



# **ECE Graduate Studies – Summer 2019**

Professor Sennur Ulukus/ Graduate Studies Office/ Electrical and Computer Engineering



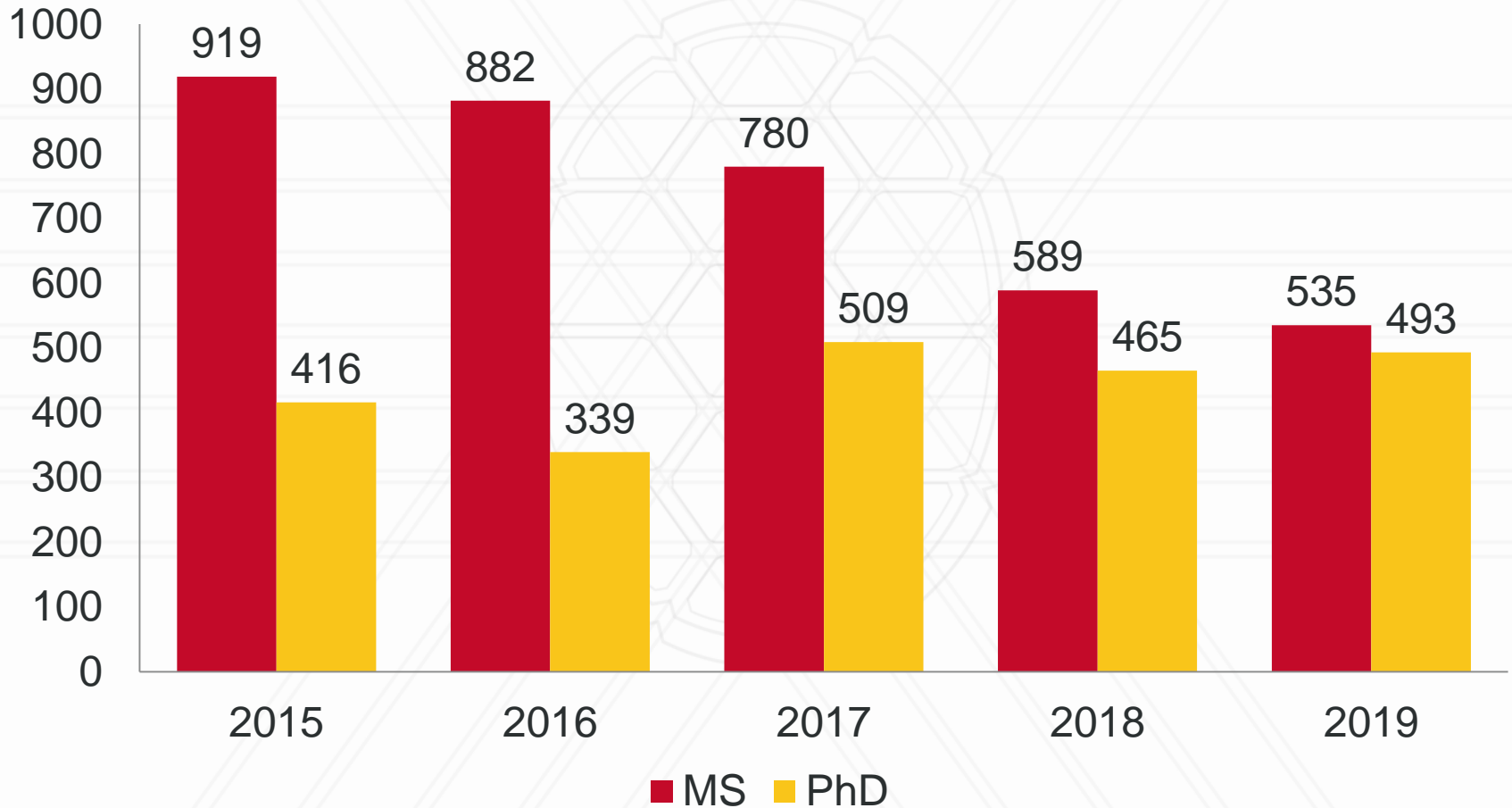
UNIVERSITY OF  
MARYLAND

# Three Items to Report Today

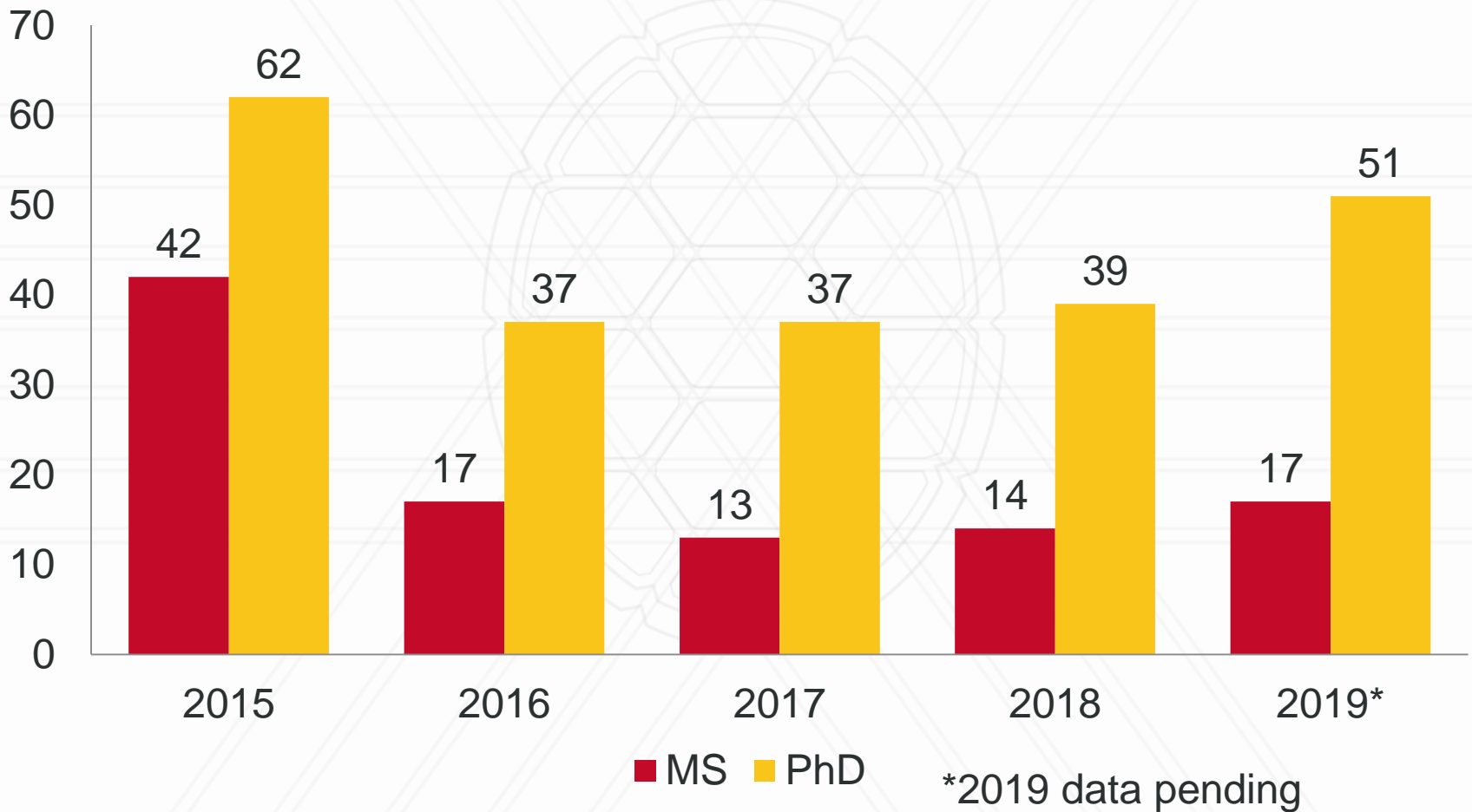
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1. ECE graduate program
2. ENTS program
3. MS in ML proposal

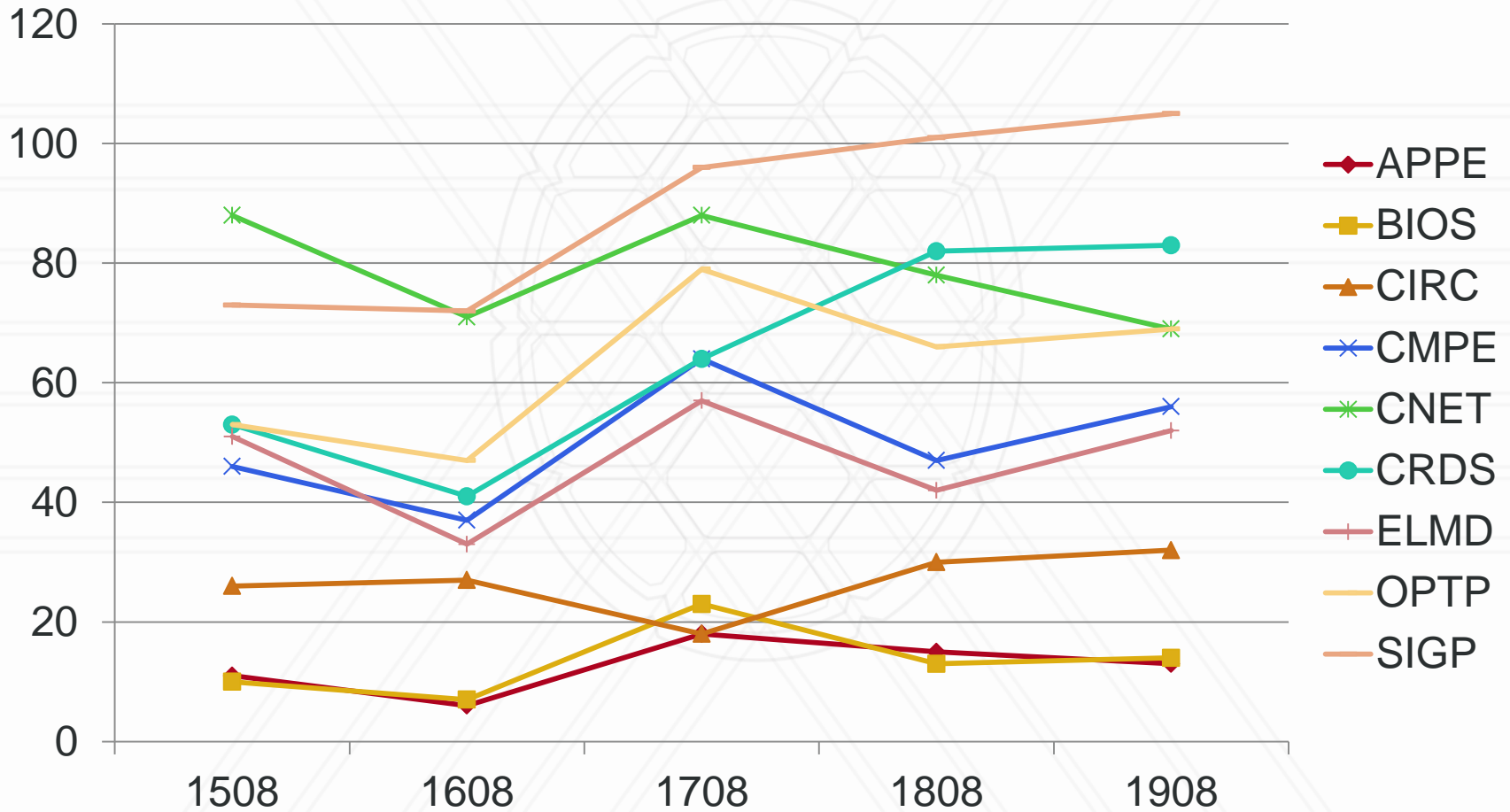
# MS and PhD applications



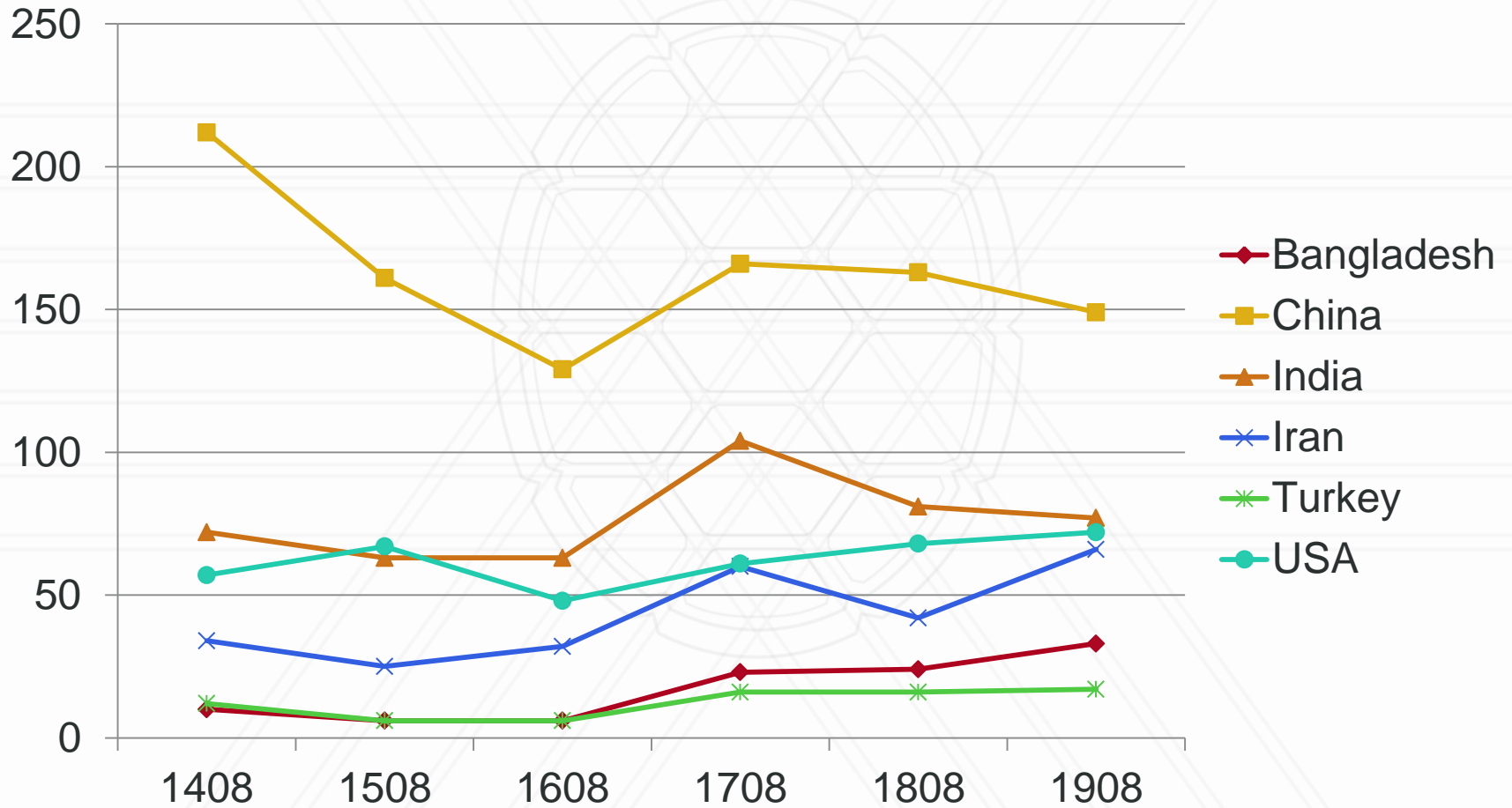
# Incoming Graduate Students



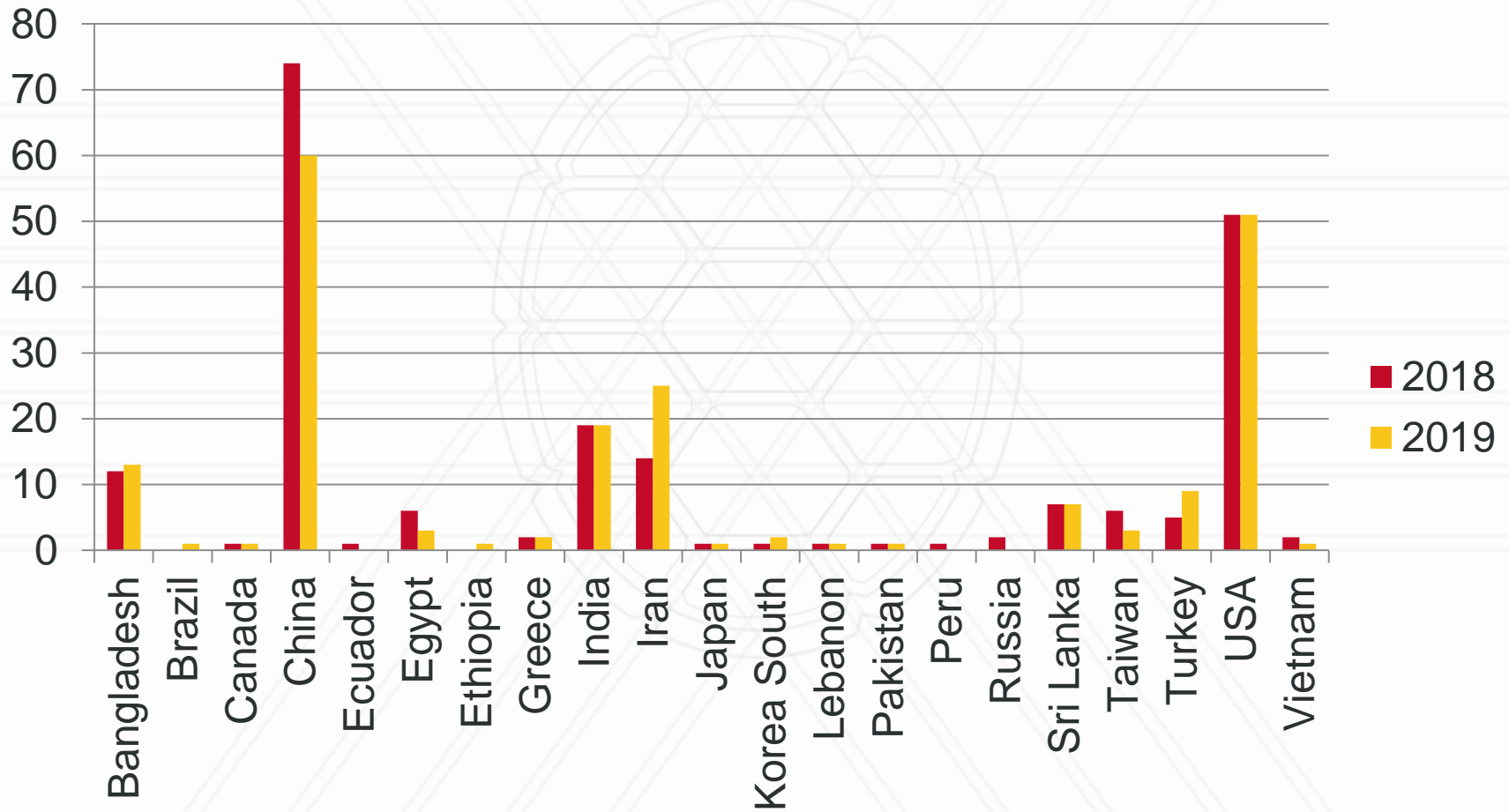
# PhD Applications by Area



# PhD Applications by Country



# PhD Superb/Excellent Applications by Country



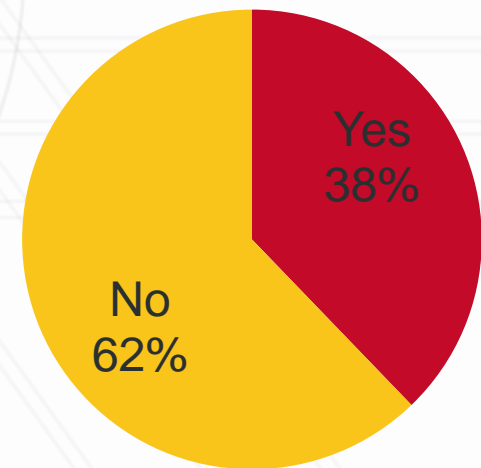
# Fall 2019 Financial Offers

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## 127 total PhD offers, 48 offers accepted

- Clark Doctoral Fellowship: 6/12 accepted (50%)
- GSR: 15/27 accepted (56%)
- GST: 6/28 accepted, (21%)
- GTA: 15/53 accepted, (28%)
- GRA: 6/7 accepted, (86%)

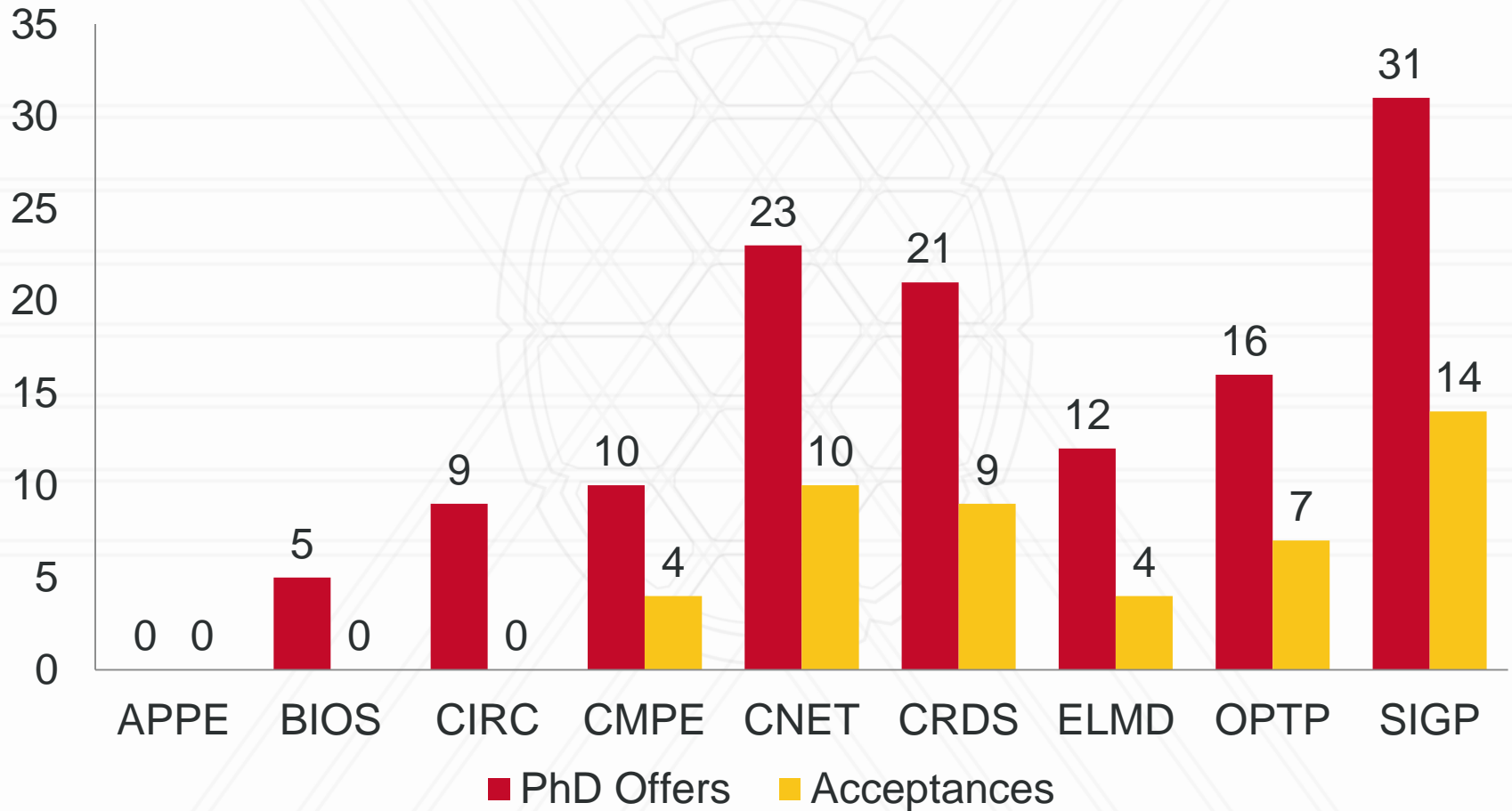
Fall 2019 Yield



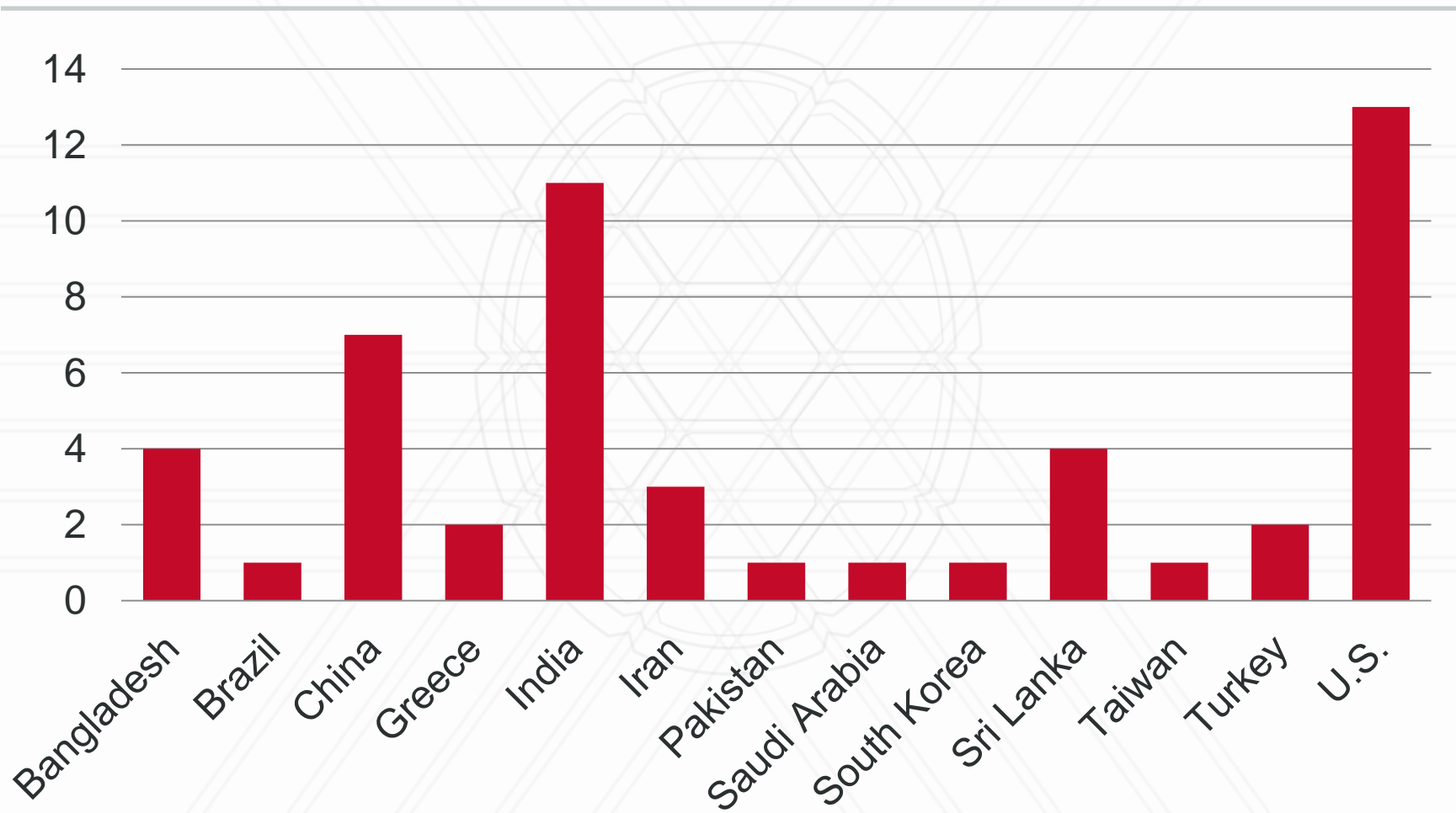
\*Fall 2018 first round yield: 28%  
Second round yield: 31%



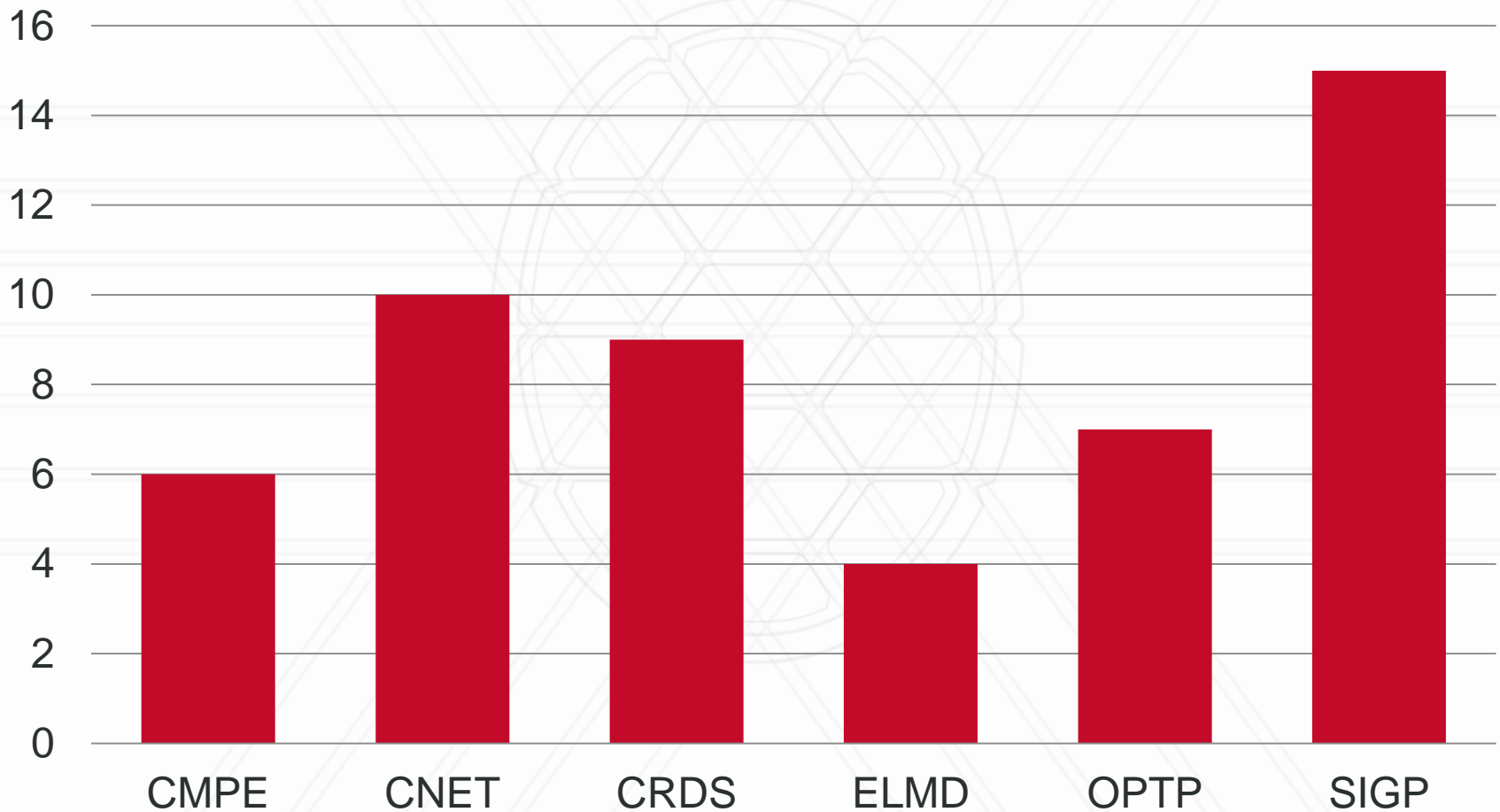
# PhD Offers by Area



# Fall 2019 New PhD Students (by country)



# Fall 2019 New PhD Students (by area)



# Fall 2019 PhD Application Fee Waiver

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ELECTRICAL & COMPUTER ENGINEERING

## PhD Application Fee Waiver

UNIVERSITY OF MARYLAND

- ✓ Fall 2019 PhD application fee waived - submit by December 16
- ✓ ECE graduate programs ranked #18 nationwide and #9 among public universities, according to US News and World Report.



Visit [ece.umd.edu](http://ece.umd.edu) to learn more and apply today!

**APPLY NOW**



A. JAMES CLARK  
SCHOOL OF ENGINEERING

# 2019 ECE Graduate Visit Day



## ECE Graduate Visit Day Agenda

Department of Electrical and Computer Engineering, University of Maryland

Monday, March 25, 2019

- 9:00 am** Meet in hotel lobby to walk to campus (hotel guests only)
- 9:30 am** Welcome and breakfast, 2460 A.V. Williams Building  
Professor Joseph Jaja, Department Chair  
Professor Sennur Ulukus, Associate Chair, Distinguished Scholar-Teacher  
Melanie Prange, Director, Graduate Academic & Student Affairs  
Emily Irwin, Program Manager, Graduate Studies  
Guerda Mervilus, Program Coordinator, Graduate Studies  
Maria Hoo, Program Management Specialist
- 10:00 am** Faculty research presentations  
Professor Dana Dachman-Soled (Cybersecurity)  
Professor Kevin Daniels (Microelectronics)  
Professor P.S. Krishnaprasad (Controls and robotics)  
Professor Min Wu (Signal Processing)  
Professor Jeremy Munday (Electrophysics)
- 11:00 am** Campus tour
- 12:00 pm** Lunch with faculty and graduate students
- 1:00 pm** Individual meetings with faculty as scheduled

**\*\*Return to hotel at your convenience\*\***

### Visit Day Statistics:

- 47 applicants invited
- 20 attended
- 11 accepted offers

### Faculty Research Presentations:

- Professor Dana Dachman-Soled (Computer Engineering)
- Professor Kevin Daniels (Microelectronics)
- Professor P.S. Krishnaprasad (Controls)
- Professor Min Wu (Communications and Signal Processing)
- Professor Jeremy Munday (Electrophysics)

# Fellowships and Awards

## ECE Distinguished Dissertation Award

**Shahriar Aghaeimeibodi**, advised by Prof. Waks  
*Integrated Quantum Photonic Circuits with Quantum Dots*

**Ayan Mallik**, advised by Prof. Khaligh  
*Regulated Transformer Rectifier Unit for More Electric Aircrafts*

**S. Sina Miran**, advised by Prof. Babadi  
*Efficient Solutions to High-Dimensional and Nonlinear Neural Inverse Problems*

## Other Notable Awards

Ann G. Wylie Dissertation Fellowship

- **Yuntao Liu**: *Enhancing IP Security of SoCs using Hardware Obfuscation*
- **Bathiya Senevirathna**: *Development of a Biosensor for Real-time Label-free Monitoring of Cell Viability*
- **Shahriar Aghaeimeibodi**: *Integrated Quantum Photonic Circuits with Quantum Dots*

Kulkarni Summer Research Fellowship

- **Abhishek Chakraborty**

Dean's Research Award (Ph.D.)

- **Ayan Mallik**: *Regulated Transformer Rectifier Unit for More Electric Aircrafts*

Dean's Research Award (M.S.)

- **Nate Ferlic**: *Forward Scattering Meter for Visibility Measurements*

# External Fellowships and Awards

New database external fellowships and awards to encourage and assist our graduate students to compete for these awards.

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IBM PhD Fellowship



Google PhD Fellowship



Microsoft PhD Fellowship



ARCS Fellowship

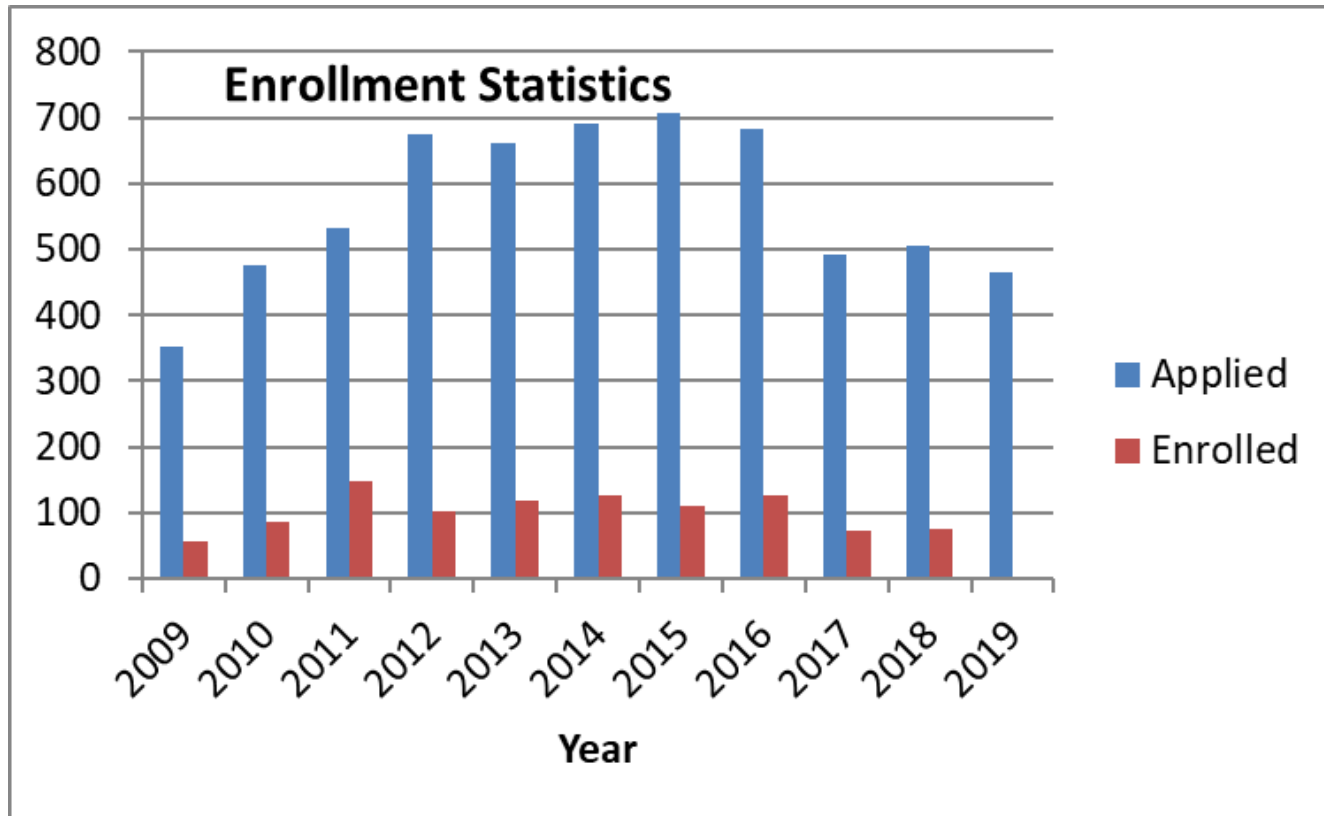


NSF Graduate Research Fellowship



Qualcomm Innovation Fellowship

# ENTS Program Statistics: Enrollment



## Applications for Fall 2019:

Direct applicants: 98

ECE referrals: 129

CS Referrals: 211

## Enrollment in 2018-2019:

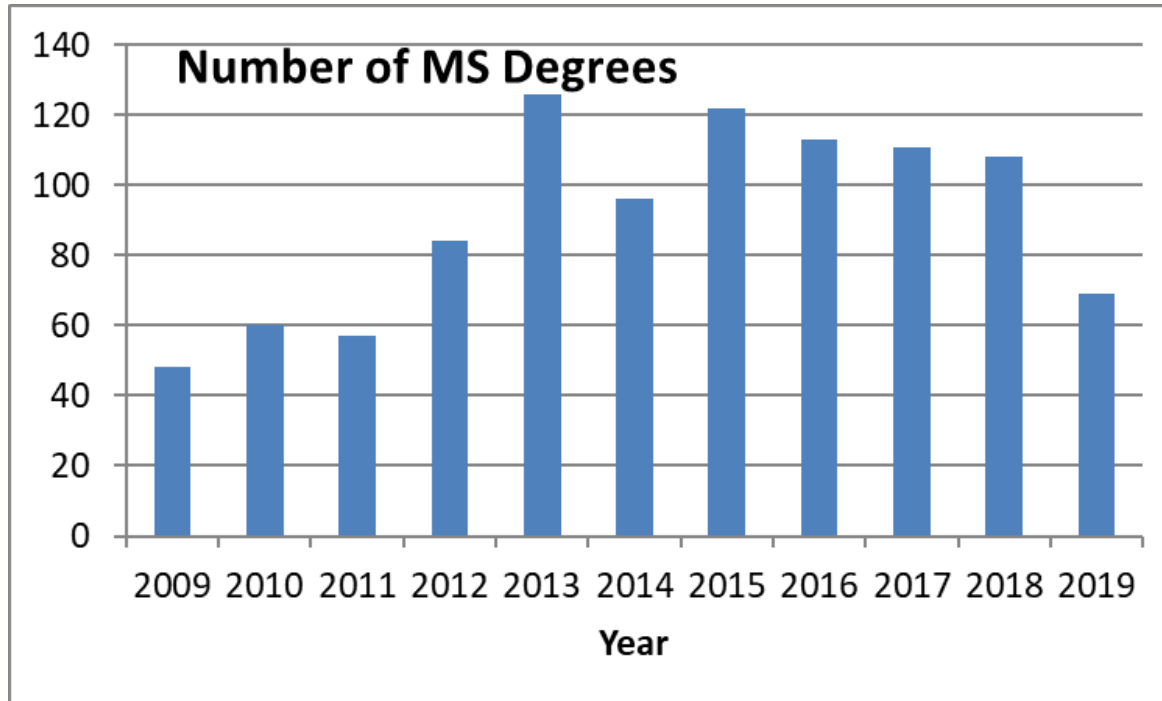
Fall 2018: 64

Spring 2019: 5,

Fall 2019: Not known yet



# ENTS Program Statistics: MS Degrees



## Recent graduation stats:

### Spring 2018:

- **108** MS degrees awarded

### Summer 2018:

- **1** MS degrees awarded

### Fall 2018:

- **5** MS degrees awarded

### Spring 2019:

- **69** MS degrees awarded

Note: Fall 2019 graduation data is not available yet.

# ENTS New Initiatives for 2018-2019

- Donation received from Juniper Networks:
  - 30 MX5 routers and 60 EX switches
  - 2 Lenovo servers
  - Money for lab renovation
  - Will be used to expand the current ENTS Networking Lab
- New courses for Fall 2019:
  - ENTS 669C: Special Topics in Computing: Operating Systems
    - How operating systems work under the hood
  - ENTS 759F: Advanced Topics in Wireless Communications: 5G Radio Access Networks and Technologies
    - One of the first courses offered that covers the new 5G cellular standard

# ENTS Amazon Event



- Workshop and Hiring/Interviewing event
- Similar events with
  - Facebook
  - Juniper Networks
- Career Day with guest from Juniper
- Red Hat Seminar on DevOps and containers



# ENTS Recruitment Efforts

- Marketing and Outreach
  - International Outreach
    - Email and mail campaign during January/February 2019
    - Social media outreach during January 2019
  - Domestic Outreach
    - Email campaign during January/February 2019
  - Virtual Info Session (February 2019) – streamed live online
    - For prospective applicants
    - Welcome, program overview, and live Q&A with ENTS alumni
  - Virtual Open House (May 2019) – streamed live online
    - For admitted students
    - Welcome, elective showcase, and live Q&A with current students

# Social Media Outreach

The screenshot shows a Facebook group page for 'MS in US - Fall 2019 | Yocket'. The page features a banner with the text 'MS Largest community for study abroad aspirants' and 'Study Abroad'. Below the banner, there is a post from 'UMD Telecommunications Students and Alumni Network' sharing a link. The post text reads: 'Advance your career with a Master's degree in Telecommunications! Come and study at the University of Maryland! The MS in Telecommunications program offers cutting-edge, industry-oriented graduate education, combining rigorous technical courses with invaluable business insight and entrepreneurial skills. Learn about computer networking, cyber-security and computing, including cloud computing, Linux system administration, server virtualization and machine learning Or focus on wireless communications: distributed antenna systems, small cells, OFDM technologies, and 4G/5G systems and standards. Washington DC, the US capital, is just a few metro stops away, providing a wealth of opportunities in the local industry as well as a range of free-time and cultural activities. For more information, please review the flyer at <http://go.umd.edu/ents>, visit website at <http://www.telecom.umd.edu/> or contact at [telecomprogram@umd.edu](mailto:telecomprogram@umd.edu). We look forward to hearing from you!

Social media sites:  
Linked-In, Facebook  
and yocket.in

## Activities:

- Posted ENTS e-flyer
- Posted ENTS ads with link to ENTS website
- Posted invitations to live ENTS Virtual Info Session
- Posted link to recorded ENTS Virtual Info Session

# ENTS Virtual Open House



- Streamed live from UMD
- Total number of views: 203



- Welcome
- Program overview
- Elective showcase
- Live Q & A with current ENTS students

# MS in Machine Learning Program

- **New professional MS program proposed by ECE and CS**
  - Similar to the ENTS program
  - Technical only (no business component)
  - Focus: practical, industry-oriented, with solid foundations
  - Inspired by similar existing programs at CMU, NYU, Columbia
- **Approval process:**
  - Passed College PCCs (March-April 2019)
  - Passed Graduate PCC (April 26, 2019)
  - Passed Senate PCC (May 3, 2019)
  - Last two steps:
    - Signoff by University President
    - Signoff by USM Chancellor
- **Preparations underway for start in fall/winter 2019:**
  - Staffing, web-page, advertisement, course development, etc.

# MS in Machine Learning Program

- Degree requirements:
  - 30 credits total: 6 core courses, 4 elective courses, scholarly paper
- Core courses:
  - MSML 601: Probability and Statistics
  - MSML 602: Introduction to Optimization
  - MSML 603: Computing Systems for ML
  - MSML 604: Algorithms and Data Structures for ML
  - MSML 605: Applied Machine Learning
  - MSML 606: Data Science
- Electives:
  - ENML 610: Advanced Machine Learning
  - ENML 612: Deep Learning
  - ENML 620: Estimation and Detection
  - ENML 621: Digital Signal Processing
  - ENML 630: Numerical Methods
  - ENML 640: Computer Vision
  - ENML 650: Cloud Computing
  - ENML 651: Big Data Analytics





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