

College of Science and Technology

Dr. Abdellah Ahmidouch, Founding Dean

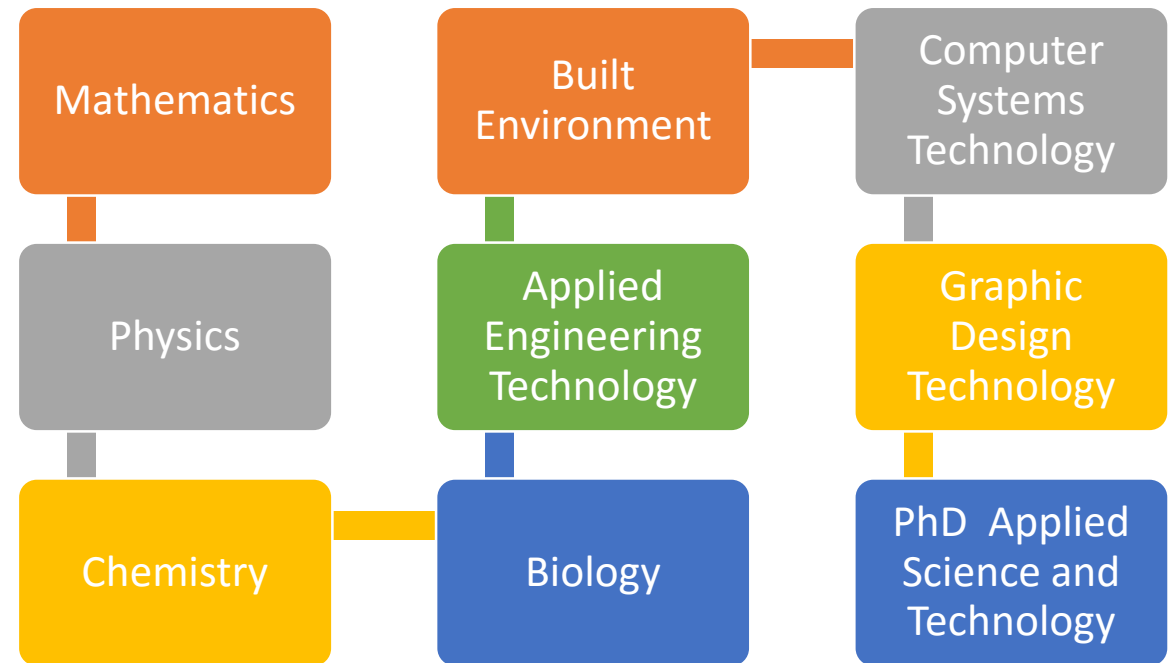
Board of Trustees University Affairs Committee

April 26, 2019



College of Science and Technology

- ❑ Eight Departments + 1 PhD program
- ❑ 13 Undergrad. Programs + 7 Graduate Prog.
- ❑ 103 FT faculty, + Adjuncts
- ❑ 24 Staff members
- ❑ 1549 undergraduate students
- ❑ 262 graduate students
- ❑ Total Budget: \$12.2 Million
- ❑ +6.0 Million extramural funding





13 Undergraduate Degree Programs

- Applied Engineering Technology (*) → ABET accredit. in 2017
- Atmospheric Sciences & Meteorology
- Biology
- Chemistry (ACS approved, reapplied 2018)
- Construction Management (*, ACCE) → ABET accredit. in 2018
- Electronics Technology (*) → ABET accredit. in 2017
- Environmental Health & Safety (*) → ABET accredit. in 2018
- Geomatics (*) → ABET accredit. in 2016
- Graphic Communication Systems (*)
- Information Technology → Seek ABET accredit. in 2019
- Mathematics
- Motorsports Technology (*)
- Physics

(*) All Technology programs (-IT) are ATMAE accredited





7 Graduate Degree Programs



- ❑ MS – Applied Mathematics
- ❑ MS - Biology
- ❑ MS - Chemistry
- ❑ MS - Information Technology (on-line)
- ❑ MS- Physics
- ❑ MS - Technology Management (on-line)
- ❑ **PhD - Applied Science and Technology**



Vision

The College of Science and Technology is a national leader that serves and engages the citizens of the state of North Carolina, the nation, and the world through preeminence in science and technology education, research, discovery, and innovation

Mission

The College of Science and Technology integrates science, mathematics, and technology to advance knowledge and prepare the next generation of science and technology leaders. The College embraces the mission of the University as a land-grant doctoral research institution with a distinction in STEM by expanding new frontiers in science, creating novel technologies, developing innovative approaches to STEM teaching and learning, and formulating scientific and technological solutions that lead to transformative social and economic development

Values

Student centered – Excellence – Integrity - Diversity and Inclusiveness – Creativity – Agility





EXCELLENCE IN TEACHING, RESEARCH AND STUDENT SUCCESS

□ Goal 1.A – Strategy 8:

Develop and implement creative and innovative teaching and learning pedagogies and integrate instructional technologies in the classroom.



Multiple research activities centered around Active Learning pedagogies and Student Success

→ Establish the Center for STEM Education Research



EXCELLENCE IN TEACHING, RESEARCH AND STUDENT SUCCESS

□ Goal 1.B – Strategy 2

Develop new degree programs and certificates that address economic needs and challenges, especially at the graduate level

→ Developed AST PhD program – Growing enrollment 10-12 students/year –
Largest STEM PhD program

→ BS Motorsports → BS Automotive Engineering Technology – Start in Fall-2018

→ BS Graphics Communication Systems → Graphics Design Technology (ID and EX)

→ Redesign MS programs in Math, Physics, Chemistry, and Biology – *in progress*

→ New programs: MS Data Science, BS Aviation Engineering Technology – *planning phase*



EXCELLENCE IN TEACHING, RESEARCH AND STUDENT SUCCESS

□ Goal 1.B – Strategy 7

Invest in modernizing and expanding the college learning facilities and infrastructure

→ A total of ~\$2.1 Million expenditure on lab equipment

□ \$1 Million expenditure on teaching lab equipment – All Departments – AY17-18

□ Estim. \$600K+, on IT improvement – AY17-18

□ \$200K+ on Active Learning facilities: Two large rooms in Smith – One in NSB, One in Barnes

□ \$300K on lab improvement – AY18-19



Phase II Hardness Tester



Braking System Trainer

Applied Engineering Technology



Amatrol Motor Control Trainer



Transmission Trainer



Epson training line robot



ABB 120 IRB Production line model

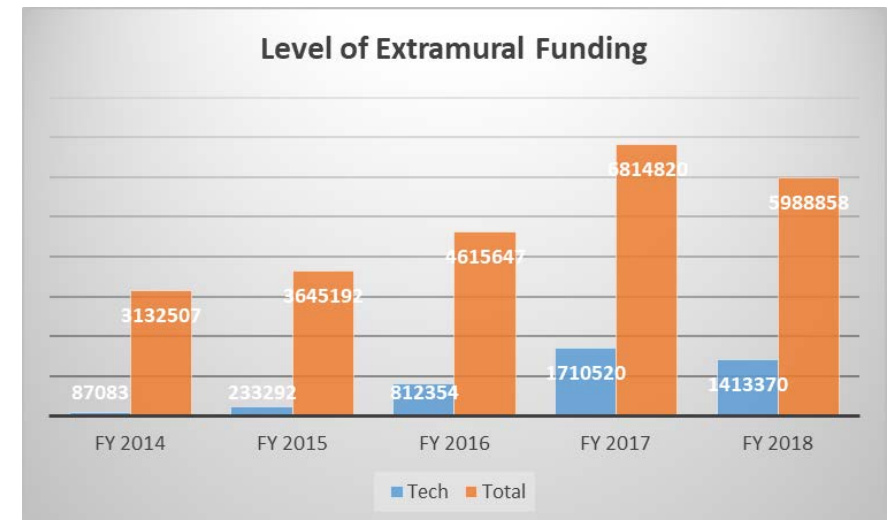
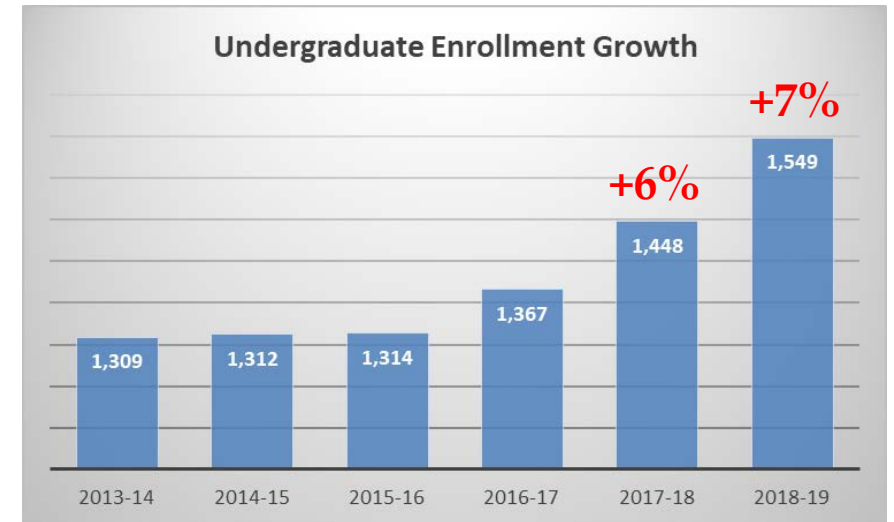


New Teaching Equipment

Amatrol Multi Trainer unit Hydraulic – Pneumatic – Electronic Motor Controls



College of Science & Technology	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
ENROLLMENT						
Total	1,571	1,590	1,592	1,636	1,707	1,811
Undergraduate	1,309	1,312	1,314	1,367	1,448	1,549
UNC-Charlotte	2758	2673	2434	2479	2498	2519
ECU	3678	4053	5937	6557	6763	6942
FAMU	1141	1059	1027	1042	1071	1156
Online	N/A	N/A	N/A	58	92	119
New Transfers	69	90	108	106	90	122
Rural (In-State)	380	410	374	346	355	409
Low-income (Pell, In-State)	707	725	681	696	718	713
Graduate	262	278	278	269	259	262
UNC-Charlotte	539	698	768	748	748	740
ECU	729	771	785	837	854	786
FAMU	34	33	38	43	51	57
Undergraduate						
First-year retention	77.0%	73.7%	73.2%	71.3%	76.5%	72.2%
UNC-Charlotte	75.50%	81.00%	86.40%	85.50%	72.50%	
General education course completions	N/A	71.5%	72.3%	74.7%	75.9%	
Graduation and placement						
4-year graduation	16.6%	15.3%	27.4%	25.5%	22.5%	
5-year graduation	39.4%	31.4%	34.1%	44.0%	44.7%	
UNC-Charlotte	39.00%	42%	37.7%	38.70%	43.20%	
FAMU	32.40%	25.60%	46.80%	35.80%	37.70%	
Degrees awarded						
STEM degrees awarded	198	182	202	198	211	
Job-rich degrees awarded	161	161	161	161	161	
Degree efficiency	15.6	14.4	16.0	15.7	16.5	
Placement (%)	81	83	81	88	77	
Graduate						
Degrees awarded	82	105	98	123	108	
Doctoral degrees awarded	8	11	9	16	5	
Placement (%)	90	100	95	95	95	





Recent Student Success Stories

- ☐ Amirah Burton, Biology → PhD program [University of Illinois at Urbana-Champaign](#), 2018
- ☐ Mariah Franklin, Chemistry → Pharmacy School, [UNC-Ch](#) , 2018
- ☐ Mahalia Robinson, Biology → MD program [Campbell University](#), 2018
- ☐ Tyrell Fullwood, Graphics Comm. Syst. → VDC Engineer, [Holder Construction](#), Spring, 2018
- ☐ Ciara Davis, Graphics Comm. Syst. → Graphic Designer, [Center for Creative Leadership](#), Fall, 2018
- ☐ Hope Pegues, Physics → PhD Medical Physics, [Duke University](#), 2018
- ☐ Kateree Moore, Appl. Math → Risk Analyst, [Wells Fargo Bank](#), Spring 2019
- ☐ Jonathan Fabish, Appl. Math → PhD Statistics, [NCSU](#), 2019
- ☐ Jeremy McCombs, Geomatics → Survey Manager, [Bryant Associates](#), 2017
- ☐ Wasilat Usman, Construction Management → Project Engineer, [W. C. Construction Company](#), 2018
- ☐ Candace Fogg, AET → Logistics Engineer, [Atlas Copco](#), 2017
- ☐ Julius K. Smith, AET → Mechanical Design Engineer, [HAECO](#), 2017
- ☐ Dr. Aseel Issa, AST PhD → Research Scientist, [High Point Clinical Trials Center](#), 2017
- ☐ Dr. Emmanuel Asiamah, AST PhD → Assistant Professor, Animal Sci. Dept. [University of Arkansas at Pine Bluff](#), Fall 2018



Challenges

- Space – Need for a new building – to accommodate growth in
 - Student enrollment
 - Research Activities and productivity
 - Increase in program offerings
 - Increase of faculty pool
 - Improved profile

- Synergy in research and curriculum between Math-Sciences-Technology - **Improving**

- Large contribution to the General Education curriculum – Need to fix the FT/Temp ratio → 7/3



Summary

- ❑ CoST raised the profile of Technology programs by seeking ABET accreditation
 - 5 programs ABET accredited, 1 (IT) Scheduled, 2 (CGT, AutoET) wait for first class of graduates
- ❑ Undergraduate Enrollment grew 6% and 7% in the last 2 years
- ❑ Recruited top talent faculty
 - EHS 0→3 FT faculty, MS 0→1 FT, CST 4→8 FT, Geo 2→3
- ❑ New programs: **AST PhD program**
 - Automotive Engineering Technology**
 - Computer Graphics Technology (Submitted to UNC System)
 - Data Science (in progress)
- ❑ Major \$2.1 Million investment on improving student lab experiences (special focus on Technology)
- ❑ Increase in Research activity – \$6.0 Million FY18, Technology contribution 6.4% in FY15 to 23.6% in FY18
- ❑ Major Challenge: Space