

Michael Boring, PhD

I grew up on a Barrier Island in Florida 18 miles from where my mother's ancestors, who were from the Spanish island of Menorca, gained their freedom from indenture in the 1770s. I went to high school there. While in high school I had jobs such as golf caddie, paper boy with a large route, ice cream salesman (from a cart I peddled), grocery store stocker, engine mechanic at a shipyard, knife salesman, etc. We were very poor so I was always working. After high school (1955) I went in the Air Force for 4 years. My small high school was very good and I did get a good education.

In the service I became an electronics technician on the B-52 flight simulators. My experience in the service made me decide to go to college and major in physics. I enrolled at the University of Florida in 1959 (only school I could afford as a resident of Florida). I obtained a Bachelor's degree in physics in 1962, a Master's degree (Nuclear physics) in 1964, and a PhD in solid state physics in 1968. Besides all the physics I learned, I learned more about the humanities, classical music, and the Opera (I loved listening to the Opera on Saturday afternoons, while I studied). I also learned to play the Chinese game of "GO" and I became a "car guy". From other graduate students I learned a lot about sports cars and ended up owning several, including a Shelby Mustang GT (as they say in the business, that sucker would fly). In my "golden" years I now drive a reliable Prius. So, all in all I got a good education.

So, in 1968 I took a job at Los Alamos Scientific Lab. It was a one-year appointment, but I liked working at the Lab and they were happy to have me, so I stayed for another 25 years and retired in 1994. My work at Los Alamos mainly involved the quantum theory of atoms, molecules, and solids. That means determining the electronic structure (what the electrons are doing) of atoms, molecules, and solids. For atoms and molecules this indicates how they interact with other atoms or molecules. For solids, such calculations can determine whether a solid is a conductor, a semi-conductor, or an insulator. Also, these calculations can indicate why certain crystal structures such as the cubic structures are preferred by many metals. This research also explained why heavy metals such as the

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actinides do not form cubic structures. We also derived the universal binding curve for metals. My research resulted in over 100 publications (with coauthors) and about 150 talks at conferences (international and national). I also spent 4 months at the University of Uppsala in Sweden on a research grant. I was a theoretician and could do lots of different calculations so I was often asked to join different groups to help on certain projects. Some of this research was very interesting. Such as, could the earth's *solid* nickel-iron core generate the earth's magnetic field: calculations indicated it was unlikely. (We now know it is the *liquid* nickel-iron core that generates the earth's magnetic field.) I did air chemistry calculations (1500 chemical reactions in the troposphere) as a means of detecting ionizing radiation. These are just a few of the many projects I worked on. So, I did have a very interesting career at Los Alamos. In my last few years at the Lab, I was Deputy Director of a Materials Science Center. Also, while I was at the Lab I learned and taught Tai Chi for a few years and that is where I met my wife.

After we retired (my wife also worked the Lab), we did a lot of volunteer work and we traveled a lot. We made several trips to Europe and Canada (mostly with Elderhostel). We also travelled all around the West in our little camper van, including doing the Lewis and Clark Trail and the Old Santa Fe Trail. We also designed and built (as general contractor) our present home with the help of our daughter and 2 construction workers. I think a trip on the Columbia River and a trip to Powell's book store (Portland Ore.) led me to a book on BIG HISTORY and to more interest in biology. Over the past 25 or so years there has been an explosion of data and new information from the field of molecular biology. A deeper understanding of genetics and the determination of the genomes of hundreds of animals (including humans) has led to a new understanding of life on earth. In the last few years, I have given classes/lectures at RENESAN in Santa Fe on physics and biology.