Staff Notes

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National Center for Atmospheric Research

Three NCAR Scientists Elected to Posts of Distinction

Bob Serafin, Member National Academy of Engineering

NCAR director Bob Serafin has been elected a member of the National Academy of Engineering (NAE). One of the highest professional distinctions accorded an engineer, academy membership honors some 1,700 people who have made "important contributions to engineering theory and practice" and demonstrated "unusual accomplishment in the pioneering of new and developing fields of technology." The academy works in parallel with the National Academy of Sciences (NAS) to create in-depth, peer-reviewed studies for the National Research Council (NRC) on issues related to the state of science and engineering.

Bob's nomination describes his profound influence on the science and practice of meteorology through his personal contributions to advanced instrumentation, particularly radar. It recognizes his guiding role in the development of modern tools for observation, data processing, and display and commends his leadership in national and international bodies that have set the course for critical research and operations worldwide.

Bob earned a bachelor's degree from the University of Notre Dame, a master's degree from Northwestern University, and a Ph.D. from the Illinois Institute of Technology (IIT), all in electrical engineering. He worked from 1960 to 1962 at Hazeltine Research Corporation and from 1962 to 1973 at IIT, where he developed the institute's research radar and major portions of the University of Chicago/Illinois State Water Survey (CHILL) radar. Bob joined NCAR in 1973, managing the Field Observing Facility through 1980 and directing the Atmospheric Technology Division from 1981 until he became NCAR director in 1989. At both FOF and ATD, Bob oversaw the development and operation of state-of-the-art instruments for atmospheric research, including mobile sounding systems, portable automated mesonets, and new research radars.

Bob founded the *Journal of Atmospheric and Oceanic Technology* and is associate editor of the *Journal of Applied Meteorology*. He has served on research panels for such organizations as NAS, NAE, the Office of Naval Research, and the American Meteorological Society (AMS).

"It was a total and remarkable surprise," says Bob of his nomination to the NAE. He will be inducted into the academy at its annual meeting, in Washington, D.C., on 5 October.

Roy Jenne and Rich Rotunno AMS Fellows

Roy Jenne, senior scientist in the Scientific Computing Division (SCD), and Richard Rotunno, senior scientist in the Mesoscale and Microscale Meteorology Division (MMM), have

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Bob Serafin. (Photo by Ginger Hein.)

In This Issue

Farewell to RAF's Classiest Lady, the Twin-Jet Sabreliner

After a quarter century of probing the atmospheric elements from the earth's surface to 45,000 feet (14,000 meters), the sleekest aircraft in the Research Aviation Facility (RAF), its beloved twin-engine Sabreliner—a casualty of budget cuts, hard economic times, and changing needs in atmospheric research—left the Jefferson County Airport in February for a final flight to the Sabreliner Corporation in Perryville, Missouri.

Acquired in October 1968 from North American Rockwell, the Sabreliner, owned by NSF, is the only jet that NCAR has ever operated and the only aircraft flown by NCAR pilots that could penetrate and conduct research in the stratosphere. During its 25-year tenure, the svelte aquamarine and white aircraft logged research missions over 2 million miles (3.2 million kilometers) from Alaska to Argentina and from the Azores and Senegal, off the west coast of Africa, across the Atlantic to Greenland. On homeward-bound journeys, the aircraft also refueled in Spain, Scotland, and Iceland, extending its travels to parts of five of the world's seven continents.

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Bon voyage: the Sabreliner makes its final departure from Jeffco. (Photos by Bob Bumpas.)

During the past 25 years, the Sabreliner participated in numerous field experiments, supporting many NCAR scientists' research, including Paul Crutzen's and Pat Zimmerman's forays into the jungles of Brazil in 1979 and 1980 to measure trace gases emanating from biomass burning. It was on one of these expeditions that Pat first discovered that termites were giving off methane, which sparked several years of termite research contained in glass Mason jars in one of the Atmospheric Chemistry Division's basement laboratories.

In the mid-1970s, Al Lazrus and Dick Cadle (ACD) mounted trace gas equipment aboard the Sabreliner to sample gases from an active volcano in Guatemala. In 1989, ACD's Brian Ridley and Jim Dye (Mesoscale and Microscale Meteorology Division) used specialized equipment aboard the twin-engine jet to measure production of odd nitrogen species produced by thunderstorms over the deserts of New Mexico. More recently, Brian and colleagues from the National Oceanic and Atmospheric Administration (NOAA) Aeronomy Laboratory flew missions with the Sabreliner as part of the Rural Oxidants in the Southern Environment (ROSE) experiment, working from a base in Alabama while looking at pollution events in the southeastern United States.

ACD's Bill Mankin takes the cake for logging the most hours by a scientist in the proud bird, flying about one in every ten hours flown in the Sabreliner. He and Mike Coffey designed a spectrometer to measure the wavelengths at which infrared (IR) radiation from sunlight is absorbed in the stratosphere. From those wavelengths, Mankin and Coffey could identify which chemical compounds were in the stratosphere and how much of each chemical species was present, ranging from 0.1 parts per billion of hydrogen fluoride to 350 parts per million of carbon dioxide.

Between 1971 and 1992, Bill and colleagues flew the Sabreliner on research missions from north of Point Barrow, Alaska, south to Juneau and over the midsection of Canada, the lower 48 states, and over Mexico (where they never landed because of unfriendly receptions at the airfields). They have flown and landed the Sabreliner southward in El Salvador, Panama, Barbados, and Trinidad, West Indies, and on to Brazil, finally reaching Rio Gallegos on the southern tip of Argentina.

Throughout this period, Bill has amassed a myriad of anecdotes. While he was flying a research mission with RAF pilots Bob Burris and Tom McQuade in January 1978 over the Canadian province of Saskatchewan, Bob announced calmly, "You may have noticed that we have shut down one engine due to a hot generator and are heading back to Great Falls [Montana]." As they neared Saskatoon, Bob's voice again came over the intercom to the scientists in the back of the Sabreliner: "When we just tried to restart the right engine, the left generator dropped off the line. With both generators and one engine now off line, we have no electricity except from the battery—and although we have no international clearances, we are

landing in Saskatoon." Bob skillfully set down the Sabreliner with the NCAR scientists and crew welcomed by fire engines on the runway. Greeted by a –37°F (–38°C) temperature, the NCAR pilots were anxious to find a sheltered hanger for the aircraft to examine its engines. Mike Coffey was dispatched to guide the intrepid Sabreliner into its safe haven. He then had to straddle the tail of the Sabreliner to add the necessary weight so that the tip would just clear the door opening of the small hangar.

One decade later, Mankin and Coffey were again conducting trace gas studies in the stratosphere aboard the Sabreliner with RAF pilots Jim Ragni and Mike Heiting. Jim recalls the following incident when the crew flew over dense jungles in Brazil on the way home from the tip of Argentina.

Jim Ragni in the Sabreliner cockpit—one last time.

"My most memorable experience with the Sabreliner was at a remote airfield in Brazil. As you can imagine, air traffic control folks who speak English are something of a rarity once you get off the beaten path. Noting that we were running low on fuel, I radioed the airfield asking for permission to land. The guy in the tower said something like, 'You not land jet airplane here,' which, of course, got our attention! We made a low pass down the runway, and things became more clear when we saw a cement mixer pouring concrete about halfway down the runway.

"Since we didn't have enough fuel to go anywhere else, it became crystal clear that we were indeed going to land a jet airplane there. We touched down on the first brick, just a couple of knots above stall speed, about one-third of the way down the runway, at which time Mike cut both engines. We stopped with the nose boom about 20 feet [6 meters] short of the construction activity."

As the South American odyssey continued southward, the inertial navigation system failed en route to Rio Gallegos. Having no other navigational aids available, Jim and Mike began their descent above a thick cloud layer when time and distance calculations told them they should find the airfield beneath them. After penetrating the clouds, the only surface area visible was water, a very unlikely location for an airport. Mike came up with the astute observation that they were over the ocean, to which Jim replied, "Which one?" They chose the Atlantic, turned right, and as Jim recalls, "fortunately painted the large bay at Rio Gallegos on our radar and shortly thereafter landed uneventfully."

As this "trip from hell" continued on its northbound leg, the windshield heat failed during the nighttime descent into Brasilia, turning both pilots' windshields into popsicles. Ever the resourceful scientists, Bill and Mike produced a small portable hair dryer used to warm the IR spectrometer. Hair dryer in hand, Jim warmed a hole on the windshield, enabling Mike Heiting to gain enough visibility to land the airplane. The pilots had to open the fuselage door to guide the airplane to its parking spot!

Many UCAR member-university scientists and federal researchers also conducted missions aboard the Sabreliner, including Russell Dickerson (University of Maryland), Mel Shapiro (NOAA), and Ron Smith (Yale University).

Bill's most vivid memory is the quality, experience, and professionalism exhibited by all the RAF pilots who flew with him on the Sabreliner, including Bob Burris, Henry Boynton, Jim Covington, Bob Foltz, Mike Heiting, Lloyd Newcomer, Pete Orum, Tom McQuade, Jim Ragni, and Bill Zinser. They, along with RAF project managers Ed Brown, Erik Miller, and Al Schanot, Jr., mechanics Bob Carl and Bob Olson, and others, all harbor a wonderful set of memories and bid a fond farewell to NCAR's beloved twin-jet Sabreliner. •*Joan Frisch (Media Relations)—a former Alaska Airlines flight attendant and long-time admirer of the Sabreliner*

Ice is Nice for WISP-94 Researchers

While spring may be right around the corner, Colorado scientists are in the midst of a major study on winter storms. During the Winter Icing and Storms Project 1994 (WISP-94), a two-month field program lasting until 25 March, about 25 researchers from NCAR's Research Applications Program, the National Oceanic and Atmospheric Administration (NOAA), and several universities are searching for the secrets that cause supercooled water droplets and ice crystals to form in clouds. This is the fourth winter since 1990 of WISP research, sponsored through an interagency agreement with NSF and the Federal Aviation Administration (FAA).

"Although it seems like we haven't had a lot of big winter storms this year, we've actually been very busy," says Marcia Politovich. She and Roy Rasmussen, both of RAP, are the two operations directors for WISP-94. "We're set up to study just about any kind of cloud—everything from deep storms to mountain-wave clouds."

Before meteorologists can better predict aircraft icing, they need to better understand its cause: supercooled water droplets. These tiny droplets, suspended in air below 32°F (0°C), freeze almost instantly when they encounter a hard surface such as an airplane, causing ice to accumulate. Ironically, the worst icing conditions for aircraft can occur in a cloud deck that may not contain ice itself or produce any rain or snow at the ground, but that is full of supercooled water.

The WISP team has identified shallow stratus decks as the source of the largest supercooled droplets, those with diameters from 50 to several hundred microns (about 0.002 to 0.01 inches). "The droplets tend to form near the tops of the clouds," says Marcia, "but we've seen some surprises." A number of innovative new instruments are sampling clouds from aboard the University of Wyoming's King Air and NCAR's Electra research aircraft. A U-band radar on the King Air, operated jointly by the universities of Wyoming and Massachusetts, will help resolve the fine-scale structure near cloud tops that may be responsible for generating the large droplets. Both aircraft flew to Kansas and Nebraska last week for "very successful" probes of extensive stratus decks there, and early this week the King Air studied intense snow and ice storms in Oklahoma.

Ice crystals aloft can reduce the icing threat to an airplane by scouring out supercooled cloud droplets. This year's study is focusing on the origins of in-cloud ice. Air samples taken from just outside ice-bearing clouds are being rushed to a cloud chamber at Colorado State University, where scientists are recreating the ice-production process that the air would have encountered within the cloud. This technique, coupled with improved processing methods for ice-nucleus filter samples, should yield a better understanding of nucleation mechanisms at work in winter storms.

Another project, led by Greg Kok (RAP/Atmospheric Chemistry Division), Ron Smith (Yale University) and Bob Rauber and Harry Ochs (University of Illinois), seeks to compare the ratios of deuterium isotopes in ice crystals and water vapor in order to estimate the altitude at which the ice or water vapor originated. Microscale observations such as these will be connected to large-scale weather features later, so that future forecasts can predict how a given cloud or storm might evolve.

Though icing conditions can be very localized, traditional icing forecasts for aviation are so general—often covering entire states—that they can be of little help in fine-tuning flight plans. The WISP team is working with the FAA, NOAA's Forecast Systems Laboratory, and the National Aviation Weather Advisory Board on a new aircraft-icing forecast system scheduled to be demonstrated next year. Three mesoscale forecast models are being used with various computer algorithms that give real-time, in-flight icing forecasts; the goal is to find which algorithm-and-model pair works best.

Closer to ground level, the United Airlines ground operations unit at Denver's Stapleton International Airport is involved in a WISP project designed to improve airport de-icing efforts. "We're using some techniques for tracking snow bands by radar, in combination with snow gauges at the airport, to see how snowfall rates can be predicted from radar returns," says Marcia. "This year we're developing the relationship between snowfall and radar returns—next year we hope to do real-time forecasts." Better snowfall predictions will help airlines decide when and how often to de-ice planes.

Also taking part in WISP are the University of Wisconsin, the University of Nevada's Desert Research Institute, NCAR's Mesoscale and Microscale Meteorology Division and Atmospheric Technology Division, and NOAA's Environmental Technology Laboratory. •BH

Don't Put Yourself in Ergonomic Misery—Get Help from HESS

There's a fine line between the mild aches one has at the end of a workday and the more serious strains that herald a chronic problem in the making. Steve Sadler, manager of Health, Environment, and Safety Services (HESS), wants to keep all of us on the safe side of that line.

Preventing cumulative trauma related to computer use is a high priority for HESS. Such conditions typically start out as numbness or pain in your fingers, arms, elbows, or shoulders; eye strain or blurred vision; or back pain. If unchecked, they can lead to carpal tunnel syndrome (a swelling of nerves in the wrist that can be corrected only through surgery), backaches, eye strain, tendinitis, and other ailments.

It's important that you contact HESS at the first sign of these conditions if you suspect they are work-

(Continued on p. 6, col. 3)

No One Is Invulnerable: A Case from SCD

"My family tree holds many hard laborers—householders, steelworkers, coal miners, and farmers—and I know I have it easy in comparison. Nonetheless, the repetitive nature of using a computer in my work holds its own stress." In his 23 years at NCAR, Dick Valent, the math librarian in the Scientific Computing Division (SCD), knew that staring at a shiny terminal screen all day resulted in eye strain and neck aches but didn't realize there was something he could do about it. "I just accepted it as being part of the territory; it seemed nothing in comparison to the red-hot steel my father stared at in his job as rail-roller at the Colorado Fuel and Iron Company in Pueblo."

Ginger Hein shows Dick Valent the proper eye height for optimal monitor use with minimal strain. (Photo by Carlye Calvin.)

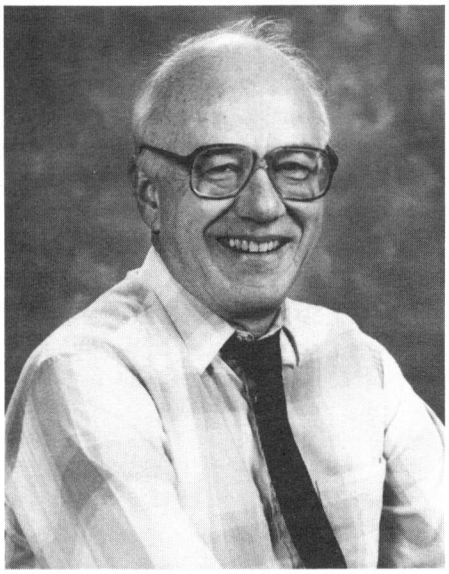
Dick's attitude began to change when he first saw an ergonomic chair in the office of SCD colleague Fred Clare. "Fred told me that the chair and wrist pads were good improvements for him, and that Steve Sadler had helped him tailor his work environment." Dick got permission to purchase a similar chair, but as a veteran do-it-yourselfer, adjusted it himself. He found this better than his old set-up, but the eye strain and neck aches continued. So he called Steve's office and was directed to Ginger Hein. This made the difference.

"Ginger showed me how to coordinate the height of my terminal with the adjustments of my chair, and how to use wrist pads to minimize strain," Dick says. Ginger's ergonomic training includes a four-day workshop she attended last year. "It really showed," says Dick. "I was very impressed with the amount of information she gave me and with the number of adjustments she made to my work environment in her 20-minute visit. I noticed improvement in how I felt almost immediately." At the same time, Dick replaced his old SUN 3/140 workstation with one that has a nonglare screen.

"Looking back, I wish I had made these changes years ago. I enjoy my work with computers and computer users, and I want to continue my work in a sustainable manner. I'm convinced these ergonomic aids will help me do this. I'm grateful to UCAR/NCAR for allowing me to make these improvements." •BH

Three NCAR Scientists *(Continued from p. 1)*

been elected fellows of the American Meteorological Society. Those elected to the title of AMS Fellow have made "outstanding contributions to the atmospheric or related oceanic or hydrologic sciences or their applica-

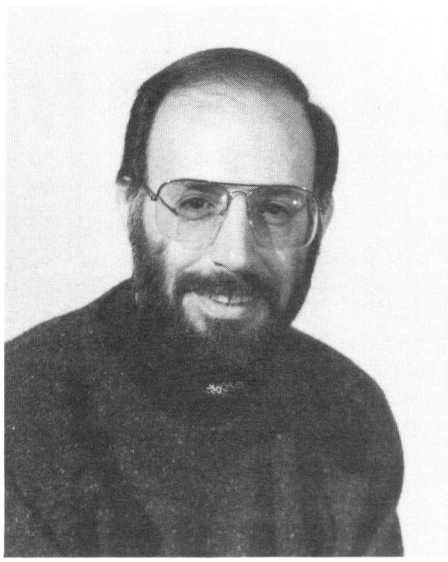


Roy Jenne. (Photo by Bob Bumpas.)

tion during a substantial period of years." About 600 have been named to date.

Since 1965, Roy has managed SCD's Data Support Section, which has established large archives of global atmospheric observations and analyses for research. In recent years, the group has taken on increasingly larger volumes of data from operational centers and satellites. Roy is currently a principal investigator on the National Meteorological Center/NCAR reanalysis project, which will create new six-hour analyses of the global atmosphere for the period 1957–1992. In another project, the Country Studies Program, Roy and his group are working with the U.S. Environmental Protection Agency and Department of Energy, establishing a bank of climate model data to help more than 20 nations assess the impact of climate change on crops, forests, rivers, and the like.

Roy earned a bachelor's degree in mathematics at Washington State University, completed a concentrated U.S. Air Force meteorology program at the University of Chicago, and earned his master's degree in meteorology at the University of Washington. He became an NCAR senior scientist in 1979. Roy has worked with the World Meteorological Organization and the National Climate Program on their long-term data management plans and has served on several NAS and NSF committees. In 1986 he received the Cleveland Abbe Award from the AMS for Distinguished Service to Atmospheric Science by an Individual; in 1989 he became a fellow of the American Association for the Advancement of Science.



Rich Rotunno (Photo by Bob Bumpas.)

Rich is well known in the mesoscale meteorology community for his studies of circulation development in thunderstorms and tornadoes. In the 1980s, he and MMM's Joe Klemp documented the mechanism by which vertical wind shear causes tornadic thunderstorms to rotate. Rich also has created a three-dimensional numerical model of vortex flow as observed in the laboratory.

Rich completed his bachelor's degree in engineering science and a master's in mechanics at the State University of New York–Stony Brook; he then earned master's and doctoral degrees in geophysical fluid dynamics at Princeton University. He became an NCAR postdoctoral fellow in 1976, a scientist II in 1980, and a senior scientist in 1989. Since 1986, Rich has been co–chief editor of the *Monthly Weather Review* and a member of the AMS Publications Commission. He recently chaired an NRC panel on coastal meteorology. •BH

Ergonomics *(Continued from p. 5)*

related. Steve and his staff will be happy to come to your office or work site and conduct an ergonomic evaluation. "It takes about 30 to 45 minutes," says Steve, "and it can prevent a lifetime of pain and discomfort." HESS will check your posture, placement of your computer and other tools, and your furniture. When necessary, they'll recommend new equipment. Chairs and desks that look great in a catalog may not be so appealing to work with, says Steve: "I've seen some terrible furniture purchased recently."

Little things mean a great deal when it comes to ergonomic comfort. A room that's too strongly lit can make it hard to read a computer screen and lead to eye strain. The correct positioning of wrists relative to a keyboard and desktop is critical to avoid carpal tunnel syndrome. HESS's evaluation of your work space will take these and other factors into account.

Don't hesitate to contact HESS if you think your work setup may be giving you physical problems. They're ready and willing to help out—but they can do so only if they hear from you. Steve is at ext. 8550, sadler@ncar.ucar.edu, and HESS assistant Ginger Hein is at ext. 8555, hein@ncar.ucar.edu. •BH

How to Get Your Piece of Mosiac

A prototype version of *Staff Notes* will be released on Mosaic next week, 17 March. Mosaic is an electronic access tool allowing multimedia files (text, color images, video, and sound) to be shared over many computers. The *Staff Notes* version of Mosaic will include the same features, announcements, and so forth as the print version, along with some added elements such as sound bites.

The National Center for Supercomputing Applications (NCSA) distributes the Mosaic program and accompanying programs that permit you to play sound bites, show "movies," and the like, all at no cost. There are three different versions of Mosaic, one each for Macintoshes, IBM personal computers (PCs), and UNIX-based machines.

See It for Yourself

If you would like to check out Mosaic before installing it yourself, you can drop by one of the Scientific Computing Division (SCD) consulting offices. The Mesa Lab User Area (ML 22A) is open 24 hours a day; the consulting office there is staffed between 8:00 a.m. and 5:00 p.m., except during the lunch hour and after 3:30 p.m. on Wednesdays. It will have all three versions of Mosaic available for your inspection. The Foothills Lab office (FL3 2125) is open the same hours, except that it is closed after 3:00 p.m. Wednesday. (During the week of 14–18 March, the FL office will have reduced hours: 8:00 a.m. to noon Monday, Wednesday, and Friday and 8:00 to 10:30 a.m. Tuesday and Thursday). At FL, only the Mac and UNIX versions of Mosaic will be available.

The SCD offices are not equipped to help you install Mosaic. If you need installation assistance beyond the tips below, please contact your system administrator for UNIX applications or the computing resource person in your division for Macintosh and PC applications. They may be overloaded at times with requests for help, so be prepared to be patient! For general questions about Mosaic, contact Greg McArthur (SCD), ext. 1813, gregmc@ncar.ucar.edu.

Important note: Not all sound and video players will work perfectly on all platforms. Mosaic's speed and performance will depend both on the speed of your machine and that of your network connection. Again, patience is warranted.

Installation Basics

All three versions of Mosaic are available through anonymous file transfer protocol (FTP) from NCSA at the address "ftp.ncsa.uiuc.edu". (If you have a Mac or PC, in order to copy Mosaic you will need to use file transfer software such as Fetch 2.1 for Macs, Wftp for PC/TCP users, or Rapid Filer for LAN WorkPlace users; check with your computing resource person for details.) Use the login "anonymous" and your e-mail address as your password. To take advantage of Mosaic's multimedia features, you also need to download some accompanying software. See "Specifics" below.

Be prepared for times when the NCSA archives cannot be reached due to high demand. Once you have Mosaic and the other programs installed, you can bypass the NCSA home page by setting NCAR's home page as the one that appears each time you start Mosaic. For details on how do this, check the introductory information in Mosaic for your type of computer.

Mosaic connects you to the World-Wide Web, a set of computers linked through the European Center for Nuclear Research, Geneva, Switzerland. As you browse the Web, you can add various sites to your Mosaic "Hotlist." This allows you to quickly access these sites at a later time without needing to recall each universal resource locator (or url, the address for each Web computer).

Specifics for Macs, PCs, and UNIX

Macintosh: The latest release for Macs is version 1.0.3. You must have a hard disk and at least four megabytes (MB) of random access memory (RAM). You must have System 7 and should be using the networking software package MacTCP 2.0.2 or later. Check with your computing resource person if you do not yet have MacTCP or need a newer version. UCAR has a 99-user license for MacTCP 2.0.2; if you are interested, contact Diane Norman, norman@ncar.ucar.edu. Single copies can be obtained in "The Internet Starter Kit for Macintosh" (Adam Engst/Hayden Books, 1993) and elsewhere. Some people have used MacTCP 1.1.1 successfully with Mosaic 1.0.3 without running into the memory-leak bug reported by NCSA. NCAR/UCAR has a site license for MacTCP 1.1.1; your network administrator can contact Herb Poppe, hpoppe@ncar.ucar.edu, for a copy of the software and assistance in configuring it for your TCP/IP subnet.

- To download: Using Fetch or other file transfer software, connect to NCSA and go to the directory "Mosaic/Mac." You will find about a dozen files listed. Download the following five files: NCSAMosaic.1.0.3.README, NCSAMosaicMac.103.sit.hqx, LocalHome.html, QuickStart.Txt, and StuffIt_Expander_3.0.7.se. The other programs you need are in another directory called "Helpers"; download each file in that directory except for .index. (Fetch automatically converts most files with a .sit.hqx extension to a Macintosh executable file. If you do not use Fetch and/or you need help

converting these files, please contact your computing resource person.)

PC: The latest release for Windows is version 2.0alpha2. You will need Microsoft Windows 3.1 and TCP/IP networking software. Mosaic needs at least an 80386-SX machine with 4 MB RAM. NCSA recommends a 33-megahertz or faster 80486 with 8 MB RAM.

• To download: Using Wftp in PC/TCP, Rapid Filer in LAN WorkPlace, or other file transfer software, connect to NCSA and go to the directory "Mosaic/Window." You will see around eight files listed. Download wmos20a2.zip and readme.now. Then go to the directory "viewers" and download each file listed there. If you do not know how to unzip files on your PC, please contact your computing resource person.

Unix: The most recent X Windows release is version 2.2. Within the directory "Mosaic," you will find Mosaic and accompanying software for your workstation configuration. If you do not have root privileges on your UNIX machine, you will need to ask your system administrator to install Mosaic for you. •BH

The Next Step

NCAR's current home page is at the Mosaic address "http://www.ucar.edu/metapage.html". We recommend you use the appropriate menu option in Mosaic to change Mosaic's starting point to this address. Next week we'll provide the location at which you'll be able to find *Staff Notes* and other UCAR/NCAR materials. Between now and then, if you think you'll want to use Mosaic on your desktop, we recommend you get a head start on installation.

Announcements

Using a Black Bag? Be Sure It's Urgent

Traffic Services and the mail room remind you that intersite black-bag service between the Foothills and Mesa labs are intended for urgent deliveries only. Please send all other materials by interoffice mail. If you have questions, contact Jean Hancock, ext. 8504.

No Photo IDs through 18 March

Due to camera repairs, there will be no photo identification cards created at the Foothills Lab reception desk through at least 18 March. Further notice will be posted if the down time is extended.

Reminder: March Is National Nutrition Month

NCAR Food Service is highlighting National Nutrition Month through healthy dietary selections in the cafeterias as well as special weekly drawings for beverage mugs and note pads with this year's logo. A review of recent nutrition literature is also displayed at both FL and ML cafeterias. If you are interested in "Shedding Dietary Light on Seasonal Affective Disorder" or "For Your Heart's Sake, More B Vitamins," stop by and look over the many articles and reprints that are available for your information. Here's to healthy eating!

New Hires

Lara Ferraro, student assistant II with UCAR. FL3 room 1029, ext. 8499.

Tracy Huntzinger, network technician III with SCD. ML room 33, ext. 1258.

Leslie Mayer, student assistant II with CGD. ML room 168, ext. 1384.

Jeffrey Smith, software engineer II with ATD. FL1 room 2139, ext. 8837.

Scott Yarbrough, shuttle driver with UCAR. FL1 mailroom, ext. 8504.

What's Cooking in the Cafeteria

Monday, 14 March
Minestrone Soup
Sesame Chicken Sandwich, Stir Fry Veggies
Hickory Buffalo Burger, Grilled Onions and Fries
Spaghetti/Marinara Sauce (meat or veg.), Tossed Green Salad, Garlic or French Bread

Tuesday, 15 March
Sopa de Maiz Soup
Club Sub (or veg. sub) and Chips
Barbecue Beef and Baked Beans
Chicken Burrito, Chipotle Baked Beans, Green Rice

Wednesday, 16 March
Vegetable Patch Soup
Mushroom Muffin/Spinach Salad
Calzone—meat or vegetarian
Turkey Breast/Pepper Sauce and Spinach Fettucine

Thursday, 17 March
ST. PATRICK'S DAY
Irish Barley Broth
Chicken Cashew Pita/Red Grapes
Pizza—Sausage and Peppers or Spinach, Mushroom and Provolone
Corned Beef and Colcannon with Irish Soda Bread
Enjoy a complimentary piece of our special St. Patrick's cake!

Friday, 28 March
Fish Chowder
Pesto Provolone and Sundried Tomatoes/Baguette
Fajitas
Lemon Pepper Cod with Rice Pilaf and Vegetable

Luncheon Winners:
ML - Brian Keyser
FL - Diane Rabson

Visitors

Donna Beller, Hebrew University, Jerusalem, Israel. Interest: Climate change. 7 March–8 April. ML room 286, ext. 1611.
—David Schimel, UCAR

John Cardwell, University of Manchester Institute of Science and Technology, England. Interest: Atmospheric physics. 24 January–28 March. FL2 room 2019B, ext. 2808.
—Roy Rasmussen, RAP

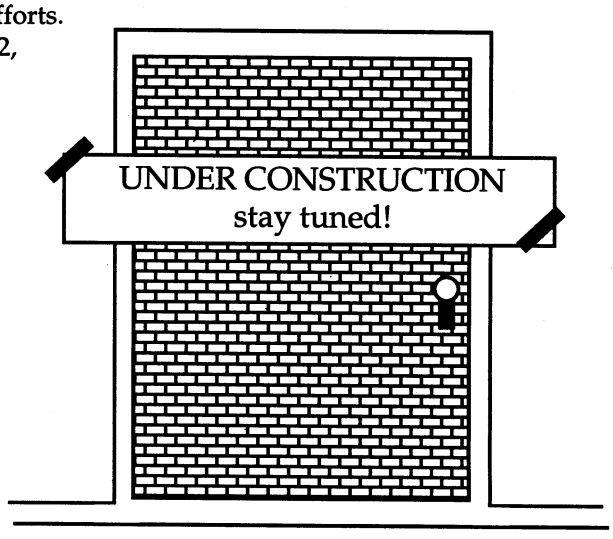
Tae Young Chang, University of Colorado at Boulder. Interest: Turbulence. 1 March–31 August. FL3 room 3095, ext. 8172.
—Bob Kerr, MMM

Joanne George, NCAR. Interest: 2DQ data analysis. 1 March–1 April. FL3 room 3039, ext. 8946.
—Dan Breed, MMM

Dan Johnson, University of Wisconsin–Madison. Interest: Atmospheric science. 25 January–25 March. FL2 room 2019A, ext. 2808.
—Roy Rasmussen, RAP

Breck Owens, Woods Hole Oceanographic Institute. Interest: Oceanography. 24–28 February.
—William Large, CGD

S. C. Tripathy, Udaipur Solar Observatory, India. Interest: GONG efforts. 21 March–1 April. FL2 room 3072, ext. 1582.
—Tim Brown, HAO



Job Openings

March 10, 1994

EMPLOYMENT PROCESS
PLEASE READ!

ACCESSING JOB OPENINGS AT UCAR (including the University Corporation for Atmospheric Research and the National Center for Atmospheric Research): Job Openings are updated each Thursday and can be accessed in the following ways.

(1) The 24-hour UCAR jobline, 497-8707.

(2) The print version of Staff Notes. To subscribe, call 497-8601 or write to outreach@ncar.ucar.edu.

(3) The electronic-mail version of Staff Notes. To subscribe, send a message to the address majordomo@ucar.edu containing no title and only the words *subscribe staffnotes* in the body of the message. You will receive an acknowledgement message and further instructions.

(4) The NCAR/UCAR Gopher. Job Openings can be accessed on the Internet by going to the NCAR/UCAR Gopher at gopher.ucar.edu and looking under "Employment Information" in the folder "NCAR/UCAR News and Information."

APPLYING FOR JOBS AT UCAR (including the University Corporation for Atmospheric Research and the National Center for Atmospheric Research): You may call our 24-hour jobline, 497-8707, for information about UCAR positions. Please follow this checklist to ensure that you are considered for positions for which you feel qualified:

(1) Submit a separate application and/or resume for each position,

(2) Indicate the job number and position title on your application materials, and

(3) Hand carry or mail your application and/or resume to Human Resources by the closing date posted. Applications and/or resumes submitted by facsimile (fax machine) will not be accepted.

NOTIFICATION OF APPLICATION STATUS: Each applicant will receive an acknowledgement letter. After that, you will be contacted ONLY if you are chosen to be interviewed.

MORE INFORMATION ON SPECIFIC OPENINGS: You may obtain copies of previous "Job Openings" ads at the UCAR Human Resources Office, located at 3450 Mitchell Lane, Boulder.

UCAR EMPLOYEE APPLICATIONS: If you are a UCAR employee and wish to be considered for any of the positions listed, please complete an employee application (available from Human Resources, x8713), attach a resume, and return it to Human Resources, FL2.

NOTE TO UCAR STAFF: Requests for Staff must be received in the Human Resources Office no later than noon on Monday in order to appear in the following Thursday's edition of Staff Notes. However, the posting of new or unique positions will be delayed if market data (which is used to establish salary ranges) is not readily available.

The University Corporation for Atmospheric Research has a strong commitment to the principle of diversity in all areas. In that spirit, we are interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities, veterans, and disabled individuals.

ELECTRICIAN - #1964

PLEASE NOTE: Applications for this position will be accepted until 5:00 p.m. on March 18, 1994.

DIR - Facilities Support Section

Non-exempt Range: 32, $2,632 - 3,418/mo

DUTIES INCLUDE: Reads and interprets blueprints and schematic drawings to determine the appropriate materials and applications necessary to complete a job. Follows established safety practices. Uses and maintains a variety of tools in a safe manner. Installs, repairs, and maintains electrical equipment. Completes documentation of work and job orders. Maintains knowledge of state-of-the-art technologies and advancements in the electrical trade. Performs duties according to established electrical code standard procedures. Performs preventative maintenance and other duties in support of facility operations as assigned by supervisor. Maintains stock and orders parts for pending jobs. Uses internal account charges and associated documentation for material ordering. Performs unscheduled and emergency repairs on facility components. Prepares material lists and assists in establishing and maintaining inventories for maintenance. Follows safety, operations, and maintenance procedures and rules required by the facilities service and support department.

REQUIREMENTS INCLUDE:

- Approved four-year apprenticeship as an electrician or equivalent combination of education and training
- Knowledge of and willingness to follow the national electric codes and established safety practices
- Skill in reading and interpreting blueprints and schematic drawings
- Skill in troubleshooting and repairing a variety of electrical systems such as heating, ventilating, air conditioning, and door card readers
- Skill in the maintenance and repair of dimmable fluorescent lighting systems, utilizing electronic dimmable ballasts
- Skill in using, repairing, and maintaining computerized Energy Management Systems
- Skill in using and maintaining a variety of hand tools
- Skill in written and verbal communication
- Skill in following oral and written instructions
- Skill in making independent decisions
- Possession of a valid Colorado driver's license and driving record which will comply with UCAR's liability insurance requirements
- Willingness to perform other facility maintenance duties as assigned
- Willingness to perform shift work, to respond to after hours emergency call-ins, to work with other crafts and work in environments out of normal duties as needed
- Physical ability to lift fifty (50) pounds twenty (20) feet

PLEASE NOTE: This is a one year term position.

Anna Reyna-Arcos

UCAR/NCAR is an equal opportunity/affirmative action employer.

Mail resumes to:
P.O. Box 3000
Boulder, Colorado 80307

Pick up applications at:
3450 Mitchell Lane
Boulder, Colorado 80301

Job Line: (303) 497-8707
Human Resources: (303) 497-8713

PART-TIME POSITIONS

CLERK/TYPIST - #1962

PLEASE NOTE: Applications for this position will be accepted until 5:00 p.m. on March 25, 1994.
ATD - Program Management
Non-exempt Range: 25, $721 - 937/mo (.5 FTE)
Hours: 20 hours per week, Monday - Friday
DUTIES INCLUDE: Processes and tracks travel forms. Maintains facility files. Serves as key operator for copy machines, including service calls. Maintains office supplies and forms. Prepares and sends faxes and makes photocopies. Prepares memos, letters, forms, and reports as required. Organizes and maintains facility libraries. Makes necessary meeting arrangements, including scheduling meeting rooms and arranging for audio-visual equipment. Maintains bulletin boards. Maintains office coffee fund and purchases supplies as needed. Runs errands and performs other duties as assigned.
REQUIREMENTS INCLUDE:
- Knowledge of basic office procedures, including filing
- Skill in accurate typing
- Skill in word processing using WordPerfect and willingness to learn other software as required
- Skill in the use of office equipment
- Skill in maintaining attention to detail while performing repetitive tasks
- Skill in meeting deadlines under time pressures
- Willingness to work on a variety of tasks and with a variety of personnel
- Willingness to promote positive working relationships
- Willingness to work full time on occasion
- Possession of a valid drivers license which will comply with UCAR's liability insurance

Anna Reyna-Arcos

SECURITY ALARM TECHNICIAN - #1958

PLEASE NOTE: Applications for this position will be accepted until 5:00 p.m. on March 23, 1994.
DIR - Facilities Support Section
Non-exempt Range: 29, $1,018 - 1,323/mo (.5 FTE)
HOURS: 20 hours per week, schedule to be determined
DUTIES INCLUDE: Installs and maintains door card access system. Installs and maintains building intrusion alarm systems including door monitoring contacts, infrared and motion sensors and CCTV cameras and monitors. Documents existing and new wiring installations, and equipment/spares inventory. Performs basic telephone switch administrative functions, including telephone system troubleshooting and instrument installation and troubleshooting.
REQUIREMENTS INCLUDE:
- 3-5 years experience working with building security systems including door card readers and CCTV
- Knowledge of card reader installation and maintenance (CASI-RUSCO experience preferred)
- Knowledge of security systems installation and maintenance
- Knowledge of National Electrical Code wiring practices as applied to low voltage wiring
- Basic knowledge of telephone system wiring and maintenance
- Demonstrated skill in troubleshooting using a wide variety of test equipment
- Skill in reading blueprints and wiring diagrams
- Skill in using a wide variety of power and hand tools
- Basic skill in using a computer

Anna Reyna-Arcos

ADDITIONAL POSITIONS

SCIENTIST I - #1938

PLEASE NOTE: Applications for this position will be accepted until 5:00 p.m. on March 18, 1994.
ACD - Stratospheric/Tropospheric Measurements (S/TM) Group
Exempt Range: 58, $3,433 - 5,150/mo
First Published in "Job Openings" on January 27, 1994

ASSOCIATE SCIENTIST IV - #1922

PLEASE NOTE: Applications for this position will be accepted until 5:00 p.m. on April 15, 1994.
UCAR - Cooperative Program for Operational Meteorology, Education and Training (COMET)
Exempt Range: 61, $4,260 - 6,390/mo
First Published in "Job Openings" on January 6, 1994

* Asterisked positions are appearing in "Job Openings" for the first time.

Calendar — 14 March through 3 April

WEEK OF 14 - 20 MARCH

Monday, 14 March

- ADC Seminar - *Tropical-extratropical Interaction the Stratosphere* - Pin Chen, University of Washington

  10:30 a.m.
  Mesa Lab, Main Seminar Room

Tuesday, 15 March

- Sunergy Broadcast on Creativity in the Digital Domain - *Multimedia, Information Highways, Virtual Corporations, Electronic Libraries* - John Gage, Sun Microsystems Computer Corporation, Marc Andreessen, Enterprise Integration Technologies, Philip V. W. Dodds, Interactive Multimedia Association, Tom Van Sant, GeoShere Project

  9:30 - 11:00 a.m.
  Mesa Lab, Main Seminar Room

- GTP Seminar - *Examining Applicability of Thermal Turbulence Scaling Laws at Low Ra Via Direct Simulations* - Steve Christie, University of California, Santa Barbara

  11:00 a.m.
  Mesa Lab, Damon Room
  Please note change in time and location

Wednesday, 16 March

- ASP Seminar - *Thermodynamics of Arctic Ocean Sea Ice* - Judith A. Curry, Program in Atmospheric and Oceanic Sciences, University of Colorado-Boulder

  3:30 p.m.
  Mesa Lab, Main Seminar Room

Thursday, 17 March

- MMM Seminar - *The Determination of Optimal Growing Modes for a Mesoscale Atmospheric Model* - Ron Errico, CGD, NCAR

  3:30 p.m.
  Foothills Lab 2, Room 1022

- ACD Seminar - *Satellite Remote Sensing of Tropospheric CO and CH4 Model Studies of the MOPITT Instrument* - Liwen Pan, ACD, NCAR

  3:30 p.m.
  Mesa Lab, Main Seminar Room

WEEK OF 21 - 27 MARCH

Tuesday, 22 March

- CGD Seminar - *Atmospheric Angular Momentum, Friction, and Mountain Torques During 1987-88* - Roland Madden, Climate Analysis Section, CGD, NCAR

  3:30 p.m.
  Mesa Lab, Main Seminar Room

Thursday, 24 March

- MMM Seminar - *Snow Crystal Branching* - Charles Knight, MMS, NCAR

  3:30 p.m.
  Foothills Lab 2, Room 1022

Calendar announcements may be mailed to Liz Kriete at FL2. Tuesday 5:00 p.m. is the deadline.

WEEK OF 28 MAR - 3 APRIL

Monday, 28 March

- CGD Seminar - *Analogy Between Convection and Radiation* - Michael Hantel, University of Vienna

  10:30 a.m.
  Mesa Lab, Main Seminar Room

Tuesday, 29 March

- CGD Seminar - *The Response of a North Atlantic Ocean Model to High-Wavenumber and High-Frequency Forcing* - Ralph Milliff, Oceanography Section, CGD, NCAR

  3:30 p.m.
  Mesa Lab, Main Seminar Room

Thursday, 31 March

- MMM Seminar - *A Semi-Lagrangian/Eulerian Nonhydrostatic Model for Fluids* - Piotr Smolarkiewicz, MMM/CMS, NCAR

  3:30 p.m.
  Foothills Lab 2, Room 1022

National Center for Atmospheric Research
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