Fall 2013
Volume 1, Issue 1

The Cable

The Newsletter of the Civil Engineering Program at Stony Brook University

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Regular Features:

Welcome Class of 2017!

We are very excited to welcome our second class of students. Between fall 2012 and the start of this academic year, we grew considerably in new student enrollment. Our inaugural class will be joined by another 48 students this fall, for a total student body of 72! Next academic year we anticipate that undergraduate students will be joined by M.S. and Ph.D. students.

For new students, please utilize the many resources on campus to help you make a successful transition into college life. If you need help writing papers, the writing center will give you useful suggestions and tips.

It's never too late to start considering a summer internship! Check out our website or visit the Career Center, which is also the place to go for resume tips and ideas for cover letters. The Career Center also sponsors a career fair twice a year, once during the fall term and once in the spring.

In addition to your faculty advisor, CEAS Academic Advisors are also available in Old Engineering for anyone wishing to discuss their academic plans or how to transfer any college credits earned prior to enrolling in CE.

Lastly, although perhaps most importantly: transitions can be challenging; if you need to talk to someone, there are confidential services on campus for you and every SBU student. Your first two semesters are a major period of adjustment and there are people who care and want to help you achieve your goals. The Center for Prevention and Outreach and the Counseling and Psychological Services offices are here to support you (and are paid for by your student fees). Please stop by anytime if you need help or visit the CPO/CAPS websites for more information.

Again, welcome to Stony Brook and best of luck in your academic career! We are excited to be on this journey with you.

SBU chapter of ASCE established

The Student Chapter of ASCE at Stony Brook University held its first formal meeting on April 17, 2013 in Lecture Hall 143 of the Old Engineering Building. Approximately 10 students attended the meeting. The group elected officers for the 2013-2014 academic year and they are:

Morgan DiCarlo, President
Marie Baietto, Vice President
Nicole Yoo, Secretary
Kevin Yee, Treasurer

Please join us! The first meeting of the 2013-2014 academic year will be held mid to late September. ASCE meetings are a great place to learn about civil engineering and begin networking for your career. Please follow meeting announcements on the chapter's website.

Stony Brook University

A note from the Director

Harold Walker, Ph.D., P.E.

"The need for Civil Engineers has never been greater. Civil Engineers make a real difference in people's lives."

I am excited to provide a "note" for the very first edition of the Civil Engineering Newsletter, which we are calling "The Cable." Our new faculty member, Dr. Ryan Giles, suggested the name "The Cable" as it invokes thoughts of civil infrastructure (e.g., suspension and cable-stayed bridges) as well as both historical and modern modes of communication. Learn more about Dr. Giles, as well as our other new faculty member Dr. Juhyuk Moon, in this edition.

I am also excited to serve as the first Director of the new Civil Engineering program here at Stony Brook University. Starting a new Civil Engineering program from scratch is both an honor and incredible responsibility. Superstorm Sandy hit New York in the inaugural year of our program and reminded me just how important civil engineers are in people's lives. All told, Sandy severely damaged or destroyed over 100,000 homes on Long Island, damaged hundreds of water and wastewater treatment plants, flooded and severely damaged seven subway tunnels under the East River, grounded the John B. Caddel tanker and disrupted operations in New York Harbor for weeks, knocked out electricity to millions of people, and nearly destroyed our petroleum supply chain. I am thankful my family was safe, but sadly, dozens of New Yorkers lost their lives during the storm. The total monetary damage of Superstorm Sandy has been estimated at over $50 billion in New York alone. If we, as civil engineers, can better design and protect our coastal cities, the terrible toll of extreme events can be greatly reduced.

This past year, we also saw the collapse of the Skagit River Bridge on Interstate 5, one of the main transportation arteries in the state of Washington. Fortunately, no one was killed, but millions of people were left with few transportation options. The collapse highlighted the decrepit state of our nation's transportation infrastructure which the American Society of Civil Engineers (ASCE) has given a grade of C+. ASCE estimates that one in three bridges in the United States is "structurally deficient" or "functionally obsolete." In New York, the number is 39%. Our transportation infrastructure provides the foundation for our economic prosperity and supports our most basic needs, such as getting to work, going to the grocery store, and safely taking our children to school. Civil Engineers can make a real difference by developing innovative solutions to our transportation and other infrastructure problems and by informing the public and our elected officials about the critical importance of our basic infrastructure.

The need for civil engineers has never been greater. I look forward to working with all of our faculty, staff, students, and the civil engineering practice community to develop a high-quality, world-class civil engineering program at Stony Brook. Together, we can tackle these tough infrastructure challenges and make a real difference in people's lives. Go Seawolves!

Skagit River Bridge Collapse – 5/23/13
Image courtesy of News 1130, Vancouver
News1130.com

Skagit River Bridge Fix
The 160-foot long section was repaired earlier this summer, a more permanent repair is scheduled for fall 2013. The Skagit River Bridge will still be classified as "functionally obsolete" and traffic moves slower for now because the patch is narrower than the original bridge frame. Repairs and construction will cost Washington State 1 million while the federal government will contribute emergency funds totaling 17 million for the reconstruction project.

Photo credit: The Bellingham Herald, Bellinghamherald.com

New CIV faculty member, Dr. Ryan Kent Giles

Dr. Giles

Dr. Ryan Kent Giles' research focuses on using sensor technology to continuously monitor the condition and safety of bridges and other civil infrastructure. Structural Health Monitoring or SHM, as this process is generally called, aims to supplement current bridge inspection practices providing a more objective approach in assessing bridge health which translates into greater public safety. Utilizing sensor technology not only helps allocate limited resources in a more effective manner, but it also aids in the sustainability of the nation's infrastructure.

Dr. Giles earned his Ph.D. and M.S. in civil engineering from the University of Illinois at Urbana-Champaign in 2013 and 2006 respectively; he earned his B.S. in civil engineering and a B.A. in history from Rice University in 2004.

Though many wonder why he majored in both history and civil engineering as an undergraduate, Dr. Giles feels that his degree in history has shaped his civil engineering interests and understanding of the world. According to Giles, "The preservation of historic structures has an important place in our profession, alongside LEED and other green technologies in creating a sustainable future. These structures present a number of engineering challenges that the next generation of engineers needs to be ready to solve." Dr. Giles looks forward to preparing Stony Brook students to face these challenges.

"Stony Brook is located on the doorstep of one of the best living civil engineering laboratories in the world – New York City. I look forward to using it to further my own research and educate its future engineers."

The Rock Island Arsenal Government Bridge, built over the Mississippi River in 1896 between Rock Island, IL and Davenport, IA, is just one of over two hundred bridges owned by the United States Army. Dr. Giles placed dozens of sensors on this bridge and used the sensors to objectively monitor the bridge's stability.

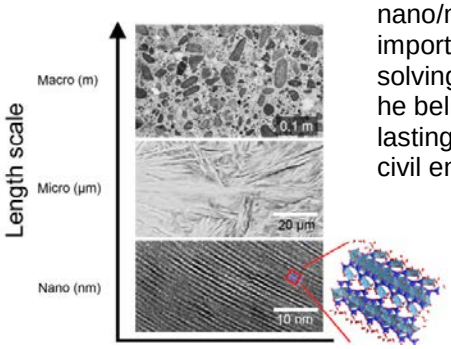
New CIV faculty member, Dr. J. Moon

Dr. Moon

"Construction sustainability and obsolescence will present new opportunities for future civil engineers. Skills my students gain by using a nano/micro approach will help them meet and surpass these challenges."

Dr. J. Moon studies the nano and microstructure of materials, particularly those used for construction applications. In 2013, he earned his Ph.D. in construction materials from the University of California at Berkeley. Dr. Moon earned his M.S. in structural engineering in 2009 from Seoul National University, South Korea and completed his B.S. in architectural engineering from the same university in 2007.

Dr. Moon's current focus on concrete is vital because it is the second most commonly used material in the world after water. The production of Portland cement involves using heat to convert calcium carbonate into calcium oxide with the release of carbon dioxide. Unfortunately, this results in 5-7% of global carbon dioxide emissions. Dr. Moon's research involves developing new, alternative, green cements known as geopolymer**,** limestone cement, and calcium sulfoaluminate cement with reduced emissions.



"Our society is facing new challenges. Many of the buildings and much of the infrastructure in New York City have to deal with obsolescence and greenhouse gases, which are both major global issues. To solve these new problems, we need a new approach." Dr. Moon's multi-scale research based on a nano/micro approach is an important step forward in solving these problems and he believes will make a lasting impact in the field of civil engineering.

CE students attend ASCE MET region conference

"Having the opportunity to learn about the design process and watch the outcome of the concrete canoe race made me really eager to start up our own build team for next year."
- Marie Baietto '16

The 2013 ASCE Metropolitan (MET) regional conference was hosted by Polytechnic Institute of New York University on April 26-28. Fairleigh Dickenson University hosted the concrete canoe competition at Cooks Pond, NJ. This year, Dr. Walker and several students went to the conference's canoe competition to learn more and plan Stony Brook's future involvement with the regional chapter of ASCE.

Marie Baietto, a sophomore and VP of SBU's ASCE chapter, commented, "The thing that excited me the most [about the competition] was watching the race. I was also able to ask many questions of different team members to get an idea of some challenges and successes that went into the entire design process. I liked being able to see which designs worked the best in the race, and of course, cheering on my favorite teams!"

The SBU chapter of ASCE will start planning for the 2014 concrete canoe race this fall. They need your talents and enthusiasm—get involved, join today!

CIV Program Awarded $309,584 for Teaching Labs

The Civil Engineering Program was recently awarded $309,584 through the High Needs Program created by the State University of New York (SUNY). The SUNY High Needs Program provides funding to support the growth of academic programs in areas of critical importance and projected need in the State of New York.

The Civil Engineering Program was one of 8 programs selected for funding at SBU. The grant will be distributed over the next three years and will be used to develop state-of-the-art teaching laboratories.

This year, several "total stations" are being purchased to support a course in surveying. We will also purchase a "universal testing machine" for compression and tensile testing in the materials lab.

A universal testing machine will be a notable

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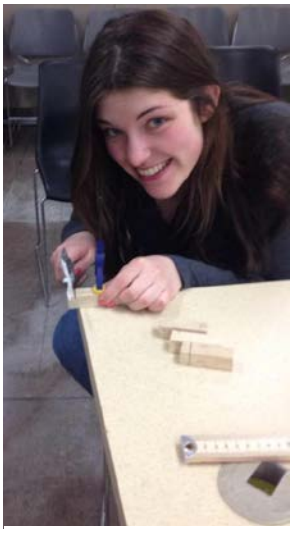
Meet Your Classmate!

Morgan DiCarlo



Morgan working hard in the Physics lab.

Morgan DiCarlo, class of 2016, is the newly elected president of the SBU student chapter of the American Society of Civil Engineering (ASCE). We caught up with Morgan over the summer for a brief interview.

TC: Why did you choose civil engineering as your major? *In high school, I had the opportunity to participate in a sequence of technical courses that taught me computer aided design and other skills that ultimately convinced me that my love for math and science would be best applied as an engineer. I took a particular interest in the water industry and participated in research on the proposed desalination plant in my town. My paper on this research gave me recognition from National Association of Water Companies-NY Chapter. The most exciting aspect of Civil Engineering to me is the challenge of making clean, potable water accessible to our world's growing population, and it's my hope that in my future career I can work to resolve water crises.*

TC: What was last year like for you? Do you have any tips for the incoming class? *Freshman year of college is an amazingly good time; that is, if you plan your time to make it that way. I took a total of 41 credits over my first two semesters, while simultaneously attending WISE [Women in Science and Engineering] mentoring sessions, founding the Stony Brook Chapter of ASCE and making fantastic new friends. My best advice to incoming freshman is to be ambitious but cautious of overloading yourself. Stony Brook is a huge school, and it takes a lot of persistence to create relationships with your professors and your classmates. You need to commit time to these relationships, your studies and any extracurricular*

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Coastal Zone Engineering and Management Program

Through close collaboration between Civil Engineering, the School of Marine and Atmospheric Sciences (SoMAS) and the Sustainability Studies Program a new program in Coastal Zone Engineering and Management is being created. The trio's proposal for new faculty was one of five proposals selected out of 36 submitted in the first year of this initiative. The Coastal Zone program was awarded six new faculty lines as part of the Provost's Interdisciplinary Faculty Cluster Hiring Initiative. The program was also awarded $1.46 million through the SUNY Empire Innovation Program (EIP) to support the recruitment of world-class faculty for this new program. EIP funds will be used to enhance the start-up packages for new faculty hires. Start-up packages are designed to pay for professors' lab equipment and some research projects. In addition, start-up packages reflect the university's commitment to attract the best faculty and researchers for the school.

One of the main goals of the Coastal Zone faculty cluster will be to develop solutions to some of the most important and challenging environmental and social issues of our time. Much focus will be given to the resilience of coastal infrastructure, transportation, offshore renewable energy, water quality and the ability to monitor and simulate the ocean's properties and functioning. The cluster will also study the effects of communities' choices as it relates to the ocean.

Civil Engineering Scholarship Endowed by the Ammann Family

We are extremely grateful to Dr. Margot Ammann Durrer, daughter of the renowned civil engineer Othmar Hermann Ammann, for her generous contribution of $200,000 to establish the Othmar Ammann Endowed Scholarship in Civil Engineering. Othmar H. Ammann was the structural engineer and designer of the George Washington, Triborough/RFK, Bronx-Whitestone, Throgs Neck, Verrazano-Narrows, and Bayonne bridges, among others. Othmar H. Ammann (1879–1965) was born in Switzerland, came to the United States in 1904, and then became a naturalized citizen in 1924. He served the New York Port Authority from 1925–1939 and was its director of engineers from 1937 to 1939. He went on to found Ammann & Whitney, one of the preeminent structural engineering firms in the United States. Robert Moses described Othmar Ammann as "at once a mathematician and a dreamer in steel … a combination of realist and artist rarely found in this highly practical world." The Othmar Ammann Endowed Scholarship in Civil Engineering is intended for full-time students majoring in Civil Engineering at the Junior, Senior, or Master's level. For more information, please contact the College of Engineering and Applied Sciences (CEAS) advising office.

See page six regarding Othmar Ammann's papers and documents in University Special Collections.

Engineering Honor Societies

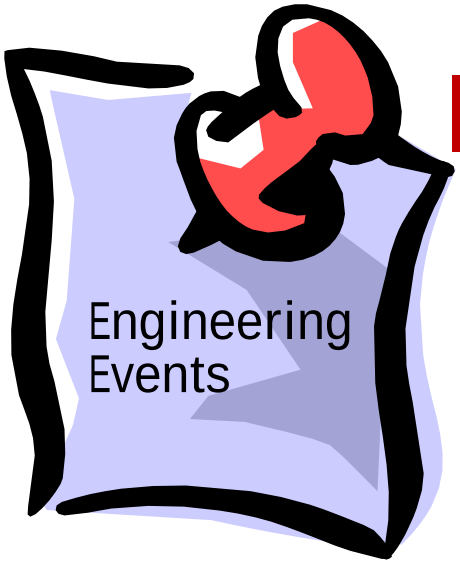
Stony Brook students may graduate with "Latin honors" (e.g. *cum laude*, *magna cum laude*, and *summa cum laude*), but engineering also has a number of honor societies. Established in 1885 at Lehigh University, Tau Beta Pi is the second-oldest engineering honor society in the U.S. and the only honor society representing the entire engineering profession. There is currently an active chapter of Tau Beta Pi at Stony Brook University. Basic eligibility for Tau Beta Pi includes being in the top eighth of your engineering class in your next-to-last year or in the top fifth of your engineering class in your last year. Other factors in considering membership are personal integrity, breadth of interest both inside and outside engineering, adaptability, and unselfish activity.

Civil Engineering also has its own honor society called Chi Epsilon. Chi Epsilon was founded in 1922 by a group of Civil Engineering students at the University of Illinois (alma mater of our own Professor Giles). We currently do not have a chapter of Chi Epsilon at Stony Brook.

The first step in establishing a student chapter of Chi Epsilon is to create a Civil Engineering Honor Society. Once our Honor Society has existed for at least one year and we meet additional requirements, we can petition for membership in Chi Epsilon. At that time, all members of the SBU Civil Engineering honor society will become "charter members" of Chi Epsilon. Formation of a Stony Brook University Civil Engineering Honor Society will also allow members to participate in many Chi Epsilon events, both locally and nationally.

In addition to strengthening your resume, membership in Tau Beta Pi and/or Chi Epsilon offers many opportunities for networking and building leadership skills through social events, national conferences, and conclaves. As you complete your freshman or sophomore year, please consider becoming a member of an engineering honor society in your junior or senior year. If you are interested in starting or helping to start the SBU Civil Engineering Honor Society, please contact the Director of the Civil Engineering Program, Dr. Walker.

To learn more about Tau Beta Pi and Chi Epsilon, please visit www.tbp.org and www.chi-epsilong.org



Engineering and Technology Fair
What? Annual showcase of activities CEAS student groups are currently involved. This event is also a great opportunity for new students to become involved in these groups or engineering clubs.
When? *Sept. 25, 2013*
Time? *1:00 – 2:20 (Campus Lifetime)*
Where? *Engineering Quad*

Engineering Carnival and Potluck Dinner
What? Annual charity event at end of fall term, complete with carnival booths created by student *groups*. Afterwards is a potluck celebration.
When? *November or December, 2013, date & time* ***TBD****. Please monitor the CEAS website!*
Where? *Old Engineering Lobby*

Internship Opportunities – Suffolk County Dept. of Public Works

The Suffolk County Department of Public Works (SCDPW) has several internship opportunities for SBU civil engineering students. One program, the Pavement Management Program, started just last year and is run in conjunction with Cornell University. Interns spend the summer helping to evaluate 1500 lane miles of roadway and input the data into a database also called 'the Pavement Management Program.' Because this is a new program, there are a few missing details, but if you are interested in more information, please be sure to stay in touch with the SBU chapter of ASCE because a representative from SCDPW will be visiting the group in the fall. There are several other SCDPW internships available to CIV students. If anyone is interested in Structures, Highway Design, Traffic Engineering and Construction Inspection as it relates to Highways, then it is possible that SCDPW can accommodate an internship specifically geared toward your interest. Lastly, SCDPW also has other opportunities in Waste Water Engineering as SCDPW maintains 21 sewer districts. Please stop by Heavy 250 for more info.

The Othmar H. Amman Collection at SBU

In 2002, Dr. Margot Ammann Durrer gifted a collection of important papers to Stony Brook University. This special collection includes articles, books, translated correspondence, and multimedia that chronicles the professional and personal life of Othmar H. Ammann, Dr. Durrer's father. It also includes important papers and early letters from Othmar to his parents, other family members, and to his wife, Lily Wehrli Ammann. The Othmar H. Ammann Collection serves as a primary source for research and is part of Stony Brook's Special Collections and University Archives, which can be viewed by request. (Call 631-632-7199 for assistance.)

Dr. Ammann Durrer (1922-2010) was a charter member of Stony Brook's John S. Toll Heritage Society in honor of her family's financial dedication to Stony Brook University and its students. Dr. Durrer's relationship with Stony Brook spanned over four decades and her generosity will continue to support students and researchers for decades to come.

Othmar H. Ammann
Self-portrait, circa 1904
Credit: Ammann-Whitney.com

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Please email us with any comments, suggestions, corrections, questions, or stories to include in future editions, etc. We love hearing from our students, the civil engineering practice community, and other stakeholders. We strive to make the newsletter as relevant and interesting as possible.

Thank you!

CIV Program Awarded $309,584 cont'd.

Universal Testing Machine

Photo credit: Rainer Knäpper
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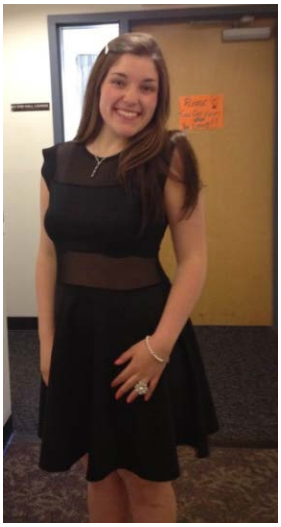
asset to civil engineering classes. Its ability to test a variety materials and structures makes it an essential piece of equipment. In subsequent years, we will purchase teaching flumes, hydraulic benches and pilot-scale treatment systems to support our teaching laboratories in water resources and environmental engineering. We are delighted and grateful to have been chosen for this grant because the funds directly benefit our students.

Meet Your Classmate! cont'd.

activities you choose to pursue. Also, join the American Society of Civil Engineers: Stony Brook Student Chapter! I will be conducting mentoring sessions and other activities that I hope will help the incoming class adjust to college life. Contact us at: sbucivilsociety@gmail.com

TC: What was it like going to the ASCE MET region conference this year? What impressed you? Or, was there anything that really made you think about CE in a different way?

The Student Chapters of the American Society of Civil Engineers (ASCE) hold regional competitions annually through a variety of events, including steel bridge tests and concrete canoe races. When first invited to the ASCE MET region conference, I had no idea how a concrete canoe could plausibly stay afloat, never mind hold the weight of two people and be used in races! I thought it was incredible to see what a group of undergraduate students can do to meet a design challenge. One thing I love about Civil Engineering is that large groups of engineers often collaborate together, working to create a single design that will meet the standards that society (or in this case, the competition) expects. Attending the concrete canoe race and networking with the members of other ASCE Student groups gave me some insight that will help our ASCE chapter to start competing as soon as possible!



Dressed up for the Engineering Ball, April 2013

TC: What are you most looking forward to this coming academic year?

In the fall, I'm most looking forward to working with my terrific e-board to get our ASCE Stony Brook University Chapter up and running. I'm also excited to be hosting events and meeting the incoming class as well as working closely with the Long Island Branch of the ASCE. Currently, I am working with the WISE program to develop a two week summer camp for middle and high school girls to expose and attract them to the field of Civil Engineering. I'm very eager to see the curriculum that I'm creating for this program be instated next year.

TC: Thank you, Morgan! We hope you and all our CE students have a great fall semester.

Giving to the Civil Engineering Program

Stony Brook University's Civil Engineering Program graciously accepts endowments and financial gifts. Regardless of the amount, each and every contribution we receive is important to the future of Stony Brook University and in particular, Civil Engineering's mission of teaching, research, and service to society. Whether your passion is student scholarships, helping us build our laboratories, or supporting faculty research, a gift to Stony Brook is a meaningful investment in creating a better future. To learn more, please contact the director of the program, Dr. Harold Walker, by phone 631-632-8315 or by email: harold.walker@stonybrook.edu

Make a Gift

Every gift matters.