



# Best Practices in



# Graduate Enrollment Management

Jeffrey Bakken      Dean of the Graduate School and Sponsored Research, Bradley University

Christopher Connor      Assistant Dean, Graduate Enrollment Management, University at Buffalo

Thomas Reynolds      Associate Vice Provost for Graduate Programs and Dean, Graduate School  
University of North Carolina at Charlotte

Charles Taber      Dean, Graduate School, Stonybrook University

Johnna Watson      Associate Dean & Associate Graduate Faculty, Graduate School  
University of North Carolina at Charlotte



# Agenda

2:00-2:15 pm Graduate Enrollment Management Overview

2:15-3:30 pm Current Practices

3:30-4:30 pm Implementing GEM Breakout Sessions

*3:30-3:45 pm Setting the Foundation (organizational structures)*

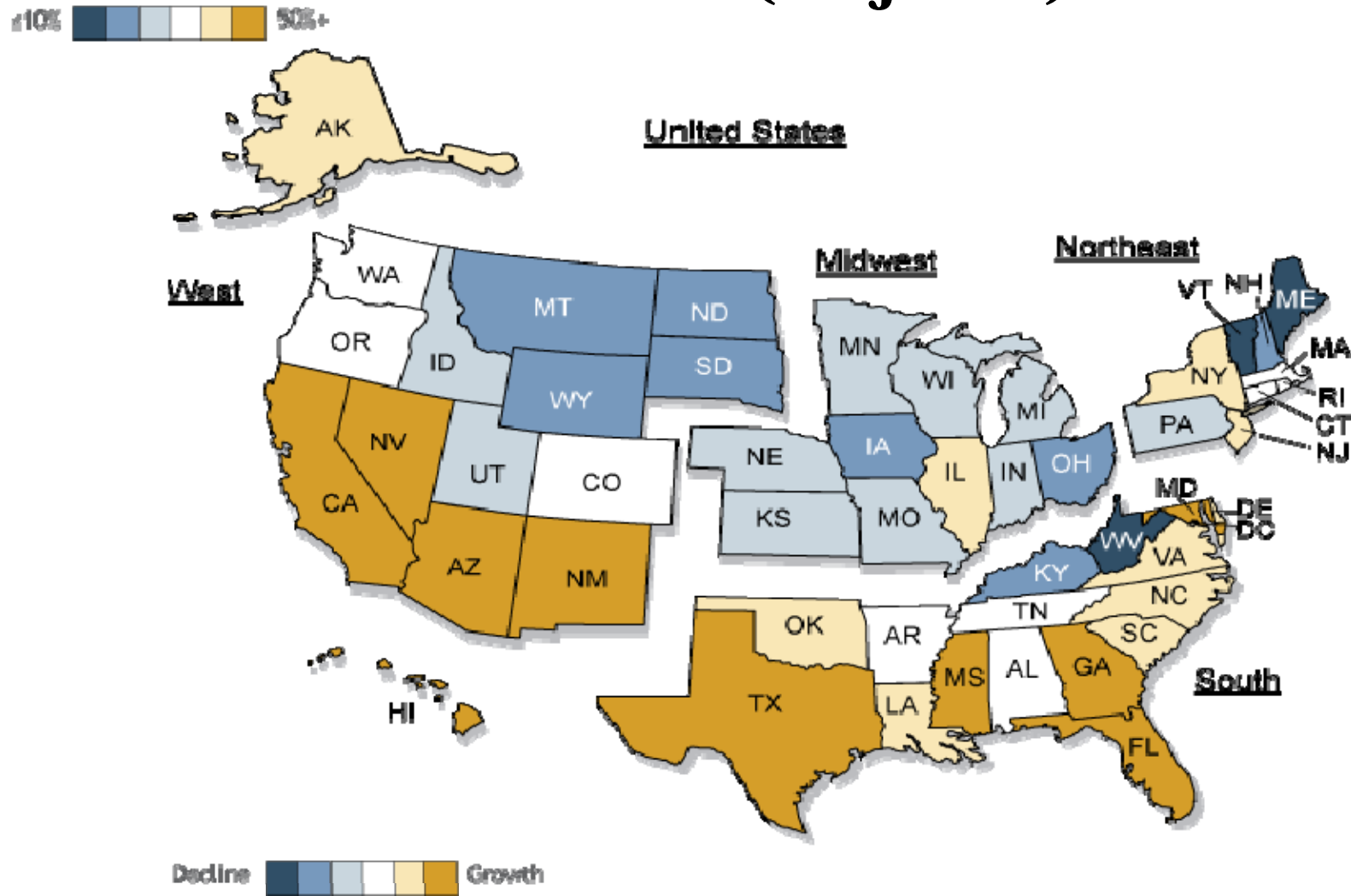
*3:45-4:00 pm Planning and Data Utilization (emerging trends, market analyses, program capacity, student demand, ROI)*

*4:00-4:15 pm GEM Plans (university level, college level, program level to include projections/goals, strategies, evaluation, responsibility, and resource needs)*

4:15-4:30 pm Questions/Wrap-Up



# Non-White Share of Public High School Graduates, 2019-20 (Projected)



Source: Western Interstate Commission for Higher Education, "Knocking at the College Door: Projections of High School Graduates", 8th Edition.

# Current Graduate Enrollment Landscape

- Overall enrollment increases heavily skewed by STEM
  - International market volatility (i.e. India and China)
- Declines Arts & Humanities, Social and Behavioral Sciences
- Questions of the value of graduate degree
- Increased institutional reliance on graduate enrollment

# Current Graduate Enrollment Landscape

- Number of jobs requiring advanced degree project to grow to 2.5 million by 2018.
- Disconnect between business and education
  - Need for professionalization of student experience

# Current Graduate Enrollment Landscape

- Increasing competition
  - More programs
- Retention is emerging as a critical component of recruitment planning
- Tuition costs reaching point of saturation
- Structures and practices not in-sync with pace of change

# Comparing U(EM) and GEM

## Undergraduate Models

- Primarily centralized recruitment
- Coordinates all aspects of student lifecycle under one umbrella
- Unified institutional advocacy
- Primary support-campus leadership
  - Proactive
- Higher staffing levels/budgets
- Definitive starting and stopping point of staff roles/responsibilities
- Emerging
  - Academic focus institutionally

## Graduate Models

- Primarily decentralized recruitment
- Some coordination and oversight but generally fractured
- Fractured institutional advocacy, complex
- Secondary support-campus leadership
  - Reactive
- Do more with less
- Evolution to increasing responsibilities of staff roles beyond primary function
- Emerging
  - Service focus programmatically



# SILOING

Serving American Higher Education Since 1636

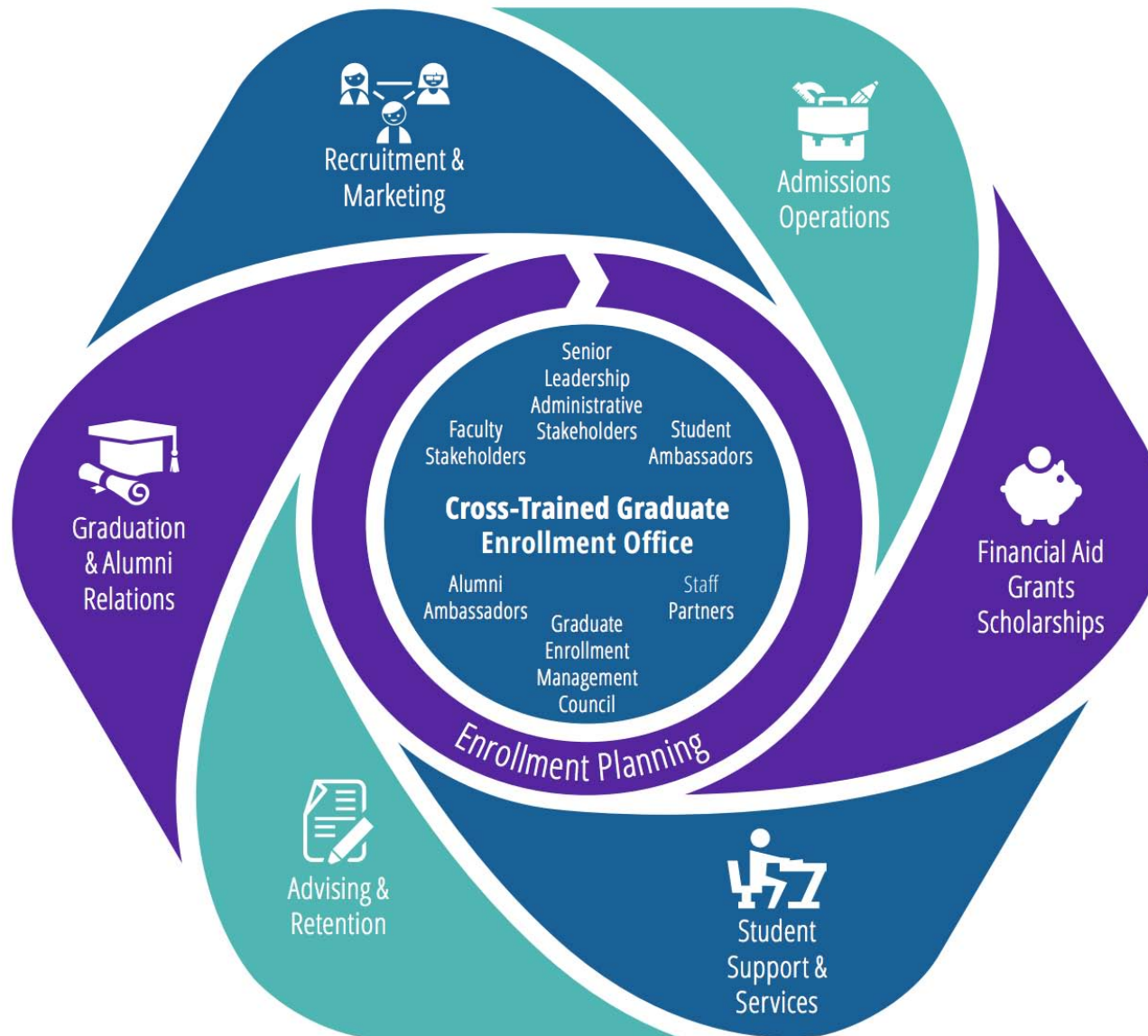


# Interdependent Model in GEM

Practice of “*silo’ing*” aspects of the student lifecycle



# Integrated Interdependence in GEM



# **Integrated Interdependence Critique**

- Model makes sense for smaller schools and academic units but what about large institutions?
- Concerns of senior leadership's buy-in at the graduate level
- Is it utopian to expect individuals to be cross-trained?
- Role definition
- Staffing levels

# Integrated Interdependence in “Nexus”



# **Nexus Model of Integrated Interdependence**

- Academic units within single institution may have varying levels of dependency on central support
- Central GEM office serves as nexus between senior leadership and academic unit
  - Coordination
  - Collaboration
  - Advocacy
- Unify all aspects of the graduate student life cycle as coordinated entity
  - Enhanced visibility to leadership



University at Buffalo *The State University of New York*

REACHING OTHERS

# State University of New York University at Buffalo: Case Study

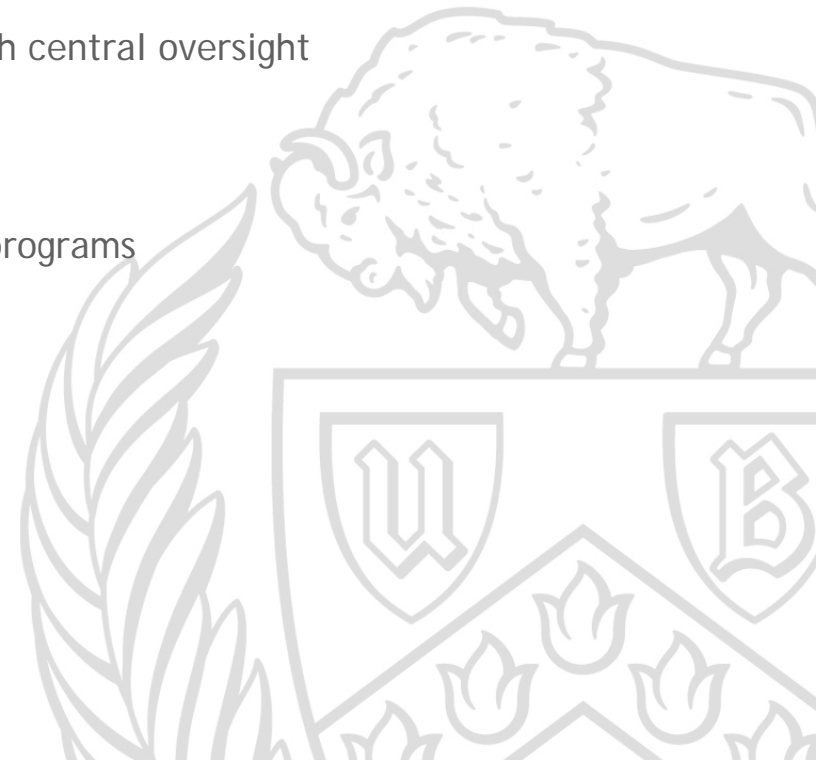
## Foundational Imperatives for Graduate Enrollment Management



A tradition of excellence, a vision for the future

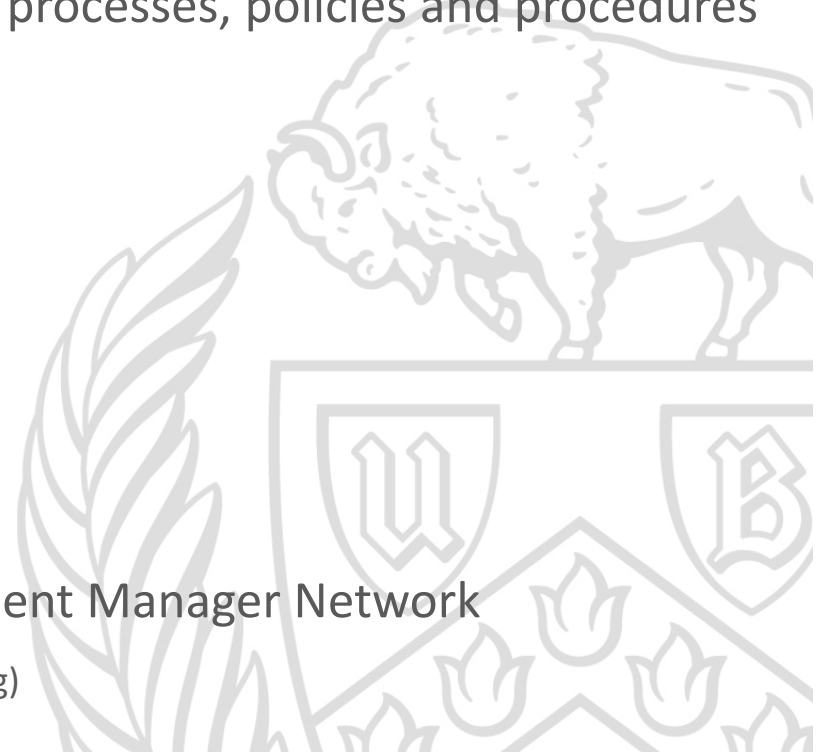


- Largest institution of 64 SUNY campuses,
  - Member of American Association of Universities (AAU)
  - One of the Top 50 best public universities in the nation
  - Research Intensive
- Student body 29,850
  - 19,831 Undergraduate
  - 10,019 Graduate/Professional
    - Graduate admissions decentralized with central oversight
    - 3,100 International
- 13 schools/colleges
  - Over 300 graduate and professional degree programs



# UB Graduate Enrollment Management Services

- 4 C's (Confirmation, Coordination, Collaboration, Communication)
  - Comprehensive grad/professional admission and enrollment data set
    - Accessible; Strategic Data Repository; Data driven decision making
    - Campus updates, enrollment projections, admissions surveys
  - Strong infrastructural support of business processes, policies and procedures
    - Graduate Online Application System (GrAdMIT)
      - Self-Managed Application Process
      - Coordinated Admissions Communications
    - Graduate and Professional Registrar functions
      - Enhanced onboarding processes
      - Improved data integrity
  - Graduate and Professional School Enrollment Manager Network
    - All units not created equal (Unit based GEM emerging)





# UB Graduate Enrollment Management Services

- Graduate Admissions Oversight
  - Policies, procedures, exception requests (UGPA, TOEFL, GRE, etc.)
- Advocacy

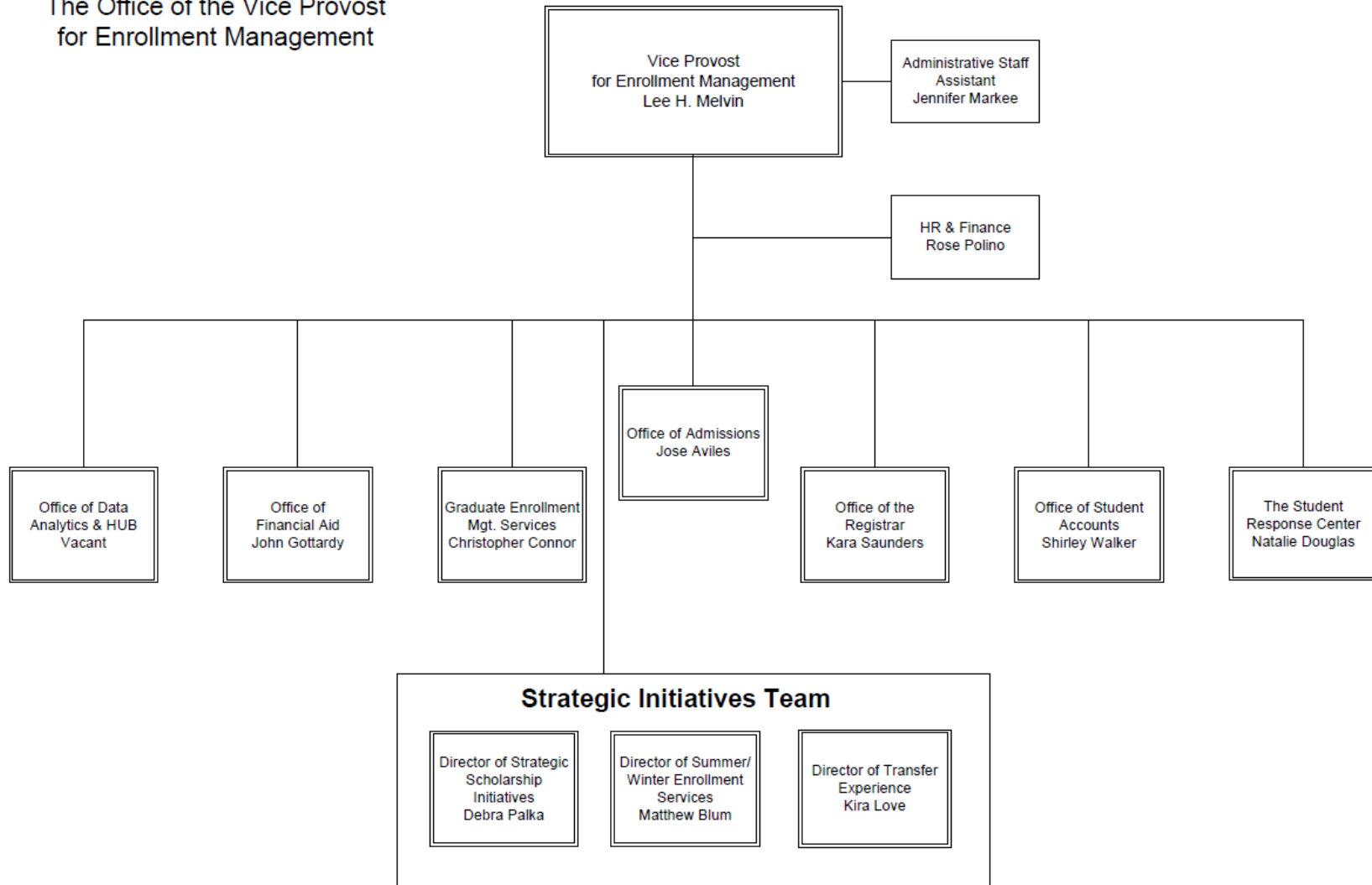




University at Buffalo

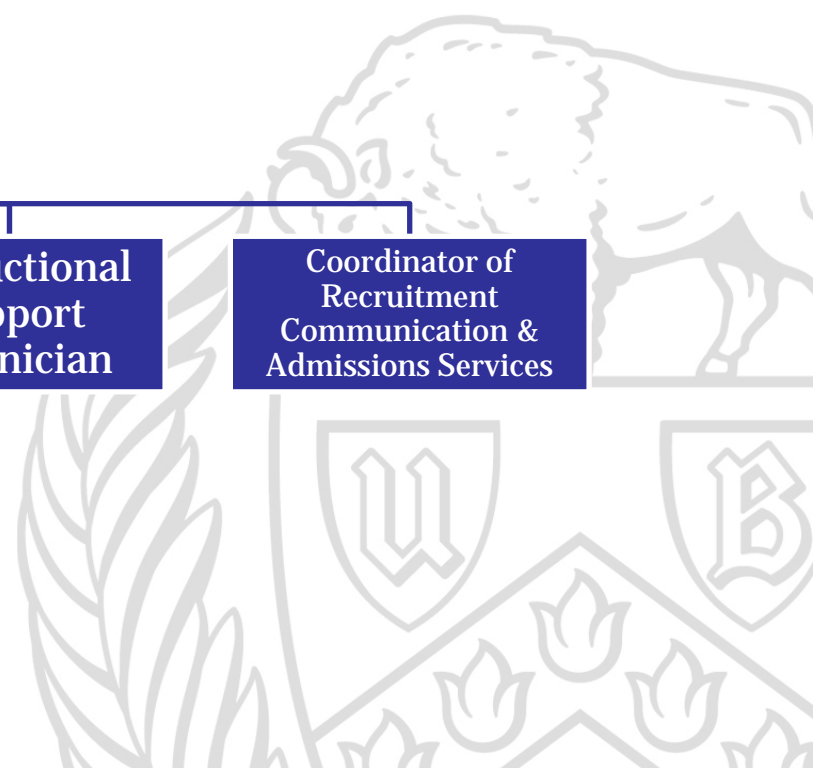
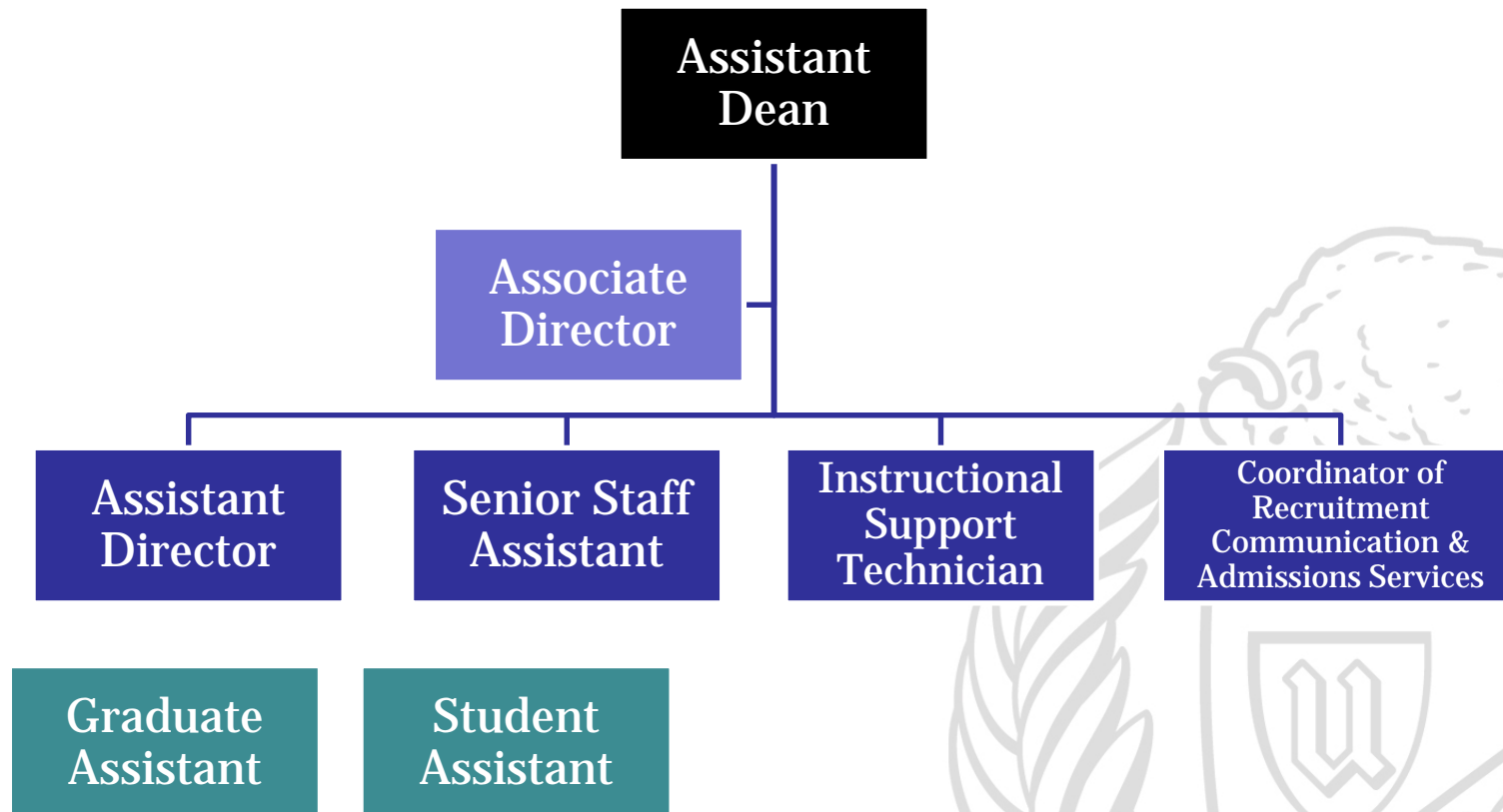
The State University of New York

The Office of the Vice Provost  
for Enrollment Management





# Organization Structure 2015





# Integrated Interdependence in “Nexus”





# SGEM: What does our data say?

All Graduate and Professional Programs									
Schname	Total2014	Total2015	Total%	Comp2014	Comp2015	Comp%	Offers2014	Offers2015	Offers%
COLLEGE OF ARTS AND SCIENCES	3,330	3,033	-9%	2,584	2,265	-12%	902	892	-1%
GRADUATE SCHOOL OF EDUCATION	1,271	976	-23%	811					
ROSWELL PARK CANCER INSTITUTE	238	231	-3%	175					
SCHOOL OF ARCHITECTURE AND PLANNING	456	460	1%	325					
SCHOOL OF DENTAL MEDICINE	3,409	2,954	-13%	3,215					
SCHOOL OF ENGINEERING AND APPLIED SCIENCES	8,038	7,398	-8%	6,574					
SCHOOL OF MANAGEMENT	2,884	2,981	3%	2,144					
SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES	4,901	4,988	2%	4,109					
SCHOOL OF NURSING	102	100	-2%	41					
SCHOOL OF PHARMACY AND PHARMACEUTICAL SCIENCES	1,066	889	-12%	920					
SCHOOL OF PUBLIC HEALTH AND HEALTH PROF	827	828	0%	644					
SCHOOL OF SOCIAL WORK	597	604	1%	352					
SUNY BUFFALO LAW SCHOOL	1,068	996	-7%	979					
<b>Total</b>	<b>28,127</b>	<b>26,438</b>	<b>-6%</b>	<b>22,873</b>	<b>2</b>				



Country	SEMESTER									
	2004 Fall	2005 Fall	2006 Fall	2007 Fall	2008 Fall	2009 Fall	2010 Fall	2011 Fall	2012 Fall	2013 Fall
UNITED STATES OF AMERICA	8,600	8,946	9,972	8,855	8,124	9,299	16,019	15,962	15,001	
INDIA	2,483	2,189	2,876	2,797	3,923	3,881	3,949	3,896	4,149	
CHINA	1,374	1,795	2,296	2,812	3,098	3,485	3,864	4,389	4,671	
TAIWAN	668	869	934	855	561	544	382	344	305	
REPUBLIC OF KOREA (SOUT)	654	596	578	558	460	478	427	535	537	
CANADA	367	364	359	360	383	280	687	815	578	
TURKEY	117	125	129	138	117	111	95	108	97	
IRAN	49	78	88	116	182	355	408	582	607	
PAKISTAN	84	69	77	88	78	83	73	104	106	
INDONESIA	121	112	102	80	95	97	73	101	122	
JAPAN	114	91	86	79	68	58	64	43	36	
SAUDI ARABIA	28	53	79	70	67	84	129	212	246	
THAILAND	40	44	41	51	33	26	39	37	18	
GHANA	47	66	33	47	32	37	60	63	83	
MALAYSIA	34	61	36	47	42	35	26	23	27	
NEPAL	49	47	36	48	51	49	62	42	68	
BANGLADESH	13	16	17	13	17	13	16	17	13	

NY ZipCode Map - 2012 Fall

ZIP	SEMESTER									
	2004 Fall	2005 Fall	2006 Fall	2007 Fall	2008 Fall	2009 Fall	2010 Fall	2011 Fall	2012 Fall	2013 Fall
14221	58	58	58	38	44	33	106	226	243	
14051	27	27	26	12	17	24	57	121	144	
14226	37	32	18	24	26	24	63	155	136	
14150	20	12	19	10	11	17	38	91	116	
14127	19	21	21	14	15	14	28	95	113	
14120	26	28	23	13	16	14	40	105	112	
14094	29	22	27	26	29	28	39	107	109	
14228	24	25	18	14	19	22	39	93	106	
14075	23	36	35	29	22	12	45	88	104	
14224	25	25	19	6	18	16	35	88	98	
14222	25	16	12	19	12	11	27	60	88	
14216	23	14	11	9	13	13	26	81	87	
14215	17	19	11	11	8	18	23	89	84	
14214	17	20	30	14	13	9	30	83	78	
14223	17	22	11	13	12	14	25	79	77	
14217	15	18	13	12	11	14	29	77	74	
14086	11	11	11	6	6	6	14	64	64	

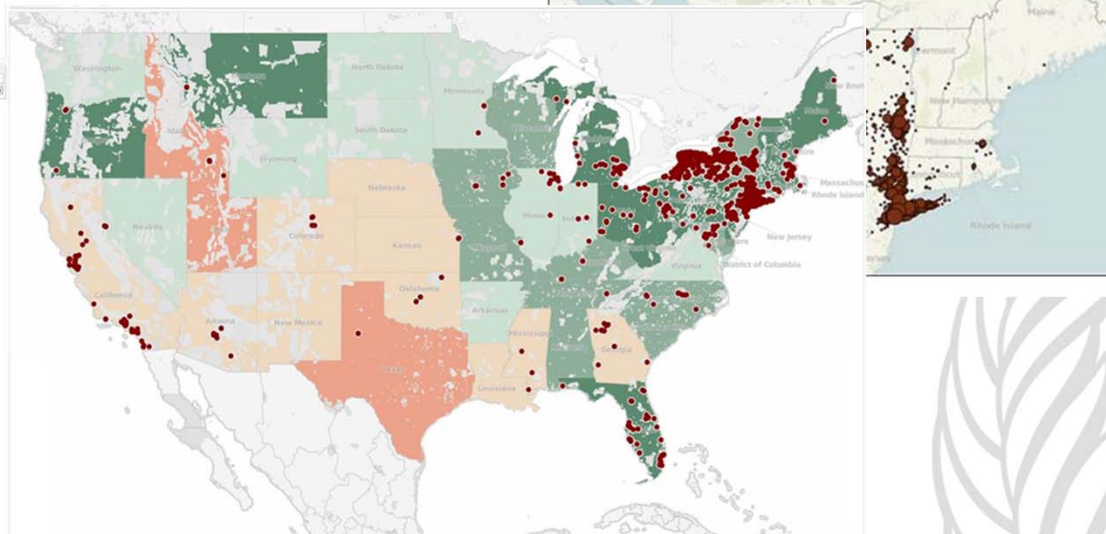


Tableau Data Visualization Tool



# SGEM: Data Driven Decisions

- Allows the evaluation of strategies and tactics by looking at different variables. This can help with marketing and recruitment strategies ROI over a specific period of time

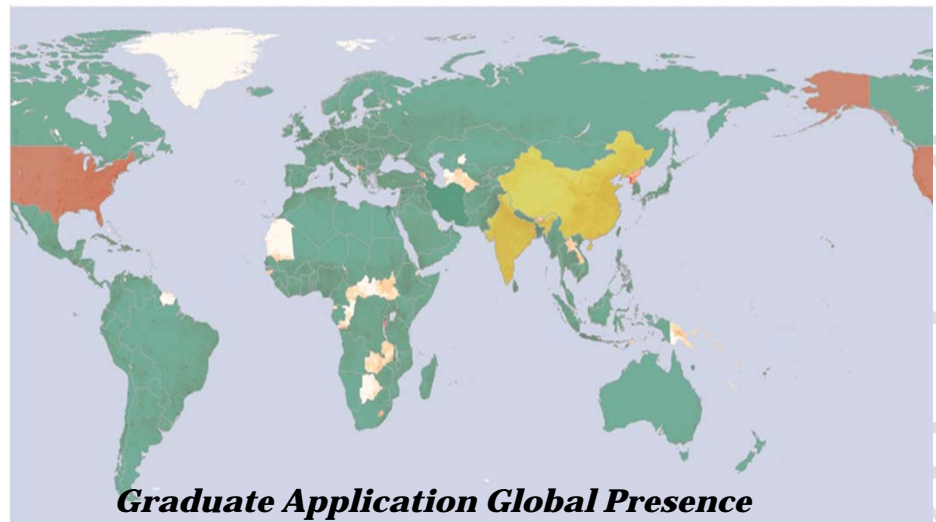
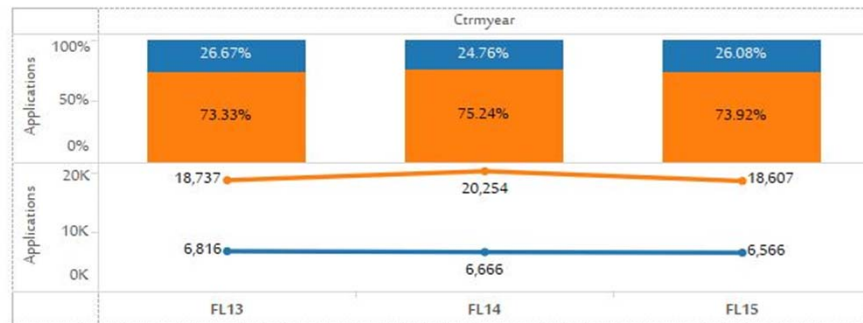
Graduate and Professional Applicants ,In-state and Out-of-state Applications  
 Fall Terms 2013-2015

University View

	In-state			Out-of-state		
	FL13	FL14	FL15	FL13	FL14	FL15
No. of Applications	6,816	6,666	6,566	18,737	20,254	18,607
% Difference		-2.20%	-1.50%		8.10%	-8.13%

NYS  
■ In-state  
■ Out-of-state

In-State/Out-State



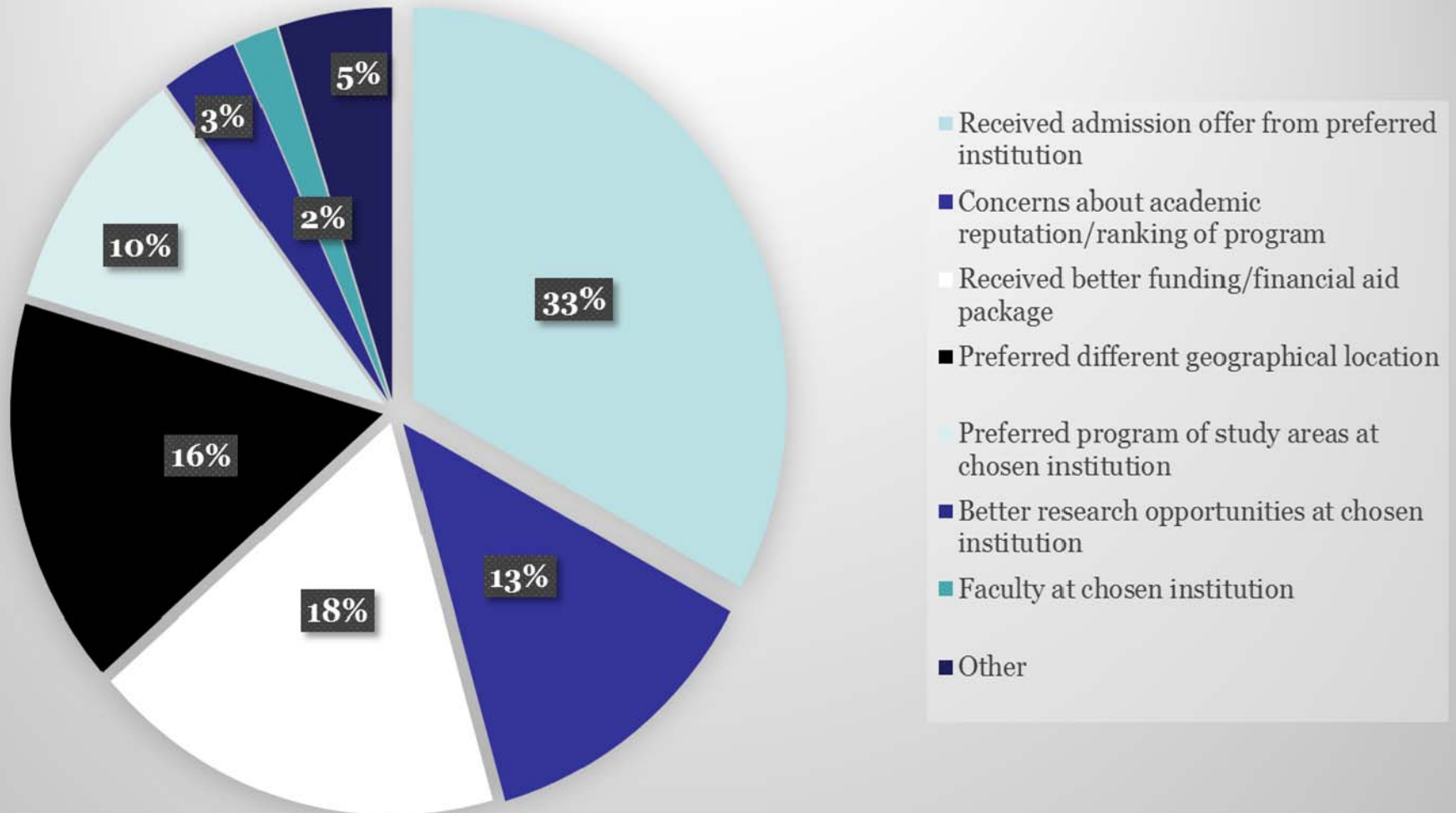
**Graduate Application Global Presence  
 Map**

**2015-** Daily Automated Reports via Tableau



# SGEM: What are our applicants saying?

## What was the MOST IMPORTANT factor in your decision?





# SGEM: Where are they going? Why?

NATIONAL STUDENT CLEARINGHOUSE

User Login FTP Login Careers Contact Us

About The Clearinghouse

Colleges & Universities

High Schools

Education Finance Providers

Degree & Enrollment Verifiers

Order-Track-Verify

Home > Colleges & Universities > StudentTracker

Share



Audit Resource Center

Clearinghouse Academy

DegreeVerify

Electronic Transcript Exchange Registry

Enrollment Reporting for Student Aid Compliance

EnrollmentVerify

Gainful Employment Reporting

Meteor Network

Research Services

SPEEDE Server

Student Self-Service

**StudentTracker>**

StudentTracker for Outreach

Transcript Services

Fee Schedule

## StudentTracker

[Using StudentTracker](#) / [Cohort Query, VSA & SAM](#) / [Case Studies](#) / [Testimonials](#) / [FAQs](#) / [How to Subscribe](#)

StudentTracker<sup>SM</sup> is the only nationwide source of college enrollment and degree data. More than 3,600 colleges and universities — enrolling 98% of all students in public and private U.S. institutions — regularly provide enrollment and graduation data to the Clearinghouse. Through StudentTracker, you can query our participating institutions' student data to perform all types of educational research and analyses — quickly, easily and affordably.

If your institution participates in our free [DegreeVerify](#) and [EnrollmentVerify](#) services and reports [additional data elements](#), you will receive StudentTracker at no cost.

### What StudentTracker Includes

- Access to nationwide postsecondary enrollment and graduation data for your student group
- All types of postsecondary institutions: in-state, out-of-state, two-year, four-year, public, private, trade school, vocational, etc.
- Student unit level data that you can combine with your own data to analyze educational trends and patterns by any variable you choose
- Unlimited individual student look-ups via the Web
- Secure and easy batch file exchanges
- [Free and discounted options available](#)

### Why You Should Put StudentTracker to Work for You

- Identify enrollment trends & patterns
- Track transfer student enrollment nationwide
- Improve your ability to target, recruit & retain students
- Fulfill federal reporting requirements
- Verify & correct cohort default rates
- Determine a student's financial need level
- Plan curriculum modifications & institutional alliances



### RESOURCES

- [Types of Searches](#)
- [Sample Report](#)
- [Brochure](#)
- [Additional Data Elements](#)
- [Research Services Web Site](#)

### ARE YOU WITH AN EDUCATIONAL ORGANIZATION?

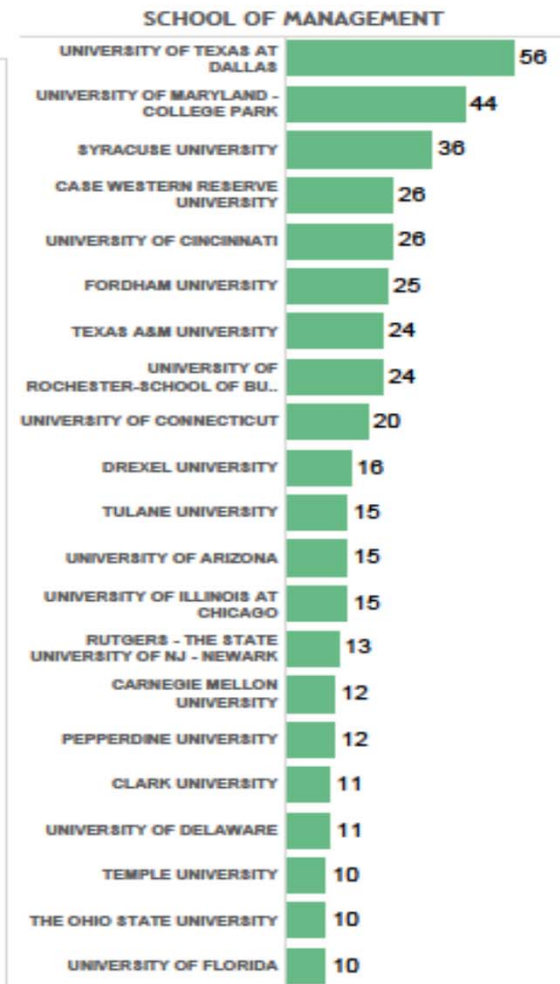
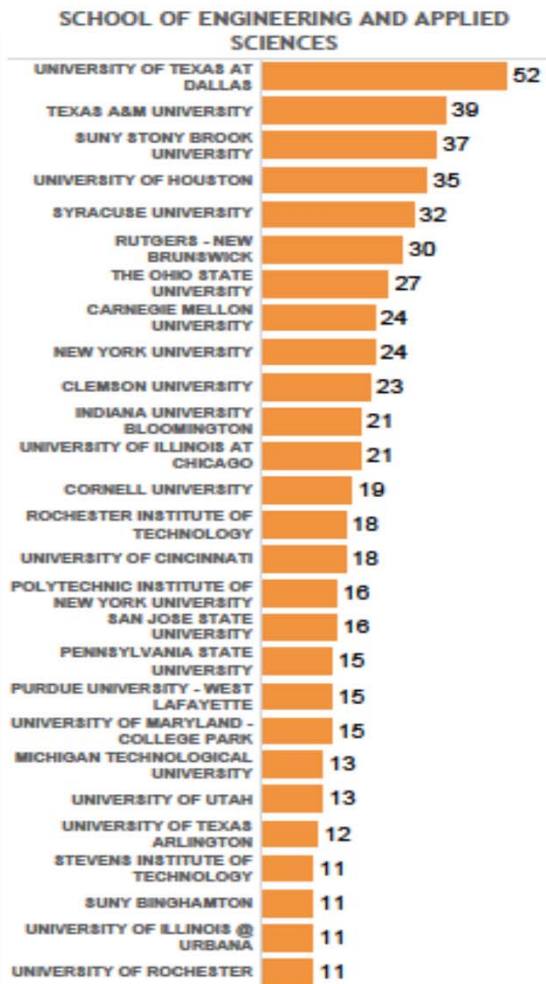
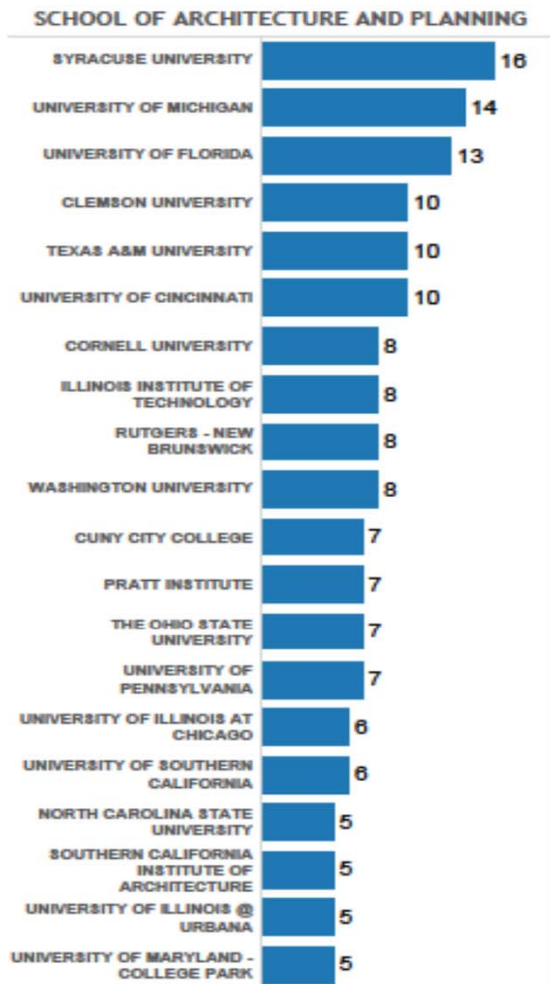
[Contact us](#) to hear more about our services for educational organizations, like government agencies and others.





# LEVERAGING GRADUTE STUDENT NATIONAL CLEARINGHOUSE DATA

## Major Competitors for Masters Students Who Are Accepted to UB and Enroll Elsewhere





# SGEM: Peer Quantitative Analysis Applications, Acceptances, Enrollment, etc.



## Statistics & Reports

- Graduate School Reports
- Admissions Statistics
- Enrollment Statistics
- Exit Questionnaire Summaries
- Financial Support Statistics
- Primary Source of Funding Statistics
- Graduate Degrees Granted
- Graduate Student Statistical Summaries
- Notes

Share |

### Make a Gift

Support Graduate Students



### The Graduate School

G-1 Communications Building  
Box 353770  
Seattle, Washington 98195-3770

Phone: 206.543.5900  
Fax: 206.685.3234

## Graduate School Statistics

### Graduate Admissions Statistics

Note: Graduate School Report 2 issued July 2010 uses methods that differ from reports on this page. In contrast to Report 2, these reports include withdrawn and deferred applications, report only for Autumn Quarter, do not count concurrent students separately for each application major, and count all interdisciplinary graduate programs under the Graduate School. For further information see [Report 2, Data Sources and Methods](#).

#### Current

- ▶ [Autumn 2014](#)
- ▶ [Autumn 2014 \(Ethnic Breakdown\)](#)
- ▶ [Autumn 2014 \(Major/Pathway Breakdown\)](#)

#### Archive

- ▶ [Autumn 2013](#)
- ▶ [Autumn 2013 \(Ethnic Breakdown\)](#)
- ▶ [Autumn 2013 \(Major/Pathway Breakdown\)](#)
- ▶ [Autumn 2012](#)
- ▶ [Autumn 2012 \(Ethnic Breakdown\)](#)
- ▶ [Autumn 2012 \(Major/Pathway Breakdown\)](#)
- ▶ [Autumn 2011](#)
- ▶ [Autumn 2011 \(Ethnic Breakdown\)](#)
- ▶ [Autumn 2011 \(Major/Pathway Breakdown\)](#)
- ▶ [Autumn 2010](#)
- ▶ [Autumn 2010 \(Ethnic Breakdown\)](#)
- ▶ [Autumn 2010 \(Major/Pathway Breakdown\)](#)
- ▶ [Autumn 2009](#)
- ▶ [Autumn 2009 \(Ethnic Breakdown\)](#)
- ▶ [Autumn 2009 \(Major/Pathway Breakdown\)](#)



# SGEM: Peer Assessment...Feeder pipelines



## Welcome to IPEDS

the primary source for data on colleges, universities, and technical and vocational postsecondary institutions in the United States

### COLLEGE Navigator

Start a college search here. Find institutions, compare them side-by-side, print and save the results, and more.



### IPEDS DATA CENTER

Start data analysis here. Compare institutional data, create reports, download data files, and more. From the Data Center you can also access other IPEDS tools such as the IPEDS Trend Generator and IPEDS Table Library.



### IPEDS TABLES LIBRARY

Find tables here. View and download national and state level data tables on enrollments, graduation rates, institutional prices, student financial aid, faculty and staff, and more.



### IPEDS RESOURCES

Look for answers here. Browse archived survey forms, frequently asked questions, information on changes in race/ethnicity reporting, and more.



### This Week in IPEDS

March 17, 2015

There are three items this week:

1. Collection Schedule for 2015-16
2. College Navigator Updated
3. Custom Comparison Groups for the 2015 Data Feedback Report

### ANNOUNCEMENTS & ALERTS

March 12, 2015 - IPEDS Training Announcement: Upcoming Workshops

The Association for Institutional Research (AIR) announces six upcoming workshops related to IPEDS.

January 12, 2015 - IPEDS Training Opportunities

The Association for Institutional Research (AIR) announces six upcoming workshops related to IPEDS. These face-to-face training sessions are geared toward IPEDS data providers and users and are taught by experienced practitioners from across the country. The workshops are hosted by AIR or co-hosted by AIR and other higher education organizations, with funding provided by the National Center for Education Statistics (NCES).

December 4, 2014 - IPEDS Training Announcement: 3 Keyholder Trainings in January 2015

The Association for Institutional Research (AIR) is hosting 3 one-day IPEDS Workshops for new Keyholders (less than two years) during the month of January. Financial support for these workshops is provided by the National Center for Education Statistics (NCES).

[All Announcements & Alerts >>](#)



# SGEM: Peer Qualitative Analysis Costs, Delivery, Curriculum

PROGRAMS

ADMISSIONS

STUDENTS

ALUMNI

ABOUT US

## News



### News

Category:

#### School News [VIEW MORE ▶](#)

GSAS Students in the News  
*March 27, 2015*

GSAS Celebrates Graduates in 2014 Convocation Ceremonies  
*May 20, 2014*

New Graduate Student Center Opens in Philosophy Hall  
*April 08, 2014*

#### Announcements [VIEW MORE ▶](#)

Nobel Laureate to Join Ph.D. Students in Skype Conversation  
*March 24, 2015*

Fulbright Hays Doctoral Dissertation Research Abroad  
*March 03, 2015*

Career Pathways for Ph.D.s Series  
*January 21, 2015*

#### Alumni News [VIEW MORE ▶](#)

Physicist Val Fitch, Ph.D. '54, Passes Away at 91  
*March 27, 2015*

Statistics Ph.D. Student Debunks Rat Myth

## Columbia University Launches Online Graduate Programs to Meet Global Demand for Big Data Careers

*February 25, 2013*

### First online classes toward an M.A. in Statistics and M.S. in Actuarial Science scheduled for Fall 2013.

Columbia University will offer online versions of its **Master of Arts in Statistics** and **Master of Science in Actuarial Science** programs beginning in fall 2013. For the first time, students around the world can further their quantitative knowledge with a degree from Columbia while continuing to reside in their communities and advance their personal and professional goals.

Starting in the fall of 2013, students will have the option of completing these two innovative programs on campus, online or in a hybrid format (a combination of on-campus and online courses). These programs are the result of collaboration among **Columbia's Department of Statistics, Graduate School of Arts and Sciences, and School of Continuing Education.**

Columbia's new programs will be offered using the School of Continuing Education's online learning platform, which is designed to encourage "knowledge networking" through cutting-edge social technologies that create a sense of community among students and faculty. Similar to campus-based classes, each online course is anchored by weekly "live" face-to-face lecture sessions conducted by University faculty. Between the live weekly sessions, students and faculty communicate regularly through a unique social network that extends and enhances the impact of traditional learning experiences. All online courses include a combination of live events, asynchronous community-driven activities, and self-study.

"We are delighted to be able to bring the experience of a rigorous Columbia graduate education online," said Carlos J. Alonso, Dean of the Graduate School of Arts and Sciences and Vice President for Graduate Education. Dean of Columbia's School of Continuing Education Kristine Billmyer noted, "Highly qualified students from around the country and all over the world who may not be able to relocate to New York to enroll in these programs will now have the opportunity to engage with our faculty and each other in a unique online learning environment."

Columbia's initiative comes as domestic and foreign organizations face a severe shortage of



# SGEM: National Associations/Accrediting Bodies



LOGIN

CREATE NEW ACCOUNT

FUTURE JD STUDENTS

FUTURE LLM STUDENTS

LAW SCHOOLS

PRELAW ADVISORS

LSAC RESOURCES

## LSAC RESOURCES

- Home
- Data
- Dates & Events >
- Grants >
- Publications >
- Research >
- LSAC Account Number Lookup

FOLLOW US ON twitter

Like 2,722 people like this. Sign Up to see what your friends like.

## DATA

### ADMITTED APPLICANTS BY ETHNIC & GENDER GROUP

The current volume summary of admitted applicants by ethnic and gender group is available below. However, due to significant [changes in data collection methods](#), race/ethnicity data collected after 2009 are not directly comparable to prior data. [Data from 2000-2009](#) are still available but have been archived separately.

Ethnic data now incorporate maximum reporting, which means that candidates may select multiple ethnicities. All selections are counted in each ethnic group. As a result of this overlap, summing the ethnic category totals will yield a larger number than is represented by the "All" group total.

The following data include deferrals. Deferrals are defined as "admitted applicants who were granted a postponed enrollment for a subsequent term."

	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014
<b>All</b>	60,400	55,800	50,600	45,700	43,500
% change from prior year		-7.7%	-9.2%	-9.8%	-4.9%

#### Summary of Admitted Applicants

##### Race/Ethnicity

<b>American Indian/Alaska Native</b>	780	900	900	930	890
% change from prior year		16.2%	0.0%	2.7%	-4.0%
<b>Asian</b>	5,310	5,450	5,050	4,620	4,650
% change from prior year		2.6%	-7.3%	-8.5%	0.7%
<b>Black/African American</b>	4,680	4,610	4,860	4,670	4,760
% change from prior year		-1.3%	5.3%	-3.9%	2.0%
<b>Caucasian/White</b>	41,410	35,920	35,620	31,790	29,330
% change from prior year		-13.3%	-0.8%	-10.8%	-7.7%
<b>Hispanic/Latino</b>	4,430	4,560	4,700	4,630	4,550
% change from prior year		3.0%	2.9%	-1.3%	-1.8%
<b>Native Hawaiian/Other Pacific Islander</b>	160	180	160	200	170
% change from prior year		10.4%	-8.9%	21.3%	-13.6%
<b>Puerto Rican</b>	1,140	1,220	1,060	1,130	1,060
% change from prior year		7.8%	-13.2%	6.5%	-6.5%

##### Gender

<b>Female</b>	27,610	25,730	24,980	21,990	21,160
---------------	--------	--------	--------	--------	--------

# SGEM: International Trend Analysis

[Who We Are](#)

[What We Do](#)

[Our Global Reach](#)

[Research and Publications](#)

[Gateways for...](#)

[Home](#) » [Research and Publications](#) » [Open Doors](#) » [Data](#) » [International Students](#) » [Academic Level and Place of Origin](#) » 2012-14

[SHARE](#)

## Open Doors Data

### International Students: Academic Level and Place of Origin

[Return to all data for "International Students: Academic Level and Place of Origin"](#)



2012/13 - 2013/14

INTERNATIONAL STUDENTS BY ACADEMIC LEVEL AND PLACE OF ORIGIN, 2012/13 & 2013/14

Place of Origin	Undergraduate			Graduate			Non-degree			OPT		
	2012/13	2013/14	% Change	2012/13	2013/14	% Change	2012/13	2013/14	% Change	2012/13	2013/14	% Change
<b>SUB-SAHARAN AFRICA</b>	<b>16,999</b>	<b>17,531</b>	<b>3.1</b>	<b>9,131</b>	<b>9,060</b>	<b>-0.8</b>	<b>1,132</b>	<b>1,238</b>	<b>9.4</b>	<b>3,323</b>	<b>3,284</b>	<b>-1.2</b>
<b>East Africa</b>	<b>4,177</b>	<b>4,160</b>	<b>-0.4</b>	<b>2,483</b>	<b>2,349</b>	<b>-5.4</b>	<b>166</b>	<b>172</b>	<b>3.6</b>	<b>935</b>	<b>868</b>	<b>-7.2</b>
Burundi	86	91	5.8	18	19	5.6	10	8	-20.0	10	4	-60.0
Djibouti	8	3	-62.5	4	2	-50.0	0	2	-	1	0	-100.0
Eritrea	30	27	-10.0	67	55	-17.9	2	5	150.0	7	10	42.9
Ethiopia	819	888	8.4	462	444	-3.9	24	37	54.2	158	147	-7.0
Kenya	1,813	1,658	-8.5	1,117	1,018	-8.9	59	72	22.0	527	453	-14.0
Rwanda	389	493	26.7	123	157	27.6	25	17	-32.0	28	53	89.3
Seychelles	11	11	0.0	4	4	0.0	1	0	-100.0	0	1	-
Somalia	24	13	-45.8	2	1	-50.0	2	1	-50.0	2	0	-100.0



# SGEM: CGS Trend Analysis

## Graduate Enrollment and Degrees: 2003 to 2013





# SGEM: Occupational Outlook

## OCCUPATIONAL OUTLOOK HANDBOOK

**Go**

[Occupational Outlook Handbook >](#)

### Home

[EN ESPAÑOL](#)

This is a guide to career information about hundreds of occupations!

#### OCCUPATION GROUPS

- Architecture and Engineering
- Arts and Design
- Building and Grounds Cleaning
- Business and Financial
- Community and Social Service
- Computer and Information Technology
- Construction and Extraction
- Education, Training, and Library
- Entertainment and Sports
- Farming, Fishing, and Forestry
- Food Preparation and Serving
- Healthcare
- Installation, Maintenance, and Repair
- Legal
- Life, Physical, and Social Science
- Management
- Math
- Media and Communication
- Military
- Office and Administrative Support
- Personal Care and Service
- Production
- Protective Service

#### SELECT OCCUPATIONS BY

#### FEATURED OCCUPATION



### *Dietitians and Nutritionists*

Dietitians and nutritionists are experts in food and nutrition. They advise people on what to eat in order to lead a healthy lifestyle or achieve a specific health-related goal.

[view profile >](#)

#### A-Z INDEX

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

#### BROWSE OCCUPATIONS

**Highest Paying**

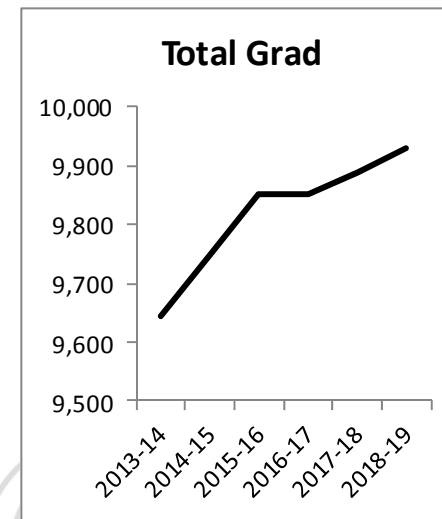
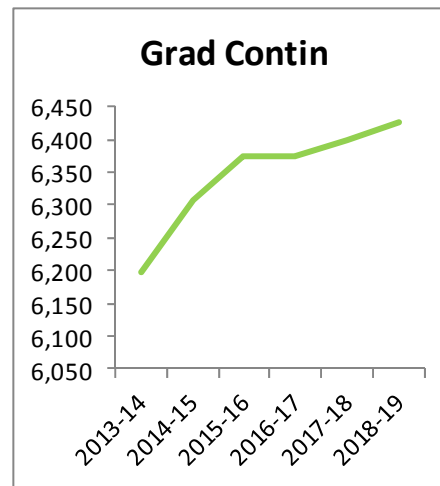
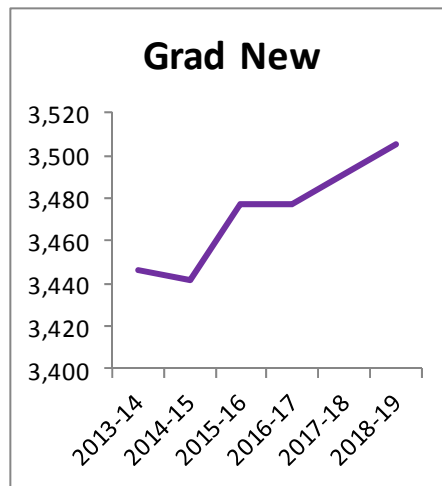
**Fastest Growing (Projected)**

**Most New Jobs (Projected)**

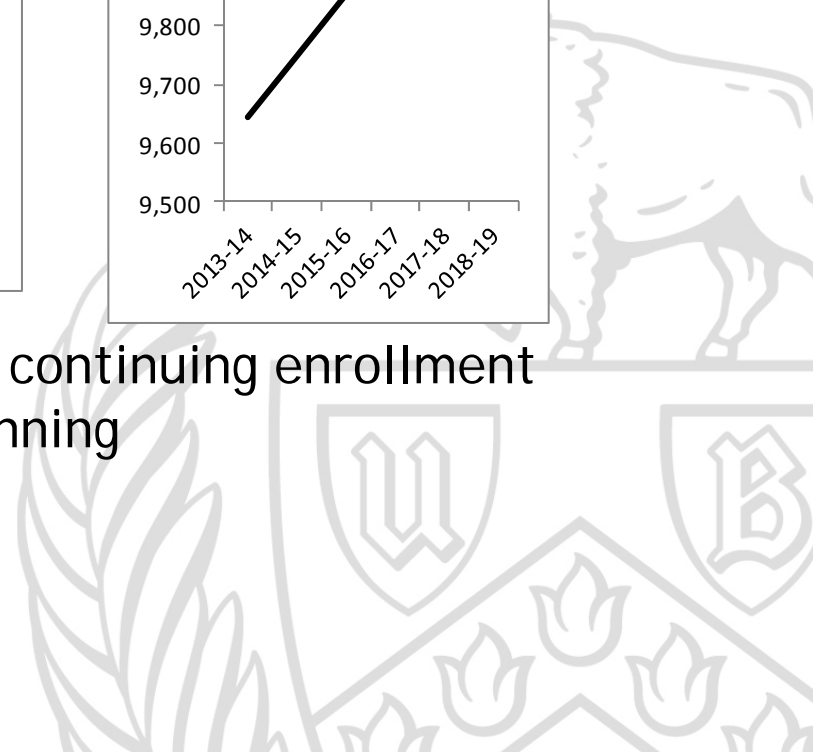




## SEM: Five Year Basic Graduate Enrollment Plan

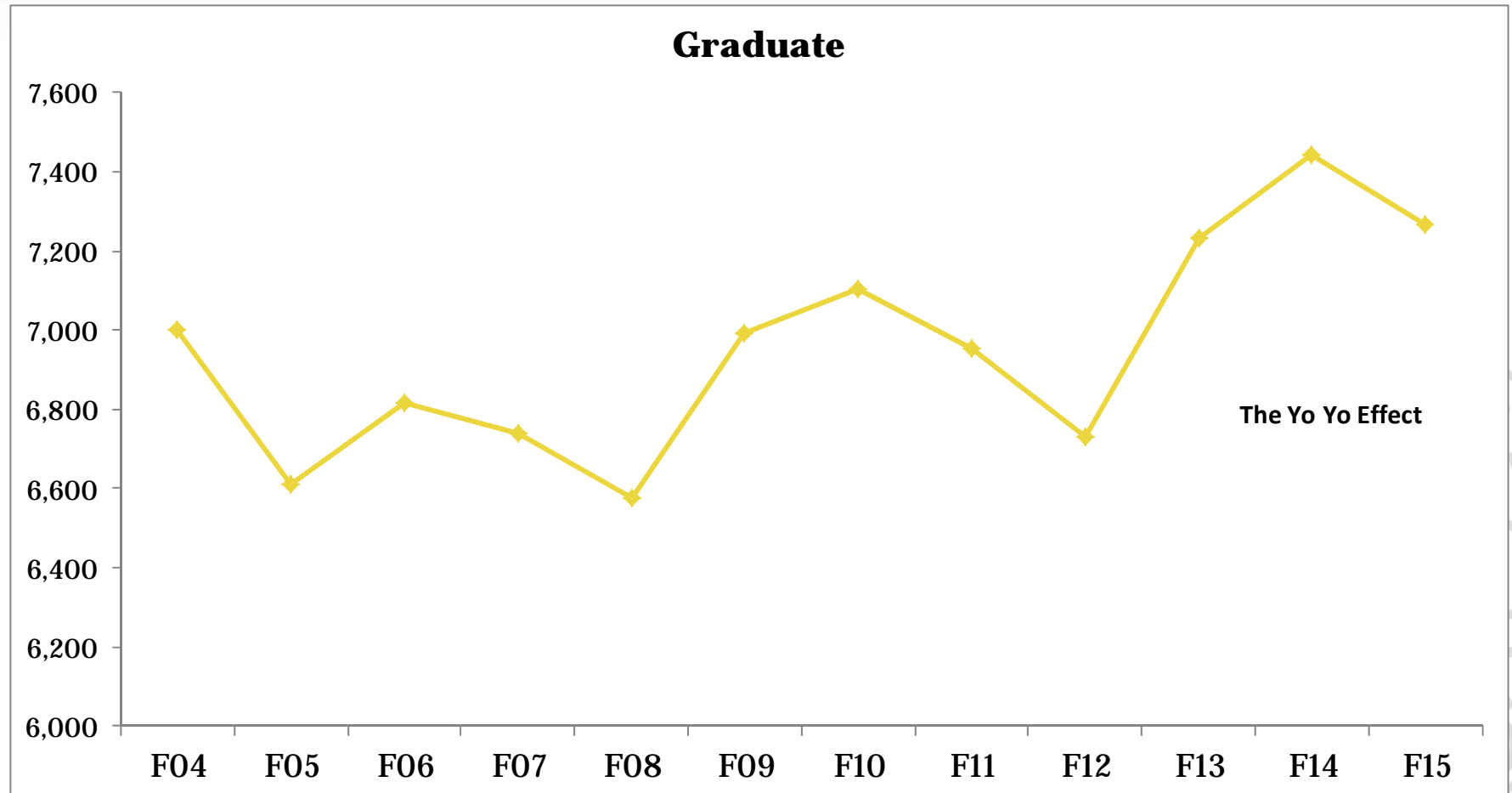


Need to model graduate level new and continuing enrollment patterns in longer term enrollment planning





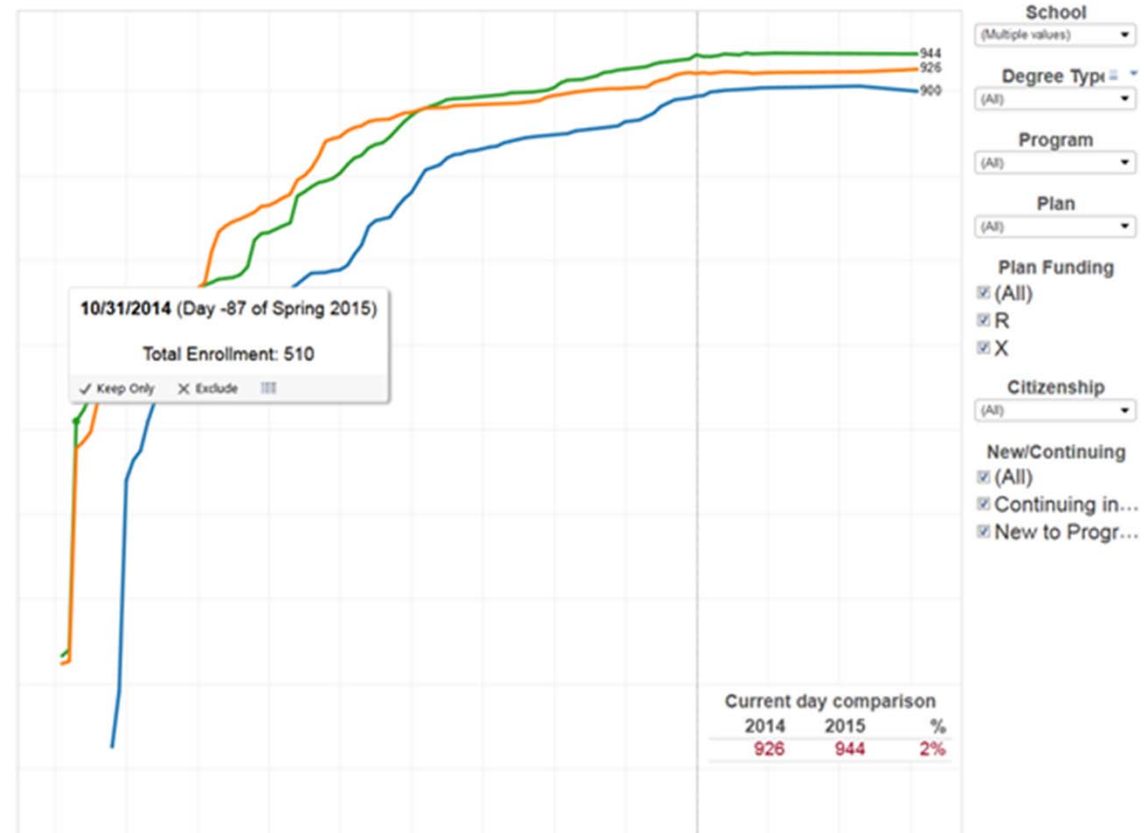
## SGEM: Graduate Enrollment





# Understanding Enrollment Behaviors

- Dynamic filters
- Automatic updates
- Visual

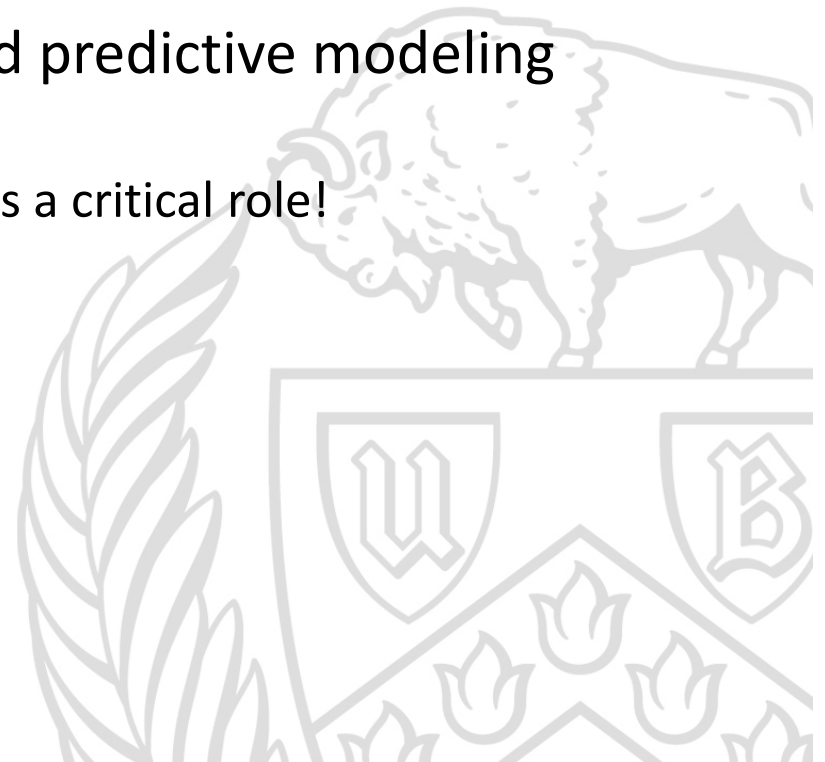


Enrollment Tracking Reports powered by Tableau



# SGEM: In-Cycle Graduate Enrollment Projections

- Academic unit based enrollment projections
  - Quantitative
    - Highly variable accuracy
  - Qualitative context/Summary
- Institutional/Academic unit hybrid predictive modeling of graduate enrollment
  - Continuing student enrollment plays a critical role!





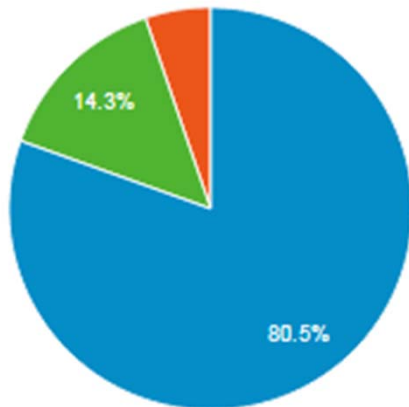
# Optimizing Communication Channels



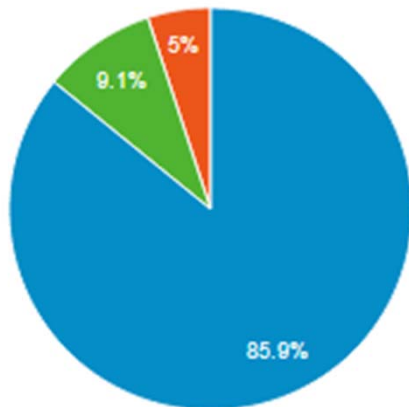
# Communication Outcomes

■ desktop 
 ■ mobile 
 ■ tablet

Sep 1, 2014 - Apr 1, 2015



Sep 1, 2013 - Apr 1, 2014



## Mobile Pageviews (Top 10)

Page	Pageviews
<a href="/Academics/academic_programs.html">/Academics/academic_programs.html</a>	
Sep 1, 2014 - Apr 1, 2015	54,028
Sep 1, 2013 - Apr 1, 2014	24,625
<b>% Change</b>	<b>119.40%</b>
<a href="/">/</a>	
Sep 1, 2014 - Apr 1, 2015	15,587
Sep 1, 2013 - Apr 1, 2014	13,928
<b>% Change</b>	<b>11.91%</b>
<a href="/Admissions/Electronic_Online_Application.html">/Admissions/Electronic_Online_Application.html</a>	
Sep 1, 2014 - Apr 1, 2015	13,013
Sep 1, 2013 - Apr 1, 2014	6,030
<b>% Change</b>	<b>115.80%</b>
<a href="/admissions.html">/admissions.html</a>	
Sep 1, 2014 - Apr 1, 2015	10,734
Sep 1, 2013 - Apr 1, 2014	4,524
<b>% Change</b>	<b>137.27%</b>
<a href="/Admissions/Admissions_Requirements.html">/Admissions/Admissions_Requirements.html</a>	
Sep 1, 2014 - Apr 1, 2015	10,461
Sep 1, 2013 - Apr 1, 2014	6,377
<b>% Change</b>	<b>64.04%</b>



# Accessibility

The Graduate School

WHY CHOOSE UB?

The University at Buffalo is New York State's leading public university, with state-of-the-art research and teaching facilities. | [Learn more about UB >](#)

OVER 300 PROGRAMS

Academic Programs

The University at Buffalo offers more than 300 graduate and certificate programs. Click on any of the links below to learn more, or contact us for more information.

INFORMATION FOR: Prospective Students Incoming Students Current Students

Financial Support News and Events About Us

Academic Programs

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S

**A**

- Accounting (M.S.)
- Adult Gerontology Clinical Nurse Specialist
- Adult Gerontology Nurse Practitioner
- Aerospace Engineering
- American Studies
- Anatomical Sciences
- Anthropology
- Applied Biostatistics
- Applied Economics -- Financial
- Applied Economics -- Health Services
- Applied Economics -- Information and Internet Economics
- Applied Economics -- International
- Applied Economics -- Law and Regulation
- Applied Economics -- Urban and Regional
- Applied Statistical Analysis
- Architecture
- Art History
- Arts Management
- Assistive and Rehabilitative Technology
- Audiology

**B**

- Behavioral Neuroscience
- Biochemistry
- Bioinformatics and Biostatistics
- Biological Sciences
- Biological Sciences (Cellular & Molecular Biology, Roswell)

The Graduate School

- + Admissions
- + Academics
- + Financial Support
- + News and Events
- + About Us

INFORMATION FOR

- + PROSPECTIVE STUDENTS
- + INCOMING STUDENTS
- + CURRENT STUDENTS
- + POSTDOCTORAL SCHOLARS
- + FACULTY & STAFF

INFO ABOUT

- > APPLY ONLINE
- > CONTACT US

WHY CHOOSE UB?



# Optimizing Communication Channels

## Academics

- Academic Deadlines
- Academic Programs
- Class Schedules
- Electronic Thesis & Dissertation (ETD) Submission
- Forms for Faculty & Staff
- Forms for Students
- Graduate Faculty Roster
- Graduation Requirements
- Our Academic Units
- Policies & Procedures
- Rankings

### Related Links

- > Apply Online
- > Technology

## SCHOOL OF ENGINEERING AND APPLIED SCIENCES

### Biomedical Engineering

Biomedical Engineering at UB is a vibrant, growing department that spans the Schools of Engineering & Medicine/Biomedical Sciences. BME offers a Master of Science (MS) degree and a Doctor of Philosophy (Ph.D.) degree. The M.S. program is designed to provide a fundamental/research-oriented program of advanced study for students wishing to enhance their knowledge and understanding within a specialized discipline. The Ph.D. degree provides an opportunity for students to pursue a program of research in a specialized area and to develop a dissertation that embodies the results of original research.

[Apply Now](#)



[Ask a question](#)

[Visit Departmental Site](#)

#### PROGRAM CONTACT

Cheryl Michalowski  
*Assistant to the Chair*  
 332 Bonner Hall Buffalo, NY  
 14260-1920  
 Email: [cherylmi@buffalo.edu](mailto:cherylmi@buffalo.edu)  
 Phone: (716) 645-8503  
 Fax: (716) 645-2207

MS
PhD

AVAILABLE INSTRUCTION OPTIONS	CREDITS REQUIRED	TIME TO DEGREE
 <b>IN PERSON</b>	 <b>FULL TIME</b>	<span style="font-size: 2em; font-weight: bold;">30</span> HOURS
		<span style="font-size: 2em; font-weight: bold;">1.5-2</span> YEAR(S)
Application Fee		\$75
At least one of the following tests are required for admission. Test and score requirements/exceptions vary by program. Contact the department for details.		GRE

\* Online programs/courses may require students to come to campus on occasion. Time to Degree and number of Credit Hours may vary based on Full Time/Part Time status, degree, track, and/or certification option chosen. Time to Degree is based on calendar year(s). Contact the department for details.







## Website and Optimization

- Primary: admissions and recruitment information... goal to drive traffic to academic unit pages/application.
- Improve overall look and feel as a promotional tool
- Reduce number of pages, redundancy and internal vernacular
- Migrated Graduate School internal documents to GEMS internal website ([grad.buffalo.edu/internal](http://grad.buffalo.edu/internal))
- Electronic Communications



# UB: Challenges to Institutional Graduate Enrollment Planning

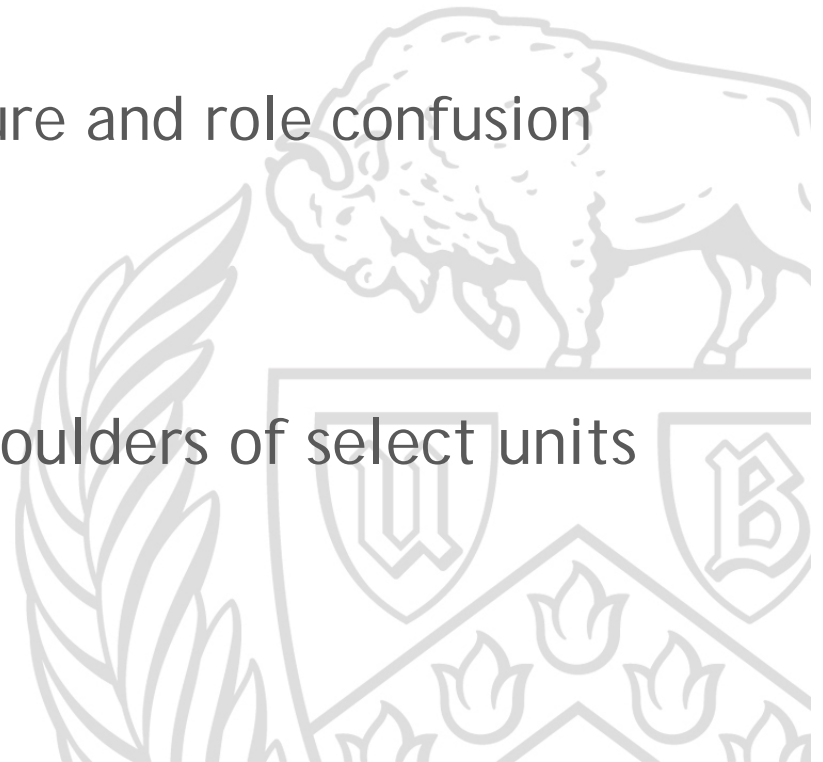
- Premium Accreditation Standards
  - Capacity
- Physical Space
  - Labs
- Lack of emphasis and understanding of new (yield) and continuing (retention)





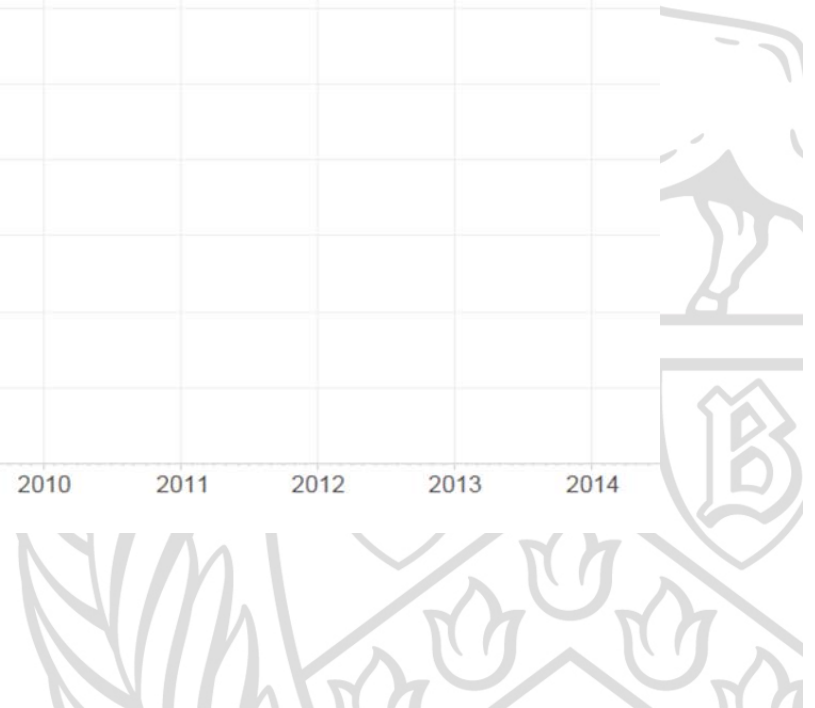
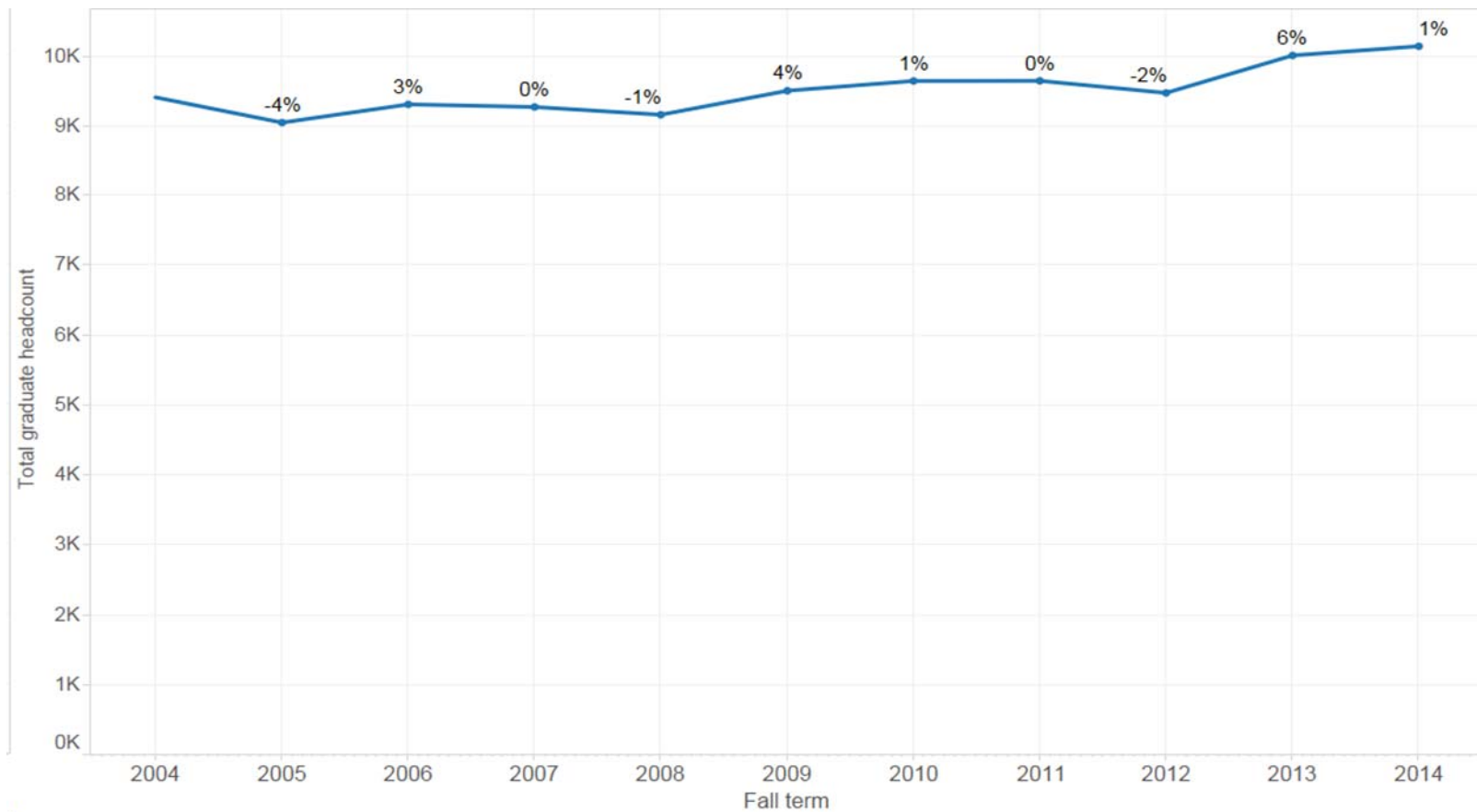
## UB: Challenges to Institutional Graduate Enrollment Planning

- Graduate (niche) vs. Undergraduate (institution)
  - Program length highly variable
- Over 300 individual graduate programs...
- Occasional organizational structure and role confusion
  - Central Graduate School
  - Enrollment Management
  - Academic Unit/Program
- Enrollment plan balanced on shoulders of select units





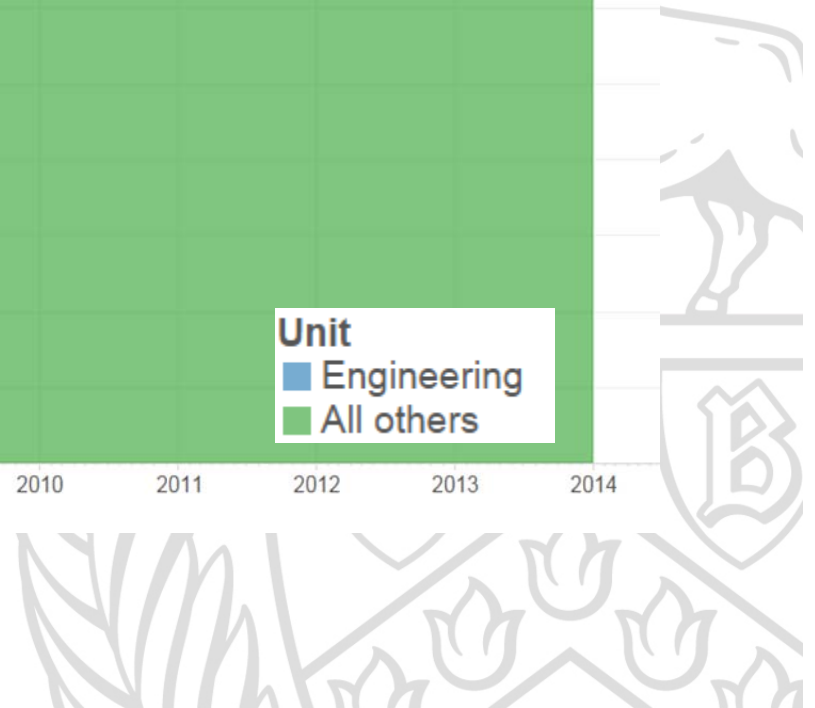
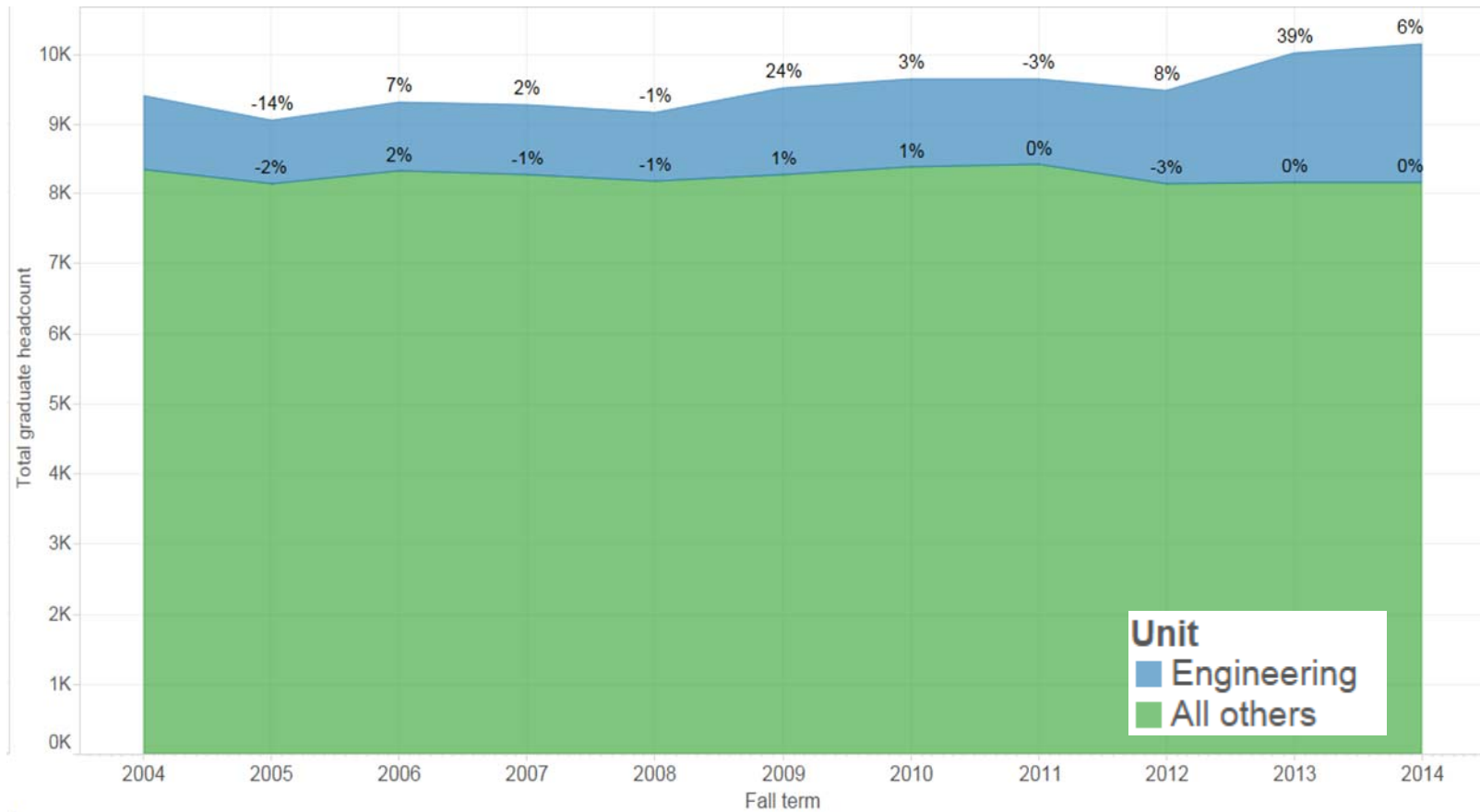
## UB Graduate/Professional Headcount, fall terms Overall growth, 2004-2014





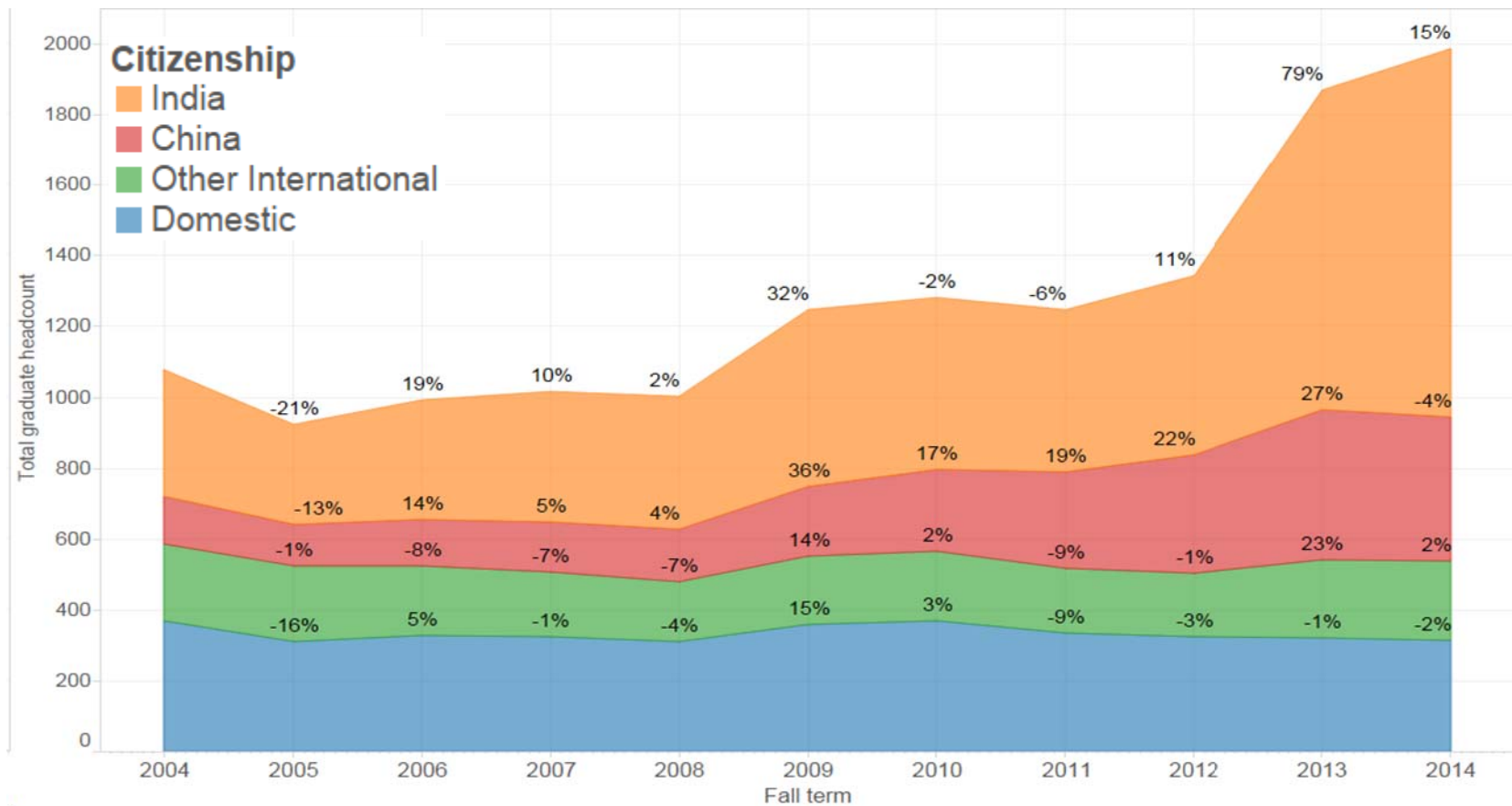
## Graduate/Professional Headcount, 2004-2014

### Growth concentrated in Engineering

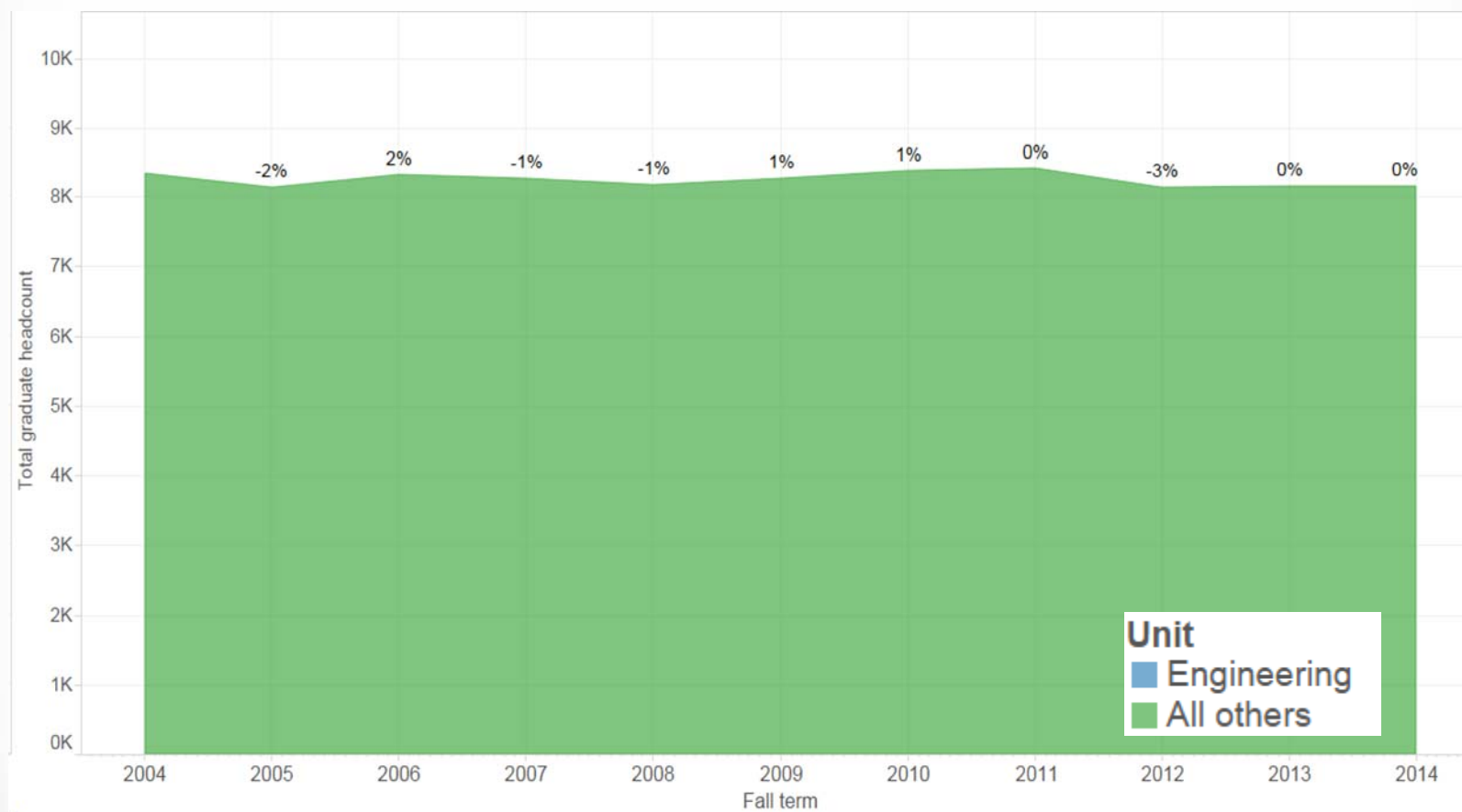




# Graduate/Professional Headcount, 2004-2014 School of Engineering by citizenship



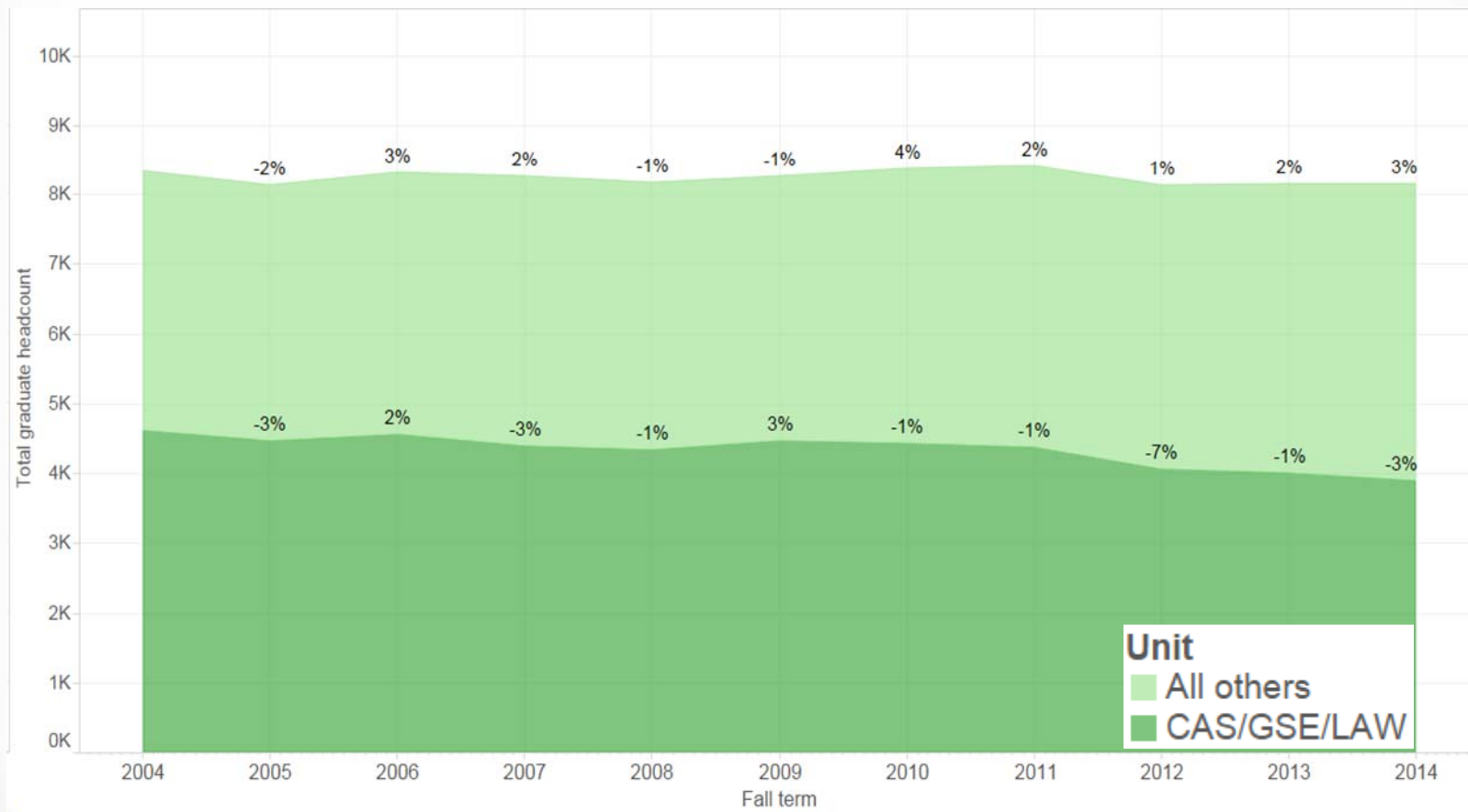
## Graduate/Professional Headcount, 2004-2014 Non-Engineering units





## Graduate/Professional Headcount, 2004-2014

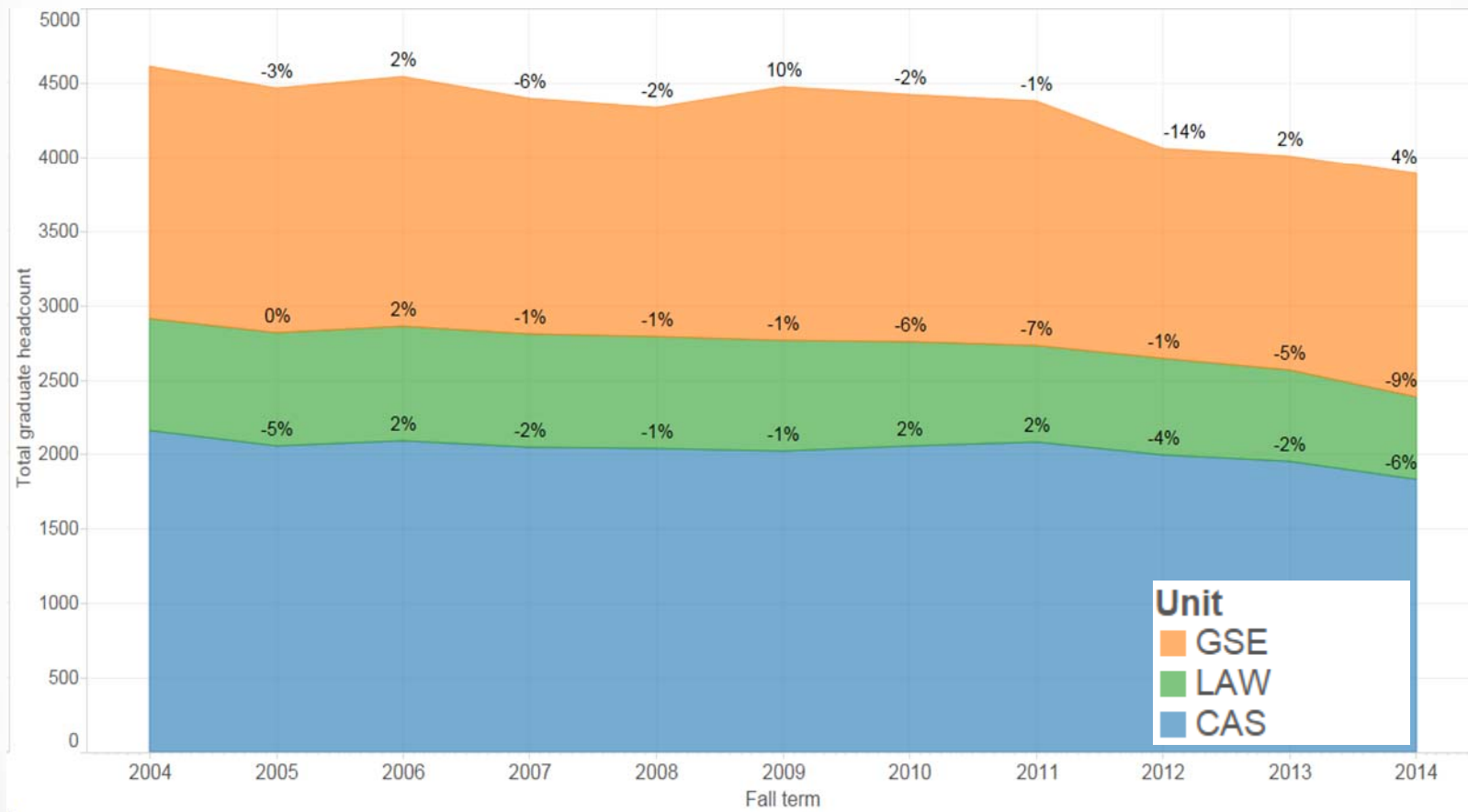
### Decline in 3 major units: CAS, GSE, LAW





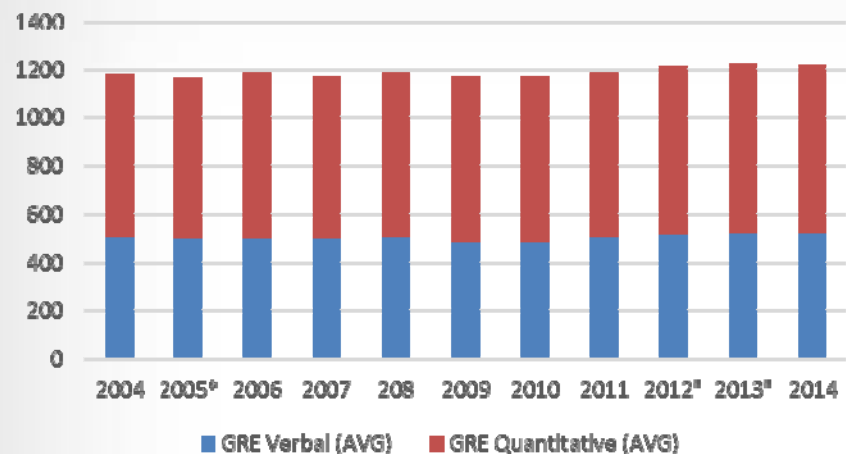


## Graduate/Professional Headcount, 2004-2014 CAS, GSE, LAW only

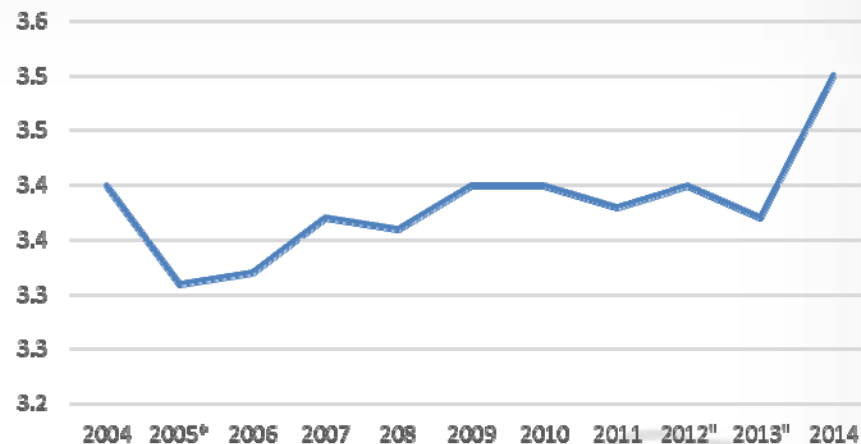


## Enrolled Graduate Students Profile

AVG GRE Score



AVG GPA



	2004	2005	2006	2007	208	2009	2010	2011	2012	2013	2014
College GPA	3.4	3.31	3.32	3.37	3.36	3.4	3.4	3.38	3.4	3.37	3.5
GRE Verbal (AVG)	502	498	498	494	502	481	481	500	509	519	516
GRE Quantitative (AVG)	675	665	684	673	680	685	686	686	701	703	700



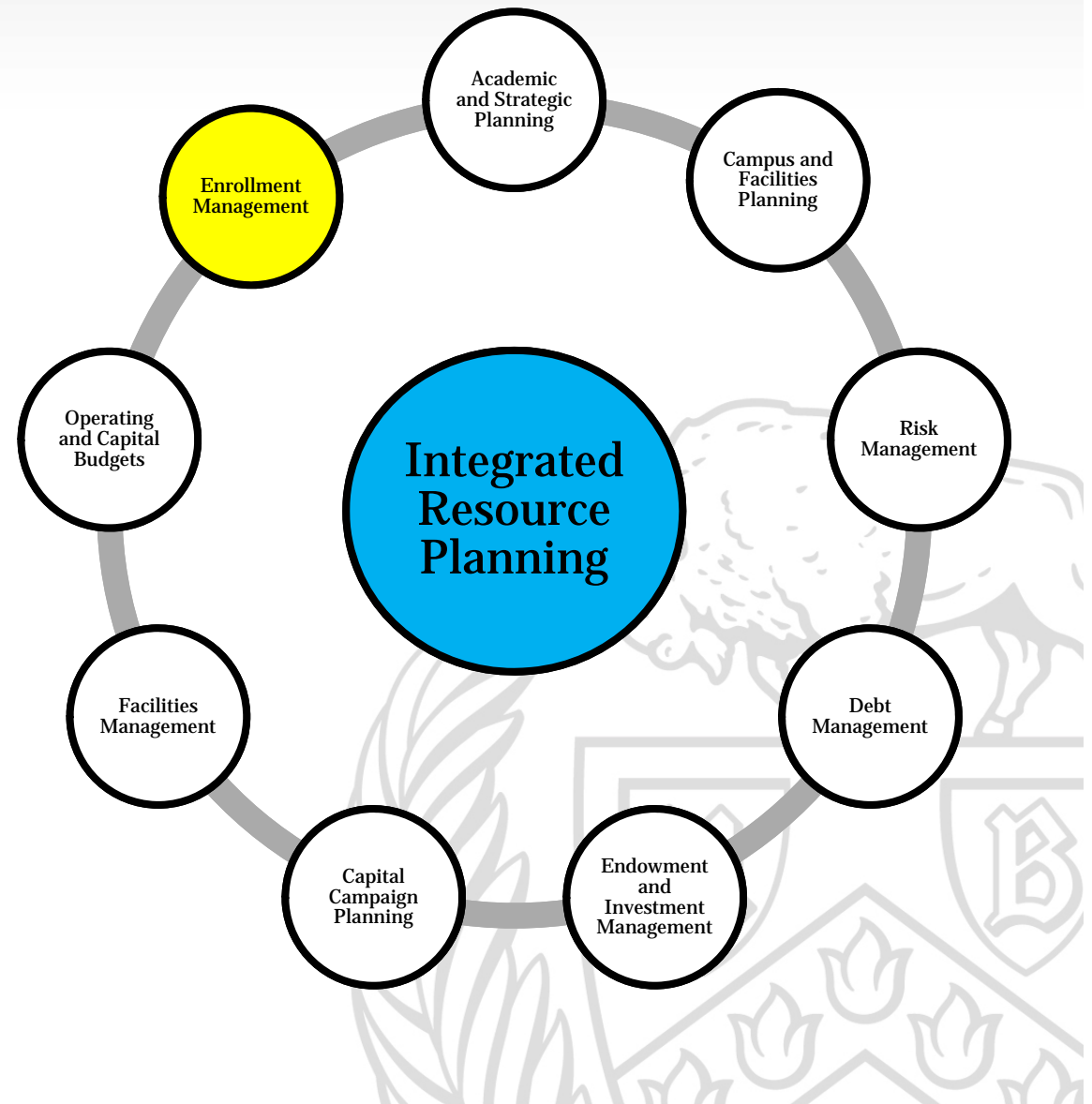
## UB: Challenges to Institutional Graduate Enrollment Planning

- Lack of accountability, investment and attention by academic programs in managing enrollment
- Cost conundrum
- Fractured budget and enrollment process
  - Enrollment Management not included in pre-planning budget process
  - Reactive (late) vs. proactive (recruitment planning)
- Needed to bridge the gap to enable for Strategic Graduate Enrollment Planning



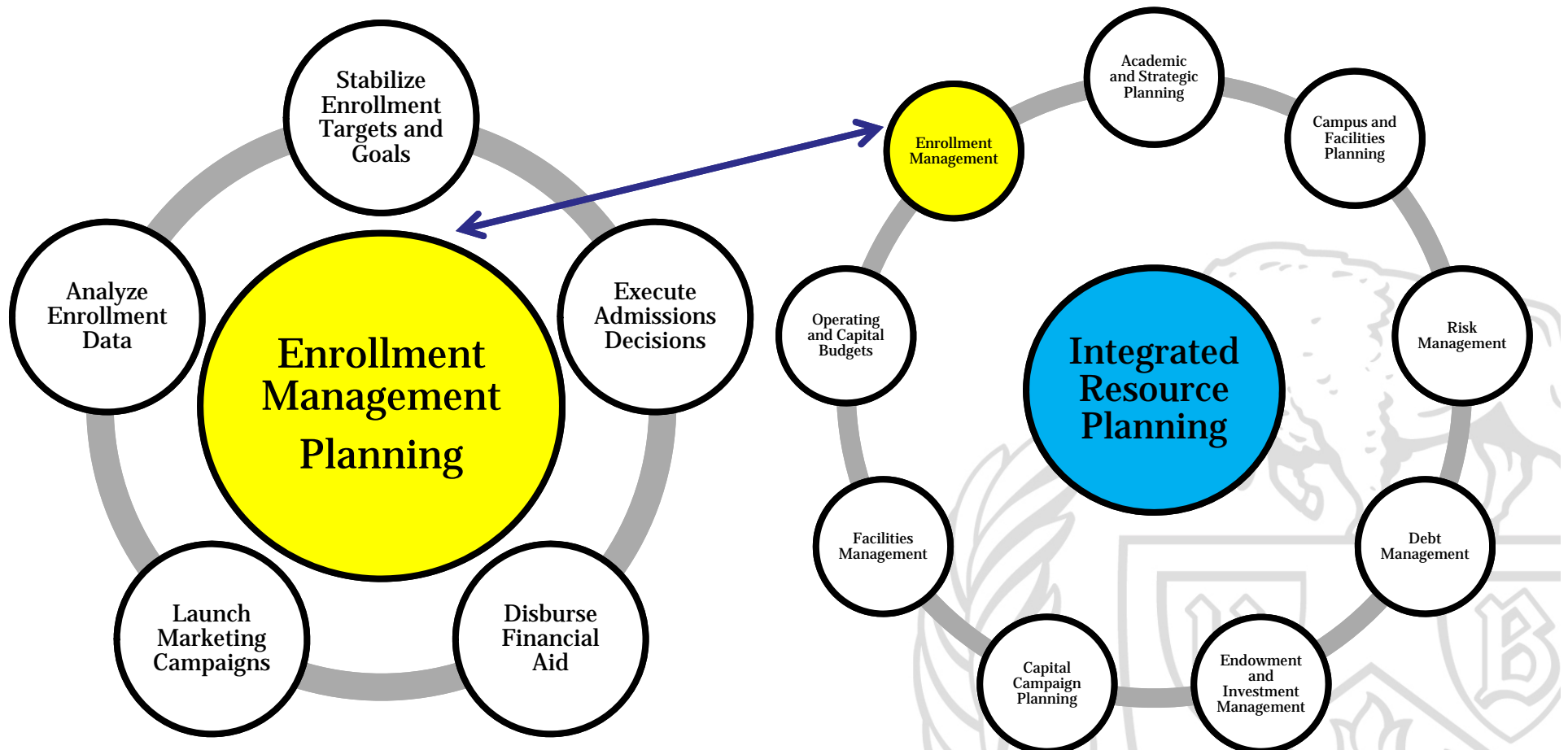
## Best Practices Model: Integrated Resource Planning

- Comprehensive asset/liability management
- Integrative - single institutional point of view
- Long-term in nature
- Analyzes returns on investments
- Proactive
- Dynamic and scenario-based
- Transparent



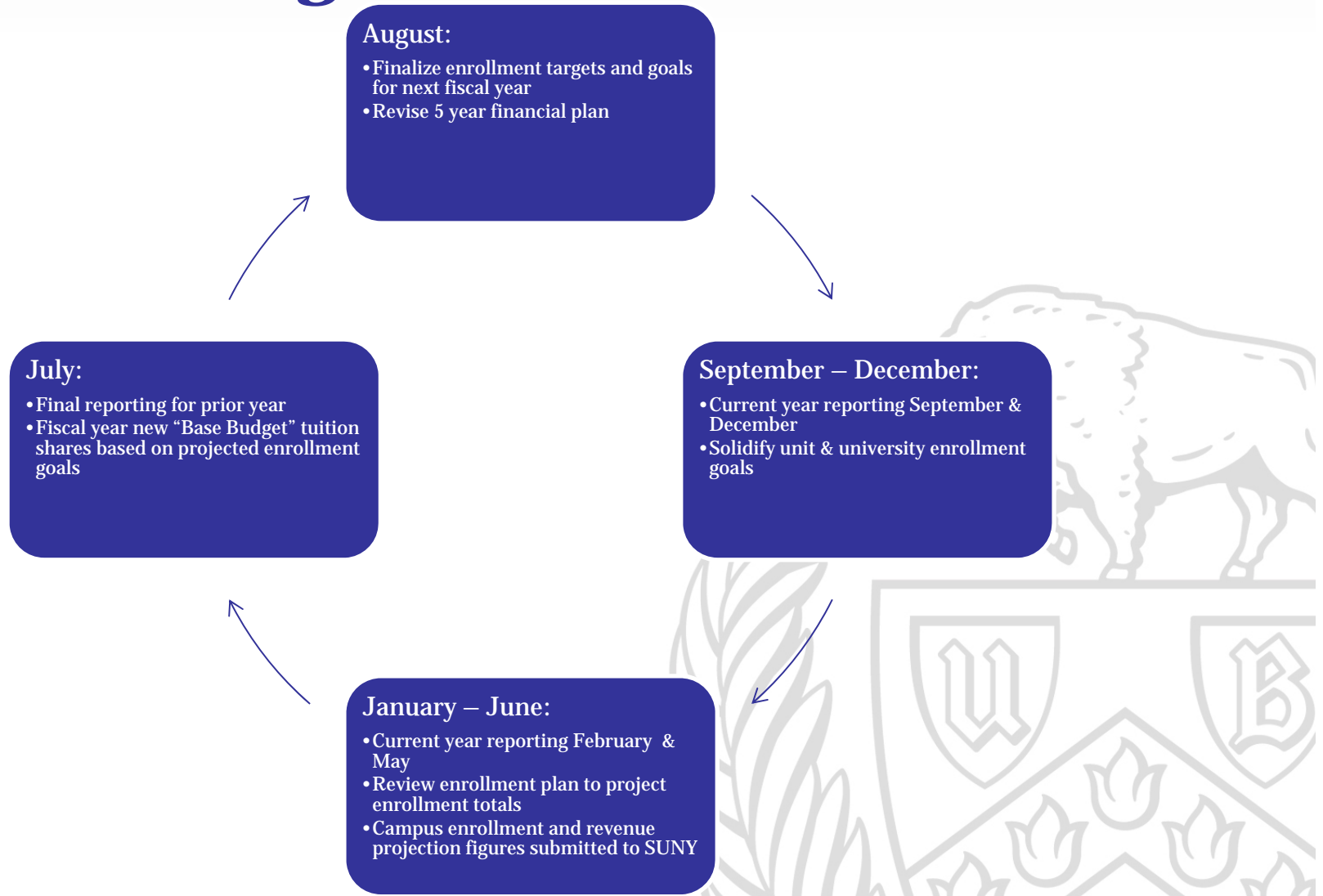


# Integrated Resource Planning



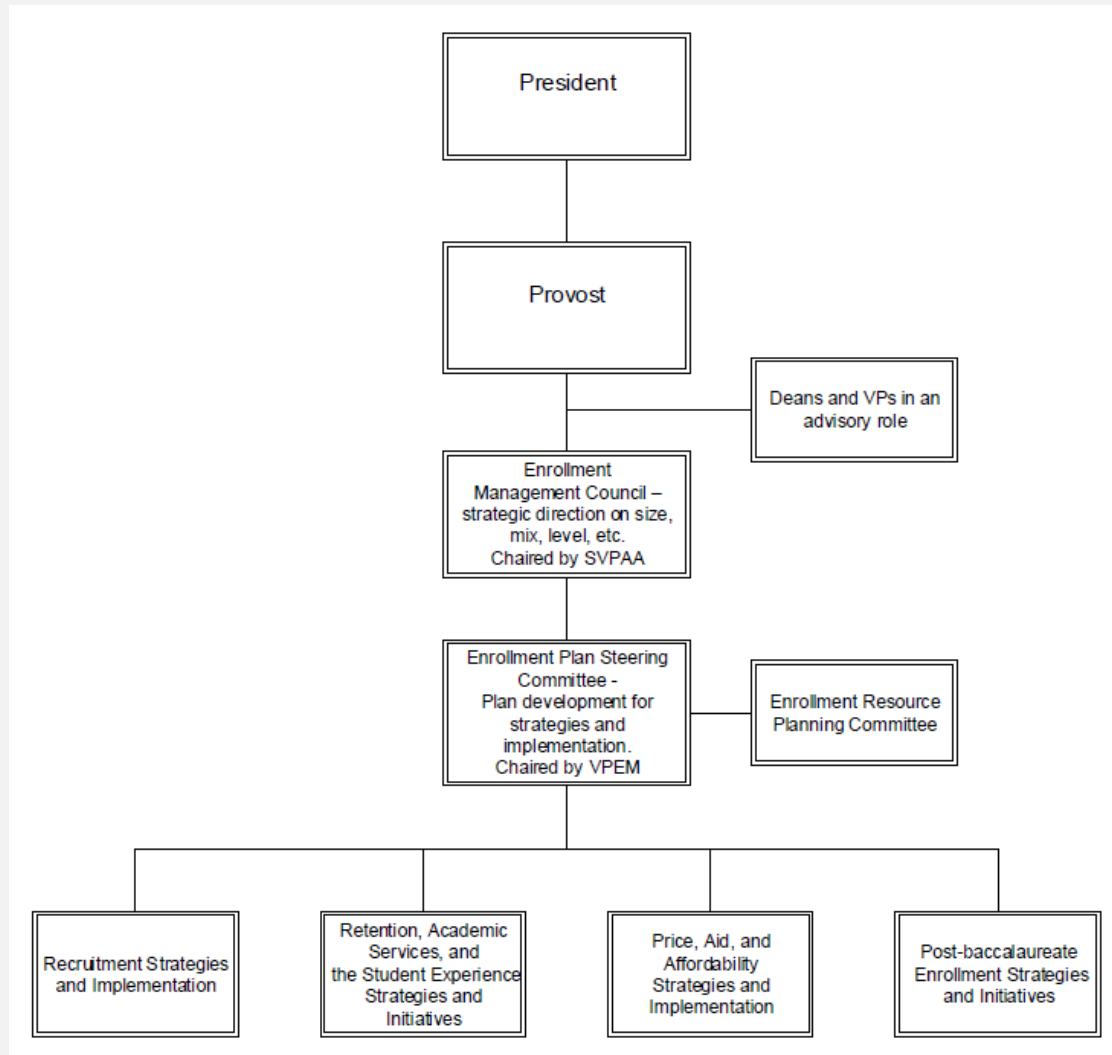


# Integrated Enrollment & Resource Planning Process Flow Chart





# Enrollment Planning Structure





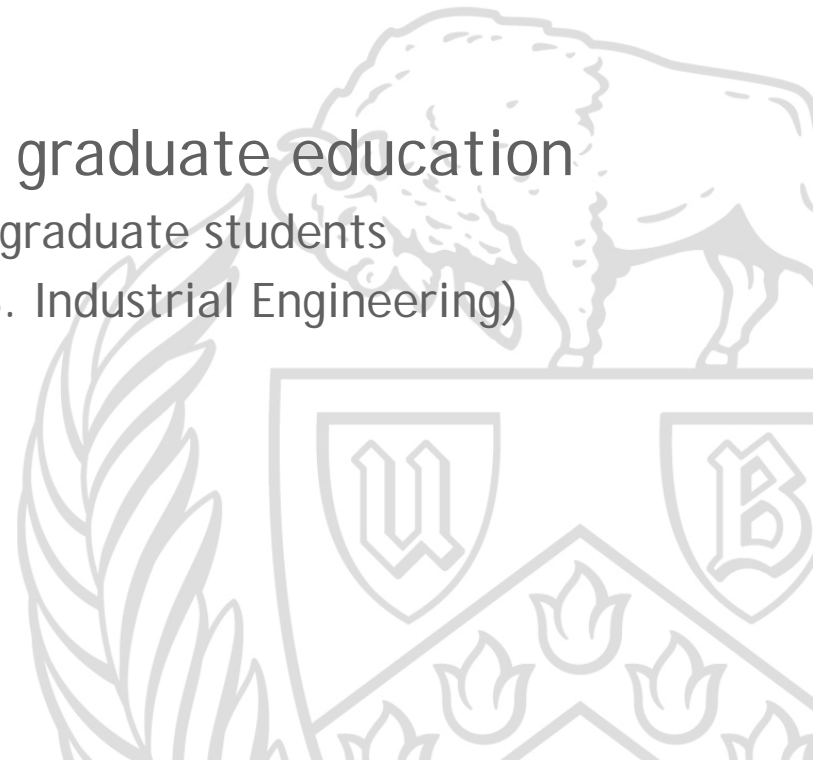
# Strategic Enrollment Plan (SEP)

- Campus wide participation, active engagement and representation at **ALL** levels (Undergraduate, **Graduate, Professional**, International)
  - Faculty and staff
- Intentional overlap between subcommittees to provide holistic picture
- Ultimately, enrollment management (even graduate) is a campus wide effort!



# Strategic “Graduate” Enrollment Planning

- Assessing and adapting for future pipelines
  - Projected high school graduation levels matter
  - US population becoming more diverse
    - Tuition and funding level challenges
  - International markets
- Enhancing literacy surrounding graduate education
  - Legacy recruitment of our own undergraduate students
  - Pathways (i.e. B.A. Economics => M.S. Industrial Engineering)
  - Job outcomes





# Strategic “Graduate” Enrollment Planning

- Analysis on qualities that yield enrollment and student success
  - Feeder school profile
  - Holistic admissions review
  - Retention
- Enhancing availability and visibility of graduate student services/outcomes
  - Leverage for recruitment
- Alignment of resources to recruit graduate students
  - Marketing, Recruitment and Yield Enhancement Stimulus Fund



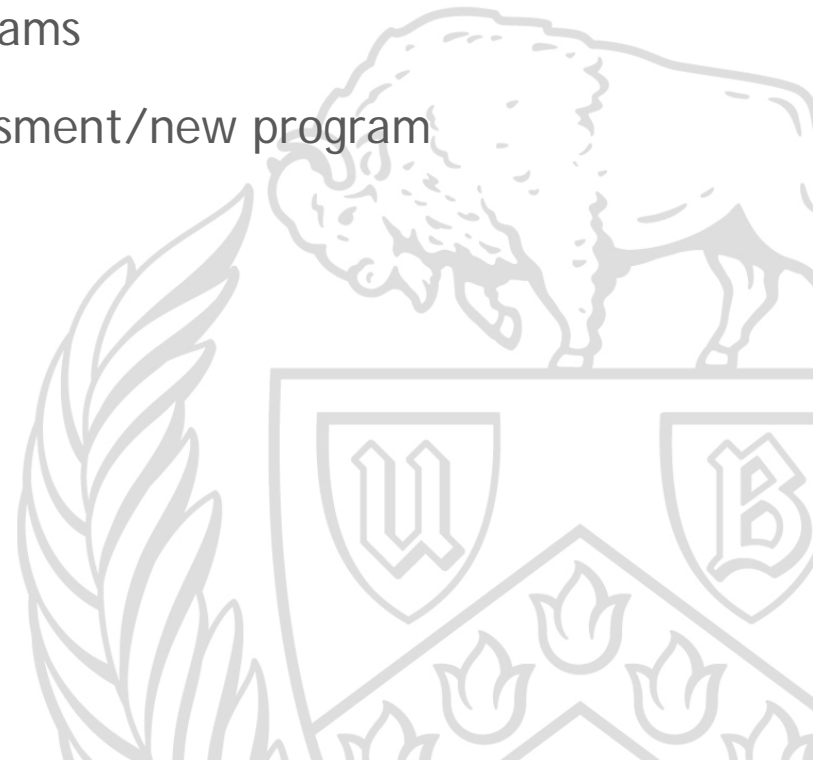
# Strategic “Graduate” Enrollment Planning

- Building and cultivating relationships
  - CRM
- Encouraging faculty and current student engagement
- Where do you focus?
  - New programs
  - High demand disciplines



# Strategic “Graduate” Enrollment Planning

- Strengthening connection to the “Graduate School”
  - Reinvesting in central recruitment and student support services
    - Improving Professional Development of Graduate Students
  - Leveraging of Fellowships, Scholarships and Assistantships
  - Graduate diversity enrichment programs
  - Current program marketability assessment/new program development
    - Peer research of competitive programs



# State University of New York University at Buffalo: Case Study

**Tools to Project Graduate Enrollment**



**A tradition of excellence, a vision for the future**



# Basic enrollment projection model: 3 components

## New students

- Project number of completed applications based on point-in-time percentages
- Use weighted average of previous offer rates and enrollment yield rates

## Continuing students

- Based on spring enrollment and weighted average of previous return rates

## Non-degree students

- Average of total in previous 3 years



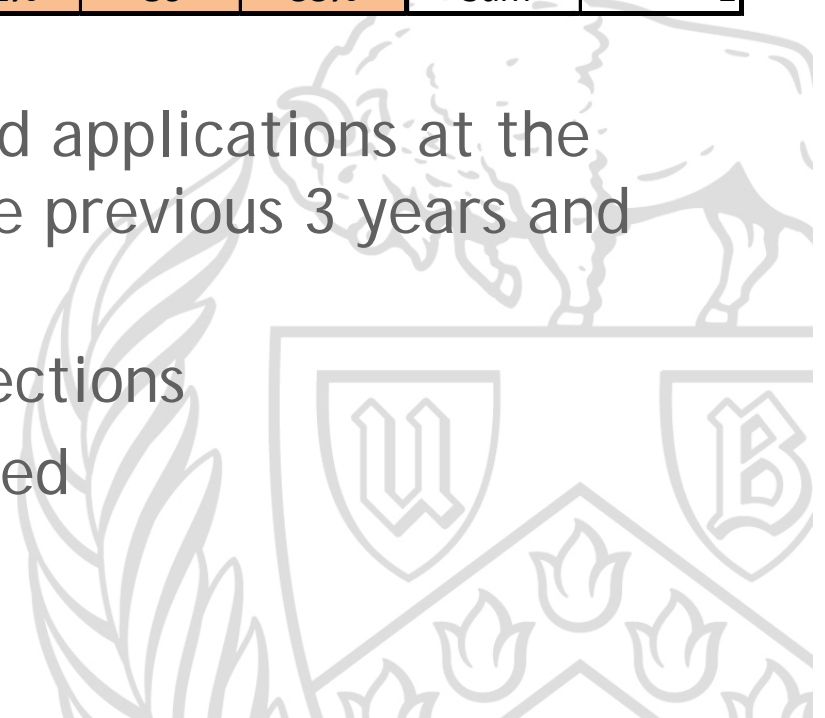
# New student enrollment projection

School	AY	Completed apps PT	Completed apps final	PT %	Offers	Offer rate	Enrolled	Offer yield	Weights	
School of Fake Numbers	2012	279	323	86%	231	72%	81	35%	2012	0.17
	2013	325	361	90%	247	68%	86	35%	2013	0.33
	2014	308	354	87%	267	75%	81	30%	2014	0.50
	2015	319	<b>363</b>	<b>88%</b>	<b>263</b>	<b>72%</b>	<b>86</b>	<b>33%</b>	Sum	1

We find the number of completed applications at the same point in time (PT) for the previous 3 years and compare to the final totals

Orange cells are calculated projections

Weights can be adjusted as needed





# Continuing student enrollment projection

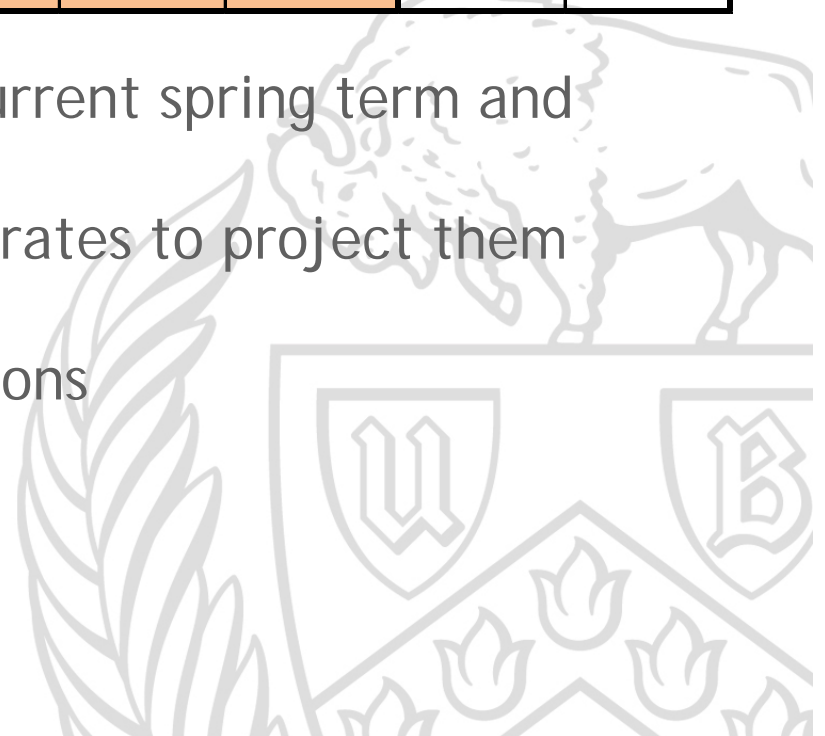
School	Year	Total spring enrollment	Graduated	Graduation rate	Enrolled fall	Return rate	Weights	
School of Fake Numbers	2012	174	45	26%	103	59%	2012	0.17
	2013	176	31	18%	124	70%	2013	0.33
	2014	194	39	20%	131	68%	2014	0.50
	2015	206	<b>42</b>	<b>20%</b>	<b>138</b>	<b>67%</b>	Sum	1

We find enrollment totals for the current spring term and the previous 3

Use previous graduation and return rates to project them for this year

Orange cells are calculated projections

Weights can be adjusted as needed







# Building a better enrollment model

Add more detail

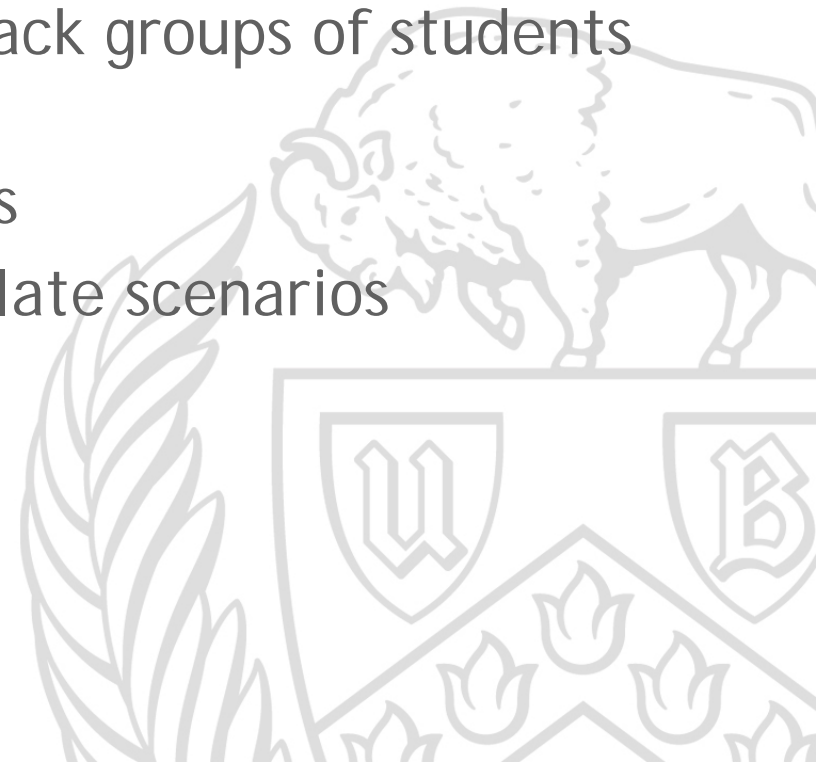
- Current model only accounts for overall numbers

Add more time

- Use retention metrics to track groups of students through their programs

Use advanced statistical methods

- Find probabilities and simulate scenarios





# SGEM: Current Cycle Enrollment Projections

School	Calculation of new enrollment projection							Other enrollment		Totals		Offer projections			
	Comp. apps 3/23/2015	Projected % of total	Projected comp. apps	Projected offer rate	Projected total offers	Projected enrollment yield	Final new enrollment projection	Cont. from spring 2015	Average non- degree	Total projected F15 enrollment	Overall enrollment target	New enrollment target	Offers needed	Projected offer rate needed	Projected offers - Offers needed
	School A	324	92%	351	72%	255	33%	83	141	4	228	208	63	193	55%
School B	2246	93%	2425	45%	1094	41%	443	1274	21	1738	1931	636	1570	65%	-475
School C	5879	98%	6018	43%	2599	29%	753	1108	15	1876	2007	884	3049	51%	-450
School D	632	75%	847	69%	585	61%	357	813	162	1332	1442	467	765	90%	-180
School E	986	72%	1367	29%	393	56%	163	330	2	495	592	260	463	34%	-70
School F	2153	96%	2249	44%	993	39%	386	242	0	628	474	232	596	27%	397
School G	4820	99%	4881	11%	522	49%	257	561	3	821	762	198	402	8%	119
School H	37	53%	70	56%	39	71%	28	140	8	176	200	52	73	104%	-34
School I	607	84%	725	49%	358	60%	217	290	6	513	465	169	280	39%	79
School J	174	95%	183	33%	61	58%	35	95	2	132	147	50	87	47%	-26
School K	2801	98%	2869	8%	233	63%	148	357	2	507	483	124	196	7%	37
School L	817	98%	837	17%	146	90%	130	423	2	555	548	123	137	16%	8
School M	370	69%	536	59%	319	69%	221	235	33	489	462	194	280	52%	39
School N	NA	NA	NA	NA	NA	NA	NA	NA	51	51	147	NA	NA	NA	NA
<b>Total</b>	<b>21846</b>	<b>86%</b>	<b>23359</b>	<b>41%</b>	<b>7596</b>	<b>55%</b>	<b>3222</b>	<b>6009</b>	<b>311</b>	<b>9542</b>	<b>9868</b>	<b>3452</b>	<b>8090</b>	<b>46%</b>	<b>-494</b>

Column B - Based on GrAdMIT records

Column C - Based on % of applications received at the same point in time for the previous 3 application cycles

Column D - Current completed applications / Projected % of total

Column E - Weighted average of offer rates (offers/completed applications) for previous 3 fall terms

Column F - Offer rate \* projected completed applications

Column G - Weighted average of enrollment yields (enrolled students/offers of admission) for previous 3 fall terms

Column H - Total offers \* Projected enrollment yield

Column I - retrieved from GEMS view of PeopleSoft term and plan data as of 3/23/2015

Projected based on spring 2015 enrollment and a weighted average of fall return rates (% of spring enrolled students who continued in the same program the following fall)

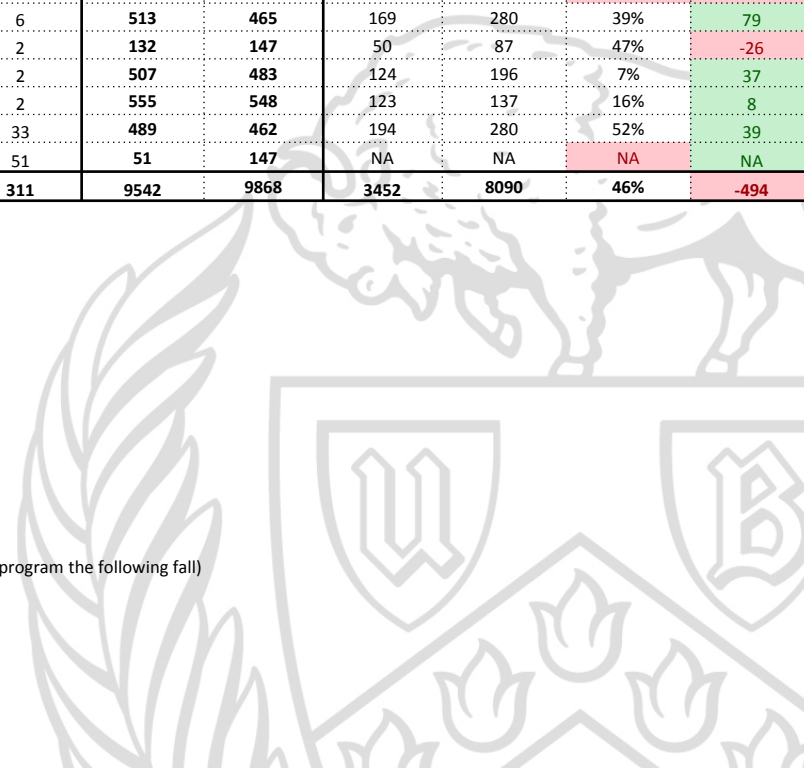
Column J - Average number of non-degree students in the last 3 fall terms

Column K - Total projected enrollment is a sum of columns H, I, and J.

Column L - Target is the fall 2015 assigned headcount target

Column O - Projected offers needed / Projected completed applications

A value over 100% indicates that the GEMS projection of offers needed is greater than the GEMS projection of completed applications



# Step 1: Find basic attributes

Things we know about a student before enrollment

Student



## Academic program

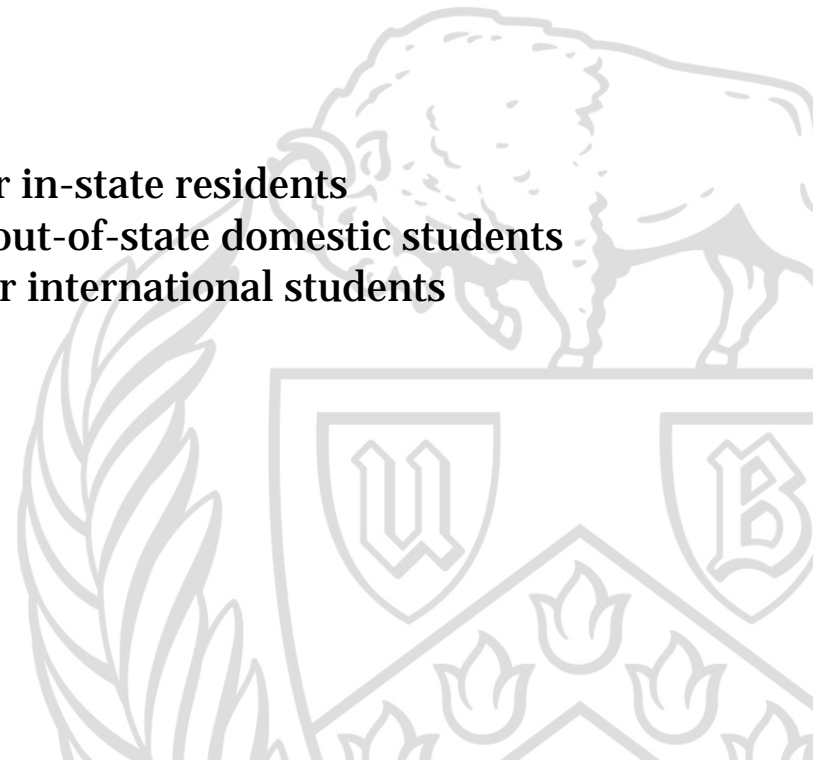
- Unit/area: Management, Arts and Sciences, etc.
- Degree type: Master's, Doctoral
- Program plan or concentration
- New or continuing

## Residency

- US Citizenship
- County or region for in-state residents
- State residency for out-of-state domestic students
- Country of origin for international students

## Biodemo

- Gender
- Race/ethnicity
- Age range





## Step 2: Enrollment data

Information about academic progress/performance in a term

Student



Full-time vs. part-time enrollment

GPA

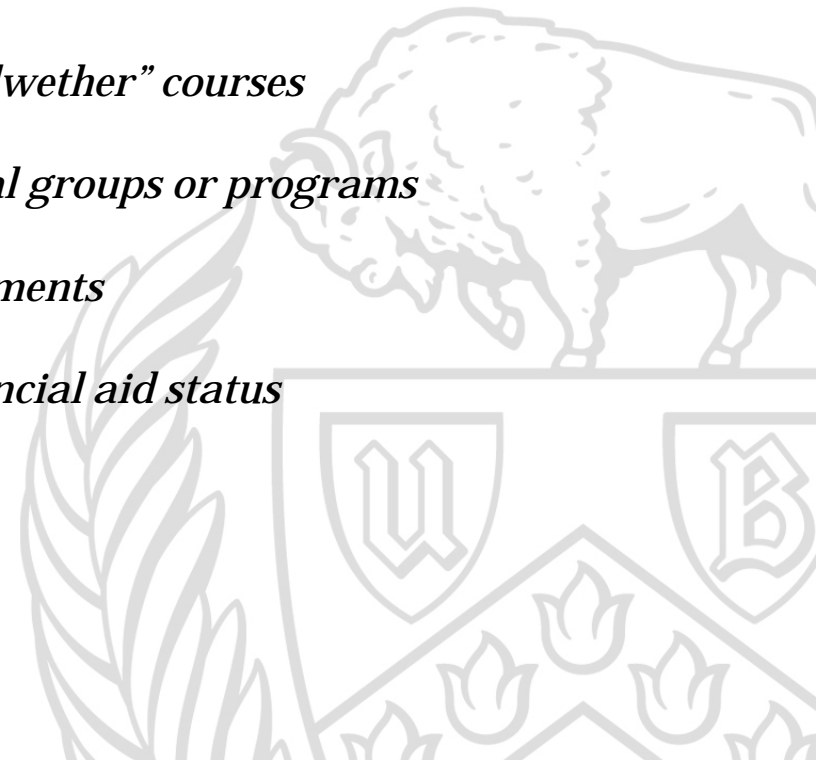
Number of accumulated credits

*Grades in certain "bellwether" courses*

*Participation in special groups or programs*

*Assistantship appointments*

*Scholarships and financial aid status*



# Step 3: Map out the scenarios

Step through the student lifecycle to find probabilities

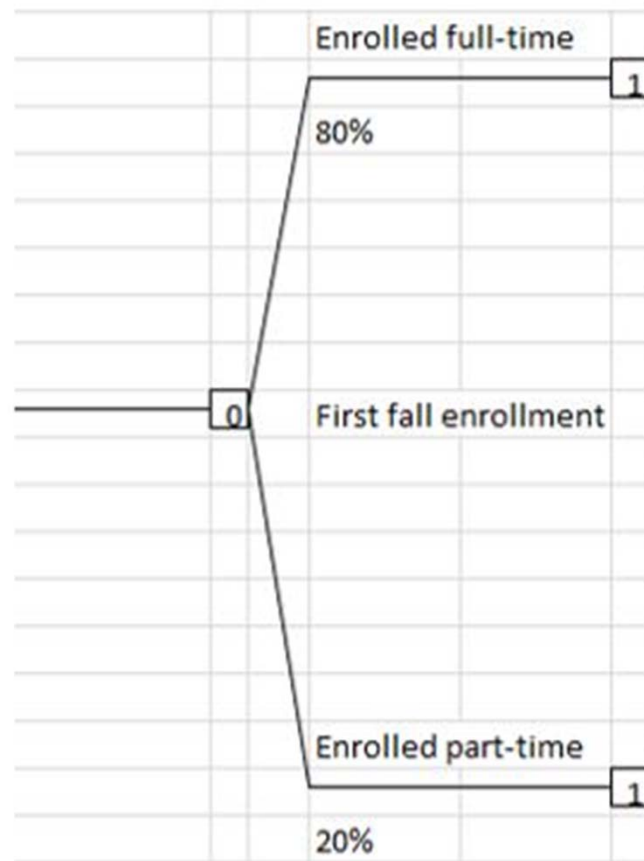
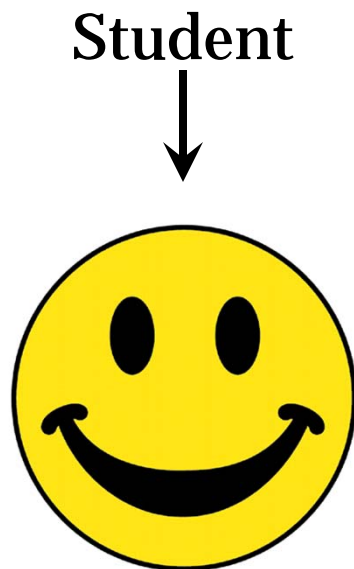


Diagram created using TreePlan Excel plugin. Trial version available at [www.TreePlan.com](http://www.TreePlan.com)



# Step 3: Map out the scenarios

Step through the student lifecycle to find probabilities

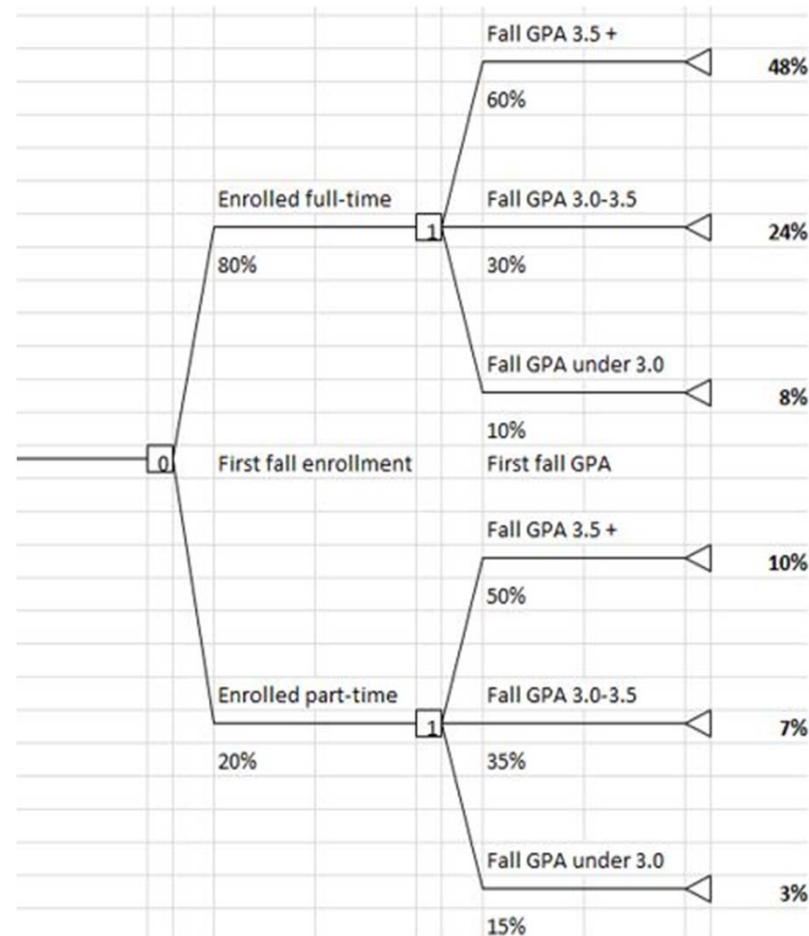
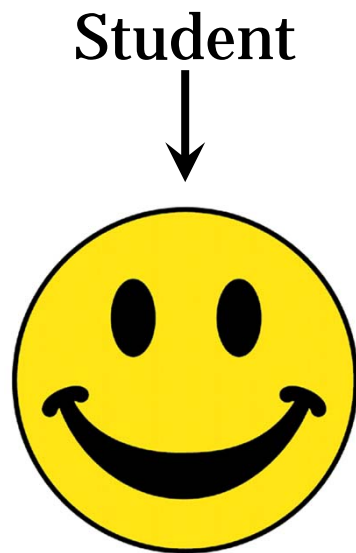


Diagram created using TreePlan Excel plugin. Trial version available at [www.TreePlan.com](http://www.TreePlan.com)



## 2013-Present Outcomes

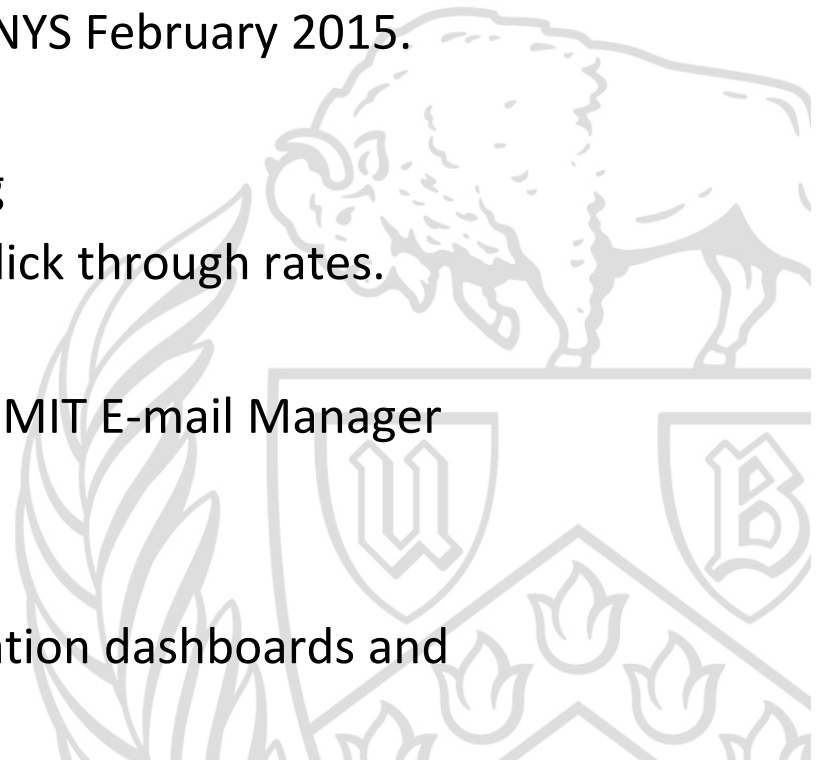
- Facilitated record high graduate enrollment
  - Fall 2013 largest incoming
  - Fall 2014 largest overall
  - Fall 2015 4% overall increase incoming vs. Fall 2014
    - measurable increase in new graduate student enrollment yields
      - Challenging disciplines
- Instant admissions survey:
  - Response rate 58%
    - Improved 53% from previous end of cycle (July/August) distribution
  - 93% good or very good application experience
    - Improved from mid 70% since 2012.
  - Prefer another institution, geographic location, funding
  - More faculty involvement
  - Concerns raised regarding timeliness of offers received





## 2013-Present Outcomes

- Responsive Web Design (RWD) on the Graduate School website ([grad.buffalo.edu](http://grad.buffalo.edu))
  - Improved mobile page visits by over 100%
- Enhanced accuracy of Graduate Enrollment Projections
  - October 2015 final enrollment .00057% difference from projected enrollment reported to NYS February 2015.
- Revised communication and messaging
  - Measurable increase in open and click through rates.
- Provided Academic unit access to GrAdMIT E-mail Manager
  - Communication plan building
- Launched on demand Graduate application dashboards and factbooks ([grad.buffalo.edu/internal](http://grad.buffalo.edu/internal))







# Breakout Questions: Setting the Foundation

1. Briefly describe the structure of GEM at your institution. How are you structured? What are some of the responsibilities you have that span across multiple functions, and how is the overall office structured in terms of multiple responsibilities and cross training (i.e. Admissions and Student Services, etc.
2. What is the reporting relationship of your office (Enrollment Management, Graduate School, single undergraduate/graduate admissions office, Dean of an Academic Unit, Director of Program?) What are the advantages/disadvantages of your current reporting structure
3. What is the role of the central Graduate School/Graduate Studies office at your institution?





# Breakout Questions: Planning & Data Utilization

1. When formulating a Strategic Graduate Enrollment Management plan, describe the processes, procedures and tools you leverage to assist in recruitment planning?
2. While graduate education is highly specialized and niche/discipline based, what role should central administration play vs. academic unit in planning?





## Breakout Questions: GEM Plans

1. What role does graduate education (i.e. enrollment management) play in your institution's overall university strategic plan?
2. Have there been successful approaches or structures that have been particularly helpful in implementing graduate enrollment management plans?





# Question & Answer Session





## Contact



Jeffrey Bakken

[jbakken@fsmail.bradley.edu](mailto:jbakken@fsmail.bradley.edu)

Christopher Connor

[cconnor@buffalo.edu](mailto:cconnor@buffalo.edu)

Thomas Reynolds

[tlreynol@uncc.edu](mailto:tlreynol@uncc.edu)

Charles Taber

[charles.taber@stonybrook.edu](mailto:charles.taber@stonybrook.edu)

Johnna Watson

[JohnnaWatson@uncc.edu](mailto:JohnnaWatson@uncc.edu)

