

# Bogus Nordic skiers will soon see the light

CARRIE QUINNEY

## Boise State engineering students design new solar-powered system

BY JANELLE BROWN

High above the city of Boise, powerful lights illuminate downhill runs at Bogus Basin Mountain Resort for night skiing. The Nordic ski trails located nearby are dark; so-called “skinny skiers” either have to head home when the sun goes down, or use headlamps to see where they’re going.

But that situation will soon change, as a result of a grant from a private foundation and a partnership with Boise State’s College of Engineering.

The Edwards Mother Earth Foundation recently awarded a \$37,000 grant to the Bogus Basin Foundation’s Nordic Group for the first phase of a project to design and light a new 5-kilometer loop trail at the Bogus Basin Nordic Center using an alternative energy source. Boise State is playing a key role in the ambitious undertaking. This semester, two electrical engineering students at Boise State are researching and designing the lighting system as their senior project.

“This is an opportunity to apply what we’ve learned and also work with people in the community. It involves a lot more than just the math — we have to be able to explain what we’re doing and in terms everyone can understand,” says Nic McGhie, who is working with a fellow student, Jeremy Taylor, on the project.

Designing a lighting system using solar energy

that doesn’t cost a fortune will be an interesting challenge, adds Taylor. “I’m looking forward to building the prototype to see if the ideas Nic and I have thought of will actually work,” he says.

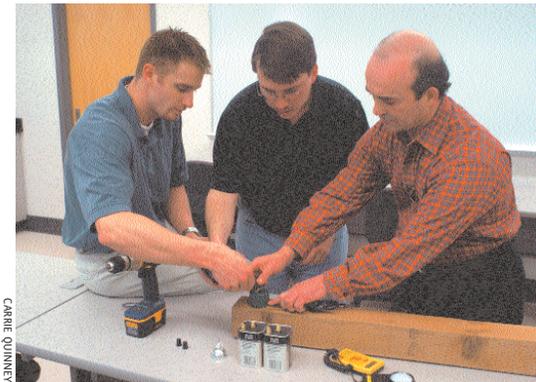
Taylor and McGhie,

who each work at local engineering consulting firms while pursuing their degrees at Boise State, have already begun the groundwork on the project. Based on initial assessments, they decided that mounting solar panels on individual poles spaced along the trail would be the best option to power the lights. The self-powered modular design would eliminate the need for electrical wires to be strung between the poles, a potential maintenance nightmare in a forest setting. Energy efficient halogen or LED fixtures will beam light directly on the trail. The poles will be placed at optimal intervals to provide continuous light.

Taylor is handling the lighting end of the project while McGhie oversees the power component. Among the challenges the duo faces is designing a system that will operate in cold temperatures, that will illuminate only the designated trail and not adjacent areas, and that will be within cost parameters to construct and maintain. They plan to construct a prototype later this winter and test it at the Bogus Basin site; those tests will help them understand what modifications need to be made to make the system work.

If the project goes as planned, the lighted trail will be operational by winter 2005-06. More donations, partnerships and volunteer help are needed to complete the project.

Carl Hoerger, a Nordic Group member and Hewlett Packard manager who is overseeing the lighting project, says he’s pleased with Taylor’s and McGhie’s progress so far. “It’s been great working with Boise State. The university’s involvement is critical to this project’s success, and we deeply appreciate their support,” he says.



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Boise State students Nic McGhie, left, and Jeremy Taylor mount a lighting fixture prototype on a pole with the assistance of electrical engineering professor Said Ahmed-Zaid. The students are designing the lighting project for the Bogus Basin Nordic Center as their senior project under Ahmed-Zaid’s direction.



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