Our World - Underwater Scholarship Society
National Park Service Submerged Resources Center 2011 Internship
Final Report
By Naomi Blinick

When I found out that I had received this internship with the National Park Service's Submerged Resources Center, I knew it would prove to be a transformative and ultimately life changing experience. I had just decided to leave a research fellowship in Northwestern Mexico, where I had been for the past few years, and was hoping to explore, have new experiences, make professional connections, and take some great photos along the way. Most importantly, I wanted to DIVE! I had no idea how I was going to do all this though, until the day I received an email from George Wozencraft at OWUSS telling me that I had been selected for this internship. Needless to say, I was able to achieve all of the aforementioned goals, and that was just the beginning! I had no idea what was in store for me, but I put my trust in my wonderful coordinators at NPS and OWUSS and was given the opportunity to reacquaint myself with the United States in the best possible way—by diving my way across it!

This internship was designed to expose a young person to the multitude of diving opportunities within the National Park system, which unbeknownst to most of the general public operates the nation's oldest non-military dive program. There are approximately 175 Park Service divers across the country, from the frigid waters of the Pacific Northwest to the tropical shores of the US Virgin islands. Park dive teams undertake a diverse array of tasks from habitat monitoring to search and recovery and underwater maintenance. Through this internship, the intern can pick and choose from all that the Park Service has to offer for three months, with a $10,000 budget to cover their expenses. This is a truly remarkable opportunity for any young person interested in any of the following: diving, marine biology, archaeology, photography, resource management, and exploring the submerged national parks.

The Submerged Resources Center is a branch of the National Park Service that focuses mainly on submerged cultural resources, like shipwrecks and submerged human settlements. The staff is mostly made up of underwater archaeologists, but there are two photographers as well, and they have a heavy focus on imaging for science, education, and outreach. One of my main interests in the underwater realm is photography, and while I have been a diver for years, I have never been able to seriously pursue my

goal of becoming proficient in underwater photography because I could never get my hands on the gear. Well, here was my chance. The wonderful people at the SRC lent me an awesome camera setup for the summer, complete with two huge strobes and a monster Pelican case to schlep around the country along with my dive gear. I couldn't believe it when I got to Denver for my orientation and they showed it to me. All I had hoped for years was that someone would just give me a chance—let me use some good equipment, give me a bit of guidance, and help get me underwater, and I was sure I could make some good images. What do you know? Not only was I being given the opportunity to explore some of our nation's most spectacular submerged landscapes and learn from a diverse group of scientists and managers, but an underwater camera to use on top of it all! Sometimes, incredibly, those seemingly impossible wishes can actually come true.

I arrived in Denver, Colorado, to start off my internship at the National Park Service Intermountain Regional Office in Lakewood, where the SRC is based. There, I met Dave Conlin, the SRC Chief and my internship coordinator, along with Sami Seeb, underwater archaeologist and who would be handling my blog, Steve Sellers, the National Dive Safety Officer who kindly hosted me for the week, photographer Susanna Preshern, and the rest of the SRC staff who were in town. The week was spent driving to what seemed like every doctor's office in Denver for the various parts of my government physical, going through all the gear that would be checked out to me for the summer, and doing the skills and physical fitness tests to receive my Blue Card certification, which is required for all Park Service divers.

One of the first things I did upon my arrival was don a pair of 3D glasses and plop down in front of a huge 3D monitor, when Susanna asked if I wanted to see some footage of a few of the parks I would be visiting. It was incredible to watch, and I didn't previously know that the SRC partnered with Woods Hole Oceanographic Institution to film in 3D in the parks. Watching the footage, I couldn't believe that in a few days I would be on my way to see many of those places firsthand.

My background is in marine ecology, and Dave Conlin helped me plan a schedule for the summer that would take me from Florida to Hawaii, mostly with dive teams that were working on natural resource management projects. I quickly learned the two cardinal rules of this internship—be flexible and prepare for lots of paperwork. Dive logs, expense reports, government travel paperwork, medical forms, volunteer forms, liability releases, and the list goes on! Additionally, people's schedules change constantly, and being flexible with my own plans and expectations helped me get the most out of the experience.

After packing up all the dive gear and camera gear, getting weighted down with countless SRC t-shirts and hats, I remember looking at all my stuff and thinking, "how on EARTH am I going to travel with all this?!" The SRC's answer? FedEx, of course!

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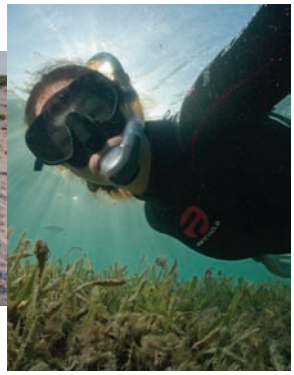
So, I shipped the dive and camera gear ahead, and arrived in Key West full of excitement for my first adventure in Dry Tortugas National Park. I met up with Biological Technician Kayla Nimmo, whom I worked with for my first week and a half. Under her tutelage, I learned all about sea turtle monitoring in the park, from beach walks looking for new nests, to nest excavations and hatchling releases. Our days were long, with countless hours of walking in soft sand on isolated sandy keys. We concentrated the beach walks in the early morning and late afternoon to avoid the sun's harshest rays, and while Kayla did office work in between, I headed to the beach to snorkel for hours in the shallow waters around Fort Jefferson, learning to use my new camera. We did a couple of dives looking for invasive lionfish, and did more the next week when the park supply boat, the M.V. Fort Jefferson, came out from Key West. I volunteered for the next 10 days with a group of sea turtle researchers from the US Geological Survey, led by Dr. Kristen Hart. Their research was focused on capturing and tagging turtles in all life stages within the park, so we did nighttime beach patrols looking for nesting females, and daytime work on the water looking for foraging juveniles and adults. I did some diving to help replace the acoustic receivers that pick up the signals from the turtles tagged with acoustic tags. I had previously worked with sea turtles and am considering pursuing a turtle-focused project when I go back to school for a Master's degree, so these two projects were particularly beneficial for me to participate in. It was also interesting to see the collaboration between USGS and NPS in the parks. While many of the parks undertake long-term monitoring projects as part of NPS's Inventory and Monitoring Program, many applied science projects are done by or in collaboration with USGS (it turns out they do much more then geology!).

Image obtained with the approval of the U.S. Fish & Wildlife Service and the Florida Fish & Wildlife Conservation Commission (FWC MTP #11-176)

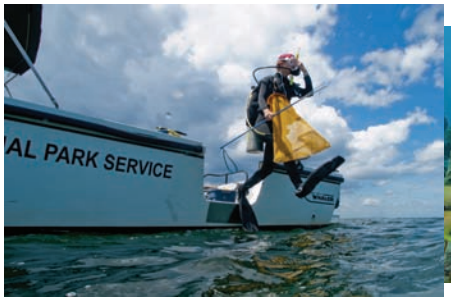


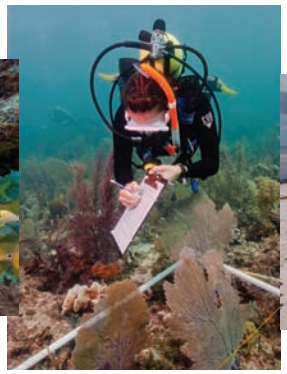
From the pristine white shores of the Dry Tortugas, I headed back up the Florida Keys to Biscayne National Park for the next three weeks. My first two weeks were spent at the park under the direction of Dr. Vanessa McDonough, Fishery and Wildlife Biologist at the park, and Shelby Moneysmith, Park Dive Officer and Biological Technician. The first week was actually spent prepping for Hurricane Irene, which never struck, but provided me with a much clearer sense of what it means to live and work in south Florida, especially on the coast during hurricane season. The next week, when we could finally get back out on the water, I dived with park divers to monitor benthic habitat and remove invasive lionfish, which currently have a much stronger presence in the Biscayne then in the Tortugas. We also monitored the seaward beaches of the mangrove islands for sea turtle nests, and I spent a day with Dave Conlin and Susanna Preshern when they came out to some archaeological work in Biscayne with Chuck Lawson, the park's underwater

archaeologist.

My third week in Biscayne was spent with the South Florida/Caribbean Inventory and Monitoring Network, specifically with Mike Feeley's marine monitoring team as they conducted annual reef fish censuses in the park. Diving in Biscayne was more diverse then I expected—visibility ranged from pea-soup conditions to stunning clarity, and the habitat could be anything from barren sand, thick sea grass, or dense beds of soft coral. Shipwrecks abounded here, as they did in the Tortugas, and they provide great habitat for fish, especially schools of grunts and snapper.

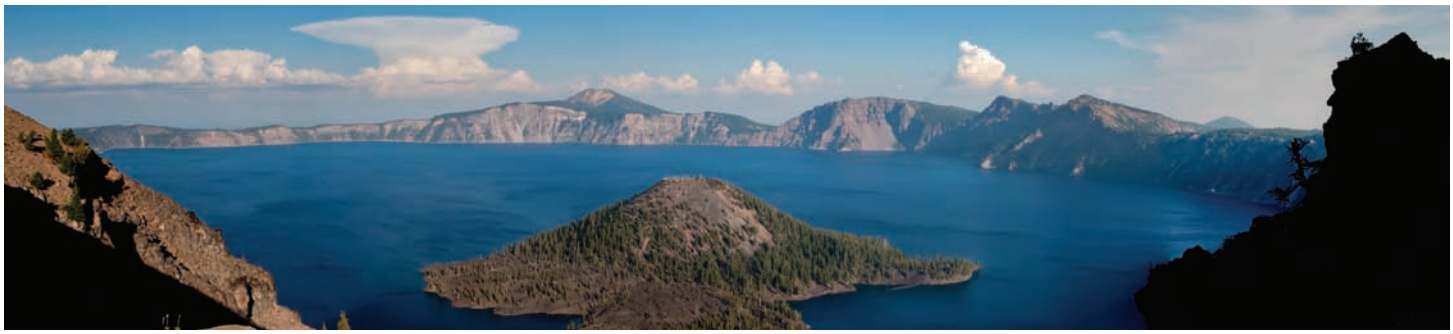
Of course, there are several challenges to the management of park resources in Biscayne—marine debris, vessel groundings, overfishing, and invasive lionfish are a few of the conservation issues that I was exposed to during my time in the park. Through public education, long-term monitoring, invasive species removal and the proposal of a marine reserve within the park, managers are working hard to protect the park's resources and continue to maintain to beautiful and productive marine habitats for future visitors.



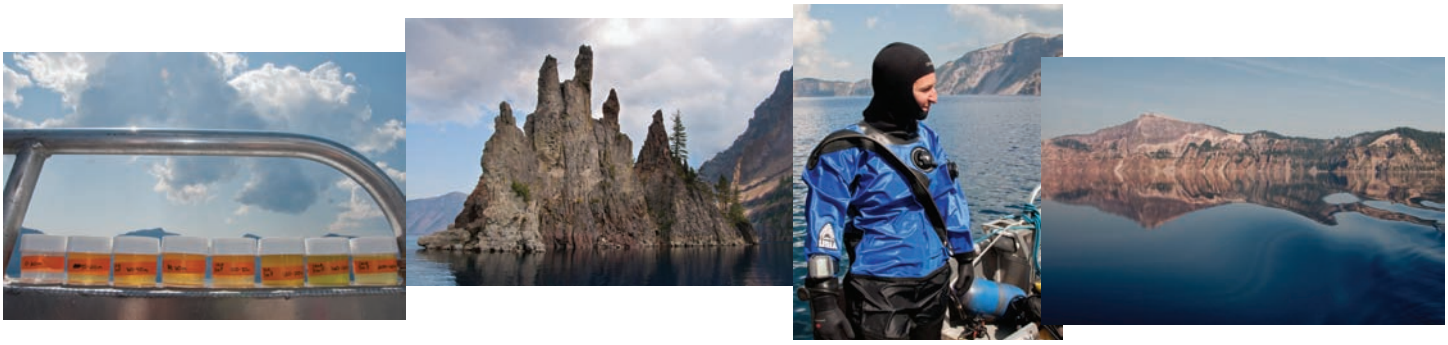




From Florida I headed west to Oregon, but first stopped in Denver for the weekend to meet up with Dave Conlin for a dry suit refresher before diving in the cold waters of Crater Lake. Dave also introduced me to diving with a full-face mask with communication capabilities, which I would use later in Hawaii.

Feeling confident about the new additions to my gear bag, I arrived in Crater Lake not knowing what to expect. Crater Lake is the deepest lake in the USA, and has some of the clearest water in the world. Mark Burktenica and Scott Girdner, aquatic biologists with the park, welcomed me and got me out on



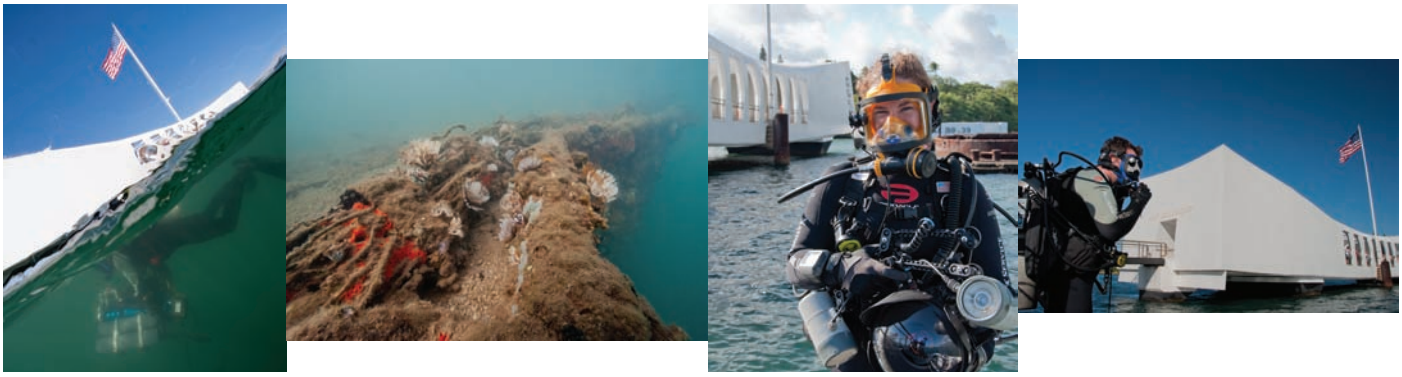
the water with them to do water quality and zooplankton monitoring for my first two days. Being on the water in Crater Lake is like skimming the surface of an enormous sapphire—the water is a deep cobalt color and can be so glassy that the wake from a single boat can be seen from the rim of the caldera. I learned so much about this unique freshwater system from my NPS hosts and also from Bob Hoffman from USGS, who works in collaboration with NPS to monitor water quality in the lake. Then, it was time to take the plunge and dive. First, we dived around Phantom Ship, an eroded volcanic dyke. This dive was otherworldly. The water was so clear and blue that I was constantly apprehensive of becoming disoriented. I didn't, but I was still a very impressionable dive, in which I recall seeing the red color of Mark's dive gear vividly in 50 feet of water. The next day we did extensive diving to reinforce the moorings for the park's research boats. I hadn't done any significant maintenance diving before, so it was a great experience and it felt good to be able to help out.



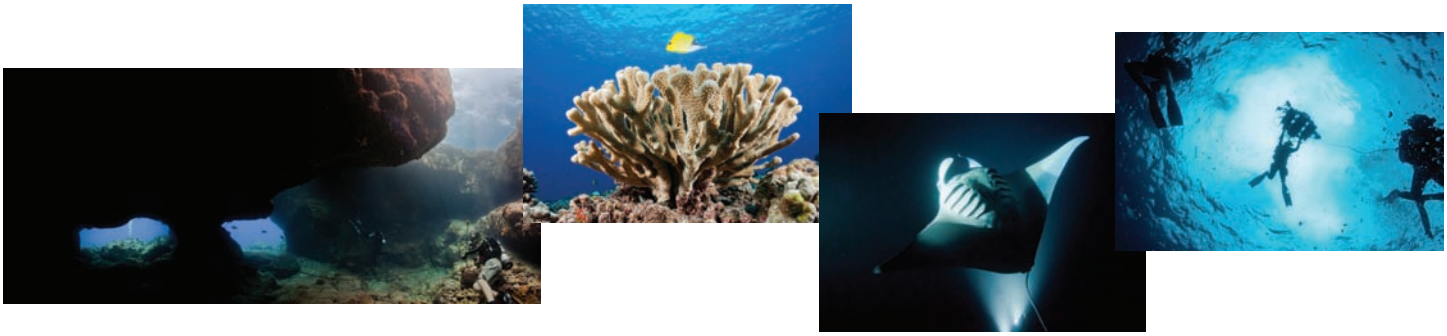
I left Crater Lake on an obscenely early flight to Honolulu, where Brett Seymour, A/V Production Specialist at the SRC, met me. I accompanied him for the next two weeks as he filmed in 3D—the first in Pearl Harbor at the USS Arizona Memorial, followed by filming lava tubes and Mantas in Kona on the island of Hawaii. Joining us were Maryann Morin, Luis Lamar and Evan Kovacs, the team from Woods Hole Oceanographic Institution's Advanced Imaging and Visualization Lab, who built the camera system we were using and helped Brett operate the camera. Also joining us was Dan Lenihan, founder of the SRC and one of the first people to map the USS Arizona on the bottom of Pearl Harbor, Jim Koza, a retired dive officer from Lake Mead National Recreation Area who now volunteers with the SRC, and two representatives from Ocean Technology Systems, who built the communication system we were using for the shoot. My first dive on the Arizona was with Dan as my guide, and it was an incredible experience to dive along the ghostly ship with Dan's voice in my ear narrating how the ship sustained each of its scars from the attack on Pearl Harbor, and the changes that Dan was seeing in the wreck site since he last visited. Scott Pawlowlski, the Chief of Cultural and Natural Resources at the park, supported us immensely while filming the park. He also told me a lot about the incredible coverage of living organisms on the wreck, and how many of the non-natives were transported here in ballast water during WWII, which I found particularly interesting.

Diving the USS Arizona was definitely the most emotional diving I have ever done, as it is a memorial and gravesite for all the soldiers who lost their lives onboard during the Dec. 7th attack on Pearl Harbor. Also, it was the first time I had ever been involved in a film shoot, and the entire process was really impressive

to me—there were absolutely epic amounts of gear that constantly had to be hauled from one place to another, and the setting up, shooting and re-shooting of scenes, dealing with temperamental equipment and unfavorable conditions are all part of a film shoot, before you even add the underwater element.

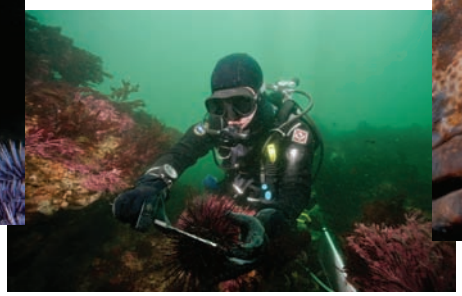
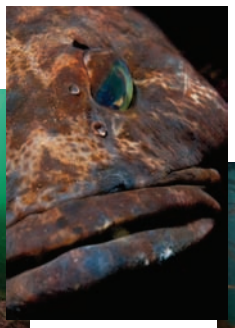
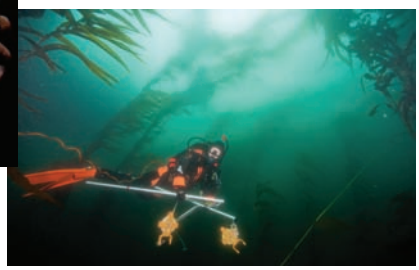


From Honolulu, we headed to the island of Hawaii to get underwater footage of lava tubes, coral reefs and Manta Rays in Kona. This was incredibly fun, of course, and exposed me to different habitats then those I had seen in south Florida. The reefs in Kona were incredibly healthy, but different in that they were comprised almost entirely of hard corals, versus the expansive gardens of soft corals I saw in Biscayne. Also, the bathymetry of south Florida and the Keys comprises of a shallow, sandy bottom, while Kona's dramatic rocky landscape is a characteristic both above and underneath the water. My most memorable experience in Kona was definitely diving with giant Mantas, photographing them while Brett filmed in 3D. I had never seen a Manta underwater before, and the three individuals that graced us with their presence put on a spectacular show that I will never forget.



My next stop after Hawaii was Channel Islands National Park, off of southern California. I had been looking forward to diving here all summer, as I learned to dive in California and have missed the kelp forests, sea lions, and often challenging conditions of the Pacific. I spent five days with the Kelp Forest Monitoring Program, led by NPS marine biologist David Kushner, on one of their bi-weekly cruises aboard the R.V. Sea Ranger II. In our five days, we dove at sites at all four of the northern Channel Islands-San Miguel, Santa Rosa, Santa Cruz, and Anacapa. My first dive back in California waters instantly re-affirmed that even though I had left California years ago, my soul never had left these green, productive waters. I am

a California diver at heart! Even though conditions throughout the week went from mediocre to awful, I still relished every moment in the water, with the incredible abundance of rockfish, sea stars, and that charismatic kelp! And to top it off, I was diving with an awesome team of biological monitors who were recording data for a staggering variety of data sets, from size-frequency of invertebrates to fish diversity. Photographing here was by far the most challenging of all the parks I had dived in, but the images I captured here area definitely some of my favorites. I left the Channel Islands with a renewed desire to pursue cold-water diving (something I never thought I would say) and to try to find a job diving in California in the future.

It wasn't long before I discovered that my immediate future would not keep me in California, but instead take me to Cape Cod, Massachusetts! I had been planning to spend the last week of my internship diving with the SRC team at Lake Mead National Recreation Area, doing dive training and some archaeological work, but that didn't end up happening. A couple of days after getting off the Sea Ranger II, I received a call from the Advanced Imaging and Visualization Laboratory at Woods Hole Oceanographic Institution, asking if I could come out ASAP to help out with a project. I had worked with a team from the lab in Hawaii while filming with Brett. And just like that, I got a job for the next few months! Having graduated college during the height of the recent recession, I know how incredibly lucky I am to even be employed, much less at a place like this lab, which is really a dream come true. I know that it is a direct result of this internship—which makes me even more thankful for this incredible opportunity.

The journey wasn't over yet, however. Before leaving for Woods Hole, I had a few more days at home in Northern California, and I was able to connect with 1997 Rolex Scholar Sara Shoemaker Lind, and 2001 OWUSS Intern Abi Smigel Mullens, both of whom are successful underwater photographers living in San Francisco. I was also able to go to Monterey and get a tour of Light and Motion (a company that makes underwater video housings) from CEO Daniel Emerson. These experiences were so inspiring, enabling me to get to know successful professionals working in underwater careers in my own backyard.

Although I ended up missing out on diving in Lake Mead to start at Woods Hole, I was still able to go to Washington D.C. to end my internship at the National Park Service headquarters in our nation's capital. Cliff McCreedy, Marine Resource Management Specialist in the Ocean and Coastal Resources Branch of

the Water Resources Division, scheduled meetings for me to meet with several Associate Directors of the Park Service to tell them about my experience and learn about their roles. I also gave a lunchtime talk at the headquarters, which was received very well and inspired a lot of interest in NPS diving operations and opportunities offered by OWUSS (mission accomplished!). Additionally, I had the chance to meet with Todd James, photo editor at National Geographic, and learn all about story production for the magazine, and with Anya Watson, the 2005 Rolex Scholar, to chat about her work as a Dive Officer for the Smithsonian Scientific Diving Program. It was a very inspirational few days, and a great way to wrap up the last several months of fieldwork by seeing how it all comes together on the national level.

After three months, I can't believe my internship is over. I already can see that this opportunity has irrevocably changed my life; and I am so excited to see how it all plays out. When I first decided to leave Mexico, I had no idea what lay ahead, if I would be able to find a job, apprehensive that I might end up somewhere I didn't want to be, doing something I didn't love. Thankfully, the opposite of that is true—this internship directly led me to my new job, and a new life in a place I love. I am so thankful to have reacquainted myself with the United States and explored so many potential new homes for the future, and to have created a network of friends and professional contacts on both coasts.

As I have known since the beginning of this internship, while the resources that the NPS works so hard to preserve are irreplaceable and wondrous, the true gem is the group of people tasked with protecting the future of these precious sites and resources. We have entrusted them with our heritage, and they work harder than any other group of people I have ever known to make the American people proud of that heritage. I am beyond proud to have worked with the National Park Service, and hope to continue to working with NPS in the future—I still have so much to learn, experience, and contribute in our National Parks!

This opportunity, along with the others provided by OWUSS, are truly unparalleled in the level of experiential learning they provide. To enable young people to be completely immersed in their area of interest is always commendable, and in this era when leaders in the marine realm are needed more then ever, I am sure that OWUSS interns and scholars will play a critical role in the future of marine protection, conservation, exploration, science, artistic expression, medicine, advocacy, and communication. Watch out world, we will make a difference!

You can too! Check out OWUSS's Scholar and Intern opportunities for next year at:
http://www.owuscholarship.org/

If you are interested in reading more about my experience and the parks I visited, as well as seeing the photographs I shot this summer, please check out the blog I kept throughout this internship at: http://owussnorthamerica.org/?cat=100

Acknowledgements

To the entire team at OWUSS and NPS Submerged Resources Center, I am forever indebted to you for your confidence in me to be successful in this internship, as well as the financial and logistical support that made it all possible. Infinite gratitude to the staff and seasonal technicians at Dry Tortugas, Biscayne, Crater Lake, and Channel Islands National Parks, and WWII Valor in the Pacific National Monument and Koloko-Honokohau National Historic Park, and in the National Park Service headquarters in Washingtono D.C. for their incredible generosity, kindness, enthusiasm, time, and the incredible work they do every day for the conservation of our natural and cultural resources. My friends and family, for listening to me obsess over how much I wanted this internship for weeks after I applied, deserve gold medals for patient listening!