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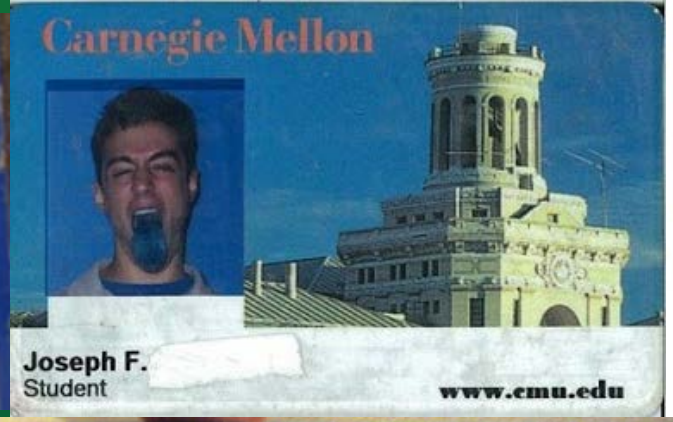
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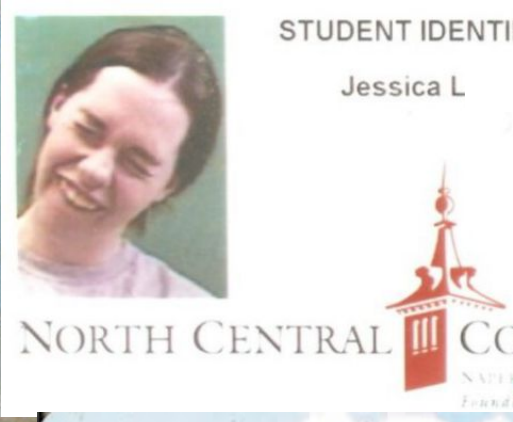
Joseph F.
Student
www.cmu.edu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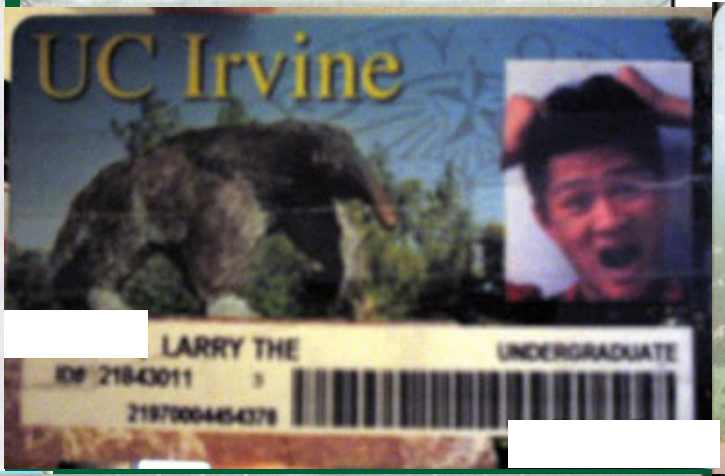
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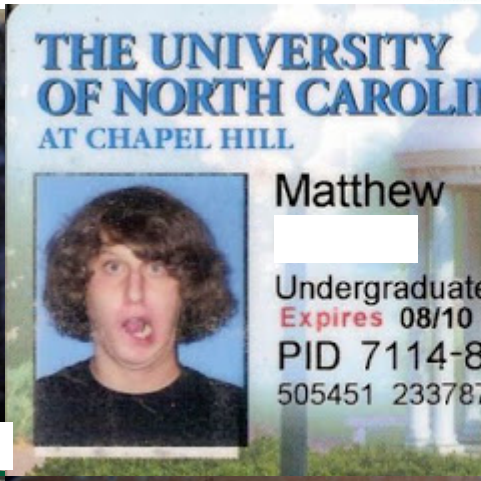
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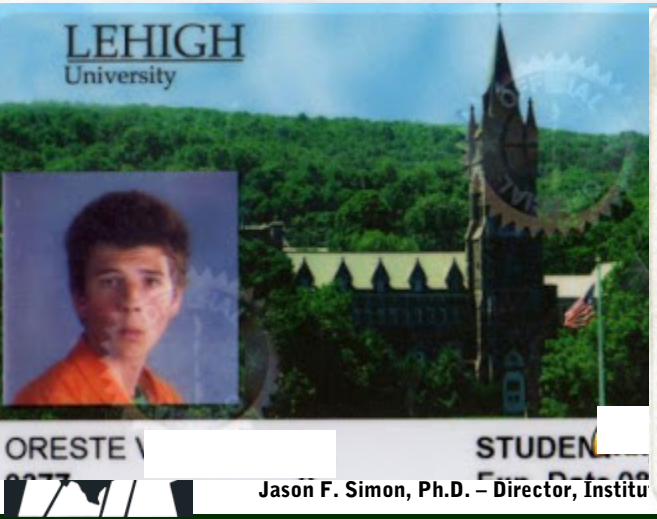
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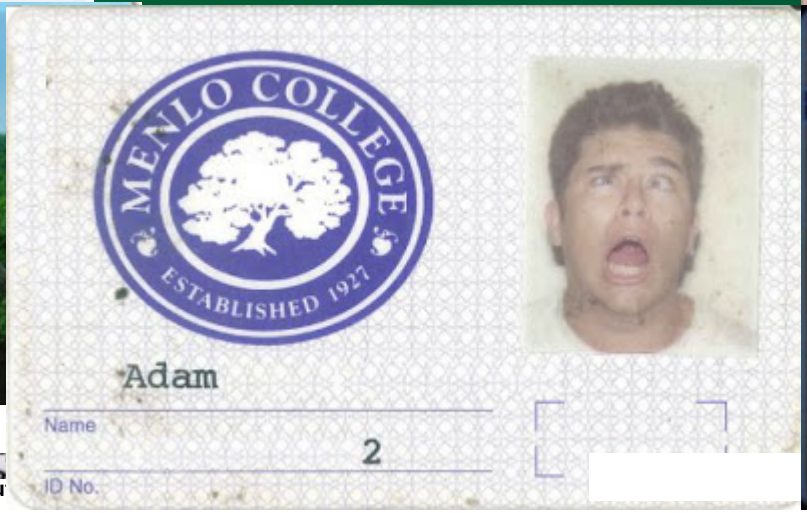
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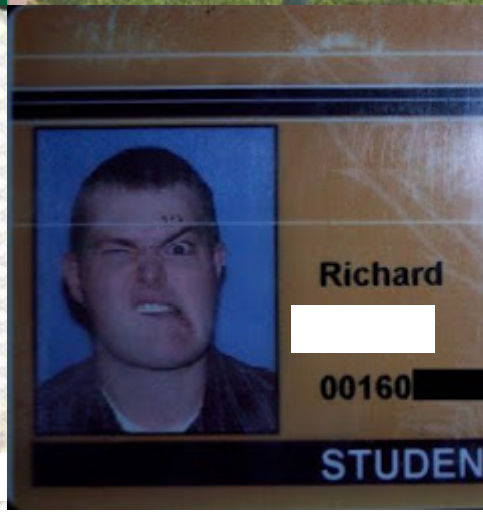
Richard
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STUDEN

Gathering Direct Evidence of Student Engagement via ID Card Systems

Jason F. Simon, Ph.D.

Director, Institutional Assessment and Reporting

Today's Session

- Introductions and Show of Hands
- A Bit About Our Institution
- Why ID Card Swiping?
- History of ID Card Swiping
- Technology/Platform
- Initial Findings
- Next Steps and Future Research

Introductions

- Why Me, Why This Topic
- Raise your hand if your campus has an ID swipe card system
- Keep your hands up if you analyze direct evidence of student engagement using this system
- Keep your hands up if you have used this evidence to predict retention or gpa

Institutional Background(*)

- Founded in 1890
- Enrollment of 35,778 - 28,911 Undergraduates and 6,867 Graduates
- 8,647 degrees conferred in 2011/12
- 97 Bachelor's, 82 Master's and 35 Doctoral degree programs
- 57% White, 17% Hispanic, 13% African American, 6% Asian, 5% International, 1% Native American
- 12% FTIC, 11% New UG Transfer, 5% New Grad
- Average age: 24
- Average SAT: 1106

*Fall 12 Data

Office Background

- Reports to the Vice Provost for Academic Resources
- Staffing
  - 3 Directors (Institutional Research, Effectiveness and Assessment)
  - 1 Assessment Staff Member
  - 1 Faculty Profile System Staff Member
  - 2 Administrative Assistants
  - 2.75 Data Analysts
  - 3 Graduate Assistant and 2 Student Assistants
  - NASPA NUFP Mentee

Why ID Card Swiping?

- How many males use your services? How do these males compare to the overall male population?
- How many students attending your campus event have been involved in at least 2 other campus programs? Involved in Athletics or went to the Learning Center?
- How do GPAs of your involved students compare to non-involved students?
- What is the likelihood that students who are engaged in campus life will be more likely to be retained at the end of their first year?
- How many Hispanic Females used your service/attended your event? How does this compare to your overall population?
- What percentage of students overall took advantage of “x”?
- Other questions?

Swiping Nationally

- Relatively few (if any) campuses have comprehensive swiping plans in place
- Swiping has remained relatively limited to Career Center, Recreation Sports, Health and Dining around the nation
- Swiping has raised some concerns at some campuses and caught staff off-guard and delayed progress

Evolution of Swiping

- **Libraries pioneered swiping at most higher education institutions**
- **Dining quickly followed to track diners and meal usage**
- **Recreation centers then came aboard**
- **IRE began asking question about patterns of usage in Fall 2007**
- **Eagle Access first event swiped in Spring 2008 (Career Center)**
- **Student Affairs Assessment (SAA) Office began rolling out swiping in 2008/09 with mixed usage across units**
- **2009/10 Decision Support builds out dashboard to view output**
- **2012 SAA transitions to IRE and Eagle Access follows**
- Today the DSA, Schools and Colleges, Athletics, Equity and Diversity, Academic Affairs, Advancement and Undergraduate Studies utilize the system

Why UNT Card Swipes

- Allows us to partner to build a retention model to help:
  - Confirm impact of programming
  - Provide direct evidence linkage
  - Help us have a deeper understanding of our students
  - Break down barriers and promote collaboration
- Because our students are already used to it and it should not be a burden
- Ultimately, it will help ensure our students have an excellent experience

What UNT tells Students About Card Swiping

- Helps us have a deeper understanding of your needs to improve services
- Confirms impact of programming and office visits
- Breaks down barriers and promotes collaboration across UNT departments to provide better resources for your benefit
- Data can be analyzed to help campus decision makers make good decisions for programming, budgeting, and staffing to help you succeed
- Allows you to “vote with your feet” on programs and services which matter to you

Maintaining Student Privacy

- UNT worked deliberately to maintain high standards of compliance with state and federal laws.
- A first step was the systematic approach to train staff. Prior to any access to the system, employees must go through a mandatory 2 hour training session.
- To ensure compliance with FERPA and other privacy statutes, staff members get copies of computing usage policies and specific recommendations to address the importance of proper and ethical usage of data.
- Users also log in with a common password tied to their HR records. Should an employee be terminated or leave the institution, access to the system is terminated.

Student Privacy (2)

- ACEs create permissions for staff to use the system. ACEs go through an additional training with computing staff to assign these roles.
- USERS create events and view output (after ACEs confirm the staff member has gone through UNT FERPA training).
- CONFIGURATORS start up the system to collect data. This final group goes through a separate training and has no access to data (either in aggregate or disaggregated formats).
- This system also honors opt-out requests by students.
- By relying on the required trainings, appropriate chain of command approvals, and the process of assigning permissions UNT ensures student data is secure. It cannot be understated that maintaining the privacy of students is of paramount importance.

The System

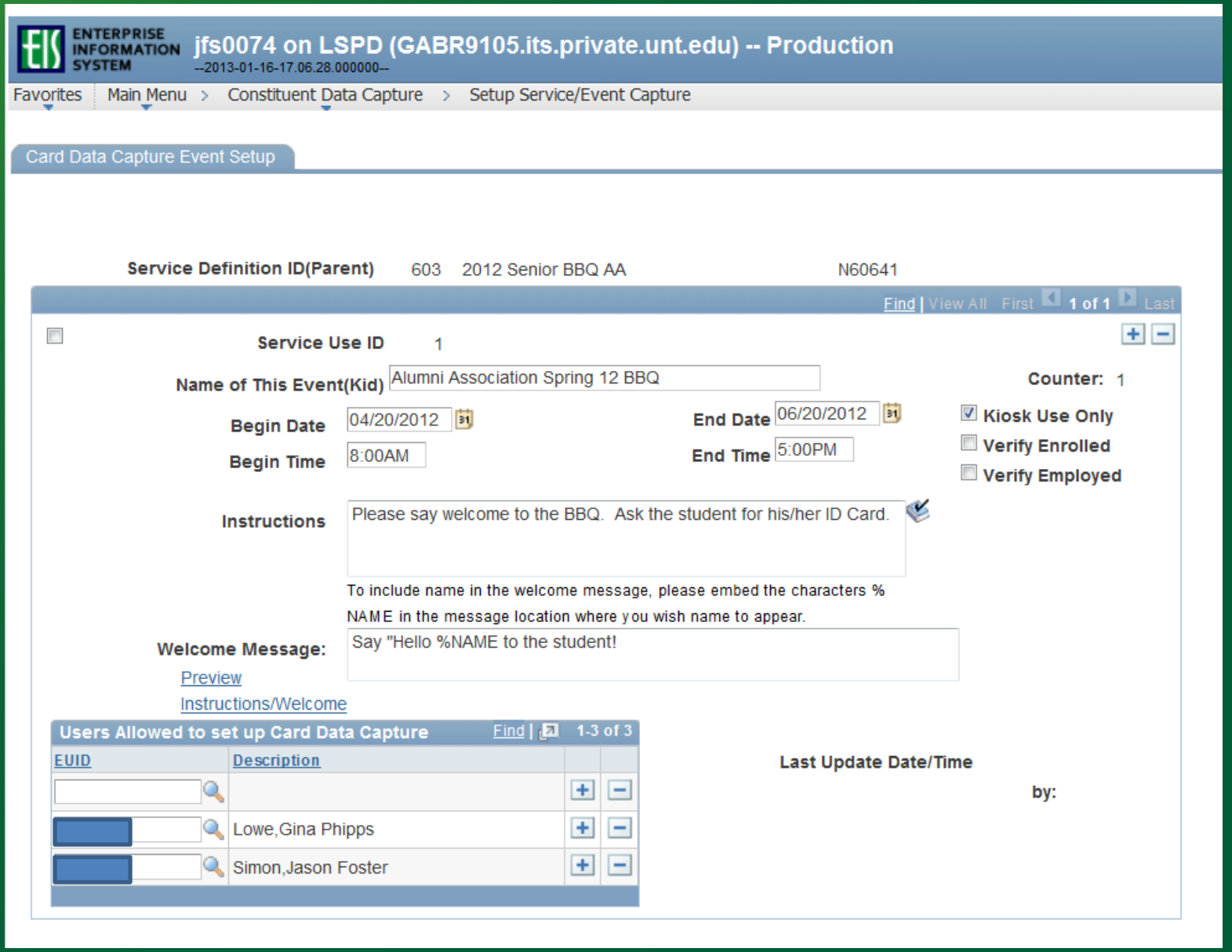
- Chevy Geo Metro vs. Mercedes
- Home grown – built as an extension in PeopleSoft environment
- Queries data tables in main Student Information System
- Refreshes data nightly in Data Warehouse
- Relies on $69 card readers
- No budget per se – self managed

The Swiping Process

- USERS establish two kinds of instances in the system: either one-time events (concert, luncheon, etc.) or ongoing services (appointment with staff, reason to see an advisor, etc.).
- CONFIGURATORS then use a low-cost ID card reader to accept swipes at the point of entry. The entire system is online and can be accessed from anywhere on campus. CONFIGURATORS then swipe and data (student ID number) is recorded in the system. The student then gets a personalized welcome message with his/her name displayed.

Selected Images Of The System

- Data Entry
- Student View
- Data Report – Aggregate
- Data Report - Detailed


ENTERPRISE INFORMATION SYSTEM
jfs0074 on LSPD (GABR9105.its.private.unt.edu) -- Production
--2013-01-16-17.06.28.000000--
Favorites
Main Menu > Constituent Data Capture > Setup Service/Event Capture
Card Data Capture Event Setup
Service Definition ID(Parent) 603 2012 Senior BBQ AA N60641
Find | View All First 1 of 1 Last
Service Use ID 1
Name of This Event(Kid) Alumni Association Spring 12 BBQ
Counter: 1
Begin Date 04/20/2012
End Date 06/20/2012
Kiosk Use Only
Begin Time 8:00AM
End Time 5:00PM
Verify Enrolled
Verify Employed
Instructions
Please say welcome to the BBQ. Ask the student for his/her ID Card.
To include name in the welcome message, please embed the characters %NAME in the message location where you wish name to appear.
Welcome Message:
Say "Hello %NAME to the student!
Preview
Instructions/Welcome
Users Allowed to set up Card Data Capture
Find | 1-3 of 3
EUID
Description
Lowe,Gina Phipps
Simon,Jason Foster
Last Update Date/Time
by:

UNIVERSITY OF NORTH TEXAS

Eagle Access

Please verify that the correct event is selected before swiping.

Current Swipe Count is: 279

Register

- Rec Center Users Fall 2011 Deduplicated Attendees
- (•) ACP 2013 ACP
- VC_Office Visits 2012/13
- VC_Center Socials VC 2012/13

Please ask your visitor for their ID Card.

Submit

Don't have your ID card?

Type in your first and last names
(middle name optional, but at least an initial is recommended)

First:
Middle:
Last:

OR type in your EUID.

EUID: Search

Questions about this service to: eistarp@unt.edu

Event Attendance by Department

SSF - ASSESSMENT

DLS - John Legend

Program **Demographics**

John Legend

College / School	Attendees	Percent
Academic Administration	10	0.2%
Col Public Affairs & Comm Srv	305	7.5%
College of Arts and Sciences	1448	35.4%
College of Business	564	13.8%
College of Education	447	10.9%
College of Engineering	176	4.3%
College of Information	21	0.5%
College of Music	184	4.5%
College of Visual Arts & Desig	218	5.3%
Graduate School	16	0.4%
Mayborn School of Journalism	279	6.8%
Merchandsng & Hospitality Mgmt	116	2.8%
Merchndsng, Hosptlty & Tourism	101	2.5%
Undergraduate Studies	202	4.9%
Total	**4087**	**100.0%**

GPA Bands	Attendees	Percent
2.0-2.49	706	17.3%
2.5-2.99	926	22.7%
3.0-3.49	934	22.9%
3.5-4.0	909	22.2%
Under 2.0	612	15.0%
Total	**4087**	**100.0%**

Classification	Attendees	Percent
Freshman	997	24.4%
Sophomore	879	21.5%
Junior	939	23.0%
Senior	994	24.3%
Post-Bac	38	0.9%
Masters	159	3.9%
Doctoral	78	1.9%
Spec-Prof	3	0.1%
Total	**4087**	**100.0%**

FullPart	Attendees	Percent
FULL-TIME	3679	90.0%
PART-TIME	408	10.0%
Total	**4087**	**100.0%**

Admit Type	Attendees	Percent
1st Time in Col	592	14.5%
Continuing	3137	76.8%
New GRAD	68	1.7%
New UG Trans.	282	6.9%
TAMS	8	0.2%
Total	**4087**	**100.0%**

Ethnicity	Attendees	Percent
African-Amer.	1529	37.4%
Amer. Indian	51	1.2%
Asian/Pacific Isl.	303	7.4%
Hispanic	820	20.1%
Non-Res	142	3.5%
Other	34	0.8%
White	1208	29.6%
Total	**4087**	**100.0%**

Age Bands	Attendees	Percent
Under 19	837	20.5%
19-24	2866	70.1%
25-34	306	7.5%
35 & Older	78	1.9%
Total	**4087**	**100.0%**

Gender	Attendees	Percent
F	2510	61.4%
M	1577	38.6%
Total	**4087**	**100.0%**

Event Attendance by Department

SSF - ASSESSMENT

DLS - John Legend

Program	Demographics

John Legend

Major	Attendees	Percent
Grad Degree Seeking Undecided	2	0%
Graduate Non-Degree	4	0%
Graduate Prep Program	4	0%
Health Promotion	14	0%
Health Psychology & Behav Med	3	0%
Higher Education	31	1%
History	43	1%
Home Furnishings Merchandising	9	0%
Hospitality Management	77	2%
Information Science	7	0%
Information Technology	3	0%
Interdisc Art & Design Studies	7	0%
Interdisciplinary Studies	157	4%
Interior Design	4	0%
Internal Audit	1	0%
International Student Exchange	9	0%
International Studies	22	1%
Jazz Studies	61	1%
Journalism	72	2%
Kinesiology	164	4%

Department: SSF - ASSESSMENT
Event: DLS - John Legend
Program: John Legend

#	EMPLID	Name	Email Address	College / School	Major	Classification	Full-Part	Term	Address1	Address2	Address3	City	State	Postal	Card Swipe Time
1	108		nt.edu	CAS	Pre-Biology	Sophomore	FULL-TIME	2011 Fall				Sugar Land	TX	77498-2784	Dec 15, 2011 9:24:51 AM
2	106		nt.edu	CAS	Allied Health	Senior	FULL-TIME	2012 Spring				Bedford	TX	76021-2524	Jan 25, 2012 1:35:29 PM
3	108		nt.edu	CAS	Biology	Senior	FULL-TIME	2012 Spring				Dallas	TX	75243-5773	Feb 7, 2012 2:02:42 PM
4	104		ah@my.unt.edu	CAS	Counseling Psychology	Doctoral	FULL-TIME	2011 Fall				The Colony	TX	75056-3926	Nov 30, 2011 8:17:13 AM
5	107		nt.edu	SMHM	Hospitality Management	Junior	FULL-TIME	2011 Fall				Katy	TX	77450-5334	Nov 30, 2011 2:10:02 PM
6	107		t.edu	MUSI	Undetermined	Freshman	FULL-TIME	2012 Spring				Carrollton	TX	75007-1909	Feb 3, 2012 11:53:44 AM
7	104		nt.edu	CAS	History	Doctoral	FULL-TIME	2011 Fall				Denton	TX	76202-3066	Nov 30, 2011 2:02:15 PM
8	107		nt.edu	SOCS	Criminal Justice	Junior	FULL-TIME	2011 Fall				Houston	TX	77064-8129	Nov 30, 2011 7:17:59 PM
9	107		nt.edu	UGRST	University Undecided	Freshman	FULL-TIME	2012 Spring				Garland	TX	75044-2620	Feb 1, 2012 11:59:39 AM
10	107		nt.edu	COE	Kinesiology	Senior	FULL-TIME	2011 Fall				Denton	TX	76205-7112	Dec 1, 2011 9:52:11 AM
11	108		nt.edu	UGRST	University Undecided	Freshman	FULL-TIME	2011 Fall				Plano	TX	75023-7077	Dec 2, 2011 11:50:56 AM
12	107		nt.edu	UGRST	University Undecided	Sophomore	FULL-TIME	2011 Fall				Dallas	TX	75228-3161	Nov 30, 2011 11:48:30 AM
13	107		nt.edu	CAS	TX Acad. of Math and Science	Sophomore	FULL-TIME	2012 Spring				Arlington	TX	76001-5678	Jan 27, 2012 1:26:42 PM
14	107		t.edu	CAS	Pre-Psychology	Junior	FULL-TIME	2011 Fall				Spring	TX	77379-2310	Nov 30, 2011 8:35:36 AM
15	105		nt.edu	JOUR	Pre-Journalism	Senior	FULL-TIME	2012 Spring				Plano	TX	75024-5734	Jan 31, 2012 11:01:00 AM
16	107		nt.edu	BUAD	Accounting	Senior	FULL-TIME	2011 Fall				Lewisville	TX	75067-8336	Dec 7, 2011 1:43:37 PM
17	107		nt.edu	BUAD	Accounting	Senior	FULL-TIME	2011 Fall				Lewisville	TX	75067-8336	Dec 7, 2011 1:43:39 PM
18	107		nt.edu	BUAD	Accounting	Senior	FULL-TIME	2011 Fall				Lewisville	TX	75067-8336	Dec 7, 2011 1:43:46 PM
19	107		nt.edu	BUAD	Accounting	Senior	FULL-TIME	2011 Fall				Lewisville	TX	75067-8336	Dec 7, 2011 1:43:50 PM
20	107		nt.edu	BUAD	Accounting	Senior	FULL-TIME	2011 Fall				Lewisville	TX	75067-8336	Dec 7, 2011 1:43:54 PM

Going to The Next Level

- Prediction based off of I-E-O model
- Moving from programmatic evaluation to data-based decision making

Methodology:

- Requested all swipes for Fall 2010 for Student Affairs in late Fall 2011 from Decision Support (22K unique swipes from 11K+ students).
- Requested additional dataset from IR&E for retention, student demographics and characteristics.
- Merged datasets and removed any staff who swiped to test their events.
- Removed any non-student focused DSA event (e.g. professional development workshops).
- Removed duplicate swipes within special events. This process took 19 hours of cleaning.
- Kept duplicate swipes for office visits.
- In cases where the merged data file had discrepancies, we manually went back to source file and brought original data back over.

Methodology - RAP (2):

- Data put into R to restructure and aggregate the data for analysis. Engagement clusters created to address the types of impacts each swipe opportunity afforded students.
- Means and Frequencies were run on all students.
- Non-FTIC students were filtered out and means and frequencies were run on all FTIC students.
- Retention rate comparisons were run on all students and only FTIC students.
- Cumulative GPA comparisons were run on all students and only FTIC students.
- Independent samples t-tests were run on GPA across both groups.
- Frequency of swiping was computed and compared to retention rates.

Methodology – RAP (3):

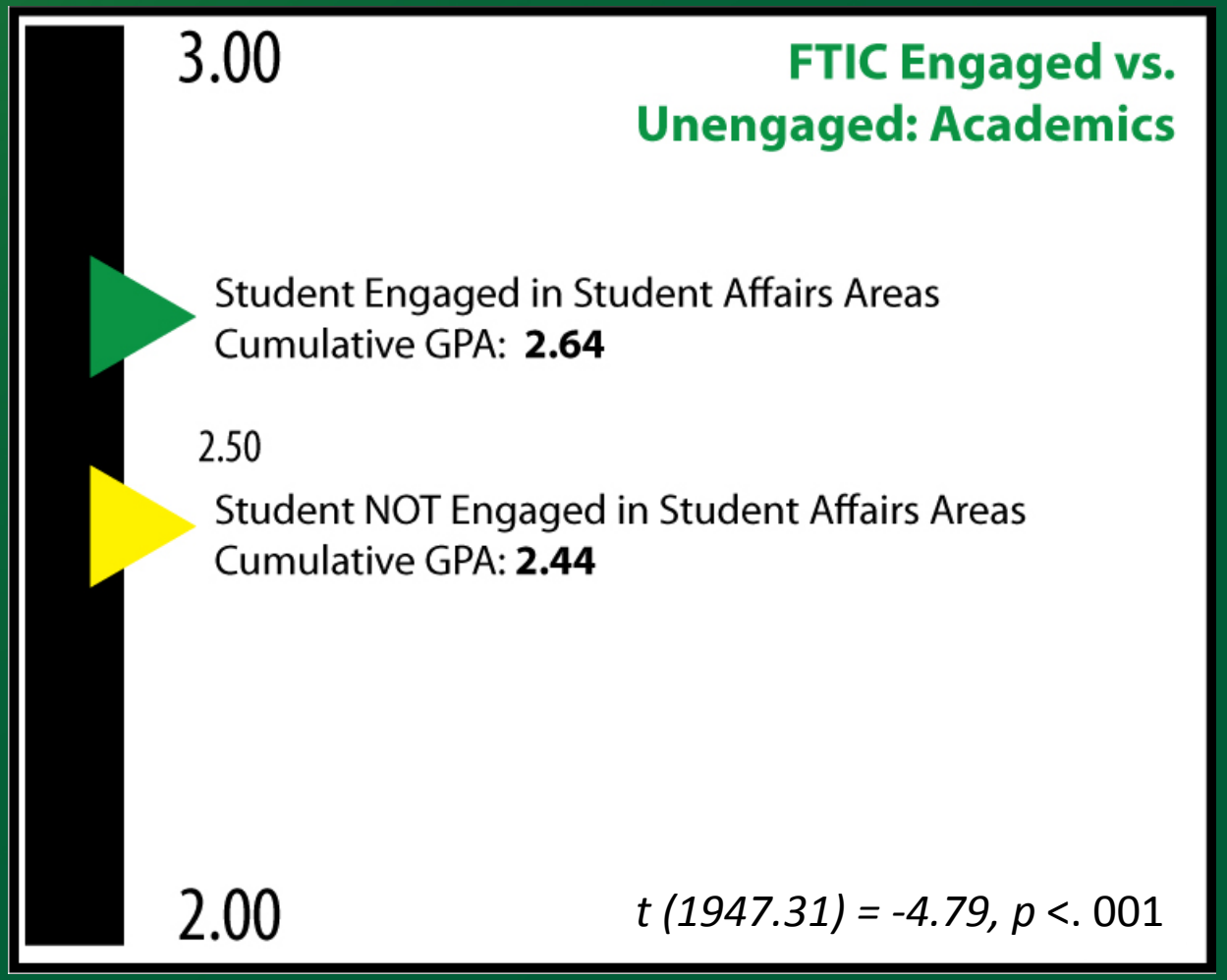
- Stepwise Logistic Regression employed to predict the impact of student engagement in student affairs while controlling for demographics and characteristics on student retention.
- This entire process required 72 hours of dedicated analysis time due to first time nature of exercise

- DISCLAIMER: CAUSATION DOES NOT PROVE CORRELATION AND VICE VERSE ☺

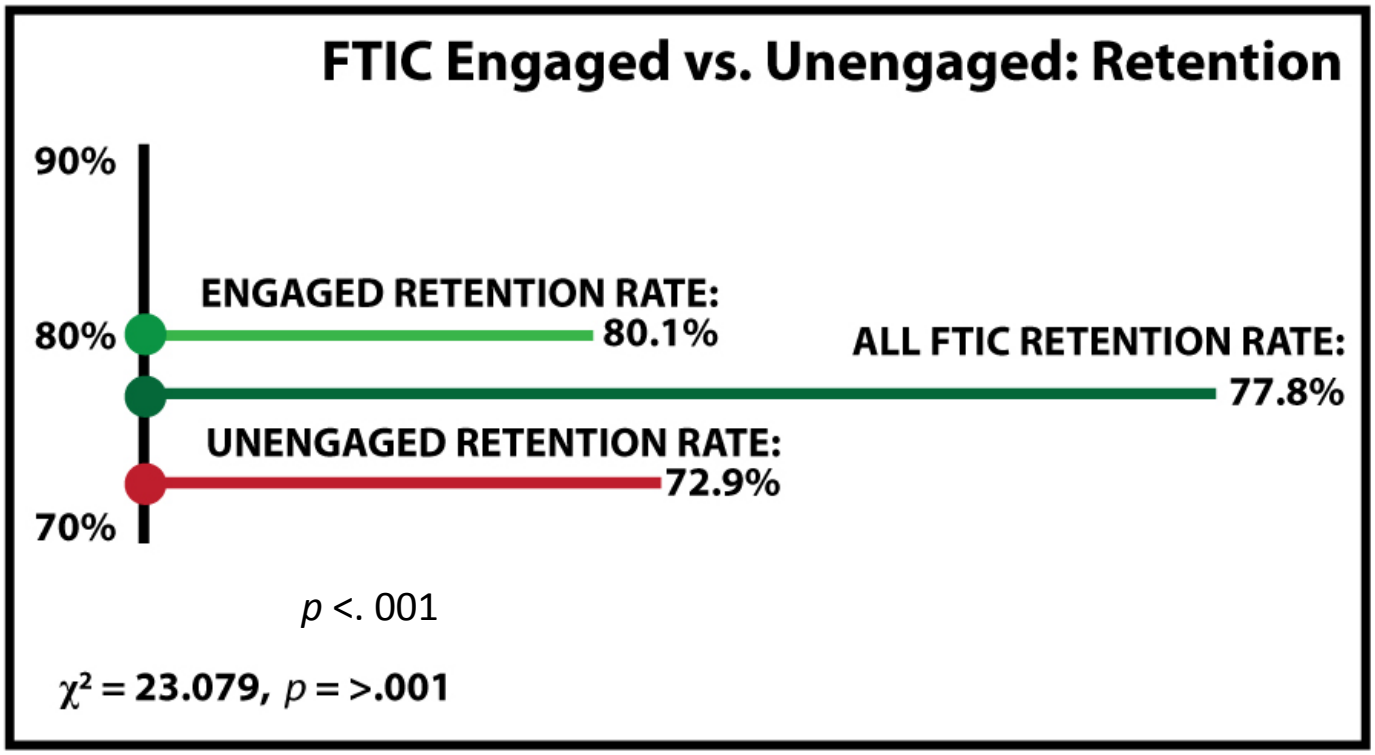
Findings: Demographics

	ALL UNT FTIC	FTIC ENGAGED	NON-ENGAGED
Male	46.4%	44.5%	50.7%
Female	53.6%	55.5%	49.3%
African American	14.8%	17.2%	9.8%
Native American	1.7%	1.7%	1.8%
Asian/Pacific Is.	5.7%	4.8%	7.7%
Hispanic	20.8%	23.5%	15.0%
Non-Resident	1.4%	.8%	2.3%
Other	.9%	.7%	1.2%
White	54.7%	51.3%	62.2%

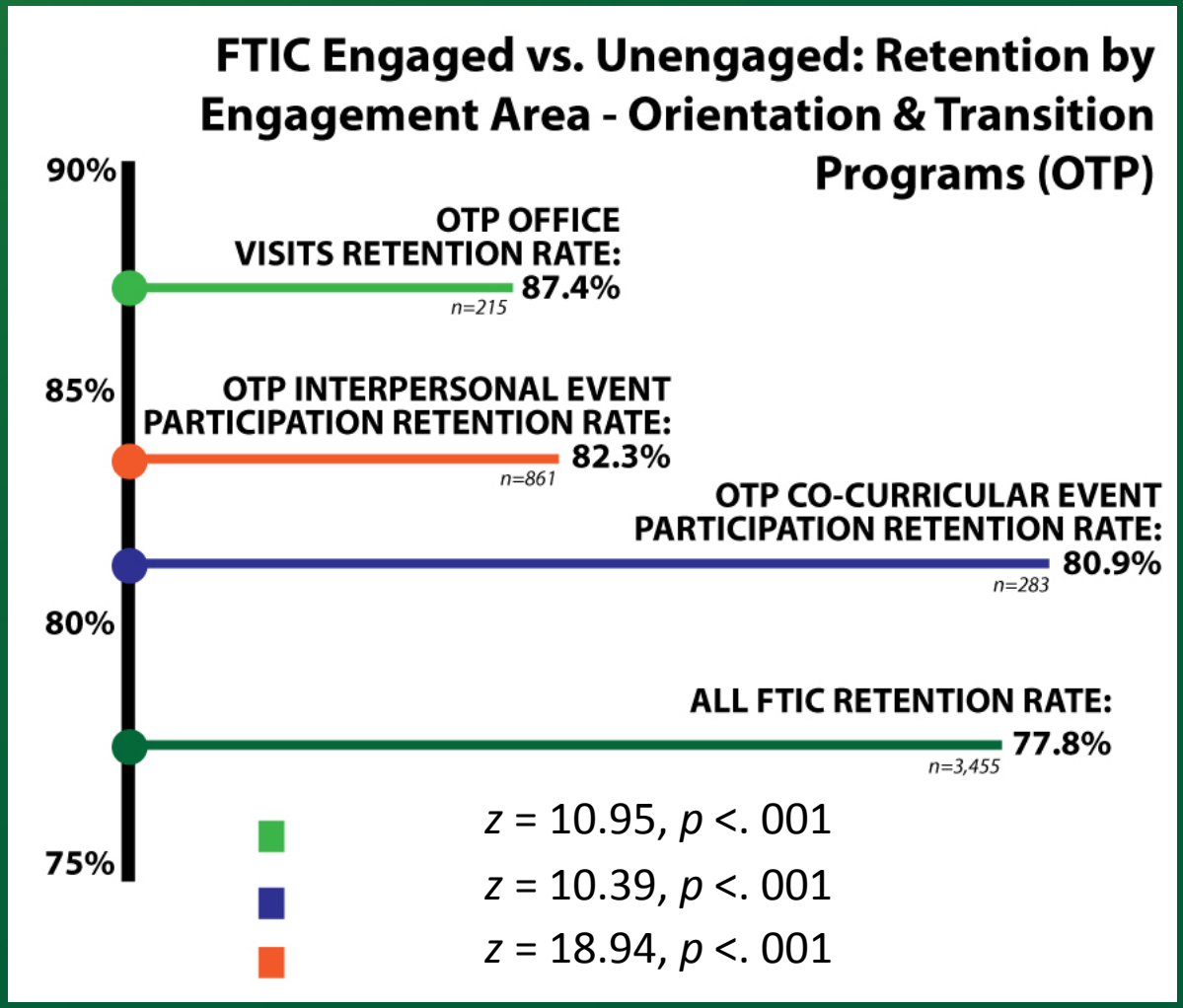
Engagement and Cumulative GPA



Engagement & Fall to Fall Retention



Engagement By Area: Orientation & Transition Programming



Frequency of Engagement and Retention

Totals:

- 785 Not Retained
- 2759 Retained
- 3544 Total FTIC
- 1940 Engaged at least once
- 54% retained were engaged
- 14% not retained were engaged

FTIC Engaged vs. Unengaged: Retention Rates by Number of Interactions

		Overall Retention Rates			
		Not Retained		Retained	
		#	%	#	%
TOTAL SWIPES	.00	304	27.1%	819	72.9%
	1.00	223	24.6%	682	75.4%
	2.00	134	20.4%	522	**79.6%**
	3.00	65	15.6%	351	**84.4%**
	4.00	27	13.4%	174	**86.6%**
	5.00	16	12.5%	112	**87.5%**
	6.00	7	12.7%	48	**87.3%**
	7.00	5	19.2%	21	**80.8%**
	8.00	3	18.8%	13	**81.3%**
	9.00	1	9.1%	10	**90.9%**
	10.00	0	0.0%	4	**100.0%**
	11.00	0	0.0%	1	**100.0%**
	12.00	0	0.0%	1	**100.0%**
	17.00	0	0.0%	1	**100.0%**

Stepwise Logistic Regression

- Engaging in Student Affairs activities in the Fall of 2010 does increase the probability of being retained.
- Students who engaged in Student Affairs activities were 1.21 times more likely to be retained compared to unengaged.
- This finding is AFTER controlling for student demographics and characteristics including GPA.

$b = .188$, Wald $\chi^2(1) = 3.869$, $p = .049$

Next Steps

- IRE is replicating study utilizing entire engagement records for entire campus for Fall 11 and Spring & Summer 12 engagements
- Record size is expected to increase 400% as a majority of student affairs areas are now swiping ID Cards
- Obtained IRB approval
- In the midst of data conversion
- Assigning engagement areas

Final Thoughts: VAST POTENTIAL

Term in 2011	# of Swipes Captured	Term in 2012	# of Swipes Captured	% Change from 2011 to 2012
Fall	34,996	Fall	71,289	103.7%
Spring	26,573	Spring	53,349	100.7%
Summer	4,105	Summer	13,851	237.4%
Total	**65,674**	**Total**	**138,489**	**110.9%**

- Retention Research
- Budget Analysis
- Reaffirmation Evidence
- Advancement Data for Fundraising

Q&A and Closing Thoughts

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On Linked In!

Brief Theoretical Background

- In *Demonstrating Student Success,* Bresciani, Gardner and Hickmott (2009) argue that student affairs divisions would be well served by using Astin's (1993) I-E-O model as an ideal approach to manage outcomes-based assessment.
- Association for Institutional Research (AIR) confirms the need for campuses to use I-E-O model for retention studies (APC, 2011).
- Sherlock (2009) urges practitioners to use data to inform decision making and move away from opinions and assumptions.
- Maki (2004) urges campuses to use direct evidence as indirect evidence does not always accurately paint a complete picture of the relationship between student service usage, persistence and success.
- Tinto (2006) urges practitioners to not only understand why students exit from our institution but to know how to actively help students stay and succeed. Furthermore, Tinto urges practitioners to identify effective action to address what was learned.
- Pascarella and Terenzini (1991, 2005) meta analysis confirms institutional environment provides a context for student learning
- Kuh (2000) confirms positive effects of campus environments on student success

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