The “Push” and “Pull” of Innovation

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USACE Innovation Summit
September 17, 2019
What is innovation?

**Problem**

Solving a problem in a new way – faster, smarter, better
Example: Forecasting/Hindcasting Hurricane Inundation

- **Solutions**
  - Slow accurate models
  - Fast inaccurate models

- **Complicating factors**
  - Inaccurate forecast inputs
  - High risk to life and safety

SPEED + ACCURACY
Example: Forecasting/Hindcasting Hurricane Inundation

- Pre-calculated inundation
- Surrogate modeling

Basis hurricane scenarios
New hurricane scenario
What are the major obstacles to innovation?

- Barriers to integrate into practice
- Politics ~ status quo (turf & advantage)
- Lack of resources (time & money)
- Risk
- SHORT-TERM THINKING

What are the key factors that facilitate innovation?

- Collaboration – bringing together diverse skill sets
- Thinking beyond step-wise advancements
- Involving stakeholders in the entire process
- Trust & commitment
How can we measure innovation?

- Traditional measures: Time, Money, Quality, Safety
- Non-traditional: Culture Changes, New Partnerships, Trust
- Long-term return on investment

How can R&D-push and user-pull be coordinated?

- Relationship with stakeholders – trust, communication
- Sharing the enterprise – credit, benefits, passion
- Engaging and collaborating
What are the key challenges and opportunities for USACE?

Opportunities:
- Broaden collaboration (stakeholders and partners)
- Support and reward innovation
- Continuous learning & networking

Challenges:
- Funding
- Risk tolerance
- Bureaucracy
- Transitioning innovations to practice
Push-Pull

key – strategy to work together…