

**Lee Teng Undergraduate  
Internship  
in Accelerator Science and  
Technology**

Vladimir Shiltsev(FNAL)

November 27 2007

---

- Engage highly promising post-junior undergraduates in the study of and research in accelerator science and technology with the aim of encouraging them to pursue graduate research and education in these fields.
  - Secondary purpose is to build interest in and appreciation of accelerator physics and engineering at user faculty institutions
  - Comments:
    - both Argonne and FNAL had and have summer students openings to work on accelerators
    - E.g. FNAL has an International Program (accelerators only, ~8-10 /yr) and Internship for Physics Major (~20/yr but in all areas)
    - the outcome (students interested in PhD in accelerators) is not great so far because of weak links after the summer
-

- Bill Barletta (US PAS Director) had come out with the idea of highly competitive summer internship program which could be coupled with US PAS - and got blessing from Young-Kee Kim to pursue that.
- An *ad-hoc* committee was quickly formed, which - besides Bill and YKK - included Rod Gerig and Vladimir Shiltsev (both involved in organization of the Illinois Accelerator Institute ) , and Alvin Tollestrup.
- Two general meetings at FNAL:
  - September 12, 2007: all agreed to name it by Lee Teng - a great accelerator scientist who worked both at FNAL and ANL
  - November 7, 2007: to discuss plans and logistics, attended by Kathy Harkay and Harold Myron
- Nov'07 - Lee Teng Internship committee members indentified

# What is Lee Teng Internship?

---

- The Lee Teng Internship is a highly competitive education and research opportunity open to students from **US Universities** who are in their junior year in physics or engineering.
  - Teng scholars will receive a **full scholarship to attend the US Particle Accelerator School Summer Session (2 weeks)** followed by an **eight-week research internship at Fermilab or Argonne Nation Laboratories**. Research Projects will be of sufficient depth for a senior thesis. The internship offers full travel support and a generous stipend.
  - Number of scholarships - not more than 10/yr (~5 @ each lab)
  - Cost of the program
    - Direct cost: ~40k\$ per lab per year
    - Indirect cost: time and effort of our staff mentors
-

- Highly competitive selection of post-junior year undergraduates for summer education and research internship. Solicitation of applications through
  - direct e-mail to members of FNAL and ANL users groups,
  - direct mailings (poster and details) to physics and engineering department heads at these universities,
  - web-site announcements linked to FNAL and ANL homepages. Fundamentals of Accelerators Session
- Selected interns will be enrolled in the June Session USPAS course, Fundamentals of Accelerators
  - Sponsoring Lab will pay transportation to USPAS Session
  - USPAS will award a scholarship covering the USPAS fee (room, board, books, credit)
- Students will undertake research project under the guidance of a FNAL or ANL mentor scientist or engineer.
  - Pay will be slightly higher than other undergraduate employees/ interns

- During senior year students will continue their work toward a senior thesis (if their university permits)
  - Lab mentor will be available to guide work
  - Students would receive additional instruction from Lab instructors via distance-learning techniques?
- Our best interns would be excellent candidates to be supported for graduate research in accelerator science and technology conducted at FNAL or ANL.
  - We could advise these students on appropriate universities to meet their interests in accelerator science and technology
- We would track the career progress of the Teng Interns.

**The First Interns - in Summer'08!**

- Budget secured
- Poster drafted (show)
- Lee Teng Internship committee selected

- William Barletta (US PAS)
- Peter Ostroumov (ANL)
- Eric Norum (ANL)
- Alvin Tollestrup (FNAL)
- Eric Prebys (FNAL - chair)

(see Rod Gerig's presentation)