Coding & QuarkNet

Coding is currently embedded in

Data Camp @ FNAL (24 teachers/summer)

Virtual Coding Camp 1 (24 teachers/summer)

Coding Camp 2 @ FNAL (24 teachers/summer)

Center workshops (~ 50 teachers in 2023)

IRIS-HEP short workshops (~ 50 teachers in 2023)

Partnership with IRIS-HEP funded $100K in 2022, $200K in 2023

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Common to All 3 Camps

One week of intensive, collaborative learning.

- 1st half in ‘student’ role: Analyze CMS Run 1 data.
- 2nd half in ‘teacher’ role: develop lessons and plans.

24 Teachers with a range of experiences, QNet involvement.

Practice with spreadsheets and python.

Working with Data Activities Portfolio.

Talks and tours.

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Camps have Unique Goals

Data Camp (at Fermilab)

- HEP content and calculations.
- Good 1st big workshop to attend.

Coding Camp 1 (virtual)

- Develops comfort using existing coding activities.
- HEP is the context; also use other data sources.

Coding Camp 2 (at Fermilab)

- More advanced python analysis and visualization.
- Users of coding activities become developers.

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Hidden Benefits of the Camps

Structure models reformed pedagogy.

Participants learn much from each other.

Builds an international community of educators.

Camps are run by fellows.

- Trains the next generation of teacher leaders.
- A ‘meta’ experience of teaching teachers.

Next Steps

Further differentiate which CMS analyses are done in which camps.

Pursue solutions beyond Google Colab.

Find new HEP data to address physics content.