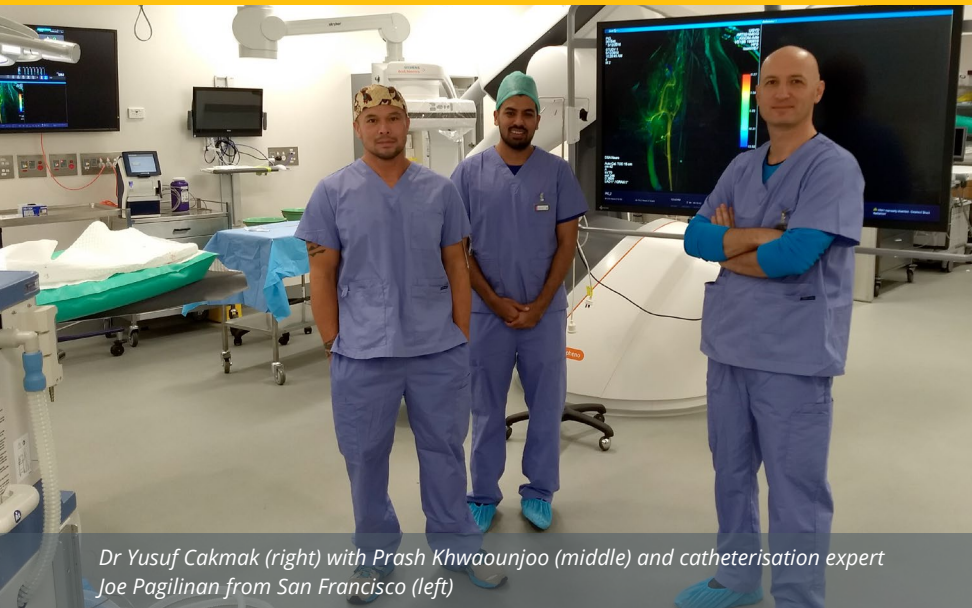
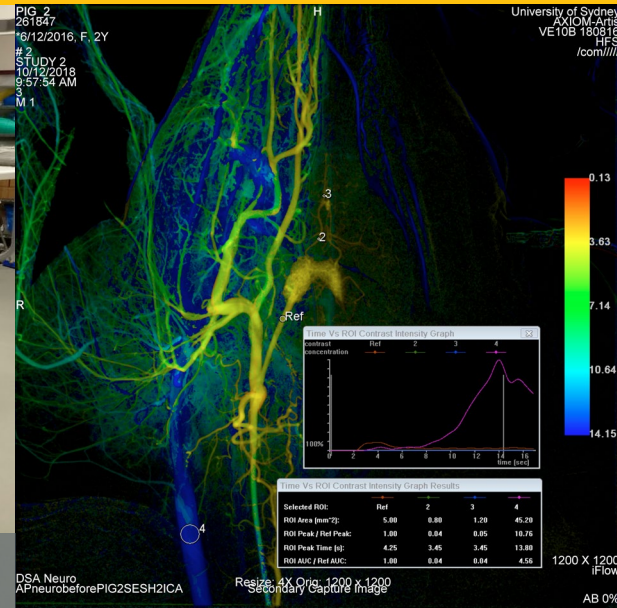


# THE INSIDE STORY

Issue 37, May 2019



Dr Yusuf Cakmak (right) with Prash Khwaounjoo (middle) and catheterisation expert Joe Pagilinan from San Francisco (left)



## Innovative research trialled in Australia

Innovative research being developed by Senior Lecturer Dr Yusuf Çakmak and Postdoctoral Fellow Prash Khwaounjoo and colleagues is receiving positive reviews following a research trial at the University of Sydney's Charles Perkins Centre Hybrid Theatre, a facility that specialises in the development of surgical and medical imaging technology and interventional treatment devices.

The novel patented device they are developing is a wearable stimulator that can shift blood flow non-invasively from one organ to another. Such a device could be clinically important for aerospace medicine and extreme acceleration/gravity conditions where blood is forced to gather in the abdomen and limbs but not in the brain or eyes, resulting in a black-out. In cases of internal bleeding, the device could allow blood flow to a particular organ to be controlled remotely.

For the trial, the team used Siemens iflow technology to colour code blood flow in digital subtraction angiography. This enabled them to monitor blood flow changes in the internal organs.

The image on the above right is a colour coded output of blood flow velocity in the brain as a response to the stimulation.

A prototype device based on Yusuf's novel design has been built at the Southwest Research Institute in Texas, USA, and Yusuf and Prash will return to the Charles Perkins Centre Hybrid Theatre at a later date to participate in the main study trial.

If all goes well, this innovative device could not only help push back the frontiers of science, but also the frontiers of space!

# May Graduation



Graduation was a special time for the Department with thirty-one undergraduate and twenty-one postgraduate students graduating in ceremonies throughout May. A special morning tea was held in the Department with graduands and their families to mark the occasion.

*Left: Graduands and staff gather outside the Lindo Ferguson Building for a celebratory photo.*



*Right: Lisa Zhou (left) with supervisors Dr Louise Parr-Brownlie and Dr Andrew Clarkson.*

Those graduating were:

## **BSc**

Taitimuroa Akuhata  
Madeleine Bartle  
Aisling Beamish  
Samuel Burgess  
Mingkai Cai  
Elleshia Clarkson  
Levi Cox  
Sara Elgoran  
Henrietta Haskell  
Alex Huo  
Campbell Kershaw  
Maisah Khan  
Matilda Leleai  
Madeleine Lindemann  
Noelene McKenzie  
Cassandra Moheloa  
Logan Murray  
Fiona Nicoll  
Panagiotis Papaioannou  
Annie Racklyeft  
Keely Ranga  
Pavithra Reddy

Lucy Shilston  
Kishan Singh  
Jessica Smith  
Megan Southern  
Julia Strachan  
Rory Swanson  
Henrietta Tutton  
Te Awanui Waaka  
Ashleigh Williams

## **BSc(Hons)**

Laura Hadfield (Neuroscience)  
Ireland Jacobs (Neuroscience)  
Michael Loveridge  
Hanna Van der Giessen

## **BBiomedSc**

**(Reproduction Genetics & Development)**  
Rachel Fulton  
Brittany Jones  
Emma Marsland  
Alice McAtamney  
Drew McTaggart

Katherine Scott  
Andrea Van Turnhout  
Rebecca Veitch

## **BBiomedSc(Hons)**

**(Reproduction Genetics & Development)**  
Yasmin Tawngdee  
Shannon Taylor

## **PGDipSci**

Tori Duxfield  
Christopher Gowen  
Kristian Petersen  
Sabian Wood (Neuroscience)

## **MSc**

Anu Kaw

## **PhD**

Stella Cameron  
Lisa Zhou



# PhD student awarded paper prize

Clinical Anatomy PhD candidate Vivek Perumal is excited to have been awarded the Keith and Marion Moore Blue Box Award from the American Association of Clinical Anatomists for the best student paper published in the prestigious journal *Clinical Anatomy*. His paper, of which he was the first author, examined the morphology and morphometry of the ligament of the head of femur.

Vivek says that research in this area is gaining attention in the clinical world as a better understanding of the ligament will lead to better informed surgical decision making when determining graft types and fixation sites in reconstructive surgery.

Keith Moore is the author of the renowned textbook *Clinically Oriented Anatomy*. The blue box is a unique feature that highlights clinical concepts within the text.

Visit the [Clinical Anatomy](https://www.clinicalanatomy.com) website to learn more about Vivek's research paper.



*PhD candidate Vivek Perumal*



# Staff Profile - Jane Girling

## Lecturer, Reproductive Biologist and Ballerina?



Dr Jane Girling joined the Department in 2018 after nearly 20 years working in Australia, most recently as a Senior Research Fellow in the Gynaecology Research Centre at Royal Women's Hospital in Melbourne and the Department of Obstetrics and Gynaecology at the University of Melbourne.

Her interest in biology began when she was at high school. In vitro fertilisation techniques were rapidly developing, and wildlife documentaries were capturing the hearts of New Zealanders.

*"In vitro fertilisation was still a new thing and I also loved the David Attenborough documentaries on TV. So for me, there was no choice – I had to study biology when I went to University."*

Although she had no plans for a research career at that early stage, she quietly took up opportunities as they presented themselves, and before she knew it she had completed an Honours degree and a PhD, and then she was a researcher.

*"I think of myself as a reproductive biologist. I am particularly fascinated by the uterus, which in some species is responsible for production of an eggshell but in others allows for placental interactions and gestation of a fetus."*

In more recent years, her research has focussed on menstrual cycle related problems, including endometriosis, a disease which is receiving more attention these days, but Jane says there is still a long way to go to understand its cause and aetiology.

*"There are some tantalising hints coming from ongoing collaborative projects I have with colleagues in Australia, but getting to the bottom of this disease is going to be a challenge."*

The highlight of Jane's career so far has been the amazing, dedicated people she has been able to work with. *"A research career can be all-consuming, so having people who I enjoy working with has been a blessing. Watching my first PhD student graduate was pretty special too!"*

But it was her desire to teach, which she wasn't able to achieve as a Research Fellow, and the call of whānau and Aotearoa New Zealand which brought her back home to Dunedin.

She's enjoying teaching reproductive biology modules in a range of papers from 100-level right through to 400-level.

Away from work, she is loving being able to pop down to the local beaches for a walk, taking time out with friends for some arts and craft time, or binge-watching on Netflix.

*"I still have a hankering to be a ballet dancer so need to find a local dance class again, and I think there might be a gardener in me somewhere as well, but that might have to wait for retirement."*

She is also relishing being home in familiar surroundings, although she is having to get used to being recognised by people who remember her from when she was growing up in Dunedin, or who know her folks.

*"That never happened in Melbourne!"*

# Maintaining our precious resources

After 15 years of solid use, and handling through many many thousands of pairs of hands, a rejuvenation project has begun to restore the Department's teaching set of transverse E12 slices. Several years ago, unidentified artefacts (a degrading of the images) began to appear on some of the slices, and Plastinator/Prosector Ms Marlene Black has been playing detective to discover what may be the cause.

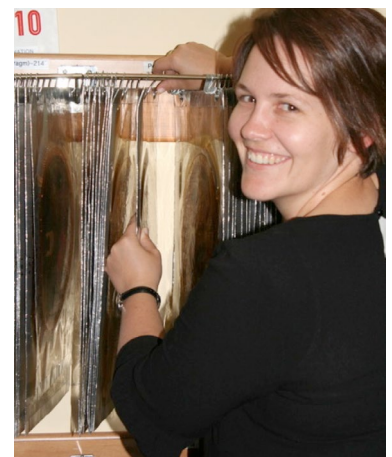
In the meantime, to maintain this precious resource, each of the 400+ slices will need to be re-layed in fresh resin, a task which will take some time to complete.

Marlene has already begun work on this project, and the results are astonishing, with the newly re-layed slices looking beautiful and clear of artefacts.

Another ongoing maintenance issue has also been tackled. After many years of frustratingly (and pain-stakingly) having to replace broken or missing hooks that were attached to the hanging storage system of E12 slices, a more permanent fix has been found. While not perfect, the new system will hopefully solve a few of the tangles and breaks that were aggravating for users. A big thank-you to Covermarq for their work in fitting the new eyelets and to Dr Louisa Baillie for her work modifying a thousand little hooks!

The new system is now in operation. Please take a little extra time when removing and replacing the slices. We have found it easiest to lift the front eyelet off the front hook first, before lifting the back eyelet when removing a slice; and then do the opposite when replacing the slice - back hook first, then front hook. Please hold the hook on the rail as you lift.

Oh, and another important point ... please make sure you replace the slice in the right place, something that is more important now as the hooks remain attached to the rails, and there can be many empty hooks side by side if consecutive slices have been removed.



## Gumboot Friday



Staff and postgraduate students were encouraged to wear gumboots on Friday 5 April in support of the *i am hope* charity and Gumboot Friday.

Gumboot Friday was a fundraising initiative organised by *i am hope* to raise funds for early intervention by means of free counselling for New Zealand children experiencing mental health challenges.

The department also held a competition for the best decorated gumboot - the winner determined by the boot which contained the most donations.

Visit the [i am hope](http://iamhope.org.nz) website to learn more.

### Need help?

Free counselling services and resources are available.

Lifeline Aotearoa - 0800 lifeline (0800 543 354) or text 'Help' to 4357 or visit the [Lifeline](http://lifeline.org.nz) website.

Depression Helpline - 0800 111 757 or text 4202 or visit [depression.org.nz](http://depression.org.nz).

Suicide Prevention Helpline - 0508 TAUTOKO (0508 828 865)

Youthline - 0800 376 633 or text 234 or visit the [Youthline](http://youthline.org.nz) website.



# Valued staff members farewelled

The Department recently bade farewell to four valued members of its general staff. Julia Dixon, Dot Scott, Tony Vink and Lilly Yu all provided key support to the Department through their roles in administration, IT and finance. They will be sadly missed. We wish them the very best for their future achievements wherever life may take them.

## Julia Dixon

Julia joined the Department in February 2017 in the role of Undergraduate Administrator, provided support for the Department's undergraduate and 400-level papers. Julia is off travelling around South America, Europe and the United States. Buen Viaje Julia!

## Dot Scott

Dot joined the Department in April 2017 in the role of Postgraduate Administrator. After many years of working in various roles around the University, she has now retired and is looking forward to spending more time in her garden, and with her grandchildren.

## Tony Vink

Tony had worked in the University of Otago for 33 years - the last 17 years as an IT Support Technician in the Department of Anatomy. After having a holiday with his family, he plans to do a bit of DIY at home, and then see where life takes him.

## Lilly Yu

Lilly joined the Department in August 2008 in the fixed-term role of Finance Assistant. She transferred to the permanent role of Finance Administrator in June 2009 and was seconded to the role of Finance Manager in April 2016. She has now relocated to Auckland to be closer to family.



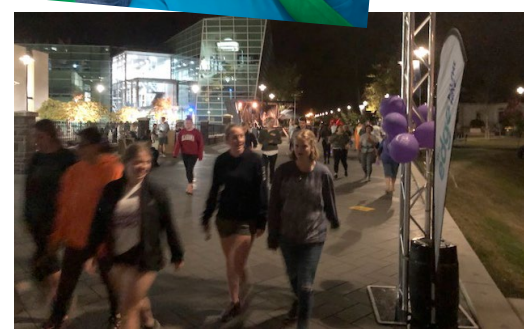
Lilly Yu, Dot Scott and Julia Dixon



Tony Vink

# Team Anatomy completes Relay

Congratulations to members of Team Anatomy who walked, skipped, ran and dragged themselves around the University campus for the 4th Otago Students Relay for Life. The team raised an amazing \$2,145.13 for the Otago and Southland Cancer Society to help them continue the awesome work they do in our community. Well done Team Anatomy! Fifty-six teams took part in the event, raising over \$107,000 for the Cancer Society.



# Student Profile - Flynn Butler

## Laying the perfect foundation to study Medicine



BSc ANAT major Flynn Butler

Ever since he was a little boy growing up in Whakatane, Flynn Butler has wanted to be a doctor. He has always been fascinated by Anatomy and how the human body works. This fascination has led him to the University of Otago where he is studying for a Bachelor of Science degree majoring in Anatomy.

*"I can't remember a time in my life when I haven't felt a passion for the complexity of the human body. I came to Otago in 2017 to fulfil that desire by beginning a degree in Anatomy, and I haven't looked back."*

While studying First Year Health Science and Medicine have always been the plan for Flynn, it was his Year 13 English teacher, whose husband was a doctor, who suggested it would be a good idea to first complete a Science degree. When he looked into it, Flynn says he liked the idea of completing a degree prior to Medicine, and the opportunity to continue that degree with postgraduate study at any time in his life. He also liked the idea of being able to take the time to learn something, before jumping straight into studying Medicine.

*"Once I decided that a BSc was the right option, an Anatomy Major was a no brainer. Getting a solid base in Anatomy will be the perfect foundation, allowing me to focus later on all the other aspects of studying Medicine."*

Flynn is enjoying studying Anatomy and says the content of the papers never fails to peak his interest. *"Being able to describe the things that allow us to grow from a single cell and keep us alive and well is pretty cool."*

He is now only a year away from realising his dream of studying Medicine. *"I'm the most motivated to succeed now than I have ever been because in the next year, what I have been working for academically will become totally worth it. Hopefully, I will succeed and the future for me will hold a fulfilling career in Medicine. Right now, being in the middle of my Anatomy degree, I really do like the idea of postgraduate Anatomy playing out at some stage in my life. Though Medicine is well and truly the primary goal, regardless of the outcome, I highly doubt that the end of the BSc will spell the end of Anatomy for me."*

## Anatomy Thanksgiving Service



Image: Hikaru from Pixabay

Each year the Department holds a Thanksgiving Service to remember and honour the altruistic actions of those who have donated their body to medical science. Family and friends of donors are invited to attend, along with students and staff of the Department.

This year the service will be held in Dunedin at the Glenroy Auditorium, on Wednesday 11 September, beginning at 7pm.

If you would like more information about the service please contact the Department at [anatomy@otago.ac.nz](mailto:anatomy@otago.ac.nz).



# The evolution of an Anatomy Dept.



With the University's 150th anniversary celebrations in full swing, we take a moment to look back at how this department has evolved from focusing solely on the health sciences, to the science and research active department we know today. Emeritus Professor Gareth Jones, Head of the Department of Anatomy from 1983 - 2003, takes us back to the early 1980s and the transition that was about to take place.

## Anatomy in transition



Professor D. Gareth Jones

When I arrived in the Department of Anatomy in October 1983, as Professor of Anatomy and Head of Department, it was a largely teaching Department and was principally devoted to the teaching of medical and dental students, with a small contribution teaching physical education students. Research occurred in the Department at a low level, and PhD students were thin on the ground.

My goal was to transform the Department into a research-based one with a strong presence in science teaching at all levels. I was supported in this by Professor Geoff Brinkman, Dean of Medicine at the time. Indeed, if I had not been assured of this support, I would have turned down the offer of the position.

*"I had witnessed the tragedy of anatomy departments in the UK and USA ..."*

I had learned from the two previous anatomy departments in which I had worked – University College London and University of Western Australia – that Anatomy had to be academically self-reliant, and not be dependent upon the Faculty of Medicine for most of its students and financial support. Even more important, I had come to realize that if a discipline is to flourish, it has to be research-based. I had witnessed the tragedy of anatomy departments in the UK and USA being assimilated into other departments, and reduced to teaching-only sections within those departments. If the Otago department was to avoid this fate, it had to realize that it is a discipline in its own right capable of holding its head high among all the other departments in the University. To do this its teaching and research had to be of the highest standard.

Inevitably, this transformation did not appeal to everyone, including some of the staff at the time, but gradually staff were appointed who were committed to research and who wanted to see the Department grow as a strong academic unit. Nevertheless, for some years, Anatomy continued to be regarded by some of those external to the Department as being weak in research.

I kept a check on the growing research output of the Department compared to that of the other biomedical science departments, and could see that it was beginning to challenge and even surpass that of some of these departments, but this

was not noticed by others. However, it became evident with the first PBRF round in 2003, when the transformation was obvious for all to see. No longer was Anatomy viewed as research-weak!

As the research within the Department took off, so did the breadth of the Department, something with which I was delighted. In 1987, when there was limited research being undertaken, I proposed that there should be distinct research units in the Department. The terms used then were 'neurobiology, neuromuscular, cell biology, reproductive biology, functional anatomy (including anthropological studies)'. While we may not use exactly the same terms today, and while there is no reference to genetics or genomics (that was to come later), they indicate the sort of direction in which I thought the Department should be heading.

*"... the Department had become a modern scientific department"*

By 1996 I was able to conclude that the Department had become a modern scientific department and that it had cast off its image as simply the handmaiden of surgery. However, I was still dissatisfied with the publishing record of staff, and with the number of female academic staff (only one was a senior lecturer) and I stated that I would be much happier when up to 40% of academic staff were female (look at today's percentage!). At the time there was a handful of PhD students, and I boldly (or foolishly) suggested that there should be closer to 40! Some staff at the time were sceptical in the extreme. I was happy with the increase in administrative and technical staff, although the number of research staff would look paltry in comparison with the current situation.

An underlying thrust from the 1980s onwards has been to develop a Department that is broad and cross disciplinary, in which people with different perspectives are able to interact informally and naturally. After all, the Department should be a community – of interests, expertise, scholars and people.



A department identifier (or logo) was created in 1983 (left).  
The identifier in use today (right) was updated in 2017.

*Continued ...*

At some point towards the end of the 1990s, a staff member from another department described the department as a school of biological sciences. I took this as a positive comment. For me, the underlying thread holding everything together in an anatomy department is structure/organization – from the molecular and genetic through to the macroscopic and human population levels.

Over more recent years, the continually increasing stature of the Department has been due to the appointment of highly successful academic staff, capable of obtaining research funding and contributing to the Department as well as to the University as a whole. The academic vigour of the Department is something to be cherished and built upon over the coming years.

From my perspective I had never envisaged that the Department would grow nearly as much as it has, and while the growth has brought with it challenges, the positives have far outweighed the negatives.

*D. Gareth Jones*



*In 1984 the Department had a total of 28 staff members - 14 academic staff and 14 general staff.*



*In 2019 the Department has almost 150 staff - 98 academic and research staff, plus 50 general staff.*

## Those were the days ...

*From Anatomy Museum Curator Mr Chris Smith ...*

Hosting alumni reunion tours (predominantly Medical) in the Anatomy Museum and associated lab spaces is a privilege I thoroughly enjoy. It is wonderful to hear the stories and experiences of the students of years gone by. Here is one of the many humorous, and in this case 'clean' stories I can remember ...

Back in November 2015, the 1955 graduating year of the MBChB programme held their 60 year reunion. One of many recollected stories told was of the following occasion.

Early in the 1950s one of the Physiology department teaching staff used to come in to the Lindo Ferguson Building in the evenings to do some lab based research. He owned an Austin 'Baby' 7 and would drive in in the summer evenings. However, should time get the better of him, he wouldn't drive home as he didn't like to drive after dark, so would instead do the long trek home and I assume get the bus to work the following morning.

It was on one of these evenings when the car had been left behind, that a group of Med students decided to play a prank on the unsuspecting academic. One of the students had access to the building for lab work after hours. Once they knew the staff member had left for home and indeed had left his vehicle behind, the mission was put into action. A posse had been pre-arranged and they all turned up, pulled back the two sets of double doors to the ground floor foyer, picked up the vehicle, carried it up the steps into the building and up the stairs to the first half landing turn, and left it there (I expect it to look something like the image on the right, although of course, in black and white).

The rest of the situation the following morning I am sure you can imagine!



*What a sight it must have been!*

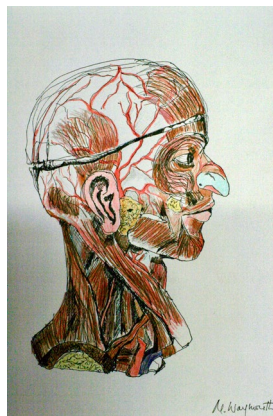
***We won't need computers!***

Computers were new technology for the department back in 1983. A staff member recalls someone at the time saying "We won't need computers."

Another staff member recalls e-mail being installed on their computer. The IT person proudly announced "Now people from all over the world will be able to contact you through your email" to which the staff member replied "I'm sure no one will ever want to send me an email!"



# Not-quite-life drawing



Dr Louisa Baillie is running a series of Not-Quite-Life Drawing evening classes in the W.D. Trotter Anatomy Museum. The classes are targeted at artists who are already familiar with drawing, to give them the rare opportunity of sketching and drawing objects from the Museum's collection.

They are being held in the early evening so there is no clash with teaching in the Museum. Classes have begun with very little advertising but already word of mouth is spreading, and the classes are rapidly filling up.

As Louisa has previously lectured in sculpture, drawing and design at the University of Otago and the Otago Polytechnic, and she frequently references the human body in her own art, she is well aware of the value, to an artist, of having access to our Museum collection.



In the future Louisa may consider running other, more structured classes aimed at teaching specific drawing techniques. These could include how to draw bones, a histology slide, a body or part of a body, or how to meaningfully sketch an archaeology site or an operation procedure for a patient.

*These drawings have been printed with the kind permission of the artists.*



## Those were the days ...

### *"The smell was inexpressible for words!"*

The dissecting room used to be a double-storied room with no air-conditioning or heating. The embalming fluid used in those days contained a high level of formaldehyde, the smell of which has been described as "inexpressible for words".

The cadavers were wrapped in formalin-soaked cloth (no body bags in those days) and some of the tables were wooden with stainless steel covers.

The smell of formaldehyde hung in the air and on any porous surface in the room, including on the clothing and hair of any person who spent too much time there! It is, thankfully, a smell we no longer have to endure today.

### *A health and safety nightmare ...*

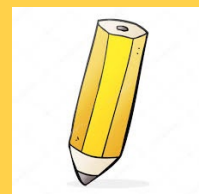
Research laboratories also smelled. There were no fumehoods to speak of in those days, so they often smelt of formaldehyde and other chemicals. There was one fumehood in the Histology laboratory (now room LFB402) but even so, you could smell the xylene down the hall.

Gloves and protective gear were also rare and certainly not discarded as often as they are now. They were more likely to be heavy duty and reused often!



### *You can only have one ...*

Back in the 1970s and 80s, the department had a "new for old" scheme for stationary. If a staff member needed a new pen or pencil, they had to first present their old pen (with ink depleted) or pencil (worked down to a stub) to the Senior Technical Officer before they could be given a new replacement.



It appears the "you can only have one" rule also applied to laboratory gloves. One researcher recalls being asked if he really needed two gloves (one for each hand) or would one be enough?

### *Cigarettes and ink ...*

In the 1980s smoking in the work-place was more acceptable than it is today. It wasn't too unusual for staff to smoke a quick cigarette in their room. The office of one particular staff member would often reek of a combination of cigarette smoke, formaldehyde, solvents and inks used for the Gestetner (a precursor to the photocopier).

Quite an interesting combination!

