Health
Australia’s next boom industry

Dr Mark Schier
Course Director, Bachelor of Health Science
Key trends

• Decline in manufacturing sector
• Drop in commodity demand and price
  – high impact for mining & engineering
• Increase in service-based sector
  – professional services
  – scientific services
  – technical services

Employment by industry (share of total)
Key Trends

• Increase in
  – demand for health services
  – numbers of ageing population

• Increase in
  – use of costly medical technologies
  – discretionary income for health and wellbeing
Employment forecast

- Healthcare and social assistance field
  - expected growth almost 19% by 2019
  - the largest area of employment growth

- Graduates will fill these places
  - bachelor degree graduates wanted
  - further training as area develops
  - higher degree graduates will follow

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Projected employment growth - five years to November 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dieticians</td>
<td>11.4%</td>
</tr>
<tr>
<td>Medical Imaging Professionals</td>
<td>31.9%</td>
</tr>
<tr>
<td>Occupational &amp; Environmental Health Professionals</td>
<td>22.3%</td>
</tr>
<tr>
<td>Optometrists and Orthoptists</td>
<td>11.4%</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>16.1%</td>
</tr>
<tr>
<td>Other Health Diagnostic &amp; Promotion Professionals</td>
<td>34.6%</td>
</tr>
<tr>
<td>Chiropractors and Osteopaths</td>
<td>11.4%</td>
</tr>
<tr>
<td>Complementary Health Therapists</td>
<td>11.4%</td>
</tr>
<tr>
<td>Dental Practitioners</td>
<td>11.4%</td>
</tr>
<tr>
<td>Occupational Therapists</td>
<td>36.6%</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>20.8%</td>
</tr>
<tr>
<td>Podiatrists</td>
<td>11.4%</td>
</tr>
<tr>
<td>Speech Professionals and Audioligists</td>
<td>14.3%</td>
</tr>
<tr>
<td>Generalist Medical Practitioners</td>
<td>17.4%</td>
</tr>
<tr>
<td>Anaesthetists</td>
<td>30.6%</td>
</tr>
<tr>
<td>Internal Medicine Specialists</td>
<td>25.6%</td>
</tr>
<tr>
<td>Psychiatrists</td>
<td>12.8%</td>
</tr>
<tr>
<td>Surgeons</td>
<td>13.1%</td>
</tr>
<tr>
<td>Other Medical Practitioners</td>
<td>35.6%</td>
</tr>
<tr>
<td>Midwives</td>
<td>7.0%</td>
</tr>
<tr>
<td>Nurse Educators and Researchers</td>
<td>11.6%</td>
</tr>
<tr>
<td>Nurse Managers</td>
<td>21.6%</td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>17.9%</td>
</tr>
<tr>
<td>Counsellors</td>
<td>11.2%</td>
</tr>
<tr>
<td>Psychologists</td>
<td>19.2%</td>
</tr>
<tr>
<td>Social Professionals</td>
<td>19.9%</td>
</tr>
<tr>
<td>Social Workers</td>
<td>30.5%</td>
</tr>
<tr>
<td>Welfare, Recreation and Community Arts Workers</td>
<td>19.7%</td>
</tr>
</tbody>
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What is Health Science?

• Study of human health and disease
  – interdisciplinary
  – broad based
  – applied to real-life situations

• Preparation for a range of careers
  – hospital technician, hospital scientist, clinical technologist
  – mental health, drug and alcohol prevention
  – community health services, health policy, health management
  – environmental health officer, food safety, health educator

• Foundation for postgraduate clinical training
Health Science at Swinburne is different

• Core units allow students to keep their options open
• Majors with vocational outcomes
  – Biomedical Science
  – Public and Environmental Health
  – Psychology and Psychophysiology
  – Psychology and Neuroscience
• Majors in emerging interdisciplinary areas
  – Health Communication (Media and Communications / Health Science)
  – Health Across the Lifespan (Design / Social Science / Health Science)
  – Applied Statistics
  – Psychology and Forensic Science
• Combine studies within Health Science or add other disciplinary areas
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<td>• Health Across the Lifespan</td>
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Applied Statistics

- Data underpins the digital economy
- Data scientists
  - high demand and low supply
  - earning about 3 times Australia’s average salary.
  - 77% increase in data scientist jobs in Australia
    - health sector
    - banking/finance
    - telecommunications
    - market research
    - retail
    - government
Biomedical Science

- Celebrating 40 years of experience in this area
- Swinburne is the only Australian university to offer biomedical science focused on:
  - Instrumentation
  - Clinical measurement
  - Monitoring and imaging technologies
- Employment in hospital sector
  - Sleep centres, neurology, intensive care, respiratory, cardiology, vascular laboratories
- Pathway for medicine or physiotherapy
- Graduates and trainees in all major hospitals
Health Communication

• Delivering clear health messages
  – promotes public health
  – aimed at changing health behaviours in the community

• Growing field
  – shift in perspective by government, councils, insurance companies
  – cheaper to prevent disease than to treat disease!

• Employment in allied health areas
  – health promotion, media, community health
  – acute care, health insurance
  – biotechnology and associated
Health Across the Lifespan

• Study of population health
  – genetics versus lifestyle
  – behaviour, attitudes and beliefs about health
  – nutrition and food science
  – technology and health care
• Early life experiences influence health and well-being in later life
• Role of technology and design in optimising health
• Employment
  – community health
  – aged care health
• Postgraduate clinical degrees
Neuroscience

• Understanding how the brain works
  – normal health
  – diseased states
  – mental illness

• Swinburne facilities
  – highly advanced brain imaging in Australia
  – MRI, MEG, EEG, BabyLab,
  – internationally and nationally recognised brain researchers

• Strong hospital network
  – teaching and research
Public and Environmental Health

• Deals with all aspects of health at a local level
• Accredited by Environmental Health Australia
• Victoria Government Gazettal
  – qualifying graduates to work in environmental health roles
• Membership of Environmental Health Professionals Australia
• Only course of its kind in Victoria.
  – celebrating 40 years at Swinburne in 2016!
• One-year paid industry experience
• Graduates highly sought
  – Environmental Health Officer, Water Regulation Advisor
  – Tobacco Policy Officer
  – Immunisation Coordinator, Public Health Planner
Psychology and Psychophysiology

- Deals with the physiological responses to stimuli
- Pairs with the behavioural responses and processes
- Students gain an understanding of:
  - neuroanatomy, neurophysiology
  - physiological responses to sleep, dreaming
  - memory and cognition
  - brain disorders
- APAC accredited – graduates who complete this major are eligible to apply for the Bachelor of Psychology (Honours) – Graduate Entry
- Careers
  - hospitals
  - universities
  - research institutes
Psychology and Forensic Science

• Swinburne is one of two universities worldwide to offer this
• Links the psychological processes with understanding of mental health and criminal justice system
• APAC-accredited – graduates who complete this major are eligible to apply for the Bachelor of Psychology (Honours) – Graduate Entry
• Swinburne’s Centre for Forensic Behavioural Science – Australia’s leading facility for excellence in forensic mental health
Student experience

Laura Davies
Psychology and Forensic Science
Diverse choice of minors and electives

- Nutrition
- Sports Science
- Management for Health
- Indigenous Studies
- Chemistry
- Food Safety
- Healthy Societies
- Environmental Health
- Health Planning & Evaluation
- more choices across the University

- Growing emphasis on e-Science and the key role that information technology plays in scientific discovery

- Students examine the physical, psychological and social aspects of health in a variety of settings
Projects change from year to year

- Designing a community-based intervention to obesity, smoking and/or mental health issues
- Developing applications for food premises
- Developing an evaluation plan for Indigenous health
- Design and construction of visual stimulator
- Evaluation of sleep technology for simplified home use
- Testing of small student cohort with flicker stimuli
- Noise testing in hospital work locations
The Swinburne Advantage

• Professional degrees
• Work Integrated Learning
• Summer Internship Program
• Access to successful high-profile research teams
Complementary studies

• Vocational courses can be studied concurrently
  – Certificate IV in Mental Health
  – Certificate IV in Alcohol and Other Drugs

• Co-majors are another option – add a major from a completely different discipline
  – chemistry, IT, sociology, politics, media, maths
  – students can create their own unique blend of skills
What’s coming in 2017

• Clinical Technology
• Sports and Exercise Science
• Nutrition
Questions