Eighth Year of Fun
Camp Fantastic, Despite Rain, Is a Soggy Success

By Rich McManus

Noah had it no harder than the 95 children with cancer who attended the eighth annual and largest Camp Fantastic in Front Royal, Va., last month. Though rain fell through all but the first and last days, the net effect was to pack all of the laughter and good times under a roof rather than under an open sky. “It has been a great experience, despite nature,” said Dr. Philip Pizzo, chief of NCI’s Pediatric Branch and head of the camp’s medical staff, on a rainy Thursday at camp. “It’s running very smoothly.”

“I guarantee you, next week these kids aren’t going to remember that it rained,” said Tom Baker, director of Special Love, Inc., the group that sponsors camp. “They’re going to remember that it was camp and a lot of fun.

“This is the longest rain spell we’ve had in 8 years,” Baker continued. “Thanks to the new buildings (at the Northern Virginia 4-H Educational Center, where camp is held), we’ve been able to move most activities indoors.

“You think of camping and you automatically think of swimming, but I don’t think anyone’s missed it.”

Charles Butler, who heads pediatric recreation at the Clinical Center in addition to being the camp’s impromptu meteorologist, observed, “It’s been rainy, but not a cold, icky rain.”

“The kids are forgetting about the fact that it’s raining out there,” said Paul Jarosinski, an NIH pharmacist who was part of the camp’s medical staff. “They’re keeping busy.”

“This is our largest, and sickest, camp,” said Kathy Russell, a former NCI administrator now at Georgetown University. “There have been a lot of logistical problems because of the size of camp. We’ve had to order more medications than ever. And there have been

(See CAMP, Page 6)

Landmark Gene Therapy Trial Progresses

By Florence S. Antoine

Foreign genes can be transferred into humans, and the resulting gene-modified cells can be detected at least 2 months later in the patient’s bloodstream and tumor deposits.

This landmark study, reported by NIH scientists and their collaborators, is the first trial approved for introducing foreign genes into humans.

The researchers are encouraged by the finding that gene-modified cells may survive for long periods of time without harm to the recipient.

“Until now, we were uncertain if gene-modified cells could survive in the patient’s body long enough to be useful for therapy,” said NCI scientist Dr. Steven A. Rosenberg.

This new finding suggests that gene-modified cells could be used to deliver toxic substances to the tumor, modify the patient’s genes, or correct inherited defects.

In January 1989, Rosenberg and Drs. R. Michael Blaese, also of NCI, and W. French Anderson of NHLBI, received approval to incorporate this gene into cancer therapy for 10 patients with advanced melanoma. The approval process lasted 7 months, with careful scrutiny by various review committees, the Food and Drug Administration, and the NIH director.

(See GENE THERAPY, Page 8)

Dr. DeWitt Stetten, Jr., Dies; Was NIH’s Senior Science Advisor

Dr. DeWitt Stetten, Jr., NIH deputy director for science, emeritus, died Aug. 28 of congestive heart failure. He had served NIH since 1954 in numerous capacities, including director of intramural research, NIAMD; director, NIGMS; and deputy director for science, NIH. In addition, Stetten founded the Museum of Medical Research at NIH that bears his name and was a founding member of the Foundation for Advanced Education in the Sciences, Inc. An obituary will be published in the next issue of the Record.

(See PLATELETS, Page 4)

From Mobile Home to Brick House
Platelet Center Moves Into New Quarters

By Anne Barber

Working among boxes packed for their upcoming move, Gail Carter, manager of the NIH Plateletpheresis Center, and Virginia Morgan, pheresis donor coordinator, reminisce about their earlier days in the mobile trailer that the center and both women have called home since Apr. 15, 1974.

“We were the first trailer here,” says Carter. “Actually the trailer (located in parking lot 10-D behind the Clinical Center) was placed here in November 1973 and I was hired in February 1974 to set up the unit.”

Morgan had worked as a volunteer pheresis platelet donor coordinator for NCI. The trailer allowed the program to expand and offered Morgan a paid full-time job.

In the beginning the unit came under NCI’s Pediatric Branch. Not until 5 years later was it absorbed by the Clinical Center’s department of transfusion medicine (DTM). In 1987, the program expanded to include the Marrow Donor Program, and another trailer was added. Now, the trailers have been towed
Cancer Center Forges Link With Frederick High Schools

The National Cancer Institute's Frederick Cancer Research and Development Center (NCI-FCRDC) has entered into a declaration of partnership with the Frederick County Public School System to provide a student intern program at the center in Frederick.

The partnership is intended to provide an opportunity for high school students interested in biomedical research to receive training at the center, have students learn the basic methods of cancer research through "hands-on" laboratory training, enhance students' access to strong undergraduate and graduate preparation for careers in biomedical research, and further enhance the NCI-FCRDC's educational outreach program within the Frederick community.

Students applying to the intern program must be in their junior year of high school and are nominated by school staff members. The students work for 2 months in the summer, under the Student Research Training Program, to learn basic laboratory techniques and safety prior to starting their project. At the beginning of the school year, they work under the student volunteer agreement for approximately 2 hours each day on their project. Through participation in this program, students earn from 1 to 3 elective credits toward their Maryland State high school diploma.

The first year of the program (1989-90) brought the following six high school seniors into the student intern program: Sacha Malin, Allison Martin, Jill Humphrey, and Ali Shafaie from Frederick High School; Surai Thaneeemit, Governor Thomas Johnson High School; and R. Michael Stephens from Linganore High School. Malin was selected as a national finalist in the Westinghouse Science Talent Search and was invited to participate in an international science fair. Stephens was selected to participate in the Youth Science Olympics sponsored by the United Nations People-to-People Program being held in Russia this summer.

Students selected for the 1990-91 program are: Eugina Kim, Shannon Moore, Nimisha Vyas, Nathan Herman, Jeffrey Gerard from Frederick High School; Elizabeth Ramsburg, Linganore High School; and Tara Francomano from Walkersville High School.

Hay Fever Sufferers Sought

NIAID/FDA seeks volunteers who have spring, fall or year-round hay fever symptoms to participate in a study involving allergenic skin testing. Participants will be paid. Send written request to: J. Matthews, Bldg. 10, 11C420, or Bldg. 29, Rm. 201.

TheNIHRecord

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Dr. Rochelle M. Long has recently joined the NIGMS Pharmacological Sciences Program as a program administrator. She will bundle research grants and predoctoral training grants in the area of pharmacology. Long was an assistant professor in the department of pharmacology and toxicology in the school of pharmacy at the University of Maryland. Prior to that, she was an NIGMS pharmacology research associate in the Laboratory of Chemical Pharmacology at NHLBI. Long has a Ph.D. in pharmacology from the Uniformed Services University of the Health Sciences.
STEP Announces Its 1990-91 Education Programs

Applications are now being accepted for an exciting continuing education program for extramural staff sponsored by the STEP committee.

Staff Training in Extramural Programs, now in its 28th year of service to NIH, is a committee function of the Office of Extramural Research under the auspices of the NIH associate director for extramural affairs, Dr. George J. Galasso, and Dr. James F. O'Donnell, director, Office of Extramural Programs. The STEP education program is formulated each year by a committee of NIH staff members drawn from across all of extramural NIH. Together with other volunteers and selected professional trainers or consultants, it plans and conducts the training sessions.

Dr. David Longfellow, chief of the Chemical and Physical Carcinogenesis Branch, NCI, has been appointed chairman of the STEP committee for 1990-91. Dr. Michael Rogers, deputy director of the Pharmacological Sciences Program, NIGMS, is vice chairman. They are assisted by a committee of 24 experienced NIHers and Arlene Bowles, STEP program director.

This year, a diverse program of six training modules, five forums and a "Science for All" lecture are offered. The season will open in October with a Science for All lecture on "Real Science, Pseudoscience, and Dumb Luck." This program will explore the differences between craft and quackery and will be targeted to the general NIH community.

The popular afternoon forum series talks are held in Wilson Hall for 2 hours and do not require advance registration. This series typically covers topics of immediate concern as well as those of broad policy interest and implication. Ample time is allotted for discussion.

This year the forum series will take a look at changes in the Freedom of Information and Privacy Acts, integrity in science, sharing of scientific resources, talking to reporters, and minority programs in other agencies.

Module 1, "Effective Alliances or A House Divided?" was offered last year and, because of the enthusiastic response, will be offered again Dec. 4-6. This module, led by an outside trainer, will provide an opportunity for participants from specific components of the extramural community, through a team approach, to examine the authorities, roles and responsibilities of the review, grants/contracts management, and program components of NIH. This module will help participants increase their effectiveness as members of the NIH extramural team.

Module 2, "Effective Programming: Philosophies, Procedures, People, and Politics," will focus on when, how, and why program announcements, requests for applications, and requests for proposals are used to accomplish program objectives. The roles of the various players who impact the development and implementation of initiatives will be addressed as well as a comparison of the usefulness of various instruments. A faculty drawn from inside and outside NIH will examine the pros and cons of various traditional approaches to programming; the creative use of existing alternatives will be explored. This module is scheduled for Jan. 16-17, 1991.

Module 3, "Planning for Evaluation and Evaluating for Planning," will provide practical examples of the use of planning tools for extramural staff. Program and review staff, policy analysts and program analysts will profit from learning about the who, what, and why of evaluation and planning. This 1½-day module will be held on the NIH campus Mar. 13-14, 1991.

Module 4, "The Right Person/The Right Job," is also being reoffered this year because of its uniqueness and popularity. This 2-day module will cover one of the most critical aspects of an efficient and harmonious office environment—finding the right person for the job. Using videotaping as a training tool, participants will learn the art of interviewing. An outside trainer will help participants modify or improve their current interviewing style and will provide tools for assessing if the hiree can do the job, fit in, and stay.

Module 5 presents a new concept in STEP initiatives. For the first time, a module will be available just for extramural staff in grades 10 and below. "Thriving in Place/Striving for More," will be offered twice, on Apr. 3 and Apr. 24, 1991. Using interactive teaching methods, professional trainers will provide practice in communication skills, an opportunity to examine job-related attitudes, and an opportunity to talk with people in similar positions at NIH.

Module 6, "A Panorama of Women's Health Issues," is a timely module that will investigate a range of concerns from biological responses to inclusion or exclusion in study populations, and research priorities for the future. Drawing on a faculty of leading experts in women's health issues from universities, government, and special interest groups, this module will provide participants with an in-depth picture of women's health research and the directions and conflicting forces shaping its future. The myths and misconceptions, legal and regulatory barriers, and political pressures related to women's health will also be covered during 2 days on campus, Apr. 16-17, 1991.

While there is no charge for any of the STEP offerings, an application is required for the modules. NIH Form 2245 (revised 3/89) must be submitted to the STEP office in Bldg. 31, Rm. 5B44.

This year there will be a single application deadline of Oct. 12 for modules 1-6. A brochure with details concerning all of this year's programs is now available from ICD personnel offices and from the STEP office. In addition, forms and brochures can be obtained from Dr. David Longfellow (EPN, Suite 700), Dr. Faye Austin (EPS, Suite 634), Dr. John Fakunding (Federal, 3C04), and Dr. Michael Rogers (WW, Rm. 919). No applications are needed for the STEP forums or Science for All lecture.

NIGMS grantees Dr. Koji Nakanishi, a professor of chemistry at Columbia University, has received two awards, the Japan Academy Prize and the Imperial Prize, the highest honor attainable by a Japanese scholar. Nakanishi was honored by Emperor Akihito at a ceremony in Tokyo for his structural and chemical studies of bioactive compounds. In addition to his work at Columbia, Nakanishi is director of the Suntory Institute for Bioorganic Research in Osaka.
PLATELETS
(Continued from Page 1)
away—the donor program was moved on Aug. 8 to Executive Blvd. in Rockville, while the Platelet Center, along with the rest of DTM, moved to its new quarters in Bldg. 10 on Aug. 24.

"We hope that eventually the marrow program will come back," says Carter. "They are part of our group and we feel very split."

Carter continues, "Originally, we had four donor chairs and the first day we handled six people. Now, we do 12 donors a day."

"But," pipes in Morgan, "that is because now the machinery is automated and before it was manual."

In 1974, the program had only 14 staff members; today there are 22. "The program has expanded to include bone marrow," said Carter. "We recruit all donors for the blood bank, and collect other blood products."

"We now collect white cells as well as platelets," added Morgan. "In the beginning, we just did platelepheresis."

Of the original staff, only Morgan and Carter are still there. Carter says, "Many of our staff have been here for over 10 years. We think of our staff as long-term. We are very proud of that fact."

Before the trailer was opened, Morgan had a private phone line run into her home where she answered questions about the program, screened potential donors and made appointments for them to come to NIH on Sundays, beginning at 10 a.m. "While the nurses would draw samples and do the tissue-typing, I would do all the paperwork," she said.

"We would hold huge donor drives, similar to the bone marrow drive, using children's photos. This proved to highly motivate people," Morgan continued.

The original HLA (human leukocyte antigen) file is still used in the program. "In fact, it was the file that started this program and again was used for the bone marrow program," said Carter. "The reason we contacted the same people for the marrow program was that the same information was needed."

At moving time, the trailer was open 6 days a week, Monday through Friday, 7 a.m.-9 p.m. and Saturday 7 a.m. through 5 p.m. "But, in the beginning," says Carter, "we were open every day, 7 days a week."

"One of the reasons we are now able to close on Sunday," Morgan says, "is the longer shelf life of the platelets. This is because of new automated ways of getting the platelets and the plastic bags they are collected in.

"In the beginning," she continued, "the platelets had a shelf life of only 1 day. Now they can be stored for 5 days. Also there are many more sophisticated tests run now before you can use it. The testing alone now takes 24 hours."

Morgan and Carter state they have seen every kind of patient and every kind of donor come through the trailer door including monks, nuns, policemen and firemen. "We had a man with only one arm come in from Iowa to donate for his son," said Morgan. "In those days, we only used one arm (the procedure normally requires two). We still have a machine that does it in one arm.

"We have also had blind people, deaf people, and foreigners who brought translators with them to explain the procedures," she continued.

Carter says, "Although, the trailer was meant as a temporary solution for only 5 years, it has been interesting to be out here in the parking lot for the past 16 years. "We have been asked to help in situations like, 'Do you have jumper cables? Can you help me to unfreeze my key hole in the car?' They think we are an emergency station sitting out here like we do in the middle of a parking lot," says Carter.

"And although," Morgan says, "the trailer is falling down around us, we are reluctant to move."

"We have a family atmosphere," chimes in Carter. "The donors are our friends. We are very independent and isolated from the clinical atmosphere. We have had nurses spend the night here on the couch when there was snow so they could open up the next morning—that is real staff commitment. We hate to think we are losing that close environment. The material things will be nice, but the home atmosphere will be lost."

Carter and Morgan say they have been together so long because they are of the same mind—the donor comes first.

"We do everything we can to accommodate donors and include them in our platelet family. We have a large party every year for our donors and their families. This year, we are planning a hoedown. We give T-shirts, plaques, awards, prizes—we appreciate them and we want to let them know it," says Morgan.

"Part of our recruitment effort, along with getting new donors, is to keep the tried and true," Carter says. "Keep them coming back, is our motto."

The NIH Platelepheresis Center does approximately 3,000 procedures a year—60 donors a week. "This figure has not changed significantly since the beginning," says Carter. "In 1974, we did 12,000 platelets and now we do 25,000. We get about twice as many platelets today with the new machines from approximately the same number of donors."

Sitting in one of the chairs being prepped to give platelets is Joyce Jenkins, one of the original donors at the trailer. Jenkins is now retired (2 years ago) after 35 years at NIH, but in 1974 she worked as an administrative officer for NIAID in the patient care area of Bldg. 10 for the Laboratory of Clinical Investigation.

Jenkins says, "It was while working here that I became interested in giving platelets. Just being among the patients made me more aware of what was happening." She has given blood for more than 20 years and platelets since 1974. She is still on call here to give both blood and platelets. Jenkins gives about six times a year and, during the past 16 years, she has donated 38 times.

Today, Jenkins is giving blood for a specific person. A friend of hers (they used to work together) has a niece 10 years old with cancer.

Another donor, Carl Salesky, a former Prince George's County policeman now retired and working for the Department of Archives, takes another one of the chairs. Salesky became a donor in 1986 because one of his fel-

Pasing for a moment in their packing for the move to their new quarters are Gail Carter (l) and Virginia Morgan.
low officers had a friend here at NIH who needed blood. He has been a regular donor since.

Morgan and Carter extend an invitation to all NIH'ers to come and visit them in their new space. The center's telephone number remains the same, 496-4321.

The new transfusion medicine facilities are located at the west end of Bldg. 10. The new addition is an extension of the west wing, which is adjacent to the round building (10A) outside the first floor north corridor of the Clinical Center.

NIGMS Grantee Wins Janssen Prize

Dr. Barry M. Trost, an NIGMS grantee, has been awarded the 1990 Dr. Paul Janssen Prize for Creativity in Organic Synthesis. The prize is awarded biennially by Janssen Chimica, a division of Janssen Pharmaceutica, to an organic chemist who has made major creative contributions to the field prior to his 50th birthday.

Trost, a professor of chemistry at Stanford University, has been instrumental in the development of modern synthetic organic chemistry. His research has led to the discovery of elegant methodology for the chemical synthesis of complex natural products that have medicinal value. Most recently, he has developed palladium-containing reagents so efficient and stereospecific in their reactivity that he has characterized them as the “chemist’s enzymes.”

Trost has been a member of the National Academy of Sciences since 1980 and an NIGMS MERIT awardee since 1988. In addition, he is a fellow of both the American Academy of Arts and Sciences and the American Association for the Advancement of Science.

Symposium on Reproductive Health in the Workplace

There is increasing concern among the general public, as well as health care workers, about the existence of reproductive health hazards in the workplace. To address this issue at NIH, the Division of Safety is sponsoring a symposium on “Reproductive Health in the Workplace.” This 3-hour symposium will be held twice on Monday, Sept. 24 at Masur Auditorium. All NIH employees and other interested persons are invited to attend. No registration is required. The symposium will begin at 9 a.m. and will be repeated at 1 p.m.

The Division of Safety regularly receives inquiries from employees who are concerned about reproductive hazards, both perceived and actual, in the workplace. Office workers raise questions about the safety of using video display terminals during pregnancy. Researchers and technicians are concerned about effects of hazardous biological or chemical agents on their reproductive systems. Support personnel and custodial workers sometimes feel uncomfortable working around unfamiliar chemicals and biological products. Health care personnel handling infectious agents, radioactive materials and antineoplastic drugs wonder if their reproductive health is adequately protected.

The symposium will provide employees an overview of the occupational health and safety issues on maintaining reproductive health in the work environment. Any effective control strategy must be one that emphasizes prevention of exposure to potential hazards.

Office Equipment Exhibit, Sept. 12

On Wednesday, Sept. 12 there will be a 1-day showing of advanced office automation equipment and software at Executive Plaza, 6130 Executive Blvd., (first floor conference rooms C,D,E,F). More than 20 exhibitors will be demonstrating the latest in scientific and R&D computing, graphics, applications software, desktop publishing, and more.

Zenith, Maplnfo, C3, IBM, Canon, and Egghead Software are a few of the companies that will be exhibiting. All NIH personnel are invited. There is no registration or fee for this event. For more information call 596-7005.

Dry Mouth Study

NIDR seeks patients over age 18 with dry mouth caused by radiation therapy in the head/neck region for a drug study. Volunteers must not have cardiovascular, respiratory, hepatic or digestive problems. Call 496-4371 or 496-2069.

Lecture on Social Justice

The medical scientists committee, affiliated with Amnesty International, is sponsoring a lecture on “Latin American Literature in the Struggle for Social Justice and Human Rights,” presented by Susana Cardenas, on Thursday, Sept. 20, 12:30-1:30 p.m., NIH Library, Training Center, Bldg. 10.

For further information contact G. Schiffmann, 496-1156 or P. McKinley, 496-9291.
CAMP

(Continued from Page 1)

little things like people packing the wrong
clothes for the weather. But things are going
well.

"We had to orient a whole new crew of
counselors," she continued, "but they're very
good. And you always run into those kids who
can't help but get under your skin.

"It's been a lot of work," she concluded.
"Next week we'll all go somewhere and fall
down."

Among the new counselors was NIH sum­
mer student Mike Bergin, a political science
major at LaSalle University who is working
this summer with cancer research nurse spe­
cialist Dorie Marshall on 13 West at the CC.

"The nurses in the clinic had talked to me
about camp. I wanted to work more closely
with kids and bring them some happiness," he
explained.

"I see them in the waiting room on 13 and
wish I could be more involved with them.
Camp is a chance to see them as more than
numbers and names."

Fellow counselor William Houck says he
joined the camp staff "because my sister was a
counselor last year.

"She said it was a great time," continued
Houck, whose dad is a farmer and physician
in Berryville, Va., "and it is."

As Houck and Bergin played basketball
indoors with a group of children, pharmacist
Jarosinski joined the game.

"I was downstairs in the infirmary and
heard the balls bouncing," said the second
year veteran of camp. The camp infirmary is a
busy place, he explained.

"I mix all the meds (medications) that the
kids have to get. We've gone through a lot of
supplies this year."

Meds are given four times a day. "The big­
gest time is the morning," said Jarosinski.
"Dr. Pizzo sees every kid at every meal."

Half a dozen kids were getting part of their
chemotherapy while in camp, Jarosinski
related. Four children were receiving antibio­
tics from 1-pound portable pumps that
Jarosinski was managing.

"If these kids were anywhere but camp,
they'd be in a hospital," he said. Indeed sev­
eral children had to leave camp to be
hospitalized during the week.

Campers hailed from a variety of cancer cen­
ters in the mid-Atlantic (as well as one from
Chicago and one from Jerusalem), in addition
to the CC. The medical staff, headed by
Pizzo, included physicians Jeff Toretsky of the
Medical College of Virginia (who will come to
NIH as a medical staff fellow next year) and
Herb Bevans of Kings Daughters Hospital in
Norfolk. NIH nurses who spent the week care­
ing for campers were Trish O'Connor, Karen
Montrella, and Myra Woolery-Antill. Outfit­
ted with walkie-talkies, the medical staff was
constantly ready to give care.

One night at dinner, camper Debbie Van
Coverden slumped suddenly over her plate and
fell into the lap of counselor Tracy Pizzo,
daughter of Phil and Peggy (a child advocate
Katie Baker (l), whose dad heads Special Love Inc., which sponsors Camp Fantastic, helps Gemma Counts complete a basket weaving assignment.

Examining the prehistoric footprint of a dinosaur that once roamed the vicinity of Culpeper is camper Benjamin Wittenbrook.

Having fun at a “Christmas in August” celebration one night are counselor Renee Felder (l), a recreation therapist at the CC, and camper Paola Mercado.

The supportive contact of caring counselors helps make camp fun for all. Joining in for a photo are (from l) Ross Mikels, counselor Mike Bergin, who works at NIH, Mark Robinsky, counselor William Houck, and Chris Harris.

(Continued on Page 8)
Rock videos were filmed one afternoon at camp, drawing the entertainer out of campers and counselors, including Randy Schools (c, on sax), general manager of R&W, and counselor Andrew Huff (singing).

(Continued from Page 7)

"My mother is a pediatric oncologist in Chile," she said. "She is president of a group called Faith and Hope that helps children with cancer. She has a friend at NIH—Illani Atwater—who made contacts here.

"We want to make a camp like this in our city," said Martinez, who attends a British high school in Chile. She is learning how camp is organized, what activities are available and how much staff is needed.

"I admire the emphasis on friendship, spirit and optimism," continued Martinez, who is an informal counselor for children with cancer back home. "In my country we haven't got the money, the buildings and the facilities that you have. We are not equipped for a full week of camp, only a day or a weekend at a time."

Martinez, who has relatives in Bethesda, will be a pediatric volunteer at NIH for the rest of the summer, then return to Chile with the good news gleaned from a damp August week at camp.

Oblivious to the weather on the morning of Thursday, Aug. 23, was Mark Robinsky of Carrollton, Va. Having just received a package from home, he was absorbed in its contents.

"Basketball and golf are the best parts of camp," said the third-year vet as he rifled through a set of cards depicting heroes of the World Wrestling Foundation. "Big Boss Man is my favorite," he declared, holding up a color photo of a sweat-glossed colossus. "He puts the cuffs on ya." A minute later he announces a new favorite: "The Bird Man is so awesome."

That afternoon, 93 kids divided themselves into 24 separate rock and rap groups to appear in music videos filmed on location, complete with computer-provided graphics in the background. Put on by Super Star Studios of Silver Spring, the videos transported the delighted campers from a damp, Blue Ridge mountain fastness to the glittery world of MTV.

Provided with their own tapes of themselves performing, the campers had at least one memory they could literally carry home with them. Two things you just can't rain out—music videos and Camp Fantastic.

GENE THERAPY

(Continued from Page 1)

Gene Transfer Trial

Since May 1989, Rosenberg, Blaese and Anderson have treated eight patients with infusions of special cancer-fighting cells, tumor infiltrating lymphocytes (TIL), into which they have spliced a foreign gene. This study reports on the five patients who have been followed long enough for evaluation.

TIL are white blood cells that had invaded the patient's tumor. Once removed from the tumor, their numbers are increased in the laboratory by bathing them in the growth factor interleukin-2 (IL-2). The expanded TIL population is transferred to the patient along with more IL-2, and the TIL home in on the tumor from which they were derived.

The scientists were able to detect gene-modified TIL in the bloodstream of the five evaluated patients 19 to 22 days after TIL infusion, and they could be found even later in two of these patients. One patient had gene-modified TIL in the bloodstream on day 51 and another on day 60.

The patient who had gene-modified TIL circulating in the blood on day 51 had tumor regrowth after an initial tumor regression. This patient was retreated on day 94 with cells harvested from a second tumor, and gene-modified TIL could be detected in this patient's blood on days 121 and 189, probably representing TIL from the repeat infusion.

The researchers were also able to identify gene-modified TIL in tumor biopsies from three patients. Because it is more convenient to obtain samples from the bloodstream than from tumor tissue, biopsy samples were not as frequently obtained as blood samples.

Treatment Responses

Three of the five evaluable patients had antitumor effects following therapy.

One patient, who had a complete response with disappearance of skin, mucosal, and lung metastases, is still in remission 13 months after therapy.

Another patient had a 90 percent reduction in tumor masses. This is the same patient who received a second cycle of therapy because of tumor regrowth around the esophagus within 1 month after beginning treatment. Retreatment caused a 90 percent regression in the esophageal mass that lasted about 2 months before regrowth.

A third patient had 97 percent shrinkage of underarm lymph node metastases but no change in a thigh mass, and thus did not have an overall 50 percent reduction of tumor burden.

(Continued on Page 9)
As found in earlier studies, the patients benefited from TIL/IL-2 treatment itself. In the Dec. 22, 1988, *New England Journal of Medicine*, Rosenberg had reported that IL-2 plus TIL that had not been modified by gene splicing can cause tumor regressions in about half of the advanced melanoma patients treated.

Adverse Side Effects

The patients had no adverse side effects due to the gene transfer. The toxicities they had were similar to those reported in previous studies with TIL that were not modified by gene insertion; namely, water retention and reversible kidney or liver dysfunction. All five were discharged from the hospital 4 to 6 days after infusion of the gene-modified TIL.

Two of the five patients treated with gene-modified TIL died 274 and 327 days after treatment began. The deaths were due to widespread cancer.

Implications of Study

Although the gene transfer technique is safe and the patients benefit therapeutically from TIL, the inserted gene has no impact on the therapy itself. However, the inserted gene may give researchers clues on how to improve TIL therapy for other patients. For these reasons, on Mar. 30 a subcommittee of the NIH recombinant DNA advisory committee (RAC) voted in favor of the research team expanding the current gene transfer trial to an unlimited number of patients with a variety of advanced cancers.

The researchers use an altered mouse virus to insert the gene into the TIL. The gene used in this trial, the neomycin-resistance gene, comes from a bacterium and is not part of the normal human genome. It has no therapeutic effect, playing only a passive role in the cancer treatment by acting as a marker for later identification of the cell. To avoid any potential harm, the virus has been deliberately crippled so that it cannot reproduce in the patient. In addition, before returning the gene-modified TIL to the patient, the scientists test the solution containing the TIL to verify that it is virus-free.

To better understand how TIL work, the researchers plan to obtain multiple tissue samples from patients with cutaneous melanoma, a type of lesion that is readily accessible for biopsy.

Said Rosenberg, “We can remove TIL from patients who are responding to therapy and, by incubating them with a chemical cousin of neomycin, G418, isolate the gene-marked TIL that have homed in on the tumor target. In the presence of G418, unmarked TIL will die, while gene-marked TIL will survive because the inserted neomycin-resistance gene protects them from destruction by G418.”

The scientists will then try to identify the functional properties responsible for the anticancer activity of the gene-marked TIL. They will also grow the selected marked TIL to expand their number for refinements.

Said Rosenberg, “At this time, we are giving cells that are heterogeneous and have multiple activities. By selectively isolating the cells responsible for anticancer activity, we could provide the patient with a high concentration of more potent cells.”

Rosenberg continued, “Evidence for the long-term survival of gene-modified TIL paves the way for further improvement of TIL therapy and gene therapy, in general.”

**Gene Therapy**

Currently Rosenberg and his colleagues are awaiting final approval for the next step, gene therapy. They plan to add to the marker gene another gene, one with a specific therapeutic role. The therapeutic gene could further enhance the anticancer effect of IL-2/TIL. Candidate therapeutic genes include those that stimulate the production of such substances as IL-2, interferon, or tumor necrosis factor (TNF)—substances that have shown anticancer responses in either animal or human studies.

The first gene that Rosenberg’s group hopes to splice into TIL is the TNF gene. In collaboration with Blaese and Anderson, he is nearing completion of another extensive review process to obtain permission for treating advanced cancer patients with TIL containing a TNF gene/virus vector.

This protocol overcame the major hurdle in its review process when it was unanimously approved by RAC July 31. Although approval by the FDA and NIH director are still pending, it is expected that the scientists could begin treating a small number of advanced melanoma patients before the end of the year.

Although TNF has not proved to be therapeutically beneficial in patients, it has produced dramatic antitumor effects in mice. The injection of TNF can cause tumor regression within hours in these animals. “You can’t give a human enough TNF to get a good response. Doses tolerated by man are about 50 times less than those tolerated by mice, “ said Rosenberg.

Because of the exquisite power of TIL to target the patient’s tumor, they may prove to be effective vehicles for delivering the TNF gene directly to the tumor site, where the gene might then churn out more TNF that could attack the tumor with a high concentrated dose.

**Other Applications of Gene Transfer**

“The findings of the gene transfer trial imply that lymphocytes could be the ideal vehicle for delivering therapeutic genes into the cells of patients who have incurable genetic diseases,” said Blaese.

To test this potential application of gene therapy, the NIH team also received approval to insert into lymphocytes from 10 children a foreign gene with the potential of correcting their severe immune system disorder known as adenosine deaminase (ADA) deficiency disease.

As required for the cancer/gene therapy trial, this protocol, which would be conducted under the leadership of Blaese, also needs the approval of the FDA and the NIH director before scientists can begin treating patients.

Blaese said, “Although there are less than 20 cases of ADA deficiency in the world at any given time, we have identified several children who are eligible for this protocol, and their parents have indicated an interest in having their children participate in the study.”

In the meantime, Rosenberg continues to explore ways to further enhance the anticancer effect of IL-2/TIL therapy by adding to it such agents as alpha-interferon, other interleukins, and monoclonal antibodies. Genes for substances found to have potential therapeutic benefit might then be considered for future trials of gene therapy. This therapy has far-reaching implications and could potentially prove useful for curing various types of cancers, many hereditary diseases, and even AIDS.

“Thumbs up” signals the common goal of improved fitness for today’s older people. The team is (from l) Dr. T. Franklin Williams, NIA director; coach George Allen, chief executive officer for the National Fitness Foundation; former NIH employee George "Pat" Morse, special advisor to the NFF; and Dr. Evan Hadley, chief, Geriatrics Branch, NIA.
Workshop Examines Effects of Space Travel on Body

When astronauts return to Earth after space travel, their bodies show evidence of loss of bone density, muscle mass and strength that impairs locomotion and increases the risk of fractures. Investigators supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases and the National Aeronautics and Space Administration are examining the effects of weightlessness on bone, muscle and connective tissue and ways to reduce adverse effects and restore lost muscle and bone mass.

For example, bed-rest studies are being conducted to determine the extent of bone and muscle deterioration that results from lack of exercise and a decrease in the pull of gravity on the body. Other studies investigate the role of nutrition and drugs as either preventive or restorative measures. Basic research is directed toward a greater understanding of bone and muscle metabolism.

NIAMS and NASA are sponsoring a workshop on “The Effects of Space Travel on the Musculoskeletal System,” at the Lister Hill Center Oct. 3-4. The purpose of the workshop is to identify means for maintaining a healthy musculoskeletal system in space and minimizing musculoskeletal dysfunction upon return to Earth.

Speakers will focus on ways that the strength, structure and metabolism of muscle and bone influence one another; identify how studies on Earth will enhance the prediction and understanding of changes that occur during space travel; and, consider what may be learned from space travel that will increase the general understanding of development, maintenance, and alterations of muscles, bone and associated tissues.

Preregistration is required. To register contact Connie Hrandon at Prospect Associates, 496-6045. □

Info for Model Directory Needed

The National Center for Research Resources is collecting information for a directory of current animal and nonanimal models developed by intramural investigators. This database will be used to form a network of modelers that will increase communication between biologists and mathematicians and facilitate the development of new models for intramural research.

Sixty intramural investigators have already registered in the database, representing a full range of in-vivo, in-vitro, mathematical, and physical models for specific biological processes and disease states.

Investigators interested in being included in the directory should contact Dr. Richard Chadwick, 496-4426, by Sept. 18. □

Diet Workshop Classes Resume

New Diet Workshop sessions will begin on Monday, Sept. 10, from 12 noon until 1 p.m., in Bldg. 12A, Rm. 3026. The cost for this 6-week course is $54.

For further information call 468-3438. □

ENTER BBS Seminar Set

A seminar on ENTER BBS, the NIH centralized bulletin board system, will be held on Monday, Sept. 10, from 1 to 3:30 p.m. in Lipsett Amphitheater, Bldg. 10.

An international electronic conferencing system, ENTER BBS can be used to:

- Publish public notices, agendas, seminar proceedings, safety procedures and patent announcements;
- Find grants guidelines, campus meeting schedules, housing availability and carpool lists;
- Discuss AIDS research, lab techniques, scheduling problems, agency interests and research ethics.

For more information, call the Computer Center, DCRT, 496-2339. □
The NIH Training Center of the Division of Personnel Management offers the following:

**Courses and Programs**

**Starting Dates**

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**Personnel Management Training**

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<td>Career Assessment and Life</td>
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**Office Operations Training 496-6211**

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**Personal Computer Training 496-6211**

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<td>Introduction to Personal Computing for New Users</td>
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**Training and Development Services 496-6211**

| Personal Computer training is available through User Resources Center (URC) self study courses. There is no cost to NIH employees for these hands-on sessions. |
| The URC hours are: |
| Mon.-Thurs. 8:30 a.m. — 7 p.m. |
| Friday 8:30 a.m. — 4:30 p.m. |
| Saturday 9 a.m. — 1 p.m. |

NIH Training Center, DCRT, and other training information is available on WYLBUR. Logon to WYLBUR and type ENTER TRAINING

**Training Catalog Available**

The new FY 1991 NIH Training Catalog and Calendar, which describes services, programs, and courses planned by the NIH Training Center, is currently being distributed to ICD personnel and administrative offices. Also available are quarterly brochures that contain course information and registration procedures for training in personal computing and networking, office operations and administrative systems, professional development, and supervision and management.

**CRISP Training Offered**

A 1-day training course called "Introduction to the CRISP System," is being offered by DRG on Sept. 20, Oct. 16, Nov. 15 and Dec. 4. This course is a comprehensive overview of the extramural and intramural projects covered under CRISP (Computer Retrieval of Information on Scientific Projects), detailing the scientific indexing and the system's search capabilities. A hands-on problem solving session is also included.

A request to attend this course should be directed, in writing, to the chief, research documentation section, Division of Research Grants, Rm. 148, Westwood Bldg, and should be received at least 10 days in advance of the preferred course date. Form HHS-350 is not required. For more information call 496-7543 or consult "Enter Training" on Wylbur for course details.

**Weight Watchers Class Begins**

The next 8-week session of Weight Watchers will begin on Sept. 14, with registration in Bldg. 31, Rm. 11A10, at noon. The first regular meeting will be held on Sept. 21, noon until 1 p.m. in Bldg. 31, Conf. Rm. 9. The remaining seven Friday meetings, Oct. 5-Nov. 9, will be held in Bldg. 31, Rm. 11A10, noon until 1 p.m.

The session costs $100 for new members and includes program materials, weekly meetings, and musical entertainment. Special foods are not required in order to participate in the program.

Registration will be on a first-come, first-served basis. Class size is limited to 30 people. For more information, contact R&W, 496-6061.

**EEO Open Forum, Sept. 21**

All employees are invited to "Career Development: Achieving Professional Excellence and Upward Mobility in the 90's," an open forum sponsored by the NIH Asian Program, Division of Equal Opportunity, and the NIH Asian/Pacific Islander American advisory committee on Friday, Sept. 21 from 11:30 a.m. to 1 p.m. at the Lister Hill Auditorium, Bldg. 38A.

Featured speakers and their topics are: "Upward Mobility Programs at NIH," Diane Armstrong, director, NIH Division of Equal Opportunity; and "My Experience as an Asian/Pacific Islander American Public Manager," Belkis Leong-Hong, director, Corporate Information Management, Department of Defense, Pentagon.

Light refreshments will be served after the forum. Sign language interpretation will be provided. For reasonable accommodation needs and more information, call Joan Brogan, 496-2906, or Lucie Chen, 496-6531.

**Oncology Nursing Conference Set**

The fifth annual Oncology Nursing Conference, "Progress in Cancer Treatment: Preparing for the 1990's," will be held Monday, Oct. 15, in Masur Auditorium, Bldg. 10, from 8 a.m. to 4:30 p.m.

Offered as a public service by the Clinical Center nursing department, the conference will address advances in cancer biomedical research and the resulting changes in nursing management of patients.

Registration is required and is available on site. For information, contact conference chair Sharon Quint-Kasner, 496-4145.
Cholesterol Education Month Celebrated in September

September marks the second annual National Cholesterol Education Month, sponsored by the National Heart, Lung, and Blood Institute.

Here at NIH, to help employees stay young at heart, NHLBI and the Occupational Medical Service, in cooperation with R&W and Guest Services Inc., have arranged for cholesterol screenings and for heart healthy meals in the NIH cafeterias throughout the month.

Between Sept. 10 and 26, OMS has arranged for 13 cholesterol screening sessions at seven convenient locations (see schedule). All R&W stores have copies of a registration form that you must complete before your test. The cost for the laboratory procedure is $4.50, payable at the time you pick up the form.

Testing will be done on a first-come, first-served basis, and everyone who takes the test will receive a general NHLBI cholesterol fact sheet. If your cholesterol level is higher than desirable—200 mg/dL or higher—you will be given materials explaining how to cut down on fat (especially saturated fat) and cholesterol and referred to your physician.

So that NIH employees can put their new knowledge to use immediately, Guest Services Inc., the NIH cafeteria system, is bringing back in full force the "Stay Young at Heart" program, complete with new heart healthy menu options. These special dishes, which originated in the NHLBI's Multiple Risk Factor Intervention Trial and Coronary Primary Prevention Trial to help people reduce their intake of calories, fat, saturated fat and cholesterol, include black beans and rice, chicken orientale, scallop kabobs, Mediterranean baked fish, and rainbow fruit salad. The new dishes will complement the original Stay Young at Heart specials initiated at NIH in 1987.

Employees can choose a special heart healthy menu option each day in September and take home a corresponding recipe card, providing the nutrient information. Additional recipe cards for specialty breads such as apricot orange bread and banana nut bread will also be provided at various cafeterias. Look for your own Stay Young at Heart Calendar of special dishes that will be distributed desk-to-desk.

The National Cholesterol Education Month activities at NIH are part of a broad national public education campaign that emphasizes the importance of finding out your cholesterol level and learning what it means. It also is designed to encourage people to take action to control their blood cholesterol by eating foods low in saturated fat, total fat and cholesterol.

Television public service announcements will be aired in September to reinforce these messages, and as a special treat, Mel Brooks and Carl Reiner will bring back their "2,000 Year Old Man" routine with an amusing but pointed radio message about the dangers of high blood cholesterol and the importance of having it checked.

High blood cholesterol is a major cause of coronary heart disease, which claims one-half million lives in the United States each year. But high blood cholesterol is easy to detect through a simple blood test, and it can be lowered. Learning your cholesterol level and reducing the amount of saturated fat, total fat and cholesterol in your diet are important steps towards a healthy heart.

The cholesterol screenings will be held at the following times and locations.

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<tr>
<th>Bldg./Rm.</th>
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<tr>
<td>10, 6C306</td>
<td>Sept. 11, 18, 25</td>
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<td>Westwood, Rm. 11</td>
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<td>Federal, 10B08</td>
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Discounts for NIH Metro Riders

NIH'ers who ride the subway to and from work during rush hours will soon be able to save 25 percent on commuting costs, according to a pilot program introduced by the Commuter Service Center (CSC).

Subway commuters who enter Metrorail at one of three northern stations—Twinbrook, Rockville or Shady Grove—and exit at the Medical Center station are eligible to buy 2-week rail passes at a 25 percent discount. Only morning and evening rush hour travel is eligible for the discount.

The Metrorail Farecard Savings Program, which could begin as early as October, was proposed by CSC to help ease gridlock off I-270, said Elizabeth Allen, CSC associate director.

"We've already received hundreds of applications," she said, adding that CSC will be canvassing NIH's campus during the next 2 weeks to help interested commuters sign up.

If the pilot program is successful, CSC and Metrorail hope to extend the offer to Medical Center commuters from other stations as well.

To apply, commuters send in business reply cards found inside CSC's blue and white Metrorail Farecard Savings Program brochures. Brochures can be obtained from Medical Center station displays or by calling CSC, 881-7433.

Dr. Mary Ann Sestili has been appointed director of the Office of Review at the National Center for Research Resources. Sestili was formerly the executive director of the Linda Pollin Foundation, a private philanthropy that supports programs in the psychological aspects of chronic medical illness. She also has previous experience in both program and review positions with the National Cancer Institute. Sestili received her Ph.D. in cellular physiology from Catholic University.