Fermilab Community Advisory Board Meeting May 24, 2018

Meeting Minutes

Members attending: Faber, Inglese, Gebhardt, Kania, Egeland, Kilburg, Huxtable, Klaus, Mesiacos, Brenner, Goodman, Swinden, Garstecki, Salazar, Jodlowska

Fermilab/DOE personnel attending: Riesselmann, Pasero, Gilbert, Greer, Siebach

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1. Welcome (Kurt Riesselmann)

2. Around-the-table introduction of current and new members

3. Presentation: Kurt Riesselmann – Fermilab updates – see posted presentation
    a. A dozen baby bison born at Fermilab
    b. Signing of US-India agreement on collaboration on neutrino research
    - Indian institutions will work on Fermilab experiments like DUNE
    - Fermilab will help with the India-based Neutrino Observatory
    - Follow-up on agreement signed a few years ago on collaboration on particle accelerator technology
    c. Visit by five members of House Science Committee to Fermilab
    d. Construction beginning on SuperCDMS dark matter experiment at SNOLAB in Canada
    - Follow-up to CDMS experiment in Minnesota
    e. 1,100 students, parents, and teachers visited the Fermilab STEM career fair
    - 160 professionals volunteered and answered questions
    f. 250 DUNE collaborators met at Fermilab last week

4. Presentation: Greg Gilbert – Fermilab water systems – see posted presentation
    a. Distributed Fermilab fact sheet about tritium (also available online)
    b. Fermilab has multiple water systems: domestic water, surface water, creeks, industrial cooling water system, low-conductivity water systems, and sanitary sewer systems
    c. You can fish in certain Fermilab ponds; information in our visitor brochure
        i. Q: Are the ponds stocked?
        A: No, they are not.
    d. This has been a wet year so far, so no need to pump water from Fermilab's deep well or the Fox River.
    e. Fermilab's infrastructure is aging. It was installed close to 50 years ago, and not everything was necessarily built to last 50 years.
    f. Fermilab chlorinates and dechlorinates the water.
        i. Q: do ponds have chlorinated water?
        A: Water in ponds on site have chlorination levels similar to

drinking wate. We chlorinate water as it comes into the industrial cooling water system and then discharge it into our cooling ponds. As water goes offsite we dechlorinate it. Fermilab dechlorinates water to at or below .05 parts per million (compared to .5 ppm found in drinking water).

g. Sanitary Sewer system
    i. Q: Warrenville sends more water than they get back in the sanitary sewer system. Why is that?
    A: Warrenville provides the entire site with water, but only the Fermilab Village sends sanitary water back to Warrenville.
h. Additional Q&A:
    i. Q: Sounds like you take temperature readings of the water. With your 35 years here, looking at the mean of the water temp, have you noticed any changes or trends?
    A: The temperature is dependent on what the lab is doing and how much cooling we are doing. We are doing bigger science and generating more heat that goes to those ponds, so the temperature has gone up. This is also one of the reasons we have a shutdown in the summer, because the ponds can't cool.
    ii. Q: Does any of your discharge go to Fox Metropolitan Water District?
    A: We send sewage water to treatment facilities in Warrenville and Batavia. Not sure whether the sewage water that is send to Batavia is being split.
    iii. Q: Do you think we can reduce the a mount of rain water entering the sewage system?
    A: Yes. We've partnered with Warrenville, and they found some problems with sewage pipes in the Fermilab Village. Our FESS group is looking at that and working on finding the most efficient solution. Much like any city, you have to look at the infrastructure and give it the help it needs.
    iv. Q: The levels of chlorine are regulated – who does that?
    A: The state of Illinois. Fermilab and the state both sample. Fermilab samples three locations on a monthly basis on average, but if there are more rain events we might sample more often.
    v. Q: Is there a five- or 10-year plan to start replacing some of that piping
    A: We just went through a large rebuild of our industrial cooling piping system. There is some funding to replace some of the domestic water piping. We hope we'll get additional funding. In general, money allocated to Fermilab is allocated in certain pots, and we can't arbitrarily shift money to things like piping.

5. Presentation: Spencer Pasero – Fermilab Education Update – see posted presentation
    a. Last year, Fermilab conducted an inventory of the outreach programs offered by the lab. The numbers included in the presentation are from

fiscal year 2016. The inventory found 69 programs reaching about 93,000 people. We don't have the numbers for FY2017.

b. Q&A:
   i. Q: How is this info distributed to schools and teachers?
   A: We have mailing lists of people in schools in a nine-county area where we send emails and physical fliers. We don't always know what the best strategy is. We try a lot of different channels, like newsletters. Any help or advice is appreciated.
   ii. Q: Can we get info on how teachers can get on flier distribution lists?
   A: We'd be happy to supply. If you have tips, connections, or other info, please let us know.
   iii. Q: Does Fermilab attend STEM nights?
   A: Yes, and it's become a challenge. We love to have a presence at STEM and STEAM nights, but the number of requests has exploded over the past few years. We used to get a couple a month, and now it is three or four a week. We have a group of volunteers and are recruiting more, but it's hard for people to do nights and weekends. We serve as many as we can, and have a presence at many.
   iv. Q: If we were doing this in 2017, would you have gone over 100,000 people?
   A: Easily. We're excited to count up the numbers for 2017.
   v. Q: For Fermilab's Outdoor Family Fair, do you have to register?
   A: No, just show up. The hours are 1-4pm on June 10.
   vi. Q: Your said there's still work to be done. Can you expand?
   A: A big part is reaching audiences we haven't always reached, particularly in our education program. We looked at the schools that come and request presentations, and we have neighbors in diverse communities such as Aurora and West Chicago that we are connecting with, but not as much as we should. We're trying to make targeted connections to serve underrepresented areas. It's a big focus for us. Most of our distribution is people from the suburbs, but we do get some groups from the city and some from other states. But there's a little bit of a donut hole for our nearest neighbors.

6. Walking tour of Wilson Hall exhibit areas (15th floor)

7. Adjourn

Next meeting: Thursday, July 26, 2018