

Neutrino Division Retreat #1 Summary

June 27, 2016

Introduction

The Neutrino Division (ND) hosted a one-day retreat on May 4, 2016 with ND administrative, technical, and scientific staff in attendance. Appendices 1 and 2 describes the organization of the day.

Morning Session Summary

The morning session groups were created to make a random assortment of professional levels and specializations, as much as possible. The first session collected information on most liked and disliked elements of working at Fermilab. In the second session, more formal discussion was held with written input on mission and strategy.

The second morning session focused on four items:

- 1) Vision for Fermilab
- 2) Mission of Neutrino Division
- 3) Impediments to mission
- 4) Improvements to aid mission

The vision statements produced by the groups had a number of common themes. Keywords for these were:

- Fundamental building blocks of matter
- World leadership
- Neutrinos
- Accelerators
- International

These were expressed with varying texts. The texts are attached in Appendix 3.

Similarly, the Neutrino Division mission statements saw important commonalities in the small groups:

- World's most important neutrino experiment
- Breadth of neutrino program
- Enable the neutrino community and be a welcoming international destination
- Provide effective technical support of the neutrino program

- Support young people in the neutrino community

Texts are attached in Appendix 4. It should be noticed that one group had a penetrating comment about making the role of scientific output of the Division more explicit.

The next, important, question posed to the group was to consider the impediments that they saw to carrying out the mission of the Division. Here there was surprisingly clear agreement among the various groups. The first and second principal impediments were seen to be:

- 1) Overall coordination between Divisions, which makes rational resource allocation difficult, and
- 2) Inadequate staffing which means too much division of time (“too many hats”)

Other impediments were excessive bureaucracy and inadequate communication at all levels. These were unifying themes throughout the morning.

Finally, the groups were asked to provide action items to help the Division mission. Some items suggested went beyond Divisional boundaries, such as “Allow more project R&D before designs are frozen”, and “Create an Engineering Division”. Of those that were closer to the Division, the overwhelming consensus was that improvements in communication and its close partner collaborative work would benefit the Division most. Specific items included:

- Better communication of management to staff
- Improve physical layout to improve collaboration opportunities
- More frequent general meetings to allow cross-fertilization and identity building
- Additional tools such as guides on how to get things done

Many groups also indicated needs for more staffing. Interestingly, it was noted that the retreat itself represented a good start on removing barriers to communication.

Afternoon Session Summary

The afternoon session of the retreat focused on discussions with ND staff grouped by job category and facilitated by group leaders. Five groups separately met: (1) administrative support staff, (2) technical support staff, (3) Research Associates (RAs), (4) junior scientists, and (5) senior scientists. Some common themes emerged from the discussions that centered around the topics of communication, career development, and ND real estate, among others. Naturally, much of the discussion focused on identifying areas of improvement and suggestions for possible solutions were presented in many of the cases (see action items below).

Communication:

There was a general call for increased communication (1) between ND RAs, (2) among LAr experiments, and (3) between the scientific staff and support groups. It was felt by many RAs that there was not enough communication between RAs on the different experiments and that such communication could help alleviate a wide spectrum of RA experiences, experiences that seem to vary significantly from supervisor to supervisor. Several groups also felt that mechanisms were needed to ensure tighter communication between different liquid argon experiments, many facing the same issues. It was noted that communication between ND management, administrative, scientific, and technical staff needs to be more frequent. The weekly Neutrino Division summaries are very helpful and opportunities to get together as a group are generally a good thing. Also, the administrative staff felt that the “open door policy” of ND senior management was very refreshing. More thought should be given to further improving chains of communication and increasing opportunities for groups to get together and discuss common issues and plans.

Career Development:

Several opportunities to improve the career paths for Fermilab staff in the Neutrino Division were expressed. Some RAs felt as if they are subject to the “luck of the draw” depending on who they get as a supervisor and often do not feel as if they have someone “fighting for them” on their experiment, as is the case for many of their University peers. Some RAs had a very positive experience with a very proactive supervisor who regularly set up meetings with their mentoring team, while others didn’t even know that they had mentors assigned to them. Some RAs felt unduly saddled with service work on their experiments (and would prefer that such tasks have a well-defined and clearly articulated duration) while others did not have this experience. Moving forward, both the RA and junior scientist groups thought it would be worthwhile exploring a 1-to-1 (or 2-to-1) pairing between Research Associates and Associate Scientists thus forming an “RA/AS team”. Such a team would work on analysis tasks and topics of common interest, would be encouraged to be involved in both analysis and hardware, have operations duties commensurate with those of their University colleagues, and work on both a current and future neutrino experiment. Pairings with visiting graduate students were also discussed. Scientists requested that they have a say in graduate student selection and expressed that it is important to clearly lay out expectations for both the graduate student and supervisor. There was some concern expressed over the load on the scientist.

In general, it was felt that the need to travel to conferences and workshops is an important part of career development and that the rules for approving or rejecting travel requests could be more clearly and consistently articulated. This issue was raised by staff at all career levels.

A discussion among senior scientists asked if management was fully aware of all of the skills and areas of expertise that senior scientists many have acquired as part of their “tool box” which prompted the suggestion of a survey. The Neutrino Division should formulate and formalize the anticipated environment that will exist for a scientist as they move through their career at the lab. It was noted that a thoughtful and well-formed approach could also act as a good recruiting and retention tool.

Division Real Estate:

There was general concern expressed over the lack of adequate office and technical space to meet the growing needs of the Neutrino Division. Several junior staff additionally advocated for more consistent allocation of office space across the neutrino experiments, especially in relation to reserving space for relatively infrequent visitors to the laboratory.

Retreat Action Items

The group discussions focused not only on identifying areas of improvement but also on solutions. Some action items from the retreat include:

- Item: Internal Communication
- Response: Develop and execute a Neutrino Division Communication plan consisting of
 - Continue to have division all hands meetings roughly every quarter, group leaders meetings every other week, and a meeting between admins and division senior management every week
 - Continue the weekly summary document and the forwarding of the minutes of the lab status meeting.
 - Start regular meetings of 1) RAs 2) junior scientists 3) senior scientists 4) technical support & engineering with division senior management (division head, deputy, dept heads) every 4 weeks
 - Hold an ND retreat twice a year
- Item: Communication among Liquid Argon Experiments
- Response: This is an ongoing challenge and a few solutions are being pursued
 - Topical workshops have been popular in the area of LAr TPC R&D and there should be more of them. Workshops are a good opportunity to ensure that the scientific, technical, and engineering specialties have good communication.
 - MicroBooNE’s public notes are a model that can be followed in some situations
 - LArSoft solves many (but not all) communication issues in the area of simulation and reconstruction

- Item: Inadequate staff within the Division requiring requests other Divisions to get work done
- Response: We have strengthened engineering in the Division since its formation and this will continue. In addition, we have a plan to grow a technician group using a mix of experienced technicians transferred in and junior technician hires. We know we need to increase operations support in the light of the expanding program.

- Item: Research Associate Job Placement
- Response:
 - Hold another session of job placement advice to postdocs (the old Intensity Frontier department held one 2.5 years ago)
 - Provide additional mentoring training for scientist supervisors that would make Division expectations clear and could include training on writing reference letters and advocacy for their postdocs
 - Revitalize the postdoc mentoring process with annual meetings (suggest January)
 - Make clear that Supervisor, Dept Head, Division Head/Deputy are all available for career development advice

- Item: Excessive bureaucracy
- Response: Gina has requested specific examples of our work being hampered by a less than optimal bureaucracy. We intend to collect and analyze these and respond accordingly.

- Item: Transparent Criteria for Travel Approval
- Response: We will follow the Travel criteria being developed by Mike Lindgren that will be applied lab-wide.

- Item: Office Space Concerns
- Response: Establish two space planning committees - one for the 10th floor and one for the 12th. These committees will advise on how to allocate space once the 13th floor renovation is complete and space becomes available on other floors. Consistent guidelines to space allocation will be an important part of each committee's charge.

Appendix 1: Retreat Agenda

NEUTRINO DIVISION RETREAT

Wednesday, May 4, 2016

8:30AM – 5:00PM

The IARC Building

Parking: Please park across from the IARC Building on the west side of the Industrial Building

8:30AM	Coffee	Lobby (1 st Floor)	15
8:45AM	Plenary - Introduction	The Lecture Hall (1 st Floor West)	45
9:30AM	Small Groups – I	Multiple (see below)	60
10:30AM	AM Break	Lobby (1 st Floor)	30
11:00AM	Small Groups – II	Multiple (see below)	60
12 Noon	Lunch (provided)	Lunch Room (2 nd Floor West)	90
1:30PM	Small Groups – III	Multiple (see below)	60
2:30PM	PM Break	Lobby 9 th Floor	30
3:00PM	Small Groups – IV	Multiple (see below)	60
4:00PM	Plenary – Closeout	The Lecture Hall (1 st Floor West)	60
5:00PM	End of Retreat		
5:15PM	Drinks	User's Center	Optional

The Lecture Hall (1st Floor West)

1WA (1st Floor East)

1WB (1st Floor East)

2E East Point (2nd Floor East)

Lunch Room (2nd Floor West)

The Floating Point (3rd Floor East)

Appendix 2: ND Retreat Small Group Sessions

Small Groups – I (1 hour)

Introductions – around the room (~2 min each)

What is your job at Fermilab?

How long have you been at the lab?

Where have you worked other than ND?

Besides your job here at Fermilab, how do you enjoy your free time ? (i.e. hobbies)

What's the weirdest thing you have ever eaten?

Share one thing that most people probably don't know about you?

Describe yourself using THREE words

Thoughts about the “temperature” at Fermilab - 5 minutes with paper and pen

What do you like most about working at Fermilab?

What's your least favorite aspect of working at Fermilab ?

Group leader :

Read the “like least”s. Read the “like most”s. Is there a generalization that we can compose and share in the end-of-day wrap-up? Group leaders should enter their notes into the Google Docs.

Small Groups – II (1 hour)

Paper and pen : In no more than two sentences write down a Vision for Fermilab; think about what Fermilab wants to be doing in 10 years (10 minutes).

Group leader shares the vision statements. Is there enough consensus to write a single one for the group? Try!

As a group, compose a Mission Statement for the Neutrino Division, such that it supports the Laboratory Vision Statement that you wrote (5 sentences max).

Pen and paper :

What do you see as the greatest impediment to being successful in that mission. Is the impediment something that is within our control to fix?

If there were one thing about our organization (Neutrino Division) that you could change, what would it be? Share the comments. As a group – Choose two of the impediments to share with the whole group when we reconvene. Choose two of the “changes” to share with the whole group.

Small Groups – III (1 hour)

Activity 1 : Candy Grab Bag Introductions

Instructions : Each person chooses between 1 and 5 pieces of candy (each different).

Group leader posts on board the topic that you must address depending on which piece(s) you chose.

1. What is your favorite hobby?
2. What is your favorite place on earth?
3. What is your favorite memory?
4. Describe your dream job?
5. Wild card – tell us anything about yourself that you think that most people don't know

Activity 2 : Would you rather ?

Instructions: Group leader identifies corner of room that is one extreme to the other; everyone stands up and places themselves somewhere on the spectrum of the two extremes posed. Each person gives a quick explanation of why they are standing where they are.

Extremes to explore:

Winter or summer

Hawaii or NYC

Rock or classical music

Chocolate or strawberry flavor

Morning person or night person

Rich or beautiful

Activity 3 : Similarities

Divide the group at random into 3 small groups of ~4 people; the small groups discuss among themselves to determine 5 things that they all have in common. The first group to finish “wins”; when all groups are finished, share the results.

Small Groups – IV (1 hour)

Purpose of this session is to give everyone an opportunity to discuss issues specific to their job responsibilities. Topics could include: performance reviews, goal setting, communication, understanding lab priorities, recommendations to management

Research Associates – Sam Zeller

Junior Scientists – Steve Brice

Senior Scientists – Gina Rameika

Engineers and Technical Support – Rob Plunkett and Stephen Pordes

Administrative Support – Deanne Randich

Appendix 3: Vision Statements of the Groups

- **Vision for Fermilab** : Fermilab will be an international destination for world leading programs in particle physics and accelerator science. Fermilab will host the world's premier accelerator neutrino program.
- **Vision for Fermilab**: The World leader in international neutrino physics and particle physics using high power beams. The lab will lead in connection with physics of the universe.
- **Vision for Fermilab**: Fermilab vision is to be the world-leader in solving fundamental questions in physics by providing a diversified international platform with world-class research facilities.
- **Vision for Fermilab**: Fermilab is the leading US laboratory in the global enterprise to understand the building blocks of the universe. Fermilab hosts world-leading experiments and develops advanced accelerator and detector technologies that make these experiments possible.
- **Vision for Fermilab**:
 - Understanding the Building Blocks of Nature
 - World Leadership in Accelerator Technology
 - International
 - Ideas -> Reality
 - Laying the Foundation for Long Term Societal Benefits
- **Vision for Fermilab**: Discovery science and bringing the next Nobel Prize in Physics to Fermilab.

Appendix 4: Neutrino Division Mission Statements of the Groups

- **ND Mission:**

Host the World's leading neutrino experiment and largest neutrino community. Lead enriched neutrino programs, including short-baseline, long baseline, and cross-section experiments. Provide advanced facilities for neutrino communities.

- **ND Mission:**

1. The Neutrino Division is the host for the lab's highest priority future experiment to measure neutrino oscillations and interactions: DUNE.
2. We have a broad neutrino research program that does world class science and leads from where we are today to the DUNE experiment.
3. The Neutrino Division enables scientists and students from universities and labs around the world to contribute to the current and future neutrino programs.
4. The Neutrino Division provides the technical groups with expertise for developing, building, and operating neutrino experiments.
5. Develop the scientific and technical skills to support the current and future experiments.

- **ND Mission:**

- Employ the world's brightest to insure the Vision is met.
- Provide a diverse, efficient, innovative environment.
- Hosting and operating a suite of experiments based on well defined technology and pointing to specific physics goal.

- **ND Mission:**

The mission of the Neutrino Division is to establish the scientific, technical, and cultural environment in which the study of neutrino physics will flourish.

- **ND Mission :**

- Create and support an environment where staff and users can excel in their pursuit of neutrino research.
- Be the hub where scientists from laboratories and universities from around the world come to build and operate experiments and analyze and publish data.
- Provide leadership for and opportunities to young researchers in neutrino physics.

- Lead in outreach activities in support of neutrino research.
- Enable staff and users to perform their work at Fermilab in an efficient manner by working to reduce or remove barriers between different parts of the Laboratory. (i.e. work to remove stovepipes)
- Expand neutrino-focused detector R&D by support of test-stands and allow for “outside the box” ideas to be explored.
- Support and actively participate in the currently operating experimental program.
- Support facilities for detector development, detector construction, test beam activities and test stands.
- Support the current and future neutrino program by providing :
 - Effective management of resources (human, material and financial)
 - Scientific leadership
 - Technical and operations support
 - Administrative support to the Division, staff and neutrino users
- Train and mentor a pipeline of workforce personnel to develop a diverse set of skills that will be required to sustain the neutrino program for decades of research to come.

- **ND Mission:**

We ended up converging on a mission statement that was very much along the lines of the mission statement on the ND website. We read the actual mission statement from the ND webpage at the end of our session, to compare. However, it was noted that one important point was absent from our mission statement: the scientific output from the Division. What's the role of the scientific output of the Neutrino Division in our mission? Our role seems to be support everyone else carrying out their physics. The implication is that we are second-class scientists. This preferentially impacts younger scientists. We only serve supporting roles? Our scientific output, aspirations, and achievements need to be somehow captured in the mission statement.