

Staff Notes

MONTHLY

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Just One Look



Under sunny skies, the annual all-staff picnic brought about 40 youngsters, plus parents, to North Boulder Park on Saturday, 19 July. Organized by the Employee Activities Committee, the picnic was added to the roster of all-staff activities several years ago. Inger Gallo headed up the EAC committee for this year's picnic. Clowns & Characters for Kids, an Arvada-based firm, provided Bobo the Clown (portrayed by Sheila Huisman) and magician Jeremiah Freedman (pictured at right), whose comedy/magic show was set to disco. Food was furnished by the NCAR cafeteria and some of its familiar faces: Jerry Bakken, Gail Gray, Rudy Montoya, Debbi Naugle, Dave Neale, and Robert Niece. (Photo by Inger Gallo.)

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August 1997 EXTRA!

Lev Gandin, 1921-1997 Lev Gandin, a senior scientist at the National Centers for Environmental Prediction (NCEP) through the UCAR Visiting Scientist Programs, died at his home on 25 June. Lev was a world-renowned expert on the use of objective analysis in meteorological fields and a frequent collaborator with scientists at NCEP, NCAR, and elsewhere.

Rol Madden (CGD) was one of the many NCAR researchers who worked with Lev. "I came to know him about 5 years ago because I became interested in optimal averaging--essentially, the best way to bring scattered observations together to form a spatial average. Gandin was a pioneer in that effort, so I invited him here to give a talk and 'picked his brain,' so to speak. He was a gracious man who wasn't afraid to ask tough questions."

Bill Bonner, former director of UOP and now a senior research associate in MMM, also worked with Lev. "He was a gentle man, with a subtle sense of humor and a deep involvement in whatever problems he worked on,"

says Bill.

Below is a summary of Lev's life and work, courtesy of Eugenia Kalnay (NCEP) and Michael Fox-Rabinovich (NASA). --BH

Lev Gandin was born in Leningrad, in the former Soviet Union. His parents were both prominent medical scientists. As a talented young man, he was confronted with the difficult choice of becoming either a musician, a chess player, or a mathematician. Following the advice of his mother, he chose the latter and never regretted it.

He graduated from the School of Mathematics and Mechanics at Leningrad State University as an applied mathematician in 1945. It took him just one additional year to obtain his Ph.D. in 1946. He was drafted into the Soviet army during World War II.

In 1943 he joined the U.S.S.R.'s Main Geophysical Observatory and worked there till 1981, when he was fired after he applied for emigration from the former Soviet Union. From the early 1950s until he applied for emigration, he was also a professor at the Leningrad Hydrometeorological Institute.

Over the years, he made enormous contributions in the areas of objective analysis of meteorological fields, dynamic meteorology, numerical weather prediction, climate theory, applied meteorology, and climatology. His pioneering work on optimal interpolation analysis was a major advance that brought him well-deserved recognition throughout the world's scientific community.

Lev Gandin wrote over 200 journal papers and 14 books. In addition to his internationally famous classic *Objective Analysis of Meteorological Fields* (1963), he co-authored *Dynamic Meteorology* (1955), *Applied Meteorology* (1973), and several textbooks.

Lev supervised over 100 master's degree students and over 20 doctoral students. His former students are working now all over the world, in the U.S., Europe, Asia, and the former Soviet Union. Through their work and the work of those inspired by his ideas, he established his legacy in our field.

From 1981 to 1987 Lev continued work at home, being consulted by his colleagues, and he even taught at home for free. Many of his U.S. and European colleagues and friends visited with him during that difficult and

uncertain time. He always had an enormous gratitude to those who remembered him at that time. During this time he also developed his last major contribution to meteorology, the theory of complex quality control.

After he emigrated to the U.S. in December 1987, Bill Bonner and Ron McPherson offered Lev a UCAR/Visiting Scientists Program senior scientist position at the National Centers for Environmental Prediction (NCEP, formerly NMC). He considered this a great second chance in his professional life, and he enjoyed every moment of it. He deeply respected people who worked with him, and in particular enjoyed ten years of fruitful collaboration with William Collins. They developed and implemented a highly successful complex quality control system at NCEP that has since been adopted at many other centers. Lev was very proud of his contributions to the overall NCEP effort and happy that he was able to work at NCEP almost to his end.

Lev was survived by his wife Nadezhda and his sons Nick and Alexey. Their love and support enlightened his entire life. His friends and colleagues will remember him as a superb pioneering scientist and as a great human being.

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Edited by Bob Henson,



The Staff Notes Monthly Summer Reading Guide

Summer reading doesn't have to be all potboilers, whodunits, and fluff (although each has its merits). It's possible to be entertained while learning something about the scientific enterprise or the earth system itself. If this is your season to catch up on reading, consider these releases from a variety of genres. Each is recommended by at least one of your colleagues, and two of them were written by NCAR scientists. Books available at the ML or FL libraries are so indicated at the end of each reference.

A novel approach to Antarctica

Carol Park (RAP) tells us that *Antarctic Navigation*, by Elizabeth Arthur (Alfred A. Knopf) is "one of the best books I've read recently. The story is a contemporary fictional account of an expedition to Antarctica led by a woman. It's based on facts from previous British Antarctic expeditions. Growing up in Colorado, the female character becomes fascinated with Scott's expedition of the early 1900s and sets out to recreate his journey nearly one hundred years later.

"It's a great story, especially for those curious about Antarctica and those who are fascinated with climbing expeditions and all the technology and logistics an expedition to 'The Ice' entails. More comprehensive than Jon Krakauer's *Into Thin Air* (with a coming-of-age tale woven into the expedition story), it is nonetheless similarly suspenseful, a page-turner that's difficult to put down (plan on some 3:00 a.m. reading sessions). Even though *Antarctic Navigation* is fiction, Arthur did her scientific homework well--there's even some vulcanology thrown in." [In 1990, before writing this novel, Arthur became the first participant in the Antarctic Artists & Writers program, sponsored by NSF.]

The Manhattan Project revisited

NCAR archivist **Diane Rabson** (Library and Information Services) found herself steered to three pieces of fiction set in an outpost far different from Antarctica. "A spring trip to Bandelier National Monument and several fascinating hours spent in the Los Alamos National Laboratories' Bradbury Science Museum inspired me this summer to read everything I could about the Manhattan Project. Since my uncle was a scientist at the Oak Ridge Laboratory in the 1950s, the Los Alamos visit also raised unexpected memories for me of vacations spent in that humid, beautiful spot near Knoxville, Tennessee. (Wonder if my mother saved those souvenir radioactive dimes.)

"I began by reading laboratory histories, biographies of Robert Oppenheimer, and memoirs of people who lived in Los Alamos from 1943 to 1945. Most recently I turned to fiction, curious how the inevitably complex story of the creation of the atomic bomb would be framed in three different novels.

"*Beginning the World Again*, by Roberta Silman (Viking) is a reliable account of the Manhattan Project told from the viewpoint of the young wife of an emigré scientist. While not all the voices sound authentic, the details of peoples' lives, work, and frustrations in this extraordinary military/scientific city are presented well. From the mystery shelves, Joseph Kanon's *Los Alamos* (Broadway Books) is a somewhat lurid, not entirely believable murder story with espionage at its core. The mystery *Stallion Gate*, by Martin Cruz Smith (Viking) is my favorite of the three. It focuses on Joe Peña, a Pueblo Indian who serves as Oppenheimer's driver. Refreshingly nonstereotypical, the book reveals the troubling undercurrent of racism in the forties, among many other themes.

Science is slim in these volumes, although technical explanations for problems like the design for the implosion device that sets off the 'gadget' are serviceable. Remarkably, the defining (and hackneyed) event of the project, the Trinity

test, is well done in each book. Other themes--Oppenheimer's charisma and vulnerability as a 'security risk,' the scientists' misgivings after Hiroshima and Nagasaki, the war itself--are developed eloquently, not simplistically, and made me scurry back to read more histories."

Let them introduce you

If nonfiction is more your cup of tea, the NCAR libraries have some enticing options. We asked several members of the book selection committee (see sidebar) for their suggestions.

For a more scholarly yet introductory treatment of climate-change issues, **Fred Clare** (SCD) suggests *Global Environmental Change: An Atmospheric Perspective*, by John Horel and Jack Geisler (John Wiley & Sons), "an excellent, well-presented overview for the uninitiated." [Mesa, GE 149 .H67 1997] Still haven't gotten around to taking that atmospheric chemistry class? **Bill Mankin** (ACD) endorses *Basic Physical Chemistry for the Atmospheric Sciences*, by Peter Hobbs (Cambridge University Press), as "an excellent introduction for nonchemists to the relevant chemical principles, especially the effects of aerosols." [Mesa, QC 861.2 .H63 1995] **Dick Valent** calls *A History of Scientific Computing* (Addison-Wesley) "a gentle introduction to the topic, especially high-speed computing." [Foothills, QA 76.17 .H59 1990]

For a more offbeat nonfiction experience, **Ralph Milliff** (CGD) recommends *A Civil Action*, edited by Jonathan Harr and Marty Asher (Random House), "a compelling book written for the general public about the pollution of groundwater, written from a the perspective of the plaintiff's lawyer." And **Charlie Knight** (MMM) enjoyed *Ravens in Winter*, by Bernd Heinrich (Summit Books), "a research study on some very puzzling behavior of ravens that Heinrich observed in the Maine woods and how he figured out their behavior. The book has some super commentaries on scientific funding and all kinds of other nice stuff."

Display it again, Ed

Edward Tufte, the oracle of clear, concise graphical description, is back on the scene with a new book soon to reach the NCAR libraries. **Gayl Gray** (Library and Information Services) suspects it will be a hit among staff. Clearly, Tufte is after our own hearts. The cover of *Visual Explanations: Images and Quantities, Evidence and Narrative* (Graphics Press) features Tufte's own take on the familiar thunderstorm visualizations produced at the National Center for Supercomputing Applications.

The book follows Tufte's previous classics *The Visual Display of Quantitative Information* and *Envisioning Information*. This volume, says the publisher, "is about pictures of verbs, the representation of mechanism and motion, process and dynamics, causes and effects, explanation and narrative." The phenomena at hand range from thunderstorms to the corrupted O-rings that sealed the fate of the space shuttle Challenger, a flaw Tufte maintains could have been spotted in time had better graphic tools been in the hands of NASA technicians. For a technical guidebook, *Visual Explanations* is a great summer read: it's light, bright, clean, and colorful. [Foothills, on order]

Two titles from ESIG authors

Face it: you won't be able to escape the El Niño/Southern Oscillation this winter, so why not prepare yourself now for those cocktail-party queries by finding out how 36 experts describe ENSO in their own words. You'll find that and much more in *Currents of Change: El Niño's Impact on Climate and Society* (Cambridge University Press), by ESIG senior scientist **Mickey Glantz**. Published last fall and now in its second printing, *Currents of Change* is a concise road map to scientific and social thought on the phenomenon. Mickey, along with numerous guest experts, considers the state of prediction research and the value of forecasts in preparing for widespread effects, from drought to malaria epidemics. There's even a crossword puzzle to test your knowledge of ENSO. [Foothills, GC 296.8 .E4 G53 1996]

How do you measure the worth of predicting ENSO--or anything else, for that matter? Another ESIG senior scientist, **Rick Katz**, teamed up with the late Allan Murphy (Oregon State University) to tackle that question. (Murphy died

early this month after a battle with cancer.) The two researchers edited *Economic Value of Weather and Climate Forecasts* (Cambridge University Press). The just-released volume operates from the premise that weather information has value only as it affects human behavior. CGD's **Joe Tribbia** opens the book with a brief history of weather prediction and a discussion of predictability. Murphy delves into the many ways forecasts can be statistically verified. The book's editors conclude with prototype models for decision making in scenarios ranging from the simplest--whether or not to carry an umbrella--to the most complex and dynamic. [Foothills, on order]

Hot politics

ENSO could be fighting for front-page space this December with the United Nations climate negotiations scheduled for Kyoto, Japan. Award-winning journalist Ross Gelbspan has jumped into the climate-change fray with another book high on Gayl's A-list: *The Heat Is On* (Addison-Wesley). Gelbspan makes a painstaking case that the trillion-dollar coal and oil industries--"the biggest enterprise in human history"--sense a real threat to their existence and are fighting back through "a disinformation campaign as ferocious as any in history," abetted by a partisan Congress, industry-funded scientists, and reporters who pursue a misleading balance between skeptics and the scientific consensus.

Occasionally Gelbspan overstates the science, as when he takes it as a given that global warming is making hurricanes more fierce. Still, his analysis of the titanic power plays staged largely behind the public's back is a fascinating read. Gelbspan includes extended statements from four esteemed climate researchers, including **Tom Wigley** (CGD), along with shorter excerpts such as a two-page transcript of debate between Vice President Al Gore and Richard Lindzen (Massachusetts Institute of Technology). [Mesa, on order]

Finally, **Carol Rasmussen** (UCAR Communications) suggests two good reads that will take you back to a time when environmental struggles were more earthbound.

"I've recommended *Cadillac Desert*, by Marc Reisner (Penguin), to all my friends already, so I'm glad to get a chance to talk about it to someone new. It's a thorough, well-researched, well-written history of water use in the western United States. Reisner is clearly an advocate for conservation, but he doesn't need to preach: by simply documenting a century of greed, waste, environmental loss, and pork-barrel politics, he should make believers out of most readers. The book touches on all the fields needed to understand the subject, but it's the politics that I found most enthralling. The material on the rivalry between the Army Corps of Engineers and the Bureau of Reclamation is funny if you can forget that the agencies were using your (and your parents') tax dollars to outmaneuver each other in building large water projects of dubious value.

"The book was written around 1980, but in the paperback edition Reisner has updated his story with a gleam of hope, talking about the recent defeat of several large and questionable projects.

"For further insight on water-use policy in the early days of the West, try Wallace Stegner's *Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West* (Penguin). Powell was a visionary whose ideas make a lot of sense to us now, though they were completely discounted in his day. He was also an adventurer in the grand style, and the story of his explorations of the Colorado River makes great hammock reading on a hot day." •BH

Reading for fun and service: the NCAR Library Book Selection Committee:

"We have 47 people who participate," says Gayl Gray, speaking of the staff who volunteer to help the NCAR Library select the new books and journals acquired each year. Library staff sort through reams of promotional materials sent to the library and compile them by subject: chemistry, oceanography, fluid dynamics, computing, and so forth. Each stack is sent to a pair of people from the committee who have research interests related to the topic; the pair then makes

recommendations. "We generally buy about two-thirds of what the committee suggests," says Gayl.

"Many libraries I'm familiar with don't routinely survey their users. We feel it's our staff who know what they need to be reading. The committee does a fabulous job, and they are so conscientious." Contact Gayl, gayl@ucar.edu, ext. 1180, if you'd like to help out. Gayl also urges all staff to bring personal reading discoveries to the library's attention whenever they seem appropriate for the NCAR collection. •BH



Gayl Gray. (Photo by Carlye Calvin.)

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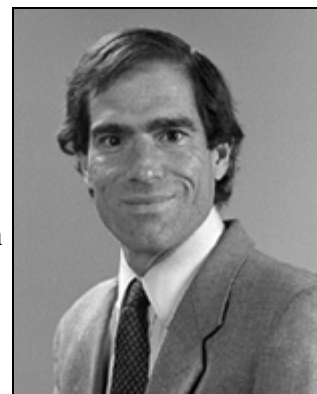
Prepared for the Web by Jacque Marshall



Science Briefing

NCAR researchers **Andy Heymsfield (MMM)** and **Sasha Madronich (ACD)** were appointed to the post of senior scientist by the UCAR Board of Trustees in its July meeting. Chosen from within NCAR to provide the center with long-term scientific leadership, senior scientists are selected on the basis of individual competence in research and in other activities that enhance NCAR's interaction with scientists elsewhere. The position is analogous to that of full professor at a tenure-granting university.

Currently in MMM's Physical Meteorology Group, Andy has worked on a range of problems related to cloud microphysics, with a focus on ice clouds, especially cirrus and anvils associated with cumulonimbi. He was a principal investigator in several related field programs, including NASA's First ISCCP (International Satellite Cloud Climatology Project) Field Experiments I and II. Andy has studied tropical cirrus since 1973 and, since becoming an associate of the Scripps Institution of Oceanography's Center for Clouds, Chemistry and Climate in 1992, he has collaborated with Veerabhadran Ramanathan and others at Scripps on the Central Equatorial Pacific Experiment. He has also been involved in several mountain wave-cloud studies over the Front Range and recently participated in the Subsonic Aircraft: Contrail and Cloud Effects Special Study field program, studying contrail microphysics.



Andy Heymsfield

From 1988 to 1996, Andy served on the International Commission on Cloud Physics of the International Association of Meteorology and Atmospheric Physics. He was chair of the American Meteorological Society Committee on Cloud Physics from 1985 to 1987. Andy has been an associate editor of *Atmospheric Environment* since 1988 and held the same post for the *Journal of the Atmospheric Sciences* from 1987 to 1994. His technical accomplishments include development of a balloon-borne ice particle replicator and an airborne video ice particle sampler.

Andy joined NCAR in 1975 after two years at Meteorology Research, Inc. He received a bachelor's degree in physics at the State University of New York at Fredonia, followed by master's and doctoral degrees in meteorology at the University of Chicago.



Sasha is the head of ACD's Theoretical Studies and Modeling Section and the leader of ACD's Regional Studies and Processes Project. His research has focused on ozone and oxidation processes in the troposphere. Sasha and his colleagues have developed a hierarchy of models to study oxidation, ranging from box models with highly detailed chemistry to a regional model that incorporates episodic meteorology. Sasha's recent work also includes an assessment of the impact of stratospheric ozone changes on ultraviolet radiation and the resulting incidence of skin cancer.

Active in several programs to evaluate and monitor ultraviolet radiation and ozone depletion, Sasha serves on standing committees of the World Meteorological Organization, the United Nations Environment Programme, the U.S. Departments of Agriculture and Energy, and the Environmental Protection Agency. He is a member of NCAR's Geophysical Turbulence Program and a science research mentor in the Significant Opportunities in Atmospheric Research and Science (SOARS) program.

Sasha has been at NCAR since 1985, with the exception of a year spent as a senior research associate at SUNY-Albany (1987-88). Before moving to Boulder, he spent four years as a chemical physicist at AeroChem Research Labs in Princeton, New Jersey. Sasha earned his bachelor's and master's degrees in engineering physics and a second

master's in electrical engineering, all at Cornell University, before completing his doctorate in physical chemistry at York University in 1982.

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Changing of the guard: Bill Rawson retires as two new veeps arrive

It's a busy month in the Fleischmann Building. The home of UCAR's top management is seeing its biggest turnover since the mid-1980s. On 2 September, Bill Rawson, vice president for finance and administration, will hand over the reins to his successor, Katy Schmoll (he will officially retire on 12 September). Bill's counterpart, vice president for corporate affairs Harriet Barker, is moving to FL4 (formerly UCAR North) as another new UCAR vice president, Jack Fellows, arrives on the scene. Both Katy and Jack are pulling up stakes from key positions in Washington, D.C., to join the UCAR team. More on the two new veeps will appear in the September *Staff Notes Monthly*. Harriet will continue to serve as a UCAR vice president during and for some time after the transition.

"It's been much more difficult than I ever thought it would be," says Bill Rawson, "to think about stepping down and to wonder what you do with the rest of your life. The word 'retirement' has not been in my lexicon, so I've been using euphemisms for the last several months."

Bill started work at NCAR on 27 December 1969, barely two years after the Mesa Lab opened. After serving as a budget and planning specialist and then heading the B&P office, Bill was promoted to direct the old NCAR Administration Division in 1978. In 1980, Bill became director of finance and administration of UCAR and wore both NCAR and UCAR hats until February 1984, when both he and Harriet Barker were appointed as UCAR vice presidents.

Despite the ups and downs in particular programs, the UCAR/NCAR/UOP enterprise has grown nearly every year of Bill's tenure. As the institution's chief financial officer, he's witnessed growth in annual funding to a level that now tops \$150 million. "When I got here," Bill recalls, "the first budget I worked on was \$13 million." Along with the growth has come increased complexity, especially as other-agency funding and regulatory requirements have risen. Bill has stayed the course, although he's been frustrated lately by "the increase in bureaucratic requirements placed on us. It's stifling science, and we shouldn't have to be doing it."

Perhaps Bill's most notable legacy is what he refers to as the "creative financing" put to use in major building and facility acquisitions. Under Bill's watch, UCAR

- initiated the plan to stabilize and grow the corporate reserve fund by developing the corporate general-and-administrative (G&A) cost-recovery system in 1981
- acquired the first production-model Cray supercomputer in 1976 and subsequent models of greater power by convincing Boulder County to issue tax-exempt bonds on behalf of UCAR
- bought the Foothills Lab from NBI in 1990, saving millions in construction costs and shortening the timeline for staff consolidation
- updated the accounting data base to incorporate distributed users and multiinstitutional projects
- launched the UCAR Foundation, which Bill plans to remain involved in (see below)



Bill Rawson. (Photo by Carlye Calvin.)

From Utah to the Pentagon

Bill's commitment to public service was born during his high school days in Utah. A native of Salt Lake City, Bill credits a civics teacher with kindling his interest in politics and government. "Then I took Poli Sci 101 in college and the guy who taught it, J. D. Williams, was spectacular. He really sparked my interest, especially in public administration." (Bill stays in touch with a close-knit group of college friends that includes motivational speaker and writer Stephen Covey.)

Before Bill could graduate from the University of Utah, the Korean War intervened. He opted to join the National Guard, then served the two-year missionary stint common among his Mormon contemporaries, after which he joined the Army. "I got a plum assignment. They sent me to the Army Administrator's School, where the top graduate got to go to the office of the [Army] chief of staff." Stationed at the Pentagon with a Q (top-level) security clearance, Bill worked at the chief of staff's message center, dealing with missives both classified and unclassified. "I learned quickly that the classification system had a lot of silliness in it. Also, in those days, everything was accessible. Anyone off the street could walk into the Pentagon and march through the corridors."

After two years in the service, Bill polished off his bachelor's degree at Utah, then returned to Washington to try law school. (Because of surgery, he dropped out of law school and, because of career opportunities that followed, didn't return.) In D.C., a friend advised him to check out a new government branch devoted to science. "After Sputnik went up in 1957, science funding had increased dramatically and NSF was growing." While awaiting appointment as a government management intern, Bill got his foot in the NSF door as a clerk-typist, passing the typing test at 36 words per minute. "My mother had insisted that I take typing in junior high, and she was right. It may have been the most important class I ever took."



Clockwise from right: Bill Rawson, Rick Anthes, and Harriet Barker confer in this file photo from 1988.

Bill rose quickly through the NSF ranks, becoming a senior contracts negotiator in the mid-sixties and head of the General Contracts Section from 1966 on. He flew to Israel, India, Egypt, Ceylon, and Tunisia--and behind the Iron Curtain to Poland and Yugoslavia--setting up translation programs for scientific literature. The frequent flying caught up with Bill on 12 April 1968, when he narrowly escaped death on a Boeing 707 aircraft departing London's Heathrow Airport.

"I was reading Look magazine and, about four minutes after takeoff, there was a big bang. The guy next to me said, 'My God, the wing's on fire.' I looked out and, sure enough, it was. I thought we'd probably go into the English Channel." Instead, the plane was able to return to Heathrow and land just before the burning left wing fell off. "Because I was in the window exit adjacent to the right wing, I pulled the hatch down, but I remembered I had the original copy of a translated manuscript from Egypt. We'd worked for a year on it! So then I was fiddling around in the overhead compartment while people were shooting past me. Finally I gave up and got off the plane."

Six people died in the smoke and flames that day. Burned by the experience, both metaphorically and literally (Bill suffered third-degree burns on his hand while exiting the plane), "I got home and decided I needed to do something else." He was investigating the option of a doctorate at Brigham Young University in 1969 when Ed Wolff, then the assistant director of NCAR, phoned him about an opening in Boulder. "The budget process at NCAR had been almost ad hoc, and they'd decided it was time to change it. I came out to Boulder and decided, Wow, this is a pretty exciting place." The rest, as they say, is history.

Ever the optimist

Bill had originally planned to retire at his 30-year service mark, which would have been five days before the year 2000. However, health concerns (cardiovascular problems and diabetes) prompted his decision to make an earlier exit. "I know it's the right decision," says Bill, "but to implement it is fraught with emotional things that you wouldn't anticipate."

The UCAR Board of Trustees honored Bill on 9 July with a reception and a testimonial. "Well known for his probity; his deep commitment to UCAR's values, goals, and activities; his integrity; and his genuine care for his associates and colleagues, Bill has truly left his mark on UCAR and all the people he has worked with," said the board members, who presented Bill with an authentic 18th-century map prepared by explorer Captain James Cook's cartographer following his voyage to the west coast of North America. The trustees wished Bill "sunny skies, wonderful new horizons, wind-filled sails, and the best of everything."

Along with spending time with his three children and four grandchildren (a fifth is on the way), Bill's future will include continued involvement with the UCAR Foundation, which he and Walt Roberts created in the mid-1980s. The foundation gave birth to the now-independent WITI Corp., which Bill believes "could provide a substantial revenue stream to the organization." Meanwhile, as the first-ever UCAR vice president emeritus, Bill will work with the foundation on a pro bono basis "to see if the technology commercialization effort will pay for itself. It's going to be kind of fun to focus on one thing rather than five thousand."

As for the institution as a whole, Bill sees good things in store. "We're on the cusp of understanding regional climate impacts. We have the capability, if we can find the funding, to significantly improve forecasts and detection of severe weather." However, he warns, "We have got to reestablish the importance of fundamental research not tied to transient politics."

All in all, says Bill, "I have no doubt the organization is going to continue to grow and be successful. We do good things and we have great people. Our third- and fourth-year NSF reviews were very positive. I'm optimistic by nature, but I feel especially optimistic about this place." •BH

How about Bill's real accomplishments?

At his 9 July reception, Bill Rawson--tongue in close proximity to cheek--related three of his most important accomplishments:

- "Being a designated driver is certainly one of them." (Bill is a teetotaler.)
- "In 1970 [former chief accountant] Wray Freiboth and I started the NCAR Golf Classic."
- "In 1978 I created the soup and salad bar, over the protests of George Lamb [then the NCAR facilities director]."

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Teachers get a new chance to LEARN from NCAR, UOP scientists

Ask the middle school science teachers participating in LEARN: Atmospheric Science Explorers what they valued most about LEARN's recent Summer Institute in Boulder, and they'll tell you it was the opportunity to spend time with NCAR and UOP scientists.

"It was a day full of experimenting and hypothesizing--exactly the way I like to learn science," wrote one teacher after spending the day with Charlie Knight (MMM). Another, who liked being able to get some of her thornier questions answered, "gained a greater understanding of why forecasting is so difficult." Several teachers appreciated the opportunity to see "what scientists actually do."

Funded by NSF's Teacher Enhancement Program, the core of LEARN (Laboratory Experience in Atmospheric Research at NCAR) is a series of workshops over three consecutive summers for 35 teachers from eight rural regions around Colorado. This year's Summer Institute, June 9-27, covered fundamentals of atmospheric dynamics and basic meteorology.

Twenty-six NCAR/UOP staff members gave their time and expertise to the Summer Institute. In between daily weather briefings and presentations, teachers devised barometers from coffee cans and experimented with other hands-on projects to take back to their classrooms around the state.

"The scientists who worked with the LEARN teachers were great. They put in a lot of time and energy to make the workshop successful," says Sandra Henderson, science educator and LEARN project staff member. Some scientists gave presentations, some served as mentors to small groups of teachers, and some did both.

Sandra and LEARN director Carol McLaren work with the volunteer scientists, suggesting hands-on activities to fit their areas of expertise. Raj Pandya (MMM) prepared by reading introductory texts on atmospheric science and rehearsing his demonstrations in the kitchen with his wife. "She helped me smooth out my explanations," he says.

Working as a team, Wendy Abshire, Katy Ginger, and Liz Page took advantage of COMET's training modules for professional meteorologists, adapting them to the LEARN agenda. "We also looked at real-time weather around Colorado. Everyone looked at what was happening in their home town, using radar and satellite images, and we showed them how they could do the same thing in their classrooms, using the Web," reports Wendy. (The team recommends a visit to [Weather Education Resource Links](#).)

NCAR/UOP scientists volunteer with LEARN because they care about science literacy and welcome the opportunity to give something back to the larger community. But once they become involved, they discover an additional benefit: "You discover holes in your understanding when you try to communicate to someone who doesn't have your background," says Peggy LeMone (MMM). "You can't hide behind a term or an equation anymore; you have to sit and think about it." Charlie Knight agrees. "Every time you go back to fundamentals, you

LEARN 1997 Summer Institute Participants

Wendy Abshire, COMET
 Mary Barth, MMM
 Ned Chamberlain, ATD
 Rich Cianflone, COMET
 Al Cooper, ASP
 Katy Ginger, COMET
 Janine Goldstein, JOSS
 Jim Howell, ASP
 Cathy Kessinger, RAP
 Charlie Knight, MMM
 Peggy LeMone, MMM
 Bev Lynds, UCAR/SkyMath
 Greg McFarquhar, MMM
 Linda Mearns, ESIG
 Liz Page, COMET
 Raj Pandya, MMM
 Roger Pielke, ESIG

appreciate more. It really feeds into one's scientific endeavors in a fairly direct way. It's challenging distilling things down to their understandable essences." Peggy is a co-principal investigator on the LEARN grant; she and Charlie help take LEARN on the road during the school year, offering on-site training to additional teachers in the eight participating Colorado regions.

Peggy notes that volunteering with LEARN is helpful for postdocs who want to find out more about teaching. "It gives them a chance to see if they like it, and puts something on their resume that gives them a little competitive edge."

Jordan Powers, ASP
Tim Spangler, COMET
Bjorn Stevens, ASP
Greg Thompson, RAP
John Tuttle, RAP
Tammy Weckwerth, ASP
Morris Weisman, MMM
Doug Wesley, COMET
Steve Williams, JOSS

Raj wanted to get more teaching experience. He was pleasantly surprised. "I didn't know it would be fun--I was pretty nervous beforehand. But I found out we were all learning together. Maybe I knew the answers to the science part, but the teachers had the expertise on what kids could get out of it. So it was more like a partnership."

Fostering that partnership is one of LEARN's goals. "To be successful, we need the expertise of the scientists and the expertise of the teachers, working together," says Sandra. Because she and Carol are aware of the many demands on scientists, they are especially appreciative of LEARN volunteers. "This program would not be possible without the time and dedication of the NCAR scientists," Sandra affirms.

Who makes a good LEARN volunteer? "People who are enthusiastic about their work and like to talk about it, especially to the public and to colleagues who are not in their specialty," says Peggy. Charlie adds that people doing hands-on lab work are naturals as LEARN volunteers.

Next summer's focus is atmospheric chemistry. Carol and Sandra are looking for additional volunteers and invite interested scientists to contact them for more information (cmclaren@ucar.edu, ext. 8109; sandrah@ucar.edu, ext. 8108). •**Zhenya Gallon**

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Edited by Bob Henson, bhenson@ucar.edu

Prepared for the Web by Jacque Marshall

SN MONTHLY

August 1997

New Hires



(front row, left to right)

Bin Wang, postdoctoral I with MMM.

Roseann Suer, contracts administrator I with F&A.

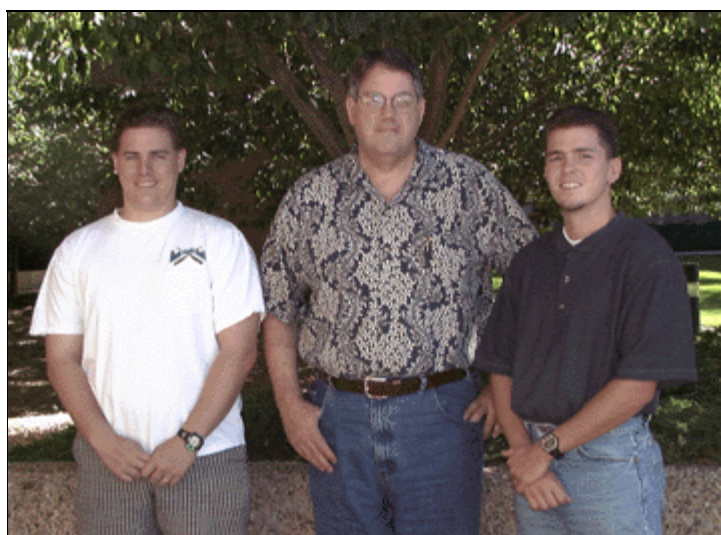
Linda Sitea, grants and development associate with Development and Government Affairs.

(back row, left to right)

William Collins, scientist II with MMM.

Vincent Wayland, software engineer/programmer I with CGD.

Patrick Craig, carpenter with FSS.



(left to right)

Del Vicker, student assistant II with CGD.

Scott Woodward, traffic services clerk with FSS.

Brian Guillen, student assistant II with ATD.

Other New Hires

Heather Allen, postdoctoral I with VSP.
James Besha, student assistant II with MMM.
Matt Briggs, casual with CGD.
David Galloway, visitor with HAO.
Scott Halvorson, visitor with COMET.
John Horel, visitor with COMET.
Weng-Mui Lee, student visitor with ACD.
Hayden Mathews, casual with ATD.
Tiffany Omeron, student visitor with RAP.
Robert Rozumalski, postdoctoral I with COMET.
Richard Slonaker, visitor with VSP.
Shelley Sullivan, administrative assistant with JOSS.
David Werth, postdoctoral I with VSP.
Robert Wilby, project scientist with CGD.

Departures

Jeanne Adams, 25 July
Barbara Appelhans, 11 July
Joseph Barry, 25 July
Jon Bergengren, 11 July
James Berger, 25 July
Michele Betsill, 26 July
Lynn Coats, 11 July
Lara Counts, 1 April
David Eastman, 2 July
Michael George, 21 July
Marilyn Hughes, 30 June
Sandra Johnson, 25 July
Crista Kippes, 18 July
Joan Morton, 11 July
David Pollard, 25 July
Bernard Sauer, 1 March
Marc Stieglitz, 30 June
Jeanette Walters, 25 July

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