International University Collaboration
The Benefits, Challenges and the Keys for Success

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Penn State University
Director, Global Engagement Network
Professor of Mechanical Engineering
Collaboration Workshop Goals

• Develop collaborative activities
  – Long term
  – Sustainable
  – All disciplines at each university

• All engagement areas
  – Research
  – Teaching
  – Students
Motivation

Research

• Citation analysis of 25 million publications

• Increased impact with an international team

• Produces transformative results
Motivation

Teaching

• Start to prepare students for Global Citizenship
  • Global perspective in life and professional decisions
  • Tomorrow’s world leaders

• Start to prepare students for careers in Global Economy
  • Increased opportunities
  • Professional performance
Global Research Collaboration
High View Benefits

• Provides multiple views, approaches and thinking
  – Promotes diversity of ideas
• Shared student talent
  – Educate the next generation’s faculty in the methods of global research
  – Educate leaders of tomorrow in developing countries
• ...
Global Research Collaboration

Direct Benefits

• Faculty access to specialized research facilities not available at home institution or country
  – Exercise complementary capabilities
  – Share large scale one of a kind facilities
  – University specific equipment and laboratories
• Leverage funding from multiple national funding sources
• Large long term projects can withstand the “ebbs and tides” of national funding priorities and cycles
  – Shared risk
• ...

...
Global Engagement Opportunities

• Education Abroad
• Courses with an embedded international travel component
• Short stay summer programs abroad
• Co-teaching of courses utilizing technology
• Global student team projects and/or collaboration embedded in a course
• Co-supervision of graduate students or post-docs with both a Penn State and international university faculty advisor
• Collaborative research programs
• International student activities on campus
• Hosting of international scholars
• Faculty sabbatical leaves, Fulbright Scholarships
• International service projects and activities
• International internships for students
• International staff exchange
Global Collaboration
Risks and Impediments

• “International research is simply too difficult, particularly when researchers with the required collaborative skill set reside at my university”

• Awareness of challenges at early project stages
  – Better positioned to develop strategies to overcome
Global Research Collaboration
Operational Risks and Impediments

• Intellectual Property Ownership
• Insurance – (liability, medical malpractice, etc.)
• Research and Ethical Standard Differences
• Patient Privacy Issues
• Investigator Responsibility
• Endangered Species/Wildlife
• Cultural Practices/Norms
• Sponsored Related Requirements (charging VAT/taxes to grants, ownership of equipment, etc.)
Global Research Collaboration
Financial Risks and Impediments

• Funding
  – Funding agencies tend to be nationalistic
  – Separate and collaborative proposals
    • Both (all) must be successful
  – Disparity in funding from different countries

• Budget management
  – Cross border money flow
    • A challenge for most university accounting departments
  – Differences in what is considered allowable and/or possibly ethical expenses
    • Can place researchers in one country in difficult predicaments
Global Research Collaboration
Operational Risks and Impediments

• Human subject protections vary
  – Institutional Review Board (IRB) practices differ
  – Can place researchers in ethical dilemmas due to different country practices

• Data ownership practices vary in countries and regions
  – Open and shared
  – Retained and sold
Global Research Collaboration

Academic Risks and Impediments

• Global projects can tend to be development and not research
  – Research publications difficult or impossible
  – Involvement damaging to early career faculty

• Publications
  – Cultural protocols to authorship order

• ...

Monash-Penn State
Similarities and Differences

April 2018
<table>
<thead>
<tr>
<th>Topic</th>
<th>Monash University</th>
<th>Penn State University</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017-18 Academic Calendar</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term 2</td>
<td>Jul 16 – Nov 16, 2018</td>
<td>Jan 8 – May 4, 2018</td>
</tr>
<tr>
<td>Term 3</td>
<td>None</td>
<td>May 14 – Aug 10, 2018</td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Undergraduate</td>
<td>2017 Preliminary Figures</td>
<td>2017</td>
</tr>
<tr>
<td>72,084 (Headcount)</td>
<td>59,942 (EFTSL)</td>
<td>98,783</td>
</tr>
<tr>
<td>49,920 (Headcount)</td>
<td>44,022 (EFTSL)</td>
<td>84,201</td>
</tr>
<tr>
<td>17,514 (Headcount)</td>
<td>12,571 (EFTSL)</td>
<td>14,584</td>
</tr>
<tr>
<td>Research + Non-Award</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4,650 (Headcount)</td>
<td>3,349 (EFTSL)</td>
<td></td>
</tr>
<tr>
<td><strong>Students Composition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian campuses only:</td>
<td>Domestic: 70% International: 30%</td>
<td>Domestic: 89% International: 11%</td>
</tr>
<tr>
<td>International Students Top 5 Source Countries: China, Malaysia, Singapore, India, Indonesia</td>
<td></td>
<td>Top source regions: China, Middle East</td>
</tr>
<tr>
<td><strong>Tuition per year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>US$ 7,953  [A$10,596] (Domestic students)</td>
<td>US$ 18,000 (Pennsylvania residents)</td>
</tr>
<tr>
<td>Post graduate</td>
<td>US$ 29,350 [A$39,100] (International students)</td>
<td>US$ 33,000 (non-Pennsylvania residents)</td>
</tr>
<tr>
<td></td>
<td>US $20,417 [A$27,200] (Domestic students)</td>
<td>US$ 21,000 (Pennsylvania residents)</td>
</tr>
<tr>
<td></td>
<td>US $29,875  [A$39,800]  (International students)</td>
<td>US$ 35,000 (non-Pennsylvania residents)</td>
</tr>
<tr>
<td><strong>Course credit system</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergraduate</td>
<td>108-144 credits required for undergraduate degree (for standard 3-year degree)</td>
<td>120-130 credits required for undergraduate degree</td>
</tr>
<tr>
<td></td>
<td>36-48 credits per year</td>
<td>30-33 credits per year</td>
</tr>
<tr>
<td></td>
<td>3 credit course = 15 weeks at 3 hours per week</td>
<td></td>
</tr>
<tr>
<td>Master</td>
<td>Up to 96 credits, research thesis typically not required</td>
<td>30 credits and research thesis</td>
</tr>
<tr>
<td>(i) Professional entry master’s courses</td>
<td></td>
<td></td>
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<tr>
<td>(ii) Expert master’s courses (coursework)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) Research masters (research)</td>
<td>Serve as pathways to PhD programs</td>
<td></td>
</tr>
<tr>
<td>Ph.D.</td>
<td>Varies. 2 PhD research programs</td>
<td>Usually 30 credits beyond Master and research thesis</td>
</tr>
<tr>
<td>- Monash Doctoral Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>Monash University</td>
<td>Penn State University</td>
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</tr>
<tr>
<td><strong>Academics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8,377 (Headcount)</td>
<td></td>
</tr>
<tr>
<td><strong>Full Time</strong></td>
<td>3,615 [44%] (FTE)</td>
<td></td>
</tr>
<tr>
<td><strong>Part Time</strong></td>
<td>3,292 (Headcount)</td>
<td></td>
</tr>
<tr>
<td>FT+ Fractional FT</td>
<td>2,920 (FTE)</td>
<td></td>
</tr>
<tr>
<td>FT</td>
<td>2,920</td>
<td></td>
</tr>
<tr>
<td>Casual</td>
<td>695 (FTE)</td>
<td></td>
</tr>
<tr>
<td><strong>Professional Staff</strong></td>
<td>8,400 (Headcount)</td>
<td></td>
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</tbody>
</table>
| **Guaranteed academic salary**| Normally 12 months excluding sessional staff. | 9 months
|                               | 4,570 [56%] (FTE) | 22,000
| **Academic hiring protocol**  | No restriction on terminal degree | Terminal degrees almost always from another university
|                               |                   | Will NOT hire Penn State Ph.D./M.D. students immediately after graduation,
| **Nominal baseline annual teaching load** | Faculty or Academic Unit will develop and maintain their own workload model. | 2 - 6 classes depending on research “buy-out”, administrative and other duties
| **Nominal academic effort expectations** | 40% Research | 45% Research
|                               | 40% Teaching     | 40% Teaching
|                               | 20% Engagement   | 15% Professional Service
| **Externally funded research expenditures** | US$ 265M (A$ 353M) | US$ 800M per year |
## Post Graduate Students

<table>
<thead>
<tr>
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<th>Penn State University</th>
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</thead>
</table>
| **Support sources** | Monash distinguishes between PG coursework and PG research students.  
- Academic support for PG coursework students similar to UG students;  
- [Monash Graduate Education]: dedicated academic support for research students (Masters + PhD)  
- Dedicated purpose-built study lounges for all types of PG (+PhD) students and quieter residential communities  
- Monash and external scholarships available to enrolled students  
- Travel-grant funding available for PG research (Masters/PhD) students to travel within Australia or overseas where travel is directly related to research;  
- Department/School casual sessional teaching contracts (as available during teaching semesters)  
- Note that we don’t have teaching assistants in the same vein as US unis (i.e. while some may teach, it is not a course requirement and doesn’t constitute course credit) | Research contracts  
Teaching assistants  
Self-funded  
External fellowships |
| **Cost to professor for research student** | Different funding model to USA  
- International students pay full fee (coursework UG/PG/Research degrees: Limited merit-based competitive centrally funded scholarships available to research students (stipend + living allowance + tuition fee) | Approx. US$ 100k/year  
• Includes tuition, stipend, benefits, overhead, … |
| **Long term (semester) mobility prospects** | Postgraduate Coursework Students  
Viable (similar to undergraduate prospects i.e. semester length exchange program) | Difficult due to financial support commitments in research or teaching  
Possible under a joint sponsored research project with investigators at both universities |
| **Short term (1-2 weeks) mobility prospects** | Viable but generally less mobile than UG students, tend to go with faculty-organised programs rather than sourcing own | Viable, pending availability of travel fund  
Best during North American summer term  
Usually directly related to ongoing collaborations |
| **Mobility funding sources** | Postgraduate Coursework Students  
Similar to undergraduate students  
Postgraduate Research + PhD Students  
Limited travel-grant funding available for research students | Research contracts  
Competitive external scholarships  
Very limited university funds  
Self-funded (unusual) |
Undergraduate Students

<table>
<thead>
<tr>
<th>Topic</th>
<th>Monash University</th>
<th>Penn State University</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long term (semester) mobility prospects</strong></td>
<td>Semester-length <a href="#">exchange program</a> (may be 2 semesters; follows a balanced exchange model)</td>
<td>Requires balanced exchange due to tuition differences Integrated curriculum necessary English instruction</td>
</tr>
<tr>
<td><strong>Short term (1-4 weeks) mobility prospects</strong></td>
<td>Fast-growing, program length typically between 2-8 weeks Distinguished between credit (e.g. <a href="#">Faculty-led study-tours/field trips</a>/placements/internships) and non-credit programs</td>
<td>Fastest growing international experience category Travel component embedded in a class Usually during Northern Hemisphere summer term</td>
</tr>
<tr>
<td><strong>Mobility funding sources</strong></td>
<td>University funds via dedicated mobility travel scholarships available.</td>
<td>Self-funded Very limited university funds</td>
</tr>
</tbody>
</table>
# International and Online Education

<table>
<thead>
<tr>
<th>Topic</th>
<th>Monash University</th>
<th>Penn State University</th>
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</thead>
<tbody>
<tr>
<td>International Locations</td>
<td>- Monash University Malaysia (campus)</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>- Monash Prato Centre, Italy (teaching centre)</td>
<td>Pennsylvania locations only</td>
</tr>
<tr>
<td></td>
<td>- Monash Warwick Alliance, UK (joint education + research)</td>
<td></td>
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<td></td>
<td>- Monash-Southeast University, China (Joint graduate school + research institute)</td>
<td></td>
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<td></td>
<td>- IITB-Monash Research Academy, India (Joint PhD program)</td>
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<td></td>
<td>- Monash Indonesia Representative Office (research centre)</td>
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<td></td>
<td>- MSA, South Africa: (teaching location)</td>
<td></td>
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<tr>
<td>Online Education</td>
<td>- Future Learn (MOOCs)</td>
<td>World Campus</td>
</tr>
<tr>
<td></td>
<td>- Monash Online (100% online courses) (Both developed with Pearson)</td>
<td>14,000 Students</td>
</tr>
<tr>
<td></td>
<td>- Founding member of EduGrowth (a national, not-for-profit organisation supporting ed-tech innovation and entrepreneurship in Australia)</td>
<td>Undergraduate, Post-graduate Programs</td>
</tr>
</tbody>
</table>
Global Collaboration
Action

• We must work to remove institutional barriers that impede global collaboration
• We must work with funding agencies to promote global research programs
• We, as the globally engaged faculty, must be persistent to overcome the difficulties and continue to lead the way
• We must train our students to take advantage of the global community’s capabilities
  – They are the leaders of tomorrow