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# High times for gold, geologists

To hear Steve Enders talk about it, the gold-mining industry is in a Dickensian period right now.

"It's the best of times and the worst of times," the vice president of worldwide exploration for Denver-based Newmont Mining Corporation says, paraphrasing Dickens' opening lines of *A Tale of Two Cities*.

Newmont operates several gold mines in Nevada, which, even though it's only a state, ranks as the world's fourth-largest producer of gold after South Africa, Australia and China.

What makes this the best of times for gold mining is obvious enough: the price of gold. By Nov. 1, it had climbed above \$600 an ounce, more than double the price of five years ago.

On the down side, oil and gas prices have also skyrocketed in recent years, and energy costs make up 25 percent of Newmont's costs. That erodes profits.

So does higher salaries. Labor accounts for 40 percent of expenses, Enders says, and labor costs in the mining industry have been rising along with commodities prices.

Here's why: When the price of a commodity like gold rises high enough, it becomes economical to go after more-difficult-to-extract deposits. But more exploration and production requires more labor. And when job openings exceed qualified workers, as is the case right now, companies bid up salaries to attract or keep employees.

That makes this one of the best times to be a geologist.

And one of the worst times to be running a graduate program in geology.

"I'm having a hard time keeping my grad students," says Tommy Thompson, director of the Roberts Center for Research in Economic Geology, part of the Department of Geological Sciences and Engineering in the University of Nevada, Reno's Mackay School of Earth Sciences and Engineering. Economic geolo-



gists prospect for valuable minerals and then determine if there's enough of the material to make it economically feasible to mine.

Thompson said last fall he'd heard that entry-level economic geologists, those with graduate education, were being offered salaries of \$65,000 to \$70,000 a year with \$10,000 signing bonuses and relocation costs.

That kind of money proved too appealing to pass up for one of his master's students and one doctoral student. Their departures last winter left the program with four master's and four doctoral students, he said.

This situation is nothing new for the mining industry, which is notorious for its cyclical boom-and-bust periods. During booms, the graduate programs starve for students. During busts, when companies are looking to cut payrolls, many geologists and other scientists enroll (or re-enroll) in graduate school, hoping an advanced degree will translate into a better job when prices recover and the companies are hiring again.

Marcus Johnston '03Ph.D. (geology) found himself in a bust period as he was nearing the end of his doctoral studies in economic geology in 2000. Gold prices lingered below \$300 an ounce, and job prospects were few. When Newmont offered him a position, he figured he couldn't ask the company to wait until he'd finished writing his dissertation. So he took the job and ended up with the unenviable task of writing a dissertation while working full time and also starting a family.

Three years later, with gold having risen above \$400 an ounce, he left Newmont to become project manager for a small or "junior" Canadian mining exploration company, Victoria Resources US Inc., that was working in Nevada. The firm contracts with larger production companies like Newmont.

"We find it, they mine it" is how he describes the business model of his outfit, which has about 10 employees based in Reno.

Johnston marvels at how the job market has changed since he left school.

"Six years ago when I went to work for Newmont, I had five years of graduate school and I was almost done with a Ph.D. and I made \$43,000 a year. Right now we're paying people with zero experience and a bachelor's degree \$50,000-plus."

Unlike larger mining companies, juniors like Victoria Resources often offer stock options to employees. That way, when the company makes a big find, employees can share more directly in the bonanza. Johnston says a student who was finishing up his master's at the University when he was completing his doctoral studies took a job in Mexico after graduation and, two successful years later, his options were worth more than \$1.5 million.

Even with all those perks, however, many geoscientist jobs are going unfilled in the mining industry, says Jon Price, state geologist and director of the Nevada Bureau of Mines and Geology.

"There just are not enough people available who can do the jobs."

Traditionally, the best source of available geologists was recent college graduates. But undergraduate enrollment in the geosciences has yet to recover from a steep decline that began in the mid-1980s. According to Elizabeth Ball '97M.A., the Mackay School's coordinator of student services, the number of undergraduates in geological sciences has started to climb only in the last two years. Leigh Freeman, general manager of Downing Teal Inc., one of

Ed Cohen is editor of *Nevada Silver & Blue*.

the largest personnel recruiters for the mining industry, has said that the 13 remaining mining programs in the United States are graduating a total of about 100 students a year. But the mining industry will need three times that many over the next several years, he says.

That dearth of new talent leaves companies few alternatives when it comes to recruitment.

“Turnover is high right now,” says Newmont’s Enders. “There’s a pretty sinister trend going on in industry, which is poaching each other’s employees, which, in my opinion, is an unsustainable practice.”

Enders says a more practical solution is to attract new people into the mining professions

and train them. In line with that philosophy, Newmont has pledged \$2.5 million to Mackay over the past five years to support scholarships, professorships and programs.

The shortage of geologists doesn’t figure to last forever because commodity prices inevitably fall when production expands in response to high prices. Enders says price cycles typically last five to seven years in the gold-mining business, and the industry is four years into the current cycle. Optimists believe this boom could be longer because it’s being driven, in large part, by demand for all kinds of minerals to feed explosive manufacturing growth in places like China and India.

A longer expansion, however, could only compound the industry’s labor woes. Ed Cope, vice president exploration-USA for Barrick Gold Corporation, the world’s largest gold mining company, says Barrick’s exploration division, based in Elko, has been aggressively recruiting lately but still has some openings.

He’s more concerned with the future of the organization. That’s because almost all of the 54 geoscientists employed by Barrick in Elko are in the 40-55 age range with only a few geologists as young as 30.

Says Cope, “The question of where we’re going to be in five years is more critical than where we are today.” □

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