International Neutrino Summer School

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School Curriculum and Lecturers

- Neutrino Mass Models (4): ZhiZhong **Xing**
- Neutrino Phenomenology (4): Boris **Kayser**
- Neutrino Detectors (3): Masashi **Yokoyama**
- Accelerator Neutrino Experiments (3): Jeff **Hartnell**
- Neutrino Interactions (3): Kevin **McFarland**
- Direct Neutrino Mass and Neutrino-less Double Beta Decay Measurements (4): Susanne **Mertens**
- Solar and Atmospheric Neutrino Experiments (2): Jen **Raaf**
- Reactor Neutrino Experiments (2): Seon-Hee **Seo**
- Cosmology / High Energy Neutrino Astrophysics (2): Mary Hall **Reno**
- Future Efforts of the Field (2): Sandhya **Choubey**
- Short bonus lecture:
  - Neutrinos: Can We Tell 4 From 2 (Components)? Jean-Marie **Frère**

Lecturer – student interaction

- Very important factor in the schools is the ability of students to share meals with each other and with the lecturers
- Another implied ingredient is that the lecturers should be at the school
  - Every lecturer except one stayed for at least 5 school days, and a few stayed 11 days or more!
- For INSS2016 success students and lecturers shared most meals at both ICISE and at Seagull Hotel

Comments from the students

- Responses: 17 replies out of 33 students
- Balance of Lecture and Tutorial time correct?
  - Mostly, but a few asked for longer tutorial sessions
- Most valuable part of the school:
  - Discussions with the lecturers and tutorial sessions
- Any topics we should have added?
  - More on ICECUBE experiment
  - Discussion of systematic uncertainties

- Were lectures at right level of difficulty?
  - Some of the mass model lectures were at too high a level
- Social events: (excursions, banquets, etc.) good, but should have had an ice-breaker at the beginning

This year's school in Vietnam

- Of 33 students:
  - 19 from Asia
  - 7 from Europe
  - 7 from USA
- Of 33 students:
  - 10 women, 23 men
- Over 80% were experimentalists
- Mix of experiments represented:
  - Accelerator-based (10)
  - Reactor-based (6-8)
  - Neutrino-less double beta decay (few)
  - atmospheric/solar based experiments (few)

What makes INSS Unique

- Broad program covers all major areas of neutrino physics
- Program involves many components
  - Formal Lectures
  - Problem sets that students must answer in groups
  - Students interact with lecturers and tutors during problem-solving sessions
  - Student presentations of the answers they derive
- Students are paired randomly in groups to work together; students with diverse backgrounds meet each other
- Also pair theorists and experimentalists
- Lecturers are asked to stay at school for full week

INSS and NuFact

- INSS covers much more than accelerator-based neutrino physics.
- The overall idea is that the INSS will now be more independent from NuFact.
- Starting next year the school will be held at Fermilab with a goal to have every other school at Fermilab with off-year schools in diverse geographical locations.
- Propose an international organizing committee for the school with representation from NuFact within the committee.