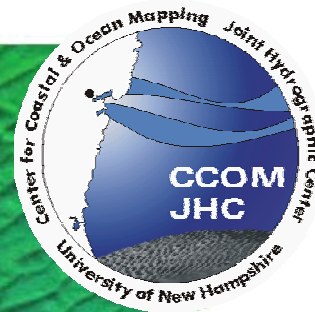


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CCOM Healy Team Completes Third Chukchi Cap Cruise

By Linda Prescott

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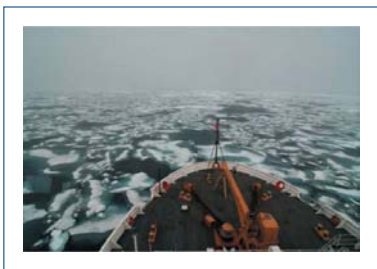
NOAA's Office of Coast Survey, in partnership with UNH's Center for Coastal and Ocean Mapping/Joint Hydrographic Center (CCOM/JHC) recently completed the third Chukchi Cap Arctic expedition. The group of 23 scientists, students, crew members and one high school teacher (Sam Fuerst, a science teacher from North Carolina, participating in the University of Rhode Island's ARMADA project) left Barrow, Alaska on August 17th aboard the U.S. Coast Guard Cutter HEALY to map the seafloor on the northern Chukchi Cap, an underwater plateau that extends from Alaska's north slope some 500 miles (805 km) northward.

The region was explored, using multibeam sonar and sub-bottom profiling, to better understand its morphology and geology and the potential for including this area within the United States' extended Continental Shelf under the United Nations Convention on Law of the Sea. Under the Law of the Sea Treaty, a country can claim 200 nautical miles of continental shelf automatically, but may extend its shelf to 350 nautical

miles or more offshore if certain geological criteria are met.

The expedition was led by chief scientist and CCOM/JHC director, Larry Mayer, along with co-chief scientist, NOAA's Andy Armstrong, co-director of the JHC. The team returned to Barrow on September 15th, after covering nearly 5,000 miles and reaching 82° 17' N. The Healy team didn't encounter nearly as much ice as they did just three years ago, when they last mapped this area. The effects of global climate change that are such bad news for the Arctic did help the team cover a much larger area than had been expected.

Several additional programs were going on during the cruise as well. A team from the National/Naval Ice Center deployed a series of ice buoys to transmit data on ice movement in the region, and a student from Scripps Institute of Oceanography recovered, refurbished and redeployed a series of hydrophones to record the underwater sounds of the Arctic Ocean.



A view from the bridge of the Healy.

Alumni News – Beccie Conrad

By Briana Sullivan

It's been 13 months since Beccie Conrad was at CCOM as a Mechanical Engineering master's student and although she misses the people, the boats, and the learning environment, her job as a Controls Engineer at DEKA has given her plenty of opportunities to continue developing her skills. "I heard about DEKA as an undergrad and I wanted to use my engineering super powers to save the world. It has been my dream job ever since I saw the wheelchair, developed by DEKA, climb stairs as a freshman at UNH. After interviewing at DEKA it became clear that there was a job opening that suited me in an environment full of passionate people where I could feel comfortable being myself."

She started interviewing for a job a full year before she finished her thesis, and when DEKA decided to hire her, Beccie was happy to be assigned to cover control system service support for an iBOT Mobility System <http://www.ibotnow.com/> (the wheelchair she had admired as a freshman) software release. Beccie is no longer working on the iBOT but she is working on a number of secret projects related to designing controls for systems that pump fluid. "I'm not allowed to tell anyone about the really cool stuff I do until after it's released to the public. Even then I can't tell the details."

Beccie, however, can tell us how CCOM helped prepare her for her life in the professional workforce. Beccie lists "hands on experience" as the number one thing CCOM gave her that helped her in securing her job. "Lloyd [Huff, Research Professor, Beccie's advisor] always stressed the

importance of cutting the cubicle umbilical cord and spending more time in the lab." She also notes how great it was to have so many people at CCOM who were willing to share their knowledge and experience. "Plus everyone at CCOM was super helpful with practicing for the defense!"

She reflects back on the time she was finishing up her thesis, "I found half of the battle to be fending off anxiety and stress. If you can make a schedule, focus on the deadlines, and really believe in yourself then you'll be good to go." Planning everything out and keeping your "eyes on the prize" is the key, she claims.

Transitioning from student to professional is still hard work. "You still have to work your way up the totem pole in your new professional environment", Beccie warns. But professional doesn't have to mean stuffy. "When you are a professional you can still skateboard to work!" Beccie has some advice about finding the "right" job out of college. "Ask a lot of questions and talk to as many people as possible when you interview. It's true that you are interviewing them just as much as they are interviewing you. A couple of good questions are 'What is your management style?' and 'If you could, how would you describe the work culture at XYZ Engineering?'"

Judging by her success (not that we ever doubted Beccie would flourish in whatever position she held) DEKA made a very good choice in hiring Beccie and we wish her all the best.



Beccie trying out the iBOT.

Student News – How I Spent My Summer Vacation

By the CCOM Grad Students



Robert and Roland with the DOERRI.

Robert Bogucki - The summer of 2007 started out relaxing enough for me; I spent some time with my family and friends back in Poland, all the while working on the DOERRI (pronounced “Dory”) AUV code base and making final preparations for the Byzantium 2007 Expedition to the Black Sea. The expedition was led by Robert Ballard, director of the Institute for Archeological Oceanography at the University of Rhode (URI) Island’s Graduate School of Oceanography and best known for locating the sunken ocean liner Titanic in 1985.

Roland Arsenault and I spent ten days on the R/V Alliance, giving me a unique opportunity to participate in a cutting-edge ROV-powered underwater archaeology expedition at the Sinop D wreck sight, off the coast of Turkey. The Sinop D is an incredibly well preserved fifteen hundred year old shipwreck sitting in the anoxic bottom layer at a depth of 325 meters. (You may have seen some of the “virtual cruise” images on CCOM’s telepresence consoles.) The vessel’s 12 meter wooden mast is still standing and rope from the ship is still visible.

Before flying back to the States, I got to explore Istanbul/Constantinople/ Byzantium a little - not the worst place to regain one’s ‘land legs’ after an eventful sea journey. Kaleidoscopically beautiful, earthy and surprising – it might just be the most unique city ever and its delights are too many to list – I’m definitely going back someday. My Istanbul travel tips: I recommend getting lost, at least for a while, within the near infinite labyrinth of the Grand Bazaar, with its rugs/trinkets galore, intricate tile work, apple-tea imbibing

sellors, thousands of tourists and locals – it’s business as usual at this six hundred year old shopping mall. The evening calls to prayer, best listened to from the park located between Hagia Sophia and the Blue Mosque, will blow your mind, regardless of your belief system, and the amplification sure helps the muezzins spread the word all over the Byzantine city. The freshly squeezed orange juice from the street vendors is super tasty and a great way to regain what you’ll amply sweat out in the hot summer weather.

Brian O’Donnell - Over the summer I continued working on my thesis analyzing data collected on the FishPac cruise. I made good progress in understanding the quirks of their multi beam signal processing. I took a couple weeks off at the end of the summer to visit some old friends and hike Mt. Washington.

Ed Sweeney - I was busy working on my thesis, for which I am making geological interpretations of a low-backscatter anomaly seen in 12-kHz multibeam backscatter data that was collected on the middle Atlantic U.S. continental margin. The backscatter anomaly is located about 340 km offshore New Jersey in about 3800 m of water.

I was also involved in several very different cruises this summer. The first cruise that I took part in was a multi-system seafloor mapping survey in the Gulf of Mexico. This survey collected Kongsberg-Simrad EM1002 and EM3000 data simultaneously to compare seafloor bathymetry and acoustic backscatter acquired by multibeam systems of different frequencies. The first leg of the cruise

Student News (summer vacation) Continued

mapped the fan of the Mississippi River offshore Louisiana, and the second cruise leg (which I was part of) mapped areas offshore Panama City, Florida. The EM3000 data collected near the Mississippi delta were particularly interesting, showing great examples of down slope mudflows.

My second survey was a cruise that mapped the head of Hudson Canyon at the shelf break offshore of New Jersey using a Kongsberg-Simrad EM2000 multibeam echo sounder. The EM2000 was mounted on the Eagle Ray, an autonomous underwater vehicle (AUV) operated by NOAA Undersea Research Center at the University of North Carolina, Wilmington. The survey was conducted from the NOAA research ship Ronald H. Brown to test the operational capabilities of the AUV Eagle Ray and to collect high-resolution bathymetry of Hudson Canyon for geological interpretation. Although much of the time was spent processing the multibeam data, the odd ping-pong match was not unheard of in the science lab – challenging, but not impossible when the seas picked up.

The final cruise that I took part in was aboard Woods Hole Oceanographic Institute's R/V Knorr, which conducted the first sea trials of WHOI's new giant piston corer. The majority of the cruise was spent on the Bermuda Rise where several successful tests of the new long coring system (commemorating WHOI scientist Charles D. Hollister) retrieved sediment cores up to about 38 m in length. Giant gravity cores, multicores, Seabeam 2112 multibeam data and Knudsen 3.5-kHz chirp seismic reflection profiles were collected as well. I was planning to

take a giant gravity core as we transited very close to the area where the low-backscatter anomaly (the basis for my thesis) is located, but unfortunately, we ran out of time and I didn't get to collect the sediment core.

Lynn Morgan - I headed to NOAA Ship Fairweather in July. The ship was in port in Kodiak. Multibeam surveying was conducted in the vicinity of the ruggedly beautiful Shumagin Islands. On interesting days, we could see Pavlof Volcano, tufted puffins, or humpback whales. Here I am radioing (satellite phoning due to topography) back to the ship from a small boat conducting bottom (grab) samples.

While on board, I was able to work closely with Cathleen Barry from NOAA's Pacific Hydrographic Branch to better define the shoreline deliverables that come off the west coast ships. I was also able to investigate the ship's use of the CARIS implementation of CUBE. This highlighted the need for a better understanding of the CUBE algorithm and its parameters.

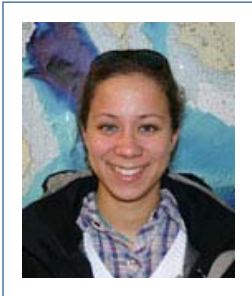
Fortunately, I am in a unique position to be able to come back to UNH and investigate CUBE further and hopefully share my findings with other NOAA users in the future. The trip back out to a NOAA ship was a great opportunity to reacquaint myself with the in-field perspective.



"On interesting days, we could see Pavlof Volcano, tufted puffins, or humpback whales."

Student News - continued

Kudos!



Michelle Weirathmueller

Jim Case was awarded the Marine Technology Society (MTS) "Outstanding Service Award" at the Oceans 2007 MTS/IEEE Conference in Vancouver, British Columbia on October 3rd. He was recognized for his outstanding accomplishments in fulfilling the objectives and missions of the Marine Technology Society. Jim chaired a local chapter of the society for five years and was Publication Chair for the Oceans 2006 MTS/IEEE Conference in Boston, which drew a record number of people and

exhibitors. The conference is the premier U.S. conference for marine technology and engineering. **Michelle Weirathmueller** was also recognized at the Oceans 2007 MTS/IEEE Conference in Vancouver. She took home second place in the Student Poster Competition. There were 21 other student competitors from Asia, Africa, Europe, and North America. Michelle's poster was titled "Acoustic Positioning and Tracking in Portsmouth Harbor, New Hampshire." Congratulations Jim and Michelle!

CCOM/JHC Outreach Statement

By *Briana Sullivan*

Outreach refers to the provision of programs, services, activities, and/or expertise to those outside the traditional university community of faculty, staff, and on-campus students. It is our goal to connect our ideas or practices with the efforts of other organizations, groups, specific audiences or the general public.

One of the primary tools used for outreach is the website. As the outreach coordinator, **Briana Sullivan**, has been working hard to organize and clean up the website so the information presented will be accurate, informative, current and easy to access. She is the person to go to for web announcements, stories, updates,

corrections, ideas, and requests. She in turn will be asking you for updated information on your projects/research, your bios and images. This publication (the Anchor) is also another very useful outreach tool for CCOM/JHC.

Briana and **Linda Prescott** are now working together to try to maximize the reach of these articles to go beyond just the Ocean Engineering building, but into the UNH community and beyond (i.e. the marine community, NOAA, etc.) Briana and Linda thank everyone for their cooperation in communicating to them about projects/progress at the center, and for their willingness to take part in the outreach communication effort.

Math for Mapping

By *Briana Sullivan*

Through the efforts of Semme Dijkstra and Brian Calder CCOM is now hosting a Math class specifically geared for mapping. Math 896 is a 3 credit course that is aimed at providing our students with the mathematical background required to

take geodesy and other courses offered within the program. "We have many non-traditional students that needed 'just-in time' math interrupting the logical flow of the material presented. It is our goal to restore that flow" Semme affirmed.

"It is our goal to restore the flow." – Semme Dijkstra



Administrative Notes

By Linda Prescott

Did you Know?

You can use the Web Information System for Employees (WISE) to access your pay information, including earnings history, direct deposit allocations, W-4 Tax exemption information and W-2 tax forms? Go to <https://wise.unh.edu/> Contact the CIS Call and Dispatch Center at 862-4242 to activate your account prior to logging on for the first time.

CCOM Addition

Ground breaking has begun on the new CCOM/JHC addition to the Chase Engineering Lab. The new 7700 square foot, L-shaped space is scheduled to be completed by May, 2008. The space which currently serves as the offices of Colin Ware and Nathan Paquin will become the hallways leading to the new addition. The first floor of the space will house the new integrated Visualization Lab, staff offices (including offices for Colin Ware, Kurt Schwehr, Roland Arsenaault and Briana Sullivan) and meeting rooms. The second floor will house the IT offices and IT work space, server room, a large presentation room with seating for 35-40 people, and office space for additional NOAA employees. The addition will also include a 1500 square foot basement storage area, and an outdoor courtyard. You can view the floor plans in the CCOM/JHC upstairs cafeteria.



Construction on the new CCOM addition has begun!

CCOM Pizza Party

All CCOM/JHC faculty, staff and students are invited to a \$5 per person pizza party in the downstairs lobby on Friday October 26, 2007 from 1-2:30 pm.

UNH Holidays

UNH will be closed for Veteran's Day on Nov 12th, as well as Thanksgiving (Nov 22nd & 23rd). The Holiday break for employees begins Dec. 25th and ends on the 27th, and as usual UNH will be closed for the New Year holiday on Jan 1st. Please note that Dec. 27th, 28th and 31st are not paid holidays. You must use your earned time if you will be taking these days off.



Ed Sweeney caught stealing logs from the construction site. Word has it he'll use the wood to construct a new surfboard!

Save the Date...
For the 8th annual
CCOM/JHC Holiday Party
Friday, December 7th, 2007
The Sugar Shack
Lee, New Hampshire

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