

SEC Core Initiatives Leadership

February 3rd, 2022

<https://indico.fnal.gov/event/53075/>

GENERAL AGENDA:

- Coordinate the content and interplay for the next “Big Questions...” colloquium
- Future Planning: the next colloquium installment and the SEC White Paper

ATTENDEES: Kristi Engel, Joshua Barrow, Tiffany Lewis, Sara Simon, Jim Gates, Chris Quigg

MINUTES:

The “Big Questions in Particle Physics: The Future of Theory” Colloquium

- Josh expresses that Chris has given a past Wine & Cheese at Fermilab ([“Perspectives and Questions: Meditations on the Future of Particle Physics”](#); [Aug. 23, 2019](#)) that he would really like to have replicated in sentiment for our colloquium series
 - ◆ Chris has a set of “120 Questions” of things he does not know and would like to know within our field to build off of here
- Jim wants his talk to start with the concept of not creating unrealistic expectations within our field (especially post-CMS)
 - ◆ Currently paying the price for past expectations not met, and we don’t want to repeat that with this Snowmass process
 - ◆ Would move on from there, more optimistically, to address his big questions (thematic issues rather than individual topics)
 - What can/will our intersection with Information Theory be and how will that shape the field?
 - What’s entanglement got to do with it?
- ★ Chris believes that Jim should present first, building off his experience as APS President
- Jim thinks the future of our field should really feature outlook to the Precision Frontier
 - ◆ Need to form more in-depth precision experiments looking for anomalies
 - ◆ What is the next horizon for precision measurement?
 - Want to have this discussion with Chris in front of our audience

- Chris stresses that what we really need to do to move into the future is to “pay attention to physics outside Particle Physics”
 - ◆ Chris especially wants to promote attention to Condensed Matter Physics
 - ◆ Jim thinks that especially phenomenologists need to pay attention to Applied Mathematics and Computer Science (e.g., Network Theory)
 - Application of principles from these fields to old problems given available computation power

- Overall, *be broadly aware of the available set of tools*
 - ◆ Jim wants to encourage the audience, especially younger members, to “sample intellectual ideas and methods”
 - Don’t stovepipe careers!
- Jim also urges for sensibility in theory moving forward
 - ◆ “What does nature have to tell us?”
- Chris wishes overall to charge people with a new way of organizing themselves in the future— look outward, not inward
- The overall goal here is to keep the talks accessible as the audience is broad both in research background but also experience levels
 - ◆ Want to bring a broad range of perspectives to them at an accessible level to reflect the variety of topics within the Snowmass process, especially those not typically given a platform or perhaps not considered traditional/strictly “particle physics”

Recap of format:

- Each talk will be 30+5 minutes
 - ◆ Slides/visuals may be PowerPoint, Keynote, Google Slides, or PDF to be shared by the speaker and uploaded to the [Indico](#) for the event
 - Materials may be sent to Kristi, Josh, Tiffany, Sara, or Jorge (*not present*) for upload
 - Supplemental materials provided ahead of the colloquium will be posted both to the [SEC Wiki](#) and to the [Indico](#)
 - ◆ If desired, a Google Drive folder can be created for the posting of presentation drafts so Jim & Chris can see each other’s works in progress
 - This would be unlikely to be utilized
- Following both talks, there will be ~20 minutes of SEC-moderated discussion, hopefully facilitated by questions from the audience
 - ◆ The audience can submit talks through a Google Form or through the Zoom chat
 - ◆ Discussion can also be between the speakers during this period to further and/or diversify ideas and opinions shared within the talks

- This series is recorded, with the recording posted to the [SEC YouTube Channel](#) following the event for those who cannot attend

Our thanks to Jim & Chris for joining us today

Future Planning

- The next installment in this series, the “cosmic colloquium,” has a tentative date of March 25th, 2022
 - ◆ Proposed speakers: Jordan Goodman and John Beacom
 - Kristi has already talked to Jordan, but will confirm this date with him ASAP
 - Jorge will reach out to John
 - ◆ If this date does not work, it will need to be pushed later rather moving it up, as people will be traveling home from the HEAD meeting on the 18th
- What Tiffany would really like Jordan to talk about at this colloquium is the line between the Decadal and Snowmass and how that impacts the Cosmic Frontier
 - ◆ There is a lot of confusion about what the differences are, what topics fit where, and the interplay between them
 - ◆ We want the Conveners to be clear where this line is before they really begin writing their report in earnest so that it is as effective as possible
- Next week, we really need to focus on the SEC White Paper
 - ◆ Should look at existing outline in the coming week— will likely need significant modification
 - ◆ Can include a discussion about the particular struggles of COVID-19 from an early career perspective
 - Having Snowmass take two years was particularly impactful on us