

DMRadio Professional Development

October 2025

Professional Development - 50L Results!

What do postdocs and students need?

What do junior faculty need?

What do senior faculty need?

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What do junior faculty need?

What do senior faculty need?

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The answer is to first order the same - we need results, so as we go through the next few months that really needs to be the guiding principle.

After that it is a bit more subtle.

Professional Development - 50L Results!

What do postdocs and students need?

What do junior faculty need?

What do senior faculty need? Results to show we can deliver an experiment.

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What do postdocs and students need?

What do junior faculty need? Their people, postdocs and students delivering key parts of the experiment and analysis.

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What do postdocs and students need? To deliver key parts of the experiment or analysis.

Many of you already have this on the hardware and the low-level parts of the DAQ.

The analysis will have an equal number of parts.

A Side Note on Postdocs

You are all on this experiment because you have done excellent work as a student.

You now have a job to do, this is a subtle difference between being a student and a postdoc - there is a higher expectation.

That said, you are now going to start being judged on your ability to include others effectively in your work - this is the transition to faculty.

These two things are sometimes in conflict, consult with the PIs and the relevant students.

Professional Development - 50L Analysis

- Calibration 2-3 people.
- Data Quality 2-3 people.
- High Level Extraction i.e. statistics - 2 people.

Professional Development - 50L Analysis

Then there will alternative analyses beyond the first analysis

- Halo Shape
- Day / Night
- Alternative Dark Matter Models
- Talk to your theory friends!!!!

Professional Development - 50L AI/ML

- There are more AI/ML algorithms than peaks in a power spectrum.
- The noise reduction algorithm (in coincidence or not with external sensors) is an obvious one.
- Triggering on non-standard signals is another one.
- At lower levels
 - LLM of our documentation.
 - LLM explaining our experiment, train and verify it on the tome and other papers.
 - Automatic data quality checks.
- At higher levels
 - Correlations with other axion experiments
 - Correlations with things like LIGO and IceCube...

There are more things to do than
people on the experiment!

Planning for First Results

Seminars at all institutions.

Zoom Seminar Announcement and Parties.

Conference Talks - Everyone will get a talk.