



University at Buffalo

The State University of New York

School of Engineering and Applied Sciences

UB Engineering and Applied Sciences Dean's Quarterly Report
July 1, 2011 to September 30, 2011

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This report covers the first quarter of our new Academic Year 2011– 12 and reflects the dedicated work of our faculty and staff and the generosity of our benefactors. Thank you for your continued effort.

1. Education: School Enrollments

Summer Semester 2011: Our summer sessions continue to grow. Summer 2011 credit hours were approximately 15% more than Summer 2010 with all departments participating. Thanks to all who made this possible as we strive to have a program conducive to students' needs.

Fall Semester 2011: Our student body remains strong, with a 2/3 to 1/3 undergraduate to graduate ration. In both groups, in-coming qualifications continue to rise.

Undergraduate	Graduate	Total
2615 (68%)	1235 (32%)	3850 (100%)

2. Awards

Congratulations to our students/clubs, faculty, and staff who have been recognized this quarter.

Students/Clubs

- ISE grad students **Matthew Henchey** and **Tejswaroop Geetla**, doing their PhDs with me as their major professor. Their US Department of Transportation's Connected Vehicle Technology Challenge win was reported in an article in *Fast Company*.

- The **University at Buffalo SEDS Nanosat Team** (UB Nanosat) was recently selected to participate in the United States Air Force University Nanosat Program (UNP). The program's objective is to help train tomorrow's space professionals by providing students with the two-year goal of developing a flight-ready spacecraft based on a mission proposed by the university's nanosatellite team. The program is funded by a \$150,000 grant from the Air Force Research Laboratory, which is used by the student program to develop their satellite.

The UB Nanosat team's mission is to perform space-to-space imagery of unresolved space objects, with the goal of gathering detailed light data to determine the shape, orbital, orientation, and material characteristics of such objects. Furthermore, the mission seeks to observe unique events in space, called glints, in which an observed satellite acts as a mirror, strongly reflecting the Sun's rays. This makes the satellite in question significantly brighter, allowing the observation of details typically too dim to be seen, such as Iridium flares. This technology has many potential applications in characterizing the space environment, especially for geostationary objects. The process can potentially increase space-situational awareness, and our knowledge of non-cooperative satellites and debris objects. Further information regarding the UB program can be found at <http://www.ubseds.org/nanosat>.

The UB team is student run and driven, providing the educational opportunity to work on state-of-the-art hardware, and experiment in a unique environment. The Principal Investigator for the mission is MAE Professor **John L. Crassidis**. Crassidis has worked on several satellites, including the Wilkinson Microwave Anisotropy Probe (WMAP), a NASA mission that launched in June 2001 to perform fundamental measurements of cosmology.

Faculty

- MAE Professor **Deborah D.L. Chung** was awarded an honorary doctorate from the University of Alicante, Spain, for her international recognition as a scientist specializing in smart materials and carbon composites.
- EE Associate **Professor Natalia Litchinitser** earned a US Department of Defense University Research Instrumentation Program (DURIP) Award for metamaterials research.

3. Research Achievements

At least one of our faculty/staff was a PI/Co-PI on 52 grants that were awarded this quarter. The grants totaled \$19,618,129, with the average award being \$377,271; the largest was \$2,669,014. The average duration is 1.93 years.

Funding groups included: **Companies:** AVOX Systems, BBN Technologies, Inc., Catholic Health System, ESensors Inc., General Motors Components Holding LLC, Greatbatch Medical, Harper International

Corp., Hydraulic Development & Manufacturing Co., Intelligent Automation, Life Technologies, Inc., Lockheed Martin Energy Systems, Motorola, Precision Scientific Instruments, Inc., Steuben Foods, Viatran Corporation; **Government or related:** California Department of Transportation, Lawrence Berkeley National Laboratories, National Institutes of Health, National Science Foundation, Roswell Park Cancer Institute, US Air Force Rome Lab, US Army Research Office, US Central Intelligence Agency, US National Security Agency, US Office of Naval Research, US Postal System; Educational Institutions: CONACYT - Consejo Nacional de Ciencia y Tecnología (Mexico), Massachusetts Institute of Technology, Purdue University, University of Central Florida, and the University Transportation Research Center-Region II.

Research Proposal Submissions: 1st Quarter Totals

Academic Year	Number of Proposals	Total Value
2007 – 2008	90	\$ 25,690,603
2008 – 2009	117	\$ 89,868,783
2009 – 2010	128	\$ 142,385,543*
2010 – 2011	115	\$ 50,224,402
2011 – 2012	123	\$ 50,021,710
		<i>*US Stimulus funding</i>

4. Personnel Status

Promotions and Appointments – Congratulations to the following faculty for their for promotions or appointments:

Promotions to Associate Professor

- **Murat Demirbas**, CSE
- **Natalia M. Litchinitser**, EE
- **Weifeng Su**, EE

Promotions to Professor

- **Ann Bisantz**, ISE
- **Vipin Chaudhary**, CSE
- **Jeffrey Errington**, CBE

Appointments

- Professor **Paschalis Alexandridis**, UB Distinguished Professor of CBE, had the responsibility of research added to his title, becoming acting associate dean for research and graduate education
- Professor **Stella Batalama**, EE, was changed from acting chair to chair of her department

Comings and Goings

Comings – We welcome the following new faculty and staff members:

- **Geoffrey Challen**, Assistant Professor, CSE
- **Mark Ehrensberger**, Professor, BME
- **Hyungseon Oh**, Assistant Professor, EE
- **Murat Kurt**, Assistant Professor, ISE
- **Nicholas Mastronarde**, Assistant Professor, EE
- **Bonnie McKay**, Staff Assistant, MCEER – Information Services
- **Blaine Pfeifer**, Associate Professor, CBE
- **Uttam Singiseti**, Assistant Professor, EE

Goings – Farewell to the following faculty:

- **Adrienne Decker**
- **David Forliti**
- **Michalis Petropoulos**
- **Gwanseob Shin**

Long-time staff leaving were:

- **Ken Peebles**: joined UB Facilities in 1974, and after a break working with private industry, he became Engineering's laboratory equipment designer and later was promoted to supervisor. Ken started the Student Machine Shop that increased the hands-on experiences of many students thus expanding engineering club activities.
- **Michelle Sacco**: was an integral part of the School's EngiNet program, where she worked for 10 years after contributing 14 years of service to UB's Millard Fillmore College.

Faculty Obituary:

We mourn the passing of our alumnus, faculty member, and Dean's Award recipient **Wilson Greatbatch** (September 6, 1919–September 27, 2011), world-renowned inventor of the implantable cardiac pacemaker, whose ever-curious mind led him to new discoveries into his nineties. Greatbatch earned his MS in EE from our School in 1957, and was recognized widely for his life-saving/life-improving invention. According to a *New York Times* obituary, he held 325 patents. Greatbatch was inducted into the National Inventors Hall of Fame in 1986. He held several honorary science doctorates, including one from the State University of New York. A member of the National Academy of Engineering, he was its Russ Prize winner in 2001.

5. Our Physical Platform

- **Davis Hall** – Work continues on the completion of Davis Hall. Donors to the building were treated to a preview of the space on September 22, an event that included a tour of the building and presentations by Provost Stenger, Tony Caputo of Perkins + Will, and me.

Important milestones during the quarter included: Interior – named rooms labeled, donor wall implemented, four information displays installed and programmed and a major purchase order of office and lab furniture made; Exterior – landscaping began, with initial sidewalks being poured and berms structured.

The anticipated move-in for CSE, EE, CEDAR/CUBS and selected staff members of the Dean’s Office is on schedule and will start in mid-October for full occupancy of office and labs by mid-January 2012.

- Repurposing of SEAS Space – Discussions continue with SEAS department chairs and me regarding the SEAS backfill plan with space that will become available when EE and CSE move into Davis Hall.
- National Grid Conference Room Upgrade – The upgrade of the 414 Bonner Hall Biomedical Engineering Conference room to a cutting-edge access grid facility was completed in September. The paperwork to accomplish the transfer of funds for the gift is being finalized to present to National Grid.

6. Philanthropy

During this quarter, our alumnus **Norman Hayes** made a naming gift to Barbara and Jack Davis Hall. Corporate gifts were received from Bird Technologies Group, Catholic Health Systems, CMP- Catholic Medical Partners, EMD Chemical, Google, and Perkins + Will Architects.

July 01, 2011 – September 30, 2011

Commitments	Collections
\$1,793,112	\$1,060,567

We are ahead of last year’s record-setting year for Engineering fundraising efforts, and are grateful for all gifts given to us by our alumni, friends, and companies.

7. Visits and Events

An important part of my meetings during the first quarter of our new academic year was a series of orientation and planning sessions I had with each of our seven departments, please see next section, **8. Where do we go from here?**

The following are visits I took as well as visitors that I received during this quarter.

Date	Visit or Event
7/7	Raj Boveja* , President and CEO OCR Services, and Naina Boveja
7/20	Tony Zhao, Technical Manager, Baidu, China

7/22	Beijing Institute of Technology, China
7/26	Brian Anderson, Senior Economic Development Representative, National Grid
8/2	BEAM Golf Tournament, in group with Turner Construction
8/3	Dennis Elsenbeck* , Regional Executive, National Grid
8/8	David Tincher, Site Manager/Community Representative, General Mills
8/8	Bob Lieber, Manager, and Steve Franz, Rich Products
8/10	Russ Agrusa* , CEO, President and Treasurer, ICONICS, and Paula Agrusa, VP Finance and Administration, ICONICS
8/10	George Neuner, Partner, Edwards, Angell, Palmer, and Dodge
8/10	John Pilitsis* , Industry Director, CyOptics
8/15	John Pustulka* , President, National Fuel Gas Supply
8/17	Scott Stevens* , President, Dimension Fabricators
8/18	Lester Gerhardt* , Vice Provost and Dean of Graduate Education, RPI, and Karen Gerhardt
8/24	Jeff Kingsley, Director, Process and Systems R & D, Praxair
9/8	Sharad Tak* , President, ST Group
9/9	Jeff Kingsley, Director, Process and Systems R & D, Praxair, and Provost Harvey Stenger
9/15	Kitty Pilarz* , Director, World-wide Product Safety, Mattel and Chairman, Safety Committee, Fisher Price
9/19	SEFA luncheon, Center for the Arts
9/19	Dinner with Professor Hermann Winner, Darmstadt University
9/21	Ed Czechowski, Engineering Fellow, New Product Development, FS-Ellicott
9/22 - 23	Dean's Advisory Council – gave a State of the School Address and introduced the DAC to UB's new planning process including 3-year plans and measurement of success via 39 metrics
9/22	Barbara and Jack Davis Hall Donor Event – hosted over 100 donors and UB officials for a reception, tours, and dinner at the new building's inaugural event

9/23	Participated in the Investiture Ceremony and Investiture Dinner of UB's 15 th President Satish K. Tripathi
9/24	Hosted DAC members at UB's Homecoming Football Game
9/29	Tom Lynch* , President and CEO, Goodwill Industries
9/29	Brian Anderson, Senior Economic Development Representative, National Grid

* Indicates an alum of our School

I include for you a list of companies with which TCIE is engaged since my last report. The goal of this list is to improve continually communications and to give visibility to all SEAS groups that contact companies or organizations outside of UB. Sending the open engagements should be a helpful communication tool informing everyone that another UB entity is at a client they are visiting. The hope is to improve industry's perspective of UB by increasing communication between us. TCIE's complete annual report for 2010 – 2011 may be found at:

<http://www.tcie.buffalo.edu/annual-report/>

Audubon Machinery Corporation

Classifieds Plus, Inc.

General Motors Components Holding LC

Greatbatch, Ltd.

Greenwood Group

Gunlocke Company

Habasit America

Hebeler Corporation

IMMCO Diagnostics, Inc.

Independent Health

Manitoba Corporation

The Mentholatum Company, Inc.

North American Carbide

Packstar

Solar Liberty

Steuben Foods

UB Undergraduate Admissions

Viatran Corporation

William S. Hein and Company, Inc.

8. Where do we go from here?

I met with the faculty of each of our departments this quarter to: 1) communicate the direction that our top administration is taking concerning unit evaluation and funding, and 2) to encourage their participation in our plans. Following are three areas that were covered.

1. Three-Year Unit Plans (goals with contributions to larger university performance, 3 E Fund proposals, hiring and outcome plans, and financial plans) at the School and informed by the departments.

THREE-YEAR UNIT PLANS

- **Mission Statement** – define role the unit plays in the university
- **Goals** – contributions to larger university performance
 - o Enrollment
 - o Student Diversity

- o Student Degree Attainment
 - o Research
 - o Philanthropy and Fundraising
 - o Service Improvements
- **3 E Fund Proposals**
 - **Hiring and Outcomes Plan**
 - **Financial**
 - **Conclusion and Discussion** – How implementation will impact their competitiveness against their peers.

2. Evaluation via 39 Metrics

FACULTY	
1	Ladder Faculty Size
2	Student FTE/Ladder Faculty Ratio
3	UG Courses Taught by Full-Time Faculty
	Diversity of Full-Time Faculty
4	% Black, Hispanic, Native American
5	% Female
RESEARCH PRODUCTIVITY	
6	Federal Research/Ladder Faculty (in 2010 dollars)
7	UB Share of Federal Research Expenditure
8	Non-Federal Research Expenditures/Ladder Faculty
9	Patent and Licensing Income
10	Publications/Ladder Faculty
11	Awards
12	Proposals/Ladder Faculty/year
13	National Academy Memberships
STUDENTS	
	TOTAL ENROLLMENT
14	Regular Enrollment (State supported)
15	Externally Funded Enrollment (e.g. Singapore)
	STUDENT QUALITY
16	Average SAT (freshman)
17	Average HS GPA (freshman)
18	Average GPA (transfer)
	DIVERSITY
19	% Black, Hispanic, Native American – (UG)
20	% Black, Hispanic, Native American – (GRAD)
21	% Female (UG)
22	% Female (Grad/Prof)
23	% Non-NY, US (Freshman)

24	% Non-NY, US % Female (UG)
25	% International (Freshman)
26	% International (Grad/Prof)
	DEGREE ATTAINMENT
27	1 st Year Retention
28	2 nd Year Retention
29	4-Year Graduation Rate – Freshman
30	6-Year Graduation Rate – Freshman
31	Transfer Graduation Rate
32	PhD Degree Ladder Faculty
DEVELOPMENT	
33	Annual Gift Collections
34	Gift Commitments (3-year average)
35	Endowment Market Value (MV)
36	# MV of Endowed Chairs/Professorships
37	MV of Endowed Chairs/Professorships
38	# Endowed Scholarships
39	MV of Endowed Scholarships

3. The 3 E Fund, a source of new dollars available for units from the university level with the specific purpose of “Investing in Excellence, Engagement and Efficiency.”

THE 3 E FUND

Investing in Excellence, Engagement and Efficiency

PURPOSE

Invest in high-impact, high-return initiatives responsive to UB strategic priorities.

FUNDING AVAILABILITY

The fund will have **\$5.2M** available in recurring dollars in FY 11/12 growing to **\$26M** by 2015/16

EVALUATION

Demonstrated impact on the 3 Es

Each of these areas will be formed into plans, measures and proposal during Quarter 2 AY 2011–12 and will be reported in more detail in my next quarterly report.

If you would like more information on any of the topics in this quarterly report, please contact me.

Sincerely,

Rajan