ABOUT 50 YEARS AGO, on April 1, 1960, the world's first successful weather satellite was launched from Cape Canaveral, Florida. Although TIROS I was operational for only 78 days (15 days fewer than planned), it sent back 22,952 images of Earth from orbit, demonstrating the usefulness of satellites for surveying the atmosphere. In the years immediately following TIROS 1, nine more satellites were launched, revolutionizing the science of weather prediction.

UCAR/NCAR was in its very infancy when TIROS was launched, but space-based meteorology quickly became critical to the organization's research. As early as 1967, scientists used satellite data during the Line Islands Experiment, NCAR's first major field program, and again in 1969 during the Barbados Oceanographic and Meteorological Experiment.

Today, nearly every lab or program in the organization interacts with modern satellite technology in some way: testing satellite chemical sensors, measuring India's groundwater, studying Arctic sea ice, guiding aircraft away from severe weather, discovering solar spicules, and much more. Following are highlights from a few of the organization's many satellite-related activities.

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A crosstown open house: UCAR/NCAR invites the community to have a look

ON SATURDAY, JUNE 5, UCAR/NCAR will open the doors of three campuses from 9:00 a.m. to 4:00 p.m. for an open house in conjunction with the organization’s 50th anniversary. People of all ages are invited to come by for a rare firsthand look at the people, instruments, and facilities that drive the atmospheric sciences. Staff will be on hand to share presentations, demonstrations, instruments, aircraft, and more.

The Mesa Lab, Foothills Lab, and Research Aviation Facility will take part in the open house, with each location offering a different experience for visitors.

At FL, which has never been open to the public before, the focus is “Hands on the Atmosphere: Instruments, Data, and Technology.” Activities include weather balloon launches, the Doppler on Wheels, Unidata displays, an emissions testing station, hands-on science education for children, and much more. Visitors can tour the machine shop, watch ice crystals form, learn about smog and aerosols, and catch short presentations and demonstrations by NCAR scientists.

At RAF, where the theme is “Eyes in the Sky: Airborne Global Research,” visitors will get a closer look at the Gulfstream V and C-130 and learn how the aircraft are equipped with observational tools and computers for each new field experiment. Scientists, pilots, and engineers will describe recent and upcoming field campaigns. Visitors can learn how to track the G-V’s flights using Facebook and Google Earth.

At ML, where the open house theme is “Voices of History: NCAR Through the Decades,” EO staff will dress in the style of each decade as they guide visitors through the past 50 years. Interpretative stations with stories and artifacts will show how atmospheric science has evolved and its importance to society today and into the future.

The open house planning committee is looking for staff volunteers for the event. “This will be an exciting opportunity for us all to welcome and guide people through our facilities while sharing our enthusiasm for our work, NCAR’s history, and the importance of atmospheric and climate research to future generations,” says EO’s Susan Foster.

More details about the open house and volunteer opportunities will appear in Today@UCAR in April. For more information, contact Susan (susanf@ucar.edu; ext. 2595).

www.50th.ucar.edu

Citation website tracks a half century of NCAR scholarship

IN HONOR OF UCAR/NCAR’s 50th anniversary this year, the NCAR Library and UCP’s Digital Learning Sciences have together launched a Citation Showcase that contains a nearly complete collection of citations (more than 14,500) of peer-reviewed articles by UCAR authors since the organization’s birth. The searchable database, which provides a central location for preserving UCAR and NCAR’s scholarly legacy, boasts some creative features, including historic facts and photos. It also contains a compilation of more than 80 books in the Library’s holdings written by current and former UCAR/NCAR staff.

“The citation database reflects a half a century of scholarship, impressive for both its breadth and depth,” says Library director Mary Marlino.

To compile the database, the Library used citation data from the NESL Publications Database, the Web of Science, and the NCAR Annual Reports (called NCAR Annual Scientific Reports prior to 2005). Any missing works should be reported to the Library.

www.ucar.edu/library/citation_showcase

DLS and NCAR Library combine forces

IN FEBRUARY, a new type of organizational unit spanning NCAR and UCP came onto the scene. Integrated Information Services (IIS), which brings together library and information research, development, and operations formerly located in the NCAR Library and UCP’s Digital Learning Sciences (DLS), is intended to support UCAR’s efforts to manage, preserve, and provide access to the organization’s scholarship and intellectual assets.

“We believe that this partnership will allow the NCAR Library to better respond to the current and future information needs of NCAR, UCP, and the larger UCAR community, while providing new audiences for DLS services and technologies,” says IIS director Mary Marlino.

The NCAR Library’s name and services remain unchanged, and the Library Board continues to provide advice on library initiatives and services. DLS remains a UCP program.
Satellites continued from page 1

COSMIC prepares for next round

COSMIC, the joint U.S./Taiwan constellation of six low-Earth orbit satellites launched in 2006, uses a method called radio occultation to measure how much a GPS signal is bent when its satellite is occulted by Earth’s atmosphere. Scientists apply mathematical methods to COSMIC data to determine underlying atmospheric conditions, such as air density, temperature, moisture, and electron density.

COSMIC is the first satellite system to provide a near real-time global snapshot of the atmosphere with high vertical resolution every 100 minutes. It produces about two thousand highly accurate profiles daily, totaling two and a quarter million since launch, most occurring in data-sparse oceanic regions.

COSMIC was launched as a research, not operational, system, and yet the technology has been so successful that the data are being used around the world for operational forecasting.

“It’s unprecedented that a new observational system comes online and major global weather centers start assimilating its data within a year after launch,” says COSMIC’s Bill Schreiner. The data have quickly demonstrated their value for weather forecasting, with numerical weather prediction centers assimilating the data into their models and reporting positive impacts on forecasts.

COSMIC is also aiding predictions of hurricane track and intensity and contributing to upper atmospheric studies of the ionosphere and plasmasphere. It’s poised to boost climate monitoring and model verification, too, by offering a highly accurate, global benchmark data record with full diurnal coverage that scientists will be able to use to determine atmospheric trends—something that no other instruments currently provide. “COSMIC data are so accurate that, given a long enough time series of data, we will be able to determine what the real atmospheric trends are over the long term,” Bill says.

COSMIC’s next step is a follow-on mission, known as COSMIC II, that is included in NOAA’s fiscal year 2011 budget. COSMIC II will place an expressly operational system of 12 satellites into orbit in late 2013 or early 2014, when the current satellites are expected to degrade. The mission is an equal partnership between NOAA and Taiwan’s National Space Organization, which funded much of the current COSMIC system.

“The science community in Taiwan is very supportive of extending the highly successful COSMIC mission to the next stage of the collaboration,” says COSMIC director Bill Kuo.

Tools for using satellite data

The Data Assimilation Research Testbed (DART) was spotlighted in the September 2009 cover story of

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the Bulletin of the American Meteorological Society. A cross-divisional project that includes collaboration with several dozen NCAR staff, DART provides students, educators, and scientists with access to free, state-of-the-art data assimilation tools.

One of DART’s major activities is helping scientists utilize COSMIC’s growing wealth of data. The test-bed’s assimilation systems help scientists incorporate the data into regional models to improve hurricane predictions and into global models to estimate moisture in the atmosphere, particularly over the tropics, which is important for climate model analysis and development.

DART may also help keep satellites in the air—literally. Scientists hope to use its data assimilation products to model the density of the upper atmosphere (ionosphere and thermosphere), where polar-orbiting satellites circle Earth. “If you know the density, you can better predict where satellites are going to move, so you can avoid having satellites smash into each other,” explains DART’s Jeff Anderson.

When TIROS I was launched 50 years ago, Earth’s orbit didn’t see much traffic. Today, thousands of satellites have been launched, putting them at risk of collisions; currently, there is no global air traffic control system that tracks the positions of all satellites. In 2009, a major collision between an inactive Russian military satellite and an active Iridium satellite grabbed headlines. The collision is estimated to have created tens of thousands of pieces of debris that will circle Earth for thousands of years and threaten other satellites. (To learn about a recent close encounter involving a COSMIC satellite, see “Too close for comfort,” below.)

**Satellite instrumentation**

Scientists in NESL/ACD have long depended on satellites to get a sense of the global sweep of atmospheric gases far above Earth’s surface. The MOPITT (Measurements Of Pollution In The Troposphere) instrument has now been measuring carbon monoxide for 10 years from its perch on NASA’s Terra satellite.

“The 10-year data record is unique and gives us a chance to look at variability over a long period, to see the effects of things like the El Niño/Southern Oscillation and variability in biomass burning and boreal fires from year to year,” says John Gille, MOPITT’s principal investigator.

The MOPITT team recently released a fourth, improved version of the instrument’s data to the scientific community. In addition, the researchers are currently refining a technique for determining surface carbon monoxide from measurements of solar radiation reflected from the Earth’s surface. Preliminary results allow the researchers to pinpoint individual cities in Asia that stand out as major sources of carbon monoxide pollution, something that wasn’t possible before, according to John.

HIRDLS (High Resolution Dynamics Limb Sounder), another ACD-built instrument aboard a NASA satellite, measures atmospheric chemicals and temperatures. The instrument stopped transmitting scientific data in March 2008 due to a malfunctioning chopper. The team is hopeful that it will be able to restart the chopper with a new approach it plans to apply this spring.

**Too close for comfort**

On February 28, the U.S. Joint Space Operations Center warned that at 3:56 a.m. Mountain Standard Time the next day, a close encounter over the eastern United States would occur between one of COSMIC’s satellites and a satellite for amateur ham radios.

The two satellites’ orbits, both about 500 miles (800 kilometers) high, were separated by a mere 128 feet (39 meters). However, timing was everything. Because of the satellites’ positions along their orbits, their actual closest pass was a more comfortable 3,127 feet (953 meters), ensuring a happy outcome.

**On the Web**

COMET MetEd Satellite Meteorology
www.meted.ucar.edu/topics_satellite.php

GOES-R: Benefits of Next-Generation Environmental Monitoring
www.meted.ucar.edu/goes_r/envmon
Satellites continued from page 4

The researchers are about to release a fifth version of the HIRDLS data, which scientists are using for studies of the upper troposphere and lower stratosphere.

The data are particularly applicable to this region because of their unprecedented 1-kilometer vertical resolution and regular global coverage. The team is also working to boost the accuracy of the instrument’s signal, which is partially blocked by a piece of plastic film that tore during launch in 2004.

“We’re working very hard to improve the accuracy of the correction for the signal coming from the blockage,” John says. “Our hope is to be able to add measurements of water vapor, methane, and nitrogen dioxide to our present suite of temperature, ozone, nitric acid, and the CFCs 11 and 12.”

Training and education

“We have a long and active history of providing satellite-related training,” says COMET project manager Wendy Abshire.

The program’s MetEd distance learning component currently offers more than 50 relevant modules in English, eight in Spanish, and five in French (see “On the Web”). About 20,000 user sessions were logged on these modules in 2009. The two most recent satellite-related modules cover using satellites to monitor the ocean and explaining the benefits to weather forecasting that would result from putting a high spectral resolution infrared sounder into orbit.

One of COMET’s ongoing efforts to support the satellite community is the Environmental Satellite Resource Center, a community-driven website launched in September 2008 that provides access to a wide variety of educational materials for all knowledge levels. Anyone in the global satellite community can contribute to the site; COMET provides quality assurance as well as quick access to COMET modules. This spring, the site will be available in Spanish as well as English.

Another ongoing project involves collaborating with the Meteorological Service of Canada on modules for helping users interpret satellite data and apply it to forecasting, particularly with regard to winter weather.

Although most of the MetEd satellite training materials are geared toward professionals and students, the program’s “GOES-R: Benefits of Next-Generation Environmental Monitoring” (see “On the Web”) module is designed for the public, decision makers, and forecasters, with especially striking visuals. “It explains the amazing leaps forward we will take when we have the capabilities associated with the next generation of geostationary satellites,” Wendy says.

SATELLITES IN THE 2010S: A GLOOMY OUTLOOK TURNS MORE HOPEFUL

UCAR president Rick Anthes spent many long hours working with Berrien Moore (University of New Hampshire) to chair a National Research Council report on the future of Earth monitoring via satellite. Informally called the “decadal survey,” the report—Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond—was issued in 2007. It warned of a looming crisis for Earth science: older U.S. satellite systems were nearing the end of their useful lives, and their replacements weren’t being adequately funded. The report laid out proposed timelines and costs for 17 missions deemed to be the most important.

There are signs of progress, Rick says. “Berrien and I have been pleased at the response to the decadal survey and its recommendations, not only by NASA and NOAA but also by Congress and the press.” However, bringing U.S. satellites up to speed isn’t easy or cheap. Since the 2007 NRC report was issued, it’s become clear that the costs of some systems were underestimated, while other proposals have been upgraded. The result is that most of the NASA missions will cost two to three times as much as expected. Similarly, the National Polar-orbiting Operational Environmental Satellite System (NPOESS) being built by NOAA, NASA, and the Air Force is now estimated to cost about $14 billion, compared to the original 2002 estimate of $6.5 billion.

President Barack Obama’s budget request for NASA and NOAA for fiscal year 2011 and beyond shows significant increases for Earth science satellites. “If these increases come through, it is a good sign for implementing the recommendations from the decadal survey,” Rick says.
Salt Lake City’s dirty winter air to get a close look

THE GREATER SALT LAKE CITY area is known for harboring some of the most polluted air in the country during the winter. A team of NCAR researchers is gearing up to collaborate on a study of the winter weather inversions that cause the city’s poor air quality. The research is expected to be applicable to other cities that experience similar atmospheric conditions.

An inversion occurs when the atmosphere’s normal temperature profile is reversed, so that rather than air decreasing in temperature with altitude, a layer of dense, cold air underlies lighter, warmer air. A snowstorm followed by clear skies can prime the atmosphere for these conditions in Salt Lake City. Cold air—and the city’s pollutants—become trapped in a pool near the valley floor, rather than mixing vertically in the atmosphere.

The cornerstone of the three-year study is a field component, called the Persistent Cold-Air Pool Study (PCAPS), scheduled for December 2010 through February 2011. Researchers will collect observations, analyze data, and use atmospheric models to study the formation, maintenance, and dissipation of Salt Lake City’s cold-air pools.

About a dozen researchers from NCAR’s Earth Observing Laboratory will be in Salt Lake City during PCAPS to set up and run a variety of instruments, including a 33-foot (10-meter) tower for measuring wind, temperature, humidity, and turbulence at four heights; several portable stations for observing all components of surface energy; radars for recording wind and temperature; and a portable GPS weather balloon system. Students from the University of Utah will help with balloon launches.

“Much of our work is in rural areas and involves storm chasing,” says scientist Bill Brown. “Working in an urban environment during calm weather will give this project a different flavor.”

Simulating seasonal snowfall over Colorado

A new study has verified that the Weather Research and Forecasting model (WRF) can depict seasonal snowfall in Colorado with a high degree of accuracy. The research could be especially useful to scientists studying the impacts of climate change on water resources in the western United States.

Until now, regional climate modeling systems have struggled to accurately simulate seasonal snowfall and snowpack. The headwaters region of the Colorado River, a critical water resource for Colorado and the Southwest, is particularly challenging for climate models to depict due to complex terrain.

The researchers, led by NCAR scientist Roy Rasmussen, used the advanced research version of WRF (ARW) to perform simulations of snowfall between November 1 and May 1 for four past winters, all in the 2000s. They compared the model results with data from SNOTEL (SNOwpack TElemetry) sites. The Colorado River headwaters region contains more than 100 of these sites, which measure accumulated snowfall.

The team found that the ARW simulations and SNOTEL data showed very good agreement when resolutions below 6 kilometers (3.7 miles) were used, showing that ARW is capable of reliably simulating snowfall over a full winter during a variety of conditions. Simulations run at 2 km (1.2 mi) suggest that other global and regional models underestimate high-elevation snowpack and overestimate low-elevation snowpack. At higher resolutions (18 and 36 km, or 11 and 22 mi), ARW underestimated SNOTEL snowfall by 20–40%.

“Recent advances in the WRF model have enabled us to produce more accurate simulations of snowfall,” Rasmussen says. “These high-resolution simulations provide the precipitation fields needed to properly simulate snowpack and runoff in the complex terrain of the Colorado Rockies.”

WRF was created through a partnership that includes NOAA, NCAR, and more than 150 other organizations and universities in the United States and abroad.
Wes Wildcat
CISL

Wes knows how to change with the times. He came to NCAR nearly 34 years ago to work in the print shop. When the unit folded eight years later, he spent 10 years in the now-defunct computer graphics department, putting data onto 35-millimeter film and microfiche. After that technology was phased out and the film room closed, Wes moved into CISL’s Network Engineering & Telecommunications Section (NETS), where his current job title is network technician.

Staff Notes: Tell me about your role in NETS.

Wes: I do a variety of things, never the same thing. My main job is using AutoCad and other drawing programs. Right now I’m helping out with drawings for the NWSC [NCAR-Wyoming Supercomputing Center]. When we have big cabling projects, I help the group with that. I do labeling in the telecom closets and wallplates throughout NCAR. I also do photography and video.

Staff Notes: What do you like best about your job?

Wes: My original degree in school was drafting, way back in the ’70s. I’ve been doing drafting since about seventh grade. I liked angles and drawing things. In college, I did architectural illustration. But I never really found a job in it until I got into NETS in ’92. So it took over 20 years for me to find a job in drafting. But I stuck with it and didn’t give up.

Staff Notes: Thirty-four years is a long time to have worked at NCAR. Have you always been at the Mesa Lab?

Wes: Yes. And I’ve never had a window [laughing]. I’ve always been in the first basement or the second basement. I probably spent about 30 years in the first basement, in the same office for 19 years.

Staff Notes: Let’s hear about your life outside the basement. Tell me about those family photos adorning your office walls.

Wes: My wife, Ruby, and I have three kids, two in Arizona and one in Wyoming. And seven grandkids. We go to a lot of powwows, all over the country—Wisconsin, Montana, South Dakota, Wyoming, California—but mainly in Oklahoma, where I grew up.

Staff Notes: Do you have a tribal affiliation?

Wes: Yes, I’m a Pawnee and Euchee. My dad is an Euchee member down in Oklahoma. He’s one of the chiefs in his tribe. It’s an hereditary position. We have our ceremonies in July, which is rough because we dance all day out in the sun. I gourd dance. It’s a warrior’s dance or men’s dance that takes place before the powwow starts. There are a lot of songs that go with it. My grandkids are now dancing in powwows, too. We’re trying to keep the culture going.

My Indian name is Kuta-wa-Kut-su. It means “roaming hawk.” My last name, Wildcat, is only a little more than 100 years old. Back when the Euchee tribe was relocated to Oklahoma [from the eastern Tennessee River Valley area], our tribe didn’t want English names. They said they wanted names to reflect who they were. So they walked around in the woods and whenever they saw an animal, they said, “That’s what I want for a name.” That’s why a lot of people are named Rabbit and Turtle. My ancestors happened to see a wildcat.

I was the first American Indian hired at NCAR, as far as I know. I must have been the first one because when I came here, a lot of people were afraid of me. They never knew any Indians growing up and only saw them in the movies, based on the questions I was asked. The room got quiet when I walked in. Walt Roberts [NCAR’s first director] even came down to meet me. He just wanted to talk and learn about my culture. It really surprised the shop when he came walking in because he’d never been down here before.

Staff Notes: Maybe you should have asked Walt for a window. Other than powwows, what else do you do in your free time?

Wes: I like exercising—biking and running. I was in the very first Up-the-Hill bike race at NCAR. I did the foot race once and that was a big disaster. I trained for three months and thought I was ready, but all of a sudden my legs just quit. I’ve done the Bolder Boulder about six times. And I’ve done some races in Oklahoma. Down there, they have a Clydesdale division for bigger people. In the first one I ran last year, I took second.

I used to coach NCAR’s softball teams, back when the EAC sponsored softball. We had a variety of people from around NCAR on our team. It gave me a chance to yell at directors and managers [more laughter].
Climate advocacy and a look ahead: UCAR’s strong voice in national climate activities

Jack Fellows
UCAR Vice President for Corporate Affairs and UCP Director

To quote Charles Dickens, “It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness.....”

If I could pick some words to describe today’s complex world of climate research, policy, and advocacy, I’m not sure I could pick any better than these famous words from 1859. The science surrounding climate change has never been more rigorous and exciting and there has probably never been a time when the science community was more poised to help on this important issue. While national climate adaptation and mitigation politics plod slowly along, many of America’s cities are making great strides to plan for a changing climate and doing it in a way that makes sense regardless of the exact scale of changes (for example, adopting policies and programs that reduce dependence on oil, conserve water, increase energy efficiency, and generally make communities nicer places to live).

Yet, while other countries understand the importance of this issue, a recent survey by the Pew Research Center for People & the Press shows that today even fewer U.S. citizens than just a year ago believe that climate change is a serious issue. When you look at countries such as Australia, where 80–90% of citizens believe this is a very serious issue and the country is taking inspirational and concrete actions to deal with a changing climate, you have to wonder why we aren’t getting it. The short answer is politics and special interests, the Climategate controversy over stolen climate researcher e-mail messages, and the surprisingly widespread belief that a single cold winter is proof that global warming is not real.

To me, regardless of where you stand on this issue, it is important to talk about it and it is unfortunate that politics are standing in the way of a constructive and important national conversation. That said, I want to tell you what UCAR is doing to move the various groups toward a more constructive climate change conversation.

Each year the UCAR member universities get together to discuss corporate and community issues. For the past two years, we have discussed the role NCAR and the UCAR universities could play in making our nation more resilient to climate change and associated severe weather, in particular how to help local decision makers ensure that their communities will have reliable access to water, food, energy, and health resources and services in the face of a changing climate. The number of UCAR universities partnered with cities has continued to increase. Last year UCAR Magazine highlighted the fascinating partnerships, particularly with New York City and Chicago, that were discussed at the 2009 UCAR Annual Meetings (see “On the Web”).

Our ultimate goal for this community discussion was to be able to eventually offer this network of partnerships as a key part of a national climate service. This effort included leading the development of a transition document (see “On the Web”) that provided recommendations to the incoming Obama administration and 110th Congress on how to make our nation more resilient to climate change and soliciting community nominations for key weather and climate positions in the new administration.

This transition document has been a very effective advocacy tool, but these efforts haven’t stopped. Based on this document and many other interactions, the President’s Science Advisor asked UCAR to convene a National Climate Adaptation Summit this spring in Washington, D.C. This invitational summit will bring together approximately 150 invited users and providers of climate adaptation information from diverse climatological regions and economic sectors. They’ll provide insight into what is needed for climate advocacy and a look ahead:
Remembering Kelly Craig

In March, UCAR/NCAR was confronted with the sad news of the death of Kelly Craig, 20, EOL’s Web developer. A memorial was held on March 11 in Longmont, where Kelly lived.

Kelly first came to NCAR in 2004 as a student assistant in F&A, moving into another student assistant position, as systems administrator for EOL, a year later. Three years later he became EOL’s Web developer. He was known around the division for his remarkable knowledge of computers and technology, along with a willingness to share that knowledge.

“If it ran on electricity, Kelly could answer any question about it,” says EOL co-worker Sara Metz. “I can’t stress how much he knew about computers. And he was really generous with his time and knowledge. There was nobody he would not help.”

As a student assistant in F&A at only 15 years of age, Kelly worked on Web development and documentation. “He was a whiz kid,” recalls IT head Shawn Winkleman.

Kelly finished high school at Weld Central at 15 and immediately started college, attending Aims Community College, the University of Phoenix, and Westwood College, where he was finalizing a triple bachelor’s degree in IT systems and security. A month before he was 20.

Kelly’s mother, Shelley Richards-Craig, has worked in F&A since 1985. Kelly and his brother, Casey, grew up in what Shelley describes as “a world like none other,” where animals and technology were important to them.

Group (WEG), of which Kelly was part. “He would find out about a technology, download it, tinker with it, and build something. He was good at anything he turned his attention to.”

Markus recalls that once, during a WEG meeting, group members were discussing how they wished they had the technical ability to carry out a very specific action in Drupal, the content management system for the UCAR/NCAR website. While they were discussing, Kelly, who had a laptop during the meeting, managed to locate a module for that exact function, install it, and do a successful demonstration.

Kelly was also known for his sense of humor. “Kelly had probably the biggest and most infectious laugh that I’ve heard,” says his supervisor, Julie Petro. “It was fun to make him laugh because I liked hearing it.

“He had a very bright, quick mind, and would share really profound insights on things,” she adds. “You’d almost forget that he was only 20.”

Kelly’s mother, Shelley Richards-Craig, has worked in F&A since 1985. Kelly and his brother, Casey, grew up in what Shelley describes as “a world like none other,” helping their parents manage The Wild Animal Sanctuary, a refuge in Keenesburg for abandoned, abused, and illegally kept wild animals.

“He rolled around with baby animals even before he could walk,” Shelley says. “Everything from lions and tigers to bears, wolves, coyotes, pigs, horses, camels, and on and on. He cared deeply for the animals we were providing a safe haven for.”

Shelley recalls that, starting about age three, Kelly decided that if something had a button, he would push it to find out what it would do. “Then by age five, if it was electronic he would take it apart and put it back together. It always worked,” she says.

In his free time, Kelly enjoyed online gaming, surfing the Internet for new information, and spending time with friends and family. He liked helping people and was known for his mischievous nature, which included playing practical jokes on friends and co-workers. He never said no to a bowl of pasta, Red Bull, Mountain Dew, or going to a movie.

Shelley has asked that contributions in Kelly’s name be made to the sanctuary (www.wildanimalsanctuary.org), where Kelly’s father and brother are caring for the animals that Kelly grew up with.

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effective climate adaptation and vulnerability assessment and how we should be organized to do that, in both the public and private sectors and from federal to local levels. These insights will be incorporated into a broad range of federal climate adaptation planning efforts, including for the White House Climate Adaptation Task Force and the U.S. Global Change Research Program.

Through these and other advocacy efforts, UCAR has become a sought-after voice on climate research, education, and policy matters. Our plans for the future include holding a community conversation on what it will take to develop the next generation’s environmental leaders and workforce that can effectively work on these climate research and adaptation issues and explore the development of a public and private sector–based Colorado Climate Service that could be a prototype climate service for the country. So, although it may be a confusing political time for climate change, rest assured that our community is making a substantial difference in this debate. We’ll keep you posted as things develop.
AN INTERVIEW WITH ROGER WAKIMOTO, NCAR’S NEW DIRECTOR

In February, former EOL director Roger Wakimoto got a new job title: NCAR director. Although Roger is a relative newcomer to NCAR, joining EOL in 2005, his extensive ties to the organization date back to the 1970s, when he participated in a field project on wind shear as a graduate student. He has also served on the UCAR Board of Trustees and chaired the University Relations Committee.

A geophysicist with expertise in tornadoes, thunderstorms, and other types of severe weather, Roger was a professor of atmospheric sciences at the University of California, Los Angeles, for 22 years, including four years as department chair. In EOL, he oversaw a comprehensive survey of instrumentation and was a principal investigator on VORTEX2, the largest tornado field study ever conducted. Most recently, he oversaw NCAR’s Workforce Management Plan.

Roger held a town hall meeting on February 24 at the Mesa Lab, and another at Center Green the following day, during which he laid out his initial plans and priorities as director. Webcasts from the meeting are available online (see “On the Web”). In March, Staff Notes caught up with Roger to chat about his new role.

Staff Notes: What attracted you to the director position?
Roger: Many people I talked to while I was at UCLA said something that I believe in, which is that NCAR is a flagship. The community thinks it’s very special, and a lot of other disciplines wish they had an equivalent to NCAR. There’s so much activity going on here. I’m glad to be part of that.

Staff Notes: What qualities do you bring to the position?
Roger: I think I have the skills that are needed for this job. I’m an effective leader and I have a vision. It’s very important that I’m also a good listener. I’ve had a lot of experience through chairing a major department that was scientifically diverse, being EOL director for four and a half years, and being an accomplished scientist.

Staff Notes: Do you see any advantages or disadvantages to being an internal hire?
Roger: The advantage is that I can hit the ground running because I’m familiar with what’s going on. The disadvantage to being an internal hire is that you get a very short honeymoon period. Everyone expects that I already know NCAR really well and don’t need to be left alone for a month or two to get my feet on the ground. I think my honeymoon was over at 8:05 a.m. on the first day.

But that’s OK. I didn’t take the job just to sit around and observe. I do understand things about the institution and have a vision of what I’d like to do.

Staff Notes: Tell us about that vision.
Roger: I shared many things with staff during the town hall meetings. For example, I talked about the supercomputing center being the highest priority. Staff diversity is very important. Nested regional climate modeling is something that has risen to the top of the scientific agenda. I would also add climate services and the atmospheric and societal impacts of megacities. These are just a subset of things that I think the institution should emphasize.

Staff Notes: What do you think are some of NCAR’s most important accomplishments in recent years?
Roger: I would say without hesitation that the two biggest accomplishments of the past several years are the Gulfstream V and the IPCC work resulting in a Nobel Peace Prize. Winning a Nobel Prize is huge, and the G-V was a coup. Not only did we acquire the aircraft, but it’s operational and has participated in several important field experiments.

Staff Notes: What challenges does NCAR face?
Roger: We’ve had some tough budgetary times and that’s certainly put stress on the institution. I’ve made a commitment to tour the entire center—all the labs and divisions—to meet with people, and to continue to do this, meeting with everyone at least once a year. I’m very committed to having an ongoing dialogue so that I feel I’m plugged into what staff are thinking and their morale.

Staff Notes: How did you originally get interested in atmospheric science?
Roger: I was always interested in severe weather. I was lucky enough to have the opportunity to work with Ted Fujita when I was a graduate student at the University of Chicago. He was known as “Mr. Tornado” and created the F-Scale [the leading scale for rating tornado intensity and damage]. He introduced me to

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Wakimoto

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Roger: I want people to understand the reason I’m doing this. I understand that I’m the NCAR director, but I got into this field because I’m a scientist. I’m excited and stimulated by discovery. I think I would have accomplished as much as I have scientifically if NCAR provided. It was so critical to my successful research. While not proven 100% effective, this visual and physical barrier has been proven by OSMP to be more effective than the previous fabric barrier, which is susceptible to ultraviolet and wind damage. This work will be coordinated within the scope of the upcoming Foothills Lab re-paving project later this summer. Please stay tuned as FM&S will be asking for volunteers to assist in the labor for installation of the straw bale barrier. [RESPONSE TO QUESTION 622 • RECEIVED 3.15.10 FROM MATT MCMULLEN, DIRECTOR OF FM&S, AND DAVID MADDY, MANAGER OF MAINTENANCE AND CONSTRUCTION, FM&S]

Roger: I’m very concerned about interacting and working with staff. What makes NCAR great is not me—it’s our staff. It’s my job to help them excel. [laughing]

Staff Notes: Speaking of your own research, we hear that you plan to rejoin the VORTEX2 field campaign this spring, documenting storms across the Great Plains.

Roger: There are two things I do to unwind. One is research. The other is that I have learned over my career to shut down when I leave the office. You cannot be thinking about work 24 hours a day. This allows me to think more clearly when I come back the next day.

Staff Notes: Anything else you want staff to know?

Roger: I’m very concerned about interacting and working with staff. What makes NCAR great is not me—it’s our staff. It’s my job to help them excel.

On the Web

NCAR Town Hall Meeting, February 25, 2010 (for QuickTime)
www.fin.ucar.edu/it/mms/webcasts/directorate/ncar-town-meeting/2-25-10.mov
(for Real Player)
rtsp://real.ucar.edu/mms/directorate/ncar-town-meeting/2-25-10.mp4
(for PowerPoint)
www.ncar.uc.edu/ncardir/internal/dircom/files/TownHall_FEB2010.pptx

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Researchers in RAL are studying how bird-detecting radar at airports could help prevent dangerous airplane bird strikes.

A new study from NESL/CGD looks at Earth’s hydrological cycle, land use changes, and climate.

HAO’s Mauna Loa Solar Observatory has a new instrument: CoMP, deployed in late February.

IN LATE FEBRUARY, UCAR photographer Carlye Calvin traveled to the Big Island of Hawaii to visit HAO’s Mauna Loa Solar Observatory, where researchers installed CoMP (the Coronal Multichannel Polarimeter). She caught this image of a smoking plume in the vicinity of the Kilauea Caldera in Volcanoes National Park. Kilauea is one of five shield volcanoes that form the Big Island. The word “kilauea” means “spewing” in Hawaiian, a reference to the volcano’s frequent eruptions. Mauna Loa, where the observatory sits at an elevation of 11,135 feet (3,394 meters), is also an active volcano.