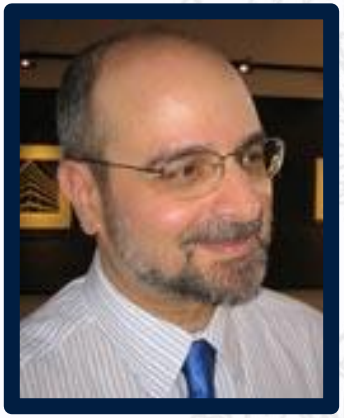
M.S. in Analytics
Concentration in Data Science

Georgetown University

The Graduate School *of* Arts & Sciences

GEORGETOWN UNIVERSITY

Presenters



Todd K. Leen, PhD
Program Director;
Professor

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Program Coordinator

Data Science Overview

Curriculum

Admission Process

Applicant Demographics (AY ’16-’17)

Q & A

Additional Information

What is Data Science

Data Science is rapidly growing interdisciplinary field that combines **computer science**, **statistics**, and **mathematical modeling** to obtain insights, knowledge, and predictive capability about processes from data.

What is Data Science

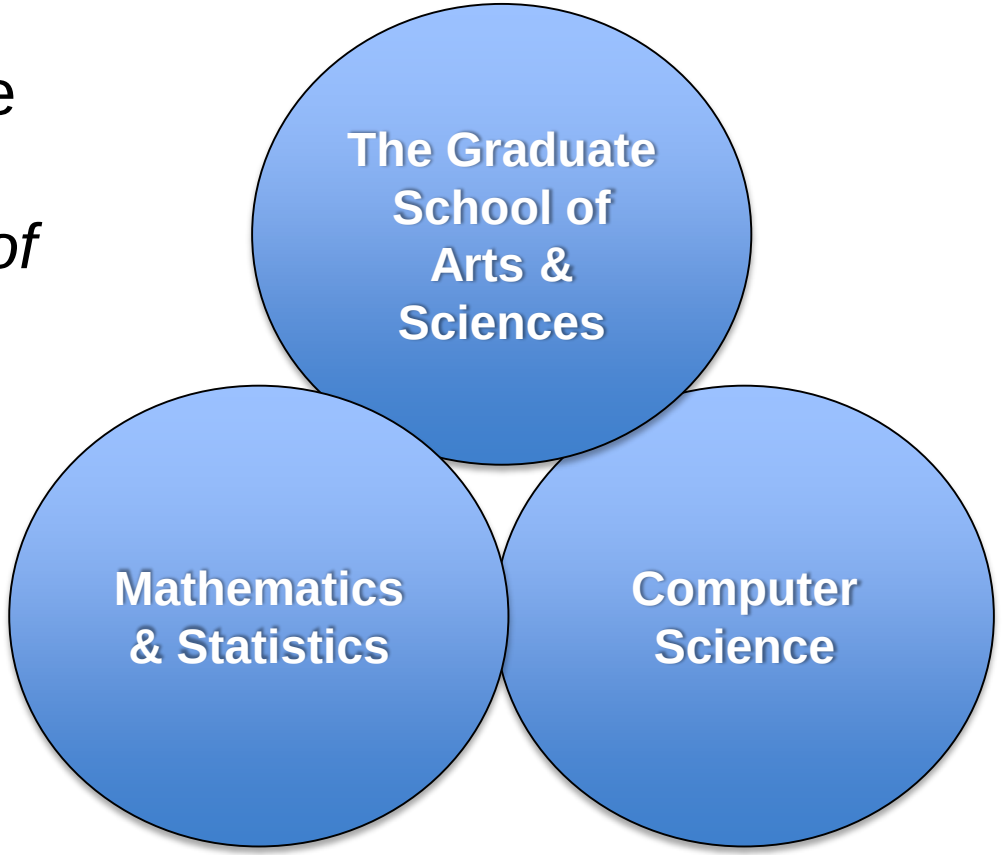
There is enormous need for talent in data science to sustain this revolution in business and industry.

In a recent report of the McKinsey Global Institute, "By 2018, the United States alone could face a shortage of **140,000** to **190,000** people with *deep analytical skills* as well as **1.5 million** managers and analysts with the knowhow to use the analysis of big data to make effective decisions."

SOURCE: McKinsey Global Institute analysis

Georgetown Graduate Analytics

M.S. in Analytics is an interdisciplinary degree program offered by *The* Graduate School *of* Arts & Sciences



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33 Credit Program

- Online, 3-credit asynchronous summer prep course on advanced Python, R, and command line programming.
  - Taken during summer after admission acceptance.

- The five-course, 15-credit core is designed to give students a strong working knowledge of computer science and statistical methods central to data science.

- 15 additional elective credits offered by the Analytics program or partnership programs throughout the graduate school.

As the data science landscape continues to change and grow, so will our core and elective offerings.

Curriculum

Core Courses	Required	
Course Number	Course Title	Credits
ANLY-500	Summer Programming Prep Course	3
ANLY-501	Introduction to Data Analytics	3
ANLY-502	Massive Data Fundamentals	3
ANLY-503	Scientific and Analytical Visualization	3
ANLY-511	Probabilistic Modeling and Statistical Computing	3
ANLY-512	Statistical Learning for Analytics	3

Curriculum

Electives	Offered by the Analytics Program	
Course Number	Course Title	Credits
ANLY-520	Effective Presentation for Technology & Science	3
ANLY-531	Databases	3
ANLY-540	Technology & Policy for Data Privacy	3
ANLY-550	Structures and Algorithms for Analytics	3
ANLY-561	Optimization	3
ANLY-905	Internship	.25

Additional electives are being developed in advanced machine learning, text analytics, and decision and game theoretic analytics.

Curriculum

Electives	Popular Offerings from Math & Comp Sci	
Course Number	Course Title	Credits
COSC-455	Image Processing	3
COSC-572	Natural Language Processing	3
COSC-578	Statistical Machine Learning	3
COSC-589	Web Search and Sense-Making	3
MATH-412	Mathematics of Climate	3
MATH-611	Stochastic Simulation	3
MATH-640	Bayesian Statistics	3
MATH-645	Categorical Data Analysis	3

Electives also available in Public Policy, Business, and Biostatistics

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Application Materials

- Online Application
- Non-refundable Application Fee
- Resume or CV
- Statement of Purpose
- Supplementary Data Form
- Official Transcripts from all prior higher-education institutions
  - *International applicants who attended institutions outside the United States **must** use a transcript evaluation service*
- Official Recommendations (3)
- GRE score
- TOEFL / IELTS score, if applicable

Admission Process

Important Dates

- January 15 - deadline for priority consideration
- March 15 - deadline for International applicants
- April 01 - deadline for U.S. applicants
- *Summer 2017* - Online Programming Prep Course

Admission Process

Prerequisite Coursework

- Multivariable Calculus *(3 credits)*
- Linear Algebra *(3 credits)*
- Calculus-based Statistics *(3 credits)*
- Computer Programming (*3 credits)*
  - *C++, Java, and/or Python*
- Programming Languages
  - Python
  - R
  - UNIX/Command Prompt

Admission Process

Desired Coursework / Experience

- Data Structures
- Analysis of Algorithms
- Data bases
- Machine Learning
- Data Mining
- Computational Statistics

Admission Process

Scholarship & Financial Aid

A limited number of merit-based scholarships are awarded to exceptional applicants and to continuing students on a case-by-case basis.

There are opportunities for assistantships (research, teaching, grading) for Analytics students on a departmental need and student skill basis. These opportunities become available at the beginning of each semester.

Admission Process

Application Tips
How to Impress the Review Committee

- All-inclusive review of application materials
- *Statement of Purpose* – Why Georgetown, why Data Science?
- *Letters of Recommendation*
  - Education, Work, Life Experience
  - How did you stand out?
- Programming Experience
  - College-level coursework, Work experience, MOOCs, Certificates

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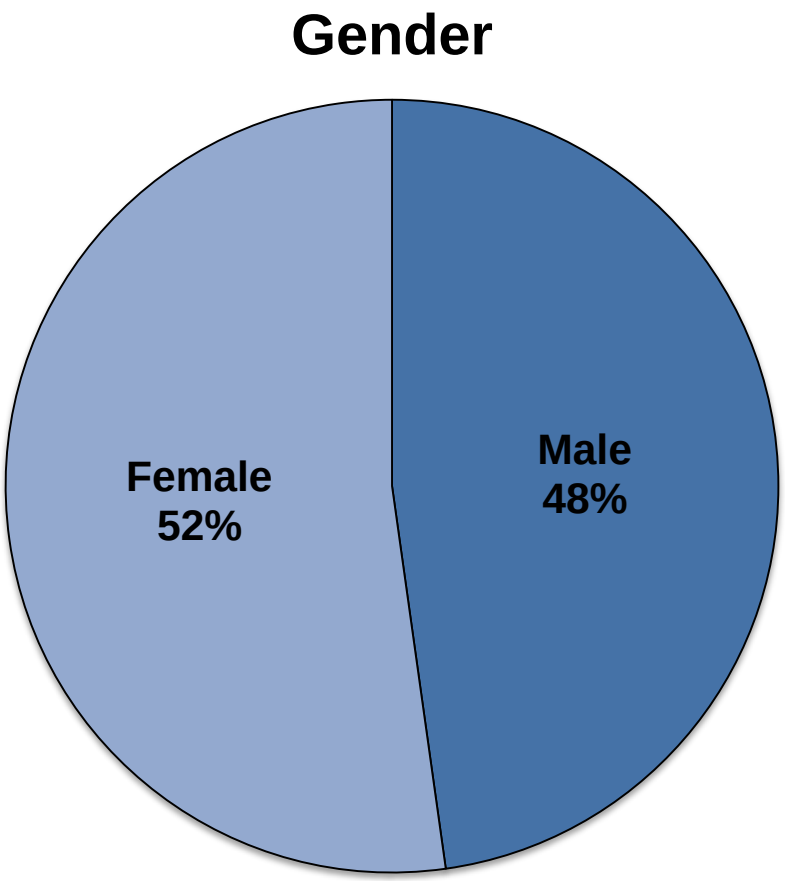

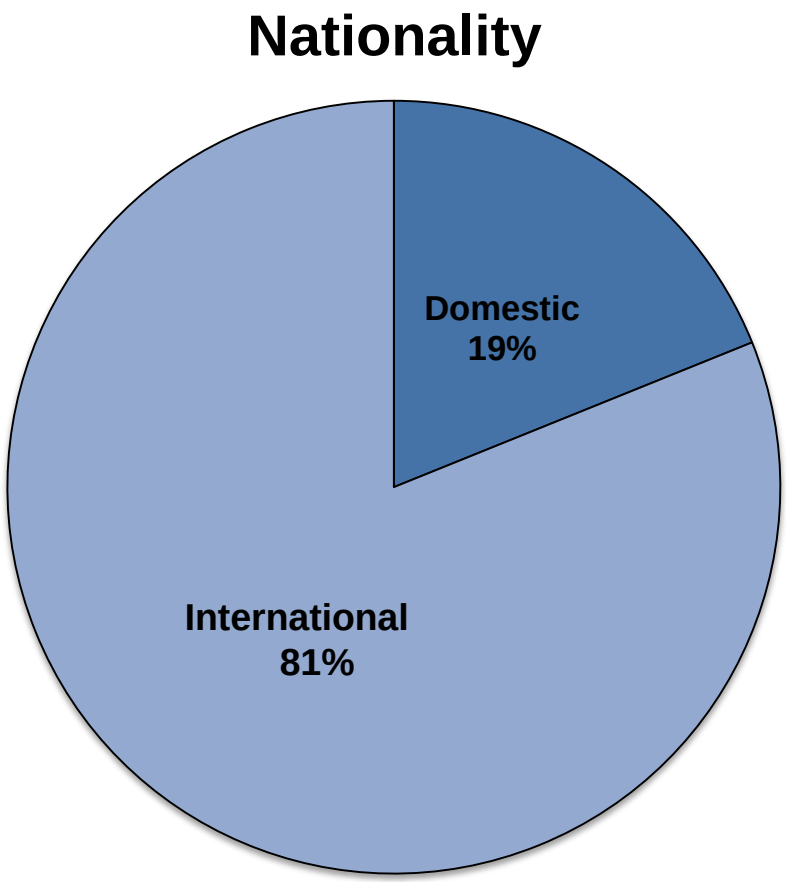

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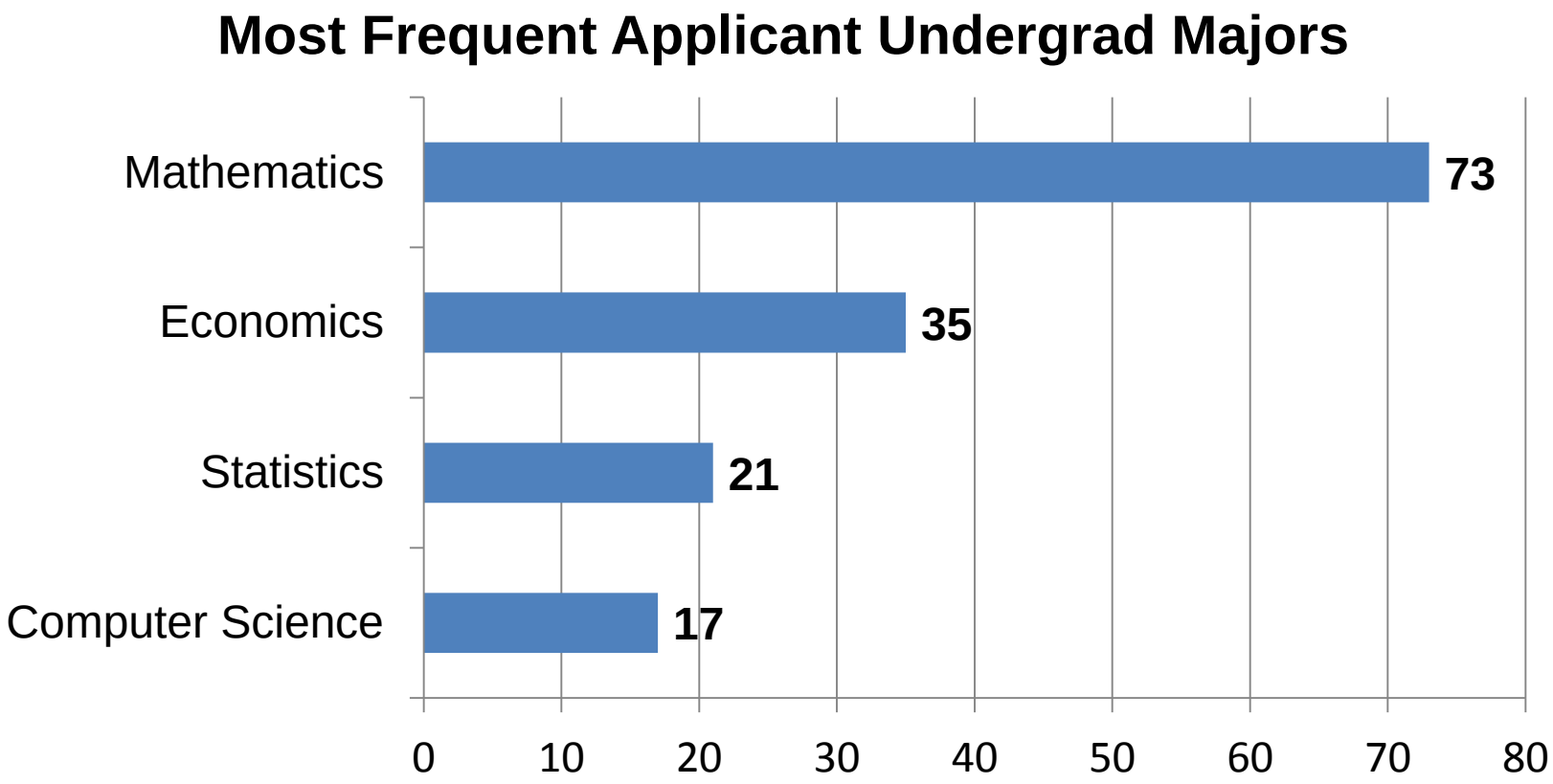

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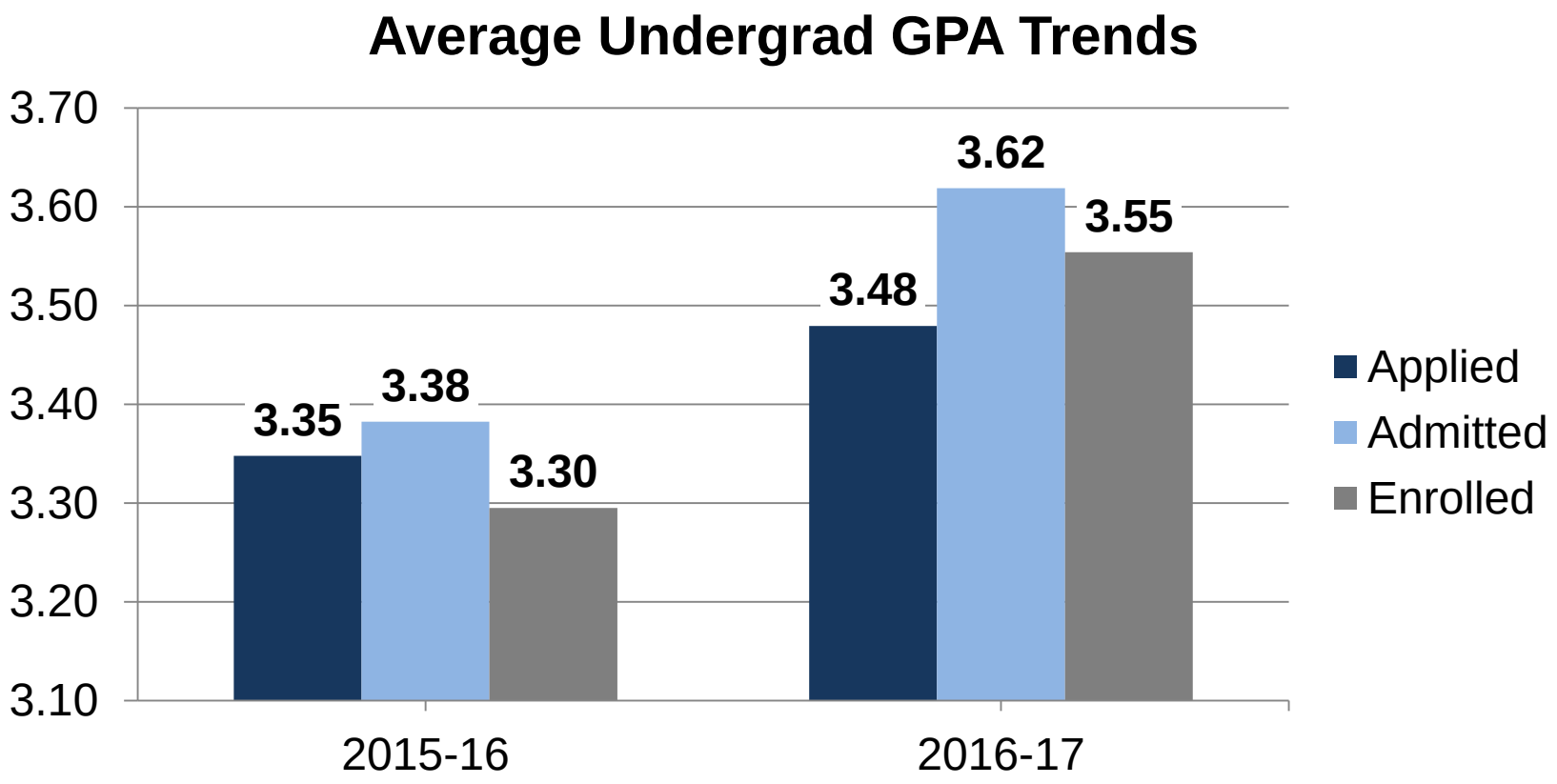

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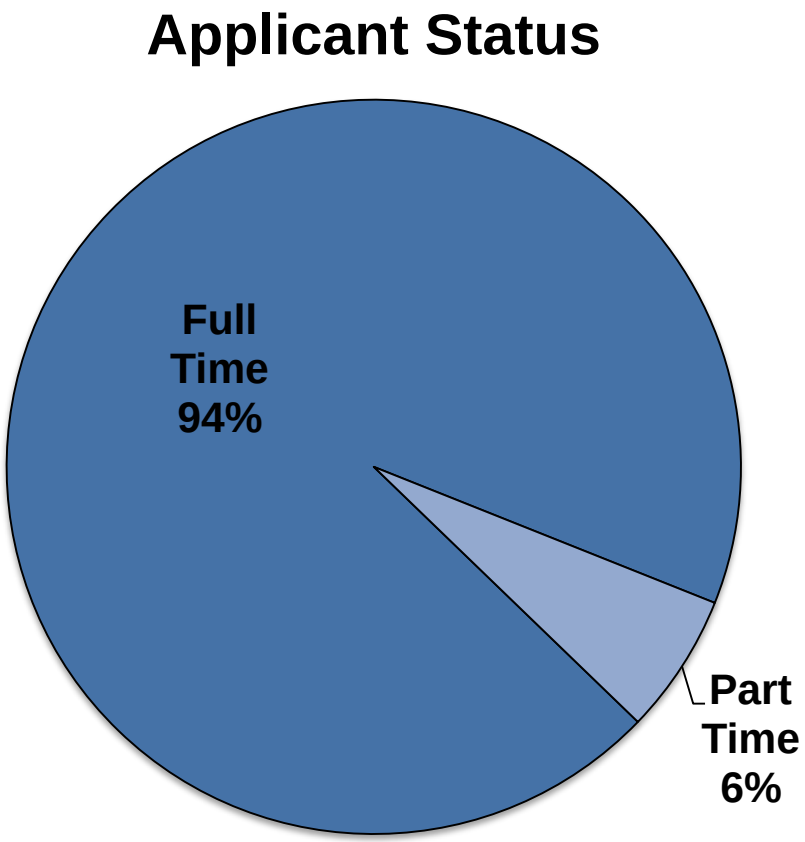

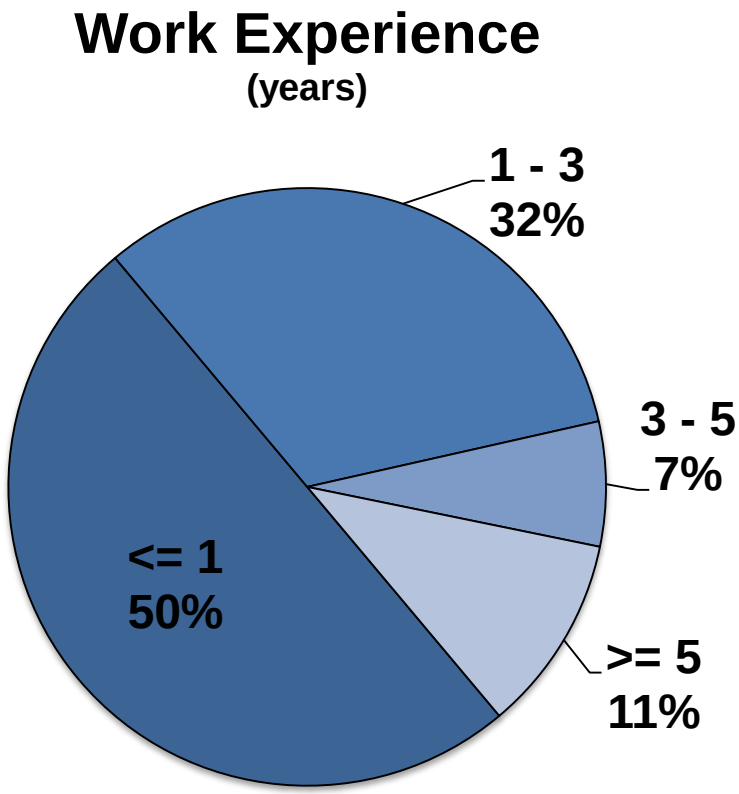

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Question & Answer Session