



Ithacation

Become a CCAMS Officer!

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Dear CCAMS,

By the time this issue of Ithacation goes out nominations will already be open for 2011-2012 officers. We know that a number of people are interested in running for elected office this year which is awesome! Both of us loved being Co-President, and we know that next year's officers will find it equally rewarding. CCAMS has a lot to offer, but none of it would be possible if it wasn't for the officers and committee chairs that put a lot of time and effort to make it all happen. On that note we would like to thank David, Sarah, John, Nikki, Tory, Torey, Matt, Dan, Carolyn for all the work they put in this past year, and a special thank you to Wysocki, the go-to person for everyone.

Congratulations on the well deserved Carpenter Advising Award!

Even though our numbers are smaller than they have been in the past, CCAMS is still very active. There are four elected and eight appointed positions in CCAMS, and we encourage everyone to try for a position they are interested in or at least get involved in a committee they like. CCAMS's mission is to advance knowledge in the field of meteorology, and to provide an outlet for the exchange of information. However, it is also a support for students in atmospheric science, and it's programs can change to fit what the membership desires. By being active you can make those changes happen.



I WANT YOU
to be a **CCAMS**
Officer!

The bottom line is to get active and stay active. We can't wait to come back for Alumni Weekend and see all that you've built!

-Aaron & Jase

A Mile High Internship by Aaron Perry '11

During my internship search last year I came across a lot of different opportunities. I found a lot of REUs, an interesting SCEP position, even a couple positions at private companies, but there was one internship that was so unique it

stood out from the crowd completely. That internship is the Student Airborne Research Program (SARP), and it opened my eyes to a side of research I wasn't even aware was open to students.

SARP is an immersive

6-week program that takes you through virtually all the aspects of a major scientific field campaign. My time at SARP started with a week of lectures. I know it doesn't sound very exciting, but it's not quite what you think. These lectures were-

n't just on Atmospheric Science, they were on Biology, Chemistry, Oceanography, and Instrumentation all taught by 19 professors and professionals who are all experts in their individual fields. All the participants were from different fields of study, so this was a way of getting everyone up to speed on as many different aspects of the program as possible.

The second week of the internship was by far the most fun, this was the week we went up in NASA's DC-8 Airborne Laboratory. I started this week by loading snakes on a plane... 'Snakes' being the rack of air canisters that make up the whole air sampler, the instrument I operated. We went up in two 6-hour flights to gather data above California's central valley and coastline. This was one of the best experiences of my life. In addition to switching off running the Whole Air Sampler, I got to see all the other instruments on board and talk to the scientists running them. We also got to have a tour of the Dryden Flight Research Center at Edwards Air Force Base. They showed us the tools NASA's Earth Science mission uses in its research as well as some of the next

generation technology.

The rest of the program I spent at the University of California in Irvine at the Rowland-Blake Lab doing quality control and analysis of our data. This wasn't the end of our field work though. We spent a day gathering ground truth from a dairy farm underneath the flight path of the research flights. The program concluded with us presenting our research to the program and to NASA Personnel.

In addition to the program itself (Which did I mention is all expenses paid?), my fellow coworkers and I travelled around Southern California whenever possible and had a great time doing it. This internship is an experience of a lifetime. Between the experience on NASA's DC-8, working with people from all different fields, and the fun we had I think this internship is unmatched. If you're interested in participating in this internship, SARP has funding through at least 2014 so take a look at their website at <http://www.nserc.und.edu/learning/SARP.html>.



**Above: Aaron Perry unloading air canisters with Dr. Don Blake
Photo Courtesy of: Aaron Perry '11**

**Below: SARP program participants pose before the first test flight.
Photo Courtesy of: Aaron Perry '11**



Winter in Ithaca: An Epic Tale of Woolly Mammoths and Flamethrowers by Molly Smith '14

When I decided to move to Ithaca to attend college, the first thing I thought about was the weather that my new home would have. (I'm a meteorologist. It's natural.) I was so excited to finally experience a real east coast winter! (Again, weather geek.) I'm from Southern California, and while it *can* get cold there in the winter, our cold season is absolutely nothing compared to Ithaca's.

However, soon after arriving in Ithaca, my excitement began to turn to trepidation. Whenever I talked to someone from Ithaca and happened to mention to them that I was from Southern California, I would instantly receive The Look. This was no ordinary facial expression. No, The Look managed to convey the phrase "Oh, you poor, poor, doomed soul," with all somber gravity appropriate for the funeral of a dear friend. The Look spoke of the futility of fighting one's fate, of the cold despair that would soon encompass the world.

I had been in the Northeast for winter before (I have lots of relatives who live around New York City), but after having received The Look about fifty times, I started to doubt myself.

Maybe winter in Ithaca *could* reach apocalyptic proportions. Maybe in January glaciers would erupt from the earth, crushing everything in their path. Maybe I would look outside my window one morning to find a herd of woolly mammoths walking past the building. Perhaps we would be forced to hunt these mammoths for food, as snow-covered roads would eliminate access to outside supplies. I felt a moment of panic. But I'm a vegetarian! I'm going to die!

That was in September. It being April now, I can officially announce: I survived!! (Although I am heartily sick of having to eat mammoth and melt a path through the

glaciers with a flamethrower....)

Seriously though, I actually enjoyed my Ithaca winter. While it was cold, there usually wasn't any windchill like there is back at home (curse you, Santa Ana winds!!). Snow is easier to brush off of clothing than rain. Glaciers did not erupt out of the ground and swallow everything in their path. And best of all, parts of Fall Creek froze into unbelievably awesome ice waterfalls! Ithaca, I have seen your apocalypse and laughed in its face! And now, of course, summer is coming.

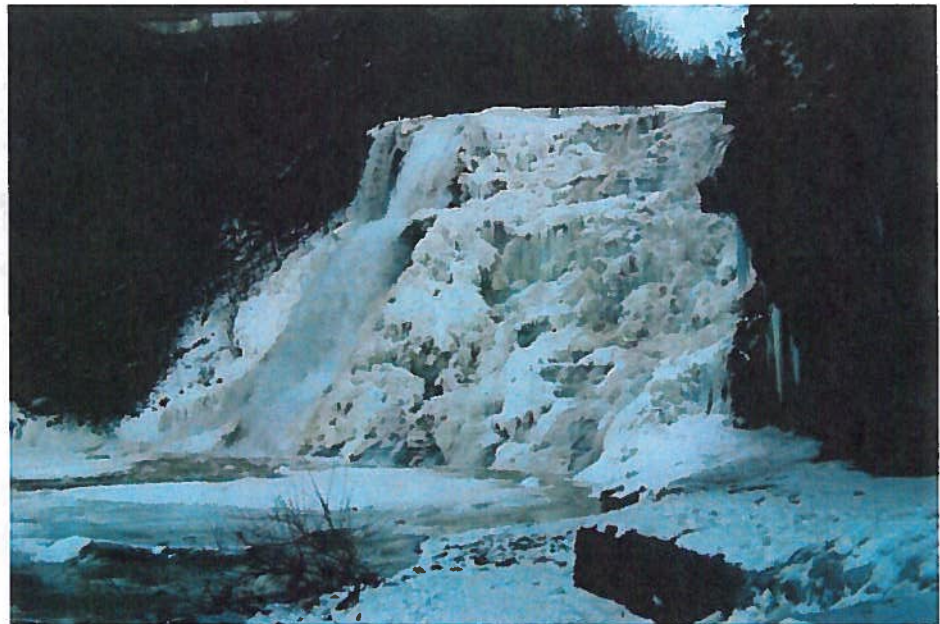


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Seniors 2011: Life After Bradfield

As the 2010-2011 academic year comes to a close, so do the Cornell careers of this year's senior class. Nine seniors have or will be graduating with a BS in Atmospheric Science from Cornell during December 2010 and May 2011. Here are the plans of some of the graduates, who all will certainly be coming back next year for Alumni Weekend!

Tara Fardellone- Upon graduation, I'll be finishing my move to Atlanta with my fiance and two cats, and hopefully after interviews with the Weather Channel in the next week or two, which are being scheduled now, I'll be working there. My fiance and I will be getting married in September 2012 and since he works at Coca Cola and I'll hopefully have

a stable job too, we'll be looking into buying our first house. After a bit of work experience I'd love to go to grad school, but I'll be taking it one step at a time!

Johnathan Kirk- This fall, I will attend Kent State University pursuing a Masters in Geography. At Kent State, I aim to combine climatology and the societal impacts of weather to better understand the 'human element' of the weather. Additionally, I will use tools and applications, such as Geographic Information Systems, to enhance this understanding. While my goals beyond grad school are still uncertain, I am fortunate to have this opportunity to continue on in higher learning. This is due in large part to the quality education I have received here at Cornell and the meaningful impacts the

faculty members of the Atmospheric Science department have had on that education and my professional pursuits.

Daniel Rothenberg-My plans are two-fold. This summer, I'm moving to San Francisco to a) work with my Indie-Rock band, and b) participate in the Google Summer of Code with the Climate Code Foundation. In the fall, I'm headed up to MIT to begin a Ph.D. in Atmospheric Science where I anticipate working with aerosols and high-resolution cloud-resolving models.



Photo: Senior Class 2011

Aaron Perry- Next year I plan on taking a gap year. During that gap year I'm going to look for research/internship positions and fellowships to try out and experience different areas of the field of atmospheric science, and narrow down my choice for graduate school. Following the gap year I intend to apply to masters and PhD pro-

grams.

Tory Farney- After applying to six graduate schools, I was lucky enough to receive admission to one of them, Mississippi State University. Pending my visit to the University at the beginning of May, I will more than likely be attending Mississippi State for graduate school next year. While there I plan on completing the thesis track for professional meteorology.

Jase Bernhardt- This August I will be heading to State College, Pennsylvania, where I will be studying Geography/Climatology at Penn State. During the next two to three years I plan on pursuing a Master's of Science in Geography while researching climate topics such as convection in the Midwestern US Corn Belt.

A Recap of the 2010/2011 Winter Season in Ithaca by Jase Bernhardt '11

Just a little over a week ago, Ithaca, New York, experienced one of its many cruel twists of fate from the weather gods. On Wednesday April 20th, Central New York was in the warm sector of an approaching storm system, with temperatures rising into the lower 70's that afternoon. A cold front crossed through Wednesday evening, however, knocking temperatures down, and by the following morning, Ithaca was seeing temperatures in the middle 30's, along with a mix of rain, snow, and sleet, and later a snow squall during midday. This turn of events summed up the wild winter we saw the past several months in Ithaca.

The winter actually got off to a slow start, with no measurable snow during the months of October and November. Ithaca finally saw some of the white stuff in early December, with a few inches coming from multiple synoptic and lake effect events. Somewhat more significant snow came at the end of the month, as Ithaca was on the western edge of a major East Coast Winter Storm just after the Christmas Holiday. The powerful storm brought

heavy snow and blizzard conditions to New Jersey, New York City, and much of coastal New England. Being on the western fringes of the storm, Ithaca did not see nearly as much wind or precipitation, ending up with 5.2" of snow from this system. December ended up being a pedestrian month for snowfall, with 12.8" total, a little under the normal of 14.0".

January was the month where the winter started to turn exceptionally active. A classic Miller Type B storm, with one low moving in from the Midwest and transferring its energy to a new storm over the Mid-Atlantic, impacted the Northeast January 11-12. Ithaca saw periods of light snow from each storm system, ending up with 8.8" of snow those two days. Ten days later, Mother Nature turned the tables against the contingent of Cornell Meteorologists attempting to fly out to Seattle for the Annual AMS Conference. 5.5" of snow fell during the early morning hours of Friday, January 21st, as several students drove up to the Ithaca Airport for a 6 AM flight to Seattle via Detroit. Fortunately, everybody made it through the unplowed roads alright, and the plane was only

briefly delayed. Overall, January 2011 saw 24.6" of snow in Ithaca—the 14th snowiest January of all time. Temperatures during the month were also a big story. Average temperatures for January 2011 were 20.2 degrees, 2.4 degrees below normal. There were six days of below-zero low temperatures, as Cornell students were welcomed back with consecutive days with lows of -14 and -15 degrees, respectively, during the first week of classes.

The active pattern from January carried right over to February. The month started off with a moderate snowfall, as a quick-moving storm system tracked south of Ithaca, bringing 5.4" of snow on February 1-2. That storm was followed by an even stronger low which was supposed to bring a major snowfall to much of Upstate New York. This storm turned out to be a bust, however, as precipitation was lighter than expected, and mostly fell as sleet. After a brief warm-up in the middle of the month, a period of storminess brought down temperatures, along with over 10 inches of snow, Feb-

Thanks to all those who contributed to this issue of Ithacation!

Special thanks to this year's CCAMS Co-Presidents, Jase Bernhardt and Aaron Perry, for all their hard work and dedication. All the amazing events this year would not have been possible without you!

Also, good luck to all of our seniors...we wish you all the best and know that you will do great things! Bradfield Hall will not be the same without all of you!

*This issue of Ithacation
edited by: Sarah Lynagh
'12*

**Check in at:
ccams.eas.cornell.edu**

Winter Recap continued

ruary 19-21. Then, the most significant storm to date impacted Ithaca on Friday, February 25. An intense and strengthening low moved a little southeast of Ithaca that day, spreading in a heavy, wet snow, with 8.5" total from the event. After all was said and done, 27.7" of snow fell during February 2011, nearly double the average of 14.1". This February was the 8th snowiest on record, with number one being last February, mainly courtesy of the large Nor 'Easter which provided over 20 inches of snow.

Winter asserted that it was not nearly over in March. The season's largest snowfall wound up occurring early in the month, coming mostly as a surprise! Saturday March 5th brought warm temperatures around 50 degrees, before a low pressure moving along a cold front west of Ithaca began to spread in light rain late Saturday Night. The cold front was expected to pass through Ithaca early Sunday morning, with the rain briefly changing over to snow, before tapering off in the afternoon. The cold front did pass through Ithaca Sunday Morning, dropping temperatures 15-20 degrees and changing the rain into a period of heavy snow between 8 and 9 AM. Then, instead of being

progressive, as forecasted, the front stalled out east of Ithaca, with additional waves of low pressure riding along it. This led to a steady snow for Ithaca which lasted throughout the day Sunday, and for 24 hours total before ending Monday morning at 8 AM. A total of 15 inches were recorded from the storm. The 15 inches of snow is tied for the 8th most all-time during a 24-hour period in Ithaca. After that storm, March was fairly quiet for wintry weather. One additional low pressure system moved south of Ithaca March 23, resulting in 3.5" more snow. Overall, March 2011 saw 19.3" of snowfall, the third straight month of well above normal totals.

Finally, April came. The area remained in a primarily cool and active pattern. Most precipitation fell as rain, with the exception of a trace of snow on the morning of April 5th as cold air moved in behind a coastal storm which had brought over an inch of rain the night before. Again, although not officially reported, there was also snow on April 21st. For the season as a whole, Ithaca received 84.4" of snow, making it the 11th snowiest season on record (since

1893). This total was over 20 inches above the normal seasonal total of 62.3". The 2010/2011 season was the snowiest since 2002/2003. Furthermore, 2009/2010 saw 81.7" of snow, making this the first time since 1976-78 that Ithaca topped 80" two seasons in a row. Like last season, and 2002/03, there was predominantly negative NAO during this winter. The negative phase of the North Atlantic Oscillation (NAO), can lead to more storms impacting Upstate New York with significant snowfall, as a blocking high may form over the North Atlantic, causing slower-moving storms over the Northeast US during this pattern. The NAO, along with El Niño-Southern Oscillation, should be closely monitored for next winter, as Ithaca looks to top 80 inches of snowfall for an unprecedented third straight season.

