to Success and Ways to Address Them

- Build more member engagement – utilize website and LinkedIn to improve communication
- Limited participation of membership in committee activities. - Publish opportunities and be specific about what is needed and the time commitment