Completion and Attrition in STEM Master’s Programs

The CGS Study and the Wright State University Response

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Wright State University

- Public Research University
- 10 Colleges:
  - Business, Education, Engineering, Liberal Arts, Nursing, Medicine, Prof Psychology, Sciences, Graduate School, Lake Campus
- Total Enrollment: 19,820
- Graduate and Professional: 4,200
- 65 Graduate Programs
- Research and Sponsored Programs: $100M
Day 1 Enrollment by College

Day 1 Enrollment: F2008-2012

- CECS
- CEHS
- CoLA
- CoSM
- CoNH
- RSCoB
- BSoM
Enrollment Management

Enrollment = (Pre-Yr-Enrollment – Graduation) * Retention%  + Admission * Yield%

- Previous Year Enrollment
- Graduation
- Attrition
- Continuing Students
- Application
- Rejected
Wright State Participation in the CGS STEM+MPA Attrition Study

- CGS study fits well with the WSU Graduate School goals
- WSU collected a dataset of all graduate students across all programs from Fall 2006 to Winter 2011
- CGS Surveys of incoming and graduating graduate students in MS programs in STEM + MBA
CGS STEM+MBA Attrition Study
Survey Data

Surveys of Graduating Students – Fall 2011, Winter 2012, Spring 2012 (163 students responded)

General Conclusions

• **Work** and **Money** are important issues for our students
• Students are very sensitive to issues surrounding the **quality of faculty, advising**, and **convenience/accessibility** of the program
• Graduate students have a **wide variety of circumstances** that make generalizations difficult
• Three top reasons to enroll in their graduate program:
  
  - Skills/Knowledge
  - Promotion/Advancement
  - Personal Interest

• Have you taken a leave of absence since starting your program?
  
  - Yes
  - Work related absence
• Do you work for pay at or outside the university (excluding TAs/RAs)?

- No
- Yes – on-campus
- Yes – off-campus

• Largest sources of financial support for graduate school:

- Assistantship (20%)
- Employer (22%)
- Loans (28%)

• To what extent was financing your graduate education a challenge?

- Not at all (32%)
- Small extent (15%)
- Moderate extent (25%)
- Great extent (23%)
CGS STEM+MBA Attrition Study
Survey Data

- How satisfied were you overall with the quality of teaching?
  - Very dissatisfied: 1%
  - Dissatisfied: 5%
  - Satisfied: 62%
  - Very satisfied: 31%

- How satisfied were you with the quality of advising?
  - Very dissatisfied: 1%
  - Dissatisfied: 11%
  - Satisfied: 49%
  - Very satisfied: 38%
Wright State University Study
Correlations with Outcome
Fall 2006 to Winter 2011

• Correlations with GPA
  - Non Returns
  - Current Student
  - Completions

GPA Ranges:
3.10 3.20 3.30 3.40 3.50 3.60 3.70 3.80
### Wright State University Study
#### Correlations with Outcome
Fall 2006 to Winter 2011

- **Correlations between completion and ethnicity**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Completion Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>71.80%</td>
</tr>
<tr>
<td>White-Non Hispanic</td>
<td>71.30%</td>
</tr>
<tr>
<td>Unknown</td>
<td>66.70%</td>
</tr>
<tr>
<td>Other</td>
<td>25.00%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>80.70%</td>
</tr>
<tr>
<td>Foreign Non-Resident Alien</td>
<td>80.80%</td>
</tr>
<tr>
<td>Black, Non-Hispanic</td>
<td>58.10%</td>
</tr>
<tr>
<td>Asian Pacific Islander</td>
<td>69.00%</td>
</tr>
<tr>
<td>Am Indian Alaskan Native</td>
<td>25.00%</td>
</tr>
</tbody>
</table>
Correlations between completion and disciplines

- Science math: 54.30%
- Nursing: 61.10%
- Medicine: 64.50%
- Lib Arts: 62.90%
- Engineering: 65.90%
- Education: 77.30%
- Business: 79.80%
THE WRIGHT STATE UNIVERSITY RESPONSE

-OVERALL ENROLLMENT MANAGEMENT STRATEGIES

• **Improve Recruitment**
  - Traditional print, radio and open house
  - Online search engine marketing
  - Social network marketing
  - On campus marketing

• **Improve Yield**
  - Direct contact by program directors
  - Graduate School and Enrollment Management joint efforts: e-mail, phone calls
• Improve retention
  – Target colleges/programs with high attrition rates
  – Improve advising – Program Director Training
  – Program Director’s Manual
  – Regular Program Directors’ Meetings discussing best practices
  – Regular Program Reviews
  – Retention software implemented for early detection and intrusive advising
  – Retention Scholarships
  – Minority Fellowships
Program Director Suggestions

- On ENROLLMENT MANAGEMENT, suggestions for interventions to help retain students:
  - Longer graduate assistantships
  - Financial Aid
  - Common graduate student study space
  - Stronger competence in Writing Center (undergrad focus and undergrad employees)
  - International students need access to on-going language support
  - International students need to understand intellectual property rights (plagiarism issues)
  - Graduate School sponsored workshop on how to write a thesis/dissertation (include plagiarism)
  - Offer Thesis Boot Camp
  - BIE program offers academic integrity course that first year grad students are required to take
  - Students often don’t realize that the Graduate School is a source for help
  - Offer resources (or at least links to resources) on Graduate School website
  - More assistance for GRAs – fee remission doesn’t include courses outside the student’s major (like English courses for engineering students)
  - Better mechanism to track student/advisor meetings - in Pilot?
  - Counseling program has a librarian associated with their program to assist students; can others?
CONCLUSIONS

- The CGS study focused campus attention on retention and attrition
- Discussions on campus resulted in actions
- Further study for deeper understanding of the attrition problem is needed
Thanks

Wright State University
Graduate School