Staff Notes MONTHLY
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In this issue

Just One Look

Mule deer who stop by the Fleischmann Building to munch on tallgrass might be surprised by what they find this spring. The latest creation of NCAR landscaper Rich Johnson is this flower garden just outside the window of the Walter Orr Roberts Board Room. Two stone benches were also added to the walkway leading from the FB board room to the ML parking lot. Rich installed the garden last summer to replace the hapless bluegrass that was perpetually being devoured by deer. The garden's flowers and grasses were chosen to be deer-resistant, and "we've been about 80 percent successful," says Rich. Deer- resistant doesn't mean deer-proof, according to Susie Siders, administrative assistant to the UCAR president. "The only thing that doesn't appeal to them at all is the daffodils. They eat a blossom and then spit it out with a look that says, 'Bleh! I forgot I don't like that!' " **•BH**

About this publication

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Prepared for the Web by Jacque Marshall

SNMONTHLY
May 2000
EXTRA!

Here's to Bob: A toast to the departing director

More than 200 of Bob Serafin's colleagues stopped by the Mesa Lab cafeteria on Thursday afternoon, 27 April, to wish the departing NCAR director well. It was the last week of Bob's 11-year tenure, the longest in NCAR history. Bob is moving to an office with ESIG in FL1 and continuing full-time work until his official retirement next February, then shifting to part time. For more on Bob's plans, see the April 2000 issue of Staff Notes Monthly.

Among the many testimonials offered in mid-party:

- UCAR president **Rick Anthes** called Bob "the most truthful, honest person I know and also the fairest." In dealing with tough problems, he found Bob "extremely insightful--quick to get to the crux of arguments." He gave Bob kudos for orchestrating such coups as acquiring the NSF/NCAR C-130 aircraft in 1993 without affecting NCAR's core funding.

- UCAR's **Steve Dickson** recalled a marathon weekend he and Dave Waltman spent working on a complex fiscal plan during his days as NCAR budget director under Bob. When they presented the results of their grueling work to the boss that Monday morning, "Bob tapped on his calculator a few times and said, 'That's about right.' "

- **John McCarthy,** the founding director of RAP: "What can I say about my mentor of 21 years? A lot." John cited Bob's "great patience" and his ability to give people space to carry out projects as they saw fit, which he called "a great sign of leadership." He also noted the "intellectual glue" that Bob provided in the early 1980s in the effort to study wind shear and its threat to aviation, work that led to the creation of RAP.

- SCD director **Al Kellie**, who arrived two years ago from the Canadian Meteorological Centre, joked that "Bob went fishing in Canada and came home with me." He also revealed that Bob knows exactly how to communicate with entrepreneurs: "He can talk about the weather, he can talk about airplanes, and he can talk about golf." Rachelle Daily joined Al to present Bob with a plaque-mounted module from the one-of-a-kind CRAY-3 housed at NCAR in the mid-1990s.

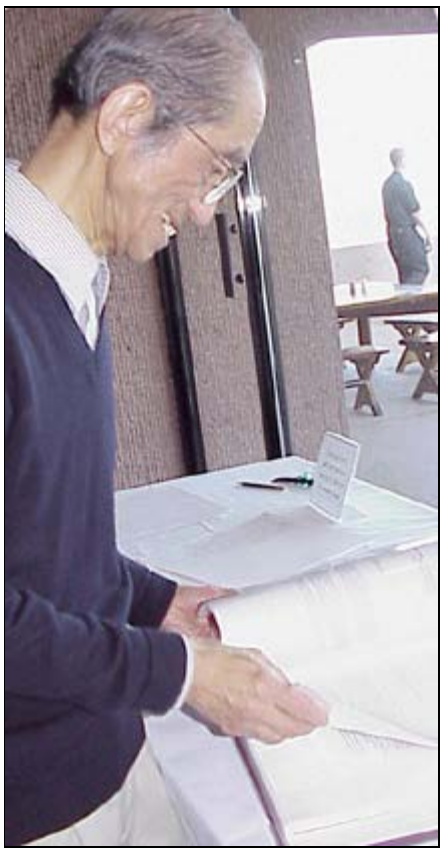
- CGD director **Maurice Blackmon** said he appreciated Bob's support during the division's transition to the Climate System Model: "He can see into people. He can understand their motivations."

Bob Serafin during a pensive party moment.
(Photos by Lynda Lester.)

- UCAR distinguished scientist **Joach Kuettner** commented on his amazement that Bob always seemed to visit field programs only on days when things were running smoothly and the field managers were in consensus. He had no explanation other than "Bob is an exceptional man."

Betsy Serafin recalled the morning when her husband, in true directorial fashion, asked her how thoroughly she'd planned her day and what goals she'd set for it.

Bob himself closed the remarks with anecdotes from his early days at ATD, where they once tested a vertically pointing radar by firing pellets from a BB gun to serve as reflectors. As for another early idea, using hay bales to reduce clutter in the radar image from side lobes, "I predicted it wouldn't work, and it didn't," he laughed. Among the satisfactions Bob noted from his tenure as director: community interaction and the diversity of NCAR's funding are both at all-time highs. --*Bob Henson*



Left: CGD's Akira Kasahara leafs through the memory book created for Bob.

Above: Rit Carbone (left, now of MMM) and Jim Wilson (ATD) roasted their colleague with a top-10 list of "cheapshots about Bob."

With the help of rice paper and food coloring, these cakes provided a send-off for Bob plus a glimpse of two of ATD's biggest accomplishments: the Electra Doppler Radar (left) and the S-Pol multiparameter radar (right).

In this issue...

Note: The rest of this issue will be posted in early May 2000.

Other issues of *Staff Notes Monthly*

UCAR
NCAR
UOP

Edited by Bob Henson, bhenson@ucar.edu

SN MONTHLY
May 2000

Assessing the climate: How it gets done

"Can't we say anything more than 'We can't say anything'?"

Jerry Meehl. (Photos by Carlye Calvin.)

CGD's Jerry Meehl recalls this plea from Tom Karl, head of the National Climatic Data Center, with a sympathetic smile. In his casual comment to Jerry at the 2000 meeting of the American Meteorological Society, Karl highlighted the tug of war at the heart of assessing climate change. Policymakers and the public want certainty. Atmospheric scientists can seldom provide it, but, as Karl realized, they have an obligation to say something. "In fact," says Jerry, "there are results that are more certain than others, and this needs to be communicated."

The next year is a big one for climate assessments. The U.S. National Assessment, the first of its kind, will be released this summer. Following in early 2001 will be the third global assessment from the Intergovernmental Panel on Climate Change (IPCC), which involves 2,500 scientists from around the world. Both analyses draw from NCAR-based work, and a handful of scientists at NCAR and UCAR are racking up thousands of in-flight miles and hours of sleep lag as they guide key portions of the reports to completion.

How we got here from there

The U.S. Department of Energy began summarizing climate-change research with its "State of the Art" reports in the mid-1980s. The IPCC era of international climate assessment began in 1988 when the World Meteorological Organization and the United Nations Environment Program joined forces. The WMO and UNEP wanted to go a step beyond earlier, individual reviews and find out what the best minds in the business thought collectively. These assessments would come to definitive conclusions--scientists' best estimates of what actually could happen--as opposed to earlier reviews, which simply summarized results.

What's emerged is "the biggest scientific assessment of all time," according to the journal *Science*. It's also a novel type of effort, notes Jerry. "The process itself is pretty remarkable. Do you know of any other discipline that tries to determine, every five years, the state of human knowledge?"

The first IPCC report, issued in 1990 and updated in 1992, suggested a plausible global temperature climb of 0.2 to 0.5°C (0.4-0.9°F) per decade over the next century due to increases in atmospheric carbon dioxide, but stopped short of attributing the 20th-century temperature rise to human factors. The 1995 report focused on the lower end of the expected temperature range by including the effects of aerosols, but its biggest impact came from a single phrase: ". . . the balance of evidence suggests that there is a discernible human influence on global climate."

Critics of the 1995 report charged, among other things, that the participants had changed the models since 1990 to produce results that fit a preconceived notion. To Kevin Trenberth, CGD senior scientist and an IPCC veteran since the beginning, this accusation reflects a basic misunderstanding of what the reports have to offer. "The changes from 1990 to 1995 were in the scenarios, not the projections. Just about all that the IPCC has ever produced [is] scenarios: if we put in this set of emissions or concentrations, what will the climate change be?" The IPCC's core science section for 2000 will incorporate fairly recent findings from about 20 global climate models from around the world, including CGD's NSF-funded Climate System Model and


Kevin Trenberth.

DOE-funded Parallel Climate Model (soon to be merged into the new Community Climate System Model).

The upcoming report will provide an even broader range of scenarios for how climate might evolve and affect humans, and it'll explain how those scenarios were produced. This is as it should be, says Linda Mearns (ESIG). "There are a lot of choices you have to make when you construct a scenario," she explains. "Do you include just the mean changes, for example? Or do you also include some aspects of variability [over time]?" It was one of her concerted goals to get a chapter on scenario development into the report from IPCC's Working Group I. Linda is a convening lead author for that chapter, as well as a lead author for two others on using scenarios in impact assessment and on evaluating and projecting regional climate.

The IPCC 2000 release, like the 1995 one, will be in three volumes. Working Group 1 deals with core science; WG2 addresses impacts, adaptation, and vulnerability; and WG3 tackles mitigation and related economic and social concerns. The biggest organizational change from 1995 is that the topic of mitigation (steps to reduce emissions) has been moved from WG2 to WG3. This allows adaptation to take a higher profile in WG2--perhaps a sign of newfound realism about the inevitability of some climate change.


Linda Mearns.

A lot of work

"It's very time consuming," says Kathy Miller (ESIG) of the background work needed to contribute to IPCC. Kathy, a newcomer to the assessment, is serving as a lead author on chapter 15 of WG2, which focuses on North American climate impacts. "It's more work than it might appear on the surface, because the final product has to be so condensed. You have to read a phenomenal amount of material to be able to synthesize it." On the plus side, she says, "It's material you ought to be familiar with anyhow to make a credible contribution to your field. The range of material helps you put your own work in context."


Kathy Miller.

Along with Linda, there are two other convening lead authors at NCAR: Kevin (for a WG1 chapter on climate processes) and Jerry (for a WG1 chapter on projections of future climate change). Convening lead authors pull together the contributions from ten or so lead authors, and many more contributors, for each chapter. Kevin can testify that the task is no cake walk. Each chapter goes through a standard peer review and a politically oriented government review. The result can be hundreds of pages of comments. For Kevin's own chapter, which is running about 70 pages, "the comments were longer than the manuscript. All of them have to be dealt with." Furthermore, in a new step added for IPCC 2000, the response to these and later reviews is checked by one or more review editors for each chapter, who make sure that reviewers' concerns have been adequately addressed. This change was partially in response to controversy over last-minute comments and the small wording changes that followed late in the 1995 report process (see below).

The three main WG reports will be finalized over the next few months. For each report, highlights have been pulled together in a technical summary and a more lay-oriented policy summary; Kevin is part of the 20-member team producing both of these documents for WG1. Early next year comes the big enchilada: the intergovernmental meetings

with high-level representatives from each participating country. "They go through the policy summary and approve it word by word," says Kevin. "Politics enter in very strongly at this stage. Scientists are there to defend the science and what can be said; the politicians get into the act about how it can be said."

During the intergovernmental meetings for the last IPCC cycle, Kuwait and Saudi Arabia registered strong disagreement with some sections of the WG1 report. According to Kevin, "U.N. rules are to try to arrive at a consensus rather than a majority vote." On the final night, "We were supposed to be done at 10:00 p.m., and we were still working at 3:00 a.m., long after the translators had gone home." Ultimately, the WG1 technical summary was "accepted" but not approved line by line, thus leaving the authors to make final changes without another review pass.

Climate news the U.S. can use

Ben Felzer.

As IPCC work continues, the U.S. National Assessment is putting the finishing touches on its report, which will be published this summer. At that point, Ben Felzer's job will be completed. Ben, who works for the U.S. Global Change Research Program through JOSS, has helped coordinate much of the report's climate sections and prepared dozens of graphics for the document. He explains that the assessment answers the questions, "What are the consequences of global warming for the U.S.? And how should we deal with these consequences?" Specifically, the assessment considers the effect of climate change on five economic sectors--agriculture, coastal areas and marine resources, forests, human health, and water resources--and 20 geographic regions. One of these regions is a crosscutting area that represents native peoples and native homelands.

Mandated by Congress in 1990, the report is being overseen by the Office of Science and Technology Policy and the National Assessment Synthesis Team, funded mainly through the EPA, NASA, NSF, and the Departments of Energy, Agriculture, Interior, and Commerce (NOAA). It is the first comprehensive climate assessment for the United States, although other countries, such as Canada and Great Britain, have done related types of assessments.

One of the U.S. report's strongest features, and a rarity for assessments, is that the process involved stakeholders in each region: farmers, resource managers, and others who will have to deal directly with climate change. They participated alongside scientists at regional meetings, and their input shaped the final product. For instance, stakeholders helped decide which of the economic sectors their region should focus on.

Kathy, Linda, and Jerry have each been involved in preparing this assessment as well as the IPCC report. Discussing a session she coordinated for a Central Great Plains regional meeting, Kathy says, "I thought it was really helpful to have the stakeholders involved and providing feedback about their information needs. Although the particulars of what could happen are important, they communicated that it's more important to them to understand the general nature of the risks, and the potential range of climatic variations they may face, than it is to have the details of any particular scenario. They're already thinking adaptation; that's because they deal with climate variability every year, every day." Linda participated in three of the regional meetings and appreciated "communicating with a broader range of people about climate scenarios."

The project navigates some tricky scientific territory, since regional effects of climate change are notoriously difficult to project. Scenarios, both climatic and socioeconomic, are important tools for the assessment. They indicate what could happen in the next century in several ways--for instance, identifying how societal vulnerabilities may change over time, and how they might be modified by adaptation choices. The climate-scenario approach involves:

- projecting historical trends, such as the increased frequency of El Niño, into the future;
- painting "what if?" scenarios for different increases in average temperature, changes in precipitation; and

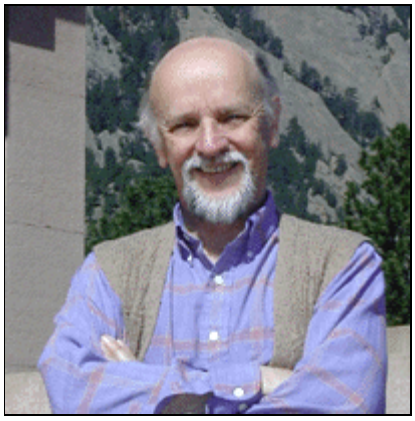
- presenting results from mid-1990s versions of the Canadian Global Coupled Model and the coupled model from England's Hadley Centre for Climate Prediction and Research.

The Canadian and Hadley Centre models were chosen largely because their output, which included daily data, was available several years ago, giving the preparers enough time to translate it to the regional level. For this translation, the assessment relied heavily on the Vegetation/Ecosystem Modeling and Analysis Project, based largely in CGD (a separate story on VEMAP's work appears in this issue under **Science Briefing**).

Ben and his colleagues don't expect this assessment to be the last word on climate change in the United States. "The idea is to get people thinking about these issues," says Ben. By this measure, the assessment is already a success. "The final report isn't going to say too much that the stakeholders don't know already," says Kathy. "I think they were more interested in being in the process. I think that's more important to them than any written report."

Once more, with feeling?

Although assessment work gives you prestige and makes you catch up on the literature, it doesn't get you any grants or produce any journal articles. "There's a high burnout rate," says Kevin. He notes that Ben Santer (Lawrence Livermore National Laboratory) and Neville Nichols (Australian Bureau of Meteorology) both opted out of IPCC 2000 after playing key roles in 1995. "It's very demanding. You just get finished with one [report] and you have to start the next."



Tom Wigley.

CGD senior scientist Tom Wigley had been heavily involved in IPCC from its beginning. He's sitting out the 2000 process, except for minor inputs to WG1 and a short contribution on uncertainty for the WG3 report. He wonders if the IPCC process is operating on too short a time scale. "Do we need to update the science comprehensively every four or five years? How different is the third assessment going to be from the second? If it's different in only a few areas, why don't we do some special reports in those areas?"

A low-key lobbying effort is now under way among IPCC scientists to shift the schedule from every five to every seven or even ten years. "The policy makers seem to want new information nonstop," says Jerry. "Five years in the political arena is a long time, but the scientists are saying, 'It's too much, too fast.' "

"It's a monumental effort," agrees Tom. "I don't know if anybody outside this community realizes what a massive job this is." Still, he adds, "I think it's more or less a duty for people who are authorities in these areas to participate at least once."

•Bob Henson

On the Web:

IPCC home page
U.S. National Assessment

A sneak preview

Although the next IPCC report isn't ready until next spring, our in-house experts provide a taste of what's likely to appear. Kevin Trenberth believes there's no particular bombshell in the works from Working Group 1. "At the moment there's no banner that IPCC 2000 would come out with that would grab as much attention [as in 1995]."

That's not to say there won't be findings of substance, Kevin adds. The past five years of global heat have bolstered the circumstantial case for greenhouse-induced warming, and the long-standing conflict between satellite and surface data has been largely resolved (see the **February 2000** *Staff Notes Monthly*). "The observational elements are much more compelling, and the models have gotten much better. The statistical analysis tools for detection and attribution of climate change have also gotten stronger. So there have been developments across a broad front."

Linda Mearns says that uncertainty and its expression will be a big theme of the 2000 report. "I think it'll be an area of rapid methodological development in the next few years. You can't know what's certain unless you know what's uncertain."

According to Jerry Meehl, "The three things everyone wants to know about are the three things we can say the least about, due to model limitations: hurricanes, midlatitude storms, and ENSO [El Niño/Southern Oscillation]." The IPCC 2000 report will reflect some signs of progress, though. As noted in the February issue of *Staff Notes Monthly*, the latest hurricane models--which can now be embedded within global models--are hinting at greater tropical cyclone intensities for parts of the Pacific basin in a world of doubled carbon dioxide. And some models are beginning to show how El Niño and La Niña might intensify in a warmer world.

Results of the U.S. assessment are embargoed for now. According to Ben Felzer, the report will include both benefits and costs of climate-change impacts. He summarizes the climate scenarios used to prepare the assessments: Temperatures will climb in general, but more quickly at high latitudes, at night, and in the winter. Rainfall and snowfall are tougher to call. "Global precipitation will rise, but we have no idea about regional trends," says Ben. The report does draw some reasonable inferences on how temperature and precipitation trends might interact, altering seasonal snowfall patterns, for instance..
•BH

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Circle the date: Bubbles and balloons on 18 June

Kids of all ages can celebrate Father's Day at UCAR's most extravagant public event in five years. The Bubble and Balloon Festival will explode on the mesa Sunday, 18 June, from 10:00 a.m. to 4:00 p.m. It's a highlight of the year-long series of events honoring UCAR and NCAR's 40th anniversary. Modeled on a similar event at the Pacific Science Center, but with a unique UCAR/NCAR flavor, the festival combines art, music, and science to explain the workings of bubbles and balloons. The current agenda looks like this:

- Bubble-ologist Casey Carle will thrill young and old with his comic performance and amazing soap bubbles.
- Renowned juggler and dancer Peter Davison will perform.
- Balloon artist Bongo will fashion fantastic balloon creatures.
- ATD technicians will demonstrate research radiosondes and their balloons.
- A hot-air balloon will be tethered on site with explanations of how it works.
- Hands-on fun with bubble vats, bubble art, and a bubble-gum-blowing contest will give visitors an interactive good time.
- NCAR's new science store will be open for business with weather-related books and gifts, including weather-themed coffee mugs and the 40th anniversary T-shirt. Next month's *Staff Notes Monthly* will spotlight the new store, which will take up permanent residence in the ML lobby later this spring.

Food and drink will be on sale, and large tents will keep the action going even if the weather turns sour. NSF director Rita Colwell and incoming NCAR director Tim Killeen will be on hand. Colwell will also deliver a public talk on Monday, 19 June. Watch *This Week at UCAR* and the June issue of *Staff Notes Monthly* for more details.

•Bob Henson

Ribbon-cutting, too

A 2:00 p.m. ribbon cutting will mark the official debut of the ML 40th- anniversary exhibit. This interactive addition is being installed in the north mezzanine and the square stairwell descending to the SCD machine room. Six panels will cover UCAR and NCAR history, complexity in the earth system, the human-climate intersection, and how models and measurements combine to yield forecasts. The exhibit is partially funded by Bank One, TIAA-CREF, PacifiCare, Holland & Hart, and Marsh USA.

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Sync your teeth into spring at 40th anniversary Fling

This year's Spring Fling will be no flash in the pan. Party planners at the Employee Activities Committee have packed the annual bash for all staff and their families with special features in honor of UCAR and NCAR's 40th anniversary. This year the Fling will take place on the mesa, starting at 2:00 p.m. on Friday, 12 May. On tap, besides beer, will be:

- **Lip syncing extraordinaire.** Each year since 1996 has seen the lip- sync competition grow. (See photos for a quick recap.) If you're a ham at heart, this is your chance to take center stage, and perhaps be cured once and for all. Late entries can sign up by sending e-mail to **eac@ucar.edu** or by contacting syncmeister Craig Hartsough, ext. 1545, **craigh@ucar.edu**.

- **Weather-themed band.** Twist and shout to the beat of Chucky and the Cyclones. This local favorite puts a spin on classics from the 1950s and 60s. Their playlist might serve as excellent material for an impromptu lip sync. If nothing else, it'll get your circulation going.

- **Double dining.** Food Services will provide snacks before the syncing, light dinner fare afterward, and beverages throughout.

- **Door prizes.** Everyone who attends will have a chance to win door prizes from local establishments such as the Red Lion Inn, Broker Inn, Boulder Cork, Greenbriar, and many more. Just show up and you're eligible--but, as they say, you must be present to win.

One perennial sign of Spring Fling has an extra touch this year. Two UCAR/NCAR T-shirts have been specially designed by Heidi Lewis, manager of the soon-to-debut NCAR Science Store, in honor of the 40th anniversary. Look for it at the Fling or shortly thereafter.

•Bob Henson

How can we keep from syncing?

Take a walk with us through four years of the Spring Fling's lip-sync competition--and, by extension, 50 years of music history. For the full, glorious history of lip syncing, check the EAC's tongue-in-cheek **timeline**. (Photos by Carlye Calvin.)

1996: Alternative transportation took on new meaning as these COMET Program refugees grooved to the Who's "Magic Bus."

1997: Tim Barnes (top, from the Education and Tour Program) and David Failing (formerly of SCD) wowed the crowd with choreography set to "Istanbul (Not Constantinople)," by They Might Be Giants.

1998: Tragic romance made for comic lip sync as HR's The DO-Bobs emoted to the Shangri-Las' "Leader of the Pack." Laurie Carr (far right) was the lead singer, smitten by tricyclist Bob Roesch (below).

1999: Tut-Tut: Steve Hinson strutted his stuff as the Fling's unofficial king, backed by a rendition of Steve Martin's "King Tut" and a set of dancers and musicians from F&A.

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Random Profile:
Elaine Kingston

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Every other month, *Staff Notes Monthly* spotlights a stochastically chosen staff member. This month we profile Elaine Kingston, who works as Mesa Lab receptionist on Saturdays and daytime desk supervisor for Barton Security at NCAR Mondays through Fridays.

Where's the coldest place in Canada?

Elaine Kingston. (Photo by Carlye Calvin.)

According to local folklore, it's Elaine's home town, White River, Ontario. "My town had about 700 people. The closest city was 250 miles away--we were at the end of the road." White River's about 650 miles northeast of Minneapolis. "So we're right in the middle of the country. And that's why it's so cold. . . . There're few moderating influences."

How cold was it?

"I used to walk to school and about every block my eyelashes would freeze shut, so I'd have to quickly take my warm hand out of my mitten and melt the ice off my eyelashes." The story they tell in White River is that the man who kept temperature records for the town went out one morning, looked at the thermometer, and saw that it read -60°F. "The next morning he went out, and the thermometer had broken. So he said, 'I think it must be about 72 below.' " The record is "not very scientific. But we do know it was cold."

What brought her south of the border?

Elaine came to the United States to attend college in Utah. She left school in her junior year to get married. After four children and a move to Boulder, she and her husband divorced. That's when she went back to college. "I was a single mom, working full time and going to school. As I look back, I don't know how I did it. My children and I would all sit at the kitchen table and do our homework together." Elaine earned a B.A. in human services from Metropolitan State College in 1990 and an M.A. in counseling from the University of Northern Colorado in 1993. Her two sons have earned their master's degrees, her daughter is graduating from CU next month, and her youngest son is a college freshman.

What's her line?

Before NCAR, Elaine worked as a professional counselor for Boulder County, private agencies, and in private practice. With the county health department and community corrections her focus was addictions counseling. "I'm a cognitive behavioral therapist." Elaine explains the theory: thoughts create feelings, and feelings create behavior. So "if you can change your thoughts, you can change your behavior. That type of therapy worked very well in dealing with clients who were struggling with addictions." Although her current schedule precludes it, Elaine expects to continue a part-time private practice in the future.

How she came to NCAR:

After about ten years as a counselor, Elaine was ready for a break. So she answered a newspaper ad and got the job as Saturday ML receptionist last August. "I've lived at the bottom of the hill, in the shadow of NCAR, for 25

years. Plus, I'm a wannabe meteorologist. I've taken one meteorology class-- just enough to make me dangerous." On the job, she got to know the Barton's security staff, and they urged her to apply for a position with them. "So I started working for Barton in November, and here I am."

Her double life:

Elaine is quick to note that, regardless of job description, she's a people person. On Saturdays at the reception desk she talks to visitors about I.M. Pei's architecture and NCAR's mission. "When the many school teachers arrive wanting information for their classes, I fill them up with all the information that Rene [Munoz] and Tim [Barnes] have gathered." During the week, in uniform with a squawking two-way radio on her belt, you'll find Elaine walking the halls and surveying the buildings from a different point of view. As daytime desk supervisor for Barton's she interacts with staff from Physical Plant Services, Safety and Site Services, and elsewhere around the institution on everything from jammed door locks to planning for emergency medical response. "It has opened up a whole other world that I knew nothing about. . . . A lot of it is customer service, but it also includes safety issues. Our job is to make NCAR a place where people feel comfortable."

Time for salsa, too?

Despite her 46-hour week, Elaine still finds time to go dancing twice a week with friends. The beat is salsa, merengue, or cumbia and the conversation's in Spanish, which she's studied for years, including a four-month immersion program in Playa del Carmen, Mexico. Years ago, in a genealogy project, she traced one line of her family back to 1490 to the Isle of Skye, Scotland. Nowadays, she's outdoors, hiking or biking. If physical therapy for her back goes well, she hopes to get back into running. And then there's travel to feed her appetite for learning about other cultures.

What's next?

Her colleagues at Barton understand that Elaine eventually would like to play a different role at NCAR. "I'm up for just about anything. The fact that I have a psychology background hopefully means I'm trainable," she says with a laugh. "It would be nice to find my niche somewhere here at NCAR, because I love this place."

•Zhenya Gallon

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Forrest Cook: NCAR's loss is Linux's gain

If you've ever checked the Web to see the weather at the Mesa or Foothills Labs, then you've seen Forrest Cook's work. Forrest, a systems administrator in ATD, created (with Jon Corbet and Chris Burghardt) and maintained the popular pages that provide real-time weather and a 24-hour log of temperatures, winds, and other variables.

Forrest Cook. (Photo by Carlye Calvin.)

Now Forrest is off to ply his Internet skills elsewhere. He's joining a couple of other NCAR alumni at a fast-growing, 'Net-based newspaper in Boulder, *Linux Weekly News*. "It's been on the Web for a couple of years. Jon [Corbet] and Liz Coolbaugh [formerly of CGD] started it." Forrest will be writing software to produce Web pages dynamically and taking on a few other yet-to-be-defined tasks. Since *Linux Weekly News* has no physical office, he'll be working at home. "That'll be just fine with me. Ask me in a year if I like it. I know two people who have gone that route and they both love it, so it'll probably be fine."

Forrest says his NCAR job "evolved massively" over 16 years. "I started out as a PAM [Portable Automated Mesonet] technician and worked as a software engineer for a while. Then I got into system adminstration--I've been doing that for quite a while. I started on the VAXes and got into Solaris-Sun when it was new. I've sort of followed the evolution." He's helped keep about 100 Sun workstations running for ATD users.

Linux is the next step in that evolution, says Forrest. The open operating system that competes with DOS and Solaris is "fairly widespread" in ATD, he notes. "It's sort of taking over the domain of the Suns. Instead of buying a $10,000 Sun, you buy a $2,000 PC with more peripherals on it."

Forrest will especially miss globetrotting for ATD. He helped set up networks for PAM deployments in the field, "going out there and making everything work for the scientists. Probably the best time I ever had here was going to Tasmania for ACE-1 [the first Aerosol Characterization Experiment in 1994]." Other memorable spots: "China. France. Australia. Wichita, Kansas. Huntsville, Alabama."

ATD's ML and FL weather sites will continue with the help of Santiago Newbery, Brandon Slaten, and Bob Rilling. The NCAR program officer at NSF, Cliff Jacobs, was so taken with the site that he asked ATD to set up a similar site at NSF's Arlington, Virginia, headquarters. You can see which way the wind's blowing there **on the Web.** Watch for Forrest's debut as a "booth dude" at an upcoming trade show near you. "That'll get boring pretty fast, I'm sure."

•Bob Henson

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SN MONTHLY
May 2000

Science Briefing

In some parts of the nation, what was once meadow is now forest, and what was once grassland is now cultivated. A CGD group is helping map these changes over the past century and their relationships to climate past, present, and future. The team recently found that U.S. vegetation may be storing considerably less carbon than researchers working on another recent study had speculated.

Nan Rosenbloom and Tim Kittel. (Photos by Carlye Calvin.)

The Vegetation/Ecosystem Modeling and Analysis Project (VEMAP) includes several staff (pictured here) in CGD's Ecosystem Dynamics and the Atmosphere Section, led by Dave Schimel (now on leave at the Max Planck Institute for Biogeochemistry) and Tim Kittel. NCAR's VEMAP team has analyzed the last century's changes in climatology and land use (forest cover, agriculture, and the like) and put them onto a high-resolution grid. Working with projections of future climate from the more coarse global-scale models, VEMAP was used to estimate how trends in weather, climate, and land use might play out on the regional scale. These simulations are an important part of the U.S. National Assessment (see page 3).

A new study based on VEMAP data has found that land use, far more than atmospheric carbon dioxide levels or the vagaries of climate, influences how much carbon is stored by U.S. ecosystems. Dave is the lead author of an article on the study that appeared in the 17 March issue of *Science.*

Scientists have been searching for a carbon storage mechanism, or sink, to explain why atmospheric carbon dioxide levels are lower than expected as emissions rise. CO_2 in the atmosphere fertilizes plants by stimulating photosynthesis, consequently increasing forest uptake of carbon. A shorter-term and more dramatic influence on carbon storage is climate and climate impacts: wildfires, volcanic eruptions, drought, and El Niño episodes can alter terrestrial carbon storage annually by as much as 100% in a given year. The authors examined the effects of both CO_2 fertilization and climate events on U.S. carbon storage.

Cristina Kaufman and Steve Aulenbach.

For the period 1980-1993, the three models of terrestrial ecosystem biogeochemistry used in the study agree within 25% that a U.S. land carbon sink resulting from CO_2 fertilization and climate effects amounts to 0.1 billion tons per year--about a third of the total amount of stored carbon estimated from inventory data. Uptake of the other 0.2 billion tons, the authors conclude, is due to regrowth on abandoned agricultural land or where forests were harvested before 1980. Last year a group of Princeton University researchers, focusing on the role of atmospheric CO_2 fertilization, had estimated net carbon uptake in the United States at levels of 1 to 2 billion tons, or 10 to 20 times that found in the VEMAP analysis.

The VEMAP team used new, detailed historical information on climate and an ensemble of three computer models to study carbon storage in the 48 states from 1895 to 1993. All three ecosystem models used by VEMAP simulate carbon storage in soil and vegetation within natural ecosystems, and one also simulates carbon in agricultural ecosystems.

"To predict and plan for future climate change, we need to fully understand the amount of carbon being stored both in the U.S. and globally, and what controls that storage," says Dave. "The next step is to quantify the North American carbon sink." A new and improved observing strategy--including airborne observations, remote sensing, surface flux measurements, and computer modeling--could resolve the discrepancies between the VEMAP and Princeton estimates of carbon storage, he says.

On the Web:

The VEMAP Project

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SNM MONTHLY
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Delphi Questions: Speeding at FL, cafeteria hygiene, lunch crowds

Question #445 (received 22 March):

It appears that speeding in the Foothills Lab parking lots is getting out of hand. It's only a matter of time until a pedestrian is hit or a collision occurs. The posted limit is ten miles per hour, and absolutely nobody goes that slowly. The most egregious violators appear to be government vehicles and the Ryder rental trucks. Take a look at the curb southwest of FL3--the black marks are from the tires of speeding vehicles that bounce off the curb. Recently, I saw a Ryder truck knock some big branches off an FL tree. Therefore, I ask:

- What is UCAR's liability for accidents and injuries that occur on UCAR grounds due to a lack of enforcement of UCAR's policies?
- Does UCAR have to enforce the 10 mph speed limit, or do the speed limit signs just absolve UCAR from liability?
- What happened to the speed limit sign on the southwest side of FL3?
- How can speeds be reduced? (The only workable solution would appear to be speed bumps.)
- Why does UCAR allow a private company (Dave Taylor rental) to use UCAR facilities for their private profit (i.e., parking their Ryder rental fleet in the FL parking lot)? How does one go about getting approval for one's company to use UCAR facilities? Perhaps I can make some money with the IBM SP computer. If the thought behind allowing this company to use UCAR facilities was that the empty space in the FL parking lot was going to waste and that the trucks would be unintrusive, I argue that the trucks are dangerous, noisy, and damaging to UCAR property. Thank you.

Response (10 April):

First, let me say thanks to the questioner, as she or he has provided valuable information concerning traffic issues. Now that we have the information, we will take appropriate action. In the future, the questioner can speed up the enforcement/abatement process and help improve traffic safety by immediately reporting traffic violations to Security at ext. 1139.

From the Delphi archives

Delphi coordinator Janet Evans found this previous Delphi question, submitted in October 1979, very similar to Question 447 below, except that the cafeteria options available to staff have increased. In an upcoming issue of *Staff Notes Monthly*, Janet will provide a look at Delphi history.

Question:

The NCAR cafeteria has a lot of guests and visitors at lunch time who take advantage of the reasonable prices. So why can't there be a designated time for them to have lunch? Some of us get 30 minutes to eat, and almost half our time is spent standing in line, especially when the senior citizens group is here.

Answer:

As the writer points out, NCAR has many visitors who eat lunch in the cafeteria. When large groups are to be here for lunch, whether it is the senior citizens or a group attending a scientific meeting, every effort is made to schedule the lunch hour for the group at either 11:30 or 12:30, before or after the noon-hour rush. There seems to be no way to enforce a hard-and- fast eating time for visitors and guests who come for lunch without sacrificing our "good neighbor" atmosphere.

> The cafeteria has eased the lunch line problem to a great extent by offering the soup and salad bar and other easy-to-get choices for a quick lunch, and we will continue to make every effort to schedule groups for lunch at either 11:30 or 12:30 so that the noon-hour lines will be kept as short as possible.
>
> *--Rose Bridgewater, Office Services manager*

UCAR is responsible for enforcing its rules, policies, and procedures. When we detect traffic violations we immediately take enforcement actions. Our security staff routinely monitor traffic into, out of, and around all of our facilities, both by camera and by personal observation. However, they cannot monitor all facilities at all times. Consequently, they rely on reports such as that provided by the questioner. I can't emphasize how important it is to report these unsafe traffic conditions. Our intent is to maintain a safe environment, and enforcement is one tool that we can and do use.

Regarding liability, that is dependent upon a legal process and interpretation. Rather than wait to find out how much liability we may or may not have, we'd prefer to prevent an accident. We will step up our surveillance and enforcement, which we hope will reduce the violations observed by the questioner. We do not know what happened to the missing speed limit sign, but we will replace any missing signs and review all signs to ensure that they are adequate. Finally, we will investigate this entire issue to determine whether additional steps are needed, e.g., speed bumps.

UCAR reached an agreement with Taylor rental that allows them to park vehicles in unused portions of our lot for a fee. This was done solely for the benefit of the many employees who felt their safety was seriously jeopardized by the way the trucks were parked along Mitchell Lane. Although the trucks were legally parked, many employees considered them a significant safety hazard. More than three dozen complaints were lodged. Our lease agreement simply solved a very serious safety problem for dozens of UCAR employees. We will contact the rental company to assure that they observe all traffic rules and regulations.

--Steve Sadler, Safety and Site Services director

Question #446 (received 28 March):

In the Foothills Lab cafeteria, the service is always good and the employees friendly. However, in the mornings, there is generally only one person working on the line. This is understandable, in order to keep labor costs down.

Nowadays people are educated about food safety, and food workers frequently wear gloves. However, lately I have noticed that the morning cook/server will be wearing a glove on only one hand. After making the food, she goes to the register to ring the sale, without removing the glove. Then she goes back to preparing the food, without washing her hands or changing the glove.

Cash is very dirty. I am sure that ID cards are also dirty--at the very least, they were in the hands of the person paying for the food. If the same person is going to be handling food and cash, surely she should be washing her hands and changing her gloves every time. And both hands should have gloves, not just one. I realize that this would create extra work, but isn't cleanliness in the kitchen worth it?

Thank you for your assistance in answering this question.

Response (14 April):

Sanitation and food safety are our top priorities in operating this food service. Our servers need to conscientiously make sure that hands that touch money do not touch food and that gloves and serving utensils like tongs are used as needed. We have reminded all servers of this important requirement. Thank you.

--Velma Ryan, Food Services and Special Functions manager

Question #447 (received 3 April):

I have a question about serving lunch. Very large groups have meetings at the Mesa Lab, etc., from time to time, and when they go to lunch in the cafeteria, some employees have to readjust their lunch time or stand in line for a while. I was wondering if we could have, say, employees at 11:30 a.m.- 12:30 p.m. and the public from 12:30 to 1:30 p.m., or something like that. I know as spring and the 40th anniversary progress, we will be having this situation more and more. Thank you for your consideration.

Response (13 April):

We appreciate your question, as UCAR does indeed have various groups that use our cafeterias in addition to our regular staff. These are often conferences or symposia that support some aspect of UCAR business, or education and tour groups that provide outreach to the public.

We try to address the situation in several different ways. First and foremost, we make every effort to schedule the lunch hour for any group at 12:30 p.m. or later. The Education and Tour Program is really great about following this guideline and usually has one of their staff with the group to help them find things and speed up the process. Despite our urgings, however, this doesn't work for all meetings as the organizers may want to have the break earlier to fit the program, or the meeting may run long or short. There really is no way to force visitors and guests to have lunch at a certain hour.

Second, we try to communicate with the staff, either by e-mail or by signs, if there are likely to be significant extras in the cafeteria on any given day. You have probably all seen some of these communications. When we are aware of a large conference, we will put this footnote on the on-line menus. Our staff gear up for the extras by providing additional servers and another cashier, and by adjusting production or choosing menus so there is limited waiting in line. We also offer groups a way to charge for their entire party, thus speeding up the line.

The best time for staff to come, particularly on these busy days, is 11:30 p.m. to noon, as everything is on the line and ready to go. After 1:00 p.m. also works if that fits your schedule better. High noon or shortly thereafter always seems to be the time of choice for people to eat, despite our best efforts to adjust this. And of course, using your debit card not only gives you a 15% discount but also speeds up the transaction and line at any time.

Third, we can offer lunch alternatives to groups. In the past, this has included everything from special catered lunches served in the Damon Room or on the second floor of ML and in the meeting rooms or in the cafe atrium at FL. We also offer a variety of box lunch selections and outdoor options which some groups have taken advantage of, particularly those using the tree plaza (as well as some functions at NOAA that are catered by NCAR). The cafeteria has also opened early, at 11:15 a.m., to allow some groups to get through before regular staff. We will take this one step further and offer individuals a pick-up or prepaid lunch or even hold one late for you if you have a major conflict. Just contact Debbi Naugle (ext. 1147, naugle@ucar.edu) or myself (ext. 1193, vryan@ucar.edu) and let us know.

Again, thank you for your question--we will continue to try to provide you with the best service possible.

--Velma Ryan, Food Services and Special Functions manager

Questions and suggestions from the staff to management may be submitted in confidence to the coordinator, Janet Evans (ext. 1114, ML room 517). They should be submitted in written form, preferably via interoffice mail in a sealed envelope marked confidential; they must be signed. Detailed procedures for submitting questions are given in the ***UCAR Policies and Procedures Manual,*** section 4-1-2. Questions and answers of general interest to staff are submitted to *Staff Notes Monthly* by Janet. They may be edited for publication. For more information, including links to questions and answers published in *Staff Notes Monthly* and a log of all questions submitted since 1995, see the Delphi Service **Web page**.

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SNMONTHLY
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A familiar library face heads out: J.K. Emery

J.K. Emery. (Photo by Carlye Calvin.)

With his warm smile and calm demeanor, library assistant J.K. Emery has helped bring order to NCAR's holdings at ML, FL, and Jeffco for the past 14 years. Beneath his placid exterior, you'll find a man who fondly recalls the roar of a pressroom and the smell of hot type. J.K. joined the NCAR Library after retiring from a long career in publishing and reporting.

"Marcelee Gralapp [head of the Boulder Public Library] used to accuse me of being a closet librarian, and I think it's probably true. My interest has always been print on paper, ink on paper, that kind of thing. There's something about the feel of paper."

J. K.'s love of all things published began during his childhood. He worked as a printer during high school in Scottsbluff, Nebraska, and college at CU. After completing his bachelor's in journalism,. J.K. earned his editorial stripes at various newspapers in Colorado, Nebraska, and Wyoming. He was an editor at the *Torrington Telegram*, "a real wild one in Wyoming. Then I worked for the *Scottsbluff Star-Herald* for a number of years as a wire editor. A friend of mine came to Scottsbluff one day and said, 'There's a job in Fort Collins that you might be interested in.' So I applied for a job at CSU as a publications editor. I didn't know what they meant by 'publication,' but they interviewed and hired me and I had a delightful time."

During his five years at Colorado State University, J.K. picked up a master's in English. He then returned to Boulder and started a 26-year tenure at CU. "I was director of publications and printing [for CU] and editor of the University of Colorado Press, which evolved into the University Press of Colorado Press. That makes me pretty ancient," he laughs.

After decades of deadlines, J.K. found his part-time NCAR job to be a breeze. "It's been very basic--recording items that come in. It's a refreshing thing to me. Maybe I've used it as an escape, but I love it."

Now that he's shelved his last book for NCAR as of 28 April, J.K. has more time to travel and to pursue print-related hobbies. "I collect incunabula; that's printing done from the time that Gutenberg invented movable type, around 1440, on up to the 1500s. As for the Internet, "It fascinates me. It frustrates me. We're so overwhelmed with information I don't know what we're going to do. I wonder what'll happen to books. Are we going to sit there by the streamside and dangle our fishing poles in the water while looking at a TV terminal?" **•BH**

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SN MONTHLY
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New Hires

(front row, left to right):
Tami Austin, accountant with F&A.
Luanna Sago, administrative assistant with F&A.

(back row, left to right):
Lynette Laffea, software engineer/programmer with GPS Science and Technology.
Julie Mundorff, traffic services clerk with F&A.
Robert Kirby, software engineer/programmer with SCD.

(left to right):
Steve Nelligan, network technician with SCD.
John Fox, software engineer/programmer with SCD.

Other New Hires

Timothy Alberta, systems administrator with COMET.
Shu-Hua Chen, postdoctoral fellow with VSP.
Melissa Crandell, student assistant with RAP.
Craig Epifanio, postdoctoral fellow with ASP.
Scott Harper, scientific visitor with VSP.
Michael Montgomery, traffic services clerk with

F&A.
Michael Stamps, traffic services clerk with F&A.
Jennifer Stebbins, administrative assistant with UOP.
Olga Wilhelmi, postdoctoral fellow with ASP.

Departures

Darrel Baumgardner, 3 April
Heather Benway, 27 March
Mary Buck, 15 March
Robert Cherry, 7 April
Galen Cook, 14 April
James Cowie, 31 March
Nuri Delen, 14 April
Chris Fischer, 29 March
Jenny Maggert, 22 March
Autumn Moss, 14 April
Luanne Nelson, 29 March
Lisa Ostendorf, 14 April
Timothy Pieper, 7 April
Arthur Shantz, 4 April
Melissa Taylor, 28 March
Miles Waite, 30 March

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