

# Education & Science Innovation (ESI) Subcommittee Membership and Priority Updating

## Members:

- Jade Morton, Chair
- Terry Moore, 1st Vice-Chair
- Dorota Grejner-Brzezinska, 2nd Vice-Chair
- Renato Filjar, James Geringer, Tim Murphy, Russ Shields, Todd Walter

Focus: US PNT workforce education and training

- Assess current state and future needs
- Make actionable recommendations

# Prior Meeting Findings, AB Feedback, Actions Taken

- **Prior Findings:**

- Other countries are gaining on the U.S. or are already ahead in PNT R&D&E investment
- Current US PNT research, education, and training may not meet industry need

- **Update Since Last PNT AB Meeting:**

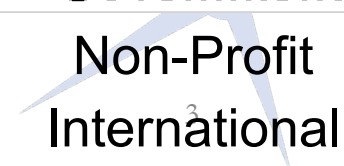
- Held a working group meeting with 21 academia, industry, government agencies, non-profit, and international attendees on September 12, 2023 in Denver to gather inputs from the community on two pressing questions:
  - How to build a base of evidence on the state of, and perceived needs for, PNT research, education and training in the USA; form comparisons with other leading countries; grow awareness of the education, skills and training issues?
  - How to create the next generation work force to meet industry needs?



1<sup>st</sup>  
WG  
Meeting  
Attendees

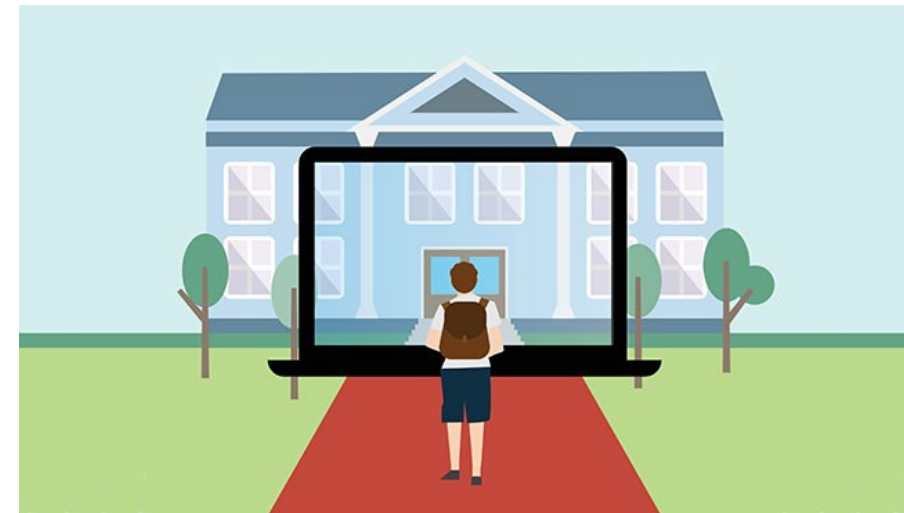
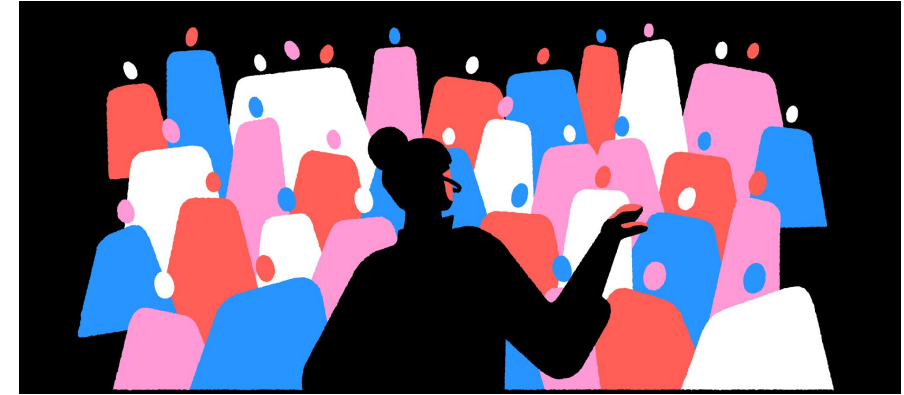
Invited: 51  
Attended: 21

Jade Morton	University of Colorado Boulder	Academia
Terry Moore	University of Nottingham, UK	Academia
Dorota Brzezinska	The Ohio State University	Academia
Mike Brassch	Ohio University	Academia
Mark Psiaki	Virginia Tech	Academia
Sherman Lo	Stanford University	Academia
Todd Humphreys	UT Austin	Academia
Zak Kassas	OSU	Academia
Paul McBumey	OneNav	Industry
Tyler Reed	Xona	Industry
Gary McGraw	Collins	Industry
Christopher Hegarty	Mitre	Industry
Tim Murphy	Boeing	Industry
Andrey Soloviev	QNav	Industry
Jacob Campbell	AFRL	Government
Nikki Markiel	NGA	Government
Ryan Gamer	NGA	Government
Joanna Hinks	AFRL	Government
Irfan Azeem	NOAA	Government
Dave Mencin	EarthScope	Non-Profit
Sharafat Gadimova.	United Nation	International



# Working Group Meeting Feedback Summary

1. Need to voice the concern to **multiple agencies**, push for a **commissioned study** to gather quantitative evidence on the state of PNT research, education, and training, in comparison with other leading countries.
2. **Form a PNT partnership** that leverages resources from multiple institutions to offer a potential means to provide access to PNT education/training to a broader student body.



# Updates Since the WG Meeting

1. **NASA** and **NGA** are discussing **collective efforts** to address **geodetic** workforce needs, and involving **NASEM** on a parallel study.
2. **GEO-ESCON**, a partnership between **OSU** and the **NGA** to develop a **multi-institution academic consortium** to address **NGA's need** to develop/enhance current **geomatics** workforce expertise/capabilities.
  - Funded \$28.5 million for a 3-year base period, option for 4 additional 4 years.
  - Brings together academia, government agencies, and industry experts to drive advancements in geomatics and related disciplines.

**Need actions beyond geodesy/geomatics**

**NSF, DOT, DoD, industry, non-profit, broader university bodies**

# Recommendations

1. ExCom to support NASA and NGA work with NASEM on a study to gather the evidence on the state of PNT research, education, and training (RET), in comparison with related international activities, and develop a road map for future PNT skilled work force.
2. ExCom to direct the establishment and operation of a PNT partnership among multiple universities to offer diverse PNT-related curricula to the broader education communities, and to foster collaborative effort with industry and government agencies to amplify the impact and facilitate advancement from basic research to applications.