Reflections

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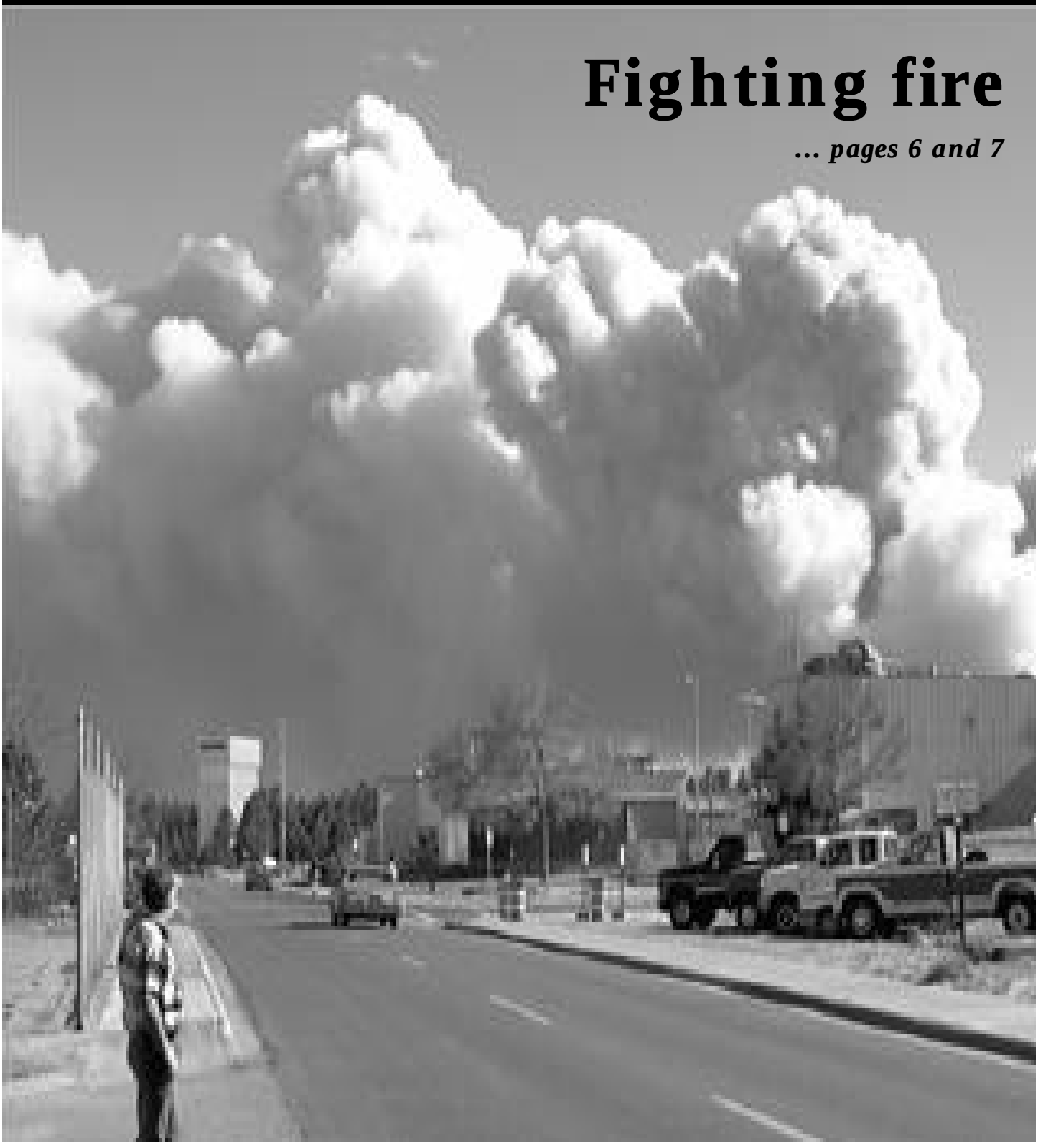

Fighting fire

... pages 6 and 7

A Department of Energy/University of California Laboratory

Inside this issue ...

The cover photo by James E. Rickman of Public Affairs (PA) shows the view along Pajarito Drive of the Dome Fire in April 1996.

Reflections

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editor's journal

Keep the home fires from burning ...

"James McKay, smoke jumper, Missoula, Montana ..." a forest service public information officer read the names of the fatalities — 10 men and four women — at the July 1994 Glenwood Springs Canyon forest fire press conference.

Technology, helicopters, air tankers and satellite imagery can't eliminate the risk of forest fires. But soon after the catastrophe near Glenwood Springs, Colo., Laboratory researchers teamed up with several agencies to develop computer models, with hopes of predicting wildfire behavior, lessening the risk and mitigating the impacts (see the article on pages 6 and 7).

There is the threat of similar, potentially deadly fires in Los Alamos. April 26 is the fourth anniversary of the Dome Fire, a large fire near the Lab that could have turned deadly.

While no one was killed, if the winds had shifted the fire into Frijoles Canyon, the results might have been much different. Once entering the canyon, the fire would have exploded up the steep walls, an occurrence called the chimney effect. The chimney effect is the term that firefighters use for fast-running fires that speed up steep canyons or hills, as the fire did in Glenwood Springs.

A day or so after it was spotted, the Dome Fire blew up. It happened so quickly and violently that 48 firefighters had to deploy their fire shelters. The intense Dome Fire fire burned directly over three of them.

Looking very much like an aluminum foil puptent, a fire shelter maintains cooler air over the firefighters because of the reflective material contained in the shelter's fabric. This trapped cool air protects the firefighters' lungs from the fire's hot air and the shelter shields their bodies from the flames.

This year may be one of the driest years on recent record.

Firefighters worry that Lab employees and the community's residents are complacent. "Remember the Dome Fire" is this year's mantra of the local firefighting officials as we enter the fire season danger.

The Dome Fire did influence positive changes. One important change was the creation of the Interagency Wildfire Management Team (see page 7). In addition, Laboratory firefighters will be trained by Forest Service personnel. As a result they will receive their "red card equivalents," proof that they have completed the training, passed the fitness test and learned to strip and deploy a fire shelter in less than 25 seconds. Another important joint effort is the Technical Area 49 joint agency fire cache. Built with Park Service funds, the facility is a warehouse for such firefighting equipment as chemical retardant, hoses, tools, vehicles, food, water and personal protection equipment. The Lab has built a nearby helipad and cleared an area for temporary water dip tanks used by firefighting helicopters.

Firefighters are called in to put the fire out after they start. We can all strive to prevent fires from occurring. We need to be alert and responsive to the potential threat this year. Careless smoking, cars that backfire, catalytic converters, spark plugs on outdoor equipment, are all devices that can start a fire. Other good fire prevention tips can be found online at *http://www.firewise.org/www/pubs_win.htm*.

Kathy

X Division's Clark tries on new job, lifestyle

by William Heimbach

Bob Clark has traded in his X Division first-floor Administration Building office and casual attire.

Visitors to his new office on the 23rd floor of a United Nations office next to the Danube River in Vienna, Austria, will find him in a suit and tie. And, with a nod to European formality, will probably call him Dr. Clark.

For nearly 20 years at Los Alamos, the theoretical physicist specialized in developing plasma computer models. And, for half that time, Clark collaborated with the International Atomic Energy Agency in Vienna on magnetic-fusion energy projects.

"I always enjoyed working with the people at the IAEA and liked the city of Vienna, so when a position opened up, I applied immediately," he says.

Clark heads the three-person Atomic and Molecular Data Unit, in charge of a physics database focusing on magnetic-fusion energy research.

Bob Clark in his Lab (not Vienna) office. *Photo by Presley Salaz of Imaging Services (CIC-9)*

His group also produces the "Bulletin of Atomic and Molecular Data," a fusion journal.

Clark, his wife Sarah and stepdaughter Diana moved to Vienna in August. "It's a wonderful, beautiful city. There is some kind of activity for everyone," he says. "There are concerts ranging from rock and roll to classical, there are cafes with jazz music and there are restaurants of every description. There's also a terrific public transportation system."

German lessons are a family priority. "We have found most Viennese speak English, but they appreciate our effort to try to communicate in their language," he says.

At work, contrasts to the Laboratory abound. "It's rare to see a man without a coat and tie, and people address each other in formal fashion unless invited to be informal," he says. "I am Dr. or Mr. Clark unless I specifically ask someone to call me Bob."

Other differences? "One thing that takes the newcomer by surprise is the beer and wine in the cafeteria, and a full-service bar in a separate area," he says. "Few people actually drink alcoholic beverages during the working hours, but after work many stop in the bar for a drink before heading off."

The agency also has a commissary offering a worldly selection. "There are frozen steaks from Argentina, chewing gum from Saudi Arabia, squid from Japan and pop tarts from the United States," he says.

Clark is on a three-year leave without pay from his usual job in the Applied Theoretical and Computational Physics (X) Division. He's paid tax-free in Austrian schillings at IAEA and, while his check took a dip, generous benefits more than make up the difference.

'It's a wonderful, beautiful city. There is some kind of activity for everyone.'

Clark's rent is subsidized and many education costs for children are covered, even if they are in a U.S. college.

IAEA also pays for dependent children in the United States to visit Vienna annually, and for the Clarks to visit stateside every two years.

Auto savings are another plus. No tax or import fee is charged UN employees, a 35 percent saving. Many car companies also offer a 15 percent discount.

"This explains the number of Mercedes and BMWs in the agency parking lot," he smiles.

The best part of the experience? "The people," says Clark. "The agency has 2,000 employees from all over the world, motivated by the desire to serve the international community."

These answers are blowing in the wind

by Nancy Ambrosiano

The "urban canyons" in large cities make the movement of airborne plumes and particles complicated, presenting special challenges to emergency responders. *Graphic by Ed Vigil*

High-tech mapping of the winds in "urban canyons" is bringing a new level of safety to firefighters, police, medical teams and others who respond rapidly to emergencies where hazardous materials may be present.

Scientists are using Laboratory supercomputers and wind tunnels to perfect their understanding of the eddies and transport of airborne particles of chemical or biological hazards in cities, parks and even inside buildings — information that's proving vital to emergency crews as they plan routes for civilian escape and their own teams' responses.

A team from Los Alamos, the National Oceanic and Atmospheric Administration and Lawrence Livermore National Laboratory has been confirming the accuracy of computer-simulated wind flow and particle dispersion by comparing their model output to actual wind-tunnel experiments. A "rules of thumb" document for emergency responders is already available on the World Wide Web.

In the few months that the "rules of thumb" document has been available online, officials from several agencies — including the Los Angeles County Fire Department, the U.S. State Department, the International Association of Fire Chiefs and a consultant for the Federal Emergency Management Agency — have applauded the document. An official of the Governor's Office of Emergency Services in California called it "enlightening from the standpoint of officer safety and civilian movement in a chem-bio environment."

The effort, part of the Department of Energy's Chem-Bio Non-Proliferation Program, is aimed at mapping how air flows in the complex shapes of manmade environments. And thanks to varied computer models available at Los Alamos and other laboratories, there is a range of tools from which to choose.

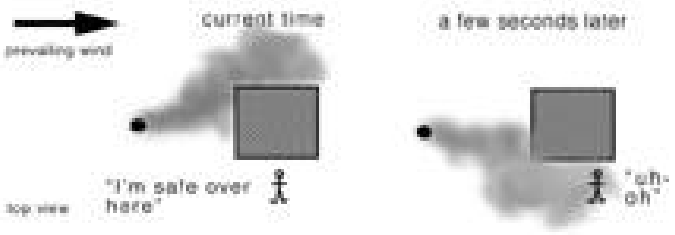
By comparing the "virtual" airflows on the computer to those actually visible in a wind tunnel (the Environmental Protections Agency's Fluid Modeling Facility at Research Triangle Park, N.C.), researchers can see how close to the mark their computer results might be.

Pinning down these flow patterns has a direct application in the real world, where police, fire and other emergency crews may need to respond to a chemical or biological agent release. Knowing something as essential as whether to stay indoors or out, on the east or west side of a building or at floor or roof level can be lifesaving information. Thus, development of a publicly available document and the continuous improvement of the computer models take on more than theoretical importance.

The researchers include Michael Brown, Gerald Streit and David DeCroix of Energy and Environmental Analysis (TSA-4); Scott Smith and Jon Reisner of Atmospheric and Climate Sciences (EES-8); Robert Lawson of the U.S. Environmental Protection Agency; and Bob Lee, Stevens Chan and David Stevens of Lawrence Livermore National Laboratory.

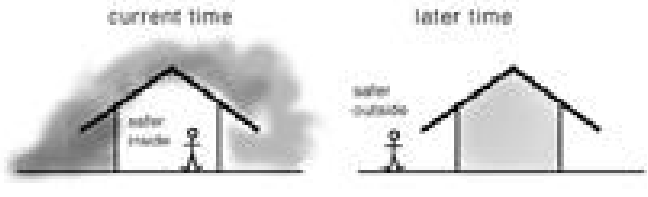
More information about the project, including a link to the document "Emergency Responders' 'Rules-of-Thumb' for Air Toxic Releases in Urban Environments," is available at *http://www.lanl.gov/orgs/tsa/tsa4/aquality/chbio.html*.

The "Emergency Responders' Rules-of-Thumb for Air Toxics Releases in Urban Environments," created and placed on the World Wide Web by Lab researchers, lists 10 situations, such as the ones shown here, to help firefighters, police, medical teams and others deal with emergencies.



Small-scale wind variability

Due to the turbulent nature of the wind, it is very common for a plume to bounce from one side of the building to the other; hence, don't assume that you are safe on one side of the building just because the plume is currently on the other side.



Indoor effects

For an outdoor release, modeling studies show that concentrations can initially be lower indoors, but then later the concentrations become lower outside. These relationships, however, depend upon the details of the building ventilation.

Virtual water water everywhere

by Kay Roybal

A project that draws on the Laboratory's capability to perform advanced high-resolution hydrological modeling is proving to be a learning experience for both scientists and the public.

The Laboratory has completed the first soil moisture maps of the Upper Rio Grande Basin as part of an effort to deal responsibly with the region's need to maximize use of its precious water resources. Living and working in the semiarid Southwest, Laboratory scientists are aware of the importance of water management and the intense demands that population growth and economic development have placed on the area's limited water resources.

Last year, the National Science Foundation established and funded a Science and Technology Center on the Sustainability of Water Resources in Semi-Arid Regions. Part of that effort uses unclassified Laboratory supercomputers to create a model of water resources in the Rio Grande Basin.

The five-year, $16 million project led by the University of Arizona will develop a virtual watershed laboratory where scientists can conduct experiments on simulated watersheds that faithfully reflect the physics of real watersheds. The Laboratory's role is to develop a computing environment that supports experiments and detailed simulations of the hydrology of large river basins like the Rio Grande or Colorado. Research so far has focused mainly on land surface and atmospheric interactions

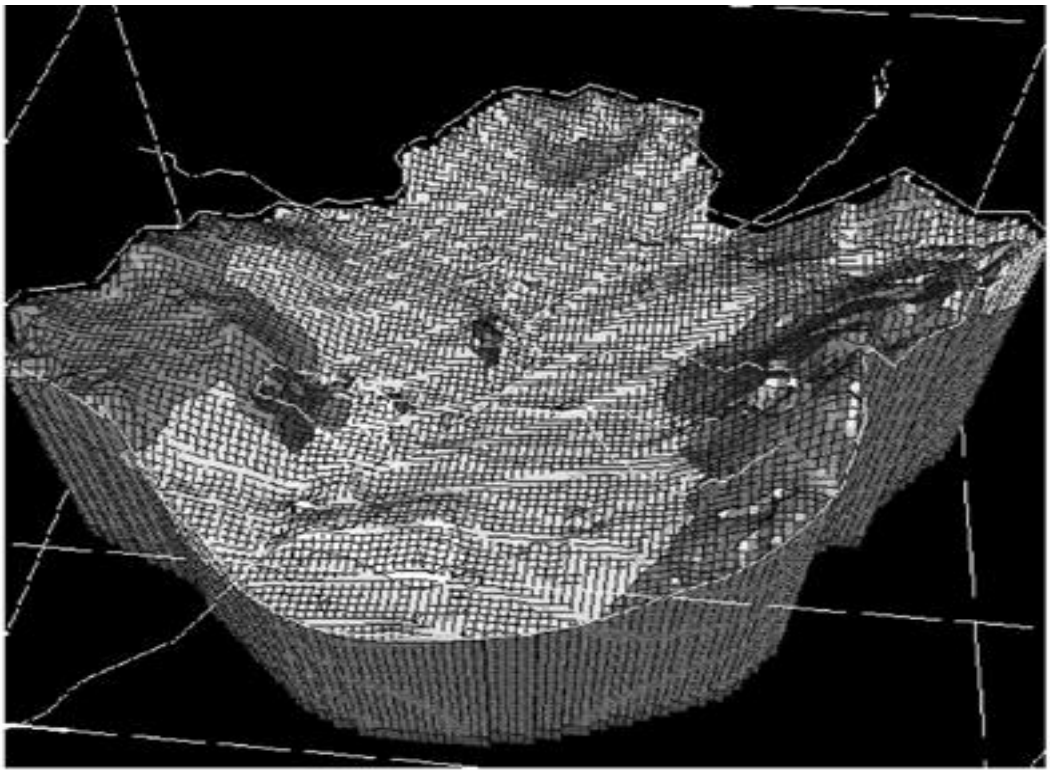
The work will link models to different components of a basin's water cycle. Components will include models of weather, land surface, groundwater hydrology and river networks, as well as such socio-economic elements as agriculture and land use. Los Alamos also will manage the large databases required by detailed basin simulations and support the visualization and analysis of the physics of the hydrological cycle. The Lab also will apply parallel computing and advanced computational techniques to help other researchers improve the efficiency of models.

"This is an important opportunity for the Laboratory to demonstrate our unclassified high-performance computing skills," said Larry Winter of Scientific Computing (CIC-19), the Lab's principal investigator for the project.

The center also will help bring water resource management and conservation issues to the forefront of science education at all levels. Planned activities include K-12 teacher education programs with field study and the development of new classroom materials and outreach to Native American schools.

The water resources consortium includes the National Science Foundation, the University of Arizona, the University of California at Los Angeles, University of New Mexico, New Mexico Institute of Mining and Technology, Penn State and Columbia universities, the U.S. Geological Survey, the U.S. Department of Agriculture, the Army Corps of Engineers, the International Boundary and Water Commission and the Scripps Research Institute.

The National Science Foundation established the Science and Technology Center program in 1987 to respond to a White House commitment to fund research that creates educational opportunities. The program also encourages technology transfer and provides innovative approaches to interdisciplinary research challenges.



An initial computer-generated geologic map of the Española Groundwater Basin in Northern New Mexico identifies the major geologic units used by modelers to simulate groundwater flow for the Rio Grande Basin study. The different shades show the various geologic features from the Precambrian basement rocks defining the bottom surface to the regional water table on top. The upper, or northern, end of the basin extends to the Velarde area, and the basin includes Santa Fe, Los Alamos and Española. It is bounded on the east by the Sangre de Cristo Mountains and on the west by the Jemez Mountains. *Graphic courtesy of Elizabeth Keating, EES-5*

Reflections

Fighting fire with ... advanced computer models

by Kay Roybal

A bolt of lightning hits a stand of trees near the Pajarito ski hill on a hot summer day. As the treetops burn, winds begin to pick up. Thousands of Laboratory workers are going about their workday duties when the fire is reported.

Los Alamos firefighters must quickly decide about evacuations, resource deployment and other emergency-response issues. Someday, they may have a powerful tool to guide them in dealing with such a scenario, courtesy of Atmospheric and Climate Sciences (EES-8), Theoretical Fluids (T-3) and the Delphi Project.

A new set of computer simulations juxtaposes a fire model based on combustion physics with EES-8 meteorologist Jon Reisner's atmospheric model that describes a variety of weather conditions. Eventually, this model, called HIGRAD/FIRETEC, may allow firefighters and other emergency responders to anticipate where and how quickly a fire will move so they can stay ahead of it and minimize loss of life and property.

Because fires are a series of small, intense physical phenomena affected by complex terrain and atmospheric conditions, scientists had trouble predicting their spread reliably under certain conditions before supercomputers were available. The Lab has developed a physical model to simulate wildfires with a resolution as small as a few meters.

"Fires are a real complicated problem," said James Bossert of EES-8, who heads the Laboratory team. "They happen at a very small scale and are affected by terrain, wind and temperature. The heat of a fire has a strong feedback on the atmosphere, creating wind that in turn feeds the fire."

Andy White, director of the Lab's Delphi Project, became interested in wildfire modeling as a high-performance computing problem. Shortly after the 1994 South Canyon fire in Glenwood Springs, Colo., killed 14 firefighters, other Lab scientists, including Rodman Linn of EES-8 and Frank Harlow of T-3, developed FIRETEC to simulate wildfire in complex terrain with meteorological and fuel conditions that mirror catastrophic wildfires. With the help of Judy Winterkamp, also in EES-8, they modeled the South Canyon fire and the 1996 Calabasas fire near Malibu, Calif., and began collaborating with the U.S. Forest Service, NASA Kennedy Space Center and Los Angeles County to simulate patterns of prescribed fires.

"The (Calabasas) fire had been smoldering in the riparian area at the bottom of the canyon and appeared to be inactive," Linn said. "It then rushed up the side of the canyon and caught firefighting personnel off guard. The FIRETEC simulation captured this behavior and demonstrated realistic fire spread rates up a steep slope towards the residential area where the firefighters were located."

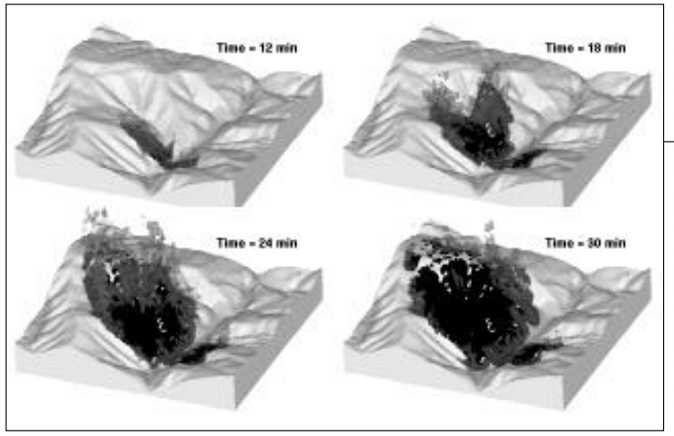
The Laboratory's Site-Wide Environmental Impact Statement has identified wildfire as the greatest threat to Los Alamos operations. Recent major blazes in the area have intensified efforts to adapt the model to real fire situations.

"Fires have been suppressed over the years, so there's lots of fuel wood available," Bossert said. "And as we saw in the Dome and the Oso Complex fires, there's no way to stop it once it gets going."

The Dome Fire flared up from an improperly extinguished campfire in April 1996 and covered more than 16,000 acres south of Los Alamos. In late June and early July of 1998, the Oso Complex fire burned more than 5,000 acres north of the town.

"To assess the threats to Lab property in a wildfire, we have to know how intensely it will burn within different fuel types," Bossert said. "We can then consider some management strategies to reduce the fuel load."

Thanks to ongoing, manpower-intensive field studies conducted by Ecology (ESH-20), the University of Arizona and Stephen Austin University, the wildfire modeling team possesses extensive knowledge of the terrain and the types of fuels in the area. This knowledge has produced a unique data set to incorporate into the model and test a variety of scenarios for wildfire risk assessment.



Simulation with the HIGRAD/ FIRETEC model of a portion of the Calabasas, Calif., fire in Corral Canyon that occurred Oct. 22, 1996. The area of the model domain is approximately 1.25 square kilometers. The figure shows how the model captured the extreme behavior of the fire as it raced out of the canyon and up the Malibu Bowl, severely injuring several firefighters, all within about 15 minutes. Similar fire behavior was witnessed by observers on the ground.

The team's goal this year is to simulate fire behavior for an afternoon period in the Los Alamos area using high resolution weather data mirroring conditions on June 27, 1998, the day the Oso Complex fire reached its destructive peak.

"Conditions that day exemplified those most conducive to explosive wildfire development," Linn said.

"The Pajarito Plateau is one of the most studied areas anywhere," said Bossert. "The terrain has been mapped and we know the different types of fuels — mixed conifer, aspen, ponderosa pine, piñon and grasslands — and where they are located."

Comparing data gathered on the ground to LANDSAT satellite images, researchers have produced one of the most comprehensive data sets on vertical fuels distribution in existence. The data include canopy and understory densities and tree shapes from numerous specific sites.

"We need to have enough layers in the model to resolve all the different types of fuels," Bossert said. "The vertical distribution is especially important when trying to model crown fires."

The fuels data has been processed into five vertical layers from zero to 25 meters. With this finely detailed model, the researchers intend to run experiments on a variety of different realistic scenarios.

Bossert is cautious about the model's predictive capabilities. "We can't really predict yet, but can only test scenarios and do the science," he said. "This physics-based model allows us to simulate a wider range of wildfire conditions than current operational fire behavior models. We are now trying to feed the technology into the operational environment, based on our testing of realistic scenarios."

Over a few days time, Lab supercomputers allow the researchers to run a full-blown test of the Los Alamos wildfire model, which will unfold at slower than real time. "After testing the model under a variety of conditions and assembling data from those tests, we can compare our results to real data from real fires," Bossert said.

In addition to causing devastation on the ground, fires are a leading source of chemicals in the atmosphere. The Laboratory's success in wildfire simulation has led to a new project incorporating airborne physical chemistry processes into the wildfire model.

As proposed by Linn and EES-8 colleague Manvendra Dubey, the model will track volatile organics released into the atmosphere from wood heating and burn simulations, so researchers can compute gas and smoke emissions from wildfires. These results, added to the HIGRAD model, will allow prediction of effects at a range of distances.

Fires damage the lungs of firefighters whose exposure to its pollutants is greater than the general population. In addition, the Southwestern United States experienced dramatic visual and public health effects from the 1998 forest fires in Mexico, and the cumulative effect of global biomass burning affects the atmosphere worldwide.

To better anticipate and cope with these effects, Linn and Dubey intend to combine the behavior of toxic emissions close to a fire, such as cyanide and smoke, with an analysis of long-range pollutants like ozone and carbon dioxide and their effects. The researchers hope to develop unique indicators of biomass burning to quantify the global significance of wildfires.

"Our model tries to represent the combined effects of small-scale details into large-scale effects," said Linn. "With this model, we can ask local, regional and global questions and share the capability with the larger global change community."

From the ashes

by Fran L. Talley

One of the great success stories following the Dome Fire in 1996 was the formation of the Interagency Wildfire Management Team. Los Alamos County, the U.S. Forest Service, the National Park Service, the Department of Energy and Laboratory fire and emergency management experts are working together to address immediate, short-term and long-term wildfire issues that directly affect the Lab and county.

The IWMT is empowered to coordinate the management and suppression of wildfires at the Laboratory and wildfire-related management activities. It represents the first comprehensive, interagency attempt to address wildfire issues.

"We will always have wildfires in this area; it's part of the natural ecology of the plateau," says IWMT Chair Diana Webb of the Laboratory's Ecology (ESH-20) Group. "The Dome Fire was a close call and clearly showed us how important it is to manage our forests to reduce the risk from wildfire.

"It also taught us to work with other agencies for more effective emergency response. The IWMT was created to do just that by cutting through red tape, discussing problems in a collegial atmosphere and getting things done."

This year's fire season, which as of early March looked like it could be a dangerous one, will be discussed this month at an IWMT-sponsored public meeting titled "Wildfire 2000: Los Alamos at Risk." The meeting is scheduled for April 26, the fourth anniversary of the Dome Fire.

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New B Division director named


Jill Trewhella

Jill Trewhella has been appointed director of the Bioscience (B) Division. Trewhella had been filling that role in an acting capacity since Oct. 1 when the division was formed.

"I am deeply honored by the confidence [Laboratory Director] John Browne has expressed in me by making this appointment," Trewhella said. "I think we are poised to do great things for this Laboratory and for the nation."

Trewhella, a biophysicist in the field of structural molecular biology, earned a doctorate in chemistry from the University of Sydney in 1980. After postdoctoral work at Yale University in molecular biophysics and biochemistry, she joined the Lab in 1984 to begin a biological neutron scattering program.

In 1995 she was named Laboratory Fellow in recognition of her sustained outstanding scientific contributions. Also that year she received the Laboratory Fellow's Prize in recognition of important contributions to the understanding of proteins in solution using biophysical measurements.

Five honored by intelligence agency

Five Lab employees have received the National Intelligence Council's prestigious Seal Medallion recognizing their support of the intelligence community on four separate projects.

Ray Koym of Weapon Design Technologies (NIS-9) supported the Science and Technology Intelligence Committee in one task area. The other honorees were recognized for support of the Joint Atomic Energy Intelligence Committee in major 1999 technical assessments. They are **Allen Riley** of NIS-9 and **Tom Kunkle** of Geoanalysis (EES-5) for work in one area, **Michael MacInnes** of Thermonuclear Applications (X-2) and **Al Charmatz** of NIS-9 in a second area, and Charmatz in a third area.

Deputy directors named for BUS


Dennis Roybal

Dennis Roybal and **Jim Herring** have been named new deputy directors in the Business Operations (BUS) Division.

"Dennis and Jim are longtime Laboratory employees with a wealth of experience and I look forward to having them on my division office staff to oversee the critical areas of accounting, budget operations, procurement, property and materials management," said BUS Division Director Allan Johnston.


Jim Herring

A native of the Española Valley, Roybal will oversee procurement, property and materials management.

"I'm excited. It's a big job and I feel like I can contribute to moving our organization into being the most valued support organization within the Laboratory," said Roybal.

He has worked at the Lab for 22 years. Recently, Roybal has worn two hats, that of risk manager and acting Small Business Office program manager.

Herring has been group leader for Business Planning and Budgeting (BUS-3) since 1997. He joined the Laboratory in 1982 in the former National Security Programs Test Operations Office at Los Alamos where he worked four years.

"I am honored to be selected as the deputy division director for finance," said Herring. "I see this as a tremendous opportunity to work with BUS Division and Lab technical staff to make sure Los Alamos has first-rate financial services that meet or exceed all customer needs."

He has a bachelor's degree in chemistry from the University of New Mexico and master's degree in business administration from the University of Oklahoma.

Gitomer honored by IEEE


Steven Gitomer

Steven Gitomer of the Russian Nonproliferation Programs office in the Nonproliferation and International Security (NIS) Division has been awarded a "Third Millennium" medal by the Institute of Electrical and Electronics Engineers. He was cited for continued outstanding dedication and service to the IEEE, its Nuclear and Plasma Sciences Society and the electrical engineering profession.

Gitomer has held a number of offices in the NPSS, including vice president and secretary, and chairman and secretary of its Plasma Science and Applications Committee. He has been editor of "Transactions on Plasma Science" since 1984 and recently was named editor-in-chief supervising the three "Transactions" of the NPSS. In 1984 he was honored as one of the Laboratory's recipients of IEEE's Centennial Medal, and he is a fellow of the IEEE.

Gitomer received his bachelor's and master's degrees from Johns Hopkins

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In Memoriam

Bernard Pohlmann

Laboratory retiree Bernard Pohlmann Jr., a resident of Albuquerque since 1975, died Dec. 2, 1999. He was 86. Pohlmann was born April 9, 1913, in Davenport, Iowa. He graduated from Brown's Business College in Davenport in 1932, majoring in stenography. Pohlmann came to work with the Lab in 1945 as a machinist with the former Shops (A-8) group. He left the Lab in 1973 while working as a staff member with the former Engineering (SD-2) Group.

Gitomer ...

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University and his doctorate in electrical engineering from the University of Wisconsin. He joined the Lab's technical staff in 1974. His research interests have been primarily in the areas of laser fusion, laser interaction with matter, plasma simulation and free-electron lasers.

He has been a member of the Lab's Center for International Security Affairs since its founding in 1995. He is now a technical staff member of the Russian Nonproliferation Programs Office at CISA, where his present work involves the International Science and Technology Centers in Russia and Ukraine.

SBO program manager named

Bennie Gonzales

Bennie Gonzales is the new program manager of the Laboratory's Small Business Office, reporting directly to the Business Operations Division (BUS) director.

Gonzales previously was the group leader of Business Support Services (BUS-8), a post he had held since 1993. He joined the Lab in 1984 in the former Materials Management (MAT) Division.

"I am really honored by this opportunity," Gonzales said of his new assignment. "One of my goals is to ensure that the office is viewed as very responsive to the needs of the small business community while ensuring that the best interests of the Laboratory and its technical programs are being served."

The Laboratory's Small Business Office employs six people, including two students.

Laboratory Deputy Director for Business Administration and Outreach Joe Salgado announced changes in its procurement operations to increase opportunities for regional small businesses and to make the Laboratory a better customer for small businesses.

Group leader named for Compensation and Benefits

Gary Hirokawa was recently selected as the new group leader of Compensation and Benefits (HR-2). Hirokawa started in his new position in December 1999. The HR-2 group leader is responsible for all health care, retirement plan, salary administration and performance management issues.

Gary Hirokawa

For Hirokawa, taking at the job at Los Alamos was like coming home. He was raised in

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March service anniversaries

35 years
Richard Bramlett, MST-6
Michael Paciotti, APT-TPO
John Ross, LANSCE-12

30 years
R. Arthur Forster, X-5
Joe King, MST-10
Thomas Van Lyssel, NIS-5

25 years
Kenny Brown, CIC-2
David Bustos, CIC-10
Harry Forehand, NIS-9
Benjamin Gurule, BUS-7
Nelson Hoffman, X-11
Alfred Lopez, DX-5
Jose Lopez, CIC-2
Johnnie Martinez, CRO
David Platts, P-22
Mike Salazar, MST-7
Susie Salazar, PA
George Zakar, NMT-5

20 years
J. Wayne Anderson, TSA-5
Robert Carpenter, MST-6
Teresa Cremers, NMT-15
Sharon Dunn, NMT-8
William Eklund, LC-BPL
Clyde Hayes, BUS-7
Alan Lapedes, T-13
Reuben Roybal, CIC-9
Victor Vargas, MST-6

15 years
Andrew Adams, E-ET
Martha Austin, NW-EP
James Barber, ESH-2
Sylvia Cassil, NMT-13
Steve Chipera, EES-1
Robert Davis, NMT-2
Lawrie Eaton, ESA-TSE
Ilene Farmer, ESH-12
John Foster, CIC-15
Michael Haertling, NW-SS
Debra Huling, BUS-3
James Krone, NIS-3
Shirley Kwan, BUS-1
Gloria Martinez, P-23
Michael Pankratz, S-7
Lauren Rauber, X-5
Marie Roybal, BUS-1
Shelly Serna, NMT-11
Hubert Van Hecke, P-25
Ward Zaelke, CIC-1

10 years
Angela Corriz, BUS-1
Stephen Doorn, CST-9
Agnes Gallegos, NIS-9
David Jamriska, CST-11
Deanne Phillips, ESH-2
John Sarrao, MST-10
Lawrence Walker, ESH-1

5 years
Jerry Brock, X-10
Sabrah Calloway, CIC-5
Douglas Chafe, CIC-14
Wayne Cox, S-1
Charles Cureton, PM-DS
Robert Davenport, CIC-4
Holly Farley, BUS-1
David Foster, IBD
James Groves, MST-STC
Patricia Hummer, CIC-13
Lance Kloefkorn, MST-OPS
Thomas Lane, CIC-1
Kevin Leifheit, S-2
Sylvia Martinez, ESA-WMM
Scotty Miller, ESH-17
Richard Montoya, CIC-4
Keith Olson, NMT-3
Deborah Pacheco, EES-8
Natalie Rivera, ALDTR
Linda Sanchez, BUS-1
Frances Schriber, BUS-3
Daniel Weeks, CIC-12

Olson receives AGU's Outstanding Student Paper Award

Alyssa Olson, left, a graduate research assistant in Geoanalysis (EES-5), and Olson's mentor, Andrew Wolfsberg, also of EES-5, discuss aspects of a computer model of ground-water flow. Olson, who is is working toward her master's degree in hydrology from the New Mexico Institute of Mining and Technology in Socorro won an Outstanding Student Paper Award from the American Geophysical Union's Hydrology Section. *Photo by James E. Rickman*

Alyssa Olson of Geoanalysis (EES-5) has won an Outstanding Student Paper Award from the American Geophysical Union's Hydrology Section.

Olson presented the outstanding paper — "Convective Transport in a Cavity/Chimney System After an Underground Nuclear Test" — at the AGU 1999 Fall Meeting in San Francisco last December. The paper's co-authors are Lee Glascoe and Andrew Wolfsberg, also of EES-5.

"Alyssa is one of the best students I have ever had the pleasure of working with," Wolfsberg said. "This is truly an honor for the Laboratory to have Alyssa working here and bringing home such a distinguished award."

Olson is a graduate research assistant at the Laboratory who is working toward her master's degree in hydrology from the New Mexico Institute of Mining and Technology in Socorro. She worked briefly at the Laboratory in 1998 and returned during the summer of 1999. Olson's award-winning work at Los Alamos involves the development of computer models that simulate ground-water flow and the transport of chemicals in ground water. Her thesis work at New Mexico Tech involves the analysis of carbon and oxygen isotopes in lake sediments to determine ancient climate records for mid-continental regions.

Hirokawa ...

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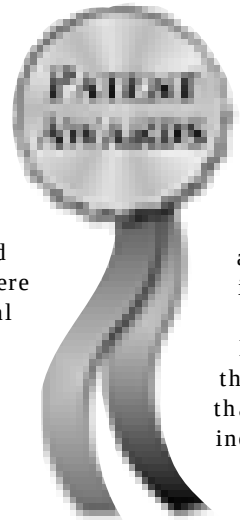
southeastern Colorado and said that he always wanted to some day return to the Southwest. Hirokawa comes to the Laboratory most recently from Dell Computers in Austin, Texas, where he was senior manager of executive compensation.

Hirokawa brings a wealth of human resource and compensation and benefits experience to his current position. He spent 15 years working for the federal government, teaching on the Navajo reservation for the Bureau of Indian Affairs and then focusing on pension, welfare, benefits and affirmative action issues in several positions at the New Orleans area office of the Department of Labor; 10 years working in the health sciences industry, including serving as vice president of human resources for the University of Texas Southwestern Medical Center in Dallas; and five years working for Fortune 100 companies, including Dell and Allied Signal.

Hirokawa said, "I feel that with my experience in both the public and private sector I'm in a unique position to be able to help the Lab in the area of compensation and benefits. I look forward to working with everyone at the Lab to ensure that we have a compensation system that we can be proud of, and that we do our best to contain costs and deliver quality health care to employees."

Lab innovators recognized



Three researchers have received the Lab's 1999 Distinguished Patent Award. Paul Arendt and Stephen Foltyn of the Materials Science and Technology (MST) Division and former employee Xin Di Wu were honored at last month's annual patent and licensing awards ceremony for their patent of high-temperature superconducting thick films.

The Distinguished Copyright Award went to a team led by Chris Barrett and Dick Beckman of the Technology and Safety Assessment (TSA) Division for the Transportation Analysis and Simulation System, or TRANSIMS, a software system that simulates human mobility on an urban regional scale.

Shimshon Gottesfeld, also of MST, received the Distinguished Licensing Award for his successful licensing of fuel cell technologies that he developed or co-developed.

Approximately 150 current and former employees were honored for work that resulted in patents, copyrights or license royalties. In fiscal year 1999, 50 U.S. patents were issued for Lab inventions and 38 commercial licenses were approved, totaling $866,000 in license income.

Since the inception of the Laboratory's licensing efforts, the program has generated more than $3 million in licensing income, 85 percent of which is redistributed to the inventors and technical divisions for research and development, technology transfer and

This month in history

April

1775 — Paul Revere makes his famous ride

1865 — Gen. Robert E. Lee surrenders to Gen. Ulysses S. Grant

1878 — Billy the Kid ambushes and kills two sheriff's deputies on the main street of Lincoln, N.M., his hometown

1912 — The "unsinkable" Titanic hits an iceberg in the North Atlantic and sinks

1943 — A contract is signed for the University of California to manage and operate the new laboratory at Los Alamos

1954 — The Army-McCarthy hearings are on TV for five weeks, ending in public disgrace of Sen. Joseph McCarthy

1960 — The first atomic-powered submarine is launched

1976 — Steve Jobs and Steve Wozniak form the Apple Computer Co. in Palo Alto, Calif., and begin assembling Apple I computers in Jobs' garage

1982 — NASA announces the selection of Sally Ride as the first woman U.S. astronaut

1985 — The first National Science and Technology Week, a National Science Foundation-sponsored event to bring science to the general public, particularly children, is held

1993 — A week-long seminar at the Laboratory commemorates its 50th anniversary

Brainteasers

Here's another chance to test your knowledge of Laboratory trivia and history. Sorry, there are no prizes, other than self-satisfaction.

1. When was the first ski season at Pajarito Mountain?

2. How long has the Lab-built ALEXIS satellite been in orbit (as of this month)?

3. Can you identify these Manhattan Project pioneers from their old badge photos? **(below)**

A B C

4. Where is the Reactor Maintenance and Disassembly (RMAD) Building?

5. What year was the Los Alamos Employees' Scholarship Fund Program started?

6. In 1995, the Laboratory produced the first high-resolution physical map of a human chromosome. Which chromosome was it?

7. How many years was Project Rover active at the Lab?

8. Which Laboratory director served the longest time in the position?

9. Can you identify these Nobel laureates who posed for this photo during the Laboratory's 40th anniversary in 1983? **(at right)**

10. In 1952, a Lab-built computer was given a name designed to mock the growing use of fancy acronyms for computers. What was it?

11. Where is TA-57?

12. The Vela series of satellites, carrying sensors developed at the Lab to monitor compliance with the Limited Test Ban Treaty, is credited with discovering one of the more mysterious phenomena in space. What are they called?

13. What was the address of the Laboratory's Santa Fe office during World War II?

14. Since it started in 1990, the New Mexico High School Supercomputing Challenge has engaged how many students: (a) 500-1,000, (b) 1,000-2,000, (c) 2,000-4,000, or (d) 4,000-5,000

15. Which Lab organization was headed by Hans Bethe during World War II?

16. What was Jumbo?

(Answers next month)

Syndicated Material

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spotlight

Skateboarding the 'milky way'

by Steve Sandoval

John Elway's got one. So do Pete Sampras, Patrick Ewing, Mia Hamm and Mark McGwire. Tens of other celebrities and athletes have them too: milk mustaches.

The national "Got Milk" campaign has burned the benefits of milk into the consciousness of Americans via celebrities and athletes. Hardly a day goes by when an advertisement in a magazine, newspaper or on television shows a celebrity sporting a milk mustache.

These days the California Milk Advisory Board, which is part of the "Got Milk" campaign, also is using skateboarders, bicyclists and in-line skaters to tout the benefits of milk.

Bill Robertson of the Lab's University of California Coordination Team (STB-UC) doesn't have a milk mustache, even though he's an avid milk drinker. But he does have a skateboard. And "that skateboard guy," as his boarding brethren know him, will be riding his skateboard again this summer to talk about the values of milk.

As part of the "Got Milk Gravity Tour 2000," Robertson will spend weekends between June and October at county fairs from San Diego to Sacramento talking about milk and giving skateboard demonstrations. The demonstrations include safety tips, the proper use of equipment such as elbow and kneepads, and wearing a helmet, said Robertson.

"You get to see us use the safety equipment," he said. "You're not just talking the talk, you're walking the walk and that includes safety."

Skateboarding is no passing fancy for the Virginia native who bought his first skateboard for $20 when he was 12. By the next year he was entering competitions around the country — and winning money.

When he moved to Colorado to pursue master's degree-level work, skateboarding competition and demonstration prize money was his main source of income. "It's just about having fun. It's something I'm good at doing, and it's something I enjoy," he said. "I thought when I was 16 I'd be done with it."

Bill Robertson of the University of California Coordination Team (STB-UC) performs a parallel handstand during a demonstration at the Summer Sunday Festival in the Phoenix Civic Center. In the top right photo, Robertson completes an "ollie impossible" during a Got Milk Gravity Tour promotional shoot in 1993 in Boulder, Colo. "It looks impossible," said Robertson of the maneuver in which the skateboarder kicks the tail of the board and spins it clockwise, landing back on the board. *Photos courtesy of Robertson*

A San Francisco marketing company in 1998 approached Robertson and others to be part of a team that included skateboarders, bicyclists and in-line skaters, Robertson said of the genesis of the gravity tour. The tour — replete with uptempo, pulsing music and ramps for all kinds of stunts — returned for an encore last summer. This summer will be the biggest yet, he said.

Robertson said the connection between skateboarding and math and science is a natural. He shows youngsters and observers that an "ollie," in which a skateboarder kicks the tail of the board and becomes airborne with the board seemingly connected to the feet, demonstrates the concepts of gravity and lift, thrust and drag. The ollie, he said, "is a fundamental basic of skateboarding."

Robertson, who turned pro in 1988, has given skateboard demonstrations all over the country, including community fairs in Rio Rancho, Los Angeles and Boulder, Colo.; halftimes of professional basketball and football games; and schools in Santa Fe, Albuquerque, Pojoaque and Los Alamos.

He said he feels comfortable talking to youths and more

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