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THE ENGINEERING IDEAS INSTITUTE

SESSION 4: PUBLIC POLICY LEADERSHIP

The background of the lower half of the page is a dark blue field filled with a complex, light blue graphic. This graphic depicts a series of interlocking gears of various sizes, some of which are partially obscured by others. Overlaid on the gears are numerous thin, white lines that form a circuit-like pattern, with small circles and arrows indicating flow or direction. The overall effect is one of mechanical complexity and engineering precision.

Summit 9 Report
Aug 6, 2020
Session 4

Public Policy Leadership

Summit 9 • Session 4 | Aug 6, 2020

Session 4 Overview

Engineers can fulfill a vital role in their communities through civic activism, proactive engagement in shaping public policy, and leading in the civic realm. Session 4 of the Engineering Ideas Institute explored the future of civic activism and leadership in the public realm for engineers.

With the guidance of our provocateurs, we examined how engineering and science can be used to more effectively set policy and how engineers can move beyond simply providing technical advice and counsel to engagement in grassroots advocacy, service on boards and commissions, appointment or election to public office, convening and guiding community change efforts, and leadership of legislative or ballot initiatives.

Participants were also challenged to think about opportunities to engage in the public policy arena to help their communities and society move beyond the disruption caused by the coronavirus pandemic and the Black Lives Matter movement.



PROVOCATEURS



George Sparks

PRESIDENT & CEO, DENVER MUSEUM OF NATURE
& SCIENCE

George Sparks has been the President/CEO of the Denver Museum of Nature and Science since November 2004. George is a Distinguished Graduate of the USAF Academy with a BS in Aeronautical Engineering, and holds an MS in Aeronautics and Astronautics from MIT. He is a member of the Colorado Forum, Colorado Concern, and is on the Boards of Aspen Academy, Colorado Education Initiative, Colorado Music Hall of Fame, Denver Metro Chamber of Commerce and the Denver School of Science & Technology. George is the founder of the Institute for Science & Policy, a program of the Museum



Steve Costello

CHIEF RECOVERY OFFICER, CITY OF HOUSTON

Steve Costello is currently serving as Chief Recovery Officer for the City of Houston focusing on Hurricane Harvey recovery. He has been a member of Mayor Turner's staff since May 2016. Prior to joining the city Steve was a city council member at-large from 2010-2015. Prior to that he was the principal owner of the civil engineering firm Costello, Inc. from inception in 1991 until May 2016.



Carla Romero Perez

SENIOR STRATEGIC CONSULTANT, HDR

Carla Perez has 30 years of experience in executive management and advisory services specializing in transportation policy, finance, administration, communications, and program development. Her career includes senior roles with RTD, CDOT, and at the Colorado State Capitol. Carla has also held positions with both private engineering and financial firms. Today, Carla leads the governance and policy efforts to advance passenger rail development along the Front Range, from Fort Collins to Pueblo. She holds a B.A. from CSU, a M.P.M. from UMCP and a Harvard School of Public Affairs certificate.



Rick Pilgrim

TRANSPORTATION MARKET DEVELOPMENT DIRECTOR, HDR

Rick is the Director of Market Development for the Transportation Business Group at HDR. In this role he is responsible for the coordination and management to build business within six market sectors: Aviation, Transit, Highway and Local Roads, Freight Railroads, Federal, and Maritime. He has more than 40 years of experience during which time he has managed successful completion of many interdisciplinary engineering and planning projects for major system, corridor and site-level transportation improvements throughout the US.

Rick was Mayor of his community in the Denver region for 10 years during which time he served as Chair of the Metro Mayors Caucus and on the MPO Board of Directors at the Denver Regional Council of Governments.

Synopsis of Provocations

THE INSTITUTE FOR SCIENCE & POLICY DENVER MUSEUM OF NATURE & SCIENCE



George Sparks

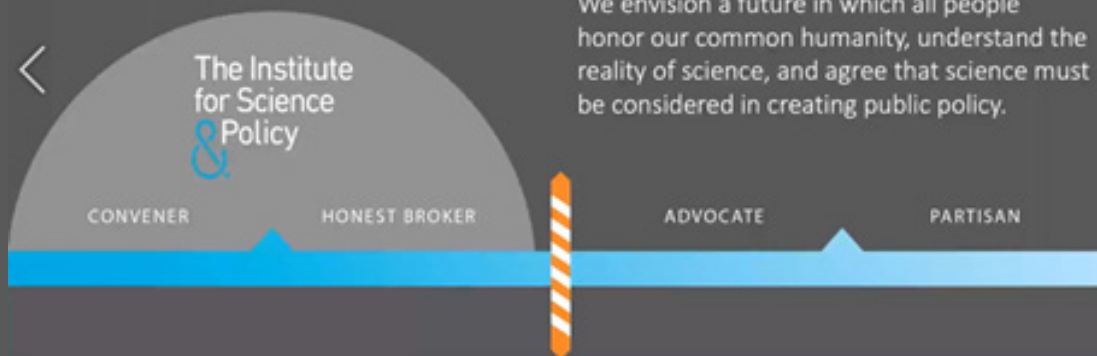
PRESIDENT & CEO, DENVER MUSEUM OF NATURE & SCIENCE

The Institute for Science & Policy at the Denver Museum of Nature & Science <https://institute.dmns.org/> envisions “a future in which all people honor our common humanity, understand the reality of science, and agree that science must be considered in creating public policy.” According to George Sparks, ignoring science never ends well. Sparks described how the Institute seeks to serve as a convener of collaborative dialogue on policy issues involving science but avoid moving to advocacy or partisanship.

Our Mission and Vision

The Institute for Science & Policy provides tools, data, processes, and a collaborative environment for civil, productive dialogue on policy issues involving science.

We envision a future in which all people honor our common humanity, understand the reality of science, and agree that science must be considered in creating public policy.



According to Sparks, policy is all about power and exerting that power to create public good. He stated that people grant their trust in policy-makers based on competence (delivering on promises) and ethical behavior (doing the right thing and working to improve society). He outlined the factors behind the loss of trust in government.

- › Poor institutional performance.
- › Large-scale global shocks
- › Political polarization.
- › Increasing economic inequality (such as the COVID-19 pandemic has demonstrated).
- › Decreasing economic mobility.

Sparks then described why the public might distrust engineers through several examples.

- › Design flaws in the Boeing 737 MAX that resulted in major loss of life.
- › Facebook’s racially biased algorithms.
- › Lack of understanding when scientists or engineers change their minds, such as with respect to the importance of masks in controlling the spread of the COVID-19 virus.
- › Instances when people perceive that scientists or engineers have become politicized, such as warning against the danger of virus spread at political rallies.

THE INSTITUTE FOR SCIENCE & POLICY DENVER MUSEUM OF NATURE & SCIENCE CONTINUED

Sparks reminded participants that gaining public trust does not ensure that people will agree with your ideas for public policy. Scientists and engineers have biases, self-interests, and values like everyone does that must be accounted for. He cited Jonathan Haidt's book, The Righteous Mind, as an important source of understanding our personal biases and values.

According to Sparks, there is evidence that citizens' level of trust in government correlates with whether leadership is from their political party. At the same time, overall levels of trust in government are

dropping. Evidence also shows that Republicans are more skeptical of scientific expertise and its role in developing policy. These factors illustrate that policy will not come about just because scientists and engineers think it is needed.

Sparks reminded participants to consider when was the last time you changed your mind and to remember that facts don't persuade people. Rather, people persuade people. We need to commit to people-centered policy creation and make the commitment to take the time necessary to build trust.



People-centered policy creation takes time



- Be ready, engage early, have an ongoing strategy
- Trust and relationships take time
- Find common ground around values
- Embrace tradeoffs
- Beware of dogma
- Be human. We all flawed.
- Listen (*especially to people you disagree with*)
- Have humility, have curiosity, be intellectually humble
- Have fun!



REFLECTIONS ON PUBLIC POLICY INVOLVEMENT & THE REBUILD HOUSTON INITIATIVE



Steve Costello

CHIEF RECOVERY OFFICER, CITY OF HOUSTON

Steve Costello offered his perspectives on the transition in the role of engineers from nerd to technical expert to advisor/policy-maker. Costello offered that the key element in completing this transition is commitment. He cautioned against communicating from the position that we know more than the public or the elected officials. He also advised that we need to be able to overcome the issue that advocating for infrastructure is in engineers' self-interest by being able to convey that infrastructure, although expensive, is key to quality of life, job creation, and economic prosperity.

Costello recounted his personal story as one of the leaders of the ReBuild Houston initiative, a 20-year, \$6 billion funding initiative for transportation and stormwater infrastructure in Houston with an innovative approach to create new funding sources without adding to the City's debt. The idea for the initiative began with the convening of a small group of engineers who saw the problem of under-investment in infrastructure and knew that something needed to be done. These leaders from the engineering community also recognized that addressing the problem of the funding shortfall would be a long, difficult public policy challenge.

As their initial step, the initiative leaders conducted multiple polls of the public, eventually re-defining their message to make the connection to public safety. They also recognized the need for a strong supporter in an elected position and sought an engineer to run for City Council. Steve volunteered to make this leap with strong support from the engineering community. Steve won election to the City Council and led the introduction of the initiative to the mayor. Supporters also worked to overcome initial opposition from the minority community, who had concerns about the financial impact on their constituents. By emphasizing and communicating the quality of life benefits of

infrastructure, this important group eventually supported the initiative. The initiative passed in 2010 by a narrow margin in an election in which limited government was a major theme. According to Costello, a key factor to their success was the willingness of the leadership group to stay in a learning mode throughout the process.

Costello offered several important tips for success in running for elected office.



The public often perceives engineers to be self-serving with respect to infrastructure policy.



Elected officials, however, have greater trust in engineers.



The greatest opportunities for influence is often at the local level. He recommended the book [The Metropolitan Revolution](#) by Bruce Katz and Jennifer Bradley as an important chronicle of the potential of leaders taking local action.



There is a need to "build the bench" of engineers who are willing to run for office.

He offered several examples of other interest groups (Victory Fund, Annie's List, Emily's List, 314 Action) who have built recruiting and training programs for their groups. ***This could be an important role for ECL-USA to pursue.***

LOCAL LEVEL PUBLIC POLICY INVOLVEMENT



Carla Romero Perez
SENIOR STRATEGIC CONSULTANT, HDR



Rick Pilgrim
TRANSPORTATION MARKET DEVELOPMENT DIRECTOR, HDR

As Steve Costello pointed out in his provocation, the engineering community has great opportunities to contribute to public policy development at the local level. Carla Perez and Rick Pilgrim have both spent great amounts of their careers in this arena. In a three-way discussion with moderator Kyle Davy, Perez and Pilgrim discussed the role of the engineering community in local level public policy.

Like Steve Costello, both Perez and Pilgrim made several important points regarding the current state of the public policy process.



There is much more to policy than just a science or engineering perspective.



Navigating the issue of the perception of self-interest requires a careful approach by the engineering community.



Trust in government was at a historic low entering 2020, making any kind of public policy work difficult.



Trust in mass media has eroded with a transition to the use of social media for information.



The public wants checks on quality/accuracy of social media information.



The public generally wants scientists engaged in policy.

Perez and Pilgrim described their personal motivation for engagement in public policy. For Pilgrim, it was his desire to be involved in front-end decision-making and recognition of the need for an enhanced public transportation system. For Perez, it was a passion for infrastructure and a desire to use her communication

skills to improve the credibility of those working for infrastructure.

Both offered their thoughts on the skills that engineers need to be learning to be more effective in the public policy realm. Perez described the need to respect the process, to learn to work effectively in the processes we have, the need to develop negotiation skills, being flexible and willing to compromise without sacrificing your vision, and being patient and willing to play the long game. Pilgrim emphasized the importance of developing partnerships.

Both also offered their lessons learned from their experience in public policy.

- › Understand the game – the players and the process.
- › Know the difference between policy and politics.
- › Understand the interrelationship between issues for policy-makers who are balancing multiple priorities- dependencies, competition, budgets/ funding.
- › Be mindful of unintended consequences.
- › Understand your audience and tailor your message to that audience.
- › Have a Plan B.

GROUP EXERCISE - ENABLING LEADERSHIP IN THE PUBLIC POLICY ARENA

Using the learnings and advice from the provocateurs, session participants engaged in an exercise to explore the elements of developing public policy for issues that are important to the engineering community. As an initial step, small group teams selected an issue from a list of priorities compiled from Summit 8 participants and from a pre-summit survey of Summit 9 participants.

PUBLIC POLICY PRIORITIES

from ECL-USA Summit 8 Discussion & Summit 9 Survey

- › Climate Change / Energy Policy / Resilience
- › Infrastructure Policy & Funding
- › Regulatory Burden
- › Transportation Policy
- › Other

- *Technology*
- *Health Care*
- *National Security*
- *Education of Policy Makers*
- *Engineering Licensure*
- *Racial Inequities in Infrastructure Policy*



After selecting their policy issue, groups were tasked with designing a public policy strategy exploring the following questions.

1. What are your objectives for intervening?
2. How will you intervene?
3. What support will you need?
4. What do you need to learn?
5. Who might be allies / adversaries?
6. What roadblocks might you anticipate?
7. Where will you start? What could be your first step?



GROUP EXERCISE - ENABLING LEADERSHIP IN THE PUBLIC POLICY ARENA CONTINUED

Each small group then reported on insights and lessons learned from their discussion. Highlights from each of the groups are summarized below.

Group 1 ***Reduction of GHG Emissions in Colorado***

- › Give yourself license to act and convene people to pursue changes to public policy.
- › Initial focus on technical solutions led to realization of need to also address behavioral aspects and recognize that not all problems are engineering problems.
- › COVID has demonstrated that behavior change is possible.

Group 2 ***Autonomous Vehicle Service for Transportation of Senior Citizens to Medical Offices***

- › Understanding of the regulatory framework and legislative process is vital.
- › Engage innovators and early adopters early. Once you convince them, they can become your advocates.
- › Generating funding in a no-tax-increase environment is difficult

Group 3 ***Infrastructure Funding (Shift to Pay-as-You-Go)***

- › It takes a lot of upfront groundwork and investment.
- › Recognize the sheer number of different stakeholders and their different needs. Challenge and balance competing needs as you move forward.
- › Identify and engage with both supporters and adversaries. Be willing to sit down, meet with, and listen to adversaries.

Group 4 ***Strengthening Public Transit (in the face of COVID and new forms of competition)***

- › Assemble a coalition by pulling together stakeholders with like interests.
- › Identify public influencers.
- › Understanding competition/adversaries.
- › Be thoughtful about generational differences.

Group 5 ***Infrastructure Policy & Funding (system maintenance and enhancement for stormwater)***

- › Raising awareness of needs through public education on consequences of lack of maintenance.
 - *Strategy for the public.*
 - *Strategy for policy-makers.*
- › Prioritize. Find an issue that translates to the passions of citizens.

Group 6 ***Racial Inequality in Infrastructure Policy***

- › Extensive non-technical aspects.
- › Community engagement is the first step-need to engage early to establish trust.
- › Use emerging social media technologies to improve community outreach.
- › Use evidence-based approaches and examples when communicating.
- › Understand the bigger picture, including the history of the issue in the community.

PUBLIC POLICY LEADERSHIP - COVID-19 PANDEMIC & BLACK LIVES MATTER

To conclude this session, participants engaged in a short discussion framed around the following question:

How might engineers engage in the public policy arena to help their communities and society move beyond the disruption caused by the coronavirus pandemic and the Black Lives Matter / Antiracism movement?

Several highlights emerged from the brief discussion.

- › The public has inherent biases about engineers.
- › Action with respect to addressing infrastructure/racial inequality is something we can do now.
- › The work of the engineering community can be improved if we HIRE the elders in communities affected by our work.
- › Some people are driven out of engineering because they don't see engineers working on the "right" problems. They see ways to have a greater impact, i.e. becoming an attorney.

As we look to important future work, this issue will need to be added to the list of issues that must be addressed for the engineering community to contribute at its highest levels to helping society address the problems of the 21st century.

Closing Comments

To close out the first Engineering Ideas Institute, participants were offered the chance to reflect on their learning over the four sessions. Several of the comments confirmed the value that is provided by the work of ECL-USA – provocative provocations, unique conversations, tackling wicked problems, and thorough and thoughtful exploration of important issues. Other comments highlighted learning that will be important in defining the future work of ECL-USA.

- We (the engineering community) need to increase our action in public policy.***
- Sense of pride that ECL is tackling racial inequality.***
- Understanding the importance of a comprehensive approach to Justice / Equity / Diversity / Inclusivity by the engineering community.***
- Incorporating self-reflection into the practice of engineering.***
- Building competence and ethical behavior to build trust from the public.***

One participant offered that they were inspired that participants want to take action. The challenge for the stakeholders of ECL-USA is to continue to inspire and support meaningful actions that advance the future of engineering.