

# 2024 Coding Fellows Workshop

**What:** Coding Fellows workshop on teaching coding with reformed pedagogy.

**When:** Jan 15, Jan 17, Jan 24, Feb 5, Feb 7, Feb 12, Feb 14, Feb 19

**Deliverable:** Develop and submit an implementation plan for using coding with your students or other teachers (see below).

## Participants:

1. Carol Burns
2. Chris DiMenna
3. Chris Hatten
4. Danelix Cordero-Rosario
5. Emily Gwin
6. Emily Rosen
7. Joy Breman
8. Kayla Mitchell
9. Maajida Murdock
10. Mark Hermano
11. Megan Alvord
12. Peter Apps
13. Tiffany Coke
14. Tracie Schroeder

## Mini-grant

Each Coding Fellow will have a mini-grant budget of \$2900 for any of the following purposes:

- helping your ability to lead coding workshops as a Fellow
- increasing your coding proficiency
- enabling you to expose your students to coding
- travel to collaborate with other Fellows and/or experts

See the [☰ Mini-grant](#) page for details.

## Workshop meetings

Mondays 7-8 pm ET and/or Wednesdays 7-8 pm ET on [Adam's Zoom](#).

Adam will hold weekly Zoom meetings where we'll discuss one topic (below) each week. We'll repeat the Zoom topics for another three weeks for anyone who wasn't able to attend the first time around. Attend whenever you are able. If those days/times don't work for you, let Adam know and we'll come up with other options.

The group will collectively review the following resources on teaching and learning from a coding standpoint. You'll be free to choose which ones to inform how you design your implementation plan.

- Topic 1: Facilitating deep connections with material
  - [NSTA's recommendations for professional development](#)
  - Reddish's paper on constructivism & mental models (~~full paper~~ [html](#), [pdf](#); [just the corollaries](#))
  - [the Reformed Teaching Observation Protocol \(RTOP\)](#)
  - Tanner's paper on metacognition ([html](#), [pdf](#))
- Topic 2: Being intentional about the sequence of tasks in a lesson/unit
  - the BSCS 5E learning cycle, specifically the tables on pages 34 & 35 (student and teacher behaviors) of [the BSCS full report](#)
  - Etkina's [ISLE](#), Sampson's [Argument-Driven Inquiry](#), and [Modeling](#) curricula
- Topic 3: Broadening participation and reducing barriers to entry
  - [Universal Design for Learning](#)
  - [On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?](#) By Bender, Gebru, McMillan-Major, and Mitchell (we'll discuss just the introduction)

## Implementation Plan

The deliverable for this virtual Fellows Workshop will be an **implementation plan** for how you will help teachers and/or students learn about coding that incorporates reformed pedagogy. This is intentionally broad so you have flexibility to be creative and help solve problems you see that are relevant to the QuarkNet/IRIS-HEP mission. This could include your plans for leading workshops this summer (i.e., helping teachers learn about coding) or activities you plan to do in your classes (i.e., helping students learn about coding).

Your implementation plan may be in any format you find convenient. However, it will need to address the following three questions. The resources linked above can help with these.

- How will the task(s) support learners making a deep connection with the topic?
- How will the sequence of tasks support learners to construct a robust mental model?
- How will the tasks help broaden participation in coding and reduce barriers for learners to engage with the lesson?