

Northwestern

T32 Evaluation Project

RESEARCH

THE GRADUATE SCHOOL
TRAINING GRANT SUPPORT OFFICE

SEARLE CENTER
FOR ADVANCING LEARNING AND TEACHING

Project Team



NIH 2T32GM008449-26

National Institutes of Health

Northwestern |  Chemistry of Life Processes Institute

Northwestern

RESEARCH

THE GRADUATE SCHOOL
TRAINING GRANT SUPPORT OFFICE

SEARLE CENTER
FOR ADVANCING LEARNING AND TEACHING

T32 Evaluation Project

Goal: to create, develop, implement and test evaluation capacity-building training and structures for NIH T32 predoctoral training programs at Northwestern, with the long-term objective of initiating campus-wide improvement in evaluation and assessment of graduate training in biomedical research.

- Specific aims:
 1. Develop evaluation skills of training grant directors and key personnel; 3 workshops being developed
 2. Develop, test and disseminate policies, procedures and standards for training program evaluation;
 3. Create a community of excellence in graduate training and evaluation.

Next Workshops: Winter Workshop (March 2021)-Assessment Approaches

Spring workshops (May 2021)-Implementation and Program Improvement

Better outcomes and greater efficiency:

Module One: Introduction to Training Program Evaluation

Bennett Goldberg

Director, Research on Higher Education, Training and Evaluation
Professor of Physics and Astronomy

Denise Drane

Senior Director for Research & Evaluation
Searle Center for Advancing Learning and Teaching
Office of Research in Higher Education, Training and Evaluation

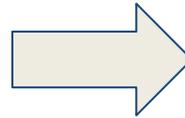
Northwestern University

NIH NIGMS 2018 paradigm shift from *Environment to Trainee*



Competencies
Transferable Skills
Research
Communications
Career Pathways
Mentor Training
RCR
Rigor & Reproducibility

Goal:
To create a successful learning
environment

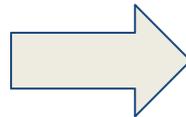


Goal:
Trainees acquire and demonstrate
skills and competencies

Environment to Trainee - Impact on Program Evaluation

- Focus on whether environment and associated activities were created by the program
- Examine elements of environment:
 - mentor and trainee characteristics
 - funding record
 - trainee outcomes related to environment
- Focus on trainee learning
- Examine elements of learning and skill attainment:
 - direct measures of learning
 - trainee cognitive, attitudinal and behavioral outcomes aligned with goals and activities

Goal: create a successful learning environment



Goal: Trainees acquire and demonstrate skills and competencies

Scope of Workshop

- **Slides and discussion:** Brief review of evaluation, requirements, and review process
- **Develop your content:** Reflect, interact and work - individually and together
- **Follow up:** Share recording, slides, references; available for follow up questions or conversations.

Learning goals for today

- ✓ • describe evaluation as a data utilization process like other scientific approaches to answering questions.
- ✓ • describe the new NIGMS requirements; how they are applied and scored in review
 - reflect on your hesitations in applying and utilizing evaluation and assessment
 - develop skills to define trainee learning goals, align with activities and assessments and plan learning from feedback

Evaluation is Learning about Your Program

- Have you achieved your goals?
- Can your program be improved?

Summative & Formative Evaluation

Summative:

To what extent have the goals of the program and specific goals for trainees been achieved?

Short- and long-term outcomes

Formative:

How can your program be improved?

How well do your activities and processes work?

Evaluation is tailored to each specific program - because the goals are unique!

What do you want to learn from your trainees?

What have you learned? What did you change?

Whiteboard (Padlet): <https://tinyurl.com/NU-T32-Dec2020-1>

1. What do you want to learn from your trainees? (Can be something you are really curious about a program or trainee learning goal)
2. What have you learned about your program and your trainees from evaluation?
3. What did you change because of feedback from your trainees?

2 minutes to think; 3-5 minutes to write

Group discussion

Three Key Elements of Training Programs around evaluation, and program & trainee goals

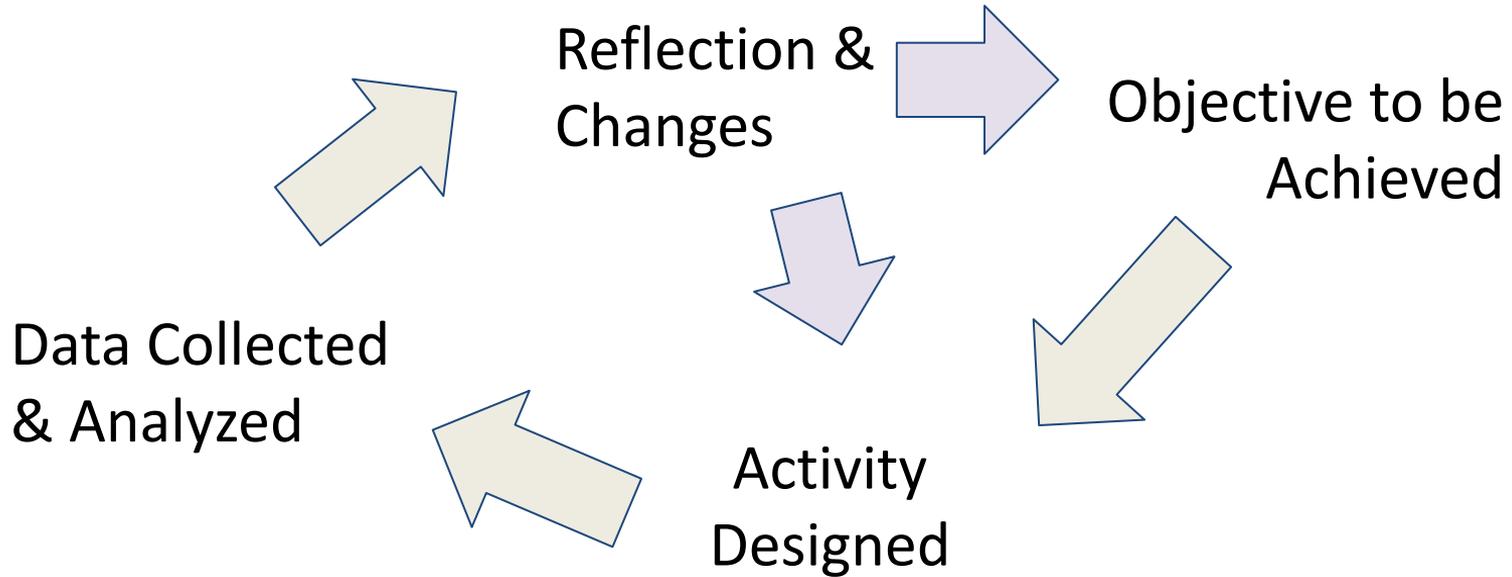
- **Trainee-centered:** Trainee learning goals and skills are core to the program and information is collected from assessing trainee outcomes across a broad array of research, professional, interpersonal skills
- **Alignment:** Program has high impact because goals, activities, outcomes and assessments are aligned, each bi-directionally supports the other
- **Integrated Improvement:** Program continuously learns and advances because information drives change through a program-integrated cycle of questioning, discovering, learning, and revising.

**Scored
criteria!**

Key Program Evaluation & Trainee Assessment Requirements and Metrics

- Is there a **well thought out evaluation or assessment process to determine whether the overall program is effective in meeting its training mission and objectives....**
- Are the **mission and objectives for the training program specific and measurable and in alignment** with the goals...
- Is there **evidence that the program has been and/or will be responsive to internal and external critiques and evaluations?**
- Does the application **provide examples of how each trainee's progress will be guided and how the trainee's performance and skills development will be monitored and evaluated?**
- Does the application describe an **effective strategy and administrative structure to oversee and monitor the program...**
- Are there **resources and the expertise for evaluating the training outcomes of the program?**

Cycles of improvement through evaluation feedback loops



Hesitancies to Doing Evaluation

Breakout #1: What are the barriers you face to doing program evaluation?

Sheet here: <https://tinyurl.com/NU-T32-Dec2020-2>

Group by program/division/area

Next steps: Trainee goals and assessments

- ✓ • Develop awareness and understanding of the **basic principles of program evaluation**
- ✓ • Identify **key features of new NIGMS FOA** around program evaluation and trainee assessment
- ✓ • Discuss the **value of program evaluation** for improvement, efficiency and outcomes
 - Clarify and distinguish **T32 program and trainee goals** and outcomes
 - Link and **align goals, activities and assessments**

Review: Program versus Trainee Goals

- **Program goals define what the program will deliver**
e.g. courses, seminars, workshops, RIP meetings, research, mentoring, etc.
- **Trainee goals define what the trainees will learn;**
e.g. research skills, career and professional awareness, interpersonal competencies

Trainee Specific Goals

Trainee Goal	Evaluation
1. Trainees will be able to apply a range of techniques such as motivational interviewing to enhance the design of their digital mental health applications.	
2. Trainees will develop skills in MATLAB to apply to the study of biological processes.	
3. Trainees will become more open to conducting interdisciplinary research.	
4. Trainees will develop oral presentation skills.	
5. Trainees will expand their professional network.	

Write trainee learning goals for your program (or refine ones you already have)

Breakout #2: Develop your trainee learning goals

Make them (or test whether they are already) SMART = **S**pecific, **M**easurable, **A**ttainable, **R**esourced, and **T**ime-bound

Google docs here: <https://tinyurl.com/NU-T32-Dec2020-3>

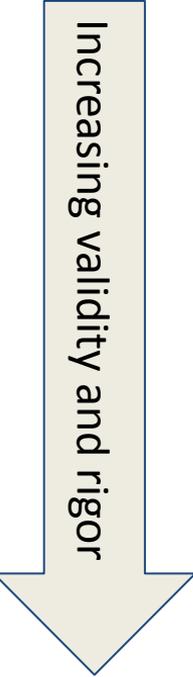
Group by program & program area

Go around and describe, for each program in the room, the genesis of a learning goal;

Assessment of Trainee Specific Goals

Trainee Goal	Evaluation
Trainees will be able to apply a range of techniques such as motivational interviewing to enhance the design of their digital mental health applications.	Trainee self-rating in a survey Rate your proficiency in the following areas: on a scale from 0=no to 4=high Designing questions for motivational interviews Conducting motivational interviews
Trainees will become more open to conducting interdisciplinary research.	Validated survey tool Cross-disciplinary Collaborative Activities Scale (Hall et al, 2008)
Trainees will develop skills in MATLAB to apply to the study of biological processes.	Trainee provides evidence from a course assignment or work product Trainee annotates sections of a MATLAB assignment to show application of a skills.
Trainees will develop oral presentation skills.	Assessment Rubric Mentor and program preceptors assess research in progress meeting using an assessment rubric
Trainees will expand their professional network.	Social Network Analysis

Levels of Evidence – Trainee Assessments



Increasing validity and rigor

- Self-report about skills/knowledge on a survey that has not been validated
- Self-report about skills/knowledge on validated survey instrument
- Trainee provides annotated examples of work products
- Third party assesses work products using an assessment rubric, or conducts oral examination

Take home messages...

- Important questions are worth the effort to answer
- Really critical to be able to step back and approach what we do analytically
- Let go of ‘we’ve always done it that way...’
- Identify implicit assumptions
- Recognize when different kinds of data may be needed – just like in research, evidence-based clinical practice, and improving teaching approaches to best promote learning

Developing Cycles of Data-Driven Improvement

Whiteboard (padlet) here:

<https://tinyurl.com/NU-T32-Dec2020-4>

Respond to prompts in four columns:

1. Which stakeholders should be in the room?
2. How do you decide what to change?
3. How do you implement the changes?
4. How often should your program meet to examine feedback?