

Neuroscientist

Sharna is a neuroscientist. She is interested in finding out more about how life experiences, like careers, playing puzzles, and becoming parents impacts our brains. Find out more at:

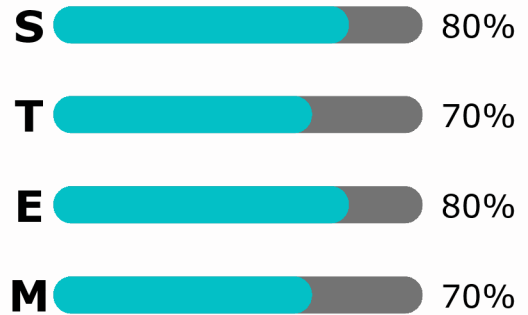
futureyouaustralia.com.au/pathfinders/sharna



It is so cool that I can peer into people's brains and see it working in action."

STEM Meter

How much Science, Technology, Engineering and Mathematics (STEM) does this job use?



Source: jobsandskills.gov.au

5 reasons why you should do this job

- 1** Find out more about the human brain
- 2** Help scientists solve mysteries
- 3** Help people live longer, happier lives
- 4** Work in a team with interesting people
- 5** Travel the world to share your research

3 STEM skills required for this job

Research

Computer Science

Chemistry

Subjects to develop these skills

Science, HASS

Digital Technologies

Science

A day in the life of a neuroscientist

8.30am I arrive at work slightly earlier than usual because today is a big day: we're about to start data collection on a new project! Months of work developing the experiment, getting approval from the ethics committee, training staff, and running pilot tests is finished! Our participant is due to arrive at 9am, so I arrive early to make sure everything is running smoothly. Our nuclear medicine technologist (NMT) confirms she has our medication for the PET scan ready, our radiographer confirms that the MRI scanner is all in order, and my research assistant confirms everything is ready for when the participant arrives.

9.00am Our participant arrives. My job today is really just to make sure everything is running smoothly – my team are the real stars today. We bring the participant around to the scanner – today they will be having a combined PET and MRI scan. It is really important that they have not eaten since last night, and that they don't have any implants or other things that would make it dangerous to enter the scanner room. The radiographer goes through a detailed checklist to ensure they are safe to scan. Then the NMT checks the participant's blood sugar levels to ensure they are safe to receive the medicine. Lastly, the research assistant reminds the participant what they will do in the scanner, and make sure they're feeling comfortable about doing the scan. Yes, they are – we're ready to put them in the scanner!

The radiographer helps the participant lie down on the scanner bed, and between them, the NMT & radiographer make sure they're nice and comfy. The NMT puts a needle in the vein of the participant's arm – this is how we will deliver the medicine that allows us to see the brain light up on the PET scan when it is active. The participant is moved into the scanner, then the experiment starts! Today, we are just interested in the participant's brain while they are at rest, and so they lie quietly, thinking of nothing in particular. Every 10 minutes, the NMT will go into the scanner room to take a tiny amount of blood to make sure the PET medicine is being delivered properly. Out in the console room, I can see that everything looks normal on the MRI, and that the experiment seems to be running smoothly, so I pop out to my office and leave the experts to do their job.

10.00am Coffee time. I'm impressed I've held off so long! While in the kitchen, I run into the operations team who are responsible for making sure all the scanners and equipment are running smoothly. They mention there is a new project coming on board, and ask if I'd chat to the researchers about their project – sure! They also update me on the progress of some videos we filmed with famous football players about maintaining their brain health. They're looking great, I just need to confirm that all the scientific facts in the videos are accurate.

10.30am After checking my emails (there are so many), I have the first of my 1:1 meetings with my PhD students. I have 9 students at the moment, and they're studying topics as diverse as the effects of pregnancy on the brain, how brain energy declines in ageing, and the effects of circadian rhythms on the brain. Today I only have 4 student meetings, and we chat about how their projects are going and if they need anything from me to help them complete their studies. Working with all these clever people is the best part of the day.

12.30pm Lunch. I'm almost always starving by this point, and today I picked up sushi on my way in. I quickly gobble it down at my desk while responding to emails.

1.00pm I start reading and making edits to a student's paper. Now that I supervise so many students a lot of the time the students are doing the analysis and writing the first draft. This draft is good! I print out the figures and draw all over the graphs to make sure I've understood everything properly. The brain images look amazing, but the student forgot to label which side is left and right. Whoops!

2.00pm Time to review a paper. I'm an editor at 2 journals and so I read a lot of papers to see if they will be a good fit for our journal. This one looks pretty interesting – machine learning of MRIs to detect Alzheimer's disease.

3.00pm Operations meeting. My facility supports a really large range of scientists across any field that uses imaging technology. I update everyone on progress on a few new projects. I hear that the new clinical trial pilot test went well and that the triceratops scan on the CT machine was a big success. Next week that team will be scanning lumps of wood – maybe not quite as exciting as a dinosaur.

4.00pm Zoom meeting with collaborators about a conference we're organising. Discussion revolves around international speakers and where we should host it. I tune out a bit and sneakily look at my emails.

5.00pm Home time. I should run out the door, but I pop by the scanner and chat with the NMT and radiographer. Everything went well today, and the data is uploaded ready to analyse. We're all excited about scanning lots of people for the new study and what the results will be!