

SCHAEFER SCHOOL OF ENGINEERING AND SCIENCE

ANNUAL REPORT

2021-2022



**STEVENS**  
INSTITUTE OF TECHNOLOGY  
1870

Schaefer School of  
Engineering and Science

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2021-2022

## Message from the Dean

The Charles V. Schaefer, Jr. School of Engineering and Science continues on an upward trajectory and I am thrilled to highlight our progress and performance in our 2021-2022 Annual Report.

I am happy to report that our accomplishments were nothing short of outstanding. This year's report features numerous new records for our school, including another record year for Ph.D. enrollment, another consecutive-year record in research awards, and a record seven Young Investigator awardees receiving funding from the National Science Foundation, Department of Energy, Department of Defense, and the National Institutes of Health.

This past academic year, we welcomed a cohort of 21 enthusiastic new faculty members, including a new chairwoman in the Department of Biomedical Engineering. They further strengthened Stevens growing interdisciplinary research enterprise with exciting new research areas and brought quality education that enhanced our student learning experience.

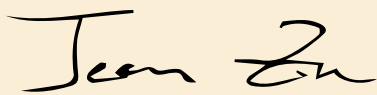
We also launched the dual-degree chemical engineering-MBA program to create another new educational pathway for our students to become leaders in their fields. This is our seventh dual degree engineering/science-MBA program.

After my fifth year serving as dean of the School of Engineering and Science, I could not be more proud of the growth and achievements of our academic community. As evidenced by our numerous successes, we have achieved great strides in propelling the Schaefer School toward becoming a top-tier research university.

As I enter my second term, I am excited for opportunities to further strengthen our culture of collaboration, student centricity, education and research quality. I believe that the dedication and hard work of our community will prove, once again, that we have what it takes to rise to a new level of excellence in everything we do.

I look forward to another year of success and accomplishments.

Best wishes,



**Jean Zu**



# STUDENTS

## Enrollment at a Glance AY 21-22

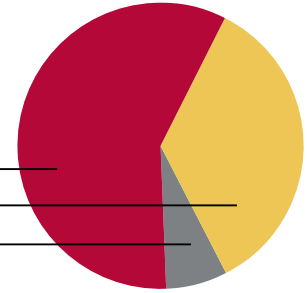
Total Students:

**5,104**

Total Undergraduate Enrollment: **2,969**

Total Master's Enrollment: **1,782**

Total Ph.D. Enrollment: **353**



## Gender Diversity AY 21-22

### % of female undergraduate students

Fall 2017: **29%**

Fall 2018: **28%**

Fall 2019: **28%**

Fall 2020: **28%**

Fall 2021: **29%**

### % of female master's students

Fall 2017: **23%**

Fall 2018: **22%**

Fall 2019: **23%**

Fall 2020: **24%**

Fall 2021: **23%**

### % of female Ph.D. students

Fall 2017: **31%**

Fall 2018: **27%**

Fall 2019: **29%**

Fall 2020: **28%**

Fall 2021: **28%**

## Underrepresented Minorities AY 21-22

Undergraduate: **18.3%** Master's: **4.6%** Ph.D.: **.6%**

## Undergraduate Enrollment by Department

	BME	CCB	CEMS	CEOE	CS	ECE	ME	MS	PHY	UND*	SES (Total)	YOY Growth
2021	266	135	188	247	859	382	647	47	49	149	2,969	7.46%
2020	233	110	218	223	745	368	600	41	49	176	2,763	3.76%
2019	239	96	220	243	611	388	579	38	61	188	2,663	4.51%
2018	227	79	233	249	503	402	599	38	52	166	2,548	7.51%
2017	222	87	231	242	420	378	579	27	37	147	2,370	N/A

## Master's Enrollment by Department

	BME	CCB	CEMS	CEOE	CS	ECE	ME	MS	PHY	OTHER	SES (Total)	YOY Growth
2021	49	26	24	187	893	217	188	187	11	0	1,782	48.9%
2020	48	39	38	170	392	247	161	85	15	2	1,197	-1.6%
2019	41	33	44	219	451	249	112	44	21	2	1,216	-0.3%
2018	40	25	56	250	434	245	127	18	22	3	1,220	-11.1%
2017	41	30	73	248	502	281	165	22	10	1	1,373	N/A

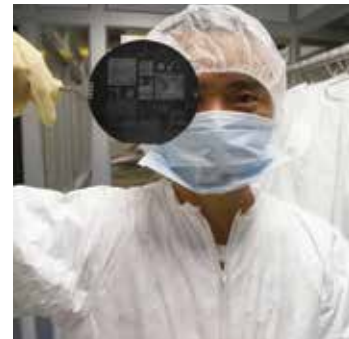
## Ph.D. Enrollment by Department

	BME	CCB	CEMS	CEOE	CS	ECE	ME	MS	PHY	OTHER	SES (Total)	YOY Growth
2021	17	27	31	56	48	46	61	20	44	3	353	5.4%
2020	13	24	31	44	58	44	60	18	40	3	335	-0.9%
2019	17	29	35	44	49	46	57	18	39	4	338	18.6%
2018	16	28	33	36	30	37	47	19	34	5	285	1.8%
2017	16	29	37	43	22	32	50	18	28	5	280	N/A

## Undergraduate Student Career Outcomes by Major

AY 20-21. Data for AY 21-22 not yet available.

MAJOR	6 MO. POST GRAD	AVERAGE SALARY
Biology	100%	Insufficient Data
Biomedical Engineering	100%	\$80,400
Chemical Biology	100%	Insufficient Data
Chemical Engineering	100%	\$67,100
Chemistry	100%	Insufficient Data
Civil Engineering	100%	\$63,800
Computer Engineering	98%	\$87,800
Computer Science	94%	\$90,200
Cybersecurity	90%	\$81,100
Electrical Engineering	100%	\$75,800
Physics / Optical Engineering	100%	\$62,000
Environmental Engineering	100%	\$63,800
Mechanical Engineering	100%	\$70,200
Naval Engineering	100%	\$63,800
Pure & Applied Mathematics	90%	Insufficient Data



# STUDENTS

## Student Accomplishment Highlights



**BME Ph.D. student Mingxiao Liu** was selected as a presenter at Johnson & Johnson's Engineering Showcase.

**BME Ph.D. student Mitchell Tillman** was selected to the 2021-22 NJ Governor's STEM Scholars program. He led a team to work on democratizing his dissertation research to improve balance via audio biofeedback by using only free, open source software.

**BME undergraduate student Enkhsanaa Enkhbayar** and **CEMS undergraduate student Angel Burgos** tied for the 1st place award of \$1,500 at the FY21 Summer Scholar Research Program Poster Competition.



**BME undergraduate student Micaela Cardile** won the 3rd place award of \$500 at the FY21 Summer Scholar Research Program Poster Competition.

**BME undergraduate student Nina Burden** received the inaugural John F. Hedderich III merit-based Innovation and Entrepreneurship Summer Research Program Scholarship.

**BME undergraduate student Arianna Gehan** won the \$5,000 grand prize at Mission 50's Entrepreneurship Pitch Competition for *Daia*, a diabetes management tool.

**BME undergraduate student Emily McCormick** and **CEOE graduate students Rexford Anderson** and **Lojin El Didi** were winners of the Brownfield Coalition of the Northeast Charlie Bartsch Scholarship Fund.

**BME undergraduate students Sydney Mellage** and **Camryn Rogers**, **CCB undergraduate students Malak Aziz** and **Thompson Hui**, **CEMS undergraduate student Danielle Hessels**, and **PHY/CCB undergraduate student Luke Bowyer** were selected to participate in the Stevens Summer 2022 Clinical Experience internship program.

**CCB undergraduate student Pamela Karasmilova** placed third in the Brain Awareness Video Contest organized by the Society for Neuroscience (SFN) for her video "Your Magnificent Plastic Brain."

**CCB undergraduate students Elizabeth Chu** and **Jenna Pralat** each received the NY American Chemical Society Student Award for Excellence in the Chemical Sciences.

# STUDENTS

**CEOE Ph.D. student Sameer Neve** received a 2021 North Jersey Branch award of \$3,000 and won the First Runner Up Prize in the student presentation competition in the 37th Annual Conference on Soils, Sediments, Water and Energy for his project “Reusing a Plant Waste for Environmental Remediation: Vetiver Root Biochar Adsorbs Copper.” Neve was also awarded the LSRPA Scholarship for a second time and was featured in the March issue of the *New Jersey Business Magazine*.

**CEOE Ph.D. student Erfan Armini** was selected as a Waterfront Scholar to attend the Waterfront Alliance’s annual Waterfront Conference on climate change and its effects on infrastructure resiliency at the Museum of Jewish Heritage in New York City.

**CEOE Ph.D. student Alaa Ahmed** was awarded the Link Foundation Ocean Engineering and Instrumentation Fellowship in the amount of \$34,000 for the 2022-2023 academic year.

**CEOE Ph.D. student Viravid (Gunn) Na Nagara** won first place in the 2022 NJ Water Environment Association poster competition.

**CEOE undergraduate student Yanqing Liang** received a 2021 North Jersey Branch award of \$3,000.

**CEOE undergraduate student Yanqing Liang** was named as one of the 2022 New Faces of Civil Engineering by ASCE.

**CEOE undergraduate students Cielo Abe, Shea Bontempo, Keeley Coval and Katie Foster** won the 2nd prize of \$5,000 at the 2022 Ansary Entrepreneurship Competition for their project “MOD Filter.”

**CS graduate students Liam Brew and Logan Drazovich**, alongside faculty mentor **Susanne Wetzel**, CS Professor, presented two papers at the IEEE CSR 2021 Symposium.

**CS Ph.D. candidates Yifan Wang and Yuchen Zhang** received a European Alliance for Innovation SecureComm 2021 Best Paper Award for their recent paper. The award included a \$500 cash prize.

**CS postdoctoral research scholar Enes Göktaş**, supervised by Georgios Portokalidis, CS Associate Professor, received the Pwnie award for most innovative research for his paper “Speculative Probing: Hacking Blind in the Spectre Era.”



*continued*

## Highlights *Continued*



**ECE undergraduate student Abdullah Hyder** won the Outstanding Undergraduate Poster Award at the 2021 American Physical Society (APS) Division of Plasma Physics (DPP) conference. Only four out of over 150 undergraduate posters presented at the conference received an award.

**ECE Ph.D. student Fangzhou Wang** received the Paul Kaplan Award for Distinguished Doctoral Work.

**ECE undergraduate students Abdullah Hyder** and **Grant Simmons** won the 3rd prize of \$2,500 at the 2022 Ansary Entrepreneurship Competition for their project “SuperLU-FPGA.”



**ECE undergraduate students Brianna Garland, Jayden Pereira** and **Chloe Sharpe** won the 1st prize of \$10,000 at the 2022 Ansary Entrepreneurship Competition for their project “Real-Time American Sign Language (ASL) Transcription.”

**ME Ph.D. student Siwei Chen** and **ME graduate students Mengqi Fan** and **Zitao Tang** presented at the 2021 21st IEEE International Conference on Nanotechnology.

**ME undergraduate student Audrey Fanning** was awarded the Tom Gagliano scholarship by the The Jersey Shore Partnership Foundation.

**ME undergraduate students Jamielyn Juan** and **Justin Tzitzis** tied for the 4th place award of \$250 at the FY21 Summer Scholar Research Program Poster Competition.

**ME undergraduate students Myles Reda, Jaleesha Guitierrez,** and **Nicole Rocha** won the 2nd place prize of \$500 at the 2022 Gallois Autonomous Robot Competition.

**ME undergraduate student Laszlo Feledy,** and **ECE undergraduate students Siddhi Patel** and **Kamil Tomaszewicz** won the 3rd place prize of \$250 at the 2022 Gallois Autonomous Robot Competition.

**ME undergraduate student Matthew Mohamed,** **CEOE undergraduate student Leah Richardson** and **ECE undergraduate student Sean Tu** won the 1st place prize of \$1,000 at the 2022 Gallois Autonomous Robot Competition.



# STUDENTS

**MS alumnus De Kong** and **former CEMS Ph.D. student Linh Tung Le**, both advised by Woo Lee, CCB Professor and Department Chair, received a 2021 Edison Patent Award in the technology transfer for their U.S. patent “Graphene-based Films in Sensor Applications.”

**More than 200 SES Engineering graduates** were inducted into the Order of the Engineer upon graduation on May 24, 2022.

**MS undergraduate student Adam Moubarak** accepted an offer to participate in the NSF-funded Summer Undergraduate Mathematics Research (SUMaR) program at Kansas State University. This is a very selective program as only 10-12 students in the country are accepted.

**PHY Ph.D. student Jiuyi Zhang** was featured in the 2021 Earth Science and Technology Office (ESTO) annual report by NASA.

**PHY undergraduate student Cosmo Gallaro** won the 2nd place award of \$1,000 at the FY21 Summer Scholar Research Program Poster Competition.

**Stevens' team** - headed by CEOE alumnus Andrew Mueller and faculty advisor Raju Datla, CEOE Research Associate Professor - won the first prize award of \$3,000 in the American Society of Naval Engineers' 2021 Promoting Electric Propulsion (PEP) competition. The full team was comprised of **CEOE undergraduate students Kate Killian, Austin Robertson, and Joshua Graham; ME undergraduates Joseph Deitz, Jiaqi Li, and Yijun Liu; and ECE undergraduate Roni Sistoso.**

**Stevens' team** - comprised of **CEOE students Evan Headley and Aidan McEnroe; ME students Nicholas Beja, Greg LaVersa, Aaron Lerch and Tyler Sapp; and CS students Edgar Castaneda, Nate Renner and Joseph Rupert** - finished second in the unmanned division during the American Society of Naval Engineers' 2022 Promoting Electric Propulsion (PEP) Competition.

**The Stevens IEEE-HKN Iota Delta Chapter** was named one of HKN's 2021 Key Chapters.

**The Stevens Institute of Technology Society of Physics Students Chapter** was awarded as a 2021 Notable Chapter by the National Council.



# FACULTY



## Faculty Distribution

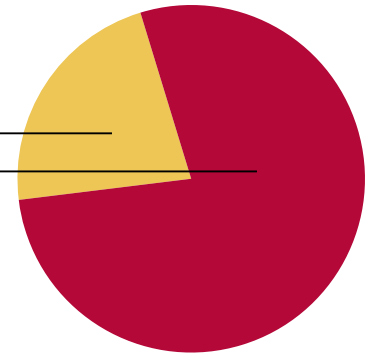
Department	T/TT	NTT/Lecturer	Total
Biomedical Engineering	10	4	14
Chemical Engineering & Materials Science	9	1	10
Chemistry & Chemical Biology	6	11	17
Civil, Environmental & Ocean Engineering	18	12	30
Computer Science	20	8	28
Electrical & Computer Engineering	18	6	24
Mechanical Engineering	26	10	36
Mathematical Sciences	7	11	18
Physics	11	6	17
<b>Grand Total</b>	<b>125</b>	<b>69</b>	<b>194</b>

## Current Faculty Makeup

**23.2%**, 45 Women

**76.8%**, 149 Men

**24%** of new hires are women



## Faculty Growth

	T	TT	NTT	Lecturer	TOTAL
AY 17-18	68	28	64	6	166
AY 18-19	71	44	56	10	181
AY 19-20	76	50	53	16	195
AY 20-21	76	48	49	13	186
AY 21-22	74	51	54	15	194

# FACULTY

## 20 New Hires

**Yu Gan**, Assistant Professor, Biomedical Engineering  
Ph.D.: Columbia University  
*Specialization:* Biomedical Image Processing/Analysis; Artificial Intelligence; Machine Learning

**Peter Popolo**, Lecturer, Biomedical Engineering  
Ph.D.: University of Iowa

**Cheng Chen**, Associate Professor, Nariman Farvardin Professor of Civil Engineering, Civil, Environmental and Ocean Engineering  
Ph.D.: Northwestern University  
*Specialization:* Geotechnical Engineering; Computational Methods and Algorithms

**An Wang**, Assistant Professor, Civil, Environmental and Ocean Engineering  
Ph.D.: University of Maryland, College Park  
*Specialization:* Experimental Fluid Mechanics; Naval Hydrodynamics; Wave Impact on Structures

**Karim Karam**, Lecturer, Civil, Environmental and Ocean Engineering  
Ph.D.: Massachusetts Institute of Technology

**Zumrut Akcam-Kibis**, Teaching Assistant Professor, Computer Science  
Ph.D.: University at Albany, SUNY  
*Specialization:* Natural Language Processing, Computational Linguistics, Data Mining

**Michael Greenberg**, Assistant Professor, Computer Science  
Ph.D.: University of Pennsylvania  
*Specialization:* Programming Languages, Systems

**Shudong Hao**, Teaching Assistant Professor, Department of Computer Science  
Ph.D.: University of Colorado, Boulder  
*Specialization:* Natural Language Processing, Computer Science Education

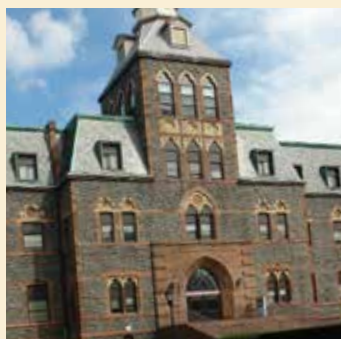
**Erisa Terolli**, Teaching Assistant Professor, Computer Science  
Ph.D.: Sapienza University of Rome  
*Specialization:* Data and Graph Mining, Information Retrieval

**Ping Wang**, Assistant Professor, Computer Science  
Ph.D.: Virginia Tech  
*Specialization:* Data Science, Data Mining, Machine Learning, Natural Language Processing



*continued*

## New Hires Continued



**Philippe Meunier**, Teaching Associate Professor, Computer Science  
Ph.D.: Northeastern University  
*Specialization:* Theory of Programming Languages, Operating Systems; Networking

**Samuel Kim**, Teaching Professor, Computer Science  
Ph.D.: Stevens Institute of Technology  
*Specialization:* Database Management Systems

**Rahul Khade**, Lecturer, Chemistry and Chemical Biology  
Ph.D.: Stevens Institute of Technology

**Alyssa Hensley**, Assistant Professor, Chemical Engineering and Materials Science  
Ph.D.: Washington State University  
*Specialization:* Connection between In Situ Chemical Composition and Structure of Heterogeneous Catalysts

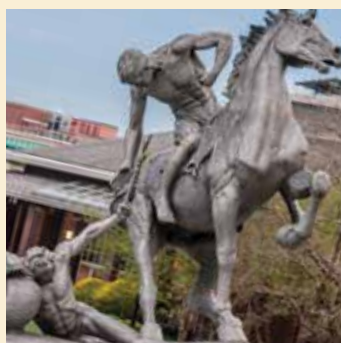


**Pin-Kuang Lai**, Assistant Professor, Chemical Engineering and Materials Science  
Ph.D.: University of Minnesota  
*Specialization:* Protein Design and Engineering; Mechanistic Study; Manufacturing for Biological Systems

**Xiaojiang (James) Du**, Professor, Anson Wood Burchard Professor of Electrical Engineering, Department of Electrical and Computer Engineering  
Ph.D.: University of Maryland, College  
*Specialization:* Security and Systems

**Mahmoud Al-Quzwini**, Senior Lecturer, Department of Electrical and Computer Engineering  
Ph.D.: Al-Nahrain University, Iraq

**Hadi Safari Katesari**, Teaching Assistant Professor, Mathematical Sciences  
Ph.D.: Southern Illinois University  
*Specialization:* Bayesian Statistics, Multivariate Time Series Analysis, Factor Analysis



**Christopher Sugino**, Assistant Professor, Mechanical Engineering  
Ph.D.: Georgia Institute of Technology  
*Specialization:* Structural Dynamics and Elastic/Acoustic Wave Propagation, Linear/Nonlinear Vibrations

**Jianmin Qu**, Senior Vice President for Academic Affairs, Provost and Professor, Mechanical Engineering  
Ph.D.: Northwestern University  
*Specialization:* Theoretical and Applied Mechanics

## Honors & Awards

### Internal Awards

CS Teaching Professor **Eduardo Bonelli** received the 2022 Stevens Alumni Association Outstanding Teacher Award.

BME Assistant Professor **Antonia Zaferiou** was appointed as Presidential Fellow.

## Stevens Employee Recognition Awards

ECE and Anson Wood Burchard Professor **Xiaojiang (James) Du** and ECE Professor **K.P. (Suba) Subbalakshmi** each received a 2021-22 Stevens Employee Recognition Award for “Strengthened Reputation, Increased Prestige.”

ME Professor **Kishore Pochiraju** received a 2021-22 Stevens Employee Recognition Award for “Excellence in All We Do.”

SES Director of the MakerSpace **Paul McClelland** and ME Assistant Professor **Johannes Weickenmeier** each received a 2021-22 Stevens Employee Recognition Award for “Student-Centricity.”

CEOE Professor **Dibyendu “Dibs” Sarkar** received a 2021-22 Stevens Employee Recognition Award for “Transformative Teamwork.”



## Faculty Awards

MS Teaching Associate Professor and Associate Chair for Undergraduate Studies **Jan Cannizzo** received the 2022 Schaefer School Education Innovation and Impact Award for Undergraduate Education.

ECE Assistant Professor **Hang Liu** received the Early Career Award for Research Excellence.

BME Assistant Professor **Raviraj Nataraj** received the Harvey N. Davis Distinguished Teaching Assistant Professor Award.

ME Professor **Kishore Pochiraju** received the 2022 Schaefer School Doctoral Advisor Award.

ME Teaching Associate Professor **Mishah Salman** received the 2022 Schaefer School Education Innovation & Impact Award for Graduate Education.

ECE Research Professor and Director of the Maritime Security Center **Hady Salloum**, PHY Gallaher Associate Professor and Director of the Center for Quantum Science and Engineering **Yuping Huang**, ME Professor **Kishore Pochiraju** and BME Assistant Professor **Antonia Zaferiou** each received a 2022 Schaefer School Research Funding Award.

CEOE Professor **Dibyendu “Dibs” Sarkar** received the Award for Research Excellence.

BME Professor and Director of the Center for Healthcare Innovation **Hongjun Wang** received a Master of Engineering (*honoris causa*).



# External Honors & Awards

## Young Investigator Awards



### National Science Foundation (NSF) CAREER Award Winners:

**Jinho Kim**, Department of Biomedical Engineering

**Kathrin Smetana**, Department of Mathematical Sciences

**Xian (Annie) Zhang**, Department of Mechanical Engineering

### National Institutes of Health (NIH) Maximizing Investigators' Research Award (MIRA) Winners:

**Abhishek Sharma**, Department of Chemistry and Chemical Biology

**Shang Wang**, Department of Biomedical Engineering



### Department of Energy (DOE) Early Career Research Program (ECP) Award Winner:

**Jae Chul Kim**, Department of Chemical Engineering and Materials Science

### Defense Advanced Research Projects Agency (DARPA) Award Winner:

**Yanghyo (Rod) Kim**, Department of Electrical and Computer Engineering

## Other External Honors & Awards

**Athula Attygalle (CCB)**, Arnold Berliner Award 2021 Winner

**Leslie Brunell (CEOE)**, 2022 New Jersey American Society of Civil Engineers (ASCE) Educator of the Year

**Raju Datla (CEOE)**, elected as Fellow of the Society of Naval Architects and Marine Engineers (SNAME)

**Xiaojiang (James) Du (ECE)**, selected as an Association for Computing Machinery (ACM) Distinguished Member

**Jinho Kim (BME)**, accepted into the American Society of Engineering Educators DELTA Junior Faculty Institute

**Woo Lee (CCB)**, 2021 Edison Patent Award Winner

**Kishore Pochiraju (ME)**, elected as Fellow of American Society of Mechanical Engineers (ASME) and the American Society for Composites

**Xiaofeng Qian (PHY)**, theoretical work on quantum wave-particle duality named one of the Top 10 Breakthroughs of 2021 in Physics

**Ed Whittaker (PHY)**, selected for "Faces of Optica" (formerly the Optical Society)

**Lei Wu (ECE)**, elevated to Institute of Electrical and Electronics Engineers (IEEE) Fellow

# UNDERGRADUATE

## Education

### Types of Programs Offered AY 21-22

- Total Bachelor's Programs **15**
- Total Engineering Programs **8**
- Total Math & Science Programs **5**
- Total Computer Science Programs **2**

### Number of Programs Offered by Department AY 21-22

Degree	BME	CCB	CEMS	CEOE	CS	ECE	E*	ME	MS	PHY	TOTAL
B.Eng.	1	-	1	2	-	2	1	1	-	-	8
B.S.	-	3	-	-	2	-	-	-	1	1	7
<b>Total</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>15</b>

\*Engineering & Science

### Number of Undergraduate Degrees Awarded by Department Over Five Years

	B.Eng. BME	B.S. CCB	B.Eng. CEMS	B.Eng. CEOE	B.S. CS	B.Eng. ECE	B.Eng. E*	B.Eng. ME	B.S. MS	B.S. PHY	Total	B.S.	B.E.
AY 21-22	65	27	47	50	152	100	16	159	9	12	<b>637</b>	200	437
AY 20-21	31	18	60	41	117	89	7	124	13	15	<b>515</b>	163	352
AY 19-20	46	17	55	52	87	93	6	141	10	8	<b>515</b>	122	393
AY 18-19	41	13	59	55	88	115	3	183	5	6	<b>568</b>	112	456
AY 17-18	61	26	61	56	87	77	9	157	2	6	<b>542</b>	121	421
AY 16-17	44	16	46	54	45	94	15	175	4	7	<b>500</b>	72	428

E\* Computational Science Interdisciplinary program now retired

AY includes both Fall and Spring graduates, e.g. 2018-19 A/Y = Fall 18 + Spring 19.

### Undergraduate Student Profile

Fall 2021

- Underrepresented Minorities **18.3%**
- Female New Undergraduate **29%**

## Retention

	First Time Full Time Freshmen Retention
AY 21-22	92.4%
AY 20-21	92.8%
AY 19-20	93.7%

	First Time Full Time Freshmen Retention
AY 18-19	93.6%
AY 17-18	95.0%
AY 16-17	94.6%

## Applications & Enrollment

	2016F	2017F	2018F	2019F	2020F	2021F
Undergraduate Applications	6,233	6,910	7,593	8,440	8,388	9,051
New Undergraduate Enrolled	596	594	798	748	729	832

## Undergraduate Student Distribution Across Departments Fall 2021

	BME	CCB	CEMS	CEOE	CS	ECE	ME	MS	PHY	Undecided
Undergraduate Enrollment	9%	6%	4%	7%	33%	11%	17%	2%	2%	9%



# UNDERGRADUATE



# GRADUATE

## Education

### Number of Programs Offered by Department AY 21-22

Degree	BME	CCB	CEMS	CEOE	CS	ECE	ME	MS	PHY	DEAN	Total
Ph.D.	1	2	2	3	2	2	1	1	1	1	<b>16</b>
Engineer	1	0	1	1	1	2	1	0	0	0	<b>7</b>
Master	1	3	2	5	4	3	4	4	2	1	<b>29</b>
Online	0	0	0	1	1	3	2	1	0	0	<b>8</b>
Dual-Degree MBAs	0	0	1	2	0	2	2	0	0	0	<b>7</b>
<b>TOTAL</b>	<b>3</b>	<b>5</b>	<b>6</b>	<b>12</b>	<b>8</b>	<b>12</b>	<b>10</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>67</b>

### Number of Graduate Degrees Awarded by Department AY 21-22

Degree	BME	CCB	CEMS	CEOE	CS	ECE	ME	MS	PHY	DEAN	Total
Ph.D.	1	5	9	6	5	8	8	4	4	0	<b>50</b>
Engineer	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Master of Science	9	18	5	34	194	19	12	58	13	0	<b>362</b>
Master of Engineering	28	0	8	44	0	72	62	0	2	0	<b>216</b>
<b>TOTAL</b>	<b>38</b>	<b>23</b>	<b>22</b>	<b>84</b>	<b>199</b>	<b>99</b>	<b>82</b>	<b>62</b>	<b>19</b>	<b>0</b>	<b>628</b>

### Graduate Student Profile

	2018F	2019F	2020F	2021F
Full-Time	82%	83%	79%	79%
Ph.D.	18%	20%	22%	18%
Domestic	31%	30%	38%	35%
Online	1%	4%	8%	12%
Female New Ph.D.	26%	33%	28%	27%
Female New Master	22%	22%	27%	22%



# GRADUATE

# GRADUATE

## Rankings

**#7**

among the 30 Best Online Master's Degrees in Computer Science

(Best Computer Science Schools, 2021)

**#25**

in the nation for Best Online Graduate Engineering Programs

(U.S. News & World Report, 2022)

**#8**

in the nation for Best Online Graduate Computer Information Technology Programs

(U.S. News & World Report, 2022)

**#1**

in New Jersey for Best Online Graduate Engineering Programs

(U.S. News & World Report, 2021)

**#2**

among the Best Online Master's Degrees in Computer Science

(College Choice, 2020)

**#69**

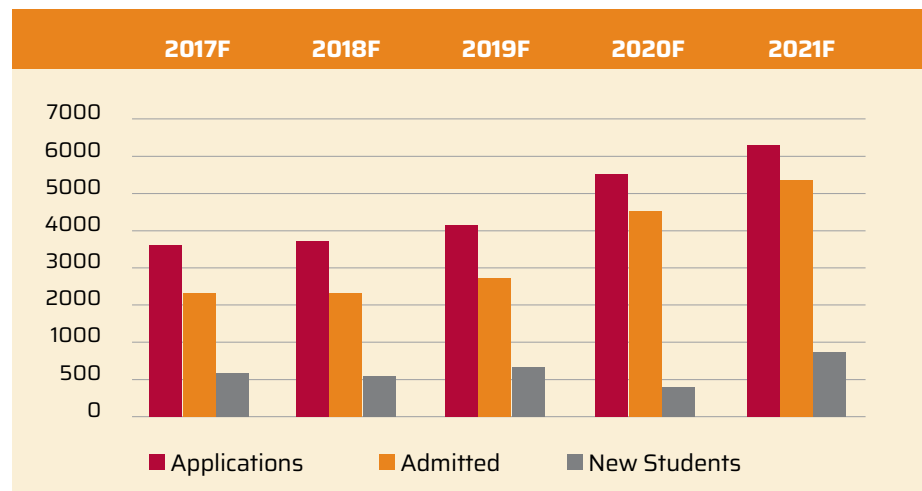
in the list of Best Graduate Mechanical Engineering Programs

(U.S. News & World Report, 2022)

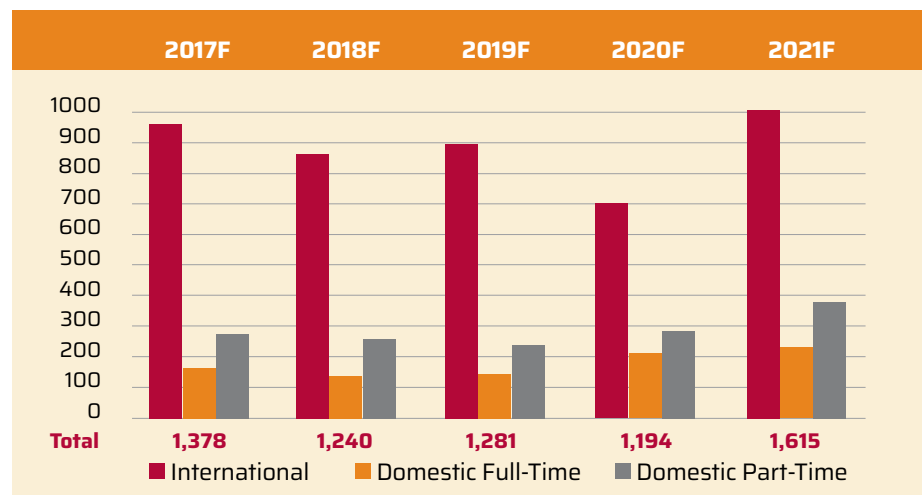
## Applications & Enrollment

	2017F	2018F	2019F	2020F	2021F
Master's Applications	3,597	3,630	4,234	5,513	6,385
New Master's Enrolled	563	517	587	412	888
Online Applications	n/a	16	38	114	218
New Online Enrolled	5	12	9	59	58
Ph. D. Applications	709	601	1,117	1,401	1,233
New Ph. D. Enrolled	63	38	90	57	74

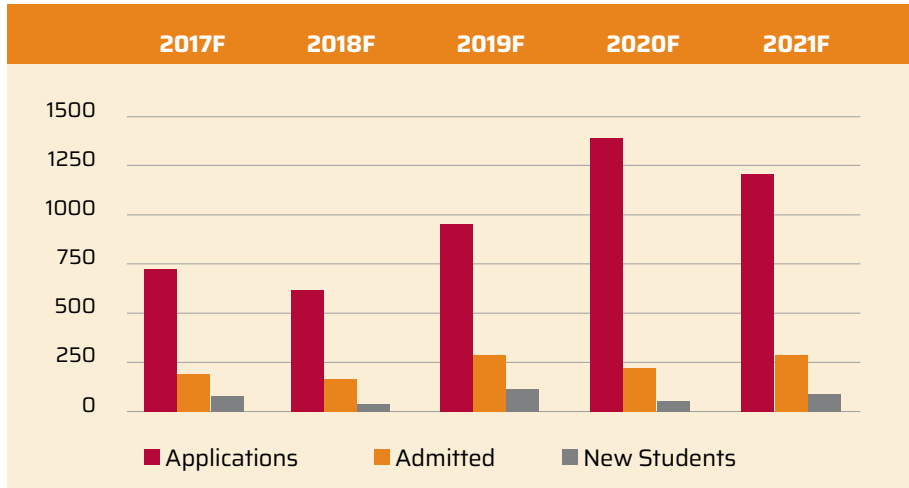
## Master's Admission



## Total Master's Enrollment



### Ph. D. Admission

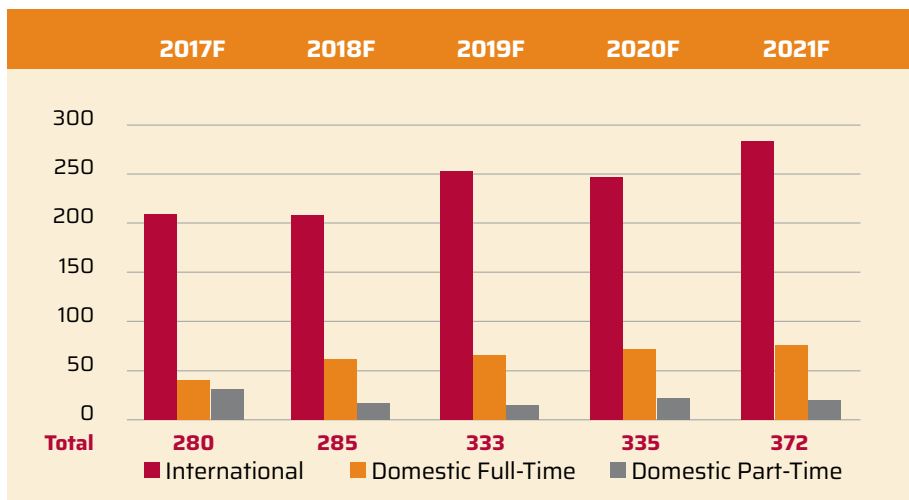


### Rankings Continued

**#75**  
in the list of Best Graduate Electrical Engineering Programs  
*(U.S. News & World Report, 2022)*

**#79**  
in the list of Best Graduate Computer Engineering Programs  
*(U.S. News & World Report, 2021)*

### Total Ph. D. Enrollment



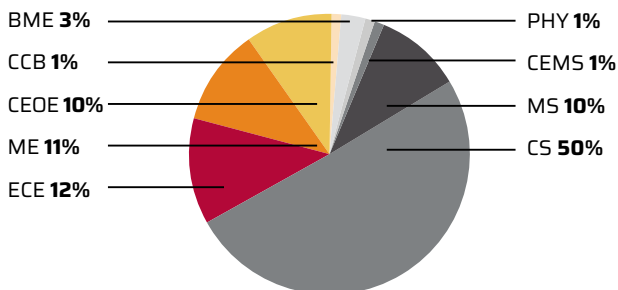
**#82**  
in the list of Best Graduate Engineering Schools  
*(U.S. News & World Report, 2021)*

### New Program

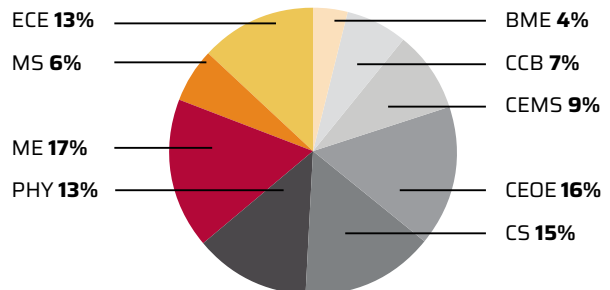
Chemical Engineering Dual-Degree MBA

### Graduate Student Distribution Across Departments Spring 2022

Master's Enrollment



Ph.D. Enrollment



# RESEARCH

## Highlights



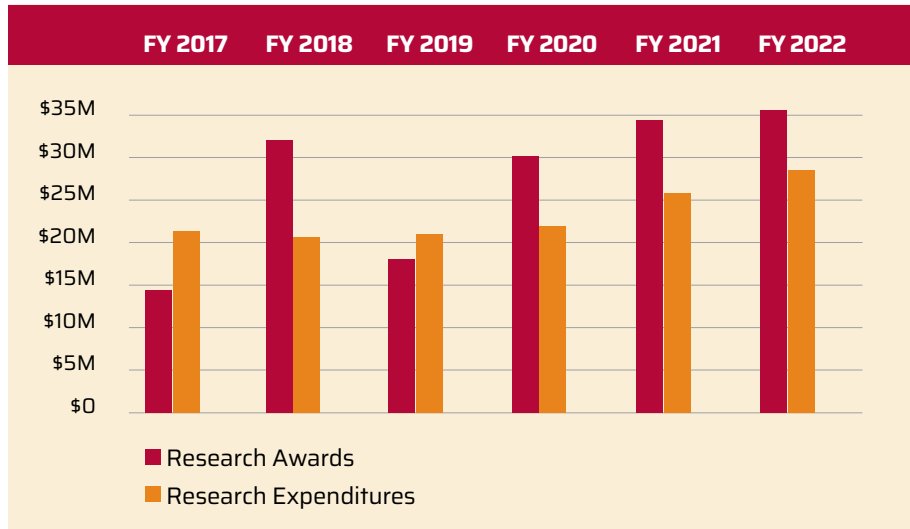
### Top Ten PIs by Research Dollars Awarded FY 21-22

PI Name	DEPARTMENT	AWARD TOTAL
Christos Christodoulatos	CEOE	\$1,910,915
Shang Wang	BME	\$1,549,134
Abhishek Sharma	CCB	\$1,819,180
Frank Fisher	ME	\$1,499,955
Samantha Kleinberg	CS	\$1,464,078
Yuping Huang	PHY & CQSE	\$1,337,310
Xiaojiang Du	ECE	\$905,645
Xiangwu Zeng	CEOE & OVPAI	\$849,042
Brendan Englot	ME & SIAI	\$834,524
Chang Chen	CEOE	\$821,149
<b>Total</b>		<b>\$12,990,932</b>

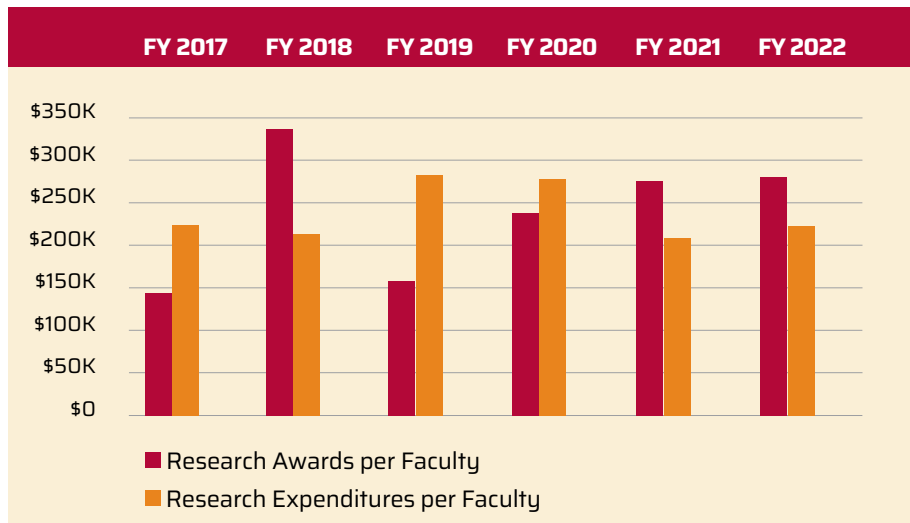
### Top Ten PIs by Research Expenditures FY 21-22

PI Name	DEPARTMENT	AWARD TOTAL
Christos Christodoulatos	CEOE	\$3,471,687
Yuping Huang	PHY	\$2,488,970
Hady Salloum	ECE	\$2,354,692
Muhammad Hajj	CEOE	\$2,024,869
Nicholaus Parziale	ME	\$865,394
Samantha Kleinberg	CS	\$775,405
Georgios Portokalidis	CS	\$767,277
Eric Koskinen	CS	\$731,979
Jon Miller	CEOE	\$670,543
Susanne Wetzel	CS	\$659,657
<b>Total</b>		<b>\$14,810,473</b>

## Total Research Funding & Expenditures



## Total Research Funding & Expenditures per Faculty



# RESEARCH



### Total Patents Granted by Department AY 20-21

DEPARTMENT	PATENTS
Biomedical Engineering	-
Chemical Engineering & Materials Science	-
Chemistry & Chemical Biology	-
Civil, Environmental & Ocean Engineering	-
Computer Science	1
Electrical & Computer Engineering	1
Engineering & Science	-
Mathematical Sciences	-
Mechanical Engineering	-
Physics	-
<b>Total</b>	<b>2</b>

### Number of Refereed Journal Articles and Conference Papers Published AY 20-21

DEPARTMENT	ARTICLES	PAPERS
Biomedical Engineering	25	9
Chemical Engineering & Materials Science	23	3
Chemistry & Chemical Biology	18	2
Civil, Environmental & Ocean Engineering	117	16
Computer Science	14	71
Electrical & Computer Engineering	67	54
Engineering & Science	-	-
Mathematical Sciences	16	4
Mechanical Engineering	60	33
Physics	32	1
<b>Total</b>	<b>372</b>	<b>193</b>

# RESEARCH

# FACILITIES

at Stevens

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## Recently Renovated Spaces

The Schaefer School has invested in upgrading departmental office and lab spaces to better meet the needs of our faculty, staff, and students. The following locations were renovated during the 2021-22 academic year:

- **Burchard 101**—ECE Research Lab
- **Burchard 429**—CEMS Research Lab
- **Burchard 711-713**—PHY Department Office and Conference Room
- **Carnegie 201 and 208**—ME Graduate Student Workstations and Printer Room
- **EAS 310-314**—ME Department Office and Center for Student Success
- **Gateway North 003**—ECE Teaching Lab
- **Gateway North 017**—ME Research Lab
- **McLean 005**—ME Research Lab
- **McLean 007**—CEOE Research Lab
- **McLean 411-412**—CCB Research Lab
- **McLean 421**—CCB Shared Equipment Lab
- **McLean 511**—CCB Department Office
- **McLean 519**—CEMS Research Lab
- **McLean 508**—BME Research Lab
- **North Building 2nd and 3rd Floors**—MS Offices (departmental, faculty, staff, graduate students) and Conference Room



# FACILITIES

# COMMUNICATIONS

## Highlights

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Robert  
Chang



**Robert Chang** appeared in *Science Daily's* story titled "Want to 3D Print a Kidney? Start by Thinking Small," *Newsweek's* story titled "American Research Team Puts New Spin on Old Technique to Produce 3D-Printed Organs," *Telemundo's* story titled "Una Universidad de Nueva Jersey es Reconocida Como la más Saludable del País," and *3D Printing Industry's* story titled "Australian Researchers Yield World's First Stem Cell Harvester."

Jason  
Corso



**Jason Corso** appeared in *Lifewire's* story titled "Why AI Needs to be Regulated," *Yahoo! Finance's* story titled "Americans Think AI is a Threat to Democracy, Yet Believe its Benefits Outweigh its Risks," *Axios's* story titled "Americans are Confused About AI," *NJ Tech Weekly's* story titled "Guest Post: Americans' Conflicted Attitudes Toward Artificial Intelligence," and *New Jersey Digest's* story titled "Researchers at Stevens Attempt to Answer: Is AI a Friend or Foe?"

Brendan  
Englot



**Brendan Englot** appeared in *Lifewire's* story titled "Why Robots are Getting More Human," *ASME's* story titled "Advances in Underwater Robots," *The Robot Report's* story titled "Researchers Developing Underwater Map-Making Robot," and *Lifewire's* story titled "No, Google's AI Isn't Self Aware."

Yi  
Guo



**Yi Guo** appeared in *The Washington Post's* story titled "Most of the Dead Astroworld Victims Were in One Highly Packed Area, Video Timeline Shows".

Muhammed  
Hajj



**Muhammad Hajj** appeared in *NJ 101.5's* story titled "Wave Power Seeks Role in New Jersey Renewable Energy Shift," and CBS News' story titled "New Jersey Mulling Using Wave Power to Move Toward Gov. Murphy's Plan of 100 Percent Clean Energy by 2050."

Yuping  
Huang



**Yuping Huang** appeared in *Yahoo! Finance's* story titled "Quantum Computing Inc. Announces Agreement to Acquire QPhoton, Delivering First Commercially Available, Ready-to-Run, Full-Stack Quantum Solutions" and *ROI-NJ's* story titled "Stevens Professor's Quantum Photonics Innovation Company is Acquired."

Mukund  
Iyengar



**Mukund Iyengar** appeared in *CNBC College Voice*, *NBC 4 Washington*, *NBC 6 Miami*, *NBC 7, San Diego*, *NBC 4 Los Angeles*, and *NBC 4 Dallas-Fort Worth's* stories titled "How to use Tik Tok, Instagram and Other Social Media to Launch a Business," and *CNBC College Voices's* story titled "How to Become an Entrepreneur — While You're Still in College."

Samantha  
Kleinberg





# MEDIA

**Samantha Kleinberg** appeared in *Lifewire's* story titled "Why We Need AI That Explains Itself," *People & Things Podcast's* episode titled "Samantha Kleinberg on Information and Decision Making," and *AiThority's* story titled "AiThority Interview with Samantha Kleinberg."

**Hang Liu** appeared in *Lifewire's* story titled "New Data Storage Tech Could Mean Never Saying Goodbye To Your Information," and *CNET's* story titled "Nvidia's Powerful New Chip Aims To Help Ai Understand You Better."

**Reza Marsooli** appeared in *Inside Climate News's* story titled "Amid the Misery of Hurricane Ida, Coastal Restoration Offers Hope. But the Price is High," *PBS/NHK's* story titled "Troubled Waters," and *NPR's* story titled "Climate-Driven Floods Will Disproportionately Affect Black Communities, Study Finds."

**Rainer Martini** appeared in *Lifewire's* story titled "Quantum computers could eventually power your smartphone."

**Weina Meng** appeared in *NJBiz's* story titled "A Stevens Institute of Technology Professor is Working to Make Bridges and Other Structures Last Longer at a Lower Cost."

**Jon Miller** appeared in *News 12 New Jersey's* story titled "Jon Miller Speaks on Nor'easter," *News 12 New Jersey's* story titled "Jon Miller Talks About Potential for Coastal Flooding During Blizzard," *The Washington Post's* story titled "Headed for the Beach this Summer? Enjoy it While it Lasts," *Press of Atlantic City's* story titled "Late Spring Storm Keeping Some Jersey Shore Beaches Closed," *NJ 101.5's* story titled "NJ beaches in Good Shape, but one Storm Could Change Everything," *NBC New York's* story titled "These Jersey Shore Beaches Won't Open Memorial Day Weekend this Year," *Asbury Park Press's* story titled "Jersey Shore Residents Urged to Prepare for Active Hurricane Season this Summer," and *NJ Monthly Magazine's* story titled "10 Years after Hurricane Sandy: What's Next for the Jersey Shore?"

**Ava Mroz, graduate student**, appeared on *Hudson TV* and *News12 NJ* discussing the invasive Spotted Lanternfly in New Jersey.

**Yue Ning** appeared in the *Becker's Hospital Review* story titled "The Innovative Future of Healthcare: Three Empowering Tech Trends."



Hang  
Liu



Reza  
Marsooli



Rainer  
Martini



Weina  
Meng



Jon  
Miller



Ava  
Mroz



Yue  
Ning



Philip  
Orton

*continued*

Kishore Pochiraju



**Philip Orton** appeared on Inside Edition, in *CNN's* story titled "New York City was Never Built to Withstand a Deluge like the one Ida Delivered. It Showed," *Reuters'* story titled "Fact Check: Statue of Liberty Photos do not Prove Sea Level Rise is a Myth," *Bond Buyer's* story titled "How New York-New Jersey Port System is Poised for Climate Change," and *The Press of Atlantic City's* story titled "Superstorm Sandy Made \$3.7 Billion Worse Due to Sea Level Rise in N.J."

Rocco and Marco Polimeni



**Kishore Pochiraju** appeared in *NJ PBS's* story titled "How Robotics and AI Power New Jersey."

Jason Rabinovitch



**Rocco and Marco Polimeni, undergraduate students**, appeared in *Fox 56's* story titled "Bartonsville Twins Earn First in Class Honors."

Dibyendu "Dibs" Sarkar



**Jason Rabinovitch** appeared in *News 12 New Jersey's* story titled "Jersey Proud: Stevens Institute professor works with NASA on Venus landing site," and *News 12 Connecticut's* story titled "12 Minutes with Mechanical Engineering Professor Jason Rabinovitch."

K.P. (Suba) Subbalakshmi



**Dibyendu "Dibs" Sarkar** appeared in *The Times of India's* story titled "Stevens Expert on Biden Climate Change Proposals."

Negar Tavassolian



**K.P. (Suba) Subbalakshmi** appeared in *Yahoo! News's* story titled "Hyperspace Challenge Accelerator Announces 2021 Cohort Winners," and *Igiornale.it's* story titled "Fake News, il 'Vaccino' Anti Infodemia è un Algoritmo."

Marouane Temimi



**Negar Tavassolian** appeared in *Science Daily's* story titled "Bye, Bye, Biopsy? Handheld Device Could Painlessly Identify Skin Cancers," *Yahoo! News's* story titled "Handheld Tricorder Identifies Cancers Without Biopsy," and *Diagnostics World's* story titled "Point-of-Care Skin Cancer Imaging Device Moving Into Large-Scale Clinical Trials."

Johannes Weickenmeier



**Marouane Temimi** appeared in *The Philadelphia Inquirer's* story titled "Ida's legacy: 5 Deaths, 7 Tornadoes, Record Flooding, Hundreds of Water Rescues, one Incredibly Soggy Mess" *The Star-Ledger's* story titled "Ida Swamped our Infrastructure. How can we Build Better to stop Future Floods?" and *French TV's* story titled "New York va Devoir Apprendre à Vivre Avec les Inondations."

Antonia Zaferiou and Marlee Kopetsky



**Johannes Weickenmeier** appeared in *SciTech Daily's* story titled "Wear and Tear in Vulnerable Brain Areas Lead to Lesions Linked to Cognitive Decline in Aging."

Damiano Zanotto



**Antonia Zaferiou and undergraduate student Marlee Kopetsky** appeared in *CNBC College Voices's* story titled "Women in STEM: Three Challenges We Face –and How to Overcome Them."

Jiuyi Zhang



**Damiano Zanotto** appeared in *The Wall Street Journal's* story titled "A New Frontier of AI-Enabled Gadgets."

**Jiuyi Zhang, Ph.D. student**, appeared in *TapInto's* story titled "Stevens Ph.D Candidate gets Shoutout from NASA for his Research Efforts."

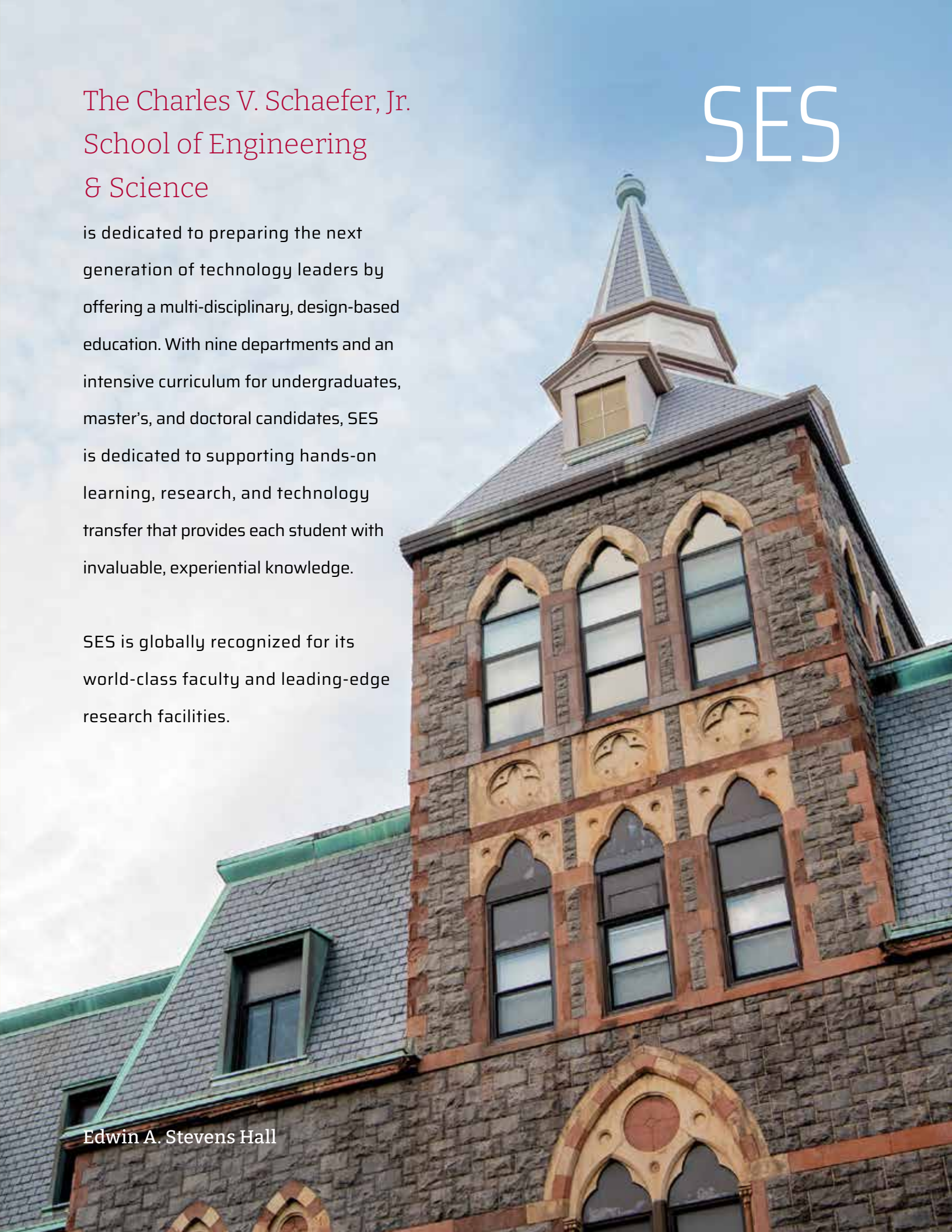
# The Charles V. Schaefer, Jr. School of Engineering & Science

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