

2022 Quarknet FSU Summer Workshop

Arrival: 8:10-8:30

- There will be in the small lot near the Keen Building and Bio Unit One, near Call St & Chieftain Way, A parking permit will be provided.
- [Here's a map of the parking lot.](#)
- [Here's a map of UPL/Richards building.](#)

Lunch

- The lunch break is typically between 11 and noon. Bring your own lunch and eat in the classroom or eat nearby where you'll find a huge buffet for a wide range of preferences and needs.

Agenda

Tuesday, July 19

8:30 - 3:30 in UPL (room UPL 110, Same time every day)

- Welcome and Overview (All)
 - Goals, Fears,
 - Talk: "Big Picture particle updates" (Ted)
 - Activity: Unknown quantity w/ FilmCanisters (Jacob)
 - Lunch
 - Talk: Social issues in Science (Jacob)
 - Activity: Tinker CAD (Jasun)
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Wednesday

- Welcome (Jasun)
 - Talk: Nuclear about FRIB research (Ted)
 - Activity: Penny Mass (Jasun)
 - Lunch
 - Activity: Tour Mag Lab (All)
 - Build a motor, SEM
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Thursday - [Link to Quarknet Agenda](#)

- Talk: Neutrinos (Ted)
 - Activity: Neutrinos and NOvA (Shane)
 - Lunch
 - Activity: Neutrinos and NOvA - finish labs
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Friday

- Talk: CMS, Higgs update (Ted)
- Activity: Higgs@10 What we know since the 10 year discovery. (Shane)
- Lunch
- Activity: Present labs (All)
- Wrap Up: Survey

More Details:

- **Shane's QuarNet Agenda:**
<https://quarknet.org/content/2022-fsu-summer-workshop>
- Pennies:
 - Lesson plan
 - [Quarknet](#)
 - [Jacob](#)
 - [Python implementation](#)
 - Experiment:
 - Calibration,
 - [Data](#)
- Social Issues in Science
 - Article:
 - <https://www.vox.com/2016/7/14/12016710/science-challenges-research-funding-peer-review-process>
 - <https://www.scientificamerican.com/article/13-urgent-science-and-health-issues-the-candidates-have-not-been-talking-about/>
 - https://issues.org/p_frodeman-3/
 - <https://www.pewresearch.org/internet/2020/06/30/tech-causes-more-problems-than-it-solves/>
- Tinker CAD
 - <https://www.tinkercad.com/>

- Build a 3D model that you could use in your class
 - [Circuits](#)
 - Ohms Law
- Random
 - [Scientist in every Florida school](#)
 - [Map of Physics](#)

Notes:

- Neutrinos - weird particles “the least standard”
 - Beta decay - Neutron $\rightarrow$ proton and electron
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- Experiments
 - Core collapse
 - Dune
 - NOvA
- Masses
- Mixing
- Oscillations