

# Business of Software (CSC454/2527)

## Welcome & Course Introduction

DEPARTMENT OF COMPUTER SCIENCE

University of Toronto

September 13, 2017

INSTRUCTORS: Helen Kontozopoulos & Mario Grech

**WELCOME!**  
**&**  
**THANK YOU FOR INVESTING YOUR TIME**

# Teaching Team



Mario Grech

- International tech entrepreneur and investor
- Executive career in brand name Silicon Valley tech companies (Oracle, Sun Microsystems, CRAY Research)
- Co-founded/exited four successful startups
- General Partner in a venture capital firm
- Co-Founder and Director of DCS Innovation Lab
- Co-Chair DCS Entrepreneurship Committee
- MBA – Rice U, Engineering – U of T



Helen Kontozopoulos

- Mentors early stage startups and social entrepreneurs
- General Partner in a venture capital firm
- Co-Founder and Director of DCS Innovation Lab
- Member of DCS Entrepreneurship Committee
- Specializes in strategic design thinking + marketing + business development
- MIB – Tasmania U, BA – York U, Tech & Innovation- MIT

# Teaching Assistant



Sayyed Nezhadi

- International IT career of 20+ years in Systems Design, Software Development, Database Design, Systems Analyst, Business Analyst, Executive , Consultant, Project Management, Entrepreneur
- Founder in startup ventures
- Degrees in Engineering
- Executive MBA in Entrepreneurship and Innovation
- Ph.D. student at the Department of Computer Science – specialty Artificial Intelligence

# Teaching Assistant



Atoosa Nasiri

- Wireless Telecom career with 15+ years of international experience in Smart Grid, Smart Cities, Internet of things (IoT), Technology Roadmapping, and New Product Launch Process
- Degree in Electrical Engineering and Management of Technology
- PhD student in Department of Electrical and Computer Engineering working with Smart Applications on Virtual Infrastructure (SAVI) research group
- Research Focus: Distributed Computing in Customer Premise Domain & Network Edge

# Our Personal Motives & Drivers

1. We want to make you successful
2. We want you to avoid devastating commercialization mistakes and bad practices
3. We enjoy teaching this powerful methodology
4. Exceptional gratification through inspiring outstanding people dedicated to excellence

# Course Description

Students are introduced to the contemporary tech industry and learn the key components necessary to commercialize tech innovation in a startup ecosystem or an established company (Slack, Uber, Snapchat, IBM, Samsung)

- Delivered through a combination of lectures, workshops, guest speakers\*, mentors, evaluation panels, tutorials, assignments and mid-term
- Teams of 4 students are expected to develop an investable business plan and a minimum viable tech solution and present a proposal for launching a sustainable company to a judging panel
- You will have several opportunities to speak to audiences and present to a wide array of people

\*Guests speakers include active entrepreneurs, investors, lawyers and industry executives with experience and current perspectives on the software industry

# Course Objectives

*To provide students with a distinct competitive career advantage in the startup ecosystem or in industry by establishing an understanding of;*

- The tech business environment in general, and specifically the unique aspects of commercializing invention to yield innovation in a chosen sector.
- The validation techniques in launching a viable tech venture as well as the business fundamentals and concepts of using simulation and forecasting models to support sustainability and scalability claims.
- How to develop, present and critique business proposals for tech ventures

Upon completion of the course, students will have had direct exposure to the processes involved in commercializing invention into an Investable and Return Driven Venture that meets or exceeds investors' hurdle rates

# Investable + Return Driven Ventures

- We are not teaching not-for-profit entrepreneurship which may or may not generate a revenue stream but, for the most part depend on constant charitable handouts and limited models of self sustenance
- We are profit and self sustenance driven yet tempered by a social conscience so as not to generate negative effects on the natural ecosystem and humankind
- Incremental wealth creation and positive outcomes are priorities and profits are reinvested into the enterprise to fund scaling, leading to higher equity valuations and driving toward a lucrative exit event to repay investors and other stakeholders

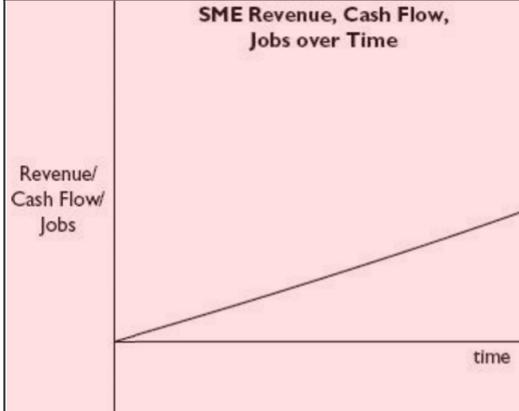
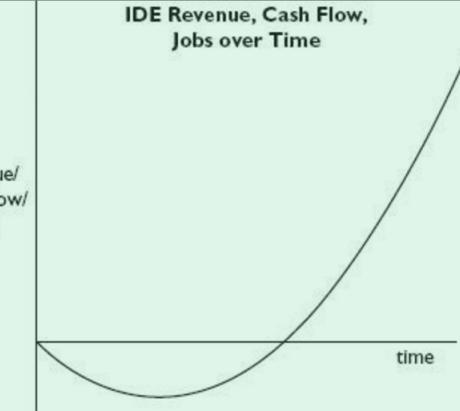
# Not-For-Profit Entrepreneurship

Characterized by not being investor return driven, but to implement widespread improvements in society and the environment. This activity is sustained by philanthropic funding and operations.

Examples of this include microfinance institutions (poverty relief), educational programs, disaster relief, at risk children, endangered wildlife, environmental preservation

# SME versus IDE

*Source:* Bill Aulet and Fiona Murray, "A Tale of Two Entrepreneurs: Understanding Differences in the Types of Entrepreneurship in the Economy," Ewing Marion Kauffman Foundation, May 2013, [www.kauffman.org/uploadedfiles/downloadableresources/a-tale-of-two-entrepreneurs.pdf](http://www.kauffman.org/uploadedfiles/downloadableresources/a-tale-of-two-entrepreneurs.pdf).

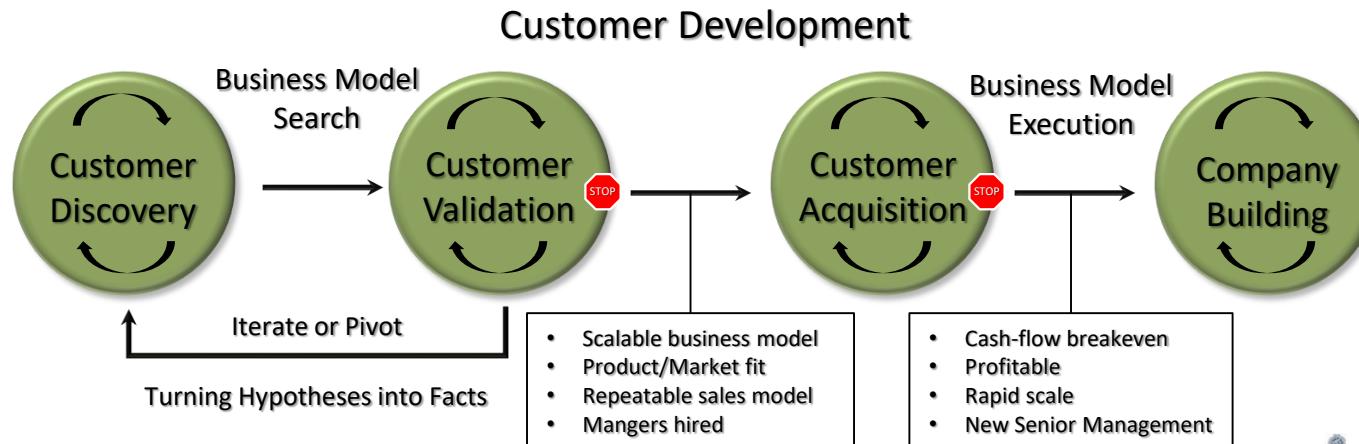
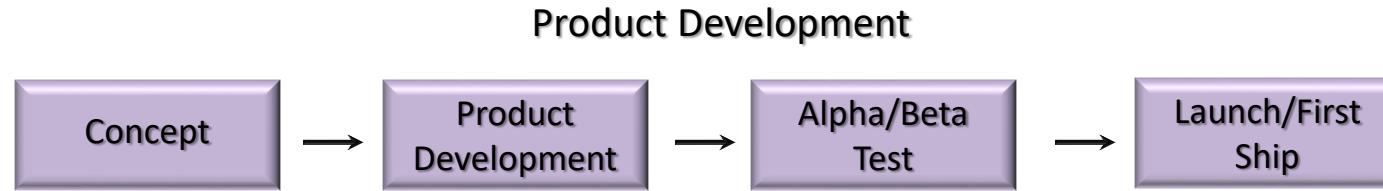
SME Entrepreneurship	IDE Entrepreneurship
Focus on addressing local and regional markets only.	Focus on global/regional markets.
Innovation is not necessary to SME establishment and growth, nor is competitive advantage.	The company is based on some sort of innovation (tech, business process, model) and potential competitive advantage.
"Non-tradable jobs"—jobs generally performed locally (e.g., restaurants, dry cleaners, and service industry).	"Tradable jobs"—jobs that do not have to be performed locally.
Most often family businesses or businesses with very little external capital.	More diverse ownership base including a wide array of external capital providers.
The company typically grows at a linear rate. When you put money into the company, the system (revenue, cash flow, jobs, etc.) will respond quickly in a positive manner.	The company starts by losing money, but if successful will have exponential growth. Requires investment. When you put money into the company, the revenue/cash flow/jobs numbers do not respond quickly.
<b>SME Revenue, Cash Flow, Jobs over Time</b> 	<b>IDE Revenue, Cash Flow, Jobs over Time</b> 

# Core Tenets to De-risking Ventures

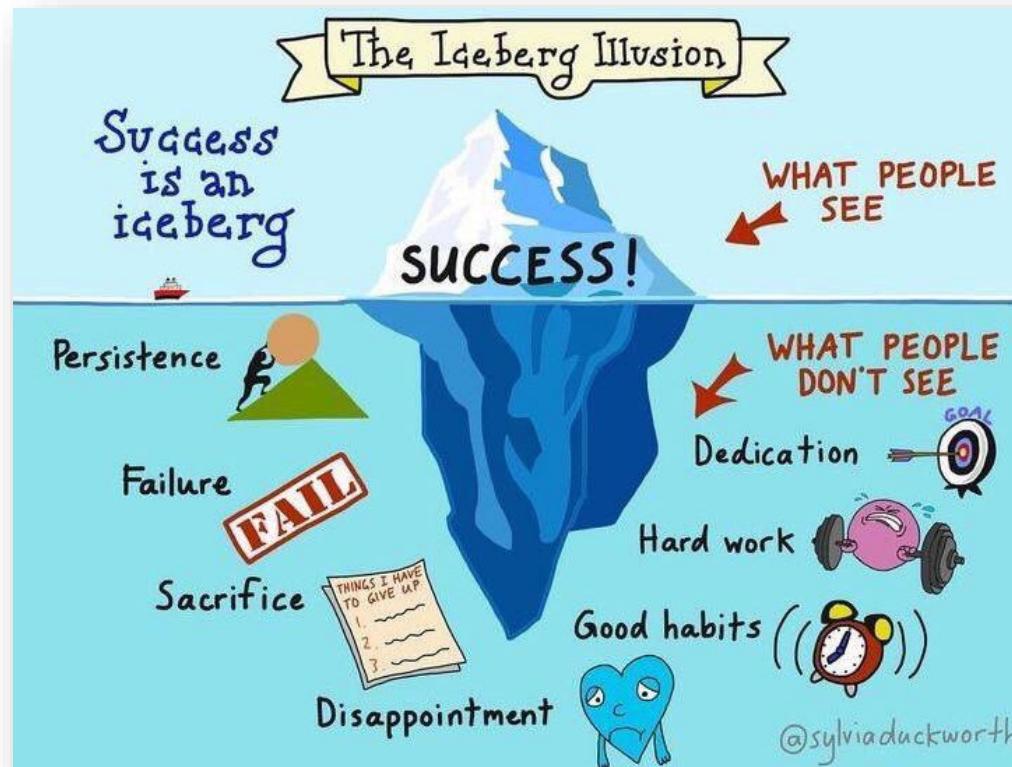


- Market Analysis
- Value Proposition Canvas
- Business Model Canvas
- Competitive Analysis
- SWOT Analysis
- Financial Projections

# Course Roadmap



# Success Realities



# Impacting the Future Takes....

- Disruptive innovation that desecrates the status quo
- Innovation is Invention + Commercialization
- Commercialization means having paying customers, otherwise its an “orphaned invention”
- Staying totally customer centric and execution oriented

# Why Ballot?

*“Some people aren’t used to an environment where excellence is expected” – Steve Jobs*

*“....and I am totally sensitive to that as long as they don’t take this class” – Mario Grech*

- This is a very time consuming, high touch, team based course – please do not underestimate it! We want dedicated and serious students to increase the chances of success for you + team
- This is a business venture building course and it will force you to think in ways that might be alien to most in technical and non-business related fields
- Communication, people skills, a dedication to excellence and high emotional intelligence are essential
- Adapting to ever-changing, unfamiliar and abstract environments is the hallmark of successful entrepreneurs, and teams
- This way everyone knows that they are surrounded by top notch and capable classmates

# Attendance, Class Preparation & Responsiveness

- This is a challenging course that provides near real-world conditions of a proven methodology
  - it requires regular instruction, feedback and iteration to become proficient
- Missing lectures, tutorials, or team work sessions runs the risk of adversely affecting your grade and that of your teammates (70% of each of your teammates' final grade is in your hands) – The less you attend and participate the more of a liability you become to your team.
- Students who miss a session are completely responsible for catching up on what is covered, assignments that were handed out and directions given

# Course Communications

We are using an intuitive online forum called Basecamp for;

- Discussions
- Announcements
- Questions - Answers
- Lecture notes, presentations
- Assignment distribution and submissions
- Coordinating events, meetings

# Email Contact Policy – Basecamp is the Default

When contacting instructors or TAs through email please copy the instructors and TAs to avoid duplicate efforts. Email should be used when the nature of your message is private, sensitive or confidential. If you want a specific person on the teaching team to answer please name that person in the opening of the email and copy the others so that we are always aware of the situations and issues. Not following this policy will result in delays in responses until we determine if the other teaching team members have been included in the loop.

Please respect everyone's time and use good judgement.

# Instructional Methods

The course achieves its objectives through a combination of

- Lectures and experiential discussion, including Q &A
- Workshops,
- Guest speakers, presentations and judging panels with Q & A
- Assigned readings related to the course and assignments
- Student participation in class discussion, presentations and critiques
- Development and completion of a business plan, a product, and pitch presentation in teams

# Evaluation Criteria

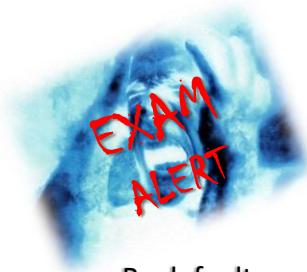
Each student's final mark will be allocated on the following basis;

- 72.5% is derived from seven assignments (**six team assignments = 70%**, one individual assignment = 2.5%)
- 20% final exam
- 10% is assigned for class participation (assigned at the end of the semester)

Late submissions will cost the grade a five percent reduction for each twelve hour period delivered late. Individual assignment grading breakdowns will be included in each assignment. Writing, organization, formatting, citations and presentation will count. The expectation is professional excellence and first rate quality.

# Evaluation Criteria Breakdown

Assignment Issue Date	Assignment Due Dates	Completion Days	Assignment Information	Grades Distribution		
				Team	Individual	Bonus
Friday, August 25, 2017	Friday, September 8, 2017	Noon Basecamp	14	<b>Assignment 1:</b> Individual Written Introductions (2.5% bonus)	2.5%	2.5%
Wednesday, September 13, 2017	Tuesday, September 26, 2017	10pm Basecamp	13	<b>Assignment 2a:</b> Team Written Industry Analysis (5%)	5.0%	5.0%
Wednesday, September 13, 2017	Wednesday, September 27, 2017	In-class	14	<b>Assignment 2b:</b> Team Pitches (5%)	5.0%	5.0%
Wednesday, September 27, 2017	Monday, October 9, 2017	10pm Basecamp	12	<b>Assignment 3a:</b> Team Written Market Opportunity (5%)	5.0%	5.0%
Wednesday, September 27, 2017	Wednesday, October 11, 2017	In-class	14	<b>Assignment 3b:</b> Team Pitches (5%)	5.0%	5.0%
Wednesday, October 11, 2017	Monday, October 30, 2017	10pm Basecamp	19	<b>Assignment 4:</b> Team Written Customer Segment, Persona (10%)	10.0%	10.0%
Wednesday, October 18, 2017	Monday, October 30, 2017	10pm Basecamp	12	<b>Assignment 5a:</b> Team Written Value Proposition, Competition, Tech Know-How (5%)	5.0%	5.0%
Wednesday, October 18, 2017	Wednesday, November 1, 2017	In-class	14	<b>Assignment 5b:</b> Team Pitches (5%)	5.0%	5.0%
Wednesday, November 1, 2017	Tuesday, November 21, 2017	10pm Basecamp	20	<b>Assignment 6:</b> Team Written Financials & Risk (10%)	10.0%	10.0%
Tuesday, November 21, 2017	Wednesday, December 6, 2017	In-class	15	<b>Assignment 7a:</b> Team Pitches (10%)	10.0%	10.0%
Tuesday, November 21, 2017	Monday, December 11, 2017	10pm Basecamp	20	<b>Assignment 7b:</b> Team Written Executive Summary (10%)	10.0%	10.0%
Wednesday, September 13, 2017	Wednesday, December 6, 2017		84	<b>PARTICIPATION (10%)</b>	10.0%	
	December 2017			<b>FINAL EXAM: (20%)</b>	20.0%	
					70.0%	30.0%
					2.5%	
						10.0%
						20.0%
					72.5%	20.0%
						10.0%
					102.5%	
						102.5%



# Final Exam

By default everything that is taught in this class or associated workshops whether taught directly by me, Helen or any guest speakers is fair game on the midterm exam, including the assigned readings. The graphic above means that there is a very high probability that this material will be on the exam. The opposite is not true – that is the absence of the above graphic on any material does not mean that the material will not be tested. The Prime Directive is that everything is fair game.

# Final Exam

Please make sure you bring:

- Pens/pencils/erasers to write
- A calculator - No cell phone calculator apps will be allowed

We will be operating this midterm under UofT's standard rules of engagement -

<http://www.artsci.utoronto.ca/current/exams/reminder>

- No aids will be allowed
- No cell phones will be allowed
- It is a closed book midterm
- We know all of you so you do not need to have your student card
- Only enrolled students will be allowed into the class during the midterm

# Teammate Termination Policy

Team dynamics is a critical ingredient in new ventures. As in real business environments we are giving teams the ability to terminate teammates for cause with the instructors' review of the team's documented facts and subsequent approval. If teammates are not pulling their share of the workload or not attending vital meetings and failing the team on their deliverables we will address the issues with the underperforming member and attempt to rehabilitate the behavior. If issues persist then additional remedies may be called on including separation from the group. The options upon dismissal are to join another team, persist on your own which is usually futile and excruciatingly painful to witness or withdraw from the course.

# Lecture, Tutorial, Workshop, Innovation Facilities

Lectures & Tutorials: Wednesdays 6-9pm

DCS Innovation Lab at Gerstein Science Information Center (2<sup>nd</sup> floor), 9 King's College Circle

Hours of Operation

M-F 8:30am-11pm,

Sat 9am-10pm, Sun 10am-10pm – Except Holidays

See the library calendar at

<https://onesearch.library.utoronto.ca/library-info/GERSTEIN>

# DCS Innovation Lab at Gerstein



- Controlled access for class work and startups
- This is not a clubhouse.
- This is a shared facility with the DCSIL Accelerator teams
- Multiple, mobile large display presentation screens
- Dense coverage, high bandwidth, isolated, secure network
- Cloud based storage and computing resources
- Video conferencing station
- Flexible workspace with moveable tables and whiteboards
- Individual, workgroup, meeting or presentation configurable

# Course Readings & Materials

## Lecture Notes

Lecture slides and notes will be available on Basecamp immediately after each lecture:

## Required Texts

These books contain essential readings that will be referenced throughout the course lectures, tutorials, and assignments:

1. (O&P) Osterwalder, Alex and Yves Pigneur, Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers, John Wiley & Sons, 2010 (ISBN 978-0-470-87641-1 (paperback))
2. (SB) Blank, Steven Gary, The Four Steps to the Epiphany: Successful Strategies for Products that Win, 2nd Ed., Published 2013 (ISBN: 0-9989200-5-07, Print), (ISBN: 978-0-9892005-2-3, eBook)

Required textbooks can be purchased new and used online or at most book sellers including the U of T bookstore and all are available online as eBooks from Amazon, Google Play, and/or directly from the authors' web sites.

# Optional Entrepreneurial/Startup Readings & Materials

1. The Four Steps to the Epiphany, by Steve Blank
2. The Entrepreneur's Guide to Customer Development, by Brant Cooper & Patrick Vlaskovits (this is the cheat notes to Steve Blank's book)
3. The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company by Steve Blank & Bob Dorf
4. Business Model Generation, by Alexander Osterwalder & Yves Pigneur
5. Value Proposition Design: How to Create Products and Services Customers Want, by Alexander Osterwalder & Yves Pigneur
6. The Lean Startup, by Eric Ries
7. Lean Analytics, by Alistair Croll & Benjamin Yoskovitz
8. The Innovators Dilemma, by Clay Christensen
9. Lean Analytics, by Alistair Croll & Benjamin Yoskovitz
10. Running Lean: Iterate from Plan A to a Plan That Works, by Ash Maurya
11. The Art of the Start, by Guy Kawasaki
12. Smart Machines: IBM's Watson and the Era of Cognitive Computing (Columbia Business School Publishing) by John E. Kelly III & Steve Hamm
13. Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist by Brad Feld and Jason Mendelson

# Optional Entrepreneurial/Startup Readings & Materials

14. The Founder's Dilemmas: Anticipating and Avoiding the Pitfalls That Can Sink a Startup (Kauffman Foundation Series on Innovation and Entrepreneurship), by Noam Wasserman
15. Founder's Pocket Guide: Startup Valuation, by Stephen Poland
16. THE ENTREPRENEURIAL BIBLE TO VENTURE CAPITAL: Inside Secrets from the Leaders in the Startup Game, by Andrew Romans
17. Valuation of Internet Start-ups: An Applied Research on How Venture Capitalists value Internet Start-ups, by Jean-Baptiste Flanc
18. Mastering the VC Game: A Venture Capital Insider Reveals How to Get from Start-up to IPO on Your Terms, by Jeffrey Bussgang
19. Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist, by Jason Mendelson
20. Term Sheets & Valuations - A Line by Line Look at the Intricacies of Term Sheets & Valuations (Bigwig Briefs), Alex Wilmerding
21. The Business of Venture Capital: Insights from Leading Practitioners on the Art of Raising a Fund, Deal Structuring, Value Creation, and Exit Strategies, Mahendra Ramsinghani
22. Venture Capital Due Diligence: A Guide to Making Smart Investment Choices and Increasing Your Portfolio Returns, by Justin J. Camp
23. Raising Venture Capital for the Serious Entrepreneur, by Dermot Berkery
24. Angel Financing for Entrepreneurs, by Susan L. Preston
25. Venture Capitalists at Work: How VCs Identify and Build Billion-Dollar Successes, by Tarang Shah, Shital Shah

# Research & Plagiarism

Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves.

If you have not already done so, familiarize yourself with the University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>)

In entrepreneurial terms it's a small and highly connected world. The truth always comes out, so might as well start with it. Your credibility and integrity are among your most valuable credentials - don't piss them away!

# Database Resources, Citations & Workshops

- There are numerous resources we have invested in using your tuition money such as CB Insights and others
- The Entrepreneurship Librarian has been extremely proactive in designing and delivering workshops to familiarize you with the research resources, teach you proper formatting and citation protocols. These are expected in all of your reports, assignments and presentations.
- You must all attend the workshops – It plays into your participation grade as well as the quality of your work.
- Not doing so makes you a liability to your team.

# QUESTIONS

**THANK YOU**