

NOAA's Approach to Transitioning Research to Practice

Highlighting Social & Behavioral Science Transitions

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What does it mean to *transition* research to practice?

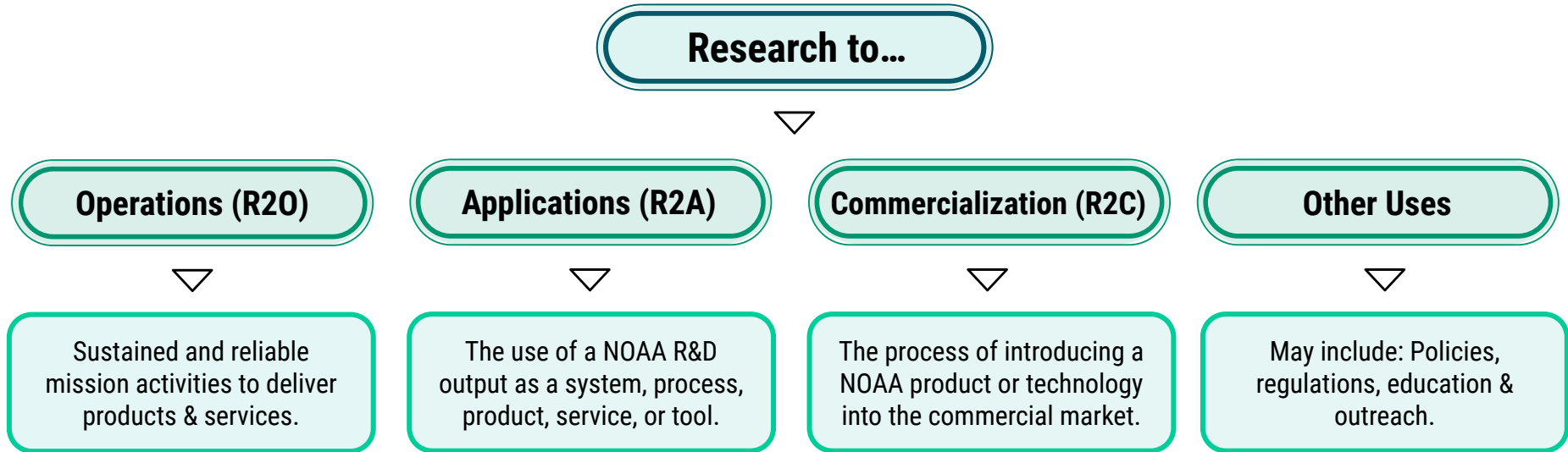
*Transitioning research to practice involves taking insights, findings, and innovations **discovered** through research, **translating** findings into actionable recommendations, and **implementing** them in practical contexts to bring about tangible benefits and improvements.*

We refer to this as the Research to Applications (R2X) process in NOAA.



What is NOAA's Research-to-Applications (R2X) Process?

Overview: *The transfer of a research and development (R&D) output to an operation, application, commercial product or service, or other uses.* – [NAO 216-105B](#)



What does it mean to *transition* research to practice at NOAA?

Coordination between researchers & practitioners: Transitioning research requires coordination, planning, and sharing of knowledge and other research outputs from one group to another and vice versa.

Using research outputs: A successful transition is marked by more than just transferring a *thing* to practitioners; it requires ensuring it is integrated and used.



Why is *transitioning* research important for NOAA?



Meeting NOAA's Mission: NOAA's ability to meet its mission through the delivery of continually improved products and services relies on the conversion of the best available R&D into operation and application products.

Exchange of Operational and R&D Needs: This process creates exciting collaboration opportunities between researchers and practitioners, enabling the sharing of operational and R&D needs/constraints, thereby amplifying the impact of the research.

How do we *transition* research to practice at NOAA?

Overview: *The transition process is about collaborating and building trusted relationships between researchers and practitioners. An outcome of that collaboration is a transition plan.*



**Build Trusted Relationships
between Researchers &
Practitioners Early**



**Establish Collaboration
Roles, Responsibilities,
and Expectations**



**Co-Develop a Transition Plan to Outline a Feasible
Transition Pathway**

Identify Research Outputs

Knowledge



For example, researchers may provide research-guided recommendations that meteorologists can use to better communicate risk information.

Methodology



For example, researchers may provide a methodology or process that the operational community can use to better understand their respective audiences.

Data



For example, researchers may provide SBES data about weather risk perceptions that will allow users to track how perceptions change through time.

Technology



For example, researchers may aim to improve, update, or create new technologies to meet the needs of the operational meteorology community.

Translating Research Outputs for *Possible* Transition

Changing a Policy, Product, or Service

E.g., Collecting general public end user data and offering recommendations to make a graphical product more usable.

Understanding User Needs

E.g., Interviewing emergency managers to learn if there are service gaps in the severe weather products that NWS currently offers.

Creating a New Technology

E.g., Developing a new interactive dashboard to depict severe weather vulnerability data for WFO CWAs.

Enhancing an Existing Technology

E.g., Collecting and integrating operational forecaster needs to improve a software's interface.



Creating a New Methodology

E.g., Developing a new methodology to systematically collect behavioral data from the general public after a severe weather event.

Collecting Vulnerability Data from Partners

E.g., Developing a method that allows meteorologists to systematic collect data about local vulnerabilities from partners.

Measuring Impact & Change

E.g., Providing SBES data before and after a product change that allows NWS to measure impact and/or change.

Measuring Mission

E.g., Providing baseline and longitudinal data to NWS that allow them to explore metrics of success and measure their mission.

Social Science Transitions Pt. 1 - Knowledge Transfer

Project Goal: Improve the display and delivery of impact-based winter storm forecast information through the WPC's Winter Storm Severity Index (WSSI).

Focus Groups

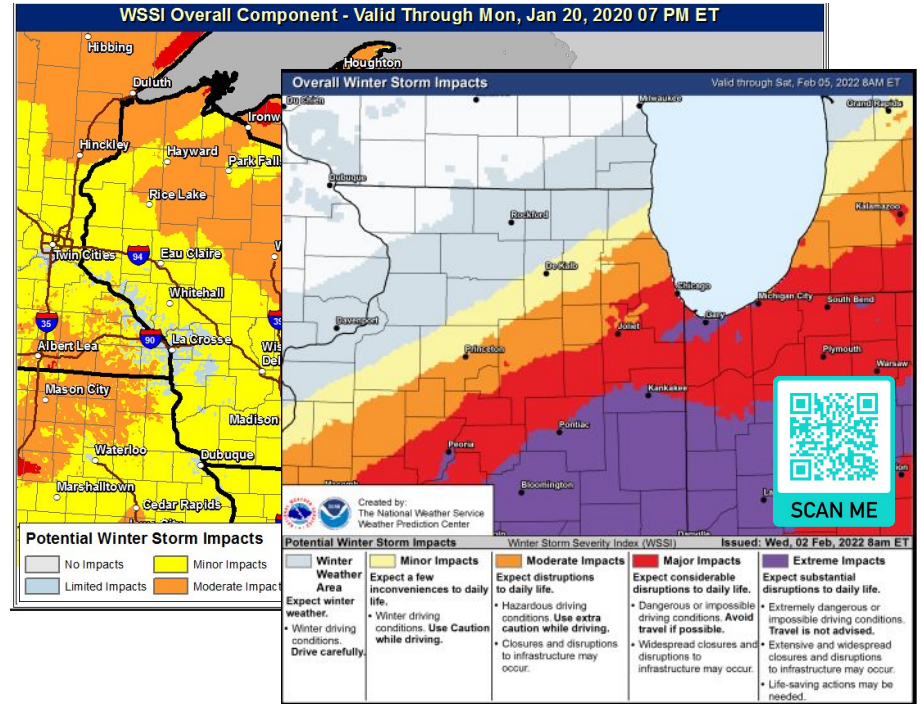
Surveys

Core Partners



*Funded: Nurture Nature Center
(Hogan Carr et al. 2022)*

*Funded By: WPO Joint
Technology Transfer Initiative*



Social Science Transitions Pt. 2 - Knowledge, Data, & Tech Transfer

Project Goal: Collect longitudinal data on how the public receives, comprehends, and responds to severe, tropical, and winter weather forecasts and warnings. It also includes an interactive resource (known as the WxDashboard) for viewing the survey data.

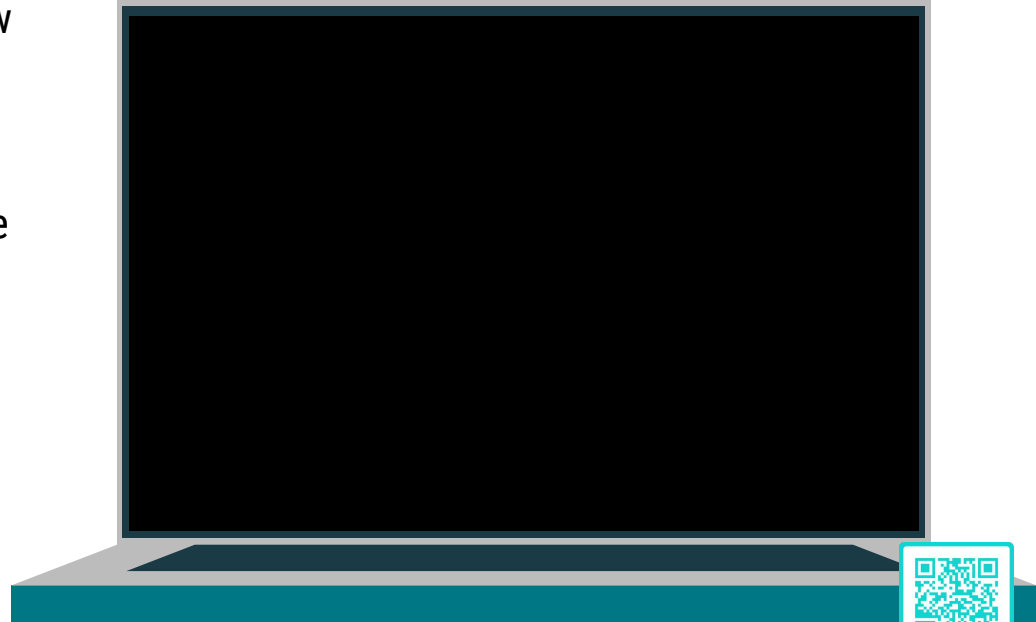
Surveys

Testbed

Public



Funded: University of Oklahoma (Ripberger et al. 2021)
Funded By: WPO Joint Technology Transfer Initiative

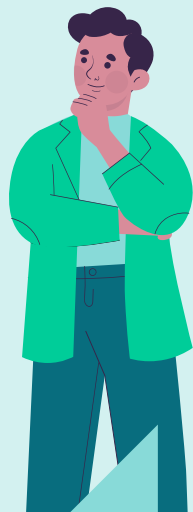


<https://crcm.shinyapps.io/WxDash/>

Challenges When Transitioning Social Science Research

WPO Social and Behavioral Science R2O Workshop Findings (2019)

Without archived social science data, new social science projects have no way of knowing whether they are “successful” at improving capabilities that affect people.



People who wrote transition plans for the first time described the process as **complex, rigorous, and jarring.**



Transition Plans Must Be able to Change as the Project Evolves



Overemphasis on Tech Transfer vs. Knowledge Transfer



Hard to Find Time to Collaborate with Operational Partners

Translating Workshop Findings into a More Human-Centered Transition Process



Make the transition plan development process more collaborative.

Make transition plan development more iterative, flexible, & agile.

Optimize transition plan development to reduce burden for all.

Explore transition opportunities both inside and outside NOAA.

How do we *transition* research to practitioners outside of NOAA?



How do we reach practitioners in the Weather Enterprise to share social science research findings with them?



What format should social science research findings be in to best assist with transitioning it to practitioners (e.g, report, interactive dashboard, presentation, etc.)?



How might we better learn when practitioners use NOAA-funded research findings in practice and experience benefits? This would help us measure broader research impact.

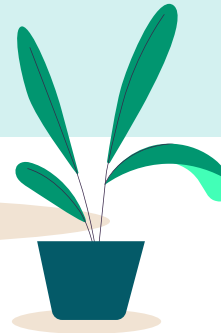
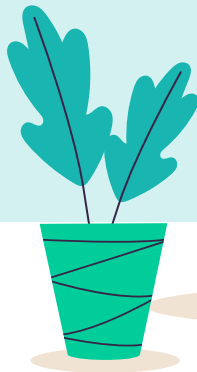


Thank You! Any Questions?

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