The study of things less than 1/1000th the width of a human hair. These are the building blocks of nature, and they can be used to build some amazing things. Like a car that can think. Or a tiny computer that can hold every book ever written. Or maybe some things we haven’t even thought of yet. All in less than the width of a human hair. N is for nanotechnology. And it’s brought to you by HP. A leader in this science of almost limitless possibilities.

Dr. R. Stanley (Stan) Williams leads one of the world’s premier nanotechnology research efforts at HP Labs in Palo Alto, California. In recent years, Williams and his team have made globally recognized breakthroughs in this burgeoning science. In 1999, the group made front-page news around the world when they demonstrated the first electronically switchable molecule. In 2000, they received a patent for a molecular crossbar memory -- recognized by MIT’s Technology Review journal as one of the top five patents of the year. Since then, they have continued to make advances including the world’s densest electronically addressable memory, the combining of logic and memory on the same device, and the use of nano-imprint lithography to fabricate it.

HP’s work with nanotechnology holds tremendous promise for the world of computers. While noting the power efficiency of computing has improved by a factor of one billion from the ENIAC computer of the 1950s to today’s handheld devices, Williams says fundamental physics indicate it should be possible to compute even another billion times more efficiently. “That would put the power of all of today’s present computers in the palm of your hand,” Williams says. “That says to me that the age of computing really hasn’t even begun yet.”