

Quarknet Educational Discussion Meeting Minutes Wednesday 9.28.22

Participants:

- Kenneth Cecire
- Shane Wood
- Emily Rosen
- Jeremy Wagner
- Maria Niland
- Charlie Payne
- Robert Baker
- Nicole Preiser
- Adam LeMee
- Megan Noel
- Alan Grinsteinner
- Daphne Wu

Agenda:

- Check-In/Updates with Participants
- Restructure QED
 - More teacher-oriented/teacher-run
 - Less facilitator discussion
 - Teachers will take more ownership of agenda and suggest speakers

Discussed Items:

- *Successful Classroom Activities*
 - [STEP-UP Career in Physics Activity](#)
 - Lead to more interest in post-secondary physics education & student enrollment in physics in the next academic year
 - [Quarknet Particle Card Sort](#)
 - Good introductory activity for the first unit
- *Valuable Professional Development*
 - [IPA-LIGO](#) (Louisiana, USA)
 - [Einstein Plus](#) (Waterloo, Canada)
 - [Quarknet Coding Camp](#) (virtual/Illinois, USA)
 - Quarknet Cosmic Ray Detector Teacher Training (2022 [Notre Dame Center](#))
- *Coding + Physics*
 - Successes
 - Constant velocity notebook with Glowscript
 - Parental permission slips for Google Colaboratory ([template](#))
 - Future Happenings
 - Publication of a white paper with best pedagogical practices & resources
 - Tracking hurricanes using NOAA data and Google Colaboratory
- *Teacher-Approved Supplies & Materials*
 - [Databot](#)
 - 20 wireless sensors on a cube that can be attached to a drone or driven in a car
 - Company can program a different frequency for up to 20 bots for a class set
 - Small radioactive source for a high school classroom cloud chamber
- *Ideas to Try*
 - Students [build a radio telescope](#) & [measure the velocity](#) of the arms of the Milky Way and determine that some are going faster than they “should” (Cost: \$100)

- [Vernier Sensors + Python + Glowscript](#)
- **Student Celebrations**
 - High school student internship at UCI
 - Independent study of AP Physics C with concurrent enrollment in AP Physics 2
 - Parents doing coding at open house in the physics classroom
 - Students studying physics & art through collaborations between advanced dance and AP Physics students for a partner dance unit
 - Students coded a 3D representation of a particle collider with randomized data
- **Book(s) to Read:**
 - Disordered Cosmos ([NPR](#))
 - The Dick and Rae Physics Demo Notebook ([out of print](#))
- **Video(s) to Watch**
 - Make a hurricane in a bubble ([YouTube](#) ~3.5 minutes)
- **Upcoming Events**
 - Dark Matter Day 10.31.2022 <https://www.darkmatterday.com/>
 - Find an event
 - Plan your own
 - Find dark matter activities for the classroom
 - Lunar Eclipse 11.7.22 ([NASA](#))
 - Annular Solar Eclipse 10.23.23 ([NASA](#)) ([AAS](#))
 - Total Solar Eclipse 4.8.24 ([NASA](#))

Procedure Adjustments:

- QED participant will update QED website after meeting
 - Current Assignee: Daphne Wu
- Meeting minutes will be placed in a google document that can be edited by participants
 - Google document of minutes should be made **view only** prior to posting on Quarknet Website
- Teacher-driven decision making for future content
- Participants should arrive at QED meeting knowing which Wednesday of the *next month* is their preferred date of meeting
 - Next meeting date will be determined before end of meeting
- Participants should complete the google form to ensure future invites & communication
- Proposed development of a repository for shared materials
 - On the website? In the meeting minutes? (Undecided)

Next QED Meeting:

Wednesday October 12, 2022

8p EST/7p CST/6p MST/5p PST

Agenda:

- Determination of location of repository for shared materials
- Share-a-Thon
 - All shares welcome
 - Special excitement for dark matter and “spooky” physics