

## THE HIGGS

6-8 pm, February 7, 2013  
Performance Hall, Logan Center for the Arts  
The University of Chicago, 915 E. 60<sup>th</sup> St., Chicago, IL

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**5:00pm:** Panel members arrive at the Logan Center

**6:00pm:** Don Levy welcomes audience and introduces Young-Kee.

**6:05pm:** Young-Kee gives ~10-minute opening remarks including 2-min Time magazine video

**6:17pm:** Young-Kee will introduce the panelists one by one asking each to give a short description of their research interests including their role in Higgs Boson discovery.

For each panelist, introduction of the panel (2') + a short description of their research interest including their role in Higgs Boson discovery (2')

**6:33pm:** Young-Kee will ask each panel one of the following initial questions. (1' question + 2' answer)

1. Time video talked about particle physics and the Standard Model. What is particle physics and what is the Standard Model? (the Higgs particle has to be introduced in the answer) – **Patty**
2. How do we search for the Higgs particle? How do you know what you saw was the Higgs particle? – **Tom**
3. So, the Higgs is responsible for giving mass to elementary particles like electrons and quarks. Why is it important? – **Mark**
4. (**Angels and Demons movie clip?**) How can we relate the Higgs-like particle discovery to other fundamental questions in particle physics? For example, how does the Higgs relate to anti matter and the matter dominant universe? – **Marcela**

**6:45pm:** Young-Kee will ask questions in a random order to panelists. Panelists are free to incorporate a slide or video clip into each response to help those who need visual stimuli to aid understanding.

Each question takes about 3' (1' question + 2' answer) and so there will be ~10 questions (including the follow-up questions shown “→” below).

### Questions

- How can we relate the Higgs-like particle discovery to dark matter and to neutrinos?
- Now what? Study, how is it different from other particles in the standard model? Are there more Higgs and more particles out there?
- Do we expect other new changing discoveries at the LHC?
- What is the mass of the Higgs? → Where does the Higgs particle get its own mass? → Is it important that that the Higgs weighs 125 times more than the proton?

- What was Fermilab role in the Higgs discovery? → What is the relevance of Fermilab present and future program in solving the most crucial open questions of our field?
- Why is this of interest to the physics community? → What would the universe look like if the Higgs boson did not exist? (or Does this new discovery really explain how we exist?)
- We know that particle physicists invented web.!! In what ways can the internet change things for particle physicists?
- In years leading up, there were a few false alarms leading up to the Higgs. Why don't scientists just know when they find the Higgs.
- Who were the scientists that made the initial hypothesis?

**7:15pm:** Panel will conclude and Young-Kee will open it up to questions from the audience as well as questions from Twitter Feed. We will tech people in the wings fielding questions and sending select questions from the web to Young-Kee.

**7:45pm:** Q&A concludes and Don Levy thanks everyone for coming.

#### Useful information:

- Sean Carrol [podcast](#) on PhysicsCentral
- Videos from which you might want to pull some short clips:
  - Atlas Experiment: <http://www.atlas.ch/multimedia/>
  - Economist: <http://www.economist.com/node/21558254>.
  - Atom Smashers: <http://www.hulu.com/watch/74782>
  - Huffington Post: [http://www.huffingtonpost.com/2012/07/05/higgs-boson-video-minutephysics\\_n\\_1652499.html](http://www.huffingtonpost.com/2012/07/05/higgs-boson-video-minutephysics_n_1652499.html)
  - Vimeo: <http://vimeo.com/41038445>

#### Potential questions from the audience

- What is this good for?
- Is it worth the large amount of money?
- What is the broader impact of this research?
- Is it good to have collaborations of so many people?
- Why didn't the US discover Higgs?
- How can you justify this expenditure during a recession?
- Why do we have to send so many people to Europe?
- Does the US get its money worth?

#### Details at the event:

1. The seating will be casual: club chairs and side tables.
2. There will be a lectern for Don Levy to introduce Young-Kee and for Young-Kee's opening remarks.
3. During the video Young-Kee can sit down in a chair with the other panelists (ladies please note as this may influence your choice of attire and skirt lengths).
4. Everyone will have a wireless mic.
5. There will be a very large screen behind the panelists and at least 1 cheat monitor in front of the panel so they can follow what's up on the screen.
6. There will be 2 smaller screens in front of the panel that will be showing all the Twitter questions coming in live from folks watching the webcast on the University's Facebook page.
7. The auditorium is large and will seat about 450.
8. The event is free and open to the public, but we are requesting that people register so we can track numbers.
9. We are holding 3 simultaneous workshops at Argonne, Fermilab and UIC in advance of the event for high school teachers. We will be encouraging them to bring students to the event. We are reimbursing for buses so hopefully this will encourage them to bring students.
10. The event will be videotaped.