

Alchemy

Lest we forget

*The Melbourne College of
Pharmacy, Sir John Monash
and the legacy of WWI*



Fast Facts

2017 CLARIVATE ANALYTICS HIGHLY CITED RESEARCHERS (2004–2014)

No.1 worldwide in Pharmacology and Toxicology

QS WORLD UNIVERSITY RANKINGS BY SUBJECT, PHARMACY AND PHARMACOLOGY

No.1 in Australia and Asia-Pacific 2018

No.1 worldwide for academic reputation 2018

No.2 worldwide 2018

Top 10 worldwide (average 2011–2018)

Excellence in Research for Australia 2015

Top rating of 5 in all sectors (well above world standard)

PharmAlliance

with University of North Carolina at Chapel Hill, US
and University College London, UK

National Alliance for Pharmacy Education

with University of Queensland, University of Sydney
University of South Australia

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Alchemy is produced
by the Development Office,
Faculty of Pharmacy and
Pharmaceutical Sciences,
Monash University.

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News *in* brief

Awards *and* honours

Monash staff, students and supporters have been the recipients of a run of recent notable awards.

MIPS' **Professor Ben Boyd** has been awarded the prestigious College of Fellows Award from the Controlled Release Society (CRS), which recognises members of the Society who have made exceptional contributions in the area of delivery science and technology.

Dr Darren Creek, also from MIPS, was awarded the prestigious NHMRC Award for Excellence, for having the top-ranked Career Development Fellowship Level II (Biomedical) for 2017.

The Pharmaceutical Society of Australia SA/NT presented the 2018 Pharmacist of the Year Award to **Dr Janet Sluggett**, a Research Fellow at the Centre for Medicine Use and Safety (CMUS) at Monash University.

Fourth-year Monash Pharmacy student **Rhiannon Froude** was named Victorian Pharmacy Student of the Year following a statewide competition. The prestigious title is awarded by the Pharmaceutical Society of Australia and recognises the top-performing student.

Mr John McCall MacBain O.C. and **Dr Marcy McCall MacBain**, co-founders of the international McCall MacBain Foundation, have been awarded an Honorary Doctorate (Doctor of Laws; Honoris Causa), which is Monash University's highest honour. Since its formation, the Foundation has committed over \$200 million of charitable donations globally for scholarships and education, health and the environment.

Professor Jonathan Baell from the Medicinal Chemistry theme of MIPS has been awarded the prestigious Adrien Albert Award for 2018. Presented by the Royal Australian Chemical Institute (RACI), it is the premier award from RACI's Division of Medicinal Chemistry and Chemical Biology. It recognises outstanding research in the field of medicinal or agricultural chemistry or chemical biology.

Monash University alumnus **Dr Craig Rayner** has been awarded the 2018 Distinguished Alumni Award for the Faculty of Pharmacy and Pharmaceutical Sciences. The Distinguished Alumni Awards recognise alumni who have demonstrated outstanding professional achievements, inspirational leadership and made significant contributions to their field.

Doctor Rayner's academic research focuses on both infectious disease research and clinical pharmacology. Doctor Rayner is currently the senior vice president of integrated drug development with Certara, a global consulting firm in drug development, regulatory science and knowledge integration.

Director of Pharmacy Education **Professor Tina Brock** has been named a fellow of the International Pharmaceutical Federation (FIP).

FIP, which represents over four million pharmacists globally, is an organisation dedicated to improving global health through pharmaceutical education, pharmaceutical sciences and pharmaceutical practice. The FIP Fellowship recognises members of FIP who have demonstrated leadership capabilities in a global setting.

Director of Project Pharmacist **John Jackson** has been named PSA Pharmacist of the Year (full story on page 5).

PharmAlliance *celebrates* third birthday

PharmAlliance, the partnership between the Monash Faculty of Pharmacy and Pharmaceutical Sciences and two of the world's other most highly regarded pharmacy schools, is now in its fourth year.

According to Dean Bill Charman, by bringing together the expertise and resources found at Monash and in collaboration with University College London and the Eshelman School of Pharmacy at University of North Carolina at Chapel Hill, the institutions have been able to achieve progress that may have otherwise not been possible.

"The partnership has amplified our impact across all of the areas in which we work," Professor Charman said.

"This is most clearly seen in research, where close to 30 papers have been published by collaborators from at least two of the three institutions since the partnership's inception. We have also been able to attract significant funding in areas including Fragment-Based Drug Design."

"It's also bearing fruit across our educational programs too, and enabling us to enhance the experience of students outside the classroom," he said.

Dean Charman points to education exchange and resource sharing, an International Pharmacy Practice Summit, staff and student exchanges, networking and knowledge exchange as amongst the outcomes that Monash could not have achieved on its own.

One area for potential future development involves investigating whether the Alliance can play a role in monitoring and evaluating the WHO Patient Safety Challenge, which aims to address unsafe medication practices and errors.

The Alliance members have also identified Antimicrobial Resistance as an important global health challenge that will be an area of future focus.

Fellowships *and* grants

Seven researchers from Monash Pharmacy and Pharmaceutical Sciences have been awarded fellowships and grants in the recent National Health and Medical Research Council (NHMRC) grant period.

Professor Patrick Sexton and **Doctor Denise Wootten**, from the Drug Discovery Biology theme in MIPS, have both been awarded five-year Senior Fellowships. Professor Sexton has been awarded a Senior Principal Research Fellowship, the highest level of fellowship the NHMRC offers. (Full story on page 24).

The Development Grant Scheme awards funding to individual researchers to support the commercial development of a product, process or service that will result in improved healthcare or disease prevention.

Professor Baell from the Medicinal Chemistry theme received a grant for his research showing that a molecule promotes cell survival and cardio protection in ischaemia-reperfusion injury (IRI). He aims to further develop this molecule into a treatment that can be administered in a clinical setting to treat IRI.

Associate Professor Bernard Flynn, also from Medicinal Chemistry, studies anticancer natural product synthesis and GPCR function, specifically chemical biology function. His research aims to expand the therapeutic application of targeted inhibitors for the treatment of metabolic diseases to treat fibrotic diseases, specifically heart failure, chronic kidney disease and idiopathic pulmonary fibrosis.

Doctors Janet Sluggett and **Amy Page** were both awarded Early Career Fellowships, given to researchers to undertake research of major significance and benefit to Australian health. Doctor Sluggett, a Research Fellow at CMUS, studies the quality use of medicines, pharmacoepidemiology and cognitive decline. Dr Page, a teaching associate at CMUS, addresses medication prescription in elderly populations and medication-related harms in older patients.

A consortium of researchers led by Professor Martin Scanlon from the Monash Institute of Pharmaceutical Sciences (MIPS) has received a major grant to establish a new Industry Transformation Training Centre (ITTC).

The ITTC for the Development of Tools for Fragment-Based Design has received \$4.2M in funding from the Australian Research Council (ARC), alongside \$5.4M of cash and in-kind support from its 11 industry partners, plus \$2.9M of cash and in-kind support from the partner universities.

The ITTC will provide PhD students and early-career postdoctoral researchers with direct experience in industry partner laboratories, as well as training and masterclasses in early-stage drug discovery from industry experts.

A multimillion-dollar deal brokered between global pharmaceuticals giant Pfizer and Melbourne-based Cancer Therapeutics CRC (CTx) could lead to the development of life-saving cancer drugs, underpinned by Monash University research.

CTx has announced a two-year research collaboration and a license agreement with Pfizer worth \$20 million upfront, but it could be worth as much as \$650 million in milestone payments to CTx if the program reaches commercialisation.

The partnership is underpinned by two novel pre-clinical cancer programs developed by researchers from MIPS working alongside other CTx participant organisations. The programs target proteins that are known to play an important role in driving the growth of both solid and blood cancers – by switching on or off – cancer-causing chemicals in the body.

The novel work of the CTx medicinal chemistry team, based at MIPS, has led to advanced molecules that may hold the key to promising new drug developments. MIPS' **Dr Paul Stuppel** leads the medicinal chemistry efforts for Cancer Therapeutics CRC.



L-R: Dean Bill Charman, Deputy Chancellor Mr Shane Buggle, Mr John McCall MacBain O.C., Dr Marcy MacCall MacBain, President and Vice-Chancellor Margaret Gardner AO.



MIPS acquires major new microscope

The Monash Institute of Pharmaceutical Sciences (MIPS) is now home to another world-leading piece of research infrastructure in the form of a Leica SP8 CARS, FLIM and FCS microscope.

This makes MIPS the only research facility in Australia with a turn-key CARS system and the first in the world with Leica's new FALCON FLIM technology.

The microscope has been obtained through the ARC LIEF program, a collaborative project with researchers at the University of Melbourne and the ARC Centre of Excellence in Convergent Bio-Nano Science and Technology.

The Coherent Anti-Stokes Raman Scattering (CARS) microscopy is a label-free method that enables imaging by displaying the characteristic intrinsic vibrational contrast of a structure's molecules. The key advantage of this process is that it allows for the sample to remain mostly unaffected.

Researchers can therefore minimise sample preparation work and improve the speed and resolution of 3D imaging.

FALCON is Leica's proprietary Fluorescence-Imaging Lifetime Microscopy ("FLIM") system. FLIM reduces the traditionally slow measurement process of the lifetime of dyes (usually in nanoseconds). Traditional FLIM systems capture data in 30 seconds per image. The FALCON system can now capture data in 30 images per second, which has never been achieved previously. Cameron Nowell, Head of Imaging, FACS and Analysis Core at MIPS, says the new microscope system is an exciting development and he encourages partners to move quickly to take advantage of it.

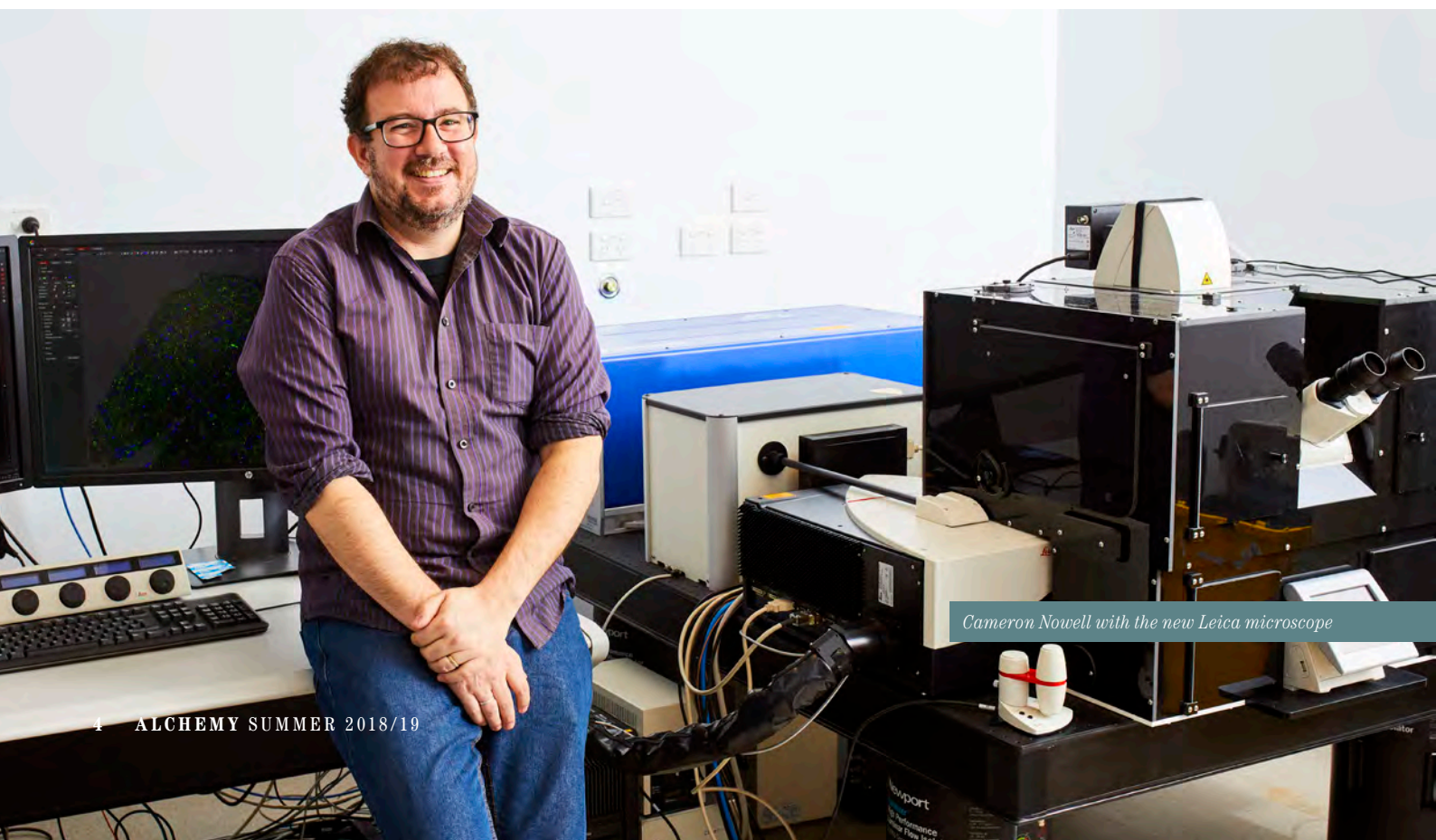
"Australian researchers have had access to CARS microscopes before," says Nowell, "but they have usually been custom made and limited in their application. This new system is in a whole other league in terms of its accessibility and breadth of application".

One of the key potential areas it can be employed in is Quality Assurance and Quality Control. Nowell gives the example of food manufacturers.

"CARS provides a reliable way to do fast and accurate quality assurance. Because it's non-invasive, there's no need to spend time injecting dyes. And you get denser, more accurate data because of the higher frame rate."

Professor Chris Porter, Director of MIPS, says that this latest investment further underlines Monash University's commitment to excellence in biomedical research.

"This new piece of infrastructure opens whole new possibilities for research in drug discovery and development here at MIPS, and also more broadly in the biomedical sciences through our partners and collaborators," says Porter. "The potential is extremely exciting".



Cameron Nowell with the new Leica microscope



John Jackson *named PSA Pharmacist of the Year*

John Jackson, Director of Project Pharmacist and longstanding advocate for pharmacist role expansion, has been named 2018 Pharmacist of the Year by the Pharmaceutical Society of Australia.

The award recognises pharmacists who show outstanding performance and dedication to their profession through continued service.

Mr Jackson, a pharmacy veteran and founder of the John Jackson Pharmacy, has dedicated his professional career to improving pharmacy practice and increasing equitable access to life-saving medicines for individuals.

Established in 1985, the John Jackson Pharmacy was a hospital pharmacy in Windsor committed to offering dispensing, clinical and administrative pharmacist services to hospitals in both the private and public sector and based on the Pharmaceutical Benefits Scheme.

Mr Jackson has shown consistent commitment to improving pharmacist skills, expanding

the role of pharmacists and providing equitable access to medicines for a range of communities. His roles include board member of the Australian Pharmacy Council, Advisory Committee on Medicines Scheduling and the Australian Commission on Safety and Quality in Healthcare. Mr Jackson pioneered the first Federal Government-approved medication chart, which incorporated PBS prescription forms as part of its goal.

Project Pharmacist is a Monash University initiative that is exploring new models of practice for Pharmacy (update on page 33). As Director of the Project, Mr Jackson is investigating the technological, political and social factors that make up the framework in which pharmacists operate.

Mr Jackson, who recently assisted in rescuing a community pharmacy after state funding was stopped, has dedicated a lifetime career to advocating for pharmacists and the importance of their role in healthcare.



John Jackson

Dean Charman *stepping down*



Dean Charman

Dean of the Faculty of Pharmacy and Pharmaceutical Sciences, Sir John Monash Distinguished Professor Bill Charman will be stepping down as Dean, with effect from mid-2019, and returning fully to his role as a Sir John Monash Distinguished Professor within the Faculty.

Appointed Dean of the Faculty in 2007, Bill's leadership has contributed greatly to the success of the Faculty and University. Outstanding achievements by the Faculty during his deanship have included Monash University ranking in the top 10 worldwide annual QS World University rankings in the discipline over the 2012–2018 period (and number two worldwide in 2017 and 2018).

Notable successes also include the establishment of the Monash Institute of Pharmaceutical Sciences, which has the highest number of Highly Cited Researchers in its field worldwide. Under his deanship, the Faculty has established PharmAlliance, a major partnership with Schools of Pharmacy at the University of North Carolina at Chapel Hill and University College London.

In recognition of his distinction and sustained high-level contributions to his discipline, Monash and the community, Bill was appointed in 2011 as a Sir John Monash Distinguished Professor, the most prestigious title conferred by Monash on serving professors of the University. He is one of only four current professors to hold the title.

Lest *we* forget



Dean Charman at the grave of pharmacy student Wallace Gordon Jewkes, Hazebrouck Communal Cemetery, Hazebrouck, France

The faculty launches a program of remembrance and reflects on the forces that shaped our profession

The Faculty of Pharmacy and Pharmaceutical Sciences, through its predecessors the Victorian College of Pharmacy and the Melbourne College of Pharmacy, is the only part of Monash University that existed during World War I.

With the centenary of the Armistice falling in 2018, the faculty felt it was appropriate to develop a program of remembrance.

In part, we wanted to acknowledge the sacrifices made by those pharmacists and pharmacy students. By telling their stories, we wanted to render them as something more than just names on an honour board – to rescue them from the dehumanising effect the passage of time can impose and acknowledge that these young men were once living, breathing human beings. They had ambitions, desires, complex internal lives and families they cared about. Many of their values are those that today animate the faculty and the profession.

We also wanted to trace the historical impact of their service. The consequences of the Great War were far-reaching and unpredictable, and the Australian pharmacy profession wasn't immune, with everything from the contours of the role to the demographic makeup of the profession being affected.

This edition of *Alchemy* is just one of a number of ways in which we're marking the centenary of the First World War.

Its companion piece will be a documentary by filmmaker Rob Sutherland, who previously produced documentaries of the Sissons Mural in Cossar Hall, and of the journey from college to faculty.

There have also been a series of events.

On ANZAC Day earlier this year, a faculty delegation headed by Dean Bill Charman took part in the Dawn Service in London. At the cenotaph, Professor Charman laid a specially commissioned wreath made from the foliage of a *Eucalyptus Kruseana*, a species named after the foundation dean of the college, John Kruse. This was followed by a service at Westminster Abbey, attended by HRH Prince William and HRH Prince Harry.

The faculty also initiated an event to mark the centenary of the knighting of Sir John Monash.

Monash was made a Knight Commander of the Order of the Bath by King George V on 12 August 1918 at Château de Bertangles. This was the first time in 200 years that a British monarch had knighted commanders on the battlefield.



Centenary of Sir John Monash's knighthood. L-R Andrew McIntosh, the Rt. Hon. Ted Baillieu, Vice-Chancellor of Monash Professor Margaret Gardner AO, and Caroline Durre and Mark Durre, descendants of Sir John Monash

In 1963, Sir John's daughter, Bertha, gifted a selection of her father's personal effects and artefacts, including the royal warrant signed by King George V and Sir John's personal sword, to the University.

On 13 August this year, a private viewing of selected items from the historic collection was held for a small group that included the University's President and Vice-Chancellor, Professor Margaret Gardner AO, former Victorian Premier Ted Baillieu and three of Sir John's great-grandchildren.

The Faculty of Pharmacy and Pharmaceutical Sciences has a special connection with Sir John: In 1927, he was the guest of honour at the College's Prize Giving.

In his address, he made a number of comments that demonstrated his foresight, and prefigure some of the values that drive the University today. For example, he spoke of how essential original research is to providing professional education.

He also presented that year's awards, including the first prize for the highest achieving student in the correspondence course. The winner that year was a student called Ernest Dunlop, better known as "Weary".

Much like this issue of *Alchemy*, a significant portion of the centenary activities we undertake will revolve around the stories of the four men who were still enrolled as students when they were killed on service: Eric Bisset, Wallace Gordon Jewkes, Alan Couve and Malcolm Jones.

In September, Dean Charman travelled to Europe to visit the memorials to each of these four men, at which he laid wreaths that were handmade by staff and students. On Armistice Day, he led a delegation from the Faculty to attend the ceremony at the Shrine of Remembrance and lay a wreath.

And in 2019, we are planning further activities to ensure that our student-soldiers are appropriately commemorated.

To that end, we are wanting to contact their families – not an easy task as, being young men, none of our fallen students had direct descendants.

If you or anyone you know may have leads that could help us find out more about Eric Bisset, Gordon Jewkes, Alan Couve or Malcolm Jones, please email us at pharmacy.outreach@monash.edu



Dean Charman and Andrew McIntosh lay a wreath at the Shrine on Armistice Day. Wreath created with the input of botanical artist Christine Johnson

From *Swanston Street* to the Somme

On the *centenary* of the Armistice, *we remember* some of our students *who served*

Frank Cahir was only a few months shy of completing his final exams at the Melbourne College of Pharmacy when the war broke out. Like many young Australian men in 1914, Frank was presumably itching to answer the call. Already a member of the militia, it seems he wasn't willing to wait to take that final test before he shipped out.

Frank eventually made it back home. But the same can't be said of four of his fellow MCP students set to receive posthumous degrees from Monash University in 2019.

In an all-too-common example of squandered potential and lives cut short, the four students died on active service before completion of their qualifications. Now Monash is keen to recognise and honour them, along with the many other graduates who served in WWI, and men like Frank Cahir, who, while not killed in action, like so many others lived with the toll of war well after November 1918.

Nearly 200 Victorian pharmacists, pharmacy students and apprentices served in that conflict. Roughly 10 per cent of them were killed in action or died on service. In some cases, whole generations of a family were wiped out on the battlefield. And because the pharmacy profession at the time was built around family businesses, their legacy was also threatened.

The centenary of Armistice in 2018 provides an opportunity to revisit their stories, acknowledge their sacrifice, and reflect upon the influence that World War I had and continues to have on shaping Australia.

This initiative has its basis in research conducted by Andrew McIntosh, a Business Manager in the Faculty's Medicines Manufacturing Innovation Centre. Andrew is an accountant by trade, who moved into social media and business management.

Andrew believed that the College of Pharmacy Honour Roll, currently hung in the Cossar Hall at the Parkville Campus, and in the care of the Faculty/College, was a clear sign that the University had strong links to both WWI and WWII, and put forward a proposal for the Faculty to research and acknowledge these men. The idea was supported by Dean Bill Charman who brought together a team from across the faculty to ensure that the centenary was appropriately commemorated. In addition to the Dean and Andrew, the group included Library Manager Maxine Cuskelly, Faculty General Manager Marian Costelloe, Research Programs Manager Karen McConologue, Marketing Manager John Palmer and Student Services Coordinator Jervis Dean.

Andrew began to work his way back from the Honour Roll to painstakingly piece together the stories of pharmacists and students who had gone off to war, in an attempt to ensure that their wartime service is properly recognised and commemorated in 2019.

After sifting through reams of clippings, lists and testimonials, Andrew and the group were left with four students that appeared with consistent information across all sources. 21-year-old Alan Couve, 20-year-old Malcolm Jones, 28-year-old Eric Bisset and 22-year-old Gordon Jewkes all studied at the Melbourne College of Pharmacy (later the Victorian College of Pharmacy), which merged with Monash University in 1992.

All four are bound by at least one common theme – in addition to being MCP students, they all had brothers who also served. Some of the brothers died and some returned to successful careers, which in itself hints at the sort of lives these men could have had ahead of them.

As pharmacy students were required to at the time, all four men had completed or were in the midst of apprenticeships. At the outbreak of WWI, in all Australian states, pharmacists had

to undergo a compulsory system of education and examination before being added to the Pharmaceutical Register. Eric, Alan, Malcolm and Gordon were in the midst of completing apprenticeships ranging from three to four years, alongside completing the compulsory attendance at lectures and passing the prescribed theoretical and practical examinations.

MCP pharmacy student Alan Couve, otherwise known as Dutchy, landed at Gallipoli on 25 April 1915: ANZAC Day. He was 21 years old, and a registered apprentice back home. As the second son of Mr Jason Couve, he was following in the footsteps of his chemist father and along with his brother was a prominent member of the local Dandenong football team.

Alan led his men into battle on the day of the Gallipoli landing but was shot in the head and died on Gallipoli Beach one day later.



Alan Couve (Australian War Memorial)



On 20 November 1915 the (Dandenong) Journal reported:

"...On Tuesday morning, widespread regret was expressed when it became known that Lieut Couve had succumbed to the wounds received whilst fighting with the 8th Battalion at the Dardanelles, and many messages of condolence have been received by the sorrowing relatives. The flag on the Town Hall was at half mast, in honour of the local volunteer and mourning was displayed outside the business premises in Lonsdale St."

His brother LT Henry TL Couve, a civil servant and a fellow teammate of the Dandenong football team, died at Gallipoli just two weeks later. He was 24.

Corporal John Walker wrote to his father and part of the letter was published in *The Journal* on 26 August 1915.

"I miss the two Couves very much. Both Tom and Dutchy were well thought of, in fact very much admired. Those who faced the task in the beginning, and were killed, did their duty and died like men. Even I, who am not a military expert, can vouch for that."

He mentions that Dutchy must have been buried at sea, as he believes he died the next day in a hospital ship.

MCP pharmacy student Eric Bisset and his younger brother Alan, both from Murrumbena, also fought in World War I.

A 27-year-old chemist prior to enlisting on 16 December 1915, Eric embarked for overseas with the 15th Reinforcements of the 14th Battalion from Melbourne on 14 March 1916 aboard HMAT Anchises.

Following further training and a period of illness in Egypt, he proceeded to France where he transferred to the 53rd Battalion and then to the 46th Battalion.

Eric was killed in action on 14 November 1916 near Guerdecourt, France. He was 28. There are several eyewitness accounts on record:

"Bisset was my particular friend. He was formerly in the Transport and left them to be with me... He was near me in the Support Trench... about 6 am on the morning of the 14th November... when a shell dropped in the trench and killed him and nine other men..."

Another wrote that the group of men were about to draw breakfast rations when the shell hit.

"On 14 Nov we were in a support trench behind the front line. I had just seen Bisset in the trench. I was about 7 yards away when a shell burst... and 8 men were killed. Bisset among them, but his body was not found. The shell must have buried him. I was so close I was covered with mud from the explosion."

Within a year, his brother Alan, a locomotive engine driver before the war, was also killed in action on 20 October 1917 in Belgium, at the age of 27.

Two fellow MCP pharmacy students, Malcolm and Allan Murray Jones, were the sons of John Albert Jones, a pharmacist originally from Wales. The Jones family was well known in Caulfield, with a family pharmacy on Derby Road near what we know today as the intersection of Sir John Monash Drive. They too cut their studies short and left



Eric Bisset (Australian War Memorial)

a hole in the family business to join the war.

Malcolm's life ended at 20.

He was killed in action in August 1917 in Ypres, Belgium. For some of these students, their young age and the way in which they died means there's very little documentation to glean their story from, as one fellow soldier recalls Malcolm:

"Description: Height abt 5"10 fair colour, came from Malvern, Australia. Thinks his people were chemists or something of that sort."

Like Eric Bisset, Malcolm was hit by a shell and the eyewitness reports are sketchy at best:

"I was next man to Sgt Jones at Ypres. We were marching on a duck board just past ANZAC House, when Jones was hit by a shell, and blown to pieces. The same shell wounded myself..."

Allan, who preferred to be known as Murray, applied for training at the Central Flying School, Point Cook, Victoria, and received his pilot's certificate on 15 June 1915. On 5 January 1916, Jones, as a lieutenant in the Australian Imperial Force, joined the newly formed No.1 Squadron, A.F.C. The squadron arrived in Egypt in April and between June 1916 and November 1917, Jones was in action against German and Turkish forces in the Sinai Desert.

Allan developed a reputation for his flying prowess and daring and aggressive tactics. In 1916 he was mainly involved in desert reconnaissance and was promoted to captain and flight commander in December. In February 1917, he was in a bombing raid on Beersheba, destroying three German aircraft, and next month near Gaza took part in the squadron's first serious aerial combat. On 6 April, while escorting a patrol after the first battle of Gaza, he fought off five enemy planes before his own machine was damaged and forced to land; although the Germans bombed his grounded aircraft he escaped unhurt. After an engagement with a German scout over Rafa in May he was again forced to land and this time was hospitalised in Cairo where "large pieces of petrol tank" were removed from his leg. He was awarded the Military Cross in April for "carrying out a raid on a hostile aerodrome. He descended to a height of 500 ft [152 m] under very heavy fire and destroyed two hangars".

Allan took over as commanding officer, No.2 Squadron, A.F.C., in France in May 1918. Under Major Jones's leadership the squadron emerged as one of the finest on the Western Front.

Lieutenant-Colonel L. A. Strange, the officer commanding the wing, recorded in his memoir *Recollections of an Airman* that Murray Jones was 'a quiet, unassuming fellow, but a most resolute leader . . . No.2, A.F.C., accounted for over 100 machines in one way or another in four months'.

Jones was awarded the Distinguished Flying Cross in June 1918. No.2 Squadron operated until the Armistice and Jones was again mentioned in dispatches and awarded a Bar to his D.F.C. for service on 10 November when "he led his whole squadron on a low bombing raid against an enemy railway station. Descending to 100 feet [30 m] he remained at this low altitude till all his machines had completed the attack, though subject



Malcolm Jones (Australian War Memorial)

to heavy fire from machine-guns". He was officially credited with shooting down seven enemy aircraft.¹

Returning to Melbourne in May 1919, Jones was registered as a pharmacist on 14 April 1920 and went on to open a retail pharmacy before being called back into service to help establish the RAAF at Point Cook. He was awarded one of the first Distinguished Flying Crosses.

Thanks to a single, priceless letter penned by the 22-year-old soldier, we're able to piece together a vivid picture of Wallace Gordon Jewkes. Gordon, one of two sons born to a prominent Melbourne pharmacist and on his way to carrying on the family business on his return home, penned his feelings to his parents on 9 January, 1917, the night before he was due to lead a trench raid.

He was filled with a mix of gratitude for the opportunity to lead his fellow soldiers and a sense of foreboding that, as it turns out, was prescient :

France – 9/1/17

*Dear Mother & Father,
I'm afraid that you will think me rather gloomy in writing in the following strain but of course one has to take the necessary precautions at these times, the fact is that our Battn is carrying out a raid on the enemy*

trenches tomorrow night, and I am one of the chosen volunteers, there are three of us altogether, that is officers, & 50 men. Of course, we are considered the elite of the Battn & I am proud to be in the position for it shows that I have the confidence of those over me which is a great factor at these times of great tests.

This war business is one which makes a man a man as regards the possession of those qualifications which are expected in a real man & I am delighted to know that my superiors think me a possessor of those qualifications.

If I should meet with bad luck and not get back I don't want you to mourn for me but just think of it in the light that you have given a son in a great cause & that he did his duty as a man.

I'm afraid my personal belongings amount to practically air, but all there is will be sent home to you & if there is any money sent home I should like you to give it to the dependents of some soldier killed in action, it will be very little I know, but it will serve to show an officer's appreciation of his men & I can tell



Gordon Jewkes (Australian War Memorial)

*you they are marvels, & the finest
chaps one could wish to meet.*

*Well dear Mother & Father please
don't sorrow for me.*

*All my love
Your loving son
Gordon.²*

The raid itself was considered a success
“...preceded by an artillery barrage on the
enemy lines the raiders, carrying a large
supply of hand grenades, left our trenches
and stormed the enemy front line. The venture
was successful. Numbers of the enemy were
killed, dugouts were blown up and machine
guns put out of action, while valuable
information was gleaned from the documents
captured in the German trenches...”

But Gordon was shot in the head and died
hours later. He was described by the *Essendon
Gazette* and *Keilor, Bulla and Broadmeadows
Reporter* as a ‘very popular young fellow,’
who ‘showed great promise.’ There are several
accounts of Gordon’s death.³

Staff Sgt Martin of the 39th Battalion shared
this account:

*“I knew Casualty. He was a very
tall man, dark complexion about
24 years of age, known as “Gordon”.
Casualty was leading and in
command of the raiding party,
Houplines, Armentiers. There were
a party of Germans in a dug-out
and Casualty went in and asked
them to surrender and they refused
to come out, and on turning around
to call for assistance one of the enemy
shot him with a revolver, the bullet
passing through his head. I was 100
yds away. His men brought him back
and he died two hours later. I saw his
grave which had a nice cross erected
on it with his name and battalion.
He was buried with his comrade Basil
White. He was well known and liked
by all his men.”⁴*

Just like Gordon, surviving Jewkes
brother Gilbert also showed great promise,
only he was lucky enough to return home.
After serving with the Light Horse Field
Ambulance (AIF) during the war, Gilbert
went on to finish his Pharmacy qualifications
after WWI and went into business with his



*Allan Murray Jones, 46th Infantry (Australian
Militia) climbing into the cockpit of a Bristol
Biplane (Australian War Memorial)*

Australian mail being distributed to men of the 1st Australian Light Horse Field Ambulance in Chailak Dere, ANZAC. Staff Sergeant Gilbert G. Jewkes, brother of Wallace G. Jewkes, is seen standing at the very back, wearing a peaked (forage) cap (Australia War Memorial)





father, who owned two stores in Melbourne, presumably one to pass on to each son.

Gilbert became Federal Vice-President of the Pharmacy Guild of Australia and also President of the New South Wales Pharmacy Board. He was appointed Chief Pharmacist to the National Insurance Commission in 1938. Gilbert eventually received an OBE for his post-war efforts including a key role as Director of the Pharmaceutical Benefits Scheme of the Commonwealth Department of Health. He was seen as mainly responsible for the scheme's successful inauguration.

The *Canberra Times* wrote at the time of his death, "Mr Jewkes was of a reserved disposition, but he developed a warm interest in Canberra, giving valuable service to the growing capital in many ways...He was a great lover of music, and earlier a keen golfer...Mr Jewkes will be well remembered also for his friendliness and for the many fine qualities of his character and citizenship."

Back on the battlefield, Frank Cahir managed to make it all the way to Armistice Day. Landing on the beaches of Gallipoli as a private with the role of a stretcher bearer in April 1915, by June he was promoted to staff sergeant dispenser, working with the 2nd Field Ambulance. Frank served with distinction in two Australian field ambulances in Egypt, Turkey and on the Western Front between 1914 and 1918.

In a letter to his mother that he smuggled via a friend to avoid the censors shortly after storming the beaches at Gallipoli, he wrote:

"You are getting very tame accounts of the war here and it is a much tougher problem than they anticipated. They are giving you the casualty lists very gently, as the day we landed there was close on four thousand killed and wounded out of the first division, the poor old 1st division they have borne the brunt of it, and those who come after have no idea what they have gone through.

Sunday, April the 25th is a day I will never forget. The first boat to hit the shore was full of 3rd Field Ambulance men (as they accidentally got ahead of the Infantry in the dark) there were eight of them killed and seventeen of

them wounded out of the one boat. After the 3rd Brigade landed and charged the cliffs, our Ambulance was embarked in the boats, only our stretcher bearers 108 of us, I can tell you my heart beat rather erratically, for the deck of the Destroyer that took us in close to the shore was strewn with wounded and dying, poor fellows who had been hit before they reached the shore.

At any rate, Providence had a watchful eye over us and we landed without losing a man. On reaching the shore our work began, the beach was strewn with wounded and dying Australians and Turks, three of our own fellows were hit before we went a dozen yards, but the sight of our wounded pals put a feeling for revenge into our heads, and into it we went after the Infantry, you should have seen the wounded, it is impossible to describe it, anybody who went through those first three or four days will never forget it..."

Despite witnessing such horror, Frank was clearly inspired by the bravery of the men around him. He rounded off his letter by writing about what propelled him forward:

"Those first few days are like a huge nightmare to us, but the work our men did was glorious. Carrying men from off the top of the hills under an awful hail of shrapnel, but the thanks and grips of the hands of the dying and wounded would only spur you on to do more, it was impossible to use a stretcher and four of us would have to do the job with waterproof sheet.

Good bye mother, my friend is ready to go. More news when I get the chance.

*Your loving son,
FRANK."*

Frank would be later recommended for a Distinguished Conduct Medal (DCM) for his service with the 9th Australian Field Ambulance, specifically for the bravery and courage he displayed in many of the major battles in 1918 as the war was

drawing to a close. For reasons that remain unknown, he was never awarded the medal and instead, his son Pat Cahir was presented with a Distinguished Service Medal (DSM) in 2017. The original recommendation for the DCM talks about his leadership through 1918:

"On the 23rd August 1918, in the neighbourhood of Bray, between 5am and 7am his NCO four times made his way along a half mile of valley through a heavy concentration of gas, and in the face of fierce and continuous shelling to deliver dressings to a Regimental Aid Post."

"During the fighting from Aug 22nd to Sept 1st his continuous devotion to duty and organising ability, coupled with great coolness and determination under fire, were a large factor in the difficult task of keeping touch with moving RAPs, thus rendering possible the quick evacuation of casualties."

"From the end of March 1918 until the present date, he has been constantly employed in the forward areas, in the organisation and supervision of the evacuation of the wounded."

"In the many days of bitter fighting during this period, he displayed a contempt for danger, energy and initiative beyond all praise. In the weeks of arduous trench warfare he set an example of endurance, cheerfulness and soldierly qualities that stimulated all ranks."

GW Macartney Lieut Colonel CC of the 10th Australian Field Ambulance wrote:

"His cheerfulness and soldiery bearing under the most trying and exhausting circumstances merit the highest praise."

Instead of returning home to his family at the first opportunity after Armistice like most of the "1914 men", Frank then made the extraordinary decision to stay on to help identify the dead. This was despite the fact that both his brother and sister had succumbed to tuberculosis back in Melbourne in 1918 and 1919. "We just don't know why he didn't jump on a ship and come home..." grandson John Cahir told *Alchemy*.

Frank would stay behind for another two-and-a-half years after the Armistice to work as a photographer for the Australian Graves Service, who were charged with disinterring and identifying bodies, in a bid

to let grieving families know the final resting place of loved ones. Frank and his grave-digging colleagues spent years searching over the very same battlefields where they had fought the Germans to discover the bodies of their dead friends and fellow soldiers and rebury them.

Decades later, Frank's grandson, University of Ballarat researcher Fred Cahir, told *The Sydney Morning Herald* in 2010 that the mostly experienced soldiers who volunteered to work for the Graves Detachment, a unit of the Australian Imperial Force, undertook "a grisly task that inevitably exacted a tremendous toll".

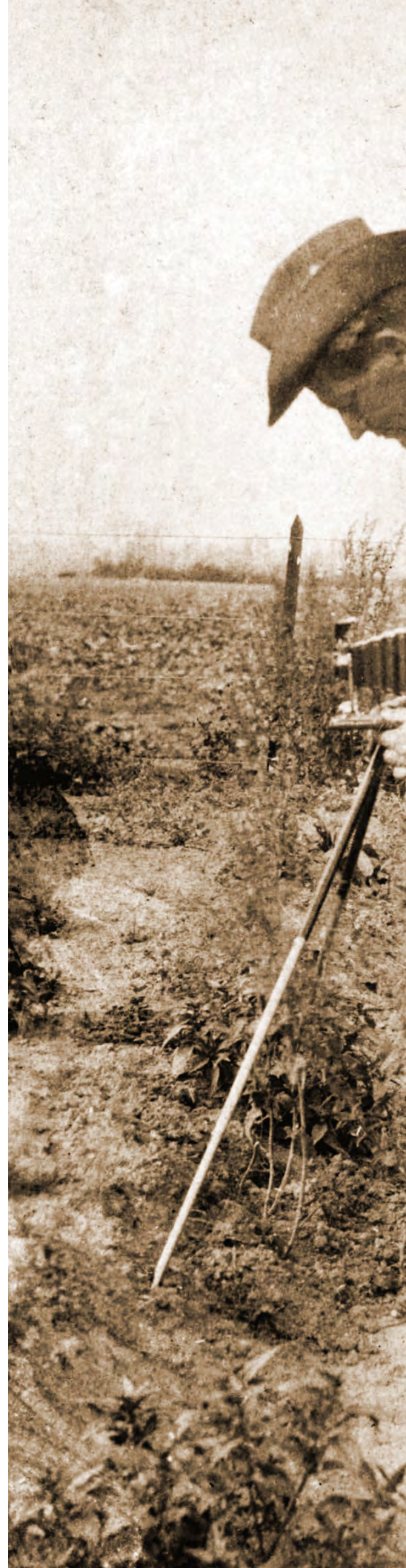
Frank returned home in 1921, and went on to marry Mabel Murray from Ireland, whom he met on the ship journey back home. Records suggest he never completed that final exam, but he did pursue his interest by working in pharmacy and was clearly involved in the wider pharmacy community when he returned. On 22 May, 1928, Frank was working as a chemist's assistant in Collins St, Melbourne when he fronted up to a nearby doctor complaining of feeling unwell and very shortly thereafter passed away.

Mabel wrote to her sister Lou in England in June of that year of her distress:

"I worshipped the ground my man trod on yet my love could not keep him. And after only 6 ½ years. He was the loveliest man ever born and all his friends say that. The letters I've received and telegrams – all from his friends, many of whom I've never seen, but all testifying to the respect and affection he engendered. It can't be true, Lou. And I have only his little sons left to remind me of my lost happiness. Thank god they are like him so that I can never forget him."

An equally extraordinary woman, Mabel wrote to Lou that despite being able to count on Frank's many friends for support she could not "survive on charity alone" and soon after, the mother of three small boys started her own business, a cake shop based in Preston.

All three sons went on to fight in World War II, and all were to return home to Mabel and to make families of their own. John Cahir told *Alchemy* that Frank's extraordinary legacy was a source of great pride for the family,





Staff Sergeant Frank Cahir
(Australian War Memorial)

and like many of these men's stories of both immense contribution and unfulfilled potential, his memory loomed large for all of them, "...for a man I never met I know an awful lot about him. He has well over 100 descendants and he's embedded in our collective memory even though most never met him..."

The manner of Frank Cahir's death remained largely unknown by his sons and in turn his grandchildren, all of whom were under the impression that their grandfather died of war wounds. The truth only came to light when one of the grandsons was searching in the Public Records Office and found reports of Cahir's death, including this story in *The Argus*, from May 1928:

"While working at the shop of E.G.Owen, chemist, Collins Street, city, yesterday morning, Frank Cahir, chemist's assistant, of Leicester Street, Preston, complained that he felt ill. And he visited a doctor a few doors away. The doctor suggested that he should go home, but Cahir replied that he had no home to which he could go. The doctor then told Cahir to rest in a spare room at the rear of the building. When the doctor visited him half an hour later Cahir was much worse, and he died a few minutes afterwards. Plain-clothes Constable Evans of Russell street has reported that when Cahir was lifted from the floor an empty bottle, which had contained poison, fell from his coat pocket. The doctor expressed the opinion that death was due to poisoning."

At 38, Frank had outlived his fellow student-soldiers Malcolm, Gordon, Alan and Eric by more than a decade, but he was no less a casualty.

"In some way, shape or form, World War 1," says John, *"that's what got him."*

* Frank Cahir will feature in the Australian War Memorial's 'After the war' special exhibition:
<https://www.awm.gov.au/visit/exhibitions/after-the-war>

1 <http://adb.anu.edu.au/biography/jones-allan-murray-6868>

2 <https://sites.google.com/site/the39th/w.gordonjewkes>

3 <http://nla.gov.au/nla.news-article74601354> According to *The Thirty-ninth: the history of the 39th Battalion, Australian Imperial Force* by A.T. Paterson <http://empirecall.pbworks.com/w/page/43649777/Jewkes-W-G-CSM-142>)

4 <http://emptirecall.pbworks.com/w/page/43649777/Jewkes-W-G-CSM-142w>

An unexpected side effect: *changing face of the profession*

As the practice of pharmacy struggled to establish itself on the battlefield, back home opportunities emerged from the ashes of the war for some.

Like so many other industries during World War I, women were there to step into the breach. A glance at the honours list around the pertinent dates of 1914 to 1918 is a stark reminder of the ways in which women were able to thrive and succeed during an otherwise dark and difficult time. In 1915, the Victorian College of Pharmacy Gold Medal was won by a woman for only the second time: Ethel E Drew. This was the first milestone on a path that has seen women become an increasing proportion of the profession. It was not until WWII that female students would again be the majority. Today the gender mix in the Monash pharmacy course hovers around 70% female and 30% male.

Pharmacy had already slowly started to become an attractive occupation for young women, and there were many qualified female dispensers. This was partly due to the fact that many pharmacies were family run, so if there was no son available the business would often be handed down to the daughter rather than be sold or passed on to someone else.

A Victorian Women Pharmacists' Association was established in 1905 and in 1911 it reported *"Almost without exception all the principal hospitals in Victoria now employ women as head dispensers"* but the advent of the war led to a surge in student numbers and women stepping into family businesses and spaces left vacant by those leaving for war.

After surveying a number of pharmacists as the war was drawing to a close (and it seems managing to offend many women in the process by questioning their *"inequality of temper"*) *the Chemist and Druggist of Australasia* wrote:

"We were soon told in black and white that three women pharmacists discussing our article thought that we had chosen a suitable time to discourage women in their efforts to qualify for any work in which they

can replace men or to damp their ardour in war time they must inevitably go unrewarded once peace has been declared. We were also told in black and white that the women pharmacists showed some temper over it, too. Nearly every letter referred resentfully to the statement we quoted that women sometimes showed inequality of temper. We hope that what we now say will not ruffle anyone."



Ethel Drew (Australian War Memorial)

The journal attempted to hedge its bets by opening with the rather tautologous line, *"For the girl who is suited to it, pharmacy is a very suitable occupation."*

In the course of canvassing opinions under the header *'Women in Pharmacy, What Women and Men Think'*, the journal surveyed 103 registered female pharmacists. The letters they received are a wonderful record of voices of the women who were studying and working in the field during wartime.

Under the header *"Should A Girl Take Up Pharmacy?"*, one woman wrote:

"I would recommend a girl to take up pharmacy as a calling in preference to anything else I know of. The work is congenial, the social status is good, the pay is better

than that of most positions open to women. For my own part I was always careful not to take a position at a salary less than would be offered to a man. If girls were bound not to accept smaller salaries than men, the latter would have nothing to fear on returning from the war that assistants might be judged on their merits, leaving sex entirely out of the question."

Another:

"If a girl has a desire to become a chemist I shall do all in my power to help her, because the duties are agreeable and interesting, and above all you have the delightful feeling of being independent."

Another working pharmacist wrote:

"There is no bar whatsoever to a girl becoming a successful pharmacist providing she commences her career by regarding it as her possible life work, and not as a means of 'doing time' in pre-matrimonial years. It should be a matter of distinct personal choice. The work is interesting and absorbing, and in addition it gives a fair monetary return to its girl workers."

Most men working in the profession who were also surveyed agreed that women were just as adept at pharmacy as men, and in a show of progressiveness still not matched by many industries today, in 1918 the Victorian association of chemists employed in hospitals and dispensaries voted unanimously in support of equal pay for both sexes.

Ethel herself became a dispenser at the Queen Victoria Hospital and while she went on to marry a prominent Victorian retail chemist, A. R. Bailey, she *"drew favoured work in the hospital to that in the shop"*.¹

¹ (A history of pharmacy in Victoria, pg 151)

The man behind the barracks: *Colin Hall Simpson*

World War I stands as a byword for the squandering of young lives on a grand scale. In the popular imagination at least, the story belongs to those who fell.

It's easy to forget that many young soldiers survived the conflict – though not necessarily unscathed – and went on to live long, productive lives. Some of them were even able to draw upon their military experience as a strength, parlaying it into successful post-war careers.

One such soldier was Colin Hall Simpson, a pharmacist-soldier whose grounding in both disciplines equipped him to ascend to the highest levels in each.

Born in St Kilda to Scottish parents in April 1894, Colin Simpson was an only child. His father was a plumber and they lived in a modest home on High Street.

In 1910, military training became compulsory for all medically fit boys aged from 14 to 18, and Colin joined the 49th Prahran Infantry Cadets in 1911 at the age of 15. He progressed from a Junior Cadet to Sergeant, and by 1914 had been promoted to Lieutenant in the Senior Cadets. By early 1913, he had also become a indentured apprentice to pharmacist John Charles Pickford. Of the 29 apprentices in 1913, Colin made friends with Eric Bisset and Alan Jones, who were part of the apprentice registrants.

Colin Simpson submitted his application for a Commission in May 1915, arriving in England for the final stages of his training in 1916. By 1917 he was serving as part of the 3rd Division Signal Company in Flanders.

In *"Simpson SO-in-C"* (2003), author Leon Stubbings says:

"Communications were a vital element throughout the campaign. The standard methods of communication were used although wireless links were not entirely successful. Dispatch riders were used extensively, messages being carried on foot,

motorcycle and bicycle. Simpson's skill, enthusiasm and devotion to duty was recognised and rewarded."

In 1917 Simpson was mentioned in dispatches from General Sir Douglas Haig, Commander-in-Chief of the British Armies in France for *"distinguished and gallant services, and devotion to duty"*.

Later in 1917, Simpson was awarded the Military Cross for gallantry and devotion to duty in the field. The citation from His Majesty The King reads:

"For conspicuous gallantry and devotion to duty. He organised the Brigade Signal Service so thoroughly that communication was maintained with every unit throughout. He was continually under shell-fire, but personally supervised all repairs, by his vigorous and cheerful manner impressed all ranks in the highest degree."

But Simpson would not escape unscathed. He had been wounded twice, impacted by mustard gas and was eventually evacuated to a London hospital.

In November 1917, unlikely to return to the front, he requested Leave of Absence to complete his final course of lectures at the College of Pharmacy, due to start on the 1 February 1918. Leave was approved and he embarked from London in December 1917.

After the war

Simpson passed his final pharmaceutical examination on 12 June 1918 and registered as a Victorian pharmaceutical chemist on 10 July 1918, four months before the Armistice.

He opened Simpson's Pharmacy in Brunswick and began a civilian career as a community pharmacist. In 1937 he founded the Allied Master Chemists of Australia Limited, better known as AMCAL, with D E Robertson and A E Moore. AMCAL grew to be Australia's largest retail pharmacy group.

Simpson stayed in the Militia and moved from Infantry to Signals duties in the

Australian Engineers. He was also moving up in the ranks. With the outbreak of the Second World War, he was appointed Australia's first Chief Signals Officer.

He was promoted to Major General and expanded the Signals Corps to over 25,000 personnel to meet the demands of the war. He led the Signals efforts in the Asia-Pacific conflict until the conclusion of the war, despite being badly injured in an accident. He was appointed a Commander of the Order of the British Empire (CBE) following active service in the Middle East, Western Desert, Greece and Crete.

Simpson returned to retail pharmacy after WWII, operating a pharmacy in Prahran but his health continued to suffer from war service. In his later years, Simpson supported the establishment of Chemists Sub-Branch for ex-servicemen.

Simpson's notable achievements also included the role in fundraising for the creation of the College of Pharmacy campus at Parkville. The War Memorial building is still in active use for pharmacy education even today.

Simpson is remembered as a compassionate pharmacist, transformative military leader and honest man. In 1986 Watsonia Barracks was renamed Simpson Barracks in honour of Major General C H Simpson.



Major-General Colin Simpson
(courtesy of Australian Defence Force)

A journey of remembrance

In September 2018, Dean Bill Charman travelled to Europe to pay his respects to our fallen students on behalf of the faculty. At each memorial, he laid a wreath that had been handmade by staff and students. He was accompanied by his son Tom, who documented the trip on camera. This is a selection of the photos he took.



At the grave of Gordon Jewkes, Hazebrouck Communal Cemetery, Hazebrouck, France



Sign on display at the Sir John Monash Centre, Villers-Bretonneux, France



Sir John Monash Centre, Australian National Memorial, Villers-Bretonneux, France





Wreath laid by Dean Charman at the memorial for Eric Bisset, Villers-Bretonneux, France



Dean Charman lays a wreath at Alan Couve's headstone, Beach Cemetery, Gallipoli Peninsula, Turkey



Dean Charman lays a wreath at The Menin Gate Memorial, Ypres, Belgium. On the wall are the name of pharmacy student Malcolm Jones and College graduate Leonard Lamb.

A question of rank

As pharmacy families dealt with the blow of losing their sons and grappled with the challenges of keeping the family business going, the profession itself was engaged in its own war of wills over its standing within both the Australian and British armies.

The role of pharmacists in their medical service structures initially followed the British army model, which meant that Australian pharmacists who signed up for the Army Medical Corps (AMC) could only attain the non-commissioned rank of staff-sergeant. Army dispensers didn't require registration, but only had to pass an Army examination in order to work in an AMC dispensary.

In the Australian Reserves, the honorary lieutenant rank was available for pharmacists, but this didn't transfer to the regular forces when war was declared. There was simply no place in the AMC establishment for the role of the highly qualified professional pharmacist.

Moreover, the 1912 regulations (Military Order 408) provided for the appointment only of compounders, not qualified dispensers.¹ The army sought men with a knowledge of Latin names for drugs and medicines, the instructions commonly employed in the use of these and poisons, and in prescription dispensing. Prospective compounders received about nine months of army training. In a slight to members of the Pharmaceutical Society, soldiers who held civilian qualifications in pharmacy were acceptable to the army – just as compounders.

As the Australasian Pharmaceutical Notes and News reported in 1915: *“Doctors, dentists, veterinarians and automobile drivers are given commissioned rank, but not pharmacists.”*

In a presentation to current serving Australian Defence Force (ADF) military pharmacists in June 2018, historian Lea Doughty, a current PhD candidate at the School of Pharmacy at the University of Otago, whose topic is ANZAC military pharmacy during WWI, said that very often the skills of qualified pharmacists were wasted.

She quotes Colonel Arthur Edmund Shepherd, the Deputy Director-General of Medical

Services in 1915, who lamented the fact that pharmacists *“had given years to study to go in the ranks and fight in the trenches, when they could give more efficacious and valuable help to the medical officers in looking after the health of the regiment.”*²

A concerted campaign for change began with a strong push from the Victorian profession and the Queensland Pharmaceutical Society, then later the Council of Pharmaceutical Societies of Australasia. Those campaigning recognised that field dispensing (for example, duties carried out in the Field Ambulances) didn't justify a commission rank, and that extra levels of responsibility were required to meet the leadership qualities that a commission entailed. They then set about identifying ways that they could add value and responsibility to their service, such as bacteriology services, (for example, urine testing) and water quality analysis and sterilisation, which would utilise the pharmacist's training in chemistry.

By January 1916, the Australian Army Pharmaceutical Service was gazetted as Military Order 6, and the establishment for the new service was determined. The first Senior Pharmacists were nominated by the Pharmaceutical Societies for the four principal states and were appointed with the rank of Honorary Captain. They were responsible for the organisation of Pharmaceutical Services for each of their Military Districts, including appointing Lieutenant-Quartermasters in charge of Base Depots for Medical Supplies.

By March 1916, all dispensers on board troop transports carrying more than 500 men were required to be registered pharmacists, and unqualified men were no longer permitted to dispense. The previous rank of Army-Dispenser or Army-Compounder was disestablished, much to the delight of the Pharmaceutical Societies. Registered dispensers working on hospital ships were also quickly promoted to commissioned rank.

Overseeing the operation was the newly appointed head of the Australian Army Pharmaceutical Service, the first Chief Pharmaceutical Officer in the Australian armed forces – Major David Alexander Cossar, a graduate of the Melbourne College of

Pharmacy and president of the Pharmaceutical Society of Victoria from 1915 to 1919.

The *Australasian Journal of Pharmacy* wrote of a farewell dinner for Major Cossar thrown by Victorian pharmacists in August of 1917 as he prepared to depart for England.

Mr Chas E Towl, President of the Pharmacy Board of Victoria, chaired the event and Surgeon General Fetherston, Director General for Medical Services, toasted Cossar, acknowledging the efforts of Australian pharmacists in fundamentally changing the role of pharmacy in the military. According to Doughty, Fetherston had *“initially been resistant to the idea of pharmacists holding commissions”*. He considered that the work pharmacists did was very basic, and it is possible that he was referring solely to field dispensing, which was indeed simple, and certainly did not justify a commission. By August 1917, he'd very much changed his tune.

The Journal's account of the toast read:

“For the very first time in the history of military matters in connection with the British Empire, they were privileged to propose the toast of the Staff Officer for Pharmaceutical Service.”

“He did not think there was a pharmacists' corps in any other part of the British Empire, and it was for Australia, apparently, to be the pioneers in this kind of work. It was something for Australia to say that she had her pharmacists trained to a keen pitch of perfection as required by the nation at such a time as this. Major Cossar was going home imbued with the idea of doing his very best for his country, and for the service he represented.”

An obituary for Major Cossar in the *Australasian Journal of Pharmacy* in January 1960 reads:

“In his efforts to obtain proper recognition for Australian pharmacists serving in the Army, Major Cossar made a splendid contribution of service to the profession and the foundation laid by him was undoubtedly a factor leading to the eventual granting of commissions for all qualified pharmacists serving in

Doughty writes: “Cossar’s aim was for there to be no requirement for unqualified Army trained Sergeant-Dispensers and Compounders as previously allowed for in the British structure. There had been a number of cases of fatal injuries caused by drug dispensing errors by unqualified dispensary staff. In one case, the patient was given strychnine instead of quinine, and in another, a patient was given carbolic acid instead of quinine. The containers had been stored next to each other with no regard for poison control, and the unqualified dispenser had accidentally

taken the wrong bottle. Both patients died. By ensuring that only registered and qualified pharmacists were handling medicines and drugs, the integrity of both the profession and its practitioners was maintained, and risk to the patients was reduced.”

Current students and pharmacists would be aware of ‘Cossar Hall’ but perhaps not aware that the hall was named in honour of Australia’s first Chief Pharmaceutical Officer, Major David Cossar.

However, while Cossar achieved great progress for the profession of pharmacy within the

military, his war experience did not go untouched by tragedy. The Major lost his son, who was also a pharmacist, to World War II, in May 1942.

Lieutenant Neil Alexander Cossar is buried far from home in the Gaza War Cemetery.

He died at the age of 28.

1 Harris, K, Sister dispensers-- Australian trained nurses in pharmacy., Pharm Hist Aust, 2008, 4 (34), pp. 3–5

2 Lea Doughty, PhD Candidate at the School of Pharmacy at the University of Otago

The Conference of Senior Pharmacists, Victoria, 1916. The chief pharmaceutical officers of the ADF



Standing – Captain R. Owen Fox (South Australia), Captain R. C. Cowley (Queensland)
Sitting – Captain A. Wadsworth (New South Wales), Major D. A. Cossar (Victoria), Captain W. B. Drake (Tasmania), Captain W. D. Williams (Victoria)

Research *with* IMPACT

Research offers new benefit to Alzheimer's drug

A study published by researchers at Monash University and the Karolinska Institutet earlier this year identified a potential new benefit of a commonly used treatment for Alzheimer's disease.

The study demonstrated that the risk of ischaemic stroke was 15 per cent lower and the risk of death was 24 per cent lower in people with dementia who were dispensed acetylcholinesterase inhibitors (AChEIs) compared to people with dementia not dispensed these drugs.

The study's primary author Dr Edwin Tan is an NHMRC-ARC Dementia Research Development Fellow at the Centre for Medicine Use and Safety and the Aging Research Center at the NVS department at the Karolinska Institutet and Stockholm University.

Article has an altmetric score of 31 Acetylcholinesterase inhibitors and risk of stroke and death in people with dementia Tan, E. C. K., Johnell, K., Garcia-Platace, S., Haakma, M. L., Fastbom, J., Bell, J. S. & Eriksdotter, M. 1 Jan 2018 (Accepted/In press) In : Alzheimer's and Dementia. 8 p.



Dr Edwin Tan

Structure of a vital drug target revealed

Researchers from the Monash Institute of Pharmaceutical Sciences (MIPS) have presented the first high-resolution structure of an activated adenosine A1 receptor, bound to both its native activating ligand, adenosine, as well as its main "signal-transmitting" partner, the heterotrimeric Gi protein.

The adenosine A1 receptor is a member of the largest class of medicinal targets, and is linked to several diseases, including cardiovascular disease, cognitive dysfunction and chronic pain. The new MIPS research, which has 'captured' the structure of the receptor and its G protein in the process of being 'switched on' by adenosine promises to overcome previous drug selectivity limitations, as well as shed new insight into how this receptor works on a molecular level.

Lead researcher Professor Arthur Christopoulos said the study's findings had significant implications for healthcare and drug discovery.

"Our results have exciting implications for future drug discovery. For the first time, we are now in a position to use atomic-level information to rationally develop new targeted medications to treat heart disease while minimising side effects."

"Understanding how this receptor is activated could also be applied to develop treatments for neuropathic pain in the future through more extensive research."

The research was facilitated through use of novel technology termed "cryo-Electron Microscopy" (cryo-EM), a technique that was most recently acknowledged through the award of the 2017 Nobel Prize in Chemistry to its key originators. Cryo-EM involves firing beams of electrons at proteins that have been frozen in solution to identify their biomolecular structure.

Structure of the adenosine-bound human adenosine A1 receptor-Gi complex Draper-Joyce, C. J., Khoshouei, M., Thal, D. M., Liang, Y. L., Nguyen, A. T. N., Furness, S. G. B., Venugopal, H., Baltos, J. A., Plitzko, J. M., Danev, R., Baumeister, W., May, L. T., Wootten, D., Sexton, P. M., Glukhova, A. & Christopoulos, A. 20 Jun 2018 In : Nature. 558, 7711, p. 559-565 7 p.



Professor Arthur Christopoulos

Research into *reducing medication errors* wins two national awards

Monash Pharmacy PhD student Erica Tong, from the Centre for Medicine Use and Safety (CMUS), has received prestigious awards for her research paper conducted at Alfred Health on reducing medication errors in hospital discharge summaries.

She is lead author on the paper titled *Reducing medication errors in hospital discharge summaries: a randomised controlled trial*. It was awarded the 2017 Sir Richard Stawell Memorial Prize and the MDA National Prize for Excellence from the MJA.

The research evaluated whether pharmacists completing the medication management plan in the medical discharge summary decreased the rate of medication errors in these summaries. Ms Tong and her collaborators found that completion of the medical plan was effective, with medication errors occurring at a rate of 15 per cent when the plan was completed by a pharmacist, compared to 61.5 per cent when it was not.

Ms Tong's supervisors and co-authors from CMUS include Professor Michael Dooley and Associate Professor Kirstie Galbraith. Associate Professor Galbraith highlighted just how extraordinary Ms Tong's achievements were.

"For the AMA to award such a prestigious prize to a lead author who is still completing their PhD is unheard of," she said.

"To receive two awards as a PhD student from the AMA and the MJA on the same paper is a significant recognition and demonstrates the importance of Ms Tong's research."

Reducing medication errors in hospital discharge summaries: a randomised controlled trial, Erica Y Tong, Cristina P Roman, Biswadev Mitra, Gary S Yip, Harry Gibbs, Harvey H Newnham, De Villiers Smit, Kirsten Galbraith and Michael J Dooley *Med J Aust* 2017; 206 (1): 36-39. || doi: 10.5694/mja16.00628 Published online: 16 January 2017



Erica Tong (left)

DDB researchers awarded Senior Fellowships

MIPS researchers **Doctor Denise Wootten** and **Professor Patrick Sexton** have been awarded prestigious **National Health and Medical Research Council (NHMRC) Senior Fellowships**.

NHMRC Senior Fellowships are five-year fellowships supporting health and medical researchers. The Fellowships aim to bolster the capacity for future Australian research and encourage knowledge sharing. They represent significant academic success and innovation and are awarded to researchers who have demonstrated consistent commitment to the profession and improving health outcomes.

Professor Patrick Sexton is one of the founders of DDB. He has been awarded a Senior Principal Research Fellowship, the highest level of fellowship the NHMRC offers. His research addresses the behaviour and quantification of allosteric drug action, focusing on key areas of GPCR research. The laboratory studies different paradigms of GPCR function and investigates the function of key peptide hormones involved in major diseases such as diabetes, osteoporosis, cardiovascular disease and obesity.

Doctor Wootten is the Group Leader of the Class B G protein-coupled receptor (GPCR) Biology team in the Drug Discovery Biology theme at MIPS. Her work focuses on the study of GPCRs and understanding modes of regulation to identify new and innovative approaches to drug discovery, including addressing treatment for chronic disease such as obesity or cardiovascular disease. Doctor Wootten's research examines the interaction of receptors with regulatory accessory proteins, differential signalling and the mechanisms of GPCR activation.

Professor Sexton and Doctor Wootten co-run the Sexton Laboratory, part of the Drug Discovery Biology theme. Their research focusing on GPCR has been published in high-impact journals including *Nature* and *Molecular Pharmacology*, demonstrating the significance of their research for the wider scientific community. Their continued research has significant implications for individuals living with chronic disease and the opportunity to improve their health outcomes.

Both Professor Sexton and Dr Wootten are lead-authors on several recent papers in notable journals including *Nature*, *Endocrinology* and *Biochemical Pharmacology*. Together they are also undertaking a project addressing the structural basis for Family B GPCR function with the NHMRC.





Professor Jonathan Baell

New drugs put cancer to sleep for good

In a world first, Melbourne scientists have discovered a new type of anti-cancer drug that can put cancer cells into a permanent sleep, arresting tumour growth and spread without damaging the cells' DNA.

Research led by Professor Jonathan Baell, Associate Professor Tim Thomas and Associate Professor Anne Voss from the Walter and Eliza Hall Institute, and Dr Brendon Monahan from Cancers Therapeutics CRC investigated whether inhibiting KAT6A and KAT6B could be a new approach to treating cancer.

The new class of drugs target KAT6A and KAT6B proteins, both known to play an important role in driving cancer. Rather than causing potentially dangerous DNA damage, as chemotherapy and radiotherapy do, this new class of anti-cancer drugs simply puts cancer cells into a permanent sleep.

Professor Baell said the project was particularly significant because the scientific community had coined the gene family as 'undruggable'.

"There were many hurdles to overcome with this project; this compound certainly didn't fall into our laps," Professor Baell said. *"But with perseverance and commitment, we are excited to have developed a potent, precise and clean compound that appears to be safe and effective in our preclinical models. Our teams are now working on developing this compound into a drug that is appropriate for human trials."*

Professor Baell said the project was indebted to funding from the Australian government and proved that public research could be an effective translational vehicle.

Correspondence: Reply to 'Compound 17b and formyl peptide receptor biased agonism in relation to cardioprotective effects in ischaemia-reperfusion injury' Qin, C. X., May, L. T., Sexton, P. M., DeBono, A. J., Baell, J. B., Christopoulos, A. & Ritchie, R. H. 1 Dec 2018 In : Nature Communications. 9, 1, 4 p. 530



Simon Furletti

Giant StEPs for pharmacy placements

Students enrolled in the new Vertical Integrated Masters (BPharm(Hons)/MPharm) at Monash will have a more relevant placement experience in practice sites under the newly developed Student Experiential Placements (StEPs) program.

“The goal,” says newly recruited StEPs Manager Simon Furletti, “is to increase students’ learning in practice, empowering them to add value by demonstrating what they are capable of doing. We’re increasing the relevance of the placement experience and improving transparency for pharmacists so that they can see that students are learning appropriate skills for the workplace.”

Simon was selected for the newly created role in part because of his extensive experience in community pharmacy.

He has worked as the professional practice manager for Terry White Chemmart and also for Chemist Warehouse as the professional services pharmacist and intern coordinator. He was recently named one of the Australian Journal of Pharmacy’s 12 Agenda Setters.

He has joined the team in order to build the new program, which has been developed in consultation with multiple stakeholders from hospital and community practice sites, taking onboard their feedback and identified needs to provide more effective placements.

“While StEPs is a shift,” he adds, “we are receiving good feedback. Pharmacists understand why we are doing it. We want the system to be more robust and drive what our students should do and learn at practice sites.”

As part of StEPs, a new way of defining and assessing developing pharmacy practice skills has been implemented. Monash students will now have an evolving suite of “*entrustable professional activities*” (EPAs). These are specific tasks that a student has demonstrated a level of independence in before they commence each placement. This provides much clearer expectations for students and preceptors, so students can participate in tasks appropriate to their level of development.

The EPA model was originally developed in medical education and Monash is the first Australian university to use it in pharmacy education.

Another big shift is the frequency with which students will now attend experiential placements: 110 days across the course of their studies rather than 60.

They will begin with two days in their first year, “*mostly so they can see pharmacists practising and understand the context for their future learning,*” says Furletti. Previously placements didn’t begin until the third year of study.

Key to the success of StEPs will be building a robust cohort of education partner sites, says Furletti. “*We want to build a core group of experiential partners that are a significant part of our program.*”

Ultimately, the aim is to improve healthcare by graduating highly skilled pharmacists who can contribute to patient care.

Seeds of success planted at Parkville



Professor Martin in her lab
(Griffith University)

Pharmacy alumna Professor Jennifer Martin's professional road has taken her from the Parkville campus all the way to the "wonderful, amazing honour" of being made a Companion of the Order of Australia.

Beginning her studies at the Victorian College of Pharmacy (now the Monash University Faculty of Pharmacy and Pharmaceutical Science) in 1979, she admits that pharmacy was not her first choice.

"I always wanted to be a vet," she says. "And my second choice was medicine. But I didn't score well enough at HSC to get into either of those courses. However, I was offered a place in pharmacy."

She planned to transfer to veterinary science after first-year Pharmacy, but during physiology pracs she quickly discovered she didn't have the stomach for surgery. Meanwhile, she fell in love with the pharmacy course and the college.



Professor Jennifer Martin and the Governor-General of the Commonwealth of Australia, His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd), at the awards ceremony

Professor Martin remembers a "great feeling of belonging" at the Parkville campus. *"Everyone took the same course, the same subjects; the lecturers and prac staff were outstanding; it was great for me as a shy young girl from the sticks to go through the course as part of a cohort."* She thrived, loving the course and the content. *"For me, the learning that the interaction between a small, specific chemical and a much larger biological molecule can result in pharmacological activity – and that the chemical (or drug) could be designed – was simply a revelation. That memory still gives me goosebumps all these years later."*

It helped that with a 90-minute commute home each day, she had plenty of time to study on the train. During her undergraduate studies she was awarded the faculty's highest undergraduate honour – the coveted pharmacy gold medal.

Professor Martin was made a Companion of the Order of Australia in the 2018 Australia Day Honours for her eminent service to scientific research, particularly in the field of biochemistry and protein crystallography applied to drug-resistant bacteria, and as a role model and an advocate for gender equality in science. She can trace those areas of interest back to her time at VCP.

Early on, she found an inspirational leader in Professor Peter Andrews AO, who she says *"didn't have that unconscious bias present in so many of us that tends to favour men over women; he gave opportunities and recognition to everyone that contributed and always had very balanced teams."* Professor Andrews and the then Dean of the College Professor Geoff Vaughan AO would go on to be lifelong mentors, helping spark her interest in leadership and role models. Sadly Geoff passed away this year, just days before the 2018 Order of Australia was announced.

"I didn't know it at the time but Peter and Geoff became constants in my life, and their leadership style helped define my own," says Professor Martin.

Now Director of the Griffith Institute for Drug Discovery at Griffith University, Professor Martin's work aims to bring government, industry, philanthropists and academia together to address the world's most devastating diseases. Her own research focuses on antibiotic resistance, which she says is a global public health problem.

Now coming back full circle, she collaborates as part of a national team with researchers at MIPS to design and develop drugs to overcome antibiotic resistance by *"disarming rather than destroying"* pathogenic bacteria.

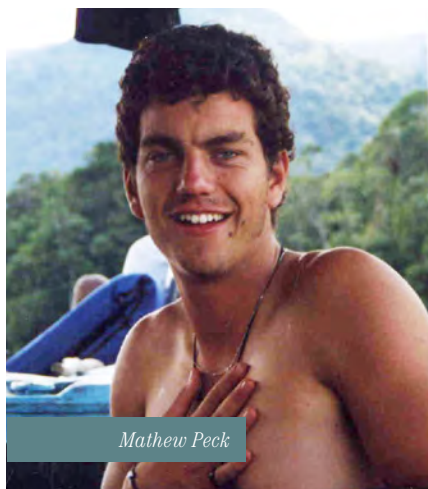
Mathew Peck: 15 years on

It's now been 15 years since popular pharmacy student Mathew Peck died while travelling in South America. His legacy lives on in the form of the Mathew Peck Travelling Scholarship, established by his family in 2003.

Mathew Peck was a lover of travel, remembered for his commitment to global health, improving health outcomes for disadvantaged populations, and a passion for pharmacy.

Mathew was studying a Bachelor of Pharmacy at Monash University and had previously demonstrated interest in working in developing communities. His family established the Mathew Peck Travelling Grant in his honour, hoping to inspire future students to find their passion in pharmacy and international development. The grant of \$4000 allows students to travel overseas, work in an international community and have a mentorship with a pharmacist.

The program is now in its 15th year and as part of the commemoration, two past recipients – one a contemporary and friend of Mathew's, the other a recent recipient – have shared their experiences of the scholarship. They spoke of how their time in the program shaped their careers today and enabled them to use the skills they had picked up at Monash to improve the health of people in resource-poor communities.



Mathew Peck



Michael Nunan

Michael Nunan

When we spoke to Michael, he had just returned from working in the Ivory Coast and Tokelau. Michael has founded a company called MSupply which is working on improving healthcare supply chains by moving from paper records and inventory to the use of e-distribution methods using iPads.

It is a far cry from what he expected to be doing back when he was a student – in fact, while he was at VCP he wasn't even sure he wanted to be a pharmacist. But following the death of his friend Mathew, he made a last-minute decision to apply for the Scholarship.

"I'd never considered a career in international development; I just wanted to transfer out of pharmacy," said Michael.

After spending two months in Vanuatu, Michael found his entire perspective on pharmacy had changed. From working in the community to running a hospital pharmacy, Michael had a new appreciation for the breadth of career options in a degree he had once tried to transfer out of.

"Before the program, I was actually labelled worst trainee of the year by my placement supervisor. I came back and that following year, won the Victorian Pharmacy Student of the Year competition," Michael said.

"The program changed my life; I went from uninterested to developing this whole new enthusiasm for a career. I completed a Graduate Diploma in Pharmacy Practice and, just this year, graduated with a PhD in healthcare supply chains."

Michael adds that Mathew's legacy lives on in every student who takes the opportunity to complete the scholarship program. An old friend of Mathew's, Michael found the process to be emotional, raw but fulfilling.

"I often think of Matt, when I'm out in the field. I was in a tiny island country, stuck on a boat for 36 hours. That time, out there on the deck made me reflect. I owe him this whole new outlook on life; we all owe him for this opportunity we have created in his memory." Michael comments.

"I'm proud to have been involved."

Jake Bromley

Jake completed his bachelor degree in 2017 and is currently undertaking his internship at the Royal Melbourne Hospital. As a Mathew Peck Travelling Scholar, he spent six weeks in Timor Leste last summer, working with two former scholarship recipients, Michael Nunan and Alex Bongers (Bongers undertook his scholarship placement in 2010).

Jake spent his time with the Timor Leste government, working alongside Michael's company, MSupply. Part of his project was to analyse the efficacy of Michael's systems, particularly the impact of switching from paper to electronic inventory.

"I had this chance to really work with stakeholders and government officials. Part of my responsibility involved analysing the data since MSupply switched to the e-based system. MSupply is working to increase medical supply in resource-poor communities and it was cool to be a part of that process," Jake said.

Jake was seeking an experience that was different from the norm. Having previously been in community and hospital settings in Australia, he wanted a taste of how health systems in other countries worked.

"I wanted to see what else was on offer and experience another culture. You work a lot at home and see the impact here but not overseas. I wanted to know how I could make a meaningful impact somewhere else."

"I learnt to engage with people from different cultural backgrounds and confront the challenges the community faces. Seeing how people like Alex approached situations made me reflect on my learnings and how they had to change to meet the situation."

We asked Jake what his highlights of the experience were and he had a few to add.

"The type of people you meet, the many volunteering options and meeting so many professionals from a range of fields were all

key highlights. I made some strong friendships in a relatively short period of time," Jake added.

"The impact you can make over there is huge. I'll be keeping my eye out for more opportunities like these in the future. I think down the track, I'd like to be working in similar programs overseas."

Jake is finishing up his one-year internship with Royal Melbourne Hospital and is planning his next career move for the future. His key advice for students?

"Take every opportunity you can get. Everyone studying pharmacy should do it. The people you meet will help you along the way and if you don't do it, you won't ever get this type of chance again."

"I don't regret a single decision and I hope that the program continues to change students' lives like it changed mine."



Michael Nunan



Professor Tina Brock

Course director update: BPharm (Hons)/MPharm

News from our #pharmacistsintraining

As we conclude the second year of the Vertical Integrated Masters (VIM) course, I'm pleased to share that our team has sustained its energy and enthusiasm for teaching pharmacy students to provide comprehensive services in a variety of healthcare settings.

We've taken some important steps, expanding our team to include a Deputy Course Director (Dan Malone) and a Manager of Student Experiential Placements (Simon Furletti). These critical enhancements reflect the integrated, intercultural and interprofessional nature of the course, and the extensive role of experiential placements in providing opportunities for deliberate practice and feedback.

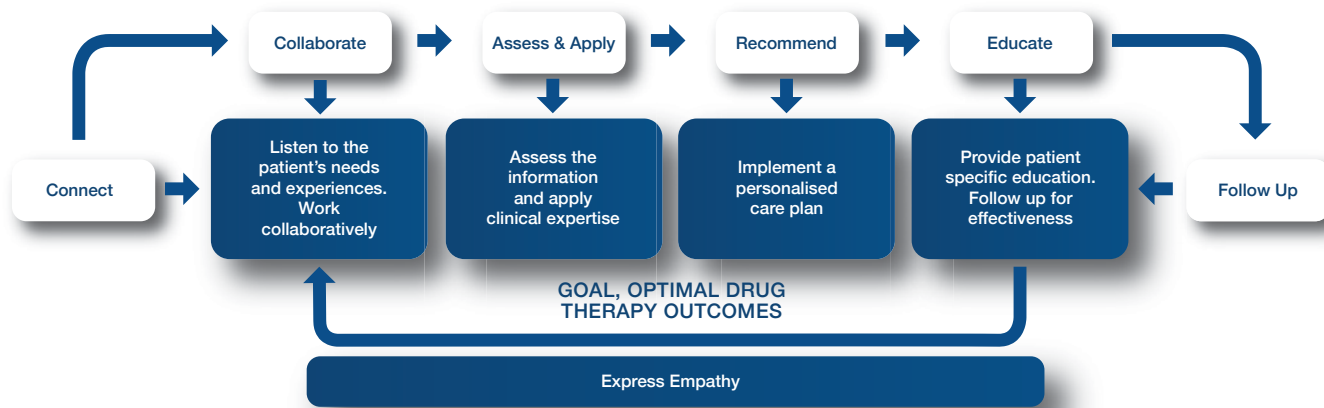
We've also benefited greatly from the contributions of many talented local practitioners who have helped us to build and teach with a unifying framework, demonstrating how pharmacists add value in the care process. We call this the Monash Model of Care (see graphic). We encourage pharmacist practitioners with a passion for extending this model into our third year to join our team as teaching associates. We're always looking for talented teachers!

We started this course because we wanted to make healthcare better. This means our graduates must not only be practice-ready but also team-ready.

To teach our students how to collaborate with others, this year we've incorporated two full-scale interprofessional education activities based on the Monash Collaborative Care Curriculum Framework. The first of these had pharmacy students collaborating with medical students to help a patient avoid potential hospitalisation for an attack of *'thunderstorm asthma'*. The second had pharmacy students learning about, from and with nursing students to help a patient thrive after a heart attack.

Response to these activities has been overwhelmingly positive from students in each of the professions.

There's always something exciting happening in the VIM!



Course director *update:* student placement program



Associate Professor Michelle McIntosh

We are committed to ensuring all students are career-ready the minute they step into the workforce. That's why they all get the chance to undertake Professional Experience Placements, also known as PEPs, which give them authentic workplace experiences.

Students in the program are offered a range of options, including working among industry leaders such as pharmaceutical giant GSK or Australian luxury skincare company Aesop. However, there is an increasing draw to our Monash Institute of Pharmaceutical Sciences (MIPS) program, where students gain insider knowledge of pharmaceutical product development and evaluation. Partners of MIPS include Pfizer and Shimadzu, who provide cutting-edge technology for research use here at Parkville.

Placements last six weeks, during which students work closely with their supervisors and develop critical skills including written and verbal communication, scientific inquiry, teamwork and collaboration, and hands-on laboratory skills. Students can also progress into a further summer scholarship program with the opportunity to complete a 16-week placement program in full.

The course has an emphasis on transferable skills, and part of the utility of the placement is that it shows the students just how transferrable their skills are. Students often assume that when they choose a major, it will define their career options from thereon in. One of the things they learn on placement is that whatever major they choose, their course will have prepared them to make a useful contribution.

Students often go on to complete their Honours year with the institute and have the opportunity to author publications, setting themselves up for career avenues in both research and academia. This is exemplified in the network of project supervisors, many of whom are former Monash University graduates.

Recently I spoke with Arthur MacArthur, a former Bachelor of Pharmaceutical Sciences student and current PhD candidate. He credits the placement program for his career path and journey.

"Without that opportunity, I would have graduated and jumped into an unknown open job market. At MIPS, I got to choose my own adventure and learned so many skills," he said.

"It helped me to network, how to write and how to present. Having a program that places you in a team, nurtures you and helps you become a better researcher is invaluable."

I thank all our supervisors, researchers and students for their time, effort and commitment to providing students with the best educational experience possible.

New deputy course directors *bring strong skills focus*

Doctor Daniel Malone and Doctor Jennifer Short have been recently named Deputy Course Directors of Pharmacy Education and the Bachelor of Pharmaceutical Sciences.

In their new roles, Dan and Jen will focus on strengthening the presence of Monash University in the pharmacy and pharmaceutical science education sectors. Deputy Course Directors also play a pivotal role in meeting continuing educational challenges, such as the rise of e-based learning and understanding the shift in theoretical teaching paradigms and how they apply to students. Dan and Jen have a key responsibility in designing, implementing and regularly evaluating the curricular programmes of the Bachelor of Pharmacy, Bachelor of Pharmaceutical Sciences and the Masters of Pharmacy degrees.



Dr Jennifer Short

Dan Malone

Dan is a Victorian College of Pharmacy alumnus and Senior Lecturer at the Faculty. He completed his secondary education at Xavier College. In addition to his position as Deputy Director, he boasts an impressive teaching portfolio, lecturing in mainly the pharmacy course in physiology, pharmacology and clinical pharmacy.

Dan brings an enthusiasm for improving student outcomes and a strong understanding of pharmacology and community pharmacy. Teaching awards include an Australian Government Office of Learning and Teaching Citation in 2012 and a Faculty Teaching Excellence Award in 2017.

Dan's commitment is not just to in-classroom teaching but also to coordination and structure of student experience. He has authored papers on using active learning methods in teaching and the impact of teaching staff on case-based learning.



Dr Dan Malone

Jennifer Short

Jen is part of the Monash Institute of Pharmaceutical Sciences Drug Discovery Biology theme. Jen's research investigates the role of blood-brain barrier transport proteins in the pathogenesis of Alzheimer's disease and explores the usefulness of strategies that target the blood-brain barrier to enhance brain clearance of beta-amyloid. Jen currently lectures in units involving neuroscience, physiology and pharmacology in both the Bachelor of Pharmacy and the Bachelor of Pharmaceutical Sciences.

Jen is an education-focused academic and has worked within the academic teams to ensure that skill proficiencies are explicitly taught, regularly practised and robustly assessed throughout the curriculum. Deliberate scaffolding allows students to become more aware of their strengths and to become more empowered to seek opportunities for support where gaps in their skills are identified. Jen has been involved in mapping studies examining skill development in both degrees, and has published papers examining the impact of active learning strategies and the deliberate scaffolding of problem-solving techniques on skill development.

Jen also brings an enthusiasm for working across the education portfolio and a commitment to raising the teaching profile of the Bachelor of Pharmaceutical Science. Her role as Deputy Director is imperative in engaging with local and international stakeholders to highlight the significance of Monash University's reputation as number two in the world for pharmacy and pharmacology.

The roles of Deputy Director are essential in reaching a wider network of prospective students in a competitive tertiary market. Dan and Jen both share not just academic expertise of pharmacology but the experience of working with students and large cohorts to understand student needs and interests. These skills are crucial in targeting international student markets, where we are seeing an increased number of undergraduates.

We look forward to hearing more from Dan and Jen in the next edition of *Alchemy*.

Australia's *next top model* of practice

An update on Project Pharmacist

John Jackson

Aligned with the introduction of the new combined Bachelor and Master of Pharmacy, there has been recognition within the faculty of the need for greater professional opportunities for pharmacists in primary care. This is being addressed by Project Pharmacist, established in 2014 to facilitate enhanced roles for pharmacists that create both rewarding careers and patient benefits.

The initial work of Project Pharmacist identified factors in the practice environment that affect pharmacists' opportunities to pursue new roles. In addition to the recognised factors of legislation, policy, funding and the expectations of the public, focus groups of pharmacists determined the leadership of the profession and attitudes and beliefs of pharmacist themselves as major factors.

The major pharmacy associations were subsequently engaged by Project Pharmacist to seek consensus as to the workforce issues that affect pharmacists having sustainable and rewarding roles. A key message arising from this process was the need to address limitations that prevent pharmacists working to their full scope of practice and to improve career prospects and conditions in the workplace.

In 2017, Project Pharmacist completed the development of a Framework for Enhanced Roles for the Victorian Department of Health and Human Services. More than sixty roles performed by pharmacists in primary care were identified from the literature. Roles of a similar nature were grouped and the resultant functions categorised into three themes: medication management, primary care services and public health services. A conceptual model of practice has been created using these structures to provide a visual depiction of the range of roles pharmacists are capable of performing in primary care.

Through this work, it has been necessary to differentiate between enhanced roles which are those within the existing scope of practice of pharmacists but not currently widely adopted, advanced roles which are those performed at a level beyond common practice and new roles which are beyond the current scope and may lead pharmacists into 'turf wars' with other health professions. It has also been necessary to translate clinical activities pharmacists have been educated and trained to perform into sustainable, employable positions. Understanding these parameters is important to ensure we foster roles that are soundly based on pharmacists' knowledge and skills and are able to be implemented within the workplace.

In developing the Framework, four new positions were identified as having the greatest potential benefit. They are pharmacists working in general medical practice, pharmacists embedded in residential aged-care facilities, pharmacists working as medicines consultants to home nursing services in support of patients on complex medication regimens and pharmacists providing enhanced adherence services in community pharmacies to patients on multiple chronic medications.



John Jackson

Driving success: *out of the car* and into the pharmacy

The curtain has come down on the Victorian auto industry, but former workers are finding opportunities in the booming pharmaceuticals and medical technology sector.

Assad Ibrahim worked in car manufacturing for 12 years. He started at Ford in Melbourne, straight out of school when he was still a teenager, in the body shop, literally putting cars together.

"The exterior, the side assembly, the hood, the bonnet, the works," he says. He did an apprenticeship for a trade in fitting and turning, and then also a diploma in engineering. He went on to work in project management at Ford, working with the newest manufacturing technology in a high-stakes, well-paid role.

Then the Australian automotive industry hit the skids. In Victoria, Toyota has now been reduced to a skeleton staff in Altona doing non-manufacturing roles. Ford stopped

making cars in Victoria in 2016. Holden shut its last Australian plant, in Adelaide, last year. It had spanned nearly 100 years; the first Ford factory opened in Geelong in 1925.

The grand era was over.

"We all knew it was doom and gloom," says Assad. *"It was just a matter of when. It was heartbreaking. I put my heart and soul into the company and gave them so much. They gave me so much, too. But I knew I had to get out."*

Assad says he knew he needed to transition into another career, and boiled it down to three manufacturing industries in Melbourne – chemical, food and pharmaceutical. He didn't know much about any of them, but by now he knew a lot about manufacturing. He decided on the pharmaceutical industry.

Where the car industry slowed down then stalled, pharmaceutical manufacturing boomed. With medical technology manufacturing, it's now worth almost \$13 billion in Victoria alone – close to half the state's revenue from all manufacturing. It employs more than 20,000 people. Monash University's Faculty of Pharmacy and Pharmaceutical Sciences has established an enterprise called the Medicines Manufacturing Innovation Centre (MMIC), a joint venture between the University, the state government and pharmaceutical manufacturers.

On 28 July, MMIC held a workshop where all stakeholders were updated and informed on the links between the auto industry and the pharmaceutical industry, with a view to attracting qualified former auto employees to fill the demand in the booming new sector.





Informed by the auto industry

Assad took a job at Pfizer, with “a significant setup [with] a substantial manufacturing operation” in Melbourne. He’s been there 10 years now, one of six who have migrated from the auto industry. His role now is Packing and Technology Manager; he’s currently overseeing a packaging process idea potentially worth millions to the company.

Andrew Hodder, Pfizer’s Site Director at its Mulgrave manufacturing plant and an MMIC advisory board member, says his company, like others, always looks for ways to be more effective.

“We’re taking these colleagues from automotive into our environment and getting them trained up in the regulatory framework challenges and the way we do things. It helps us be more effective in the way we problem-solve and deal with the manufacturing line. We really take on board the things the auto industry has been very good at doing. We adopt them into our own manufacturing environment. They re-energise our existing workforce.”

Exports of pharmaceutical goods from Victoria rose nearly \$1.5 billion last year, with the growth driven by blood products to the US and medicines to China. The state government has prioritised pharmaceutical and medical technology manufacturing as a ‘key priority growth’ sector.

Victoria’s Minister for Industry and Employment Ben Carroll says former auto workers have “transferable skills that are ideally suited to pharmaceutical manufacturing”.

“We’ve always supported ex-auto workers to find new jobs, and by teaming up with global companies like Pfizer and universities like Monash, we’re helping to create even more career pathways.”

Monash’s Pharmacy and Pharmaceutical Sciences Associate Professor Michelle McIntosh is the director of MMIC. She says tertiary-qualified staff in project management, design, quality control, engineering, business and science are wanted. She says the similarities between the two industries are “not a connection that may be obvious. But we are trying to draw that out, through MMIC, and shine a light on it. It’s very much part of our mandate to train and develop a workforce of the future.”

For Assad Ibrahim, managing major projects at Pfizer’s plant, the transition has been successful. “It was sad to see the auto industry go,” he says, “but the skills I got from it are incredible.”



Assad Ibrahim

Where *are they* now?



Ivette Aguirre

MClinPharm 2015

'10s

Senior Clinical Pharmacist, Melbourne Sexual Health Centre (MSHC), Alfred Health

MSHC is a service within Alfred Health for the management and prevention of sexually transmitted infections (STIs) aiming to improve sexual health through innovation and excellence in public health, education, clinical care and research. It provides a free pharmacy service. I have an interest in infectious diseases/HIV and completed a Master of Clinical Pharmacy involving a project looking at the impact of a pharmacist review at annual health checks in patients taking combination antiretroviral therapy. In my spare time, I enjoy trying out new cuisines while travelling, and reading crime novels.



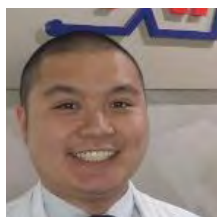
Vincent Tang

BE/BPharmSci 2014

'10s

Formulation Development Chemist, Nufarm Australia Limited

I did the double degree to include chemical engineering and formulation science – not many of the graduates realise all the career path options available with a pharmaceutical sciences degree. That's why I try to attend many of the Monash networking nights with the postgrad students, or be included on the alumni discussion panels for the faculty's Open Day event. The company I now work for, Nufarm, is one of the world's leading crop protection and specialist seeds companies. We produce products to help farmers protect their crops against damage caused by weeds, pests and disease – we do our research and really take into account customer needs.



Eric Li

BMedChem(Hons) 2010

'10s

Senior Research Analytical Chemist, Racing Analytical Services Limited

My role involves method development and validation for supplements research and metabolomics. We research and test for the various racing codes – looking at new drugs coming onto the market that could be potentially used for performance-enhancing effects. For example, there's a novel class of drugs called selective androgen receptor modulators (SARMs), used to help elderly people maintain muscle mass. These new research chemicals are a popular performance-enhancing drug (PED) for the bodybuilding and racing industry, so I develop and validate methods to detect these novel drugs. I also assist Australian Customs and Border Protection in identifying unknown substances entering the country. And the last part of my job role is to supervise a supplements-testing program, which certifies supplements free of the World Anti-Doping Agency's code of banned substances for athlete use.



Amy Fischer

BPharmSci 2015

'10s

Regulatory Compliance Coordinator, Aesop

Since graduation I held various roles at Aesop, who develop a range of skin, hair and body care products. While I was studying I heard a guest speaker talking about regulatory compliance, and I was so impressed I thought that's the area I want to go into. We have a few Monash graduates who specialised in formulation science working here. One of my career highlights was a one-month placement in Aesop's Japan office. Outside of work, I enjoy learning languages and travelling and I'm passionate about the welfare of refugees – there are a couple of detention centres for asylum seekers and refugees in Melbourne that I often visit.



Dr Natalie Vihn

BPharmSci 2015

'10s

Professional Development Program (PDP) Scientist, Pfizer

After I did my Bachelor of Medicinal Chemistry, I continued on to complete honours and a PhD at Monash Institute of Pharmaceutical Sciences (MIPS). My PhD research focused on the design and synthesis of anti-inflammatory drugs. Between 2014–16, I was a research fellow at MIPS, primarily working on the synthesis of inhibitors of aminopeptidases as anti-malarial drugs. Now I'm on the PDP as a scientist at Pfizer.



Mahisha Lim

BPharm(Hons), MPharmPrac 2013

'10s

Clinical Pharmacist at Angliss Hospital Eastern Health

After graduating, I worked at a Priceline Pharmacy in Carrum Downs. In 2007, I worked on a health education teaching project with the Volunteer Service in Nepal (VSN), a Nepali NGO, providing sustainable assistance to disadvantaged women, children and young adults. I'm now at Eastern Health and, like a few of my fellow graduates at our recent 10-year reunion, have been on maternity leave. My interests are in volunteer or professional health promotion and health education. On a personal level, I love dance.

We'd love to hear what you've been up to since graduation.

Please contact the Alumni Engagement Officer on 9903 9087 or email pharmacy.alumni@monash.edu to share your story with your fellow alumni.



Alchemy

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