

# Microanalysis facility users 2007-2008

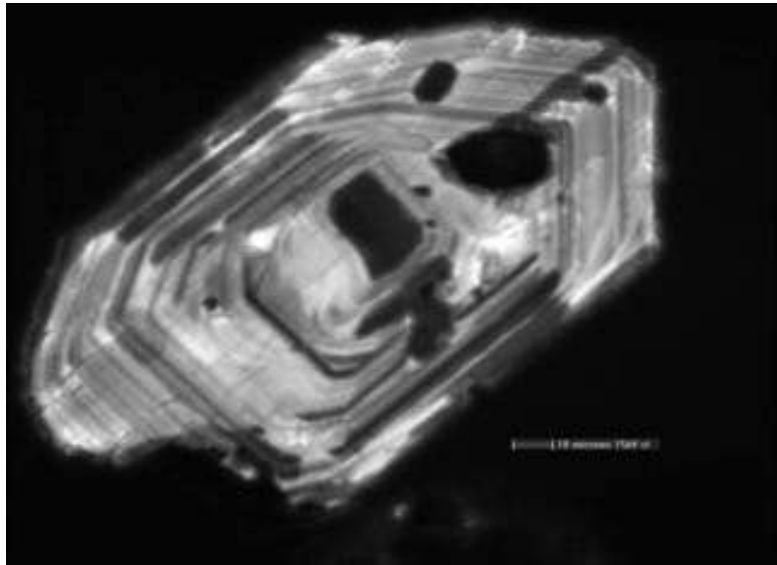
More electron microprobe images can be found at:

[Electron Microprobe Images](#)

## School of Geography, Environment and Earth Sciences

**Sophie Barton** - Electron microprobe analysis, cathodoluminescence imaging, macro-photography.

*cathodoluminescence of Zircon. The cathodoluminescence attachment was constructed using the secondary electron detector, electron multiplier and fitting it to either the optical microscope or the sub-stage illumination path.*



**Caroline Hall** - Electron microprobe analysis, macro-photography.

**Chelsea Tutt** - Microscope, LED lighting, hot-plate loan. Macro-photography.

*Macro-photograph of a small shell.*



**Evelien van de Ven** - Electron microprobe, macro-photography.

**John Creech** - Electron microprobe analysis, macro-photography.

**Nicole Semple** - Electron microprobe analysis and images of pigment. Macro-photography

**Riyad Mucadam** - Technical advice on optics and light scattering in shells.

**Michael Gazeley** - Electron microprobe analysis, ore-bearing rocks from Australia.

**Matthew Stevens** - Electron microprobe analysis and images. macro-photography. Tephra analysis

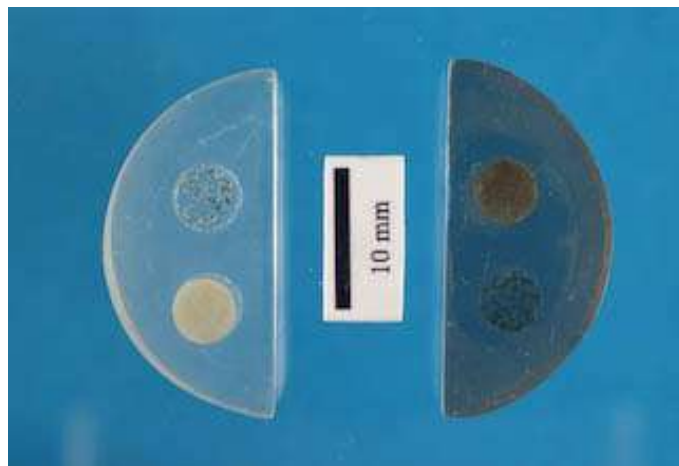
*Sectioned tephras. Analysed tephras are marked on a print and later analysed for trace elements by laser ablation ICPMS.*



**Dr Jocelyn Thornton** - Electron Microprobe analysis and images.

**Elodie Brothelandie**- Electron Microprobe analysis and images. cathodoluminescence

*Macro-photography of block mounted tephra samples. The half blocks also fit the laser ablation ICPMS stage.*



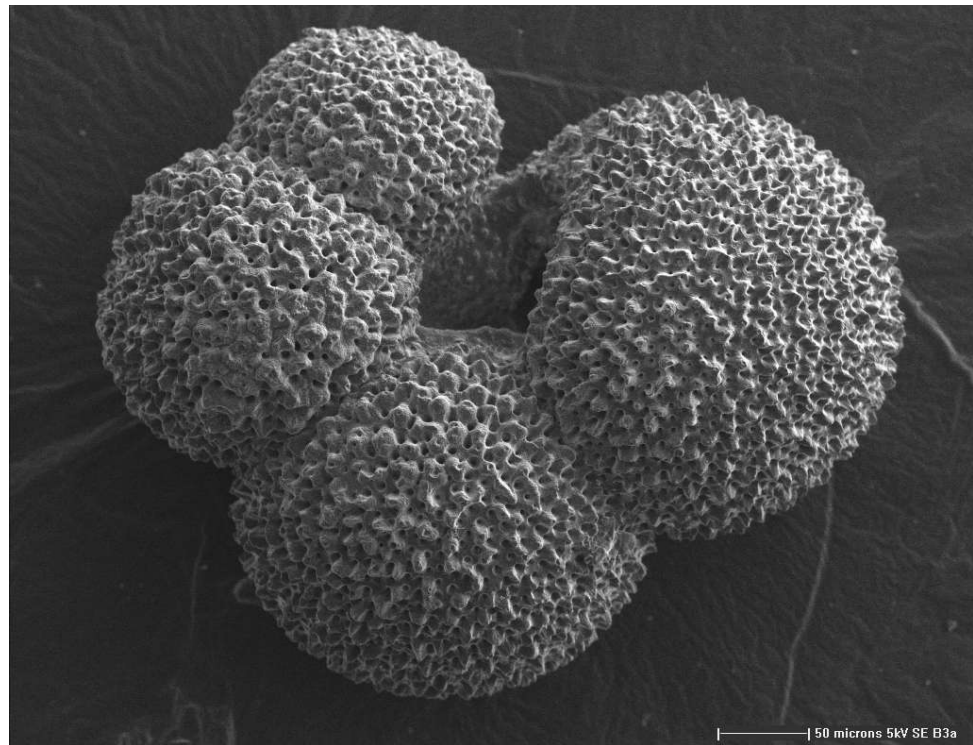
**Annette Bolton** - Electron microprobe foram images, macro-photography., plasma ashing.

**Julene Marr** - Electron microprobe foram images, macro-photography., plasma ashing. Rotary carbon coating.

*Macro-photography of mounted forams, field width 12mm. This image is used to help location when higher magnifications instruments are used.*



***Foram, secondary electron image.***



**Kate Saunders** - Electron microprobe analysis of TVZ rocks and images, cathodoluminescence images, macro-photography.

**Alex McCoy-West** - Electron microprobe analysis and images, macro-photography.

**David Murphy** - Electron microprobe analysis and images, macro-photography.

***Whole slide macro-photography.***



**Steven Eager** – Electron microprobe imaging of Ostracods with control over electronic charging and image tone.

**Aiden Allan** - Electron microprobe analysis of tephtras, macro-photography.

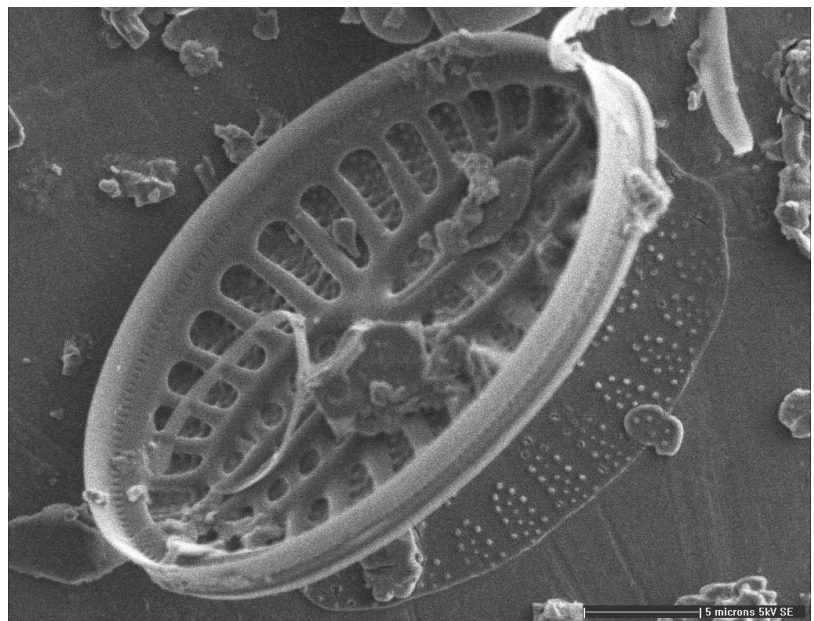
**Dr Margaret Harper** - Development of precise dark field imaging of diatoms so that structural interference colours could be observed. This assisted in the discovery of a new species and a new genus. The results were presented at a diatom conference in Dubrovnik and a paper entitled: **New diatom taxa from the world's first Marine Bioblitz held in New Zealand: *Skeletomastus* a new genus, *Skeletomastus coelatus* nov. comb. and *Pleurosigma inscriptura* a new species.** MARGARET A. HARPER, JOHN E. PATTERSON, JOHN F. HARPER is in press.



*Diatom pleurosigma inscriptura, a new species, dark-field illumination.*



*Diatom Skeletomastus a new genus, Skeletomastus coelatus nov. comb.*



**Dr John Collen** - Macro-photography and collaboration on a paper, macro-photography. of forams.

*Forams from Palmira atoll, 12.5mm field width.*



**Dr John Carter** - Data logging of reaction temperatures to allow preservation of DNA in plant samples.

**Dr Joel Baker** - Electron microprobe imaging of laser ablation pits.

**Dr Tim Little** - Electron microprobe analysis.

**Stewart Bush** - Photography of new laboratory equipment.

*Rock thin section polishing equipment.*



**Susan Cayless** - Photography, naming, framing and printing graduate student photos for display on third floor. Generation of some thumbnails for student web pages.

**Dene Carroll** - Photography of first year geology students, naming and loading onto M drive, printing thumbnails, twice in 2008.

**Dr Richard Wysoczanski** - Electron microprobe analysis and imaging.

**Dr Nick Preston** - Photography of first-year geography students, naming and loading onto M drive, printing thumbnails.

**Dr Sarah Kindon** - Photography of third-year students, naming and printing.

**Dr Sean Weaver** - Photography of first-year geography students, naming and loading onto M drive, printing thumbnails.

**Dr Uwe Reiser** - Measurement of uranium in sediment, using X-ray spectrometer. Photography in darkroom. The photo was published in the book "A Continent on the Move" by Ian Graham as were two others of mine which were not correctly attributed. Electron microprobe and cathodoluminescence imaging of diatoms.

*Dr Uwe Reiser at work in the darkened Luminescence Laboratory*



**Michelle Dow** - Translation of old 5.25 inch floppy disks to a modern format.

**Dr Gavin Dunbar** - Plasma removal of organic membranes from forams at room temperature.

**Dr Julie Vry** - Electron microprobe analysis

**Third year microprobe exercise.** Training, analysis, imaging and macro-photography. Several groups of four students.

**Lecture to fourth year students** on instrumentation, X-ray spectrometry and the electron microprobe for 2 hours.

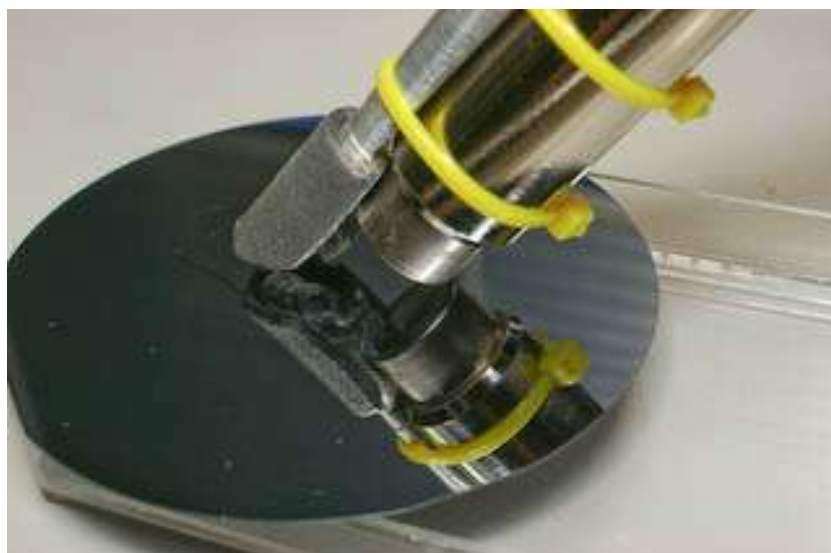
## School of Chemical and Physical Sciences

**Dr Pablo Etchegoin.** - Plasma ashing of gold plated substrates to remove the last organic molecule for application in surface enhanced Raman spectrometry.

**Dr Kirsten Edgar** - Set up RF-powered system to create a plasma for use in growing nano-tubular materials.

**Carla Fonseca** - Help with Atomic Absorption spectrophotometer, developed method to allow highly concentrated solutions to be run reliably.

**David Flynn** - Help with noise problems on JEOL 5300LV SEM. General cooperation and discussions. Assisting some students during SEM sessions.



*X-ray spectrometry of a Silicon wafer standard.*

**Salme Kortet** - X-ray spectrometry of pigments and valuable paintings at The Dowse and at the Adam Art Gallery collection at Victoria University. X-ray spectra interpretation, microphotography of small defects in a valuable painting at The Dowse.



*X-ray spectrometry of a Toss Woollaston painting at The Dowse. Some brown spots have formed on the prussian blue area where the measurement is being taken.*



*This defect in Prussian blue pigment is about 2mm across. It was photographed on site. Brush strokes run diagonally from top to bottom. Dust particles are abundant.*



*Discovery of lead-based pigments in an Adam art collection painting.*



**Sarah Wilcox** - X-ray spectrometry of iron oxides and items in the Te Papa collection, electron microprobe analysis of ochres and imaging, X-ray spectra interpretation.

*X-Ray spectrometry of Amo surface at Te Papa. Iron was detected.*



**Dr Gerald Smith** - Numerous discussions and X-ray spectrometry of flax, grasses and pigments, also in conjunction with his students, X-ray spectrometry of valuable artifacts and paintings at Te Papa, National Library, The Dowse, and the Adam art collection at Victoria University.

*X-ray spectrometry of "The Waterfall" a Colin McCahon painting. The measurement is to find out what is in the white pigment. Ba, Fe and Zn were detected. The X-ray spectrometer is powered directly from the USB ports of the computer. No other power supply is needed. Limited battery operation is possible.*



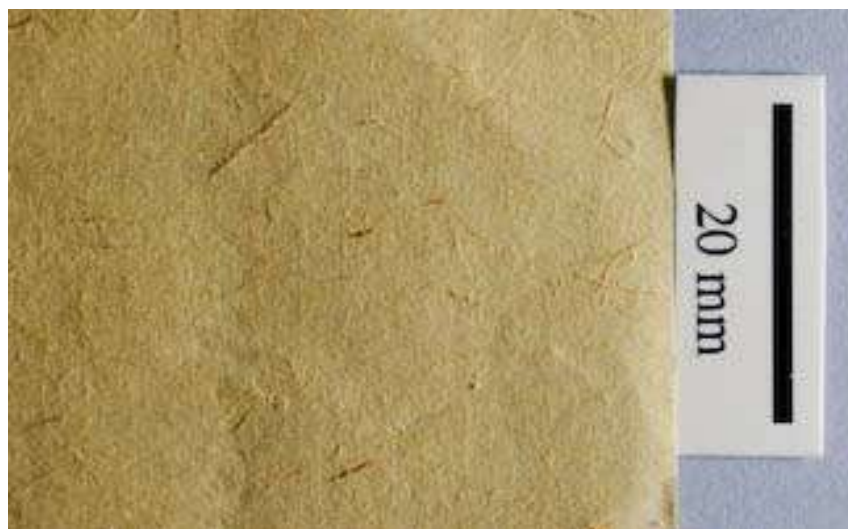
**Rebecca Yeats** - X-ray spectrometry of map backings at National Library, X-ray spectrometry of Captain Cook's logbook

*Captain Cook's logbook. The stain is from sea water. Sodium and magnesium were easily detected as was the iron in the ink.*



**Ying Tang** - X-ray spectrometry of handmade Chinese papers and flax, macro-photography.

*Chinese handmade paper. An elemental survey was carried out on a set of papers.*





**Chris Varoy** - X-ray spectrometry of chlorine in glass.

**Dr Thomas Borrmann** - X-ray spectrometry of silver nanoparticulates in wool.

**Andrew Durant** - Electron microprobe analysis, imaging of ochre and X-ray spectrometry.

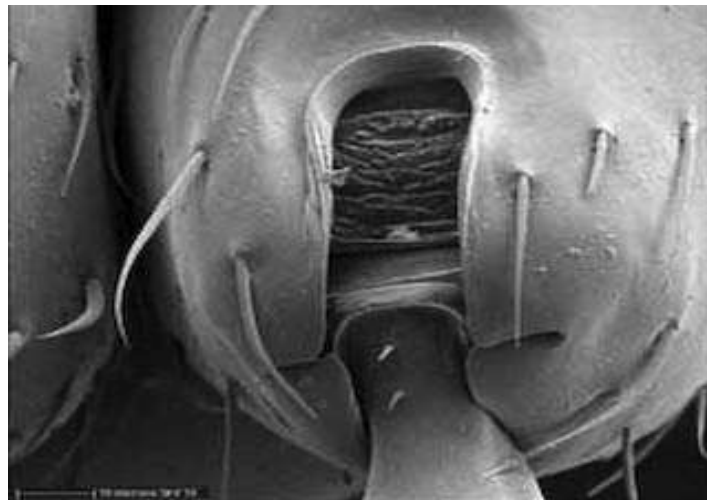
### **School of Biological Sciences**

**Dr Phil Lester** - High-quality, precisely-framed, electron images of ants using the electron microprobe – for publication.

*Secondary Electron image of ant using electron microprobe,*



*Ant back leg detail*



**Dr Steven Hartley** - X-ray spectrometry of plant root ashes for a project with four third year biology students, data analysis and development of a semi-quantitative method. The project was carried out over several weeks. I am told the students got an “A”.

### **COMMERCIAL**

**Dr Alan Palmer** - Massey University Electron microprobe tephra analysis.

**Eng Seng Lee** - Electron microprobe analysis, asbestos imaging and analysis.

**Dr Robert Langridge** - Electron microprobe analysis for student.

**Murray Friar** - Electron microprobe analysis of metal particles in oil from helicopter failure, X-ray spectrometry of metal particles in oil, and matching with SKF bearing shell. The samples were from a large wind turbine and from a thruster on a floating oil drilling rig.

**Rachel Pickett** - Electron microprobe analysis and images.

**Dr Anthony Coote** - Electron microprobe analysis of ore bodies.

**Dr Agnes Reyes** - Electron microprobe analysis.

**Rose Turnbull** - Electron microprobe analysis and images.

**Dr Lisa Northcoat** - Electron microprobe imaging of forams.