

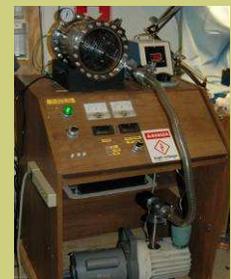


You may be wondering why I have such a peculiar name, “Assorted Technical Expertise at Rattlesnake Ridge Research.” The answer is, Assorted Technical Expertise is my official consulting business name, registered in Virginia. Rattlesnake Ridge Research is a personal lab I’m building at my home in the mountains of West Virginia.

But why use such a scary namesake? I once wanted to name the entire property “Rattlesnake Ridge.” My wife objected thus: “But nobody will want to visit.” I responded thus: “Yeah!” We settled on “The Phoebe’s Nest” when a little grey flycatcher decided the cabin was the perfect place to build a home. But I wanted the lab to have a name that was just a little scary and mysterious. Lockheed had already trademarked “The Skunk Works”, but as far as I could see there was no lab named for rattlesnakes. Plus, I happen to *like* rattlesnakes, and the local timber rattlers provide my security detail.



Rattlesnake Ridge Research is not intended to be a business. A better description is that it is a 1900 square foot man-cave containing a collection of my hobbies, which range from the primitive to the space age. It includes my blacksmith forge, carpentry tools, earth moving equipment, welding equipment, metalworking tools, temperature measurement equipment, cameras, microscopes, telescopes, radio equipment, electronic instruments, vacuum equipment, and a working nuclear fusion reactor.



One portion of the second floor has been set aside as a high definition television studio. I hope to use that to produce interviews of some of my science fiction author friends, to produce educational videos to support Science, Technology, Engineering and Math (STEM) education, and perhaps to produce a few nature videos.

Among the unique features of Rattlesnake Ridge is its relative isolation. If I want to do something noisy, the neighbors are unlikely to complain. I have about 54 acres to play with. The site is just inside the northern border of the National Radio Quiet Zone, and thus has little in the way of local radio noise sources. It is quiet enough that I’m considering setting up a small radio telescope of my own based on the SETI League designs.

The “laboratory” is not limited to this building. It has long been a place for me to learn about solar energy. The cabin is heated by the sun, using hot water collecting panels and a low-voltage

photovoltaic system to drive the pumps. The design is my own, and has a number of unconventional features. It was designed to use the minimum pumping energy possible so that a modest photovoltaic system could drive circulation. The panels were installed below the first floor level so that convection (“thermosiphon”) would assist the pumps. Heat storage is accomplished with about 60 tons of gravel under the concrete slab first floor, insulated around the periphery. Much of my temperature measurement equipment was obtained expressly to work on this system. Fifty-four acres of hardwoods provide more than enough biofuels in the form of dead-fallen trees to provide the balance of the needed heat.



Other resources include a private target range and an abundance of the extraordinary plants and animals offered by the unique biodiversity of the Appalachian mountains. The site is also one of the best dark-sky locations in the mid-east United States, a place to explore the night sky with my telescopes.



The real purpose of Rattlesnake Ridge Research is to provide me with a place to try new things, to learn new technologies, and to invent.

Now, I’m not saying Assorted Technical Expertise won’t sneak out of the corner office and make some use of the RRR facilities. But by and large, these resources are not really part of the business, so I’m keeping them separate.