

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact

Day 1: Connecting to the Long Arc of Translational Impact

Sponsored by CTSA Translational Impacts Working Group

Monday, March 2, 2026

CTSA | CCOS

Welcome & Objectives

Day One Translational Summit Opening– Emmanuel Tetteh, MD, MPH, - Washington University in St Louis

Dr. Emmanuel Tetteh opened Day 1 of the CTSA Translational Impact Summit by welcoming attendees and framing the event as a convening of the Translational Impact Working Group, a community of evaluators, investigators, and others focused on understanding translational impacts across the CTSA consortium. He outlined the day’s theme, “the long arc of translational impact,” emphasizing how CTSA work ultimately reflects in the lives and livelihoods of taxpayers, and previewed sessions spanning policy impact, community-driven impact, economic/commercial impact, and global/cross-sector perspectives.

Panel: Policy Impact in Action

Policy Impact in Action – Moderated by Kristi Holmes, PhD -Northwestern University of Feinberg School of Medicine

Focusing on policy influence, this session considered how translational research can be designed, timed, and communicated to shape decisions at federal, state, and health-system levels. Panelists stressed aligning research with policy cycles, co-developing evidence with decision-makers, and framing results for practical use. Collectively, the presentations highlighted several routes by which CTSA can advance policy-relevant science.

Presentation: “Translating Research to Policy Relevance” – Robin Mermelstein, PhD – University of Illinois Chicago

Drawing on tobacco regulatory science, the speaker argued that translational work should be oriented toward policy questions, not only academic ones. The talk highlighted the importance of interdisciplinary evidence, timeliness, and stakeholder awareness in shaping effective policy. It also warned against waiting for perfect data or overlooking implementation barriers, and emphasized actionable findings delivered through clear, targeted communication.

Presentation: “Partnerships for Policy Impact” – Justin Blackburn, PhD - Indiana University Indianapolis

Centering on speed and trust, this talk described state–university partnerships that deliver usable evidence within short policy timelines. The speaker highlighted the WISE Indiana model, which relies on co-design, strong project management, and flexible contracting to address urgent questions. A case study showed how estimating the cost of untreated mental illness informed legislation and funding decisions while also supporting peer-reviewed publication.

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 1: Connecting to the Long Arc of Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Monday, March 2, 2026

CTSA | CCOS

Presentation: “Translational Research - Policy Impact Examples” – Shari Bolen, MD, MPH - Case Western Reserve University at The MetroHealth System

Using examples from Medicaid partnerships, the speaker showed how implementation science and quality improvement can drive system-level policy change. Illustrations included reducing barriers to continuous glucose monitor access and securing Medicaid coverage for diabetes prevention programs. The presentation also pointed to federal influence through service on the National Clinical Care Commission, underscoring how professional engagement can shape national recommendations.

Working Session 1

Working Session 1– Setting Strategic Priorities for Translational Impact with Modified Delphi – Moderated by Michelle A. Maclay, NC TraCS Institute at the University of North Carolina Chapel Hill

Participants kicked off a consortium-wide Delphi process to define strategic priorities for measuring, supporting, and disseminating translational impact over the next five years. Structured, open-ended prompts were used to surface perspectives and build cross-hub consensus. The results will guide coordinated action and investment by the Translational Impact Working Group.

Fireside Chat: Communities Driving Impact

Fireside Chat - Communities Driving Impact – Moderated by Andrea Molzhon, PhD – Virginia Commonwealth University

Through a community-engagement lens, this session examined how authentic, long-term community–academic partnerships can generate sustainable translational impact. Speakers underscored trust, shared leadership, and capacity-building as core components of effective engagement. The discussion positioned community benefit as a central indicator of success, alongside (and beyond) traditional research outputs.

Presentation: “Communities Driving Impact” – Lori Carter Edwards, PhD, MPH - Kaiser Permanente Bernard J. Tyson School of Medicine and Pastor James D. Gailliard -Senior Pastor, Word Tabernacle Church

In a longitudinal case study of faith-based and academic collaboration, the speakers described a model that prioritizes community capacity and health equity. They emphasized forming relationships well before funding opportunities, centering community expertise, and investing in trust over time. Positive ripple effects, including new community organizations, expanded grant activity, and leadership development, illustrated how sustained engagement can extend impact beyond a single project.

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 1: Connecting to the Long Arc of Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Monday, March 2, 2026

CTSA | **ecos**

The Economic & Commercial Aspects of Impact

Economic and Commercial Aspects of Translational Impact – Moderated by Kristopher Bough, PhD - NIH | NCATS

Exploring economic value creation, this session highlighted how translational science contributes through innovation ecosystems, product commercialization, and disciplined investment approaches. Speakers addressed impact at both regional-system and individual-project levels. Overall, the discussion positioned CTSA as drivers of economic, clinical, and societal return on research investment.

Presentation: “Ecosystems to Accelerate the Translation of Biomedical Research” – Maryann Feldman, PhD - Arizona State University

Looking at place-based dynamics, the speaker analyzed how regional innovation ecosystems affect the pace and success of translation. CTSA were described as “market-shaping institutions” that coordinate actors, align incentives, and reduce uncertainty across discovery, development, and commercialization. Comparative examples showed how regions leverage distinct strengths, such as regulatory expertise or manufacturing capacity, to generate sustained economic impact.

Presentation: “How CTSA Ecosystem Can Create Products for Global Markets and Equip Investigators for Translational Impact” – Umut Gurkan, PhD - Case Western Reserve University

Following one diagnostic from pilot funding to global use, this talk traced the commercialization of a point-of-care test for sickle cell disease supported by CTSA awards and SBIR/STTR funding. The speaker highlighted how local manufacturing capabilities, clinical partnerships, and translational training enabled rapid prototyping and validation. The product’s worldwide deployment demonstrated how CTSA investments can catalyze both health and economic impact at scale.

Presentation: “Maximizing Resources to Advance University Therapeutic Assets Toward the Clinic” – Elan Ness-Cohn, PhD - Northwestern University, Querrey InQbation Lab

Introducing a milestone-driven, diligence-first approach, this presentation outlined a model for advancing early-stage therapeutic assets. It emphasizes rapid feasibility assessment, external expert review, and clear go/no-go decision points to stretch limited translational funding. By aligning academic projects with industry standards early, the approach improves capital efficiency and strengthens readiness for downstream commercialization.

Lightning Talks: Global & Cross-Sector Perspectives

Real World Approaches to Assessing Translational Impact Beyond Traditional CTSA Settings– Moderated by Liz Middleton, PhD - Harvard Medical School

Turning to nontraditional environments, this session considered how translational impact can be assessed in settings such as public health agencies and global health systems. Speakers

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact

Day 1: Connecting to the Long Arc of Translational Impact

Sponsored by CTSA Translational Impacts Working Group

Monday, March 2, 2026

CTSA | CCOS

emphasized pragmatic evaluation, multi-sector partnership, and embedding assessment early rather than relying on retrospective reporting. The discussion also surfaced ways these approaches can be adapted within CTSA hubs.

Presentation: “Climate Changes Health” - Bradley Kramer, PhD - Public Health, Seattle & King County

Drawing from practice in a local health department, this presentation showed how climate and health adaptation can be operationalized through dashboards, community-co-created communication materials, and low-cost interventions such as air filtration during wildfire smoke events. The speaker emphasized prioritizing populations most affected by climate-related exposures and using tools that are practical, timely, and actionable. Success measures were framed around cross-departmental uptake, sustained use, and real-time response utility, not only formal outcome metrics. The talk also underscored the need for academic partners to support rigorous evaluation where evaluation capacity is limited.

Presentation: “Impact to Improve Global Cardiovascular Health” - Mark Huffman, MD, MPH, Washington University in St. Louis

Using the Translational Science Benefits Model as a framework, this presentation illustrated ways to document clinical, policy, economic, and capacity-building impacts of cardiovascular research in U.S. and global settings. Examples included combination antihypertensive therapy trials, large-scale hypertension implementation in Nigeria, and national sodium reduction initiatives. The speaker highlighted outcomes beyond publications, such as policy change, workforce training, and health system integration, and presented the model as a flexible tool for prospective tracking and ongoing updates across the research lifecycle.

Working Session 2

Setting Strategic Priorities for Translational Impact Across the CTSA Consortium:- Moderated by Emmanuel Tetteh, MD, MPH, Washington University in St. Louis

Building on prior sessions, the panel discussion considered which evaluation strategies, metrics, and communication approaches are most transferable to CTSA hubs. Panelists explored trade-offs between rigor and feasibility, the value of stakeholder partnership, and challenges in quantifying dissemination impact. The conversation reinforced the role of pragmatic designs and government partnerships in scaling impact.

Delphi Priority-Setting Exercise - Emmanuel Tetteh, MD, MPH – Washington University in St. Louis

Results from Round 1 of the modified Delphi process were shared in this working session focused on defining shared translational impact priorities across the CTSA consortium. Participants reviewed synthesized priority clusters and ranked them by importance and feasibility. This exercise set up the next rounds of iterative consensus-building.

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 1: Connecting to the Long Arc of Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Monday, March 2, 2026

CTSA | **CCOS**

Synthesis of CTSA Translational Impact Priorities and Ranking Exercise - Emmanuel Tetteh, MD, MPH – Washington University in St. Louis

Summarizing results from a consortium-wide survey, the presenter reported that more than 250 translational impact priorities were consolidated into seven thematic clusters. Themes included shared impact frameworks, strengthened communication, impact planning across the research lifecycle, support for real-world implementation, and workforce capacity for impact measurement. Participants then completed a live ranking exercise to gauge each cluster's importance and feasibility. Community engagement and cross-hub collaboration were emphasized as foundational to advancing priorities.

Adjournment

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 2: Building Shared Capacity for Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Tuesday, March 3, 2026



Welcome & Objectives

Day 2 Opening and Day 1 Summit Recap– Amelia Bucek, MPH - Northwestern University Clinical and Translational Sciences Institute

Amelia Bucek welcomed participants and summarized Day One highlights, including sessions on policy-relevant research, trust-building with community partners, commercialization ecosystems, and global and environmental health projects. She highlighted the modified Delphi process used to identify translational impact priorities and reminded attendees that meeting materials and posters would be shared post-summit. She then reviewed the Day Two agenda, framing it around Element E, multi-CTSA collaboration, impact measurement, and workforce development.

Talk: Planning for Impact in Element E

Planning for Impact in Element E– Moderated by Amelia Bucek, MPH, -Northwestern University Clinical and Translational Sciences Institute

Centered on participatory methods for setting Element E priorities, this session highlighted inclusive, community-informed funding approaches and featured an innovation tournament case study that helped shape a translational research RFA.

Presentation: “Planning for Impact in Element E”– Rinad S. Beidas, PhD, - Northwestern University Feinberg School of Medicine

Northwestern used an innovation tournament to crowdsource research priorities for its Element E RFA, as Rinad S. Beidas explained. The process allowed broad participation across faculty, trainees, staff, and health system partners, generating 62 ideas that were reviewed using a structured rubric by a diverse challenge committee. The resulting themes emphasized communication, access, care delivery innovation, and trust, which directly shaped the final RFA. She discussed benefits, challenges, and lessons learned, including workload, IP considerations, and transparency in how ideas were used.

Panel: Multi-CTSA Research

Multi-CTSA Research Initiatives Moderated by Kristi Holmes, PhD -Northwestern University of Feinberg School of Medicine

A series of cross-hub collaborations illustrated how CTSA's are advancing evaluation practice, reviewer sharing, and translational science measurement across the consortium through sustained, multi-site partnership.

Presentation: “Translational Impact through Collaboration” – Margaret Schneider, PhD - University of California, Irvine

The CTSA External Reviewer Exchange Consortium (CEREC) is a decentralized reviewer exchange that has operated since 2016 to address conflicts of interest and reviewer scarcity in pilot funding,

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 2: Building Shared Capacity for Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Tuesday, March 3, 2026



as Margaret Schneider outlined. The consortium has supported hundreds of reviews across multiple hubs while allowing each site to retain its own review processes. She also described spin-off collaborations, including community reviewer training, distinguishing translational science from translational research, and operationalizing the Translational Science Benefits Model (TSBM).

Presentation: “Translational Science Case Studies” – Clara Pelfrey, PhD - Case Western Reserve University

A standardized protocol for translational science case studies is helping teams capture complex, multi-step stories of successful translation, as Clara Pelfrey explained. The group has published a new manuscript type, developed shared templates, and coded over 60 cases across CTSA hubs. These case studies highlight facilitators, barriers, and impacts across health, research, and policy domains and serve as tools for researchers, institutions, funders, and the public.

Presentation: “Multi-CTSA Collaboration in the Evaluator’s Bibliometrics Working Group”– Nicole Llewellyn, PhD - Georgia Clinical & Translational Science Alliance, Emory University

A multi-hub bibliometrics group is examining publication influence, policy impact, and translational acceleration across the CTSA consortium, as Nicole Llewellyn highlighted. Using tools such as citation analysis and policy databases, the group has published multiple papers, including analyses of COVID-19 research and trainee influence. She emphasized bibliometrics as a scalable, comparative method that complements qualitative case studies.

Selected Posters Session: Innovative Processes & Impact Assessments Across CTSA Hubs

Selected Poster Oral Presentations - Moderated by Amelia Bucek, MPH, -Northwestern University Clinical and Translational Sciences Institute

In a rapid-fire format, presenters shared three applied, scalable projects spanning community engagement infrastructure, workforce development, and clinical trial feasibility.

Presentation: “An Innovative and Comprehensive Approach to Community Health and Research Engagement using the Social Ecological Model” – Farra Kahalnik MPH, MSSW - University of Texas Southwestern Medical Center

The Health Street model at UT Southwestern combines community health screenings, trust-building, and research engagement using the social ecological model, as Farra Kahalnik described. Through partnerships with over 50 community organizations, the program has conducted thousands of screenings and strengthened pathways to care and research participation. The model demonstrates bidirectional benefit for communities and academic health centers.

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 2: Building Shared Capacity for Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Tuesday, March 3, 2026



Presentation: “Enhancing “Ease of Practice” in Research: Physician and Allied Healthcare Retention through Translational Workforce Development Efforts in New Mexico”– Larissa Myaskovsky, PhD FAST - University of New Mexico School of Medicine

Workforce development interventions in New Mexico are addressing clinical research capacity in a rural, diverse state, as Larissa Myaskovsky described. Initiatives included a new Applied Statistics PhD program, recruitment training for diverse populations, and a clinical research professional training pipeline. These efforts aim to improve retention, research efficiency, and equity in clinical and translational science.

Presentation: “A Research Feasibility Committee Model to Enhance Clinical Trial Success and Translational Impact”– Carl Schulman, MD, PhD, MSPH - University of Miami Miller School of Medicine

The University of Miami’s Research Feasibility Committee reviews industry-sponsored trials before IRB submission to improve alignment, feasibility, and resource use, as Carl Schulman outlined. The structured review process assesses alignment, feasibility, and resource use, resulting in fewer low-probability trials entering the pipeline. Early data suggest improved efficiency and alignment with institutional priorities.

Panel: TSBM State of the Science

TSBM– State of the Science- Moderated by Anna La Manna, MPH, MSW - Washington University in St. Louis

Speakers examined how CTSA hubs are applying the TSBM to assess translational impact, with emphasis on methodological advances, real-world implementation, and opportunities to standardize approaches across sites.

Panelists: Pamela Davidson, PhD - UCLA Clinical & Translational Science Institute, Douglas A. Luke, , PhD - Washington University in St. Louis and, Joe Hunt- Indiana Clinical & Translational Sciences

Panelists discussed a *Frontiers in Public Health* research topic featuring 12 papers on TSBM-based impact evaluation. They emphasized shifting from retrospective proof of impact to prospective, actionable approaches that accelerate translation. Topics included continuous quality improvement, automation, systems science, and building a shared culture of impact across the consortium.

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 2: Building Shared Capacity for Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Tuesday, March 3, 2026



Working Session: Opportunities for Alignment in Impact Measurement Across CTSA Consortium

Opportunities for Alignment in Impact Measurement Across CTSA Consortium- Moderated by Anna La Manna, MPH, MSW - Washington University in St. Louis

Panelists: Joe Hunt- Indiana Clinical & Translational Sciences Lixin Zhang, PhD - Clinical and Translational Science Collaborative, Case Western Reserve University and, Alyson Eggleston, PhD - Penn State Clinical & Translational Science Institute

A cross-hub task group conducted landscape analyses, tracked reactive requests, and developed shared vocabulary to strengthen CTSA impact evaluation. Findings revealed widespread TSBM use alongside diverse tools and frequent ad hoc leadership requests. The group proposed an integrated “impact evaluation ecosystem” linking shared language, repositories, and real-time evaluation needs.

Lightning Talks: Supporting Impact in Early-Stage Development

Lightning Talks: Supporting Impact in Early-Stage Development - Moderated by Moderator: Shannon Casey, PhD - University of Wisconsin-Madison

Lightning talks spotlighted training and collaborative models designed to help early-stage investigators build impactful, translational research careers.

Presentation: “Clinical Research Informatics Postdoctoral Fellowship (CRISP)” – Naomi Bardach, MD - University of California San Francisco

UCSF’s CRISP fellowship trains postdoctoral scholars in clinical research informatics at the intersection of data, informatics, and study design, as Naomi Bardach described. Fellows receive didactic training, mentored research experience, and clinical exposure. Early outcomes include strong publication productivity and successful NIH career development awards.

Presentation: “Beyond Publications: Developing a Seminar Series on Articulating Research Impact”– Andrea Molzhon, PhD - Virginia Commonwealth University

A virtual Research Impact Seminar Series was designed to help investigators understand, plan for, and communicate research impact, as Andrea Molzhon described. Topics were informed by needs assessments and aligned with TSBM domains. The series targets early-career investigators and emphasizes practical skills such as impact statements, community relevance, and dissemination.

Presentation: “The Gotham Approach: Assessing CTSA Impact in Early-Stage Investigator Career Engagement”– Cathleen Kane, MPA – New York University

A multi-hub New York–based evaluation collaboration pooled Common Metrics data on career engagement to enable peer benchmarking and shared analysis, as Cathleen Kane shared. The

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 2: Building Shared Capacity for Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Tuesday, March 3, 2026



effort demonstrated the value of a community of practice despite limited infrastructure. She emphasized that impact metrics are far more meaningful when interpreted collectively rather than in isolation.

Closing Plenary: Where do we go from here?

Session: Closing Plenary: Where do we go from here?

The closing session reflected on key themes from the summit, acknowledged contributors, and reinforced the importance of collaboration, shared infrastructure, and a culture of impact across the CTSA program.

Poster Recognition:

Best Team-Based Impact / CQI Poster - *Speeding the Translation of Research: An Integrated Model of Wisdom-Driven Evaluation and Continuous Quality Improvement and Dissemination*

This poster showcased an integrated model combining evaluation, continuous quality improvement, and dissemination to accelerate translational impact. It emphasized team-based approaches and iterative learning to improve research translation. The work was recognized for demonstrating how structured CQI methods can support measurable impact

Best Impact Strategy Poster - *An Editorial Strategy to Amplify Impact Narrative Articles to Promote Clinical and Translational Research*

This poster presented an editorial strategy designed to strengthen and amplify impact narratives. The approach focused on improving how translational research stories are framed and disseminated to reach key audiences. It was recognized for its potential to enhance visibility and understanding of CTSA contributions.

Best Implementation Science Poster - *Remote Intervention for Children with Tuberous Sclerosis Complex: Lessons on Adaptability and Engagement from AI-Assisted CFIR-Guided Analysis*

This poster described a remote intervention study informed by implementation science and AI-assisted analysis. It highlighted adaptability, engagement, and the use of CFIR to guide evaluation. The work was recognized for demonstrating practical implementation strategies in a real-world pediatric context.

Best Community Partnership Poster - *Building Community Capacity for Translational Impact: A Human-Centered Research Fellowship Model*

This poster focused on a fellowship model designed to build community capacity for translational research through human-centered approaches. It emphasized co-creation, partnership, and workforce development beyond traditional academic roles. The poster was recognized for centering community engagement as a driver of impact.

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 2: Building Shared Capacity for Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Tuesday, March 3, 2026



A conversation with Joni Rutter, MD - NIH, Director, National Center for Advancing Translational Sciences (NCATS) & Kristi Holmes, PhD - Northwestern University Feinberg School of Medicine

Q1. How is the CTSA Program strengthening how translational impact is communicated, particularly through the new CTSA Impact website?

A1. Dr. Rutter explained that the new CTSA Impact website is intended to consolidate high-quality impact stories across hubs and improve consistency in how those stories are told. She emphasized the need for concise narratives, strong visuals, and shared metrics to support communication with Congress, NIH leadership, and local communities. The site is especially important given reduced communications capacity within NIH and will serve as a collective storytelling platform for the CTSA Program.

Q2. How can CTSA hubs support NCATS and NIH in telling these impact stories effectively?

A2. Dr. Rutter encouraged hubs to begin identifying high-quality but concise stories that clearly demonstrate CTSA contributions. She recommended focusing on the problem addressed, what was done, what changed, and why it matters, supported by metrics and visuals where possible. These elements will help ensure stories are usable across multiple audiences and settings.

Q3. How does team science function within the translational science workforce, and what role do CTSA play?

A3. Dr. Rutter described translational science as fundamentally a team effort involving diverse expertise, including clinicians, statisticians, informaticians, community partners, and patients. She characterized CTSA hubs as the “connective tissue” that brings these contributors together through shared infrastructure and coordination. This team-based approach also supports workforce development across career stages, from trainees to senior leaders.

Q4. What role does shared infrastructure play in enabling translational impact?

A4. Shared infrastructure was highlighted as a critical enabler of collaboration and collective success. Dr. Rutter cited examples such as the Trial Innovation Network, REDCap, Smart IRB, and the National Clinical Cohort Collaborative as platforms that make collaboration the default. These shared resources allow hubs to build on one another’s successes rather than duplicating effort.

Q5. How should CTSA think about AI and emerging technologies in translational science?

A5. Dr. Rutter acknowledged the prominence of AI in current discussions but cautioned against excessive hype. She emphasized using AI as a practical tool to shorten timelines, identify patterns in large datasets, improve trial recruitment, and surface outcomes that might otherwise be missed.

Translational Impact Summit | SUMMARY

Driving Translational Science Toward Measurable Impact
Day 2: Building Shared Capacity for Translational Impact

Sponsored by CTSA Translational Impacts Working Group
Tuesday, March 3, 2026



At the same time, she stressed the importance of transparency, explainability, and monitoring generalizability to avoid reinforcing existing inequities.

Q6. How do open science and “gold standard” science align with the CTSA mission?

A6. Dr. Rutter reframed gold standard science as simply doing rigorous, well-designed science and argued that rigor enables meaningful speed rather than slowing progress. She introduced the idea of “slowing down to speed up” by investing in strong study design, reproducibility, and clear impact metrics. Open science practices, she noted, support public trust and ensure that research outputs are credible and usable by regulators, policymakers, and health systems.

Q7. What is the most important call to action for accelerating measurable translational impact over the next decade?

A7. Dr. Rutter urged the community to design for dissemination and implementation from the very beginning of research rather than treating it as a final step. She emphasized embedding regulatory science early, building interoperable data ecosystems, and measuring success by time to intervention and access, not just publications. Aligning incentives, infrastructure, and training around delivery was framed as essential to producing real-world solutions.

Adjournment