

**...sculpting materials on the nanoscale, taking textile technology to the extreme, and speeding up innovation itself...**

I'm John Main. I'm an engineer, and I probably became an engineer because one of mankind's greatest achievements unfolded in front of me as I grew up. I was six years old and it was past my bedtime when very blurry images showing the first humans on the moon appeared on our black and white TV. I was hooked. During the Apollo 13 rescue I built a mission control in my back yard.

So, fast forward just a few years and I find myself at DARPA, where I'm part of something that is every bit as big and exciting as Apollo, because DARPA has an Apollo scale mission. That mission is to prevent and create technological surprise.

Finding and creating surprises is every DARPA program manager's job, but we all look for those surprises in different ways—ways informed by our technical specialty, experience, and creativity. One common element is that we are all taking technical risks in the hope of uncovering something great.

To me, surprises arise when two disparate technologies or specialties grind together and something new arises. My first program, Atoms to Product, looked at the intersection between assembly technology and nanoscale devices. In the process of grinding these two specialties together we are learning how to build things the way nature does—one atom or one molecule at a time.

One of the things I've been thinking about recently is grinding conventional textile weaving and braiding against superfine filament technology to see if we could weave fabrics with unique optical, chemical, biological, or electrical functionality.

I'd also like to grind modern social media and communication technology against reasoning about science and technology to see if we can accelerate the rate of technical ideation.

I'm interested in these areas but also many, many others. My personal goal is to create as much technical surprise as I can in my very short time at DARPA.