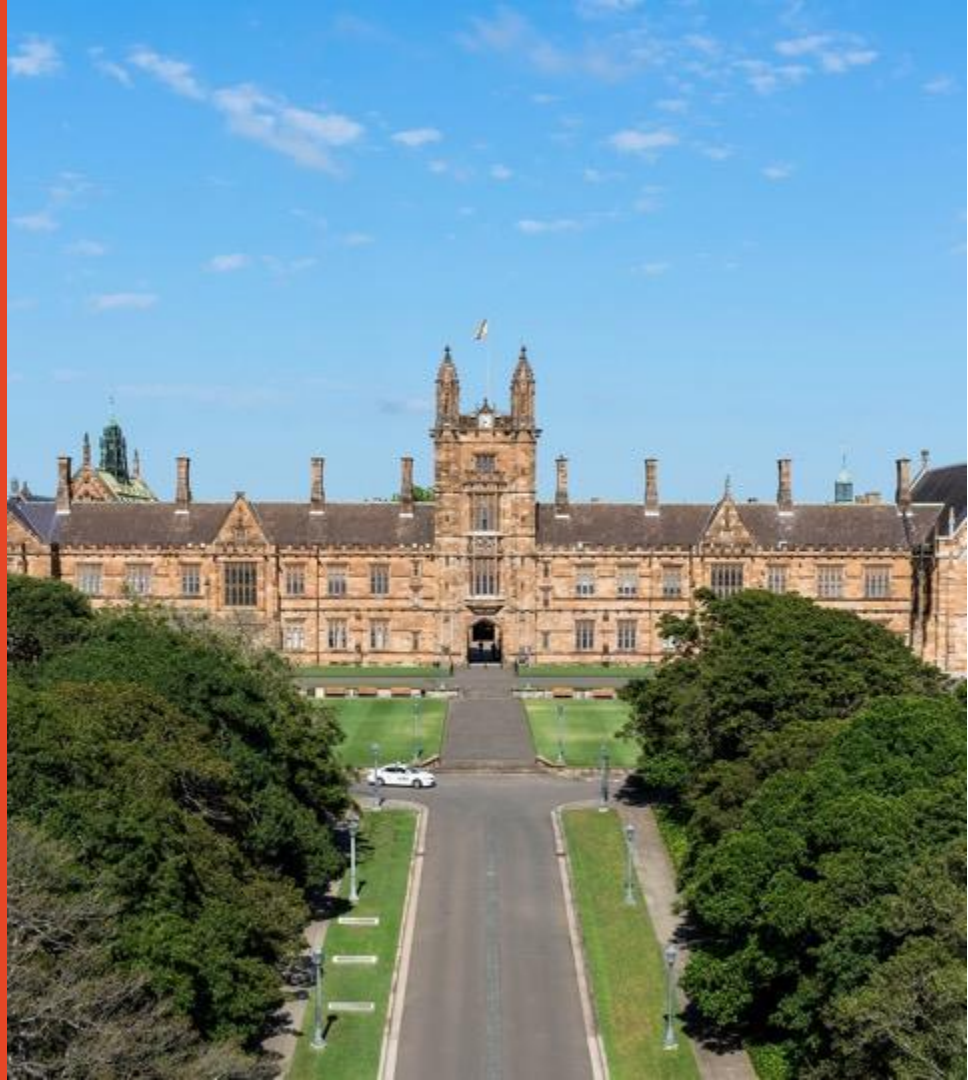
Welcome to the Careers Advisers and Teachers Conference

21 February 2020

THE UNIVERSITY OF SYDNEY



We acknowledge the tradition of custodianship and law of the Country on which the University of Sydney campuses stand. We pay our respects to those who have cared and continue to care for Country.

THE UNIVERSITY OF SYDNEY

Welcome Address

Shane Griffin

Executive Director,

Sydney Future Students

THE UNIVERSITY OF SYDNEY

Introducing…

Sydney Future Students

Admissions | Domestic | International

Admissions

- Local
- International
- Higher degree research

Domestic

- Sydney
- Regional and remote
- Indigenous recruitment
- Low SES and pathways

International

- Onshore
- International recruitment
- Global mobility
- International Partnerships

Strategy & Faculty Partnerships

- Faculty liaison
- Applicant conversion
- Events
- Market intelligence

Domestic Team

Bonnie Cousins

Director, Domestic

Erin Keech

Student Recruitment Manager

Tamsyn Richards

Senior LSES & Pathways Coordinator

Beth Downey

Student Outreach Assistant

Lauren Ribbon

Student Ambassador Assistant

Domestic Team: still to come…

March

- Senior Indigenous Recruitment Coordinator
- Indigenous Recruitment Assistant

Advertising

- Outreach Coordinator
- Outreach Assistant
- Regional Recruitment Assistant

What will be important to us?

Being open and welcoming

Increasing diversity

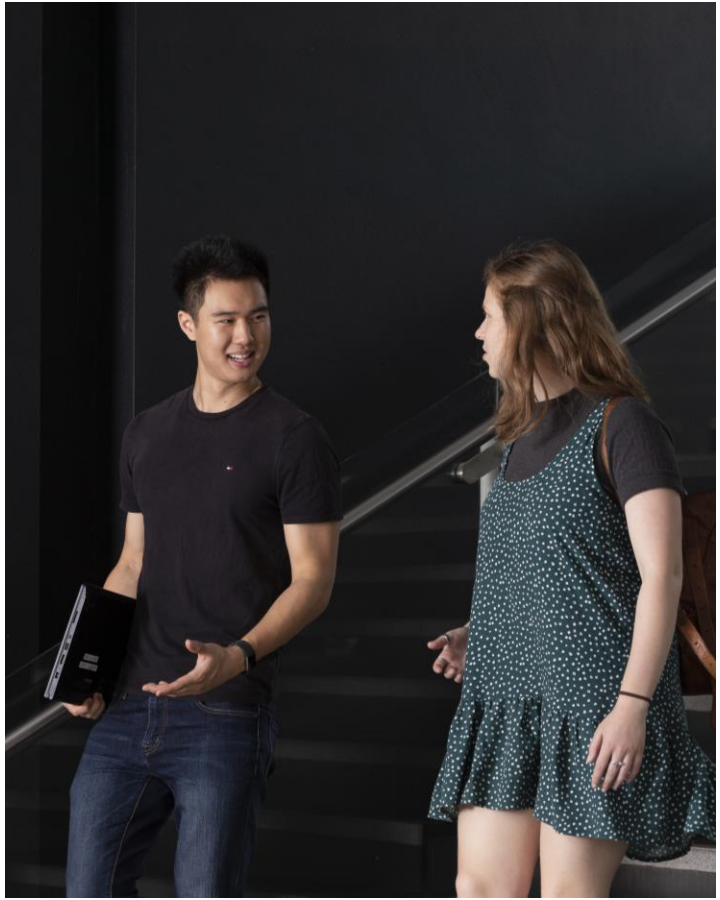
- of schools, background, choices of study

Academic quality

- through ATAR and other considerations

Our role in the community

- partnerships



Undergraduate CSP Offers

Total Offers
14,831
+ 3.6%

Total Enrolments
8,003
+ 3.3%

2020

1st

All Preferences

1st Preferences

99.95 ATARS

Market share

95+ ATARS

1st Preference Degree Demand

> 40% increase in demand

- Social Work
- Advanced Computing/Bachelor of Commerce
- Advanced Computing/Bachelor of Science
- Arts/Bachelor of Social Work
- Economics/Bachelor of Laws
- Education (Health and Physical Education)
- Music (Composition)
- Science/Master of Nursing
- Visual Arts

Top 5 degrees by demand:

Science/Doctor of Medicine
Arts
Arts/Law
Commerce
Commerce/Law

Entry Scheme Offers

Broadway	Gadigal
1,455 + 22.1%	38 - 46%

E12
511 + 23.4%

Elite Athletes and Performers	Future Leaders/DUX
123 - 3.1%	567 - 4.7%

Academic Excellence Scheme

6,486
Offers made to eligible applicants

↓

5,550
AES not required for offer

↓

936
Made an offer due to AES

Meeting the maths prerequisite: MOOC

The University of Sydney introduced mathematics course prerequisites for some degrees in 2019.

For those students who had not completed the required maths at school, they had the option of completing the MOOC. In 2019:

65 completed the MOOC
48 passed
17 failed

Questions?

THE UNIVERSITY OF SYDNEY

ICPU STUDENT PANEL

MC

Dr Derrick Roberts | ARC DECRA Fellow and University of Sydney Fellow
School of Chemistry and Sydney Nano Institute

THE UNIVERSITY OF SYDNEY

WHAT'S AN ICPU?

INDUSTRY AND COMMUNITY PROJECT UNIT

- Interdisciplinary student teams work on authentic problems set out by industry, community and government organisations
- Built-in to liberal course majors, elective in specialist/ professional courses
- Semester long (13 week) or intensive (4 week) project units (Australia, China, India, Italy, Singapore, U.S and the UK)
- *Third* year (Bachelor) and *fourth* year (B Advanced Studies) projects
- 45 partners and over 50 projects in 2020

WHO CAN COMPLETE AN ICPU?

ICPU units are available to undergraduate students from*:

- Architecture, Design and Planning
- Arts and Social Sciences
- Business
- Pharmacy
- Health Sciences
- Engineering
- Conservatorium of Music
- Law
- Science

* ICPUs meet the interdisciplinary project requirement in our liberal course majors (and the B Advanced Studies). ICPUs are also available as an elective in some of our professional/specialist courses. The course resolutions (handbooks) advise students whether and how they can complete the ICPUs.

THE STUDENT EXPERIENCE

STUDENT PANEL

Hayfa Bakour - Bachelor of Science (Psychology)

Kundai Khuleya - Bachelor of Commerce/Bachelor of Laws

sydney.edu.au/students/industry-and-community-projects

USEFUL SITES FOR INFORMATION

About ICPUs:

- sydney.edu.au/students/industry-and-community-projects

ICPU eligibility:

- sydney.edu.au/students/industry-and-community-projects/enrol-icpu

ICPU partners and projects:

- (Bachelor) sydney.edu.au/students/industry-and-community-projects/projects-and-partners
- (B Advanced Studies) sydney.edu.au/students/industry-and-community-projects/4000-level-projects

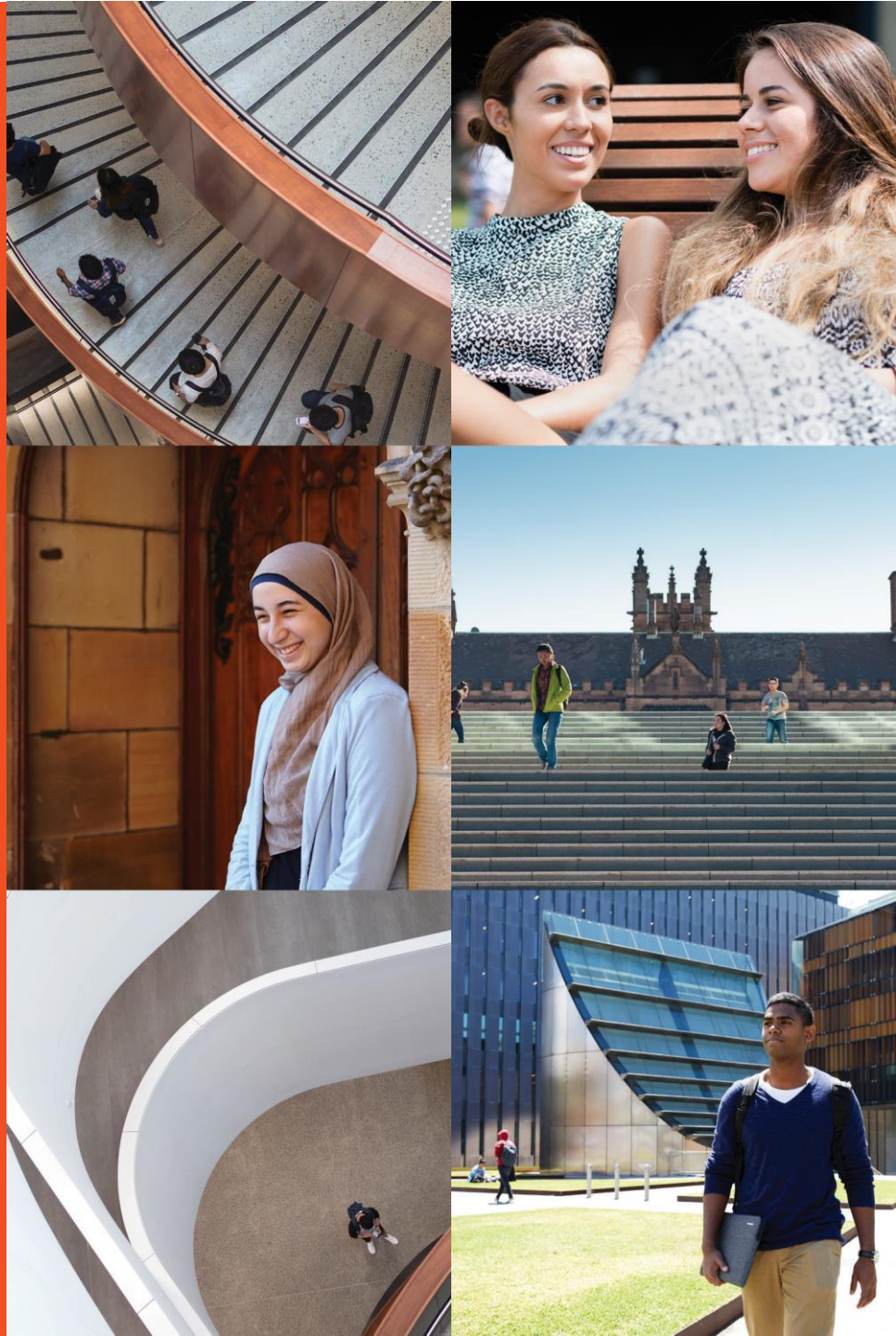
QUESTIONS.

Student Life and the Student Experience

Prof Susanna Scarparo
PVC Student Life

THE UNIVERSITY OF SYDNEY

STUDENT EXPERIENCE PROGRAM 2019-2021



THE UNIVERSITY OF SYDNEY

OUR VISION

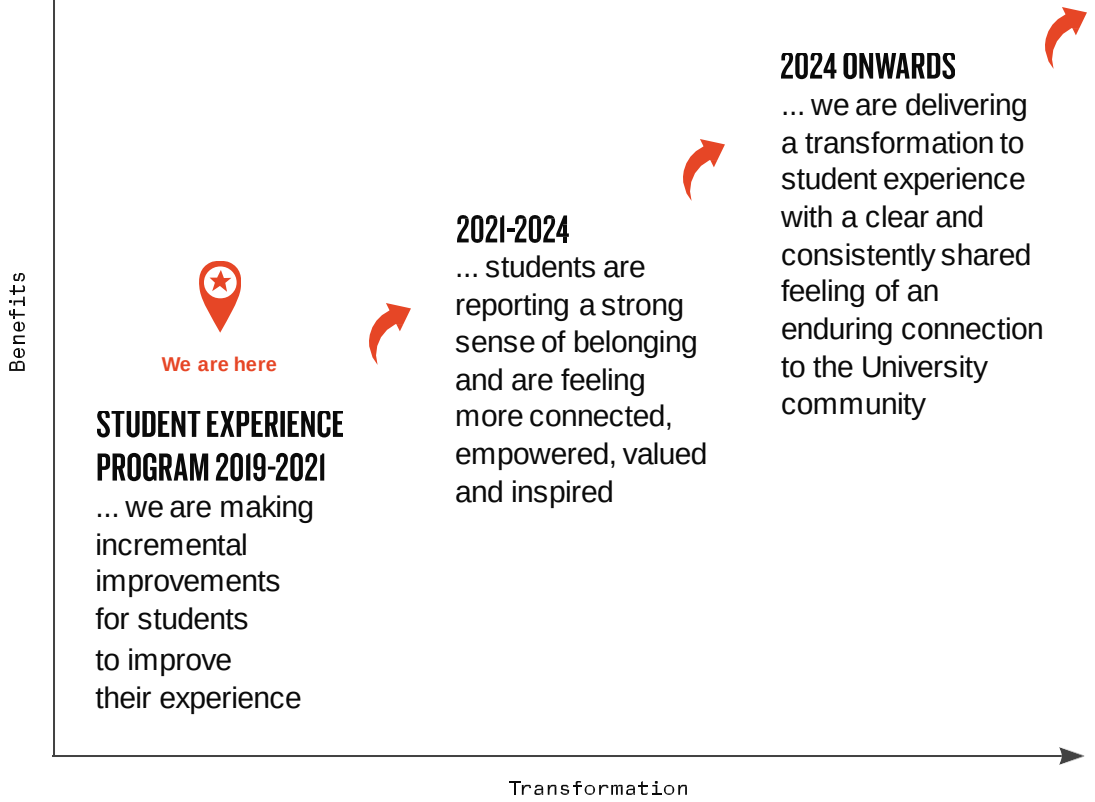
Students at the centre

Our overarching aspiration is for an outstanding student experience, one that results in each student being and feeling connected to the University community, fully engaged in learning and achieving excellent educational outcomes.

OUR FUTURE

The University of Sydney aims to lead the sector in Student Experience by 2025.

The Student Experience Program is laying the foundation for long term evolution towards an outstanding student experience.



OUR CONCEPTUAL MODEL OF THE STUDENT EXPERIENCE

RELATIONAL CORE

- Belonging
- Learning
- Participating

TRANSITION AND NAVIGATION

- Selecting
- Joining
- Navigating
- Accessing
- Finishing

ESSENTIAL SUPPORTS

- Living
- Transacting
- Enabling

TRANSFORMING THE STUDENT EXPERIENCE – THE JOURNEY

Sub-journey	PREPARE AND ARRIVE	STARTING OUT	SETTLING IN	PROGRESSING THROUGH	FINISH AND GRADUATE
Reflect and share					
Proactively engage advice and support					
Enrich learning					
Community connection					
Health and wellbeing					

Sub-journey	PREPARE AND ARRIVE
Reflect and share	I am prompted to reflect on my goals and aspirations and share these with the University
Proactively engage advice and support	The University helps me align my course to my aspirations and prepare for university
Enrich learning	I receive tailored communications about my course materials and the study support available
Community connection	I explore virtual communities where I connect with teachers and peers for the first time
Health and wellbeing	I receive information about health and wellbeing and the services available

Sub-journey	PREPARE AND ARRIVE	STARTING OUT
Reflect and share	I am prompted to reflect on my goals and aspirations and share these with the University	I am encouraged to inform the university if I am struggling to find my feet
Proactively engage advice and support	The University helps me align my course to my aspirations and prepare for university	I am proactively connected with services and know how to get further help
Enrich learning	I receive tailored communications about my course materials and the study support available	I familiarise myself with my learning environment and learn about academic culture and norms
Community connection	I explore virtual communities where I connect with teachers and peers for the first time	I meet my buddy, staff and students in person and learn about the importance of diversity and inclusion
Health and wellbeing	I receive information about health and wellbeing and the services available	I build awareness of my own wellbeing and make a plan to stay happy and healthy

Sub-journey	PREPARE AND ARRIVE	STARTING OUT	SETTLING IN
Reflect and share	I am prompted to reflect on my goals and aspirations and share these with the University	I am encouraged to inform the university if I am struggling to find my feet	I continue to update the university of my changing interests and aspirations
Proactively engage advice and support	The University helps me align my course to my aspirations and prepare for university	I am proactively connected with services and know how to get further help	I am prompted to reflect on my goals and receive advice on how to achieve them
Enrich learning	I receive tailored communications about my course materials and the study support available	I familiarise myself with my learning environment and learn about academic culture and norms	I explore learning opportunities aligned to my goals and create a plan to complete
Community connection	I explore virtual communities where I connect with teachers and peers for the first time	I meet my buddy, staff and students in person and learn about the importance of diversity and inclusion	I participate in a diverse range of activities and solidify my existing relationships
Health and wellbeing	I receive information about health and wellbeing and the services available	I build awareness of my own wellbeing and make a plan to stay happy and healthy	I actively manage my wellbeing and access a wide range of resources and services

Sub-journey	PREPARE AND ARRIVE	STARTING OUT	SETTLING IN	PROGRESSING THROUGH
Reflect and share	I am prompted to reflect on my goals and aspirations and share these with the University	I am encouraged to inform the university if I am struggling to find my feet	I continue to update the university of my changing interests and aspirations	I reflect on my achievements and circumstances and adapt my plans accordingly
Proactively engage advice and support	The University helps me align my course to my aspirations and prepare for university	I am proactively connected with services and know how to get further help	I am prompted to reflect on my goals and receive advice on how to achieve them	I participate in a range of opportunities that help me become professionally ready
Enrich learning	I receive tailored communications about my course materials and the study support available	I familiarise myself with my learning environment and learn about academic culture and norms	I explore learning opportunities aligned to my goals and create a plan to complete	I partake in further learning opportunities and understand the skills I have gained
Community connection	I explore virtual communities where I connect with teachers and peers for the first time	I meet my buddy, staff and students in person and learn about the importance of diversity and inclusion	I participate in a diverse range of activities and solidify my existing relationships	The university focuses on connection and empowers me to give back
Health and wellbeing	I receive information about health and wellbeing and the services available	I build awareness of my own wellbeing and make a plan to stay happy and healthy	I actively manage my wellbeing and access a wide range of resources and services	The University notices when I am struggling and directs me to more formal support services

Sub-journey	PREPARE AND ARRIVE	STARTING OUT	SETTLING IN	PROGRESSING THROUGH	FINISH AND GRADUATE
Reflect and share	I am prompted to reflect on my goals and aspirations and share these with the University	I am encouraged to inform the university if I am struggling to find my feet	I continue to update the university of my changing interests and aspirations	I reflect on my achievements and circumstances and adapt my plans accordingly	I provide the University with feedback about my overall experience
Proactively engage advice and support	The University helps me align my course to my aspirations and prepare for university	I am proactively connected with services and know how to get further help	I am prompted to reflect on my goals and receive advice on how to achieve them	I participate in a range of opportunities that help me become professionally ready	The University helps me decide on career or further study options and provides application assistance
Enrich learning	I receive tailored communications about my course materials and the study support available	I familiarise myself with my learning environment and learn about academic culture and norms	I explore learning opportunities aligned to my goals and create a plan to complete	I partake in further learning opportunities and understand the skills I have gained	I receive formal recognition for further learning and can use this for my next steps
Community connection	I explore virtual communities where I connect with teachers and peers for the first time	I meet my buddy, staff and students in person and learn about the importance of diversity and inclusion	I participate in a diverse range of activities and solidify my existing relationships	The university focuses on connection and empowers me to give back	The University helps me celebrate my achievements and connects me with the global alumni community
Health and wellbeing	I receive information about health and wellbeing and the services available	I build awareness of my own wellbeing and make a plan to stay happy and healthy	I actively manage my wellbeing and access a wide range of resources and services	The University notices when I am struggling and directs me to more formal support services	I am confident with my next steps and comfortable to navigate support available outside of the University environment

Any questions?

THE UNIVERSITY OF SYDNEY

Research-led Teaching

Highlights from our multi-disciplinary research initiatives

MC
Dr Seán O'Reilly
Head, Research Education
Faculty of Medicine and Health

THE UNIVERSITY OF SYDNEY

Artificial intelligence engineering in healthcare

Hype or truth?

Presenters
Dr Ashnil Kumar
Lecturer, School of Biomedical Engineering
ARC Training Centre for Innovative BioEngineering

Dr Audrey P Wang
Senior Lecturer in Digital Health ,
Westmead Medical Precinct, Faculty of Medicine and Health

THE UNIVERSITY OF SYDNEY

https://medicalfuturist.com/robotics-healthcare/

Complementary expertise

Who am I?

- Computer science researcher
- Works in machine learning and artificial intelligence
- Lots of work in medical image analysis
- Develops algorithms and software tools
- Collaborates with Westmead, Nepean, and RPA hospitals

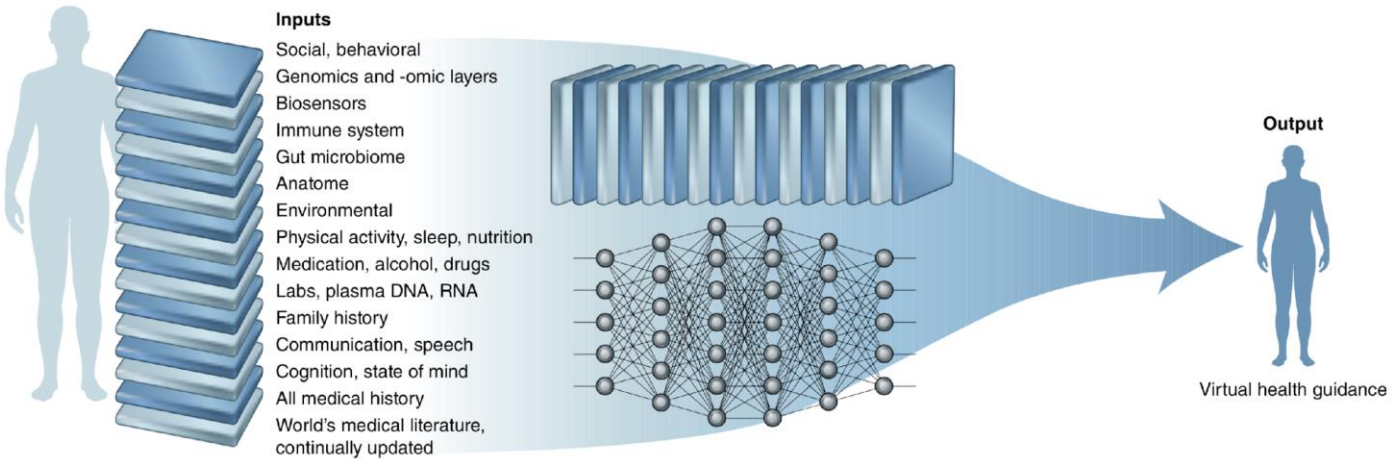
Who am I?

- Clinician researcher
- Works as a hospital clinician, health technology implementation research and educator.
- Background in physiotherapy, behavioural neuroscience, pain and imaging research.
- Applies computational and statistical tools to improve diagnostics and patient outcomes.

A new type of industry in medicine – the new frontier of AI

Convergence of

- genomics, biosensors, EHRs and smartphone apps, (**acquisition**)
- superimposed on a digital infrastructure, (**platforms**)
- with artificial intelligence to make sense of the (**algorithms**)
- overwhelming amount of data created (**scale**)

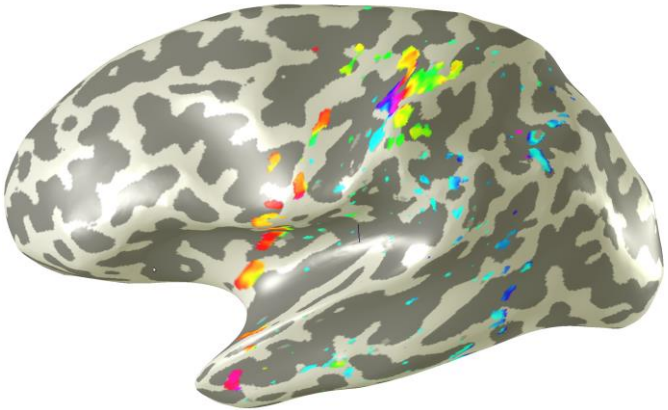


E. J. Topol, 'High-performance medicine: the convergence of human and artificial intelligence', Nature Medicine, 2019, doi.org/10.1038/s41591-018-0300-7; https://www.ncbi.nlm.nih.gov/pubmed/30617339

FUTURE FRONTIERS

EDUCATION FOR AN AI WORLD

EDITED BY LESLIE LOBLE, TISH CREENAUNE AND JACKI HAYES



First published 2017
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(Department of Education)

Natural language: using AI to write text

My father smoked a lot and it

GENERATE ANOTHER

Completion

My father smoked a lot and it was not only his addiction but it was how he had to live his life. It was like a compulsion and that is how I knew I couldn't just kick him out.
My parents instilled in me that it was not acceptable to let someone else make your choices for you.
While my father's addiction did derail his job prospects for many years, he saved up and decided to pursue what he was passionate about.
My parents never gave me a reason to go through with it and one day the day I told him I didn't want to go back he said I was strong and it was hard for him to accept that, but it was something that he had to accept. He took me to meet my

https://talktotransformer.com/

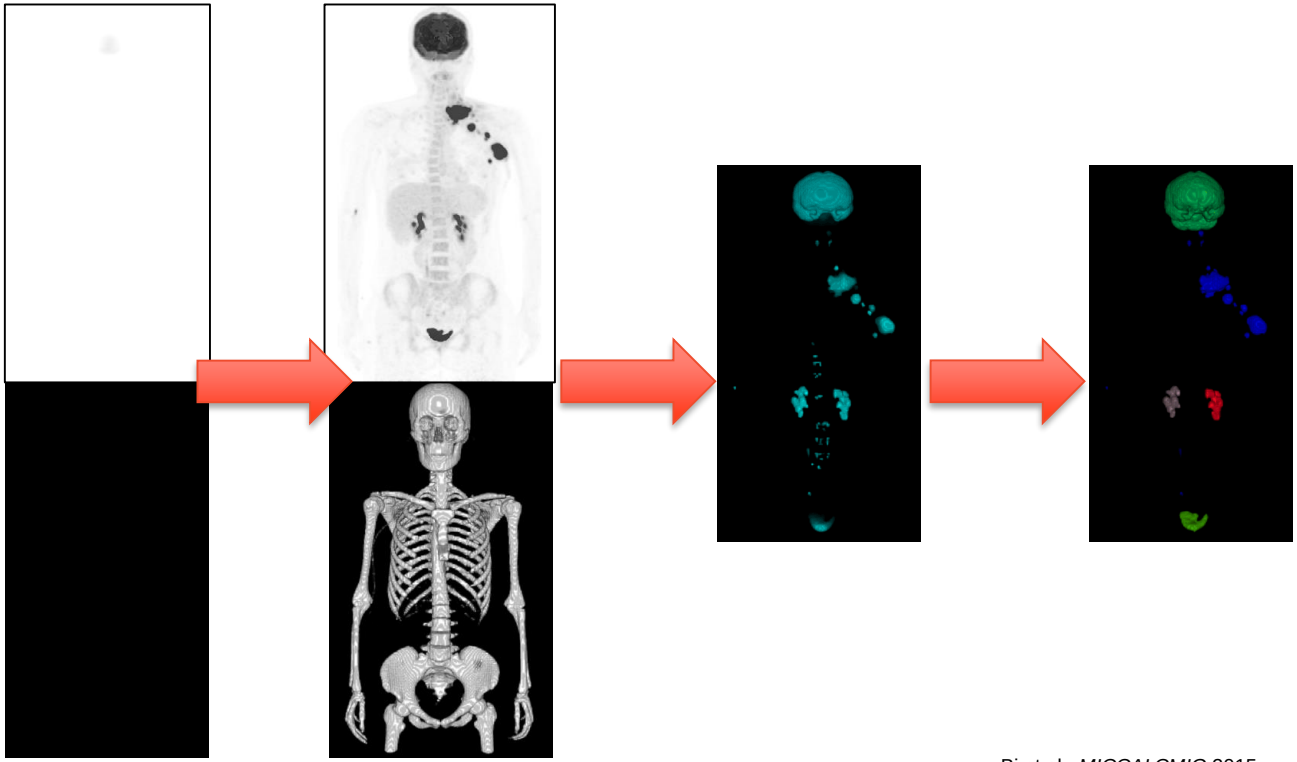
Natural Language processing – have we made progress?

“My father smoked a lot and it […]

My father smoked a lot and it is a big part of who I am, my trademark," he says.

"And cannabis was just my gateway drug."
Back in his oil-rubbed brooder, he can remember feeling a strange sense of freedom when he finally tasted marijuana after years of abstinence. And, almost after a week of growing his own, he discovered that not only was it possible, he says, to grow it "wide open" or "intensely.“ "I found out that even if you are going to get high, the highest concentration of THC is on the leaves, and not on the buds," he says. It wasn't long before Mr. Biro proudly walked out of the marijuana room with

Identifying normal and abnormal structures in image data



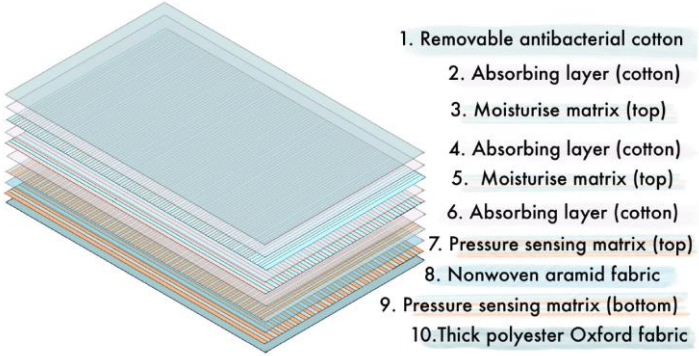
Bi et al., *MICCAI CMIG* 2015.
Bi et al., *CMIG* 2017.

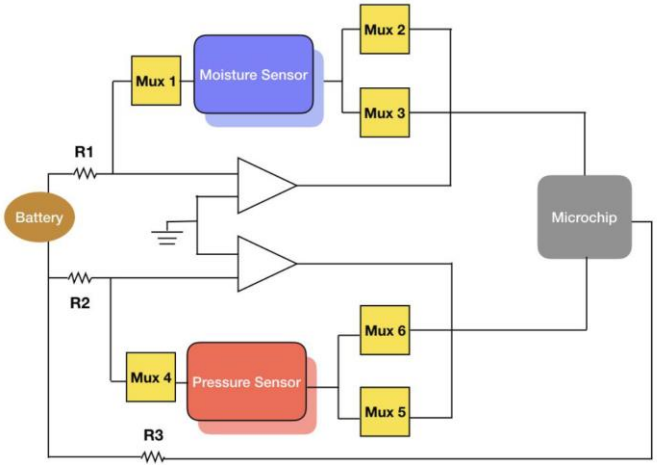
Effect on teaching: Engaged enquiry and project-based learning

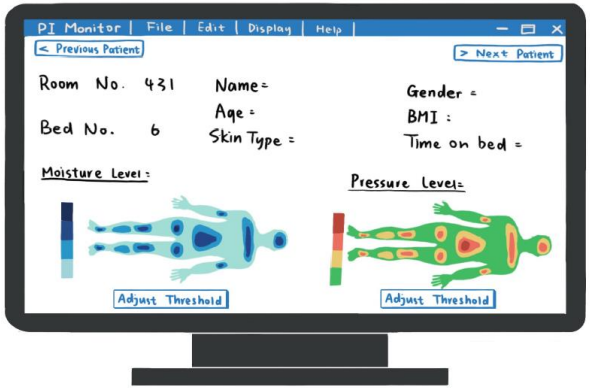
Philosophy: get students involved at every stage

- Engage the stakeholders (clinicians, hospital administration, etc.)
  - Learn to work across disciplines
  - Discover practical, social, organisational limitations of technology
- Own the problem and the solution
  - Guidance but not a lot of rules
  - Research the problem, and learn things outside comfort zone
  - No mandated solution: students <u>create</u> it
- Future thinking
  - Convince us that the solution will work
  - Leave behind documentation that others can build on
- Teamwork
  - Intra- and inter- disciplinary teams

Ongoing Student Project – Smart Sensors for Pressure Injuries







What do employers look for?

Graduate Engineer Interview

Anonymous Employee in Bella Vista

Interview Questions

Why do you want to work at ResMed and what do you know about our product and services?

↳ Answer Question

Describe an innovative solution you were apart of.

↳ Answer Question

Tell me a time when you had to influence a team or an idea.

↳ Answer Question

Describe a conflict you had.

↳ Answer Question

Intern Interview

Anonymous Employee in Tempe, AZ (US)

Interview Questions

Describe the steps you would take to design [common product].

↳ 1 Answer

Where do you see yourself fitting in well with this Company

↳ Answer Question

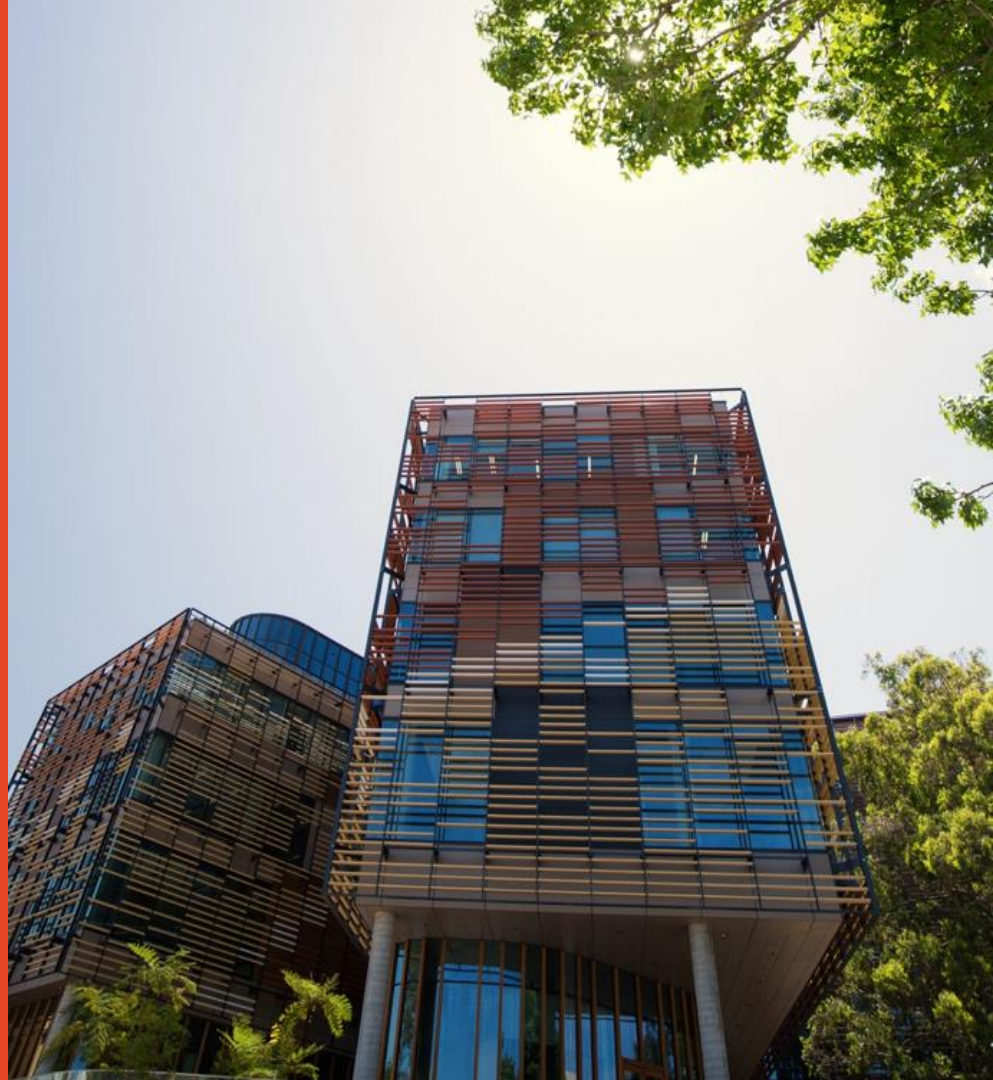
The interdisciplinary BMET3921 unit gave me a better understanding of what it's like to work in the biomedical industry than any other unit I have taken. Working directly with clinicians improved my professional and collaborative communication skills substantially, and changed the way I approach engineering design. As a result, this helped me to obtain an internship at ResMed, putting me on a promising career path. I highly recommend units like BMET3921 to any students serious about obtaining a position in the biomedical industry.

Domantas Kuzinkovas
Biomedical Engineering
Health Technology Innovation
Biomedical Informatics and Digital Health

THE UNIVERSITY OF SYDNEY

Optimizing Pharmacy Procurement in an Australian Hospital

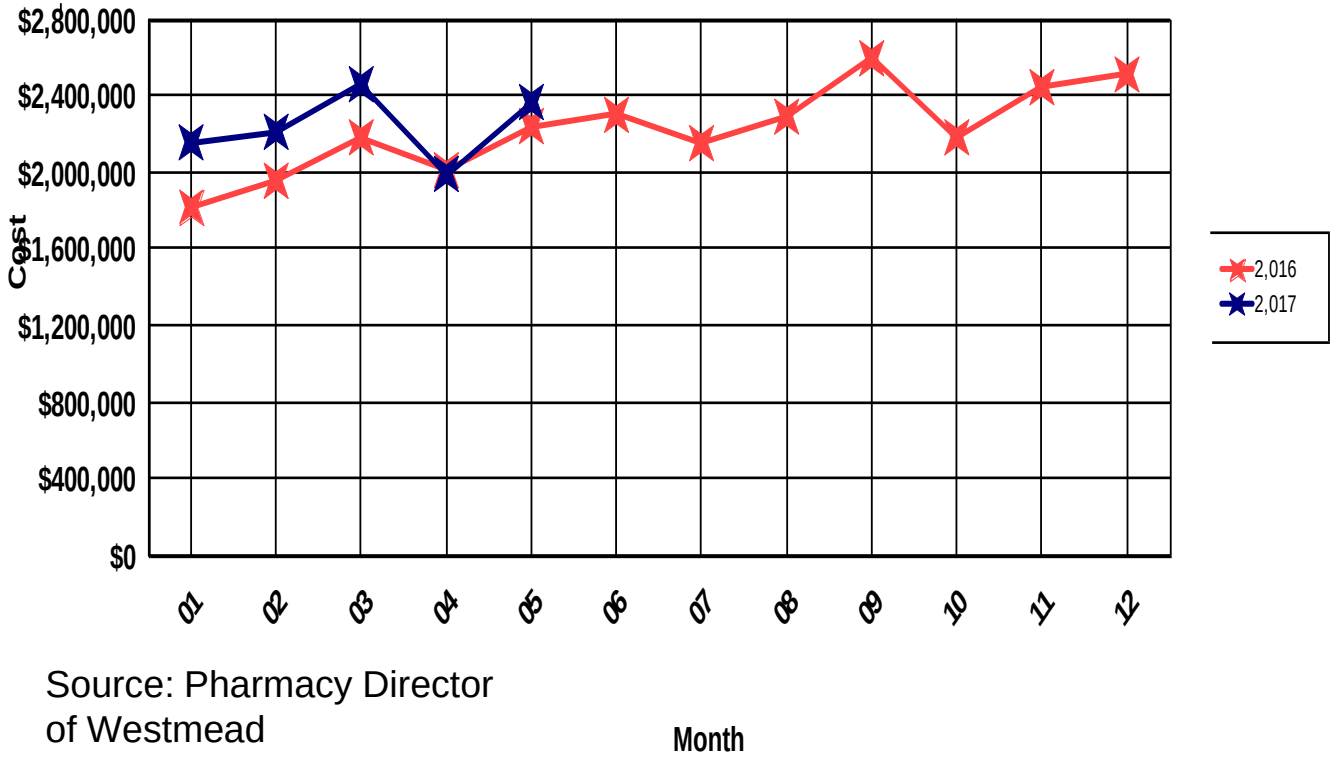
Presented by
Dr. Erick Li
Discipline of Business Analytics



THE UNIVERSITY OF SYDNEY
Business School

1. Introduction

Monthly Pharmacy Expenses of Westmead Hospital (1.2016-5.2017)



Source: Pharmacy Director of Westmead

1. Introduction

Prevalence of rebate contracts

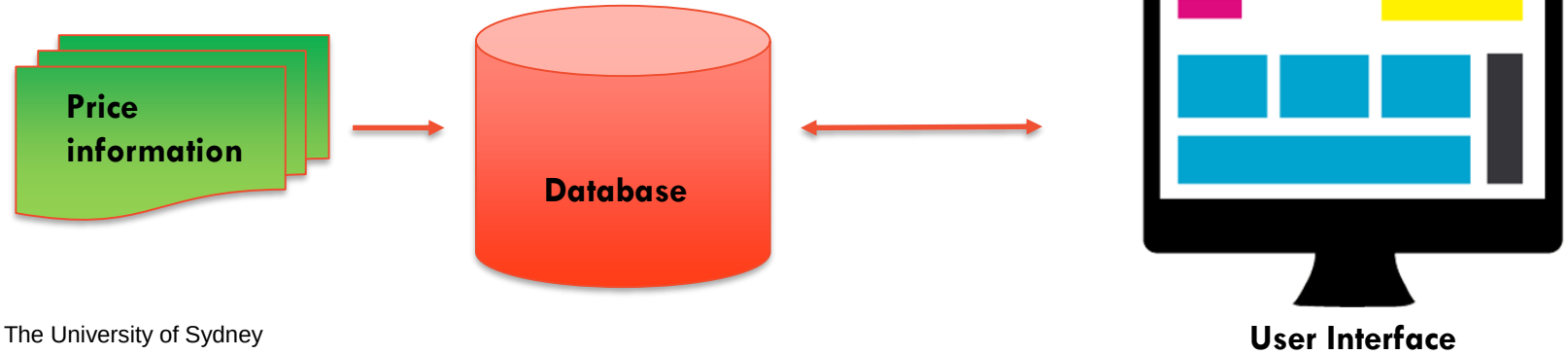
Westmead signed pharmaceutical pricing and rebate agreements with multiple vendors such as Amgen, Roche, Juno, Apotex, Mylan, Baxter, Astellas, and Janssen.

- With a rebate contract, the choice of the brand for each SKU must consider the accumulated volume, rebate target, rebate discount, and the current price of the non-rebate brand.
- With hundreds of SKU on multiple rebate contracts, the Decision Making Tool must be able to quickly solve the optimal solution.
- The algorithm is based on a dynamic programming (DP) model.

2. Our Contributions

We developed a *decision making tool* to assist with WSLHD supply chain and procurement of pharmaceuticals through data analytics. We can use the DMT to:

1. Collate price and rebate information from vendors
2. Recommend whether switch to a generic brand and/or vendor or stick with the status quo
3. Forecast the demand for each SKU



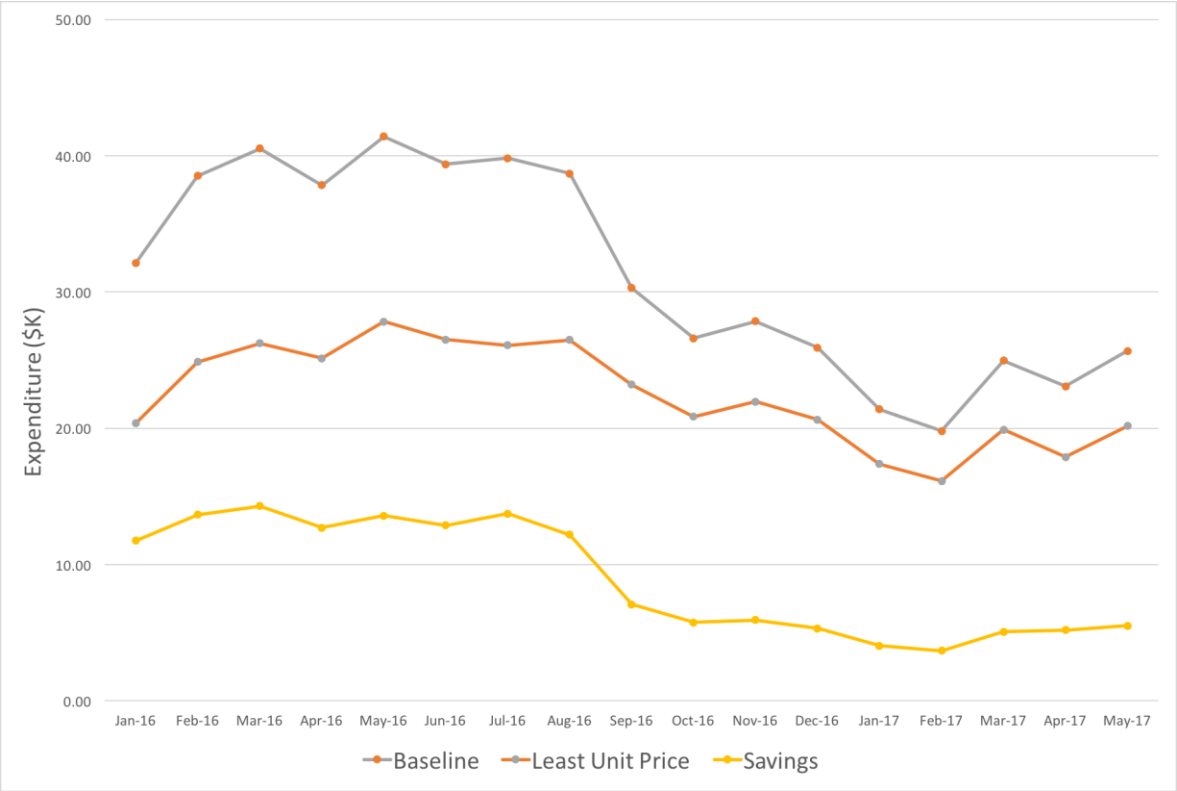
3. A Retrospective Study

Retrospective Test

21 high-volume medications were chosen. From January 2016 to May 2017, the total expenditure was $3.23M.

The *algorithm generated an optimal* strategy that resulted in a retrospective saving of $152K.

The saving is ~4.7% of the total expenditure.



4. Research-Based Teaching

This project has been used as a case study in QBUS3320 Supply Chain Management.

The relevant tools (such as forecasting, dynamic programming, and contracting theory) are taught in QBUS2310 Management Science, QBUS2820 Predictive Analytics, and QBUS3310 Advanced Management Science.

This project also involves project management (PM) principles, which are covered by QBUS3350 Project Management.

The programming language (i.e., Python) has been taught in QBUS1040 Foundations of Business Analytics.

4. Research-Based Teaching

My teaching philosophy is to integrate state-of-the-art research and my industrial experience into my teaching materials and my students' learning activities.

- Simulation is my favourite teaching tool to engage students and allow them to test their newly acquired skills. Comments from students include:
  - "The simulation is really interesting and I was amazed by this assignment."
  - "The simulation assignment gave me a comprehensive view about how supply chains work and how procurement is managed in an organisation."
- I received the Dean's Citation for Teaching in S2, 2016. I was also named by Babbar et al., (2017, 2018) as one of Asia's top 25 scholars in Operations Management and Supply Chain Management.

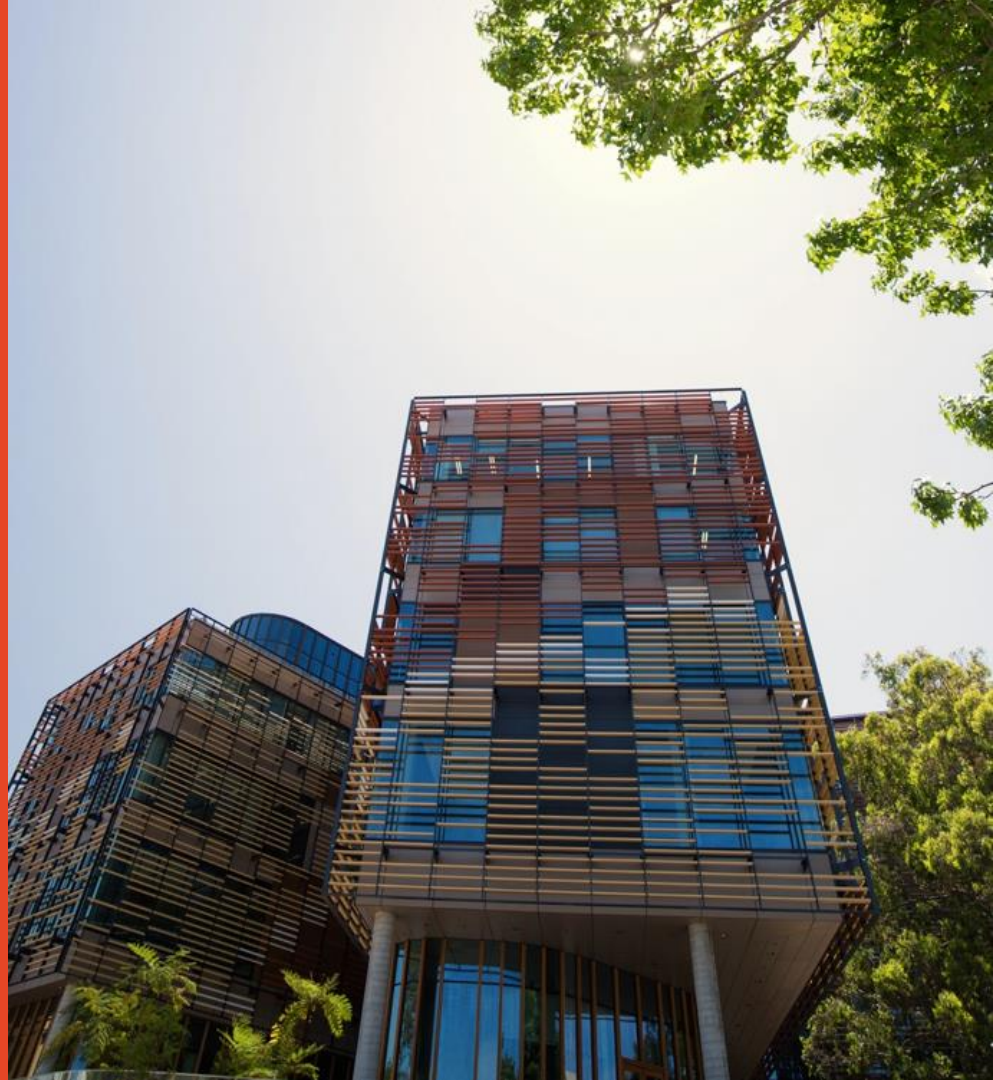
Optimizing Pharmacy Procurement in an Australian Hospital

Comments or questions?

THE UNIVERSITY OF SYDNEY
Business School

Highlights from our Design Lab

Presented by
Dr Martin Tomitsch
Faculty of Architecture, Design and Planning

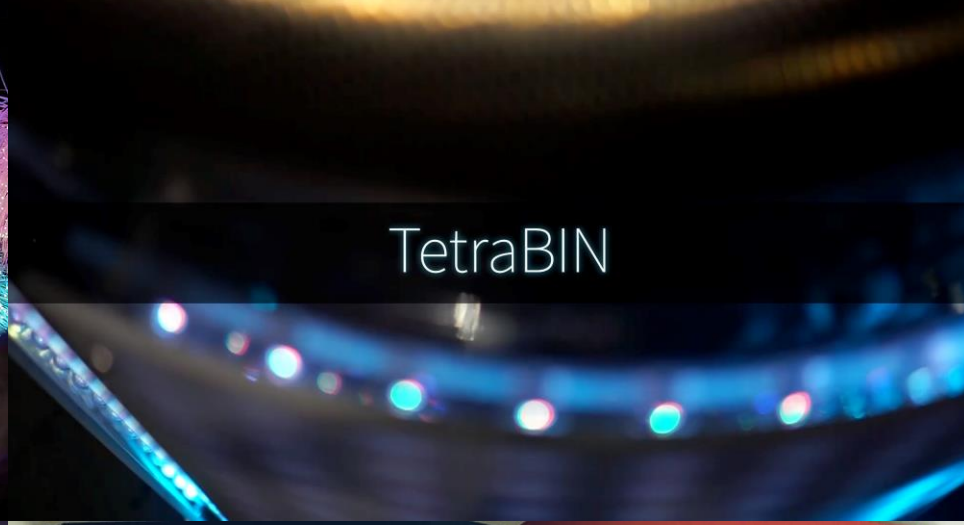


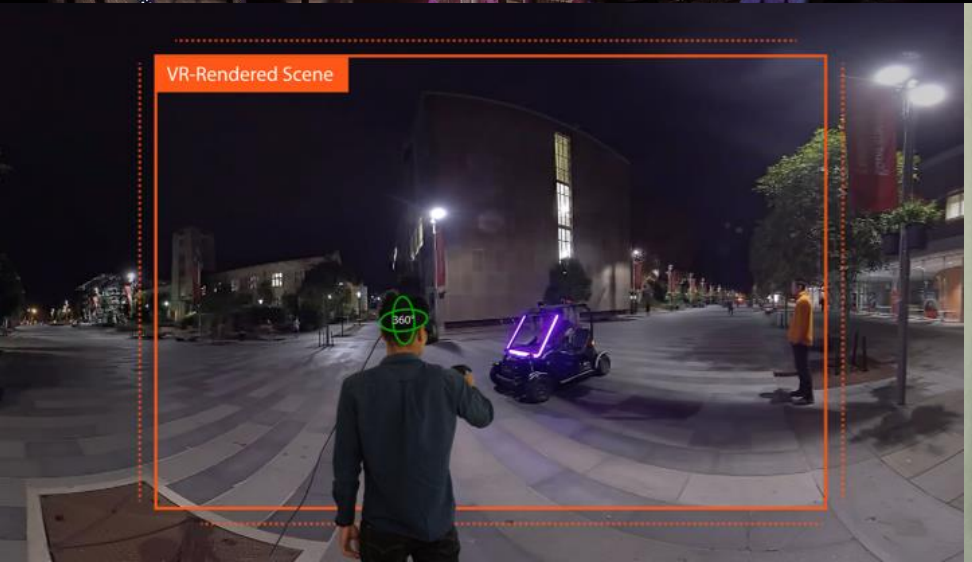
THE UNIVERSITY OF SYDNEY
Business School

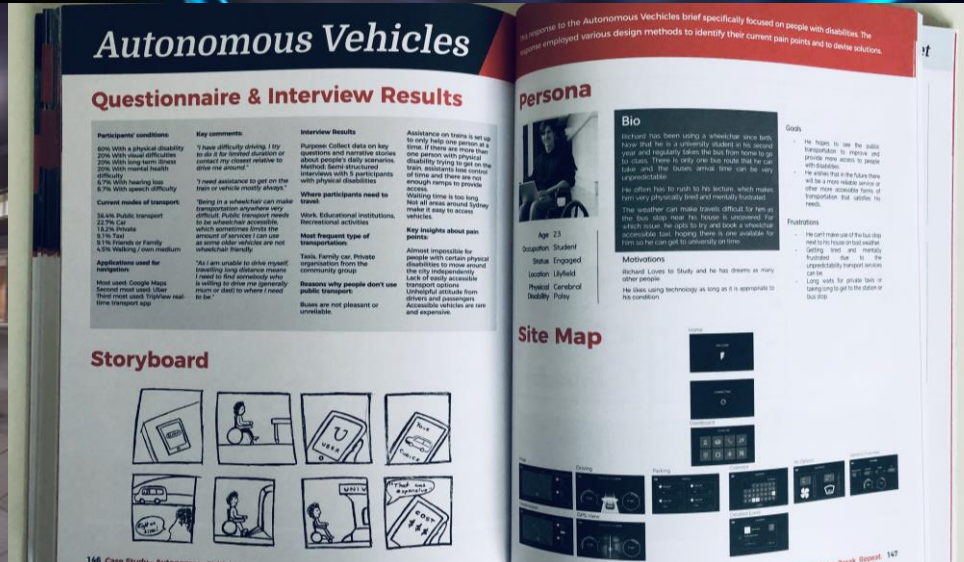
Design @ Sydney

Undergraduate
Bachelor of Design Computing
Major in Design
Major in Biological Design

Postgraduate
Master of Interaction Design and Electronic Arts (M.IDEA)
Master of Design (Design Innovation)
Master of Design (Strategic Design)







Autonomous Vehicles

Questionnaire & Interview Results

Participants' conditions:

60% With a physical disability
20% With visual difficulties
20% With long term illness
20% With mental health difficulty
6.7% With hearing loss
6.7% With speech difficulty

Current modes of transport:

36.4% Public transport
22.7% Car
18.2% Private
9.1% Taxi
9.1% Friends or Family
4.5% Walking / own medium

Applications used for navigation:

Most used: Google Maps
Second most used: Uber
Third most used: TripView real-time transport app

Key comments:

'I have difficulty driving. I try to do it for limited duration or contact my closest relative to drive me around.'

'I need assistance to get on the train or vehicle mostly always.'

'Being in a wheelchair can make transportation anywhere very difficult. Public transport needs to be wheelchair accessible, which sometimes limits the amount of services I can use as some older vehicles are not wheelchair friendly.

"As I am unable to drive myself travelling long distance means I need to find somebody who is willing to drive me (generally mum or dad) to where I need to be."

Interview Results

Purpose: Collect data on key questions and narrative stories about people's daily scenarios.
Method: Semi-structured interviews with 5 participants with physical disabilities

Where participants need to travel:

Work, Educational institutions, Recreational activities

Most frequent type of transportation:

Taxis, Family car, Private organisation from the community group

Reasons why people don't use public transport:

Buses are not pleasant or unreliable.

Assistance on trains is set up to only help one person at a time. If there are more than one person with physical disability trying to get on the train, assistants lose control of time and there are not enough ramps to provide access.
Waiting time is too long. Not all areas around Sydney make it easy to access vehicles.

Key insights about pain points:

Almost impossible for people with certain physical disabilities to move around the city independently.
Lack of easily accessible transport options.
Unhelpful attitude from drivers and passengers
Accessible vehicles are rare and expensive.

Storyboard

146 Case Study - Autonomous

This response to the Autonomous Vechicles brief specifically focused on people with disabilities. The response employed various design methods to identify their current pain points and to devise solutions.

Persona

Bio

Richard has been using a wheelchair since birth. Now that he is a university student in his second year and regularly takes the bus from home to go to class. There is only one bus route that he can take and the buses arrival time can be very unpredictable.

He often has to rush to his lecture, which makes him very physically tired and mentally frustrated.

The weather can make travels difficult for him as the bus stop near his house is uncovered. For which issue, he opts to try and book a wheelchair-accessible taxi, hoping there is one available for him so he can get to university on time.

Age 23
Occupation Student
Status Engaged
Location Lilyfield
Physical Disability Cerebral Palsy

Goals

- He hopes to see the public transportation to improve and provide more access to people with disabilities.
- He wishes that in the future there will be a more reliable service or other more accessible forms of transportation that satisfies his needs.

Frustrations

- He can't make use of the bus stop near to his house on bad weather.
- Getting tired and mentally frustrated due to the unpredictability transport services can be.
- Long waits for private taxis or having only to get to the station or bus stop.

Motivations

Richard Loves to Study and he has dreams as many other people.

He likes using technology as long as it is appropriate to his condition.

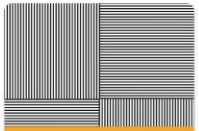
Site Map

147

Loading your recommendations...

Weekly Challenges

Programming for designers
6 Challenges



Pattern Making
6 Challenges

Simple algorithmic design
6 Challenges

Functions
4 Challenges

Transformations and Events
3 Challenges

Data For Designers
6 Challenges

Working with Media
3 Challenges

Recap week
5 Challenges

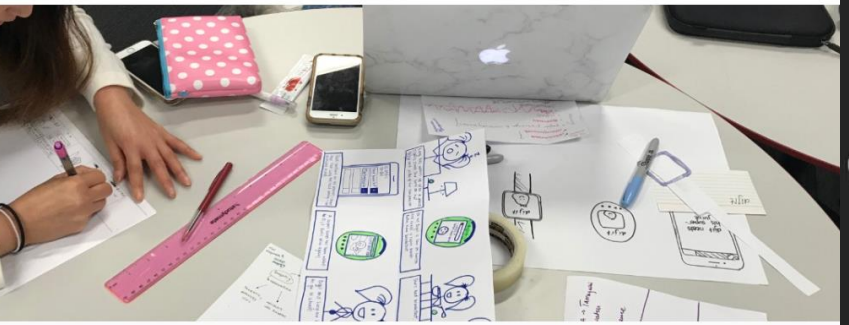
3D in the browser
5 Challenges

Object Oriented Modeling
3 Challenges

Step One

Let's apply our target function in the center of the screen with a random number of circles and a random size each time we load it so it looks something like this.

```
1
2  function setup() {
3    createCanvas(windowWidth, windowHeight);
4    noStroke();
5  }
6
7  function draw() {
8    background(230);
9    // Put your target function here
10   noLoop();
11 }
12
13 function target(x, y, size, circleNum) {
14   for(let i = 0; i < circleNum; i++) {
15     if(i % 2 == 0) {
16       fill(255);
17       } else {
18       fill(0);
```



News_

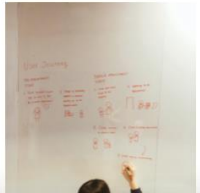
University of Sydney design students 'hack' needle phobias

21 May 2019

Design thinking used to help support children with severe needle phobias

Students from the School of Architecture, Design and Planning participated in a 'hackathon' at the Westmead Education and Conference Centre in Westmead Hospital on 12 April to support children with severe needle phobias.

The design brief asked students to design an innovative technology to help children with needle phobia, which often prevents them from completing their immunisation schedule. The students were given two weeks to research the topic and define the problem based on collected evidence, develop an idea, and test their concepts using low fidelity prototypes.



Master of Interaction Design and Electronic Arts

Learn more

Design Thinking

"We know you might be having some big feelings about your visit.'

Getting through this journey will hopefully make your visit easier.

You will have some furry friends who will keep you company."

Pull the Trigger to begin

Interdisciplinary field schools in Southeast Asia: Water in Singapore

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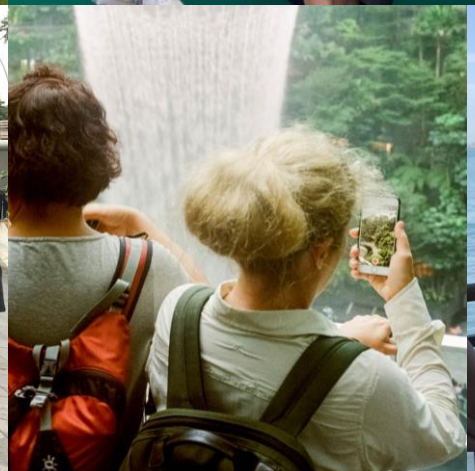
Gulf of Guinea
TRISTAN DA CUNHA IS (U.K.)

Building trust, covering content, working across disciplines



Multiple perspectives

Student-led interdisciplinary research projects: water as a lens

Student testimonials

“It was hugely intellectually rewarding and challenging, which in itself could be the best aspect. However I think that what really stood out to me was the way in which the coordinators fostered a space where we could critically engage in the issues at hand and question ourselves and each other. I was so impressed. There was never anything left unaddressed.”

“The in-country and multidisciplinary aspects were wonderful. I was really encouraged to learn and think outside of my familiar boundaries, meet great people, and had fun while doing so.”

“I never thought I would love the teamwork part before! All my team members are so open, smart, funny and hardworking. We had a great time to develop our own research project together. Also, the research project gave us so much freedom to explore what we are interested in. It is really cool to have this kind of experience before make career choice. Now I am sure I wanna do more research in the future!”

Thank you

For more information visit:

https://sydney.edu.au/sydney-southeast-asia-centre/

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The Psychology of Coaching: Resilience

Dr Michael Cavanagh

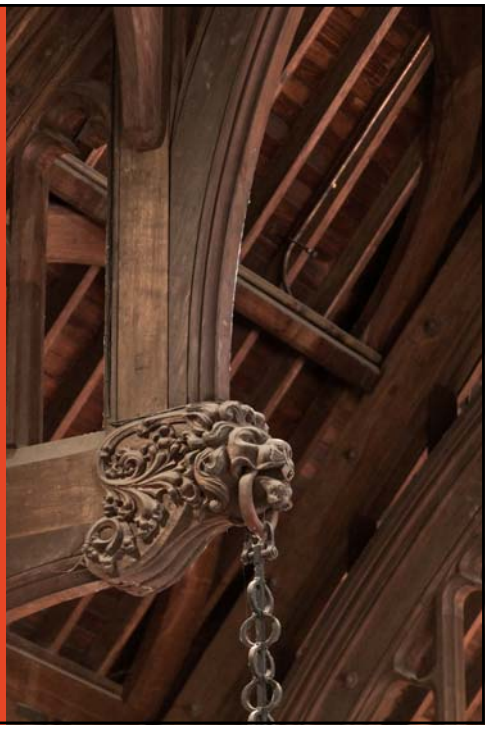
Senior Lecturer, Coaching Psychology Unit

THE UNIVERSITY OF SYDNEY

Resilience and Workplace Systems

Dr Michael Cavanagh

THE UNIVERSITY OF SYDNEY
School of Psychology



What is resilience?

What is resilience?

- Comes from the Latin verb resilire, or 'to leap back'
- OED definition:

  'Being able to withstand or recover quickly from difficult conditions'

Resilience as a trait

- Wagnild and Young (1993) Resilience is "the characteristic of an individual which facilitates adaptation and moderates the negative impacts of stress."
  - "This is made up of stable personal factors including: reflectiveness, positive responsiveness to others, above average intelligence, equanimity, self-reliance, meaningfulness, a wide range of personal and social activities and interests, perseverance, and an optimistic and energetic approach to life".

How is resilience currently seen?

As a characteristic of a person:
- Personal trait
- Combination of internal resources
- Response
- State

Resilience is seen as an *intra*personal capacity that enables positive outcomes in the face of adversity.

An antidote to resistance to change, burnout and mental health issues in the workplace and in schools

What problems are resilience programmes hoping to solve?

- 'Resilience' was seen to be the key organising concept for mental health interventions in schools. The concept was viewed as narrowly focused on attitude towards—and performance in—school work, with individuals being encouraged to 'push on through' difficulties to achieve success. Young people were critical of this approach, suggesting several alternatives.

Brown and Dixon (2019) Push on through': Children's perspectives on the narratives of resilience in schools identified for intensive mental health promotion

What problems are resilience programmes hoping to solve?

"People in the workplace have heavier workloads now and are working under enormous pressure as we enter the 'getting more from less' era (Chartered Institute of Personnel & Development, 2009). This pressure, moreover, has extended to family life as median incomes have depreciated to balance an ailing economy (Office for National Statistics, 2013). Not surprisingly then, during the period of global recession,work-related stress soared by 40% and absentee rates increased by 25% (Houdmont, Kerr, & Addley, 2012). The need for personal resilience, especially in the workplace, has never been greater."

— Resilience Training in the Workplace from 2003-2014: A Systematic Review

Do resilience programmes work?

- Robertson Cooper Sarkar and Curran (2015) in a systematic review of resilience training found:

  1. "Despite conceptual and theoretical support for resilience training, the empirical evidence is tentative, with the exception of a large effect for mental health and subjective well-being outcomes."
  2. "Most programmes utilize a cognitive-behavioural approach to developing resilience."
  3. "At this stage, there is no definitive evidence for the most effective training content or format, but it would appear wise to include an element of one-to-one training and support based on individual needs."

SO what is the problem?

- I think we have a faulty understanding of resilience for three reasons:

  1. We define it in terms of its outcomes, not in terms of its characteristics
     - The Forest Gump approach

  2. We are making, what is called in philosophy, an error of kind.
     - We see it as a property of the person when it is a relation.

  3. Therefore, we use the wrong unit of analysis
     - By decontextualizing resilience we measure the person not the system

Fitness landscapes (Kaufman)





The landscape

The challenge

- We need redundant capacity in order to deal with the challenges of our ever changing and ever increasingly changing landscapes
- Where do we find this additional capacity?
  - Resilience programmes say we have to find it within ourselves
    - In other words, you should be tough enough for any challenge, so get a tougher hide.
    - But can we always do this…?

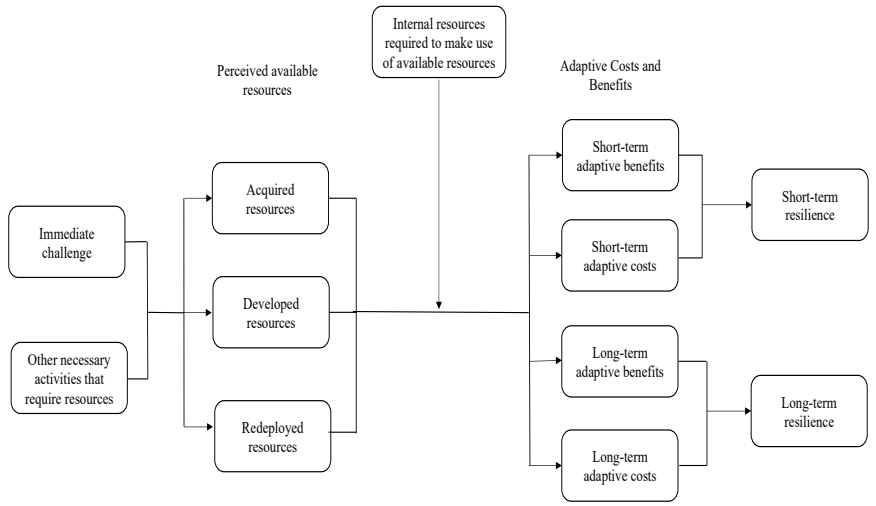
A better definition of resilience.

- Resilience is a relation between a subsystem (student, class, school) and the environment in which they are challenged.
- It requires the possession of redundant resources (both internal and external) that can be bought to bear on the challenge.
  - These redundant must be sufficient to the challenge being faced and available across the whole time-frame of that challenge.

This means:

- Building resilience is about building resource-full environments. It is about enabling access to the external resources needed to face the whole set of challenges to be found in the context.
- This is true for both individuals and for any larger system.

How do internal and external resources create resilience?



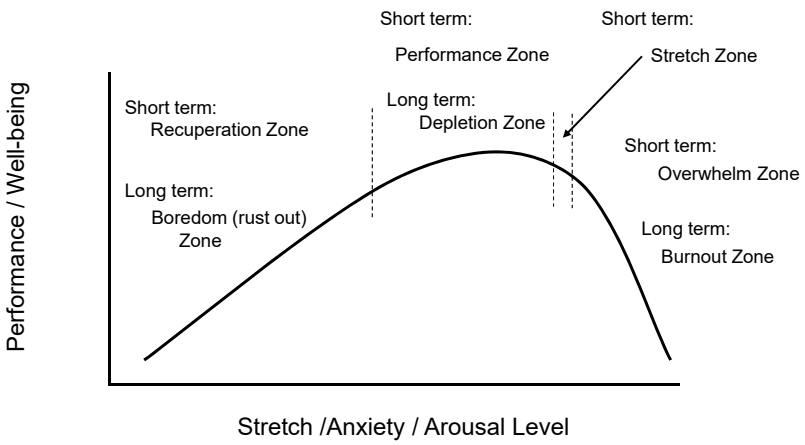
Our key challenge in building resilience

In building resilience we need to think at all levels of the organisation

- What challenges do we face
- What resources do we need to face those challenges
  - External resources
    - How do we ensure the resources are available to meet challenges
    - How do we build resource full systems
    - How do we support our people to face the challenges.
  - Personal characteristics
    - How can we improve our mental and emotional capacities so that we can use the resources available to meet the challenges
    - How well do we recognise that nobody can meet every challenge
      - How do we build support into the system
      - How do we create the space to not be perfect and to learn

Stretch and performance

adapted from Yerkes Dodson, 1908



Discussion

- Any thoughts, questions or comments you would like to share?

Thankyou

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