Academic Year (AY) 2012-13 was a very rewarding year for the Department of Technology. Department took strides in several areas of academics and outreach. There were two major initiatives that department undertook during AY 2012 – 2013 that will enhance Elizabeth City State University’s role as an institution of higher learning. First major initiative that department took during 2012-2013 was to initiate planning and development of a Professional Science Masters (PSM) program in Computer Information and Cyber Security Technology. Department received a grant from The Alfred P. Sloan Foundation/NCSU for planning ECSU’s first Professional Science Masters (PSM) program. Offering such a multidisciplinary PSM program will provide opportunities for African American students to pursue graduate education or advance their career in high-demand and high-tech areas of IT Networking, Computer/Network Forensics, and Cybersecurity, where they are heavily underrepresented. The program will enhance the department, school, and the university by attracting working professionals and with proper marketing could also attract international students to ECSU campus.

In another major initiative during AY 2012-2013, department was involved in statewide effort to bring Federal Aviation Administration (FAA) approved Unmanned Aircraft System (UAS) test site to Hyde County in the state of North Carolina. As a part of statewide consortium of academic institutions, private organizations, and governmental agencies we are competing with other states in the US for one of the six possible UAS test sites. Department of Technology constituted a team of faculty members from both technology program and aviation science program to submit responses to the Request for Proposal (RFP) issued by FAA in this regard. We are working closely with the NextGen Air Transportation (NGAT) center at the Institute for Transportation Research and Education (ITRE) at North Carolina State University to ensure that ECSU will have an important role to play if Hyde County is selected as one of the six UAS test sites. The department is also working towards capacity building in the area of unmanned systems both in terms of research and educational training capabilities. The field of unmanned systems (ground, aerial and marine) is growing rapidly and our department plans to be in the forefront of this technological growth.
Other highlights from department for AY 2012-2013 are summarized as below.

During AY 2012 – 2013, department made strides in all areas of academic endeavors. Faculty members were engaged in scholarly activities, student mentoring, recruitment, publications, and serving on campus and professional committees. Departmental accomplishments in terms of student achievements, faculty achievements, Programs, processes, procedural initiatives/changes, Recognitions and awards, and outreach are as follows.

Student achievements: Following students engagement/activities took place during the academic year:
1. Four students participated in poster presentation during SMST Research Week,
2. One student participated in poster presentation during University Research Day,
3. Five students attended Women in Aviation conference in Nashville, TN,
4. Over thirty (30) students went to field trips,
5. Aviation student flight team participated in NIFA competition hosted by ECSU
6. Two robotics teams participated in Advancing Robotics Technology for Societal Impact (ARTSI) alliance robotics competition held at Morgan State University, and
7. Two students attended graduate school fare at NCSU.

Faculty achievements:
Grant Writing: During AY 2012-2013, the Department of Technology submitted fourteen (14) proposals of which six (6) were funded and eight (8) are pending. Of these 14 proposals three (3) were in collaboration with other departments within the School of Math, Science, and Technology.
1. Planning and Development of PSM Program Computer Information and Cyber Security, submitted to Alfred P Sloan Foundation/NCSU, $4,250.00 (Rawat) – Funded
2. 2013 Summer Transportation Institute at ECSU, submitted to Federal Highway Administration (FHWA), $55,000 (Lawrence & Rawat) – Funded
3. North Carolina Department of Transportation HBCU/Minority Institution of Higher Education Summer Internship Program, submitted to NCDOT, $14,000 (Lawrence) - Funded
4. North Carolina Department of Transportation HBCU/Minority Institution of Higher Education Summer Internship Program, submitted to NCDOT, $14,000 (Sharp) – Funded
5. ECSU Aviation Career Education (ACE) Academy, submitted to NCDOT, $17,000 (Sharp) – Funded
6. ECSU Aviation Career Education (ACE) Academy, submitted to NC Aviation Division/, $5,000 (Sharp) – Funded
7. Elizabeth City State University – CREST Center for Integrative Nanomaterials Research, submitted to NSF, $4,999,674.00 (Rawat w/Taroare, Adedji and Jackson) - Pending
8. Sensor Lab Project: Using Sensor Science and Technology as a Catalyst for Student Engagement and College Readiness in Northeastern North Carolina, submitted to Burroughs Wellcome Fund, $174,780 (Rawat) - Pending
9. Strengthening Elizabeth City State University Capacity to Meet Educational and Workforce needs of the Emerging Remotely Piloted Aircraft Industry in the Northeast
Region and the State of North Carolina, submitted to the North Carolina Department of Crime Control and Public Safety (NCCPCC), $360,152 (Rawat) – Pending

10. Establishing Introduction to Bioenergy Course to Augment Green Technologies Career Development Program at Elizabeth City State University, submitted to NC Biotech Center, $44,144 (Elahi w/Rousch) – Pending

11. Partnership in Information Assurance Scholarship Program, submitted to East Carolina University, $68,351 (Eslami) – Pending

12. Partnership in Information Assurance Capacity Building Program, submitted to East Carolina University, $42,349 (Eslami) – Pending

13. Development and implementation of bioinformatics undergraduate curriculum for Enhancing interdisciplinary Research and Education at Elizabeth City State University, submitted to NSF, $393,229 (Rawat w/Sengupta, Hasan, Anderson, Banerjee, and Winrow) – Pending

14. Support Exploratory Aviation Education for the Youth of the Twenty-One Service Counties of Elizabeth City State University, submitted to North Carolina Department of Crime Control and Public Safety (NCCPCC), $229,040 (Sharp) – Pending

Faculty Presentations:

“Development of Wideband Dual Polarized of Microstrip Antennas for Microwave Remote Sensing,” Proceeding of The Fifth International Conference on Advances in Satellite and Space Communications, SPACOMM 2013, April 21-26, Venice, Italy, paper # 30003 (Eslami w/Luttamaguzi).


Professional Services:

Editorial Review board member for Journal of Industrial Technology (JIT) (Rawat)
Editorial Review board member for International Journal of Modern Engineering (Elahi)

Programs, processes, procedural initiatives/changes:

Program Accreditation: The 2-year follow-up ATMAE accreditation visit and report was defended during the ATMAE accreditation hearing in October 2012. The department has to now only submit a progress report after two years. Our current ATMAE accreditation is valid till November 1, 2015.

The departmental ABET accreditation team has completed the preliminary self-study report and graduate follow-up study for Engineering Technology program. The preliminary self-study report will be submitted to ABET by November 1, 2013. The department team will work diligently during the upcoming year so that we are fully prepared for ABET accreditation visit in Fall 2014.
New Courses: Two new courses in Engineering Technology – Introduction to Renewable Energy Systems and Introduction to Wind and Hydro Power Systems were approved and will be offered in Fall 2013 and Spring 2014 respectively.

Curriculum Changes: Curriculum changes to the existing Industrial Program to enhance concentration in Computer Networking & Cyber Security was approved by UCC. The program name change from Industrial Technology to Computer Networking & Cyber Security Technology has also been approved by the UCC.

NI Academy Initiative: Department is working with National Instruments (NI), a global leader in scientific and engineering instrumentation, to establish LabVIEW Academy at ECSU. This academy will afford students training in latest software and hardware used in industry at no cost. Students can also receive LabVIEW certification, thus making them more marketable for opportunities in engineering and technology field. Department will in turn benefit by receiving course material, program improvement consultancy, and laboratory hardware and software at a low price.

Classroom/Lab Upgrades: Following equipment/lab resources were added/purchased during the AY 2012-2013 to enhance/upgrade classrooms/laboratories.

1. A multidisciplinary Mobile Robotics (aerial and ground) research lab established in the department
2. Three classrooms/labs were equipped with SMART Board technology
3. MET tower installed to support courses in renewable energy
4. Acquired software licenses for Windographer and PROE
5. Upgraded student licenses for MULTISIM, ULTIBOARD, and LABVIEW software
6. Redbird full motion flight simulator ordered
7. Upgraded control systems laboratory with data acquisition hardware and software

Recognitions and awards:

2nd place in # of grant proposal submissions at ECSU (Rawat)
SPCG Faculty mentor award to mentor new faculty members for grant writing (Rawat)
SPCG Director’s Award (Elsami)
3rd place in # of funded proposals (Lawrence and Sharp)

Outreach:
During summer 2013, department will be hosting Summer Transportation Institute, funded through Federal Highway Administration (FHWA) grant that will bring 16 high school students for a 4-week STEM program. In addition, department will organize two (one co-ed and one all girls) one-week Aviation Career Education (ACE) camps for middle school students.