

“ Every idea comes from seeing things differently ”

Welcome to National Science Week at Micro-X

Join us for a behind the scenes tour of Micro-X's production facility, where we develop and produce next generation X-ray imaging equipment incorporating innovative design and carbon nanotube technology. Free photography workshops, presented by Digidio Studios, and other science related art and craft activities are also available.

REGISTRATION LINK FOR FAMILIES (SATURDAY ONLY)

✖ neon.ly/m6RKV

✖ Or, scan the QR code below to go straight to the Saturday August 21 registration page.



ACTIVITIES

- ✖ Science and Craft Admission
- ✖ Micro-X Facility Tour
- ✖ STEM Works Tonsley Tour
- ✖ Creative Cameras Workshop
- ✖ X-Ray Art Showcase
- ✖ Showing the movie "Math Circles Around the World"
- ✖ Talks from special guests

EVENT DATES

- ✖ Friday, August 20 (For Schools)
- ✖ Saturday, August 21 (For Families)

REGISTRATION FOR SCHOOLS (FRIDAY ONLY)

- ✖ To register a school group for Friday, please send us an email via admin@micro-x.com and we will organise a booking with you

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IMAGING

What You'll Learn About

'Looking inside ancient fossils with high-tech imagery' by Professor John Long (2019 Jim Bettison and Helen James Award)



Fig.1: CT image of a 380 million year old fish called Gogonasus

Fossil fishes from the Devonian period, 400 million years ago, reveal a lot about the evolution of backboned animals (vertebrates) from how they developed limbs from fins, to how breathing evolved, even how reproduction became complex for the first time. Australia has some amazing fossil sites that preserve these fishes in perfect 3D form, and when analysed using synchrotron, high-res micro-CT scanners and neutron beams, we can see all the details inside the skulls and fins of these superbly preserved fossils, sometimes even soft tissue is preserved like muscles and umbilical cords. Palaeontology is not what it used to be as cutting-edge technology shows us that old bones can hold many layers of information to be studied.

DISSECT ANCIENT LIFE WITH X-RAYS

'A virtual revolution for fossil hunters - how CT scanning is transforming palaeontology' by Dr Alice Clement (E.S. Hills medal for 2021 from the Geological Society of Australia)

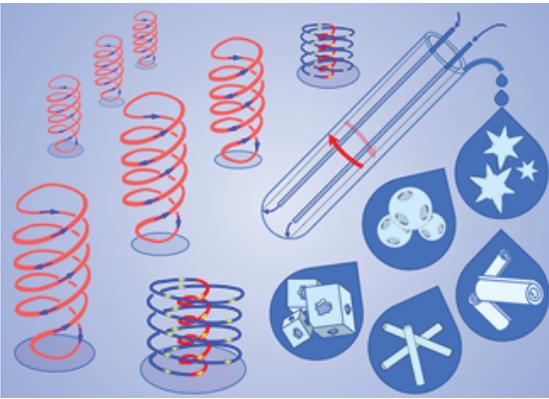
Palaeontology is the study of ancient life as preserved in the rocks of earth. This includes all life, ranging from bacteria to plants and animals. Fossils are the preserved remains (e.g. bones), impressions or traces (e.g. footprints) of something that lived in a previous geological age. Fossils are generally incredibly rare and are often considered very valuable for the individual or museum who finds them. Advances in imaging methods, such as CT scanning, is transforming palaeontology. Whole new avenues of research are now possible thanks to this powerful technology. I'll show you some of my research on fossils using CT scanning, ranging from fossil brains to bizarre ancient fishes and more.





Satiate Your STEM Curiosity

'How does fluid flow in a rotating tube?' by Professor Colin Raston (2020 SA Scientist of the Year Award)

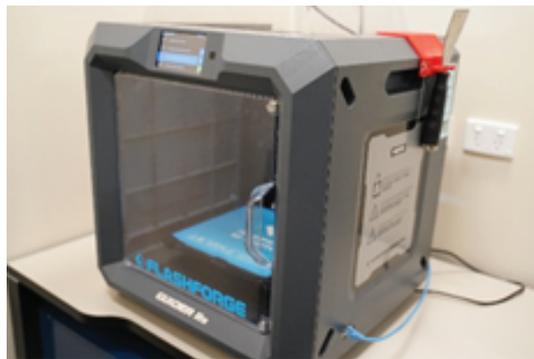


The vortex fluidic device (VFD) developed at Flinders University has exciting applications, in folding proteins ('unboiling the egg'), preparing materials for device and energy production, food and wine processing, benign clean and green drug synthesis, drug delivery, medical diagnosis, and more. A key to further advancing the applications is understanding how the fluid flows down to nanometre dimensions in the inclined rotating tube in the device, for then a high level of prediction of optimal processing parameters. Tackling this grand challenge involved over 100,000 experiments, noting that you can't measure the fluid flow directly in a rotating reference frame.



'How does 3D printing work?' by Micro-X (2020 Innovator of the Year Award)

Come down for a discussion on 3D printers and how they fit into your world. Exploring what additive manufacturing is and how does it work. A walk through the different methods of additive manufacturing and the advantages and the disadvantages that come with the manufacturing process. Let's have a look at Micro-X's 3D printer, a Markforged X7 filament deposited printer, how it's used within the business and the products. Looking towards the future vision of additive manufacturing at Micro-X and in the Manufacturing Industry, how it can continue to change our world.



SAGE Automation

You're invited to explore science, technology, engineering, and mathematics (STEM) in the real-world with automation and technology leaders, SAGE Group! Immerse yourself in the wonders of modern technology with our live 3D printing and augmented reality (AR) demonstrations at the SAGE stand! Take a tour of SAGE and find out how STEM can lead to new and exciting career opportunities. See you there!

THINK. INNOVATE. CREATE.

EXPLORE THE WORLD WITH X-RAY VISION

How does X-ray imaging work? How is it different to photography? And how will it change in the future? Find out about X-rays and see the high-tech equipment involved, without breaking an arm or leg.

Take part in our visible light photography workshops to learn about the science behind photography and how it can be used to create art. Look at everyday items from different perspectives and be creative by merging images that were generated by varying wavelengths of light.

For their artwork, visitors will have the opportunity to choose from a range of digital X-ray images of inanimate objects, which were produced by one of Micro-X's award-winning X-ray devices. Watch and learn how to use free photo editing software, such as GIMP or ImageJ, to create your own masterpiece!



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THIS EVENT IS PART OF
NATIONAL SCIENCE
WEEK 2021



BAE SYSTEMS



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