

BAMC-April2020 teacher notes

These notes were submitted by teachers who did BAMC in April 2020. They are offered to assist future BAMC teachers. Teacher names are withheld. *Coordinator responses are in italics.*

Some of the students had great difficulty with delays. Halfway through, it started taking a very long time to load each thing they entered on CIMA.

Our engine for collecting results, the CMS Instrument for Masterclass Analysis, can slow down with many connections. For BAMC-May 2020, we have extended videoconferences into the next week to spread this load out. Even still, if students experience a serious freeze or slowdown, they should disconnect from CIMA and reconnect a little later. See the next comment!

My students occasionally locked up as they did their analysis, but going out and then back in cleared it up, so we never needed to use the “back-up” analysis.

I think the only thing that might be helpful to add would be a quick analysis of one event, explaining what is going on and why, then taking some questions. I think it might help them better appreciate what is going on.

We will try to add this.

As you requested to let you know, everything went very smoothly for us and there were no technical issues. The tasks were of a perfect level of difficulty for the students. The streamlining and simplicity along with your screencast instructions made BAMC very accessible for the kids. The talks were great too and the teacher meetings that were recorded were very helpful. The webpages were perfect.

Possibly make it more clear that this is the process of science. Scientists get data from CMS in a similar manner and do their analysis that then adds to the collective understanding we call scientific knowledge.

We should all do this!

Overall I think the experience was good for the students. The one negative comment the students made was they were frustrated that they could only type in questions [during the videoconference]. Julia wanted to clarify her question about 'how do we decide what particles are important' but she couldn't. Several students commented that just being able to type in a

question wasn't the same as being able to 'chat' with the physicist or actually discuss the results. I understand it had to be that way because there were so many students participating but I think it did take something away from the experience. Still, it was much better than not being able to participate at all.

Unfortunately, this webinar model is necessitated by large numbers. There are some compensations. First, all students have some chance to contribute by typing in a question or even by "upvoting" some questions. In addition, we are able to save questions we did not get to verbally and make them available later with answers.

Only issue that was brought up was clicking on the muons to get masses ... it wasn't always clear if the tracks had been highlighted or not.

This can sometimes be tricky. Using the "orthographic view" in iSpy, our event display, should help.

For the most part everything went well technically. One student had to restart his computer a few times as he was having problems with iSpy, but eventually it worked fine. We had ample time (more than was needed to get through the events) so even with a few technological issues he finished in time.

Noted!

Maybe you could send out a survey to students beforehand so they could think of questions to ask of the physicists during video conferences. Some students are going to be too shy to ask questions during a live event, and some were not able to watch live and could only see the recordings. If they had time to prepare and submit questions ahead of time maybe there would be more good questions, and the physicists would have some time to review those questions and think of really good answers!

This is a nice idea but we get lots of questions in the videocons as it is. I suggest teachers take some time to communicate with students about forming questions. We do go over questions that were not answered in the videocon and try to post answers later. And you can always email more!

The technology worked really well and I don't have any feedback for improvements. Students were able to work in groups of two on their own and meet with me first and then go to the live webinar. It was great for them to feel like they were part of a big experiment.