

NIAMS IRPartners

Fall 2004

A newsletter for patients of the Intramural Research Program (IRP), National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

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U.S. Department of Health and Human Services



National Institutes of Health



National Institute of Arthritis and Musculoskeletal and Skin Diseases

NCI Brings Cancer Care to Cardozo

By L. Michelle Bennett, Ph.D.

This summer, the National Cancer Institute (NCI) is launching a new community-based initiative at the NIAMS Community Health Center to provide cancer screening and evaluation to members of the multicultural community in the Cardozo-Shaw neighborhood in northwest Washington, D.C. The initiative is a three-way collaboration between the NCI, the NIAMS and Unity Health Care.

NCI doctors will provide cancer evaluation at the center, which is located at one of the medical facilities owned by Unity. Unity is a health management company that provides medical care to underserved residents in Washington, D.C., and it rents the center to NIAMS for a mere one dollar per year.

Until now, the health center's focus has been the treatment of rheumatic diseases (such as arthritis, gout and lupus). With the NCI initiative, that all changes. In their initial work at the Center, NCI oncologists (doctors who treat cancer) will evaluate and treat people who have breast, lung or prostate cancer.

The NIAMS is enthusiastic about reaching new patients and broadening the expertise at the center, and the NCI is excited about getting the chance to address health disparities in cancer. JoAnne Zujewski, M.D., an NCI oncologist and researcher who will help lead the NCI team, says, "It is well known that for minorities and underserved populations, cancer is often detected at a late stage in the disease process. This has a significant impact on the ability to successfully treat the disease. By seeing patients in the Cardozo-Shaw neighborhood, the NCI hopes to understand better the factors that contribute to cancer health disparities in our community."

Through their work at the center, the NCI team also wishes to learn more about who gets cancer and why, how genes play a role in cancer,



Drs. Manish Agrawal, Barbara Mittleman and JoAnne Zujewski (l-r) are several of the team of NIAMS and NCI staff integral to the NCI's new efforts at the NIAMS Community Health Center in the Cardozo-Shaw neighborhood.

From the Scientific Director . . .

Welcome to the fall issue of *IRPartners*. In this issue's lead story you'll learn about NIAMS' exciting new partnership with the National Cancer Institute to expand the care we provide at the NIAMS Community Health Center in Washington, D.C. Providing cancer evaluation will better serve the people in the nearby community. This expansion of services is also a testament to the success of a research model based on a government-community team that works to bring health disparities research to the community. Welcome



to our colleagues at the NCI, and thank you for your article in this month's newsletter.

In this issue you'll also learn about an important new lupus study, and you'll meet Dr. Vassilios Lougaris, a NIAMS postdoctoral fellow from Italy. We've been privileged to have him here, and we'll miss him when he leaves later this fall.

Enjoy this issue!

*Peter E. Lipsky, M.D., Scientific Director
National Institute of Arthritis and Musculoskeletal
and Skin Diseases, National Institutes of Health*

CANCER CARE TO CARDOZO, *continued from page 1*

and how to prevent and treat cancer. Seeing patients at the center will provide some of NCI's cancer health care professionals with learning and training opportunities in a multicultural setting.

Barbara Mittleman, M.D., director of scientific interchange at NIAMS, says, "We are thrilled to partner with the NCI to help make cancer studies and services available to patients who might have had trouble getting them in the past. NCI staff at all levels have been committed to bringing their expertise and studies to the community. Hosting them in the NIAMS Community Health Center is a great way to do that."

Cancer Care at the Clinic

NCI doctors and staff will be available at the center every other week to see people who have been referred by a community doctor for a second opinion regarding their cancer diagnosis or because the doctor suspects the patient may have cancer. If the NCI professional determines that a person does have cancer, he or she will be offered enrollment in one of NCI's studies, such as a natural history study or a standard of care study, or, if they are eligible and wish to participate, in one of NCI's other studies. Of course, people may choose instead to return to their community doctor for treatment.

In a natural history or standard of care study, people who have cancer receive regular, ongoing care with standard medical treatments and/or medications. People who join such a study sign a consent form and maintain the option to withdraw from the study at any time.

The doctors at NCI will work with their patients at the center to choose the best approach to manage and treat cancer. Cancer may be treated using several approaches, including surgery, radiation therapy, chemotherapy, and hormones and/or substances that improve the body's ability to fight cancer.

Because the NCI doctors will not be able to provide all medical services at the center, a team of doctors will be available at the NIH campus in Bethesda, Md., to provide X-rays, lab tests, magnetic resonance imaging (commonly called MRI) or other services.

NCI's Goal

Martin Gutierrez, M.D., an oncologist who will help lead the NCI team along with Dr. Zujewski, sums up the NCI team's reasons for their work at the center this way: "NCI's goal is to increase awareness of health disparities, to create an infrastructure that provides support for patients to participate in cancer clinical trials at the NIH Clinical Center, and to develop studies on minority-oriented issues. We also wish to improve on challenges such as medical care issues, language barriers and cultural factors in the community, and to enhance training opportunities in health disparities."

The NIAMS Community Health Center is located at 3020 14th Street, N.W., in Washington, D.C., next to the Columbia Heights Metro station. For more information on the NCI initiative, call Dr. Gutierrez or Shivaani Kummar, M.D., at 301-496-0931.

Manish Agrawal, M.D., Martin Gutierrez, M.D., and JoAnne Zujewski, M.D., contributed to this article ▲

Reducing the Risk of Cancer

Cancer is a disease that impacts most people in the United States: Some people are themselves diagnosed with cancer, and others know family or friends who have been diagnosed. Approximately 1 million new cases of cancer will be diagnosed this year, and approximately half a million people will die of the disease this year. The good news, however, is that improvements in how doctors detect, diagnose and treat cancer have increased the survival rate for many types of cancer. Today, approximately 60 percent of all people who are diagnosed with cancer are still living 5 years after treatment.

Some ways to reduce your chance of getting cancer are:

- Avoid or stop using tobacco products.
- Choose foods with very little fat.
- Eat more vegetables, fruits and whole grains.
- Exercise regularly and avoid obesity.
- Protect yourself from the sun's harmful rays by using sunscreen or protective clothing.
- Go for the regular screening exams that are recommended for your age or skin type (e.g., skin check, pap smear, mammogram, colonoscopy).

There are many ways you can reduce your chance of getting cancer. Many risk factors can be avoided or minimized, but some, such as inherited factors, are unavoidable. Still, it is helpful to be aware of them so you know to check for cancer, and also so you can make lifestyle choices that reduce your chances of developing cancer. It is also important to keep in mind that not everyone with a particular risk factor for cancer actually gets the disease; in fact, most people do not.

Even if you are more likely than others to develop cancer, you can help protect yourself by avoiding risk factors whenever possible and by getting regular checkups to find cancer early if it does develop. Cancer treatment often is more effective when the disease is detected early. Screening exams, such as colonoscopies, mammographies and Pap tests, may also detect precancerous conditions that can be treated before they turn into cancer.

New Arthritis Module on NIH Web Site for Seniors

Because arthritis affects so many older people, NIAMS was asked to contribute a section on arthritis to the NIHSeniorHealth.gov Web site (<http://www.nihseniorhealth.gov>), a new Web site NIH launched last year with formats and topics tailored to the needs of older people. Created by the National Institute on Aging and the National Library of Medicine, the senior-friendly Web site is designed to encourage older people to use the Internet as a resource for health and medical information.

The arthritis part of the Web site walks users through information about the three most common types of arthritis in older people: osteoarthritis, rheumatoid arthritis and gout. It contains information on disease risk factors, symptoms, diagnosis and treatment in short, easy-to-read segments. Like the other sections of NIHSeniorHealth.gov, the arthritis section includes videos and short quizzes, not just text.

"As the nation's leading health research institution, NIH must share what it knows with the public about keeping healthy and dealing with disease. This translation of research into everyday use is a critical part of the NIH's mission," says Dr. Elias A. Zerhouni, director of the NIH, about the Web site.

Other topics featured on NIHSeniorHealth.gov include Alzheimer's disease, exercise for older adults and hearing loss. NIAMS is currently developing sections for the Web site on Paget's disease of bone and osteoporosis. ▲



Did You Know...How Your Donated Blood Is Used?

A steady supply of blood from healthy donors is crucial to keep research going at NIH. Some donated blood is used to care for patients enrolled in clinical trials, and some is used for laboratory research. The Department of Transfusion Medicine (DTM) is responsible for recruiting donors and testing and preparing blood for use by NIH doctors and researchers.

The Blood

Karen Byrne, education coordinator in DTM, told *IRPartners* how the department collects blood and what they do with it.

Whole blood has four components: plasma (fluid), erythrocytes (red blood cells), leukocytes (white blood cells) and thrombocytes (platelets). When people talk about donating blood, most people think of donating whole blood. However, it is also possible to donate specific components of blood, such as platelets or red blood cells. Donating blood components takes a bit longer than donating whole blood, but it allows the donor to give more of the specific component at one time. The DTM needs donors who are willing to donate by both methods.

Blood is collected primarily for patient care, but it can also be collected solely for research purposes. The benefit of donating only components of blood is that doctors and researchers can take only what they need. Some patients may need only red blood cells, like those with sickle cell anemia or other diseases in which the body has trouble making or keeping healthy red blood cells. Other patients may need healthy white blood cells which fight off infections. Others may need help getting their blood to clot, maybe after surgery, and need platelets which are necessary in the clotting process.

There are approximately 7,000-8,000 units (pints) of red blood cells and platelets collected annually. Donors are recruited by DTM staff who rely heavily on NIH employees and neighbors in the community to donate. The DTM needs to make sure they get enough donors to replenish blood, especially for patient care. A shortage of blood could mean surgeries have to be delayed or research postponed.

Safe Blood

Ms. Byrne says, "Before a volunteer donates blood, the DTM staff conducts extensive screening. Donating blood does not put the donor at risk. Screening procedures are in place to protect both donors and recipients." The staff checks the donor's blood pressure and weight. They also check the level of hemoglobin, the oxygen-carrying part of the red blood cells: donors need enough hemoglobin to start with so they can afford to lose some when donating.

Additionally, DTM staff asks the donor questions about general health and if they might have an illness that could be passed on through their blood. They also take the donor's temperature to see if it's elevated, an indication that the donor might have an infection. This

further screening helps ensure that the patients who are receiving the blood will not be at risk of getting an infection when blood is transfused. Nurses or medical technologists normally carry out the screening and the blood drawing.

The DTM then tests the blood samples for viruses, such as hepatitis B and C, HIV, West Nile and other infectious diseases, in the Transfusion Transmitted Viral Testing Laboratory. Platelets are tested to be sure they are free from bacteria. All platelet and red blood cell units are then leukoreduced, which means many of the white blood cells are removed.

That's because the immune systems of patients receiving blood could treat donor's white blood cells as foreign and trigger an immune response. By removing the white blood cells from the blood, that immune response will not occur. But the leukoreduction process doesn't remove all the white blood cells. The few remaining white blood cells could multiply and cause graft versus host disease. To avoid this, blood products are irradiated so that the white blood cells will not divide.

The Research

Ruth Fritsch, M.D., a visiting postdoctoral fellow in the NIAMS Autoimmunity Branch, uses some of the blood products for her research. Among other scientists in the lab, she works with lymphocytes, the parts of the white blood cells that fight foreign substances in the body. Lymphocytes, called T



DTM medical technologist Heather Grose is testing samples of donated blood.

Vassilios Lougaris, M.D., Postdoctoral Fellow

“It sounds silly, but I knew I wanted to be a doctor when I was 5 years old,” says Vassilios Lougaris, M.D., a visiting fellow in the NIAMS intramural program. He must have been a little older before he knew he wanted to do research at the NIH.

Dr. Lougaris’ journey to his present appointment has spanned several continents: He was born in Sydney, Australia, raised in Athens, Greece, then moved to Brescia, Italy, where he earned

his medical degree at the University of Brescia. Dr.

Lougaris began clinical training at the Department of Pediatrics,

University of Brescia. He

decided to focus on pediatric immunology, the study of the immune system specifically in children. He joined the Unit of

Pediatric Immunology and Rheumatology, under professor Alessandro Plebani, where he combined his clinical work with laboratory research on primary immunodeficiencies, genetic disorders in which the immune system can’t fight off invading pathogens, such as viruses or bacteria. As one might imagine, children with these disorders can have a poor quality of life, and treatment options are limited.

In 2002, Dr. Lougaris’ initial work opened the window for him to continue his studies here at NIAMS through a fellowship under Amrie C. Grammer, Ph.D., the leader of the NIAMS B Cell Biology Group, who has an ongoing collaboration with Prof. Plebani. In Brescia, Dr. Lougaris’ studies on B cells, white blood cells that play a major role in immunity, focused on immunodeficient patients. It was there he realized the important link between immunodeficiency and autoimmunity, in which the immune system attacks healthy tissues by mistake: the immune system is working improperly. He

wanted to explore why. NIAMS offered him the interesting chance to broaden his studies in autoimmunity in Dr. Grammer’s lab where the group’s research focuses on B cells and their role in the immune system.

Dr. Lougaris hopes to better understand the signals that make B cells behave or misbehave in the immune system. B cells are produced in the bone

marrow and secrete antibodies that can be protective, for example, against infections to keep a person healthy; or hazardous, against the body’s own tissues causing an autoimmune disease. Cell-to-cell contacts, such as those between the B cells and their targets, are

vital for the immune response, and each contact triggers a specific signaling pathway in the cell. Understanding how that signaling works is necessary to understand the B cells, why they misbehave in autoimmune diseases, and where on the cell surface a potential new therapy might be effective.

About doing research at NIH, Dr. Lougaris says, “One-half to two-thirds of what you can do here happens nowhere else. NIH has the environment to conduct research that no one else does. I can be in the lab sending out a research-related e-mail at 2 a.m., and NIH’s network is so vast that I’ll get a response back right away.”

Dr. Lougaris is excited to return to Italy and continue where he left off when his fellowship here ends in the fall, but he says his goodbye to NIAMS will be bittersweet. “Working here gives you a new perspective on how clinical research can be done. There are so many things I’ve learned here from a researcher’s point of view.” ▲

“It sounds silly, but I knew I wanted to be a doctor when I was 5 years old,” says Vassilios Lougaris, M.D.

New NIAMS Clinical Trial: Lupus

NIAMS is recruiting 14 patients (between 15 and 40 years of age) with severe, treatment-resistant lupus (systemic lupus erythematosus) for a 5-year study. Patients will receive stem cell transplantation therapy using cells harvested from their own bone marrow. These cells are then treated with immunosuppressant drugs and returned to the patient’s bone marrow. The study involves several outpatient visits and a hospital stay. For more information on this or other clinical trials, call 1-800-411-1222, or visit <http://clinicaltrials.gov>. You may also send an e-mail to the NIH Patient Recruitment and Public Liaison Office at prpl@cc.nih.gov.

NIAMS Has Free Health Information

NIAMS has free health information (some in Spanish) available to the public, health professionals and organizations. Information is available on arthritis, lupus and other rheumatic diseases, skin disorders, joint problems and musculoskeletal diseases.

Contact the NIAMS at 1-877-22-NIAMS (free call), TTY: 301-565-2966. Check our Web site at www.niams.nih.gov/hi/. Many of our publications can be printed directly from our site.

Free information on osteoporosis, Paget's disease of bone, osteogenesis imperfecta, primary hyperparathyroidism, and other metabolic bone diseases and disorders is also available from the NIH Osteoporosis and Related Bone Diseases~National Resource Center (NIH ORBD~NRC). Contact the NIH ORBD~NRC at 1-800-624-BONE, TTY: 202-466-4315, or at www.osteoporosis.nih.gov. ▲

National Institute of Arthritis and Musculoskeletal and Skin Diseases/NIH
Building 31, Room 4C02
31 Center Drive, MSC 2350
Bethesda, MD 20892-2350

Produced by the National Institute of Arthritis and Musculoskeletal and Skin Diseases/NIH

Office of Communications and Public Liaison

Building 31 • Room 4C02
31 Center Drive
Bethesda, MD 20892
Phone: 301-496-8190
Fax: 301-480-2814
E-mail: bettends@mail.nih.gov
Web site: www.niams.nih.gov

Stephen I. Katz, M.D., Ph.D., Director

Peter E. Lipsky, M.D., Scientific Director

Barbara B. Mittleman, M.D., Director,
Office of Scientific Interchange

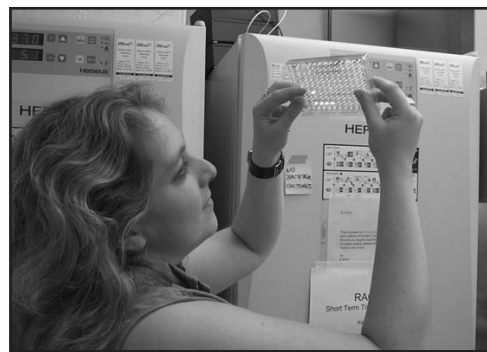
Rachel Moore Weller, Editor

Susan Bettendorf, Associate Editor

DID YOU KNOW?, continued from page 4

lymphocytes, are made in the thymus gland and, among their many diverse functions, kill viruses. Others, called B lymphocytes, are made in the bone marrow and make antibodies. She needs both for her research, in which she compares lymphocytes of lupus patients with those from people who don't have the disease.

Dr. Fritsch studies lymphocytes because they destroy lupus patients' healthy tissues by mistake. In one particular project, she is looking at T lymphocytes and comparing the surface of the cells from lupus patients to those of healthy volunteers, trying to find out how they differ. Understanding the cell surface might show researchers how to determine which cells should be targeted by new therapies without



Dr. Ruth Fritsch examines a plate of lymphocyte samples she will soon be using in one of her projects.

interfering with cells that are functioning correctly to fight off infections.

Every Thursday, blood is drawn from the patients with lupus enrolled in

her study. Dr. Fritsch needs lymphocytes from the blood bank volunteers who serve as "controls" for the patients. Controls are volunteers who match the patients in age, gender and race. The blood bank provides these data with each blood sample, but Dr. Fritsch doesn't ever know the identities of the donors.

Each Thursday, Dr. Fritsch collects the lymphocytes from the blood bank and begins a long process to prepare the cells for storage and incubation. First, she needs to separate the B and T lymphocytes. Processing the samples can take up to 12 hours. She says, "Thursdays are my longest workdays, because once I begin preparing the samples, I should complete the process." She jokes, "Employees at certain cab companies recognize my voice already when I call for a pickup at 3:00 on a Friday morning!"

Want to Donate?

The DTM welcomes volunteers who want to donate blood for patient care or research purposes. Visit their Web site at <http://www.cc.nih.gov/dtm/dtm-only/index.htm> for more information or call 301-496-1048.