ExxonMobil Student Education Program

# The one and only Student Education Program

Mick Swiney, Web Content Editor

Imagine a classroom setting unlike any other classroom, where the instructors are actually professionals with upwards of 20 to 30 years experience working for one of the world's leading exploration and production companies. Your classmates are from all over the world, representing the cream of the crop from various disciplines across exploration and production fields. And lastly, imagine that the entire weekend is devoted not to textbooks or abstract concepts, but actually analyzing data torn straight from the field as you prepare to pitch your own answer to the ultimate exploration question: where should we drill?

Now take what you have imagined, put it on steroids, supercharge it with 5,000 volts of fun… and it still won't be as good as SEP.

## This is not a drill

Now in its seventh year, the Student Education Program is sponsored by ExxonMobil and staffed with leading professional geoscientists who act as instructors and facilitators through three days of lectures and discussion followed by practical, hands-on exercises.

First up: a quick crash course in everything a student needs to know to make the most out of SEG. Elsa Velasco from SEG University and Student Programs presents on the soft skills students will need to sell their pitches to their future companies. SEG Wiki Editor Andrew Geary talks about how this new media resource will become critical to enabling student collaboration and research – especially since it now offers the two cornerstone texts of the field in their entirety and completely free of charge: Robert Sheriff's Encyclopedic Dictionary of Applied Geophysics and Oz Yilmaz's Seismic Data Analysis. "From what I've seen on the student Facebook pages, getting free textbooks is always on your mind," jokes Geary. "Now you have an easy and legal way to do it."

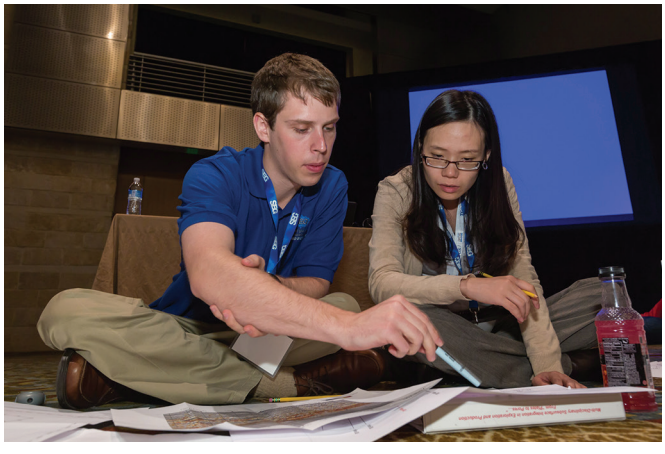
Then the weekend gets down to brass tacks as ExxonMobil's Brian Sabin takes the stand with a presentation that, for some of these students, represents the first time anyone has ever "connected the dots" by showing the role geophysics plays in an integrated oil company. As Sabin breaks down this massive, complex industry into an easily understood sequence of diagrams and explanations, a template for the entire weekend begins to emerge. "The idea here is that you are going to be joining an oil company for the next 2 days," Sabin says. "Your goal is to get the most reserves at the lowest cost in a safe and environmentally sound manner."

Their first day has dropped the participants into a rapid-fire sequence of activities, the program changing every 15 minutes to half hour. As the weekend goes on, however, the students dig deeper and deeper, attending lectures and engaging in practical exercises that serve to sharpen such practical skills as regional line interpretation, 2-D mapping, seismic acquisition design, well to seismic ties and transfer markers, and integrated mapping. The climax of the weekend will take place Sunday evening as the students put all they have learned to the test in their proposal about where to drill.

And that challenge is not without a certain degree of suspense – particularly when the budding explorers are informed that their initial forays into drilling for data ("wildcat wells") can cost their companies anywhere from 50 million to 1 billion USD. What's more, as ExxonMobil geophysicist Virginia Dunn informs her hushed audience, the global average indicates that these drills will be lucky to have a 10 percent chance of actually leading to oil discoveries.

"It's fun to see that switch when they go from 'I'm a student and I'm here just to learn things' to 'I will be a professional in the next year or two and I'm going to have to actually do this as my job, so maybe I should really, really start thinking about it in a different way'," confides ExxonMobil's Alana Robinson.

One interesting aspect of SEP is that it can tend to be a rather closed-door program – photos of the program included here on the SEG website, for example, often require that any visible maps or seismic lines be blurred out. SEP is indeed an exclusive and elite program for budding geoscientists, but all of this secrecy has another reason: ExxonMobil, sponsor of the program, actually provides real-world data for

the students to hone their skills. What students get in SEP, therefore, is not a simulation, but the real thing.

### 2D mapping, 3D minds

For the rest of the weekend, the students will listen to concepts and apply them through exercise after exercise, working at the wall, on the floor, working through lunch.

"This program is basically the only opportunity that students have to be coached by people that have 20, 30 years of experience," says Fabiola Ruiz Pelayo of the University of Houston. "Because when you're a student, the theory and everything gets more complicated in your mind, and they sympathize, they understand that you don't have time to think of all that."

At one point in the weekend, massive depictions of seismic data cover the wall, the students gathered around as Dunn targets key areas on the data map with her laser pointer, probing them with tough questions. Sometimes segments of data are displayed on the big screen, while student brainstorming is captured on a flipchart in the corner, the entire art and science of geophysics distilled into two columns of clear blue and black marker: one column reading 'Observations', the other reads 'Interpretations'.

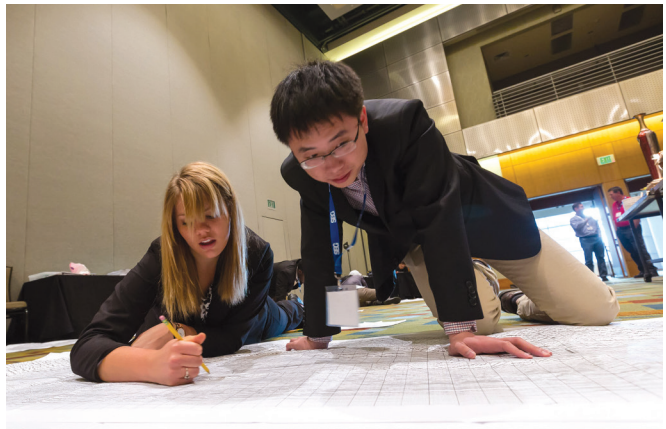
For much of the weekend, however, the students are actually on the floor with data maps spread out in front of them, elbow deep in data, poring over the squiggly lines with colored pencils, twisting signal from noise and sense from chaos. One team (Yue Du of University of Houston and Kevin Liner of University of Arkansas) has even stapled their data sheets together to make a freestanding array – anything to give them new perspectives on the cryptic seismic lines.

"We could have them do the exercise on workstations," says ExxonMobil's Glenn Bear with a smile and a shrug. But working in paper, on the floor, is much more interactive… and a lot more fun. And indeed, over the years the image of students on the floor working their data has become the iconic image of the Student Education Program.

### A 43-way street

The 43 students represent 12 different nationalities, most from North American Universities, but with Americans only accounting for 16% of the group. Through their participation in programs like SEP they are not only becoming well-prepared geophysical professionals, but also contributing members to the Society itself, like Ricardo Kabila, a student of University of South Carolina who is still helping out his student chapter back home in Angola, or Uzonna Anyiam of Oklahoma State University, a well-known figure who has made a regular practice of volunteering his energy and charisma to SEG University and Student Programs for several years. Some participants are attending the meeting as recipients of SEG travel grants while others, like Blaine Bockholt of University of Memphis, have also participated in SEG's companion program, the Student Leadership Symposium.

"Because it is interdisciplinary, and all these people are from different cultures, it means that when we discuss the same problem, different people have different views," says Yanjun Hao of Southern Methodist University. "A lot of the other people's viewpoints are a real eye-opener for me, because I never thought of it that way before, it would be hard for me to arrive at that based on my culture and my background. It widens my viewpoint for the problem."



The students give as good as they get, grilling their instructors with questions that go beyond the science and address topics such as the future of demand in the oil industry, or even how they will reconcile their exploration activities with their ethical responsibilities as earth scientists.

"They all come from different cultures, different backgrounds, and they have different ideas that challenge us at every minute," says Virginia Dunn. "It makes us better scientists."

### Lesson one: Love it

And yet no description of SEP could fail to observe that laughter is as common a feature as science. As Sabin tells the group, "the one thing that has to happen when you leave here is that you've had a really good time."

It would be hard not to, when seeing how much fun the instructors themselves are having. From the playful banter between SEP veterans Dunn, Sabin, and Robinson to the readiness with which newcomers to the program such as Glenn Bear and ExxonMobil's Katy Withers dive in with the same passion as their colleagues. It seems as if the instructors have spent most of the year itching to do what they are doing this weekend.

"I see ExxonMobil just planning ahead for the next round of geophysicists that we need, just to keep the business running," Glenn Bear says. "And I love the fact that they'll actually pay me to come here and spend time with these students. Because there's a bunch of really bright people in this room."

And yet any observer would be amazed to discover that the facilitators are not professional instructors or academics – their facility with explaining complex subject matter, their energy and passion combined with their talent for connecting with the audience is truly a wonder to behold. And when you get right down to it, this gives the students something better even than learning or career prospects: a positive vision of their own futures as professional geoscientists.

"They care, they want us to be successful geologists and geophysicists," says Hannah King of Virginia Tech. "They're showing us that passion and they're teaching us that passion."