Mary Lou Dunzik-Gougar: Idaho’s 2 + 2 Scholars Program

A new university program brings nuclear engineering students together to work at INL’s Advanced Test Reactor, Hot Fuel Examination Facility, and other facilities.

What is the 2 + 2 Scholars Program?
It is a program that grooms undergraduate students for careers in nuclear engineering. The very first class, consisting of junior-level nuclear engineering students from ISU, Boise State, and UI, started with this year’s fall term and is now under way. The way the program works is that the students spend their final two years in Idaho Falls, attending classes at University Place while working as interns at INL. At the end of the program, the students receive their degrees from ISU.

How many students are participating in the program?
The first 2 + 2 class has six students—four from ISU, one from Boise State, and one from UI. We strive to give them special opportunities by allowing them to work closely with INL researchers, using some of INL’s state-of-the-art facilities.

How does the 2 + 2 program differ from a traditional nuclear engineering program?
The program got its name because it is aimed at students as they enter into their junior year, which is when nuclear-specific courses normally start. So, for the first two years of university life, the students take their general engineering courses, which are pretty much the same at all three Idaho universities. That’s the first “2” in the name. Then, for their second two years—the junior and senior years—the students come to live and work in Idaho Falls, where most of INL’s facilities are located. That would be the second “2.” The main ISU campus is located about an hour away in Pocatello, so it’s a relocation not just for students from Boise State and UI, which is located in Moscow, Idaho, but for ISU students, too. We want the program to be like a small family—we do everything possible here in Idaho Falls, where we have access to INL’s expertise and facilities.

How does the 2 + 2 program differ from a traditional nuclear engineering program?
The basic education, the course content, for a nuclear engineering B.S. program will be the same for students at any university in the United States. The 2 + 2 program offers unique opportunities beyond the core of the curriculum. The students are provided financial support, as well as special elective courses according to the expertise at INL, field trips to INL and other regional facilities, and a six-month practicum experience working on projects—incorporating the required senior design project—at INL.

What sort of scholarship is involved for the students?
Scholarship funds, totaling $90,000, have been provided by the Areva Group and the DOE. For this first year, Areva provided $50,000, to which the DOE added $40,000 through its industry matching grant pro-
The 2 + 2 program offers …

financial support, special elective courses according to the expertise at INL, field trips to INL and other regional facilities, and a six-month practicum experience working on projects at INL.
riculum. These courses include differential equations, engineering physics, statics, dynamics, and chemistry. Beyond this, we look for evidence of self-discipline, strong motivation, and hard work.

**What about research at INL—do students not in 2 + 2 get to participate in that?**

INL, like many other national labs, has opportunities for students, for faculty, and for visiting scientists. The most popular and the biggest program is its summer internship program. Students come for a 10-week period in the summer, and they are paired up with a scientist or engineer to work on a project. Any student who applies is eligible to be selected as an intern. Even before the 2 + 2 program started, I was helping place students from ISU and really any student who contacted me. I would do that for students from Penn State, the University of Wisconsin, and other schools. I consider it part of my job to help place students at INL.

What the 2 + 2 students will do is a bit beyond what a regular intern experiences. We track down positions for them to start in the summer, the same as for a regular intern. The 2 + 2 experience is different because those students work together on projects, unlike a regular intern working on one project. Together the 2 + 2 students work on something that’s a little bit above what the average project would be, in that we want this to be something that might possibly be published for a professional or technical meeting. In addition, the 2 + 2 students will stay at INL beyond the normal 10-week period for regular interns and will continue working part-time into the fall semester of their senior year. Also, 2 + 2 students will bring other engineering students on board during the fall semester to use their INL projects for senior design project efforts.

**Is the 2 + 2 program strictly Idaho-focused, or could universities from other states get in? Could similar programs be set up at other universities working in conjunction with other national labs across the country?**

I think there is great potential for this idea. There is no restriction on foreign students coming to the program. There is no restriction on foreign students’ participating in the program. There probably will be slight differences in what we can and cannot do with respect to INL appointments for foreign students, but that’s just the reality of working at a national lab in the heightened security atmosphere that we live in today.

**Was there a real need for the 2 + 2 program?**

Yes, definitely. Some students may have the perception that nuclear is a dying field. Those of us in the field realize it’s not true, of course, but for young people thinking about careers, they don’t want to get into something that they think is dying. So, we wanted to “beef up” the field such that we can show them all the new and exciting things that are going on. We are hoping the 2 + 2 program does just that.

**Correction**

Because of a production error, the last line of the article “So, what’s up with education and R&D?” in the November issue of Nuclear News (page 34) was inadvertently omitted. The final paragraph should have read:

Lineberry said that the IUC and the NUC will work to engage other universities in the United States and around the world in recognizing INL and CAES as a focal point in the advancement of education in nuclear science and technology. “The universities are poised to play a role in INL’s research,” he said. “All of this is still very much in the growing stage, but the universities surely want to be active in the research, not only with their faculty but with graduate students.”