

Neuroscience of Learning and Student Achievement

Description

This badge recognizes faculty who apply learning science principles to improve student achievement, retention, clarity, motivation, and inclusive learning design. To earn this badge, the earner must complete 3 of the 5 workshops in this pathway at the Competent or Accomplished level. The earner must also complete 2 additional CTL workshops from outside this pathway and submit a cross-connection reflection for each one. Each cross-connection reflection must explain how the outside workshop expands, strengthens, or applies the primary pathway theme of neuroscience of learning and student achievement in relation to student success, inclusive and effective teaching, and interdisciplinary instructional thinking. Badge completion requires CTL review of all selected workshop evidence and both cross-connection reflections.

Rubric contents

1. Workshop 1: Evidence-Based Teaching for Learning and Retention
2. Workshop 2: Inclusive Learning Design and Neurodiversity Support
3. Workshop 3: Metacognition and Student Self-Regulation
4. Workshop 4: Cognitive Load, Clarity, and Course Navigation
5. Workshop 5: Motivation, Engagement, and Belonging in Learning
6. Additional Workshop of Choice 1 Cross-Pathway Integration Requirement
7. Additional Workshop of Choice 2 Cross-Pathway Integration Requirement

Workshop 1: Evidence-Based Teaching for Learning and Retention

Definition

Applies cognitive science principles to improve student persistence, retention, and achievement.

Alignment and evidence

Alignment to AMP, Strategic Plan, and NACE	Deliverable, example assessment, and activities
AMP: Goal 3, student-centered teaching, focused faculty development, effective learning environments. Strategic Plan: Goal 3, educational effectiveness and retention. NACE: Critical Thinking, Career + Self-Development, Professionalism.	Deliverable: Evidence-based learning strategy integrated into a course. Example assessment/activity: Retrieval practice, spaced learning, low-stakes quiz, formative assessment, memory check, or practice activity.

Performance levels

Developing	Competent	Accomplished
Identifies a learning science principle but provides limited evidence of how it will be applied in a course.	Implements one evidence-based learning strategy and explains how it supports learning, retention, or achievement.	Reviews student engagement, performance, or feedback evidence, revises instruction, and shares the strategy as a model.

Workshop 2: Inclusive Learning Design and Neurodiversity Support

Definition

Designs accessible and flexible learning environments that support all learners.

Alignment and evidence

Alignment to AMP, Strategic Plan, and NACE	Deliverable, example assessment, and activities
AMP: Goal 3, reduced access and success disparities, inclusive learning, effective learning environments. Strategic Plan: Goal 2, equitable access and belonging; Goal 3, educational effectiveness. NACE: Equity + Inclusion, Critical Thinking, Technology.	Deliverable: Revised course module, activity, or learning sequence using inclusive design principles. Example assessment/activity: Faculty add scaffolds, clearer routines, accessible materials, flexible participation options, or predictable learning structures.

Performance levels

Developing	Competent	Accomplished
Identifies barriers for neurodiverse learners but provides limited redesign evidence.	Revises one course module, activity, or assignment to better support neurodiverse learners through inclusive design.	Evaluates accessibility, navigation, and student engagement, then refines and shares the revised design.

Workshop 3: Metacognition and Student Self-Regulation

Definition

Teaches students strategies for reflection, self-monitoring, academic planning, and resilience.

Alignment and evidence

Alignment to AMP, Strategic Plan, and NACE	Deliverable, example assessment, and activities
AMP: Goal 3, student-centered teaching and learning improvement. Strategic Plan: Goal 3, retention, progression, and effective learning environments. NACE: Career + Self-Development, Critical Thinking, Communication.	Deliverable: Student reflection, self-assessment, or progress-monitoring tool. Example assessment/activity: Exam wrapper, learning reflection, self-assessment checklist, goal-setting plan, or study strategy reflection.

Performance levels

Developing	Competent	Accomplished
Describes the importance of metacognition but does not yet provide a structured student self-regulation activity.	Incorporates one student reflection, self-assessment, or progress-monitoring activity into a course.	Uses student reflection or progress evidence to adjust instruction and strengthen student self-regulation across the course.

Workshop 4: Cognitive Load, Clarity, and Course Navigation

Definition

Structures courses to improve comprehension, reduce barriers, and strengthen learning pathways.

Alignment and evidence

Alignment to AMP, Strategic Plan, and NACE	Deliverable, example assessment, and activities
AMP: Goal 3, effective learning environment for all students, student-centered teaching. Strategic Plan: Goal 3, educational effectiveness and retention. NACE: Communication, Critical Thinking, Technology, Professionalism.	Deliverable: Revised course unit, assignment, or Blackboard module. Example assessment/activity: Simplified assignment instructions, weekly roadmap, reorganized module, clearer sequencing, checklist, or navigation guide.

Performance levels

Developing	Competent	Accomplished
Identifies areas where students may experience confusion but does not yet revise the course element.	Simplifies and reorganizes one course unit, assignment, or Blackboard module to improve clarity, sequencing, and navigation.	Collects student feedback or performance evidence, refines the redesign, and creates a reusable clarity or navigation template.

Workshop 5: Motivation, Engagement, and Belonging in Learning

Definition

Creates learning environments that foster confidence, participation, and student connection to learning.

Alignment and evidence

Alignment to AMP, Strategic Plan, and NACE	Deliverable, example assessment, and activities
AMP: Goal 3, student engagement, student-centered teaching, retention. Strategic Plan: Goal 2, belonging; Goal 3, retention and effective learning environments. NACE: Equity + Inclusion, Communication, Career + Self-Development.	Deliverable: Engagement or belonging-centered teaching strategy. Example assessment/activity: Belonging cues, structured participation strategy, early check-in, student choice activity, confidence-building feedback, or relevance statement.

Performance levels

Developing	Competent	Accomplished
Describes motivation or belonging strategies but does not yet connect them to an implemented course practice.	Implements one strategy designed to increase student participation, motivation, belonging, or engagement and reflects on outcomes.	Gathers student feedback or participation data, revises the strategy, and shares it as a model for student engagement.

Additional Workshop of Choice 1 Cross-Pathway Integration Requirement

Alignment and evidence

Alignment to AMP, Strategic Plan, and NACE	Deliverable, example assessment, and activities
AMP: Aligned to neuroscience pathway theme plus selected outside workshop. Strategic Plan: Goal 2 or Goal 3 depending on selected workshop. NACE: Selected based on outside workshop focus.	Deliverable: Cross-connection reflection. Required reflection focus: Explain how the outside workshop strengthens learning science, student achievement, inclusive design, or student engagement.

Performance levels

Developing	Competent	Accomplished
Summarizes the outside workshop but makes only a general connection to learning science or student achievement.	Clearly explains how the outside workshop supports the neuroscience pathway and identifies one instructional application.	Integrates the outside workshop learning into a course redesign, learning strategy, or action plan and explains expected or observed student impact.

Additional Workshop of Choice 2 Cross-Pathway Integration Requirement

Alignment and evidence

Alignment to AMP, Strategic Plan, and NACE	Deliverable, example assessment, and activities
AMP: Aligned to neuroscience pathway theme plus selected outside workshop. Strategic Plan: Goal 2 or Goal 3 depending on selected workshop. NACE: Selected based on outside workshop focus.	Deliverable: Cross-connection reflection. Required reflection focus: Explain how the outside workshop contributes to learning, retention, clarity, access, belonging, or self-regulation.

Performance levels

Developing	Competent	Accomplished
Reflection identifies a connection but lacks specificity, instructional relevance, or student success application.	Reflection clearly connects the outside workshop to learning science, inclusive practice, and student achievement.	Reflection shows interdisciplinary integration and identifies how the outside learning will improve a learning science-based teaching product.