

Careers

So You Want to Be a Rocket Man?

Many different people are finding career success at NASA

BY DENNIS MCCAFFERTY

Shhh! There's a classified secret about NASA's famous Jet Propulsion Laboratory: You don't actually have to be a rocket scientist to work there.

Since 1958, with the launch of U.S. satellite Explorer I, the California-based lab has served as the cerebral cortex of space-driven science. But as technology grows, and our understanding of the galaxy emerges with more clarity, the lab serves as a great career venue for researchers who don't work on the actual spacecraft. Here's a look at three professionals who found their way to space success.

Artificial Intelligence

Steve Chien came to the lab after living the life of a Digital Age entrepreneur. He ran a small software company that specialized in data mining. But the fascination with his current discipline started in high school. "I got very interested in artificial intelligence because I wanted computer opponents in computer games to be better," he recalls. "They are so lame!" From that point on, he was a quick study. He earned his undergraduate degree from the University of Illinois at 19 and a doctorate by age 24.

Today, his team works on software projects that allow spacecraft to literally go where no manmade objects have gone before. Not surprisingly, they're an active bunch with avid pursuits in and out of the office. "To be able to work on the next generation of autonomous spacecraft and rovers has been an amazing opportunity," he says. "But many individuals are able to balance the job demands with significant outside interests. We have or have had a national-level water-skier, national-class hang glider pilot, and many others with sig-

nificant outside interests, such as water polo and volleyball."

Robotics

Yoseph Bar-Cohen's career path to the lab seems more orthodox. He used to work in labs for McDonnell Douglas and the Air Force, focusing on aircraft research and development. NASA seemed to be a natural extension of that. "NASA is a work environment with the most advanced science and technology around," Bar-Cohen says. "It combines exploring the unknown in the universe while creating helpful solutions to situations on earth."

He earned undergraduate and doctorate degrees from the Hebrew University in Jerusalem, where he was married and became the father of twins. Logically enough, he explored innovations in ultrasound technology for his thesis. Today, even though the twins are grown, he gets into the office at precisely 6:45 in the morning--and out by 4:45 in the afternoon. He crams a lot of work into his regimented day.

"I mix working with my team in the lab with documenting and reporting progress and writing proposals," Bar-Cohen says. "I write about 10 to 20 papers a year. I organize conferences and update my Web site. I deal with many people world-wise in academia and industry. I read and write 50 to 100 e-mail messages a day. Thanks to a speed-reading class, I can do all of this. And I attend meetings only if I have to."

The Search for Life

For Ken Nealson, it's all about the possibilities of existence. Could life thrive in distant places? Could it survive the impact of harsh climates? Nealson hopes someday to see for himself.

"The prospect of being involved with the search for extraterrestrial life was just too exciting," says Nealson, "I felt I could not refuse." In preparation for searching space, he studies "organisms that live in and on rocks in extreme environments" on Earth. He will use this knowledge--and the rockets that others build--to expand his investigation.

Before coming to the lab, Nealson taught microbiology and biochemistry at the University of Wisconsin. In college, he wasn't quite as focused, drifting from major to major: music, physics, biology and, finally, biochemistry. He earned his undergraduate degree at the University of Chicago and stayed there to earn a doctorate in microbiology. "I was a dedicated student," he remembers, "who cared more about learning than grades."

Nealson remains focused on that aspect of his work. If he harbors any frustration about the lab, it's that the focus on completing missions takes away from emphasis on science. But, overall, there are few complaints. "In some ways the job is like a nice dream," he says. "We work on developing new methods of life detection and we interact with the various groups that build instruments for missions to Mars, Europa, or elsewhere. We will be going to other places. Who says all life should be like it is on Earth?"

Dennis McCafferty, of Alexandria, VA, is a full-time staff writer at USA Weekend magazine. To gain insight into career success and other topics, he has interviewed newsmakers such as President George W. Bush, Lakers star Shaquille O'Neal, Web pioneer Tim Berners-Lee, and Oscar-winning film director Steven Spielberg.