Pigeonhole Live

Session Name:

Future Facilities

Session Type: Q&A
Date: 03 Aug 2016 05:30PM – 09 Aug 2016 06:30PM

Users	Questions	Total Votes
482	68	1070

Votes: 127

Shown Answered

Anonymous • 07 Aug 12:56PM

As young physicists entering the field, what reassurances can you give us to remain in the field. As much as we would like to stay, the perception we get is that the future of HEP is not very clear.

Comments (5)

Anonymous • 7 upvotes • 8 downvotes

Isn't it up to us (young physicists) to help define the future of HEP and make the case that it is worth supporting?

Anonymous • 2 upvotes • 2 downvotes

And in addition to the question already posted: what about jobs? The market now is terrible.

Anonymous • 1 upvote • 0 downvotes

Sure, let your passion guide you. But have a Plan B.

Anonymous • 1 upvote • 1 downvote

That reply was terrible. Olny people who are from wealthy backgrounds can afford to work for low pay, without benefits and with little prospect of career advancement for the sake of "passion". I love physics but I have to provide for family, mam. Most of us do.

Anonymous • 2 upvotes • 0 downvotes

The reply was a smack in the face of young scientists. Our field does not provide decent working conditions, and Fabiola sais effectively: too bad, if you want to be a scientist, you have to let yourself get exploited without job security and decent working conditions, without the stability needed to have families or stable relationships, otherwise you should go. Shocking! (I also think her numbers are wrong if you mean with 'staying in science' means getting a stable job in the field, rather than a first or second (or 3rd, or 4th or 20th) 2-year postdoc.

Votes: 123

Shown

Anonymous • 07 Aug 12:00PM

How can our field be open to realizing that the cost/benefit ratio of "the next big accelerator" is so high that resources would be better spent on facilities that are not particle accelerators?

Comments (7)

Anonymous • 4 upvotes • 0 downvotes

This is an important question. Innovative approaches, or facilities from other disciplines, may be better ways to probe the standard model. Will we be able to recognize when to stop building bigger machines?

Anonymous • 0 upvotes • 4 downvotes

Think outside of the box!

Anonymous • 1 upvote • 0 downvotes

This is the job of the community through things like the P5 report.

Anonymous • 0 upvotes • 0 downvotes

What benefit?

Anonymous • 1 upvote • 0 downvotes

This is precisely 'begging the question.' As others have pointed out, this is the job of the field's prioritization process.

Anonymous • 1 upvote • 0 downvotes

The question is rather loaded. "Benefit" is not easy to quantify, and everyone will have a different judgment. I agree, though, that we must stay open to different approaches to maximize the benefit.

Anonymous • 0 upvotes • 0 downvotes

Particle accelerators include often a multipurpose facility with many research objectives and projects, while smaller experiments are often single purpose. Not so easy to compare.

Votes: 107

Shown

Anonymous • 08 Aug 03:57PM

If the LHC sees nothing in the next few years, would it make sense for CERN to skip the LHC upgrade and go straight to a higher energy machine? For example, by going to a 33 TeV pp machine?

Comments (3)

Anonymous • 0 upvotes • 0 downvotes

Assuming 16T technology is ready, which seems likely

Anonymous • 0 upvotes • 0 downvotes

26TeV is more real...

Anonymous • 0 upvotes • 0 downvotes

LHC is seeing a lot!

Anonymous • 08 Aug 05:39PM

Votes: 98

Shown

What is the prospect of a high energy collider in the US? What is standing in the way?

Comments (8)

Anonymous • 2 upvotes • 1 downvote

This one is easy: $$$

Anonymous • 0 upvotes • 2 downvotes

The us GDP is much higher than chinas and it's not stopping them...

Anonymous • 3 upvotes • 0 downvotes

Lifetime of congress is much shorter than the lifetime of a new collider: hard to keep funding over entire campaign of the detector. As an example see what happened in Texas with SSC

Anonymous • 0 upvotes • 2 downvotes

The general attitude toward science in the US that finally made us a third-world country in this area.

Anonymous • 0 upvotes • 0 downvotes

Is there enough investment in technologies (materials esp) and collaboration with other physics & engineering communities so we arrive faster at :"mars-shot"-type acceleration and detection techniques ? MS

Anonymous • 0 upvotes • 0 downvotes

There is pressure do do science that has obvious practical applications and not basic research.

Anonymous • 1 upvote • 0 downvotes

The proposal by Peter McIntyre and others to expand on the old SSC with a large ring and weaker magnets is more affordable than most other 100 TeV ideas b/c of reduced tunneling costs (good geology) and Tevatron era ~ 4 Tesla magnets, which are mass producible with controllable and known costs. The politics are difficult, but the idea deserves attention.

Anonymous • 0 upvotes • 0 downvotes

...breakthru in affordable technology of acceleration is needed... very few options seen now

Anonymous • 07 Aug 12:58PM

Votes: 70

Shown

In light of negative results from the LHC thus far, and assuming we do not see any hints for new physics by the end of Run 2, will this have any negative impact on funding and on the field in general?

Anonymous • 08 Aug 01:03PM

Votes: 60

Shown

If China would push forward to dig the 100 km tunnel for CepC 10 years earlier than CERN's FCC, would CERN still pursue FCC? Would the world HEP community be able to afford two similar big colliders?

Anonymous • 08 Aug 03:53PM

Votes: 54

Shown

What is Fermilab's position on future lepton colliders, such as ILC, CEPC, and FCC-ee? Will Fermilab stifle efforts in Asia (ILC and CEPC) in exchange for CERN collaborations on LBNF?

(Custom) Howie Baer • 08 Aug 11:06AM

Votes: 42

Shown

Do you see any path forward for construction of the ILC?

Comments (2)

Anonymous • 0 upvotes • 0 downvotes

Will China and CERN contribute?

Anonymous • 0 upvotes • 0 downvotes

hardly seen.

Anonymous • 08 Aug 07:04AM

Votes: 32

Shown

How do we reconcile the need for truly international facilities with each country's need to maintain control and priorities?

Anonymous • 08 Aug 05:40PM

Votes: 28

Shown

Will any members of the panel live to see a 100 TeV collider in operation?

Comments (2)

Anonymous • 2 upvotes • 0 downvotes

And for that matter, will any members of audience live to see it?

Anonymous • 0 upvotes • 0 downvotes

I think it's the question to a field of medicine (geriatrics) not HEP

Anonymous • 08 Aug 05:43PM

Votes: 24

Shown

How did the negative decision of the Chinese government w.r.t. putting CEPC R&D as a high-priority item in the 5-year plan affect the strategy to get this machine build in China?

Anonymous • 08 Aug 03:08AM

Votes: 23

Shown

There are proposals for new particle accelerators in Asia with new funding opportunities. How can the international community take advantage of this situation and nurture these projects to fruition?

Anonymous • 08 Aug 05:53PM

Votes: 20

Shown

Who is better for HEP: Trump, Clinton or Johnson?

Comments (4)

Anonymous • 3 upvotes • 0 downvotes

Most important is congress which passes budgets and has "power of the purse". President has the bully pulpit but in the end can't unilaterally determine funding

Anonymous • 1 upvote • 2 downvotes

Don't forget about Jill Stein.

Anonymous • 2 upvotes • 0 downvotes

Trump would build the biggest, most luxurious collider and make other countries pay for it. The downside is when it goes bankrupt.

Anonymous • 0 upvotes • 1 downvote

Our field historically was doing better under Republican government. That trumps it all. :)

Anonymous • 08 Aug 09:19AM

Votes: 17

Shown

What fraction of CERN budget can be directed toward next large accelerator project at CERN?

Comments (2)

Anonymous • 0 upvotes • 0 downvotes

I would presume that the term of "next large accelerator project at CERN" in this question refers FCC instead of HL-LHC, since the latter has already been approved by the CERN Council and the appropriate buggets in next decades seems foreseeable, while FCC seems much more remote (including from the funding point of view).

Anonymous • 0 upvotes • 0 downvotes

Cern facilities budget is fully obligated to hl-lhc until 2025 or 2026.

Anonymous • 08 Aug 09:49AM

Votes: 17

Shown

When China can start construction of CepC collider and how long construction will take?

Anonymous • 08 Aug 05:44PM

What was all R&D on muon colliders zeroed out? Given the innovations that came out of that modestly funded program, it seems odd to shut the door on one possible future machine.

Votes: 17

Shown

Anonymous • 08 Aug 05:47PM

Are we as a field taking enough risks? What is the right balanace between must-succeed large projects and riskier efforts?

Votes: 17

Shown

Anonymous • 08 Aug 05:53PM

As government funding is a continual uncertainty, are there steps being taken to follow the path of NASA/SpaceX in forging partnerships with private companies to pusue future projects?

Votes: 14

Shown

Anonymous • 08 Aug 09:24AM

With large international project struggling lately, like ITER, how high energy physics can do better convincing we can in fact accomplish large international project?

Votes: 9

Shown

Anonymous • 08 Aug 03:49PM

How to keep the community engaged for the decades to build major international experiments? Some have been attracted to smaller experiments, offering quicker results; but may delay the big questions.

Votes: 9

Shown

Anonymous • 08 Aug 04:48PM

What quantity and scale of additional experiments do you think LBNF could host alongside DUNE?

Votes: 9

Shown

Anonymous • 08 Aug 05:49PM

What are the large laboratories and collaborations in field doing to make sure that throes of PhD students earn transferrable skills that allow them to enter the industry?

Votes: 9

Shown

Anonymous • 08 Aug 05:43PM

Is Japan willing to invest higher contributions than present promise to host ILC to make it realized?

Votes: 8

Shown

Anonymous • 08 Aug 05:43PM

For future neutrino projects the neutrino platorm is a great initiative implementing mutual support of Europe and US. Why is there no such initiative to support the ILC in Japan?

Votes: 8

Shown

Anonymous • 08 Aug 05:45PM

What do we do as a field in we find nothing else at the LHC? How can we justify to the world to continue funding our research programs?

Votes: 8

Shown

Anonymous • 08 Aug 01:57PM

How can we achieve to have a new energy frontier collider by the time the HL-LHC running ends?

Votes: 7

Shown

Anonymous • 08 Aug 05:32PM

We're off the Livingston curve (exponential increase of sqrt(s) vs. year) since many years now. How much are CERN/FNAL/.. planning to invest to achieve a particle acceleration breakthru before ~15 yrs

Votes: 7

Shown

Anonymous • 08 Aug 05:45PM

Is the High-Luminosity LHC still relevant? Shouldn't we try to squeeze more energy out of the LHC?

Votes: 7

Shown

Anonymous • 08 Aug 05:45PM

How will the results of charged lepton experiments such as g-2, mu2e, MEG-II and mu3e affect design decisions for future high energy colliders?

Votes: 7

Shown

Anonymous • 08 Aug 06:16PM

Are there realistic probabilities to build a muon collider ?

Votes: 7

Shown

Comments (1)

Anonymous • 0 upvotes • 0 downvotes

Yes, but it will not be traditional... eg linear crystal wakefield based. ..

Anonymous • 08 Aug 05:38PM

What lessons pertaining to planning for future facilities still can be learned from the abortive movement in the US toward the ILC in 2001 ~ 2010?

Votes: 6

Shown

Anonymous • 08 Aug 06:08PM

The US and Japan have made huge investments in the LHC, can Europe realistically reciprocate support for an ILC in Japan?

Votes: 6

Shown

Anonymous • 08 Aug 05:09PM

How can it be avoided that funding within HEP is only shifted within the community (eg. energy vs. intensity frontier) leaving some parts of the field to become "weaker"?

Votes: 5

Shown

Anonymous • 08 Aug 05:39PM

Votes: 5

Shown

This online system doesn't allow for timely follow-up questions or comments from the audience to the panelists. It would be more conducive to open discussion to accept microphone participation.

Comments (3)

Anonymous • 0 upvotes • 0 downvotes

Wait a minute, this isn't a question at all

Anonymous • 0 upvotes • 0 downvotes

"Wouldn't it be more conducive to open discussion if...?"

Anonymous • 0 upvotes • 0 downvotes

I don't disagree with this comment, but the fact that this system gives a voice to the whole audience more than makes up for that weakness.

Anonymous • 08 Aug 05:44PM

Votes: 5

Shown

What's the maximum cost fraction of the ILC the Japanese government would consider bearing?

Anonymous • 08 Aug 05:56PM

Votes: 4

Shown

We always hear that HEP brings together many countries. Are there tangible, specific international political consequences of international collaborations?

(Custom) Alessandro Lapertosa • 07 Aug 09:06AM

Votes: 4

Shown

LEP just slightly missed the Higgs boson discovery because of the energy design. If no new physics is found in the next 20 years, can we re-build LEP in the old tunnel and run at 125 GeV energy?

Comments (1)

(Custom) Christos • 0 upvotes • 0 downvotes

One would need to run at the Z+H center-of-mass energy, ie. 91 + 125 = 216 GeV

Anonymous • 08 Aug 06:09PM

Votes: 4

Shown

What's the argument for 2 long base neutrino machines?

Comments (2)

Anonymous • 0 upvotes • 0 downvotes

To measure the only variable they will measure twice.

Anonymous • 0 upvotes • 0 downvotes

I guess that it is to cross-check, similar as ATLAS and CMS, CDF and D0.

Anonymous • 08 Aug 06:15PM

Votes: 4

Shown

Beyond naturalness, is there a strong argument for a 100 TeV machine? How do we sell 100 TeV Machine to the world?

Anonymous • 08 Aug 06:16PM

Votes: 4

Shown

Is the physics potential of LBNF worth the cost ?

(Custom) Alexey A Petrov • 08 Aug 05:43PM

Votes: 3

Shown

Are there any plans for the next generation tau-charm factory?

Anonymous • 08 Aug 05:43PM

Votes: 3

Shown

What is Fermilab's position on future lepton colliders, such as ILC, CEPC, and FCC-ee? Is Fermilab stifling efforts in Asia (ILC and CEPC) in exchange for CERN collaborations on LBNF?

Anonymous • 08 Aug 05:49PM

Votes: 3

Shown

Assume that the high luminosity LHC finds no new physics. Why would your proposed facility be the best bet to find new physics?

Anonymous • 08 Aug 05:52PM

Votes: 3

Shown

Would it be possible to build a very long collider in a small (no-access) tunnel using older, cheaper, reliable technology?

Comments (2)

Anonymous • 0 upvotes • 0 downvotes

I don't think the tunnel cost is the main hindrance. The LHC cost 14 GUSD, but costs 1 GUSD per year to operate.

Anonymous • 1 upvote • 0 downvotes

Moles?

Anonymous • 08 Aug 05:54PM

Votes: 3

Shown

In a "flat world" without "fat wallets," how can particle physics do global planning when basic units are competing nation states?

Anonymous • 08 Aug 05:38PM

Votes: 2

Shown

From a fiscal perspective, will we see construction of a future circular collider (on the scale of the LHC) to push the energy frontier beyond the current ~14 TeV limit within our "lifetimes?"

Anonymous • 08 Aug 05:42PM

Votes: 2

Shown

How can we best ensure that operations and current facility budgets are maintained as we move forward with future facilities and detector development?

Anonymous • 08 Aug 05:43PM

Votes: 2

Shown

In an Era of limited budgets what do you consider the Most important facility in terms of answering some of the many key questions before us ?

(Custom) Daniela Bortoletto • 08 Aug 05:46PM

How far away is the technologyhigh for the high energy LHC?

Votes: 2

Shown

Anonymous • 08 Aug 05:49PM

Why don't we unify behind a single ep -> pp project?

Votes: 2

Shown

Anonymous • 08 Aug 05:53PM

Can you comment on the environmental impact of the next generation of large accelerators, and what measures might be taken to make them 'environmentally friendly'?

Votes: 2

Shown

Anonymous • 08 Aug 05:53PM

Are these efforts in competition? How do we choose a focus while continuing to foster international collaboration?

Votes: 2

Shown

(Custom) Robert Harr • 08 Aug 06:14PM

You are all lab directors. How do you propose to balance the funding of university researchers with labs?

Votes: 2

Shown

Anonymous • 08 Aug 06:16PM

Accelerator experts at ICHEP say that the only way to build next HEP big machine is to do that in China. Why dont we bluntly move there?

Votes: 2

Shown

Anonymous • 08 Aug 06:27PM

The world was burned with the cancelation of the SSC. Appears that it has regained that trust. What happens if President Trump cancels LBNF/DUNE? How can we protect these projects?

Votes: 2

Shown

Anonymous • 08 Aug 06:19PM

What is an estimate of the price of the more expensive new high energy that would give a neutral contribution to the society ? (Contribution to technology, formation of students, ...).

Votes: 1

Shown

Anonymous • 08 Aug 06:22PM

How to increase connection with industries and firms to find appealing careers beyond physics for students and postdocs?

Votes: 1

Shown

Anonymous • 08 Aug 06:27PM

Will CERN ever open to hiring US citizens?

Votes: 1

Shown

Anonymous • 08 Aug 05:41PM

Would you rather fight 100 duck-sized horses or one horse-sized duck?

Votes: 0

Blocked

Anonymous • 08 Aug 05:51PM

Would you rather discover 100 standard model particles or one supersymmetrical particle?

Votes: 0

Blocked

Anonymous • 08 Aug 05:58PM

If we build a next generation linear collider in China, how can we make sure we fully utilize the complex for other experiments such as neutrinos. Should such details be part of any future proposal?

Votes: 0

Shown

Anonymous • 08 Aug 06:08PM

Please consider a question's posting time when looking at the vote counts. The questions with the most votes have been live on the site and accumulating votes since this morning.

Votes: 0

Blocked

Anonymous • 08 Aug 06:09PM

Will there be any time left for these questions?

Votes: 0

Blocked

Anonymous • 08 Aug 06:17PM

Are you going to ask the up-voted questions?

Votes: 0

Blocked

Anonymous • 08 Aug 06:23PM

What is the reason behind CERN's current decision to introduce an intermediate step to LHC toward the ultimate goal of the FCC? Would investing in future tech immediatelybe more costly instead?

Votes: 0

Shown

Anonymous • 08 Aug 06:25PM

Some of the proposed large facilities are planned to be built from scratch. Past experience was not always successful. How are you going to create an ecosystem before the large facility is built?

Votes: 0

Shown

Anonymous • 08 Aug 06:25PM

What is the potential of interchangeability and operation within the same facility of the different future collider projects, with hadron-hadron, e+e- and electron-hadron collisions?

Votes: 0

Shown

Anonymous • 08 Aug 06:26PM

Can we let this session run until 7 pm to allow time for these questions from the audience?

Votes: 0

Blocked