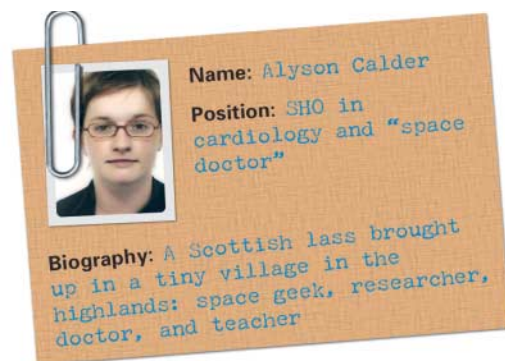


Fifteen minutes with . . .

A space cadet



Alyson Calder has spent the past 12 years pursuing her interest in space and space medicine. This interest has taken her to Russia, China, and the United States where she has participated in space medicine training, research, and education. She also set up a research project in countermeasures to post-spaceflight orthostatic intolerance during a space medicine rotation at Kennedy Space Center (KSC).

Alyson graduated from Aberdeen University in 2002 and is currently working as a senior house officer in cardiology at Monklands Hospital in Airdrie, Scotland. She also teaches undergraduates and school pupils about space and space medicine and organised the first "UK Space Medicine Day" held recently in Leicester.

How did you get interested in space medicine?

I suppose I was a bit of a space geek when I was young. Seeing Helen Sharman (the first British woman astronaut) fly on a mission to the MIR space station really captured my imagination. So, when I was 13, I got in contact with the UK space school and found out they were running a trip to Moscow. At first they said I was too young to go but, after some persistence, they gave in and I joined the British delegation. Visiting the Star City cosmonauts' training centre was an amazing experience, and I've done something space-related every year since then.

Where has this interest in space taken you?

The following two years I went to Korea and Japan with the space school. Then I decided to branch out a little and wrote to the National Aeronautics and Space Administration (NASA). I was almost 15 at the time and had nothing to put on my CV except "piano player." Incredibly, they wrote back and organised a two-week programme of activities around Mission Control and the Johnson Space Center. The trip was a success and so I wrote to the KSC director the following year.

I was a member of the press for the *Northern Times*, a small Scottish newspaper with a circulation of only 20 000 or so, and covered the first Shuttle mission to the MIR space station. I was given my own desk and telephone at the Shuttle launch site, which I thought was pretty cool at the time! I returned to KSC a few years later as a medical student to do a space medicine training rotation. During that trip I set up a project in countermeasures to post-flight orthostatic intolerance.

More recently I've been involved in education, giving lectures in the United Kingdom. Last year I was lucky enough to teach at a space school in Beijing. The British Council ran a programme called "Think UK" to improve British-Chinese science relations, and Space School China was part of this. There were "space-buffs" talking about interplanetary space flight, and physicists and rocket scientists, but no medic—so they invited me. I gave lectures and held workshops on the "Human Body in Space." I had no equipment so there was lots of improvising involving me using chocolate bars to show the effects of osteoporosis, and spinning students on office chairs to demonstrate the neurovestibular effects of space travel.

How did the interest in space lead to space medicine?

Initially I wanted to do space physics but on a trip to NASA one year someone said to me, "Physicists are ten a penny. The best way to get involved is to do medicine, because they know so little about the effects of microgravity on the body." Medicine probably suited my personality more than physics so I applied for a place at Aberdeen University to study medicine. Now I'm glad I took this route because I enjoy hospital medicine and love being a doctor. Space medicine has got so many potential applications down here—it just involves a bit of lateral thinking.

What is it that makes you so passionate about space medicine?

It's a fascinating branch of medicine; it's new and challenging and it's expanding quickly. We really do know so little about it all. It highlights how much we don't understand about the body back on earth. For example, the mechanisms of orthostatic intolerance are not fully understood. This is a very common and debilitating problem for astronauts on return from space flight. In trying to understand the mechanisms in space, we are unravelling the physiology of the body back on Earth.

As space tourism comes into play there is going to be a big increase in interest in space medicine within the medical field. We'll soon start getting commercial flights into space. Paying customers are not going to want to feel dreadful on board their spacecraft and so decent countermeasures to the effects of microgravity will have to be in place.

What advice have you got for others based on your experience?

It's difficult to get into space medicine as a Brit, because there's no United Kingdom space medicine opportunities council. There are opportunities, though, including the space medicine module at University College London (see further information). Most of what I've done was down to making my own opportunities and writing to people. I would advise anyone interested in space medicine not to be put off if they feel they're not getting anywhere. Just keep knocking on people's doors until they find a research group or someone willing to help.

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Further Information

The UCL masters course in Human Performance under Extreme Conditions (with space medicine as one of the modules) starts in September 2005. For more details contact The Administrator, MSc School of Human Health and Performance, Archway Campus, University College London, 10 Highgate Hill, London N19 3UA. Tel 020 7288 3183.