Effective Use of Data in Evaluating Graduate Programs

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Motivation for Data Driven Graduate Program Evaluation

- Context
  - Accountability
  - Strategic Importance
  - Opportunity / Leverage

- Enhance Graduate Program Quality
  - Ultimate Goal is Graduate Student Success

- Improve External Perception of Institution

- Effective Utilization of Resources
Overview

- ISU Context
  - Institutional Scope
  - Iowa, Midwest, National, Global
- Graduate Program Quality Assessment
- Data Driven Strategic Priorities
- Resource Utilization – Human, Fiscal, Physical
Iowa State University

- First land-grant institution in the United States (1864)
- 29,9887 students total (Fall 2011)
- 5,544 graduate and professional students (Fall 2011)
- 3,424 International Students from 106 Countries (Fall 2011)
<table>
<thead>
<tr>
<th>ISU College Enrollment (Fall 2011)</th>
<th>Under</th>
<th>Grad</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and Life Sciences</td>
<td>3,584</td>
<td>627</td>
<td>4,211</td>
</tr>
<tr>
<td>Business</td>
<td>3,212</td>
<td>258</td>
<td>3,470</td>
</tr>
<tr>
<td>Design</td>
<td>1,798</td>
<td>158</td>
<td>1,956</td>
</tr>
<tr>
<td>Engineering</td>
<td>5,935</td>
<td>997</td>
<td>6,932</td>
</tr>
<tr>
<td>Human Sciences</td>
<td>3,430</td>
<td>766</td>
<td>4,196</td>
</tr>
<tr>
<td>Liberal Arts and Sciences</td>
<td>6,384</td>
<td>1,217</td>
<td>7,601</td>
</tr>
<tr>
<td>Interdepartmental</td>
<td>0</td>
<td>556</td>
<td>556</td>
</tr>
<tr>
<td>Veterinary Medicine Professional</td>
<td>0</td>
<td>587</td>
<td>689</td>
</tr>
<tr>
<td>Veterinary Medicine Graduate</td>
<td>0</td>
<td>102</td>
<td>276</td>
</tr>
<tr>
<td>Post-graduate (post-doc)</td>
<td>0</td>
<td>0</td>
<td>276</td>
</tr>
<tr>
<td>Total</td>
<td>24,343</td>
<td>5268</td>
<td>29,887</td>
</tr>
</tbody>
</table>
Operating Revenues – FY 2010

- Total $1.043 Billion
- Tuition and Fees – 26.4%
- Contracts and Grants – 26.1%
- State Appropriations – 25.7%
- Auxiliary Enterprises – 13.4%
- Other Income – 7.2%
- Federal Appropriations – 1.2%
Land Grant Culture

• Tripartite mission
  • Teaching
  • Research
  • Extension/Outreach

• Academic excellence

• Access for UG

• Application of knowledge for the betterment of all

• Tech transfer; Professional development
Research and Graduate Education

- $342.3 million in grants, contracts and cooperative agreements in fiscal year 2011. Largest sources:
  - National Science Foundation: $37.9 million
  - U.S. Department of Energy: $36.2 million
  - U.S. Department of Agriculture: $33.8 million
- More than 100 fields of study leading to graduate and professional degrees
- 15th in licenses and options generating income
External Context

- Supportive state environment with high expectations and increasing desire for quantitative accountability
- 10 Land Grant “Peers” most with similar scope
  - Direct competitors for faculty, graduate students, and post docs
- Publics in states that border IA
- AAU Public Universities
- International partner universities
Graduate Program Quality Assessment

- Periodic external peer review
  - Minimum of every seven years
  - Data based qualitative judgment
  - Review team from aspirational peers
  - Outcomes focus

- Periodic internal review
  - Task force approach
  - Data driven
  - Strategic importance; Leverage; Future Opportunity
  - Outcomes focus
Dimensions of Graduate Program Quality

• Faculty Quality
  • Productivity
  • Qualitative assessment

• Incoming Student Quality
  • Characteristics of applicants
  • Characteristics of enrollees
  • Information about non-enrollees

• Student Success
  • While enrolled
  • Following degree completion
Data Normalization

- Program Graduate Faculty
- External Research Funding
- Total Funding
- Admitted Students
- Program Enrollment
- Diversity (Relative to Disciplinary Opportunity)
Graduate Program Data Analyzed

• Graduate Faculty Quality and Productivity
  • NRC Data
  • AAUDE Data
  • Academic Analytics

• Incoming Student Quality
  • GRE, GPA
  • Selectivity
  • Acceptance rate
  • Diversity
  • Domestic / International Mix
Enrolled Graduate Student Success

- Retention / Persistence
- Completion Rate
- Time to Degree
- Placement
- AAUDE Exit Survey
- Early Career Success
Undeclared Student Age Distribution

![Graph showing the percent of age groups by academic year of enrollment from 2001-2002 to 2010-2011. The age groups are 20-24, 25-30, 31-40, 41-55, and 55+. The graph provides a visual representation of how the age distribution of undeclared students changes over time.]
Undeclared Student Aspirations

Undeclared Graduate Students: What they want to do?

- Interest in achieving advance degree:
  - Not at all like me: 31.17%
  - Not much like me: 63.64%
  - Quite a lot like me: 0.00%
  - Just like me: 0.00%

- Interest in achieving graduate/professional certificate:
  - Not at all like me: 40.26%
  - Not much like me: 35.06%
  - Quite a lot like me: 0.00%
  - Just like me: 0.00%
Undeclared Student Perceived Needs

How Can ISU Help?

- Distance Courses
- Degree/CRT Planning
- An Advisor
- Transition Plan
- Networking
- Professional Development
- Research Opportunities
- Career Planning

Average response rate: How useful would the following be on a scale of 1 to 10.
Data Driven Strategic Prioritization

- Institutional Scope and Strategic Priorities
- Projected Future Opportunities
- Leverage
  - Large or expanding research programs
  - Related strong graduate programs
  - Collaborations
  - Potential collaborations
- External Perception of Program Quality
- Program Quality Trajectory
Accountability

• Normalized Program Productivity
  • Student Success Focus

• Effective Human Resource Utilization
  • Leverage
  • Specified expectations

• Effective Physical Resource Utilization
  • Data-driven space allocation / reallocation
  • Infrastructure allocation / reallocation

• Effective Fiscal Resource Utilization
Concluding Thoughts

- Context is Important to Data Driven Program Evaluation and Prioritization
- Program Quality Enhancement Focus
- Graduate Student Success Focus
  - Successful Careers and Lives
- Appropriate Data-Driven Qualitative Evaluation of Programs is Critical
- Program Self-Perception and Intra-institutional Perception can be Valuable