



Completion & Attrition in STEM Master's Programs

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Background to the CGS Pilot Study

- Rationale for Study

- Master' education is the largest component of graduate education (75% of grad students; 89% degrees conferred)
- Fastest growing and most diverse component of graduate education.
- Strategic importance to the economy.
- **Very little known about attrition and completion rates.**

4 Key Research Questions

- What are the Characteristics of STEM Master's Programs?
- What are the completion and attrition rates in STEM Master's and MBA programs and how do they vary by gender, ethnicity, field, and age?
- Identify reasons why students enroll in master's programs and the factors that contribute to their success.
- Identify promising practices to help improve student outcomes.

5 Participating Institutions

- Loyola University Chicago
- Purdue University
- Southern Illinois University, Edwardsville
- Texas A&M University
- Wright State University

8 Data Collection Instruments

- Student-level Data Template.
- Program Characteristics Template.
- Online surveys administered to GPDs.
- Focus group sessions with students.
- Group interviews with Deans, GPDs and university personnel.
- Survey of First-Year Students.
- Survey of Graduating Students.
- Survey of Stop-Out and Drop-Out Students.

Summary Data from the Study: STEM Master's Programs

- 2-year completion rate: 41%
- 3-year completion rate: 60%
- 4-year completion rate: 66%
- Increased from 41% in 2003-2004 to 44% in 2006-2007.
- API: 69%; AA: 55%; H: 60%
- Women: 69%; Men: 65%
- 6-month attrition rate: 10%
- 1-year attrition rate: 17%
- 2-year attrition rate: 23%
- Decreased from 26% in 2003-2004 to 21% in 2008-2009.
- API: 20%; AA: 31%; H: 26%
- Women 20%; Men: 24%
- Median Time to Degree: 23 months
- Median Time to Attrition: 8 months

Wright State Profile

- Large, Comprehensive Research University
- Colleges of: Science & Math, Liberal Arts, Nursing & Health, Education & Human Services, Business, Engineering & Computer Science; Schools of Medicine & Professional Psychology
- ~70 Master's programs, 7 graduate Doctorates
 - Undergrad enrollment: 13,772
 - Grad enrollment: 3373
- \$36 million in sponsored research

Wright State Observations

- On the whole, WSU data conformed to the broader study
 - Complete & Attrition rates nearly identical to study averages; MTD & MTA also the same
- Finances are an issue for about 50% of WSU students
- Work is an issue for most (70% work 30+ hours/week outside of the university)
- Advising is clearly a key factor in success
 - 75%-80% happy with their advisor; 20%-25% not
 - Problems with the University also traceable to advising

Wright State Responses

- Campus-Wide Survey on Advising & Conversation
 - Only 50% of programs have an orientation
 - Only 33% have a handbook for students
 - <50% track registration or tie it to advising
- Graduate Program Director's Handbook
- Graduate Retention Scholarships Pilot
 - 100% success rate first cohort; selection bias?
- Crisis Response: Sequester-Related Stopgap Funding
- Broader Context: New Ohio Funding Model

SIUE Profile

- PUI; Large Masters Granting Classification
 - From the mission statement: “Southern Illinois University Edwardsville is a public comprehensive university dedicated to the communication, expansion and integration of knowledge through excellent **undergraduate education as its first priority** and complementary excellent graduate and professional academic programs”
- College of Arts & Science, School of Engineering, School of Nursing, School of Business, School of Education, School of Pharmacy, School of Dental Medicine
- 47 Master’s programs, EDD, DNP, 2 cooperative PhD programs
 - Undergraduate Enrollment: 14,155
 - Graduate Enrollment: 2289
- \$30+ million in sponsored projects
 - \$8+ million is research



Footnote: At the time of the CGS study I was acting Graduate Dean, Provost was Interim, and a New Chancellor was just starting. CGS study could not have come at a better time!

Advocating Graduate Programs

Regional, national, international
recognition for scholarship and
graduates

Success of graduates
In industry and academia
Presenting work at workshops and conferences
Engaging outreach activities in K-12
Supporting and promoting of scholarship
Engaging in service to the scholarly community

Enhanced graduate
experience
&
Quality graduates

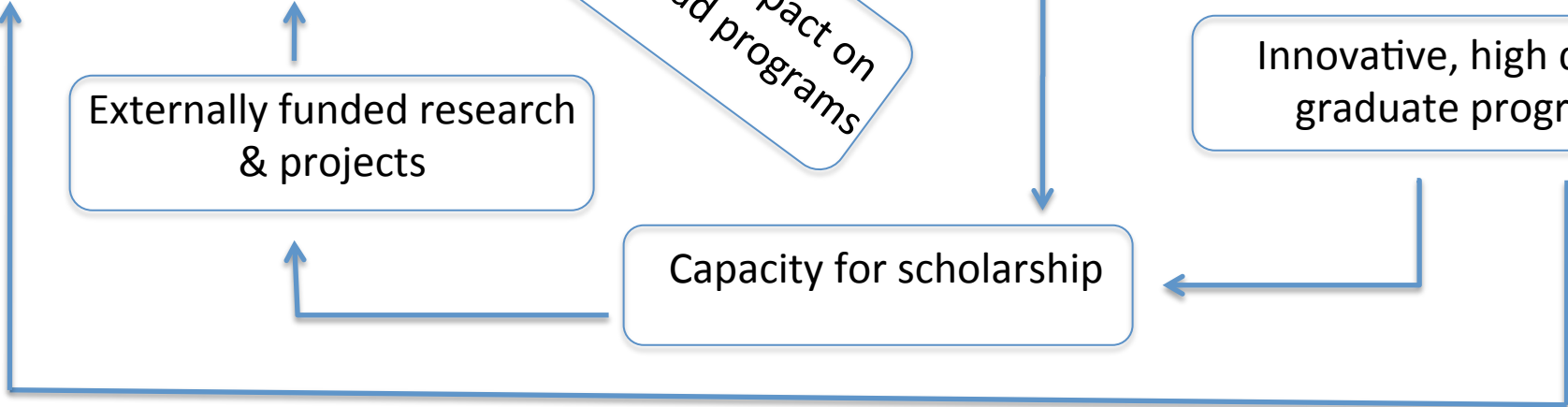
Recruitment of quality students
Recruitment of committed, quality faculty
Multi-institutional collaborations

Positive impact on
undergrad programs

Externally funded research
& projects

Innovative, high quality
graduate programs

Capacity for scholarship



Goals for SIUE

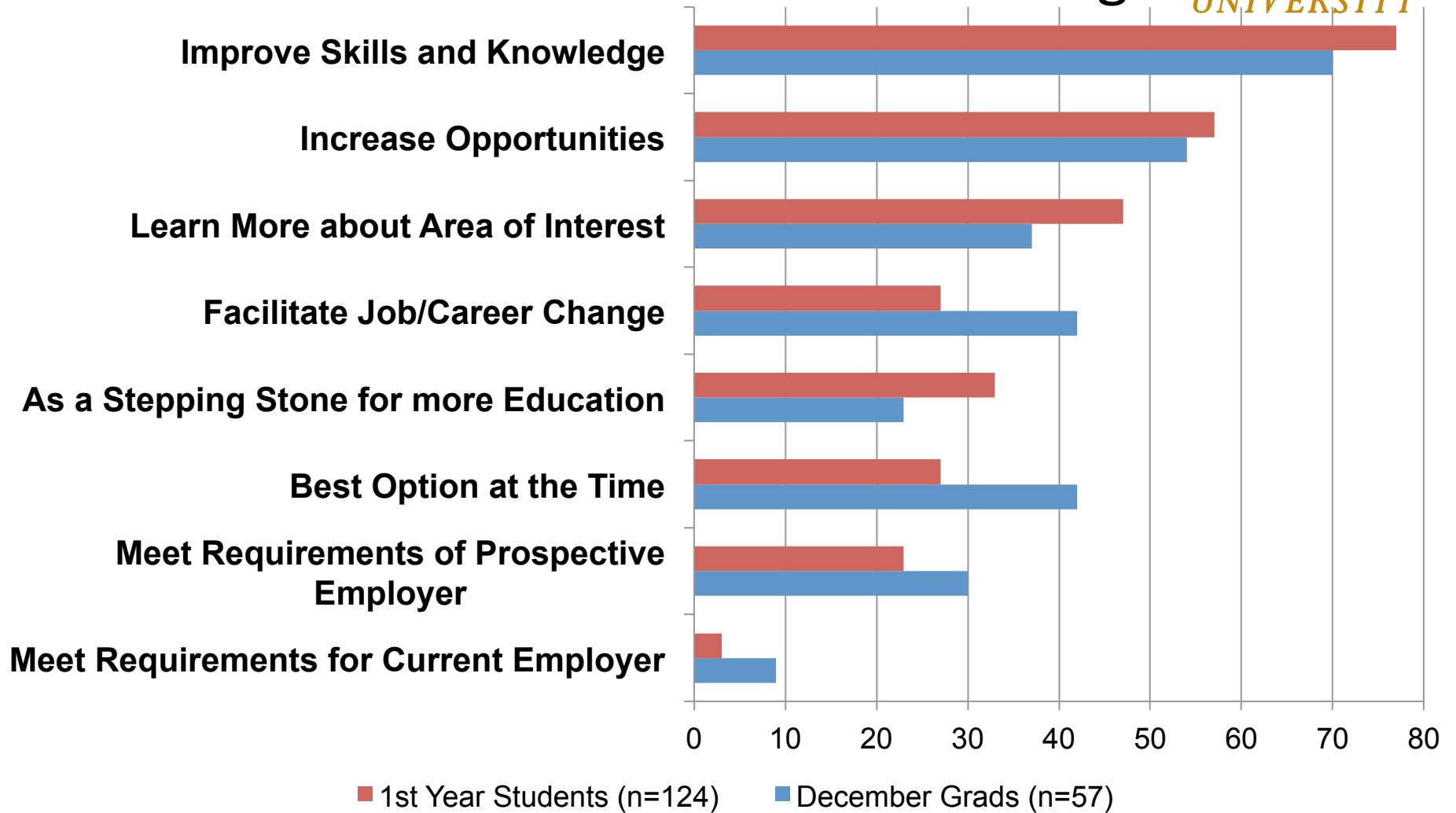
- First time ever for collecting data on graduate studies
 - Who are our students?
 - Why are they pursuing master's degrees at SIUE?
 - How well are the programs serving the students?
 - Completion rates, attrition rates, time to completion
 - What is keeping students from completing?
 - What can we do to improve completion?
 - Reasons for attrition

Demographics

	1 st Year Students	December Grads
Response Rate	68%	46%
% Female	59%	45%
% White	88%	88%
Marital Status		
Married or Marriage-like	46%	49%
Children	20%	23%
Age		
Under 25	61%	41%
25 – 29	23%	34%
30 or older	16%	25%

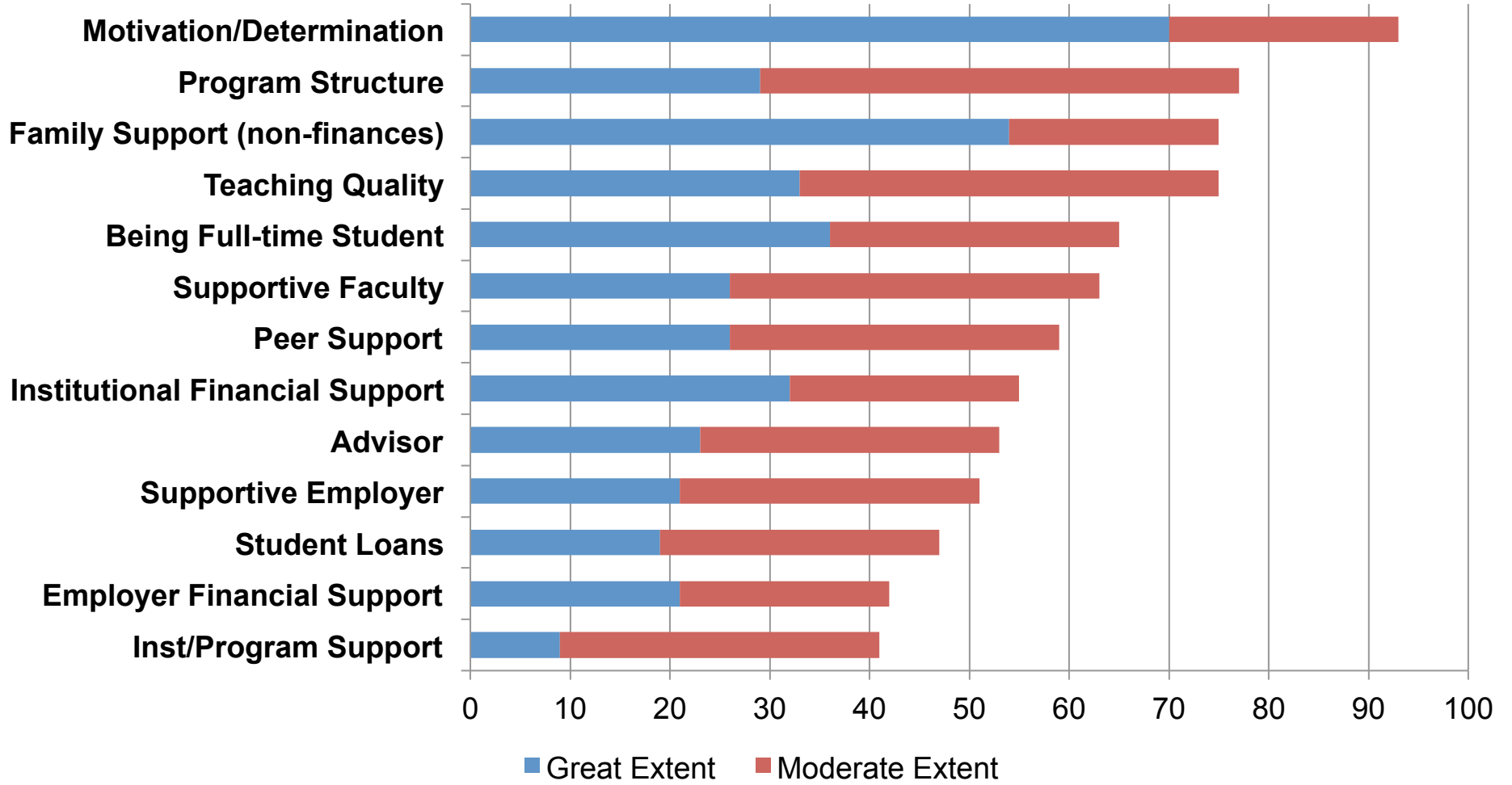
	1 st Year Students	December Grads
Enrollment Status		
Full-time	81%	60%
Part-time	19%	26%
Mix	-	14%
Work Status		
For University	12%	12%
Outside University	39%	54%
Self-Employed	2%	0%
Not working	46%	33%
Work hours per week	(n=67)	(n=38)
< 20	31%	24%
20 or more	66%	77%

Reasons for Enrolling



Note: Multiple Response option

December Graduates:
Contributed to Completion of Program



n=57

STEM Completion Rates

- 2 year: 30%
- 3 year: 51%
- 4 year: 58%
 - Lowest of the five participating institutions
- Lowest of the low
 - Math and Computer Science: 9%, 35%, 47%
 - Biological Sciences: 10%, 33%, 42%
 - Older students (35+): 9%, 26%, 32%

STEM Attrition Rates

- 6 months: 11%
- 1 year: 18%
- 2 year: 26%

- Highest of the high
 - Math and Computer Science: 17%, 30%, 39%
 - Biological Sciences: 9%, 16%, 29%
 - AA: 11%, 20%, 28%
 - Older students (35+): 18%, 27%, 35%

Salient Observations

- Most frequently noted concern by 1st year and graduating students was work-life balance
- Stop-out/drop-out students were unaware of any program orientation by 65%
 - Math & Computer Science were unaware of any program handbook or information by 56%
 - Graduating students were aware by 78% of program orientation
- Stop-out/drop-out students stated two highest contributing factors for stopping were work related pressures and program structure.

SIUE Responses

- Coordinator for Graduate Student Retention and Services
- Provide students with the tools to be successful and build on motivation for completion
 - Extensive TA training
 - TA support workshops
 - Dealing with difficult students, TA collaborations, open faculty development sessions
 - Work-life balance workshops
 - Career development workshops

SIUE Responses

- Build graduate student community
 - Graduate Student Advisory Board
- Improve communication of program guidelines and available support services
 - One stop website specific for graduate students
- Critical Reflection on Programs
 - Add completion, stop-out rates to Program Review

SIUE Responses

- Change the university's mission

“Southern Illinois University Edwardsville is a student-centered educational community dedicated to communicating, expanding and integrating knowledge. In a spirit of collaboration enriched by diverse ideas, our comprehensive and **unique array of undergraduate and graduate programs** develops professionals, scholars and leaders who shape a changing world.”