

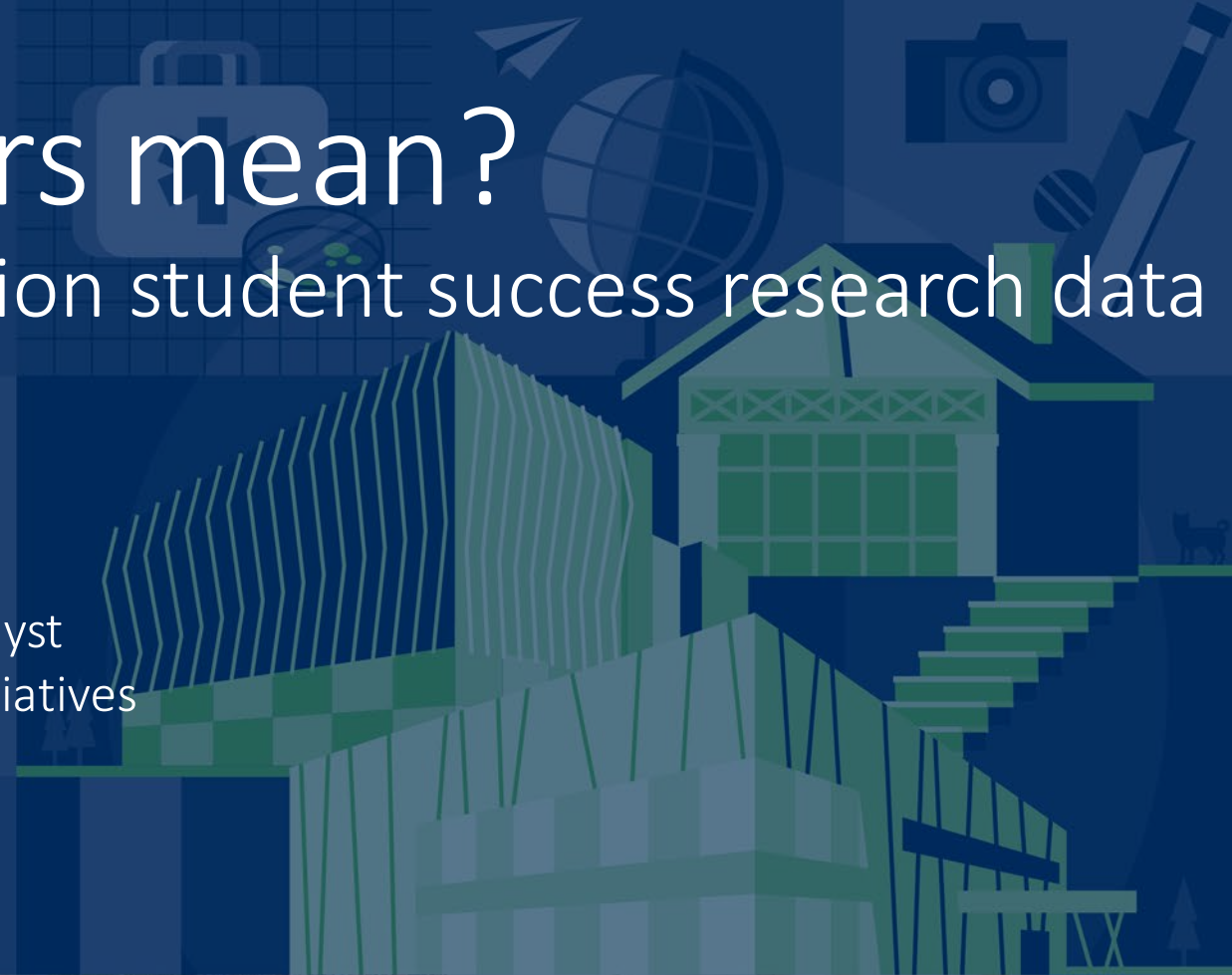


# What do the numbers mean?

## Unpacking retention and graduation student success research data

CUPA PD Conference – June 21<sup>st</sup>, 2022

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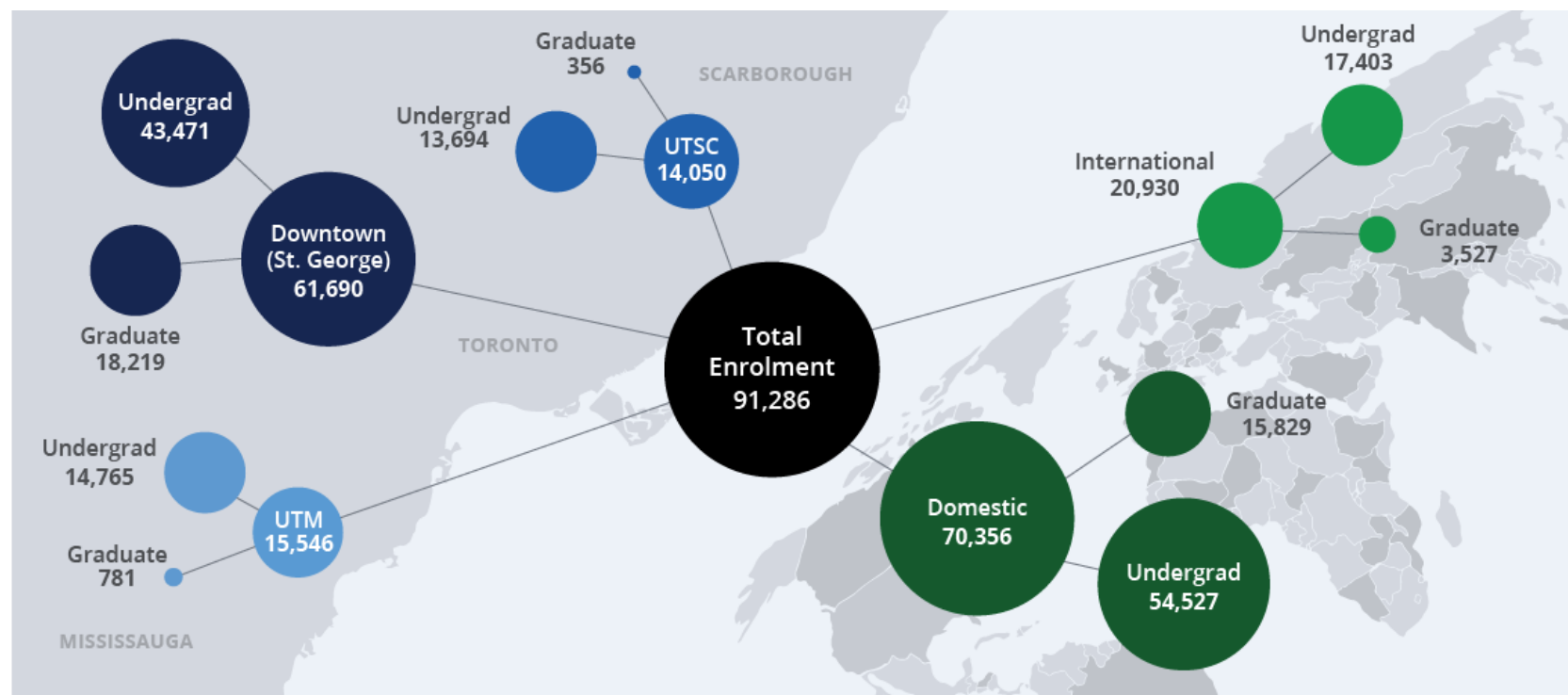
UNIVERSITY OF  
**TORONTO**  
SCARBOROUGH




# Roadmap: Student success at the University of Toronto Scarborough (UTSC)

- Introduction of UTSC
- Overall context of research and research questions
- Theoretical framework and methods
- Findings and analysis
- Outcomes/Interventions
- Where are we going next?

# UTSC within UofT



	St. George	Mississauga	Scarborough	Domestic	International	Total Enrolment
Graduate	18,219	781	356	15,829	3,527	19,356
Undergraduate	43,471	14,765	13,694	54,527	17,403	71,930
<b>Total</b>	<b>61,690</b>	<b>15,546</b>	<b>14,050</b>	<b>70,356</b>	<b>20,930</b>	<b>91,286</b>



# Research questions guiding student success journey...

- 1) What are the correlative factors that 'define' a successful student?
- 2) What does retention look like from year 1 to 2 in relation to the correlative factors included?
- 3) What does graduation in 4, 5 or 6 years look like in relation to the correlative factors included?
- 4) What implications do these findings have for future research opportunities and policy implications?

# Research methods to understand student success

- Initial exploratory analysis of retention and graduation for 9 cohorts
- Fall of 2009 through the fall of 2017 entering cohorts
- Software used for analysis are:
  - *Tableau* - platform allows to visualize data and dashboards
  - Statistical Analysis System (SAS) - allows for logistic regression analysis of attrition data



# Framework: Consortium for Student Retention Data Exchange (CSRDE)

- First-time, full-time, degree seeking students:
  - For this study, full time students for this study include students registered in at least 80% of the traditional full course load or 4 courses for their first semester (at November 1<sup>st</sup>)
  - This is the North American wide industry standard which is used by UofT's official reporting in the Council of Ontario Universities' (COU) and Common University Data Ontario (CUDO)
  - Standard used in reports required by province under Strategic Mandate Agreement (SMA)

# What correlative factors can be used to understand student success?

For the members of each of the cohorts we identified the following predictors in relation to retention and graduation included:

- ✓ Gender (F, M, U)
- ✓ Legal status (international and domestic)
- ✓ Degree type (Arts, Science and Business - at admission)
- ✓ Co-op status (at admission)
- ✓ Admission group (direct admission, alternate program, alternate campus)
- ✓ Admission average (<75%, 75-79.9%, 80-84.9%, >=85%)
- ✓ OSAP aid (yes, no)

# Visualizing success using the tools of Tableau

## Definitions for Filters:

**CSRDE** (The Consortium for Student Retention Data Exchange): to screen students whether (Yes/No) registered as first-time (no university study previously), full time (4 courses), degree-seeking (certificates excluded) on the first Fall session

**Full Fall Reg:** to screen students whether (Yes/No) completed the full duration of first Fall session registration. If "Yes", students have completed the full fall session. If "No", students have registered as of Nov 1 but withdrew all course registration by end of first fall session.

**Cand LegalStatus:** Candidacy legal status, with 0-1 as Domestic, and >=2 as International

**Transfer 2nd Fall:** to screen students whether they have transferred to another campus (UTM & UTSG) on the 2nd Fall session

**Admission type:** 1) Direct: admitted to the program and campus that students applied for (choice number = 1 to 97)

2) Alternate Program: admitted to the campus that students applied for but a different program students did not applied for (choice number = 99)

3) Alternate Campus: admitted to a different campus that students did not applied for (choice number = 98)

**UTSC Coop cand:** to screen students whether they were admitted to a UTSC Coop program (Yes/No)

**UTSC Coop grad:** to screen students whether they have graduated from a UTSC Coop program (Yes/No)

**Get Started:** an indicator for students who have attended Get-Started orientation program ("Yes")

**Indigenous:** an indicator for Indigenous students ("Yes")

**Post:** The study of subject code on each session

**Post title:** The study of subject title on each session..

## Select filters below for a student cohort

Admission year (All)	CSRDE Yes	Full Fall Reg (All)	English proficiency (All)	Cand gender (All)	Cand LegalStatus (All)	AdmAvg grp (All)
Admission type (All)	Degree cand (All)	Cand post (All)	Cand post title (All)	UTSC Coop cand (All)	Get Started (All)	
Grad Session (All)	Degree grad (All)	Grad campus (All)	Grad post title (All)	UTSC Coop grad (All)	Grad post (All)	
Admission session (All)	AcademicYear FW (Multiple values)	Post (All)	Post title (All)	Transfer 2nd Fall (All)	Indigenous (All)	



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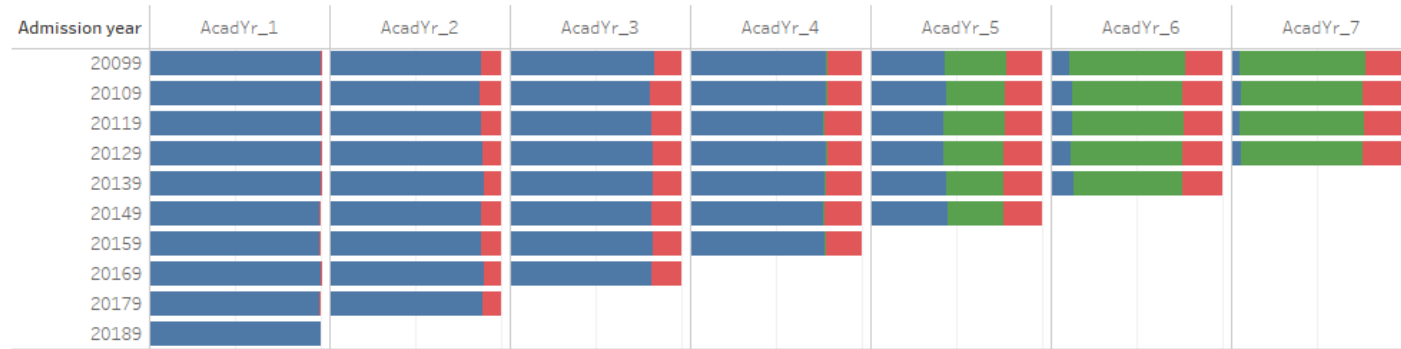
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### Select filters below for a student cohort

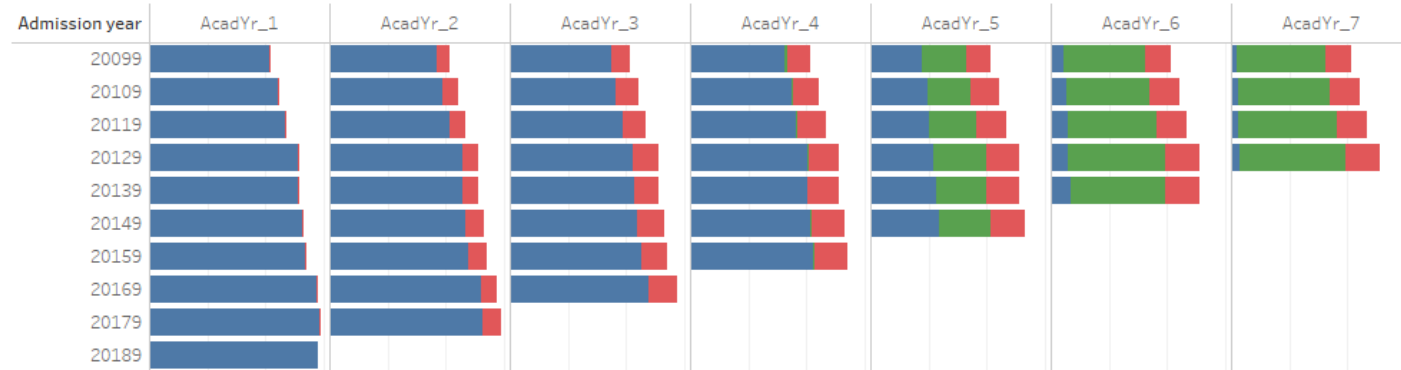
Admission year	CSRDE	Full Fall Reg	English proficiency	Cand gender	Cand LegalStatus	AdmAvg grp
(All) ▼	Yes ▼	(All) ▼	(All) ▼	(All) ▼	(All) ▼	(All) ▼
Admission type	Degree cand	Cand post	Cand post title	UTSC Coop cand	Get Started	
(All) ▼	(All) ▼	(All) ▼	(All) ▼	(All) ▼	(All) ▼	
Grad Session	Degree grad	Grad campus	Grad post title	UTSC Coop grad	Grad post	
(All) ▼	(All) ▼	(All) ▼	(All) ▼	(All) ▼	(All) ▼	
Admission session	AcademicYear FW	Post	Post title	Transfer 2nd Fall	Indigenous	
(All) ▼	(Multiple values) ▼	(All) ▼	(All) ▼	(All) ▼	(All) ▼	

# The magic of Tableau to visualize data

1) Institutional Retention & Graduation Rates (%): Calendar Year (Academic Year Fall Session)



1) Institutional Retention & Graduation Counts (n): Calendar Year (Academic Year Fall Session)



You have selected the following Filters:

Admission year="All"; CSRDE="Yes"; Full Fall Reg="All"; English proficiency="All"; Cand gender="All"; Cand LegalStatus="All"; AdmAvg  
 grp="All"; Admission type="All"; Degree cand="All"; Cand post="All"; Cand post title="All"; UTSC Coop cand="All"; Get Started="All";  
 Grad Session="All"; Degree grad="All"; Grad campus="All"; Grad post title="All"; UTSC Coop grad="All"; Grad post="All"; Admission  
 session="All"; AcademicYear FW="AcadYr\_1\_F, AcadYr\_2\_F, AcadYr\_3\_F and 4 more"; Post="All"; Post title="All"; Transfer 2nd Fall=All;  
 Indigenous="All"



# The recipe to building a successful Tableau dashboard

Identify CSRDE cohort, for 2009 to 2017 Fall admissions



For each new student, retrieve data  
(retention, graduation, academic standing, etc.)  
from subsequent Fall sessions



Using SAS, clean & link ALL data together and create a master SAS data file



Import SAS file to Tableau



Create Tableau dashboard data visualizations for  
retention, CGPA, academic status and graduation

# What is our overall retention (year 1 to 2) teaching us?

Cohort Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
Cohort Size	2,071	2,207	2,336	2,550	2,553	2,645	2,696	2,878	2946
Retention (n)	1,834	1,934	2,066	2,272	2,292	2,336	2,376	2,592	2625
Retention (%)	88.6%	87.6%	88.4%	89.1%	89.8%	88.3%	88.1%	90.1%	89.1%
Attrition (n)	237	273	270	278	261	309	320	286	321
Attrition (%)	11.4%	12.4%	11.6%	10.9%	10.2%	11.7%	11.9%	9.9%	10.9%



# What does UofT's graduation rates tell us?

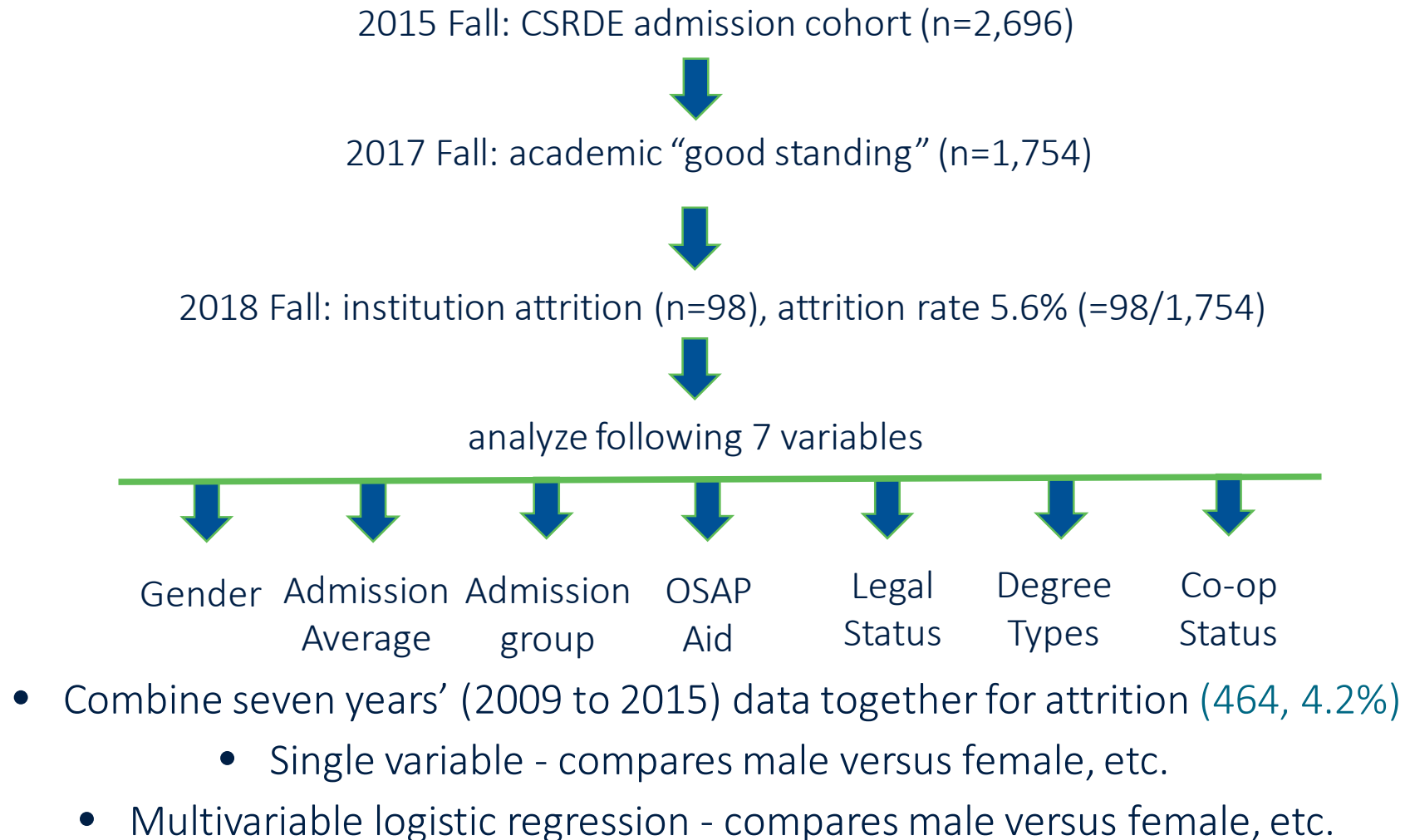
Cohort Year	2009	2010	2011	2012	2013	2014
Cohort Size	2,071	2,207	2,336	2,550	2,553	2,645
4-Year Graduation	36.0%	34.1%	35.3%	35.2%	33.7%	32.8%
5-Year Graduation	67.7%	64.6%	64.7%	65.1%	63.3%	
6-Year Graduation	73.5%	71.2%	72.5%	71.3%	-	

# What is the bigger picture? How does UofT rank?

University/Division	Entry Cohort Number	6-Year Graduation Rate	Rank in Canada	Rank in Ontario	Rank Within U of T
FPEH	154	91.6%			1
APSE	1,167	84.5%			2
ARTSC	4,548	76.8%			3
UTSC	2,203	71.2%			4
UTM	2,207	69.4%			5
Queen's	3,689	85.5%	1	1	
Western	4,568	83.4%	2	2	
Guelph	3,896	78.6%	5	3	
Waterloo	6,060	78.2%	6	4	
McMaster	4,833	77.5%	7	5	
<b>UofT Total</b>	<b>10,384</b>	<b>75.2%</b>	<b>9</b>	<b>6</b>	
Ryerson	4,024	70.0%	14	7	
Brock	3,212	69.5%	15	8	
Laurentian	1,180	68.2%	16	9	
Windsor	1,975	68.1%	17	10	
Nipissing	712	68.0%	18	11	
Wilfrid Laurier	4,164	67.5%	20	12	
Ottawa	5,009	66.2%	21	13	
Carleton	4,053	65.8%	22	14	
York	6,120	65.5%	24	15	
Trent	1,323	64.6%	25	16	
Lakehead	1,200	64.4%	26	17	
OCAD	900	61.4%	28	18	
UOIT	1,441	60.4%	29	19	

McGill	2,368	82.0%	3
Laval	4,309	79.4%	4
Montreal	3,626	76.1%	8
UBC	6,378	74.1%	10
Calgary	2,626	73.5%	11
Quebec	8,201	73.0%	12
Alberta	4,423	70.7%	13
Concordia	3,422	67.8%	19
Dalhousie	2,086	65.7%	23
Saskatchewan	892	64.1%	27
Victoria	2,262	60.3%	30
Mount Royal	742	59.7%	31
Algoma	200	53.0%	32
Lethbridge	615	50.9%	33
Manitoba	3,028	50.3%	34

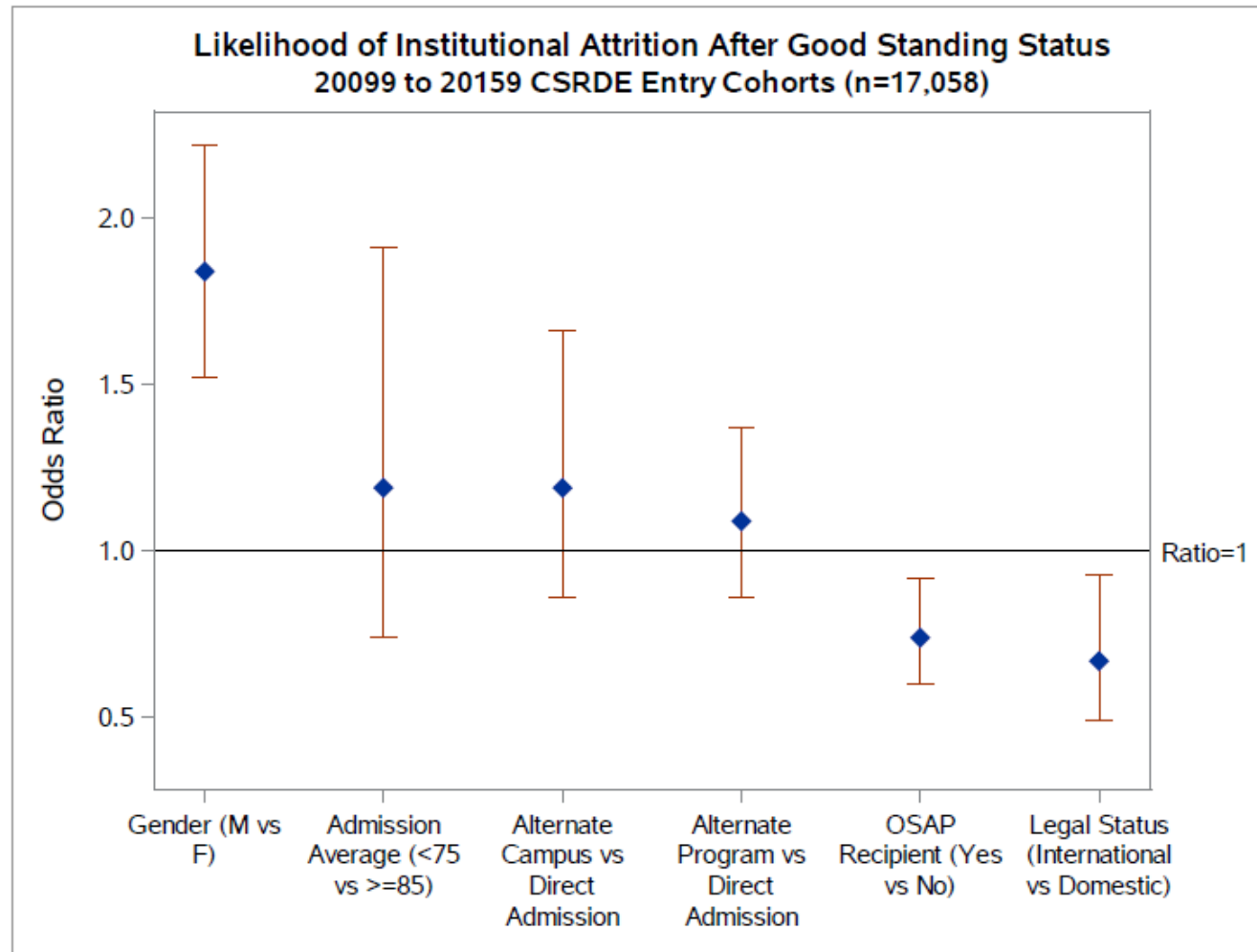
# How do we unpack and analyze our attrition rates?



# Attrition following good standing status

	Gender		Admission Average		Admission Group			OSAP Recipient	
	Male	Female	< 75	>=85	Direct	Alternate Program	Alternate Campus	Yes	No
Students, n	4,370	6,760	522	3,618	7,020	3,093	1,017	6,545	4,585
Attrition, %	5.8%	3.1%	4.6%	3.9%	4.0%	4.3%	4.8%	3.6%	4.9%
	Legal Status			Degree Types			Coop		
	International		Domestic	BBA	HBA	HBSC	Yes	No	
Students, n	1,613		9,517	1,772	3,910	5,448	2,362	8,768	
Attrition, %	4.2%		4.2%	4.9%	3.9%	4.1%	4.3%	4.1%	

# Overall results: Multi-variable logistic regression for attrition



All 7 variables were analyzed. Top 5 variables are shown in the graph.

Other two variables (Degree Types and Coop) are not significant predictors)



# Outcomes/Interventions

UTSC's Get Finished Scholarship



Architecture of historic Convocation Hall, UofT

# Where do we hope to go next...

- Continue expansion of admission cohorts from 2009 onwards
- Focus in on Ontario students
- Exclude stop-outs (who leave and then come back)
  - Exit interviews?
- Collaborations with academic departments/faculty
  - Geography
  - International students and transfer students
- Expanding the number of correlative factors by considering age and socio-economic status as predictors

Where does intersectionality fit into all of this dialogue?



Questions, ideas and/or  
insights, please contact:

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Picture is from UTSC's FB:  
This is the Valley Land Trail  
at UTSC which recently  
opened. It is a gently sloping  
paved trail, which is 500m  
long and traverses a 19m  
drop. It connects UTSC to  
the City of Toronto  
maintained trails in  
Scarborough's gorgeous  
Highland Creek valley.