Excellent Teachers Showcase
Program

Distinguished Professor Peter Corke (QUT)
Associate Professor Susan Rowland
Carl Sherwood
Dr Janette McWilliam
Professor Paul Mills
Panel Q&A
Distinguished Professor Peter Corke (QUT)
Associate Professor Susan Rowland
Protein structure through edu-karaoke and craft

Susan Rowland
SCMB and Faculty of Science
s.rowland1@uq.edu.au
What does protein do?

Fight disease. Antibodies (above) recognize and bind invading organisms.

Make us sick. The proteins on Ebola virus (below) help it infect the host.

Act as drugs. Vancomycin (blue) is an antibiotic of last resort.

Send signals. Leptin (green) tells us to stop eating.

Do enzymatic work. This is RNA polymerase making an RNA from a DNA template.
How does protein fold into these beautiful shapes?
How does protein fold into these beautiful shapes?
Hydrogen bonding
Hydrogen bonding

A hydrogen bond is a weak electrostatic interaction, through space, between (i) a hydrogen that is covalently bonded to an electronegative atom and (ii) another electronegative atom.

In the hydrogen bond you see here, can you tell which atom is electronegative?
In biological molecules, like proteins, Oxygen and Nitrogen are the “big two” electronegative atoms.

The hydrogen bonding we care about today:

\[ R - O \cdot \cdot \cdot H - O/N \]
The Electronegativity Song

Oxygen and Nitrogen
and
Oxygen and Nitrogen
and
Oxygen and Nitrogen
and
Oxygen and Nitrogen

REPEAT

AND NOW - IT'S TIME TO SOLIDIFY YOUR MEMORY THROUGH SHARED EMBARRASSMENT
LET'S SING!
Now to the crafty part of the session

Build-a-protein!
We are going to do protein folding

Please draw this structure on your paper – all in one line!
(no bends or corners & don’t draw the box)

When you finish, cut it out in a rectangle (as shown by the red box)
Now fold it up, or align it with someone else’s piece of protein, so ALL of the marked **Oxygens** and ALL of the marked **Hydrogens** are hydrogen bonded to each other.

Your model: $R - O \bullet \bullet \bullet H - O/N$
Did you get a beautiful piece of secondary structure?
What did you feel during this session?

- Surprised?
- Frustrated?
- Embarrassed?
- Delighted?
- Relieved?
- Curious?
- Silly?
- Powerful?
- Joined to a community?
- Enlightened?
Carl Sherwood
Carl Sherwood - Five Key Thoughts.

1. Be inspired by great teachers.

2. Focus on students and their success.

3. A teaching problem = research problem.

4. Embrace a scholarly approach to Teaching & Learning (disseminate nationally, internationally).

5. Evidence, evidence, evidence = time.
Samantha and her beetles

Max the gold miner

Chips and a Hook
Dr Janette McWilliam
Teaching Latin at UQ

Dr Janette McWilliam
Lecturer in Classical Languages and Ancient History
Director of the R.D. Milns Antiquities Museum

A couple of my techniques, strategies, approaches, and methods of teaching
Don’t be afraid of change or challenging convention

I teach Latin using Colour

My Students come from all parts of UQ
and are studying Medicine, Surgery, Nursing, Sciences,
Engineering, IT, Psychology, criminology
History, Ancient History, Law, Music, Archaeology, Anthropology, Sociology, Public Relations
Philosophy, Linguistics, Modern Languages, Ancient Greek, Political Science, International
Relations, Business, Economics, Accounting, Journalism, Communications…..
Why Blended Learning & Colour?

Improve Student Learning Outcomes
- overcome troublesome knowledge, identify roadblocks
- develop personalised strategies for individual learning
- develop resilience
= Improved student achievement, satisfaction, and overall success

Improve the Student Experience for 1st Year Students (LATN1110 & LATN2120)
- personalised resources and Language learning cohorts, peer mentoring
- help to overcome transitional issues inhibiting performance
<table>
<thead>
<tr>
<th>Case</th>
<th>Singular</th>
<th>Plural</th>
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<tbody>
<tr>
<td>Nom</td>
<td><strong>dominus</strong></td>
<td><strong>dominī</strong></td>
</tr>
<tr>
<td></td>
<td>master (subject)</td>
<td>masters (subject)</td>
</tr>
<tr>
<td>Voc</td>
<td><strong>domine</strong></td>
<td><strong>dominī</strong></td>
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<tr>
<td></td>
<td>master !</td>
<td>masters !</td>
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<tr>
<td>Acc</td>
<td><strong>dominum</strong></td>
<td><strong>dominōs</strong></td>
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<tr>
<td></td>
<td>master (object)</td>
<td>masters (object)</td>
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<tr>
<td>Gen</td>
<td><strong>dominī</strong></td>
<td><strong>dominōrum</strong></td>
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<tr>
<td></td>
<td>of the master</td>
<td>of the masters</td>
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<tr>
<td>Dat</td>
<td><strong>dominō</strong></td>
<td><strong>dominīs</strong></td>
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<tr>
<td></td>
<td>to/for the master</td>
<td>to/for the masters</td>
</tr>
<tr>
<td>Abl</td>
<td><strong>dominō</strong></td>
<td><strong>dominīs</strong></td>
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<td></td>
<td>by/with/from, in/on...</td>
<td>by/with/from, in/on...</td>
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## 1st Declension Feminine Nouns

**serua ae 1f**  
*female slave, slave woman, slave girl*

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<tr>
<td>Nom</td>
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<td>slave (subject)</td>
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<td>slave !</td>
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<tr>
<td>Acc</td>
<td><em>seruam</em></td>
<td>slave (object)</td>
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<td>Gen</td>
<td><em>seruae</em></td>
<td>of the slave</td>
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<tr>
<td>Dat</td>
<td><em>seruae</em></td>
<td>to/for the slave</td>
</tr>
<tr>
<td>Abl</td>
<td><em>seruā</em></td>
<td>by/with/from, in/on…</td>
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<tr>
<td>Nom</td>
<td><strong>aurum</strong></td>
<td><strong>aura</strong></td>
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<tr>
<td></td>
<td>gold (subject)</td>
<td>gold (subject)</td>
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<td><strong>aurum</strong></td>
<td><strong>aura</strong></td>
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<tr>
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<td>gold !</td>
<td>gold !</td>
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<td><strong>aura</strong></td>
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<td>gold (object)</td>
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<td>of the gold</td>
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<td>Dat</td>
<td><strong>aurō</strong></td>
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<td>to/for the gold</td>
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<td>sorōrēs</td>
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<td>Voc.</td>
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<td>sorōrēs</td>
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<td>sorōrum</td>
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<td>seruae</td>
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<tr>
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<td>seruās</td>
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<tr>
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<td>seruārum</td>
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<tr>
<td>Dat.</td>
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<td>seruīs</td>
</tr>
<tr>
<td>Abl.</td>
<td>seruā</td>
<td>seruīs</td>
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soror sorōris 3f sister

serua ae 1f female slave
### 1st/2nd Declension Adjective  much, many

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<th>M</th>
<th>F</th>
<th>N</th>
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<td>multa</td>
<td>multus</td>
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<tr>
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<td>multa</td>
<td>multe</td>
</tr>
<tr>
<td>Acc.</td>
<td>multum</td>
<td>multam</td>
<td>multum</td>
</tr>
<tr>
<td>Gen.</td>
<td>multī</td>
<td>multae</td>
<td>multī</td>
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<tr>
<td>Dat.</td>
<td>multō</td>
<td>multae</td>
<td>multō</td>
</tr>
<tr>
<td>Abl.</td>
<td>multō</td>
<td>multā</td>
<td>multō</td>
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<tr>
<td><strong>Plural</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Nom.</td>
<td>multī</td>
<td>multae</td>
<td>multī</td>
</tr>
<tr>
<td>Voc.</td>
<td>multī</td>
<td>multae</td>
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<td>multārum</td>
<td>multōrum</td>
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<td>multīs</td>
<td>multīs</td>
</tr>
<tr>
<td>Abl.</td>
<td>multīs</td>
<td>multīs</td>
<td>multīs</td>
</tr>
</tbody>
</table>
multās sorōrēs habēmus

we have many sisters

Caesar multās seruās et multōs seruōs habet

Caesar has many slave men and many slave women
Blended Learning Program

Interactive Website uqlatin: same colour format as the Powerpoints
- Interactive tables: sound and colour
- Word lookup supporting the texts and grammar
- Word parser
- Set and self-directed quizzes for immediate feedback & self-directed learning
- Audio for texts read and for declension and conjugation tables

Blackboard
- Coloured flashcards with pictures
- MP3 downloadable audio files
- Learning pathway
- Repeatable self-assessing class quizzes
Blended Learning Program

Powerpoints used in Class
- Colour coded grammar and text
- **Interactive** reading, grammar and exercises
- Supplements individual and group work
- Non-threatening collegiate learning environment
Ask and Observe: Is what you are doing working?

Traditional
- SeCats

Plus
- questions in class and via email about concepts covered in class but not understood
- asking e.g. why can’t students replicate what we do in class under exam conditions?
- observation of behaviours in class
praetor mē nauīs classis Rōmānæ cōnflagrāre iussit.

The praetor ordered me to burn the ships of the Roman fleet.

Why is cōnflagrāre an infinitive verb?
Non-threatening Interactivity

1C Exercise 3

Together we will translate the following into Latin:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>see (pl.)!</strong></td>
</tr>
<tr>
<td>2</td>
<td><strong>ask (s.) Euclio!</strong></td>
</tr>
<tr>
<td>3</td>
<td><strong>be quiet (pl.)!</strong></td>
</tr>
<tr>
<td>4</td>
<td><strong>hide (pl.) the pot!</strong></td>
</tr>
</tbody>
</table>
see (pl.)!

What part of the verb do we need in Latin?

imperative plural

What Latin verb do we need?

uideō uidēre uīdī uisum

<table>
<thead>
<tr>
<th></th>
<th>2nd Singular</th>
<th>2nd Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imperative</td>
<td>uidē</td>
<td>uidēte !</td>
</tr>
</tbody>
</table>
Thank you

Dr Janette McWilliam | Director, RD Milns Antiquities Museum & Lecturer in Classics and Ancient History
School of Historical and Philosophical Inquiry
j.mcwilliam@uq.edu.au
www.hapi.uq.edu.au;
www.uq.edu.au/antiquities/
Professor Paul Mills
Teaching veterinary science students

(so you have confidence when they treat your furry friends!)

Prof Paul Mills BVSc PhD MACVSc GCEd
MPhil (Vet Ed) PFHEA
School of Veterinary Science
The University of Queensland
My journey
A pharmacologist teaching anatomy!!

- Students had difficulty with a ‘new language’
- Did not see relevance, so rapidly unlearned
- Increasing importance of hidden curriculum to enhance learning
- Integration equates to peer support
Group Project Work

- Groups of 4-5 students
- Emphasis on teamwork and communication
- Strong focus on presenting in a way they would like to learn!
Using group learning to promote deep learning, life skills and integration in veterinary science

A thesis submitted for the degree of Master of Philosophy at The University of Queensland in July 2006 by

Dr Paul Christian Mills

BVSc (Hons), PhD (Veterinary Pharmacology), MACVSc (Veterinary Pharmacology), Graduate Certificate in Education (Higher Education)
Vets for Life program

- Enhancing the first year experience
- Introducing students to themselves and each other
- Facilitating friendships and peer support
Virtual microscopy

The Virtual Slidebox — a new learning paradigm for exploring the microscopic world

2010
Veterinary Science in Vietnam!
Pharmacology curriculum renewal

Final Report
2011

Veterinary pharmacology curriculum renewal to improve graduate outcomes and public safety

Lead institution:
The University of Queensland
The Council on International Veterinary Medical Education

US/Canada | UK/Ireland | Continental Europe | Australia/New Zealand | Africa | Latin America/Caribbean |
China/South Asia/India | Middle East/North Africa
Making Teaching Better

We are an independent non-profit organisation committed to world-class teaching in higher education. We work in partnership with institutions and individuals in higher education supporting student success. The Higher Education Academy brings the sector together to collaborate, and share teaching strategies and practice.  
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We work in partnership with institutions to resolve strategic challenges such as retention, assessment, and employability, and to support workforce

Certificate

This is to certify that  
Professor Paul Christian Mills  
has achieved the status of  
Principal Fellow  
of The Higher Education Academy  
in recognition of attainment against the  
UK Professional Standards Framework for teaching and learning support in higher education.

Recognition reference:  
PR1303894  
Date of recognition  
26/03/2018

Alton Johns  
Chief Executive, Advance HE

Nigel Carrington  
Chair of the Board of Directors, Advance HE
Books

Scientific papers
Schull, D.N., Meehan, M., Coleman, G.T., Mills P.C., (2010). Student evaluation of a first year veterinary science student checklist to determine the impact of final year clinical rotations on veterinary science student perceptions of “day one competence” Australasian Veterinary Education Symposium, University of Queensland, Brisbane, July 5-7, 2009.

Awards
• Higher degrees
• Grants
• Publications

What are the metrics?
2018 Faculty of Science Award for a Program that Enhances Learning for the “Vets for Life” program.
2016 OLT Excellence in Teaching award (Biological Sciences)
2008 ALTC Enhancement of Student Learning awards – UQ nominee
2007 Ian Clunies Ross Memorial award
2007 Carrick Institute - Excellence in Teaching award (Early Career)
2004 UQ Enhancement of Student Learning award
2006 UQ Citation for Outstanding Contribution to Student Learning
2005 UQ Excellence in Teaching Awards – Commendation
2004 UQ Enhancement of Student Learning award


Conference presentations

Tips and advice

• Supporting evidence
• Value adding
• collaboration & connections
• Good narrative
• Tell YOUR story
Panel Q&A