Avalanche scientists study all aspects of snow and avalanches. My specialty involves looking at how the snowpack on slopes varies and changes over time.

Dr. Karl Birkeland
Physical Geographer/
Avalanche Scientist
Ph.D., Arizona State University
USDA Forest Service scientist

Dr. Karl Birkeland

Important Scientist Characteristics
I think my curiosity and creativity are my biggest assets in my scientific work. I enjoy searching for solutions to practical problems that can be applied to better improve avalanche safety and education.

Example of a simple research question I have tried to answer:
Can we dig snowpits and conduct snowpack stability tests in areas that are not steep enough to avalanche?

Technology or equipment used in research:
I like using relatively low tech equipment that works well in cold temperatures. For most of my work, I use an avalanche shovel and a snow saw. I also have used a digital camera that takes high speed video for analyzing spreading cracks within the snowpack.

Most Exciting Discovery
I found that we could do stability tests to assess avalanche danger in gentler, safer locations. This was exciting! It meant that avalanche forecasters could collect valuable information about the snowpack without exposing themselves to avalanche danger.

When did you know you wanted to be a scientist?
In high school I knew I wanted to be some kind of scientist because I loved discovering things, but I didn't know what kind of scientist. In college I worked as a ski patroller and decided to combine my love for snow, avalanches, and science into a career.