

# ***2017 Online Conference***

# **Knowledge Translation Outcome Measurement**

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Disability and Rehabilitation Research (KTDRR)



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# Knowledge Translation for Technology Transfer: Tips and Tools for Communicating with Key Stakeholders

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# Outline

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1. Introduction
2. Key Stakeholders
3. Overarching Frameworks
4. Barriers to Development and Transfer
5. Tools for Overcoming Barriers
6. Milestones and Metrics
7. Summary
8. Q&A

# Introduction

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## **About me:**

- Co PI at KT4TT; Editor of ATOB

## **Center background:**

- Center on KT4TT- since 2008
- Formerly the Tech Transfer RERC- 1993-2008

## **Audience:**

- This presentation is geared towards NIDILRR investigators engaged in development projects

# What is the purpose of this talk?

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- **NIDILRR's mission<sup>1</sup>**
- **“New knowledge”**
- **Moving knowledge from the lab to the market- technology transfer.**

# Key Stakeholders

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- **NIDILRR Staff**
- **Peer Reviewers**
- **Product Buyers/Users**
- **Technology Transfer Office**
- **Industry Partners/ Investors**

## NIDILRR Stages of Development (SoD)<sup>2</sup>

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- **Proof of Concept-** key technical challenges are resolved. Stage results establish that the product is *feasible*.
- **Proof of Product-** fully-integrated and working *prototype* meeting critical technical requirements is created. Stage results establish that the fully-integrated product is *realizable*.
- **Proof of Adoption-** product is substantially adopted by target population and used for intended purpose. Stage results establish that the product is *beneficial*.

# NIDILRR Stages of Development- continued

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**New peer review criteria related to development projects:** The applicant identifies and justifies the stage(s) of development for the proposed project; and activities associated with each stage.<sup>3</sup>

## **Stages of Development Resources:**

- [NIDILRR Stages of Development Overview \(pdf\)](#)
- [Stages of Research and Development \(ppt\)](#)
- [Stages of Development \(ppt\)](#)



# Need to Knowledge Models (NtK)- Overview<sup>4</sup>

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- What are the NtK Models?
- Four variants
  - Commercial Products
  - Industry Standards/ Clinical Guidelines
  - Laboratory Instruments/ Fabrication Tools
  - Freeware Applications/ DIY Instructions

# Need to Knowledge Models- Details

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- Supported by best practices
- Stage/gate design with step-by-step details
- Tools, supporting evidence, and case examples
- All variants begin with Stage 1: Problem definition; Stage 2: Scoping the solution; Stage 3: Assessing need for research
- Models diverge after Stage 3
- All include guidance on using KT for tech transfer

# Stages of Commercial Devices NtK Model

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1: Define problem and solution

2: Scoping

3: Scientific research

4: Begin development

5: Build and test prototype

6: Beta testing

7: Production planning

8: Launch

9: Post-launch review

## Aligning The Frameworks

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SoD: Proof of Concept = Feasible →

NtK: Stages 1-5

SoD: Proof of Product = Realizable →

NtK: Stages 5-7

SoD: Proof of Adoption = Beneficial →

NtK: Stages 8-9

# SoD and NtK Takeaways

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- The SoD and NtK Models can be used for:
  - Structuring and planning development project activities
  - Identifying appropriate milestones
  - Establishing performance metrics
  - Communicating with key stakeholders!

# Barriers to Development and Transfer<sup>5</sup>

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- Insufficient allocation of resources
- Lack of preliminary assessment
- Failure to build business case
- Lack of intellectual property protection
- Inadequate shopping of a technology

# Overcoming Barriers: Tips and Tools

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Insufficient allocation of resources → **Adequate planning (NtK Models)**

Lack of preliminary assessment → **Evaluate market and business potential early and often (Tech Transfer Planning Template (TTPT) & Industry Profiles)**

Failure to build business case → **Investigate the industry and market (Primary market research, TTPT & Industry Profiles)**

## Overcoming Barriers: Tips and Tools (ct.)

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Lack of intellectual property protection → **Talk with tech transfer office early in the process to establish expectations and plans (SoD, NtK, TTPT)**

Inadequate shopping of a technology → **Develop commercialization package (NtK, TTPT, & Industry Profiles)**



# Tech Transfer Planning Template (TTPT)

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The TTPT is an online tool for planning and describing development projects

- Asks simple questions
- Provides resources
- Output reports organize your responses
  - Commercialization plans
  - Technology Transfer plans
  - Summary reports

# TTPT Resources

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- **Links to External Resources**
  - Disability statistics websites
  - USPTO
  - Company information databases
- **Industry Profiles**
  - Cognition; Vision; Educational Technology; Wheeled Mobility
- **Examples**
  - Marketing report
  - Phase II SBIR proposal

# TTPT Resources

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- **Business, Engineering & Universal Design Tools**
  - Descriptions of 50+ tools for development and transfer
- **Guides & Handbooks**
  - [Intellectual Property Protection](#)
  - [Chronological Guide for Inventors](#)
  - [Primary Market Research](#)
  - [Evaluation Resource Guide](#)
  - Conducting Competing Product Searches (coming soon)

# Tech Transfer Plan Output Report

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- Structured to align user input with Need to Knowledge Model steps.
- Useful for developing grant proposals and TT plans (RERC requirement).
- Helps the user to take stock of what activities are completed, planned, or missing.

# SBIR Output Report

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- Structured to align user input with SBIR Phase II Commercialization Plan requirements.
- Useful for developing grant proposals and commercialization plans for communicating with partners and investors.

# Summary Output Report

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- Structured in paragraph form using only high-level information.
- Useful for fleshing out development project ideas, beginning to craft narratives for proposals, and to pique the interest of potential project partners.

# Milestones and Metrics- Concept is Feasible

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- **Completion of NtK Model Stages 1 - 4 may demonstrate Proof of Concept.**
  - i.e. Scoping activities showed that there is a viable market. Research on system components led to a determination that the invention would be technically feasible. User feedback indicates interest.
  - Metrics might include: Achievement of proposed technical objectives, identification of potentially viable path to market, and/or demonstration of business and market feasibility.

# Milestones and Metrics- Product is Realizable

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- **Completion of NtK Model Stages 4 - 6 may demonstrate Proof of Product.**
  - i.e. Development activities may have resulted in the generation of an invention that is unique, and feasible to produce and sell. Interest may have been expressed by a potential manufacturing partner.
  - Metrics might include: Integrated working prototype, demonstrated consumer interest, commitment from transfer partner, and/or Intellectual property protection or transfer.



# Milestones and Metrics- Product is Beneficial

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- **Completion of NtK Model Stages 8 and 9 may demonstrate Proof of Adoption.**
  - i.e. Product has been launched. Monitoring has commenced. Sales and marketing data can provide information on purchase & use as well as problems.
  - Metrics might include: purchases/downloads, usage/abandonment, comparison with alternatives, and/or satisfaction statistics.<sup>2, 6</sup>

# Communicating with NIDILRR and Peer Reviewers: Pre-Award

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- Use the SoD and NtK Models' stages/gates & detailed steps as a framework to orient proposal readers to the current situation and plans for the project period.
- Compare project plans to NtK stages and steps to ensure that all critical elements are included, and needed resources are allocated.
- Ensure that the proposal refers to an appropriate SoD for each development project.

## Communicating with NIDILRR, Team Members, and Partners: Post-Award

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- Use the NtK as a checklist for project activities, ticking off each step as it is completed.
- Demonstrate forward progress through the completion of each SoD and NtK stage. Share outputs with others, using guidance from the NtK's KT Tables.

# Communicating with Potential Buyers/Users

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- Use the NtK to identify opportunities to obtain user input throughout the planning and development processes.
- The resulting information can be invaluable for:
  - Ensuring your proposed solution will meet consumers' needs
  - Identifying appropriate functions/features
  - Developing your business case!

### Technology Transfer Office (TTO)

- Use NtK steps to identify gaps in expertise that the TTO may be able to fill.
- Share results from NtK Stage 2 scoping activities, and Stage 4 business case to orient the TTO in regards to the invention's market and competition.

### Industry Partners/ Investors

- Use NtK to demonstrate where an invention lies in the process, and where additional support is needed.
- Use TTPT output reports to communicate project and invention/ potential product details.

# Resources

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- Resource Guide to Evaluation in the Context of New Product Development- methods, case studies, evaluation instruments and resources.
- Need to Knowledge Models (including KT tables)
- Technology Transfer Planning Template
- Industry Profiles- cognition, vision, education technology, wheeled mobility
- Primary Market Research Training Module- focus groups and surveys
- Chronological Guide for Inventors-step by step guide

# References

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