

## Dr. Straus Steps Down as NCCAM Director



Stephen E. Straus, M.D.

Stephen E. Straus, M.D., first Director of the National Center for Complementary and Alternative Medicine (NCCAM), stepped down from his position on November 7, 2006, for health reasons. Dr. Straus plans to continue his scientific work at the National Institutes of Health (NIH) as Senior Advisor to the NIH Director.

“Steve Straus has done a tremendous job in creating and leading NCCAM. His total dedication, superb intelligence, extraordinary vision, high energy, and singular wit are all qualities that make him an extraordinary leader,” said NIH Director Elias A. Zerhouni, M.D. “Steve has been one of my most trusted advisors, and I will continue to rely on his experience and perspective.”

### An Early Interest in Science

Dr. Straus was born in 1946 in Brooklyn, New York. His father had emigrated from Poland in 1930, escaping by only a few years the Holocaust that would later claim the lives of many family members. From his youth Dr. Straus was interested in science, because, he says, “I believed that science could reveal truths about ourselves and our place in the universe.”

This passion for science led Dr. Straus to the Massachusetts Institute of Technology, where he received his bachelor’s degree in

life sciences in 1968, and then to the Columbia University College of Physicians and Surgeons, where he received his M.D. in 1972. After his internship at Barnes Hospital, in St. Louis, Missouri, Dr. Straus came to NIH in 1973 as a research associate at the National Institute of Allergy and Infectious Diseases (NIAID). He then returned to Barnes for his residency, completed a fellowship in infectious diseases at Washington University, and returned to NIAID in 1979 as a senior investigator. He was, by then, board certified in internal medicine and infectious diseases.

### A Career in Infectious Diseases Research

At NIAID, Dr. Straus first served as a senior investigator, next as head of the medical virology section in the Laboratory of Clinical Investigation, and then as the Laboratory’s chief. In this time he became an internationally recognized expert in human viral infections and in health problems related to the immune system.

One of his early accomplishments was demonstrating that the drug acyclovir could suppress recurrent genital and oral herpes. “This was the first time we knew that people could take an antiviral drug every day and experience the benefits without any significant toxicity,” Dr. Straus said. His findings also had importance for treating other viral conditions, such as hepatitis, AIDS, and Lyme disease.

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He was one of a national team of clinical virologists to lead a groundbreaking study to test a vaccine to prevent the development of herpes zoster (shingles) in people over age 60. This vaccine, recently approved by the U.S. Food and Drug Administration, promises to prevent as many as a half million cases of shingles in older Americans every year.

Dr. Straus also led a team that discovered ALPS (autoimmune lymphoproliferative syndrome), a rare genetic disease that causes difficult, painful symptoms and raises a person's risk for lymphoma. "We discovered ALPS, named it, characterized its molecular biology, found the genes that are responsible, and developed diagnostic tools," he said. "Today, medicine can help people with ALPS in ways (such as targeted drugs) that we never had before." Dr. Straus is also known for his work to define and describe the characteristics of chronic fatigue syndrome.

During his career at NIH, Dr. Straus has cared for many patients with diverse, serious viral conditions at the NIH Clinical Center, the world's largest research hospital. "I have been privileged to practice medicine in a unique environment," he says. "I don't think you could have a better life as a physician, because I have gotten to take care of patients with disorders I am interested in; develop further expertise and discover new knowledge; and help my patients in ways that most others can't—for example, through cutting-edge technologies, drugs, and vaccines being studied. I have never had to charge a patient for anything or worry whether they can pay for a test. With fewer constraints on my time, I have been able to establish close, long-term relationships with my patients and their families."

## A New Center and a New Challenge

"A number of times, when my patients were not satisfied with the results of conventional medicine, I encouraged and guided them to CAM therapies, if it seemed appropriate," Dr. Straus said. This interest in integrative medicine and the opportunity to address the important public health challenges of CAM led him to NCCAM. In 1999, Dr. Straus was appointed as the Center's first Director.

As he began his new job, Dr. Straus cited his intentions to develop NCCAM's first strategic plan, open and maintain dialogue with NCCAM's stakeholder communities of both CAM and conventional medicine practitioners, develop the Center's infrastructure, create an intramural research program, and work closely with NCCAM's national advisory council. He said, "The American people are spending billions of dollars per year on CAM, so this is a major public health concern. But do CAM treatments and therapies work? Are they safe? The American people have a right to know the facts, and it's our job to generate that new and vital information. And that's what we're going to do."

## A Legacy of Results

Under Dr. Straus's 7 years of leadership, the Center achieved many milestones, including:

- Developing two 5-year strategic plans with participation from both the CAM and conventional medicine communities
- Supporting more than 1,500 projects in research, training, and career development at over 260 U.S. institutions
- Increasing the number of papers by NCCAM grantees nearly twentyfold in leading scientific journals
- Training researchers in the rigorous study of CAM, whether students, new investigators, CAM practitioners, or those further along in their research careers
- Collaborating with the National Center for Health Statistics to develop the

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largest and most representative national survey ever conducted of Americans' use of CAM

- Leading the Federal support of the Institute of Medicine's study of the scientific and policy implications of Americans' use of CAM
- Increasing the dissemination of science-based information about CAM through numerous channels, including an award-winning Web site, an array of award-

winning publications, and an online continuing education program.

### Professional Recognitions

Dr. Straus has been honored by election to many professional societies, including the Infectious Diseases Society of America, the Association of American Physicians, and the American Society for Clinical Investigation. He has received numerous

commendations from the U.S. Public Health Service, including the Distinguished Service Medal for innovative clinical research, and two Secretary of Health and Human Services' Distinguished Service Awards. In 1999, he received

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## Ruth L. Kirschstein, M.D., Acting Director, NCCAM

On November 7, 2006, NIH Director Elias Zerhouni, M.D., appointed Ruth L. Kirschstein, M.D., as Acting Director of NCCAM.

Dr. Kirschstein is a native of Brooklyn, New York. She graduated magna cum laude from Long Island University in 1947, earned her M.D. from Tulane University School of Medicine in 1951, and interned in medicine and surgery at Kings County Hospital, Brooklyn. She did residencies in pathology at Providence Hospital, Detroit; Tulane University School of Medicine; and the NIH Clinical Center.

From 1957 to 1972, Dr. Kirschstein was a researcher in experimental pathology at the Division of Biologics Standards, now the Center for Biologics Evaluation and Research at the U.S. Food and Drug Administration (FDA). She became chief of the Laboratory of Pathology in 1961, assistant director of the Division of Biologics Standards in 1972, and deputy director of the Division later that year when it became part of the FDA. She subsequently served as deputy associate commissioner for science at the FDA.

Dr. Kirschstein was the first woman director of an NIH institute, when she served as director of the National Institute of General Medical Sciences from 1974 to 1993. She then became acting associate director of NIH's new Office of Research on Women's Health. She was Deputy Director of NIH from November 1993 to

December 1999 and Acting Director of NIH from January to May 2002.

Throughout her career, Dr. Kirschstein has worked as an administrator, fundraiser, and scientific researcher, and investigated possible public health responses in the midst of crisis and conservatism. For example, in the 1950s, the California Cutter Company's Salk polio vaccine was blamed for more than 200 cases of polio. Dr. Kirschstein led the search for a safer alternative, advocating the Sabin oral vaccine that is now used worldwide. In the 1980s, she was a leader in the public health response to the emerging AIDS epidemic, organizing funding and mobilizing an NIH research team to take on the task in the face of conservative opposition.

Among Dr. Kirschstein's many honors and awards are the Department of Health, Education and Welfare's Superior Service Award; the U.S. Public Health Service (PHS) Superior Service Award; the Presidential Meritorious Executive Rank Award; the PHS Special Recognition Award; the Presidential Distinguished Executive Rank Award; election to the Institute of Medicine; and the Albert B. Sabin Heroes of Science Award. In 2002, Congress renamed the National Research Service Awards in honor of her career, as the Ruth L. Kirschstein National Research Service Awards.

Dr. Kirschstein commented to *CAM at the NIH*, "I join all of Dr. Straus's many colleagues and friends in wishing him well, and I feel a special



Ruth L. Kirschstein, M.D.

commitment to carry out the vision he forged for NCCAM as its founding Director. I was Acting Director of NIH when its original Office of Alternative Medicine was created and a member of the search committee that recommended Dr. Straus for the Center's first Director. I have worked closely with many NCCAM staff over the years, and I am doing so again to become familiar with the activities, plans, and programs currently under way. We will be continuing to implement the NCCAM Strategic Plan and working to keep the Center strong." ❖



NIH has begun requiring that grant applications be submitted via the Web portal Grants.gov ([www.grants.gov](http://www.grants.gov)) using Form 424 (Research and Related, or R&R, application). To find out more, go to [era.nih.gov/electronicreceipt](http://era.nih.gov/electronicreceipt).

For more information on these and other funding opportunities, go to [nccam.nih.gov/cgi-bin/grants/funding.pl](http://nccam.nih.gov/cgi-bin/grants/funding.pl).

### RFA-AT-07-001: New Technologies for Assessing Manual Therapies

**Sponsor:** NCCAM. Acute and chronic neuromuscular conditions (such as back pain) are very common, affecting most Americans at some point in their lives. Over 10 percent of the public uses manual (hands-on) therapies to treat these conditions. However, there are many unanswered questions about the effects of these therapies and how best to use them. The announcement invites small business concerns to develop new, innovative tools and technologies, or to apply existing ones in new ways, to find out more about the biological effects of manual therapies and/or to prevent, diagnose, manage, or treat conditions that are treated by manual therapies.

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the Dutch National ME Fund Award, the leading prize from the Netherlands for research in chronic fatigue syndrome.

#### A Leader at NIH

Dr. Straus has been a member of the NIH Steering Committee, which advises the NIH Director, and he served as chair of several committees that were part of the NIH Roadmap for Medical Research and focused on advancing clinical research. He represented NIH as a member of the Clinical Research Roundtable of the National Academies' Institute of Medicine. He chaired the NIH Committee on the Recruitment and Career Development of Clinical Investigators, which released "The Straus Report" in 1997, outlining the current career pathways for clinical investigators in the intramural research program.

In addition, Dr. Straus has published more than 400 research articles, edited several



books, and served on the editorial boards of several scholarly journals.

#### Reflections on a Career

Dr. Straus describes his career with animation. "I am passionate about medicine and passionate about science. It has been a revelatory experience to figure out something new for the first time and to discover that something 2,000 years old may work, and then to figure out how. It has also been great fun.

"I was a pretty good woodworker, and I love it. There's a relationship between building furniture and doing science. When you build something, you pick the materials, think about what you would do with them, spend a lot of time on the design, make your cuts, and all the joining has to be right. You must put it all together and finish it as well. You're not done until you are done. It's both a vision and a process.

"So it is in research. You ask the same questions: What tools do I need, and how will I use them? What raw materials will I use? How will it fit together? How am I going to analyze the data? This is a beautiful process, and it's one that moves me. Considering my family's background, their poverty, and what they could have faced had they remained in Eastern Europe instead of coming to the United States, it is a great blessing that I have been permitted to expend my decades in this creative and rewarding way.

"As NCCAM's first Director, I have been privileged to try to actualize my passion and vision for the future of medicine. Working with talented people, developing a new field of scientific pursuit, and learning new ways to practice healing have contributed to the growing transformation that we are seeing in medicine. I am grateful for the public's trust in this mission and I'm honored to have led this collective endeavor on their behalf." ❖

# Tools That Are Transforming Discovery in CAM

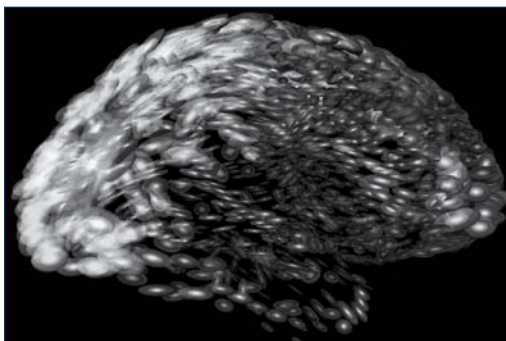
The National Institutes of Health (NIH) is the nation's medical research agency—making important medical discoveries that improve health and save lives. NIH-supported scientists study ways to prevent disease, as well as the causes, treatments, and cures for common and rare diseases. The National Center for Complementary and Alternative Medicine (NCCAM), as a part of NIH, shares in these goals.

The NIH's Roadmap for Medical Research ([www.nihroadmap.nih.gov](http://www.nihroadmap.nih.gov)) is a strategy intended to speed the process of discovery in biomedical research and bring innovations more quickly from the laboratory to patient care. An important piece of the Roadmap is to provide researchers with access to advanced technologies, databases, and other scientific resources. This article reviews some of these resources and NCCAM-supported studies that are using them. They are addressing questions like:

- What changes occur in the brain and elsewhere in the body (even down to the level of cells, molecules, and genes) when a CAM therapy is used?
- What is the chemical makeup of a natural product, such as an herb?
- How can a CAM therapy be used most effectively and safely?

## A (Very) Close Look

**Imaging** techniques produce pictures of what is happening inside the body. Two examples of imaging techniques that are well known and date back decades are x-rays and ultrasound. However, there are also some newer players on the imaging stage.



Mapping brain differences, using imaging and other advanced tools

Courtesy of Arthur Toga, University of California, Los Angeles, Center for Computational Biology

**MRI**, short for magnetic resonance imaging, uses a computer, powerful magnets, and radio waves to create three-dimensional images (scans) of the body's tissues and organs. As one example, investigators at the Consortial Center for Chiropractic Research (an NCCAM research center made up of a group of chiropractic colleges and institutions and headquartered at Palmer College of Chiropractic) are using MRI to study what happens in the spine when people with acute low-back pain receive chiropractic care. They hope to increase knowledge about chiropractic treatment and ultimately help the symptoms and functioning of people who have back pain.

With **fMRI**, short for functional magnetic resonance imaging, researchers can look at functioning in the brain or other organs by detecting changes in the chemical composition and/or blood flow in these areas. Some studies are using fMRI to better understand the brain's responses to mind-body therapies such as meditation.\*

At the University of Wisconsin-Madison, researchers are studying the impact of a meditation practice on study participants' attention and emotions, and on the brain structures and systems that are involved.

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News for Researchers  
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### PA-06-510: Exploratory/ Developmental Grant for Clinical Studies of Complementary and Alternative Medicine

**Sponsors:** NCCAM and the National Cancer Institute. These grants are for preliminary clinical research studies on CAM.

### PA-06-486, PA-06-487, and PA-06-488: Behavioral and Integrative Treatment Development Program

**Sponsors:** NCCAM, the National Institute on Drug Abuse, and the National Institute on Alcohol Abuse and Alcoholism. Projects will integrate behavioral and CAM therapies with a goal of treating drug and alcohol abuse more effectively and doing so at the community level.

### PA-06-418: Exploratory/ Developmental Bioengineering Research Grants and PA-06-419: Bioengineering Research Grants

**Sponsors:** NCCAM and 17 other components of NIH. Toward a better scientific understanding of CAM, awardees will use principles and techniques not only from biology and medicine but also from other fields such as engineering, physics, biostatistics, and computer science.

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\* See also *Meditation for Health Purposes* at [nccam.nih.gov/health/meditation/](http://nccam.nih.gov/health/meditation/).

## News for Researchers (continued from pg. 5)

### PA-06-542 and PA-06-544:

#### Mechanisms, Models, Measurement, and Management in Pain Research

*Sponsors:* NCCAM, the National Institute of Nursing Research, and 10 other components of NIH. Pain is a critical national health problem and costs the United States over \$100 billion each year in health care and lost productivity. While research strides have been made in some areas of pain, many challenges remain in understanding the pain experience and in treating pain. These grants will support a wide range of studies on acute and chronic pain conditions, toward development of better approaches to treatment and management (including from CAM).

The annual **Institutional Clinical and Translational Science Awards (CTSA)** support academic health centers in building research programs that will help speed new discoveries from the laboratory to patient care. The upcoming deadline for 2007 awards is January 17, 2007. For more information, visit [www.grants.nih.gov/grants/guide/rfa-files/rfa-rm-07-002.html](http://www.grants.nih.gov/grants/guide/rfa-files/rfa-rm-07-002.html). ❖

## Tools That Are Transforming Discovery in CAM

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One question is whether attention and emotion, as processes, are flexible enough that people can train themselves to have positive emotional states more often. Meditation can be one source of these states, which research has indicated may have health benefits. Part of the Wisconsin work includes the study of Buddhist monks who are longtime practitioners of meditation.

When someone has a **PET** (positron emission tomography) scan, the technician injects a small amount of a radioactive substance into a vein. The substance travels through the bloodstream to the target tissue, where it gathers in the cells and gives off extremely tiny radioactive particles. The PET device uses them to make three-dimensional images, not just of the body's structures, but also its metabolism.

One way PET is being used in CAM research is to study the placebo effect (the physical or psychological benefits that can occur with the use of a placebo—an inactive or sham treatment such as a sugar pill).

Recent research has shown that placebos may have value beyond simply being “controls” in clinical trials; they may have powerful therapeutic effects themselves. Researchers want to understand the underlying pathways in the body that lead to placebo effects, an endeavor that ultimately could benefit both CAM and conventional medical treatment. Johns Hopkins School of Medicine researchers are using PET to study how placebos affect brain neurons,<sup>†</sup> some of which have receptors for opiate-like substances that the body produces naturally and that

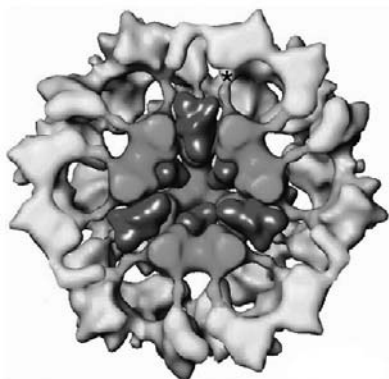
function to reduce pain. In another project, a team at the University of Michigan at Ann Arbor is using both fMRI and PET to examine the metabolism of regions of the brain that are involved in placebo treatment of pain.

## Down to the Genetic Level

New high-technology tools being used to analyze genetic material have helped create entirely new scientific disciplines, such as:

- **Genomics**, a “scaled-up” version of genetics research in which scientists can look at all the genes in a living creature at the same time. A research study at Chongqing University of Medical Sciences, China (with earlier work at the University of Chicago Medical Center), is using genomics to study human cancer cells treated with berberine (the main component of *Coptis chinensis*, a medicinal herb). The team hopes to identify genes that have a role in anticancer action in berberine, which might lead to new therapeutic approaches in cancer.
- **Proteomics**, the study of the structure and function of proteins (for example, the ways they interact with each other inside cells). Using proteomics, researchers at the University of Alabama at Birmingham have found that grape seed extract increases or decreases the levels of certain proteins in the brain in ways that might have a protective effect on brain function. Grape seed extract is rich in proanthocyanidins—molecules that help create intense colors in fruits and vegetables and are thought to have antioxidant properties.
- **Metabolomics**, the study, on a large scale, of metabolism (and the substances involved) in cells, tissues, and organ systems. In the Endocrinology Section of

<sup>†</sup> A neuron is a type of cell that receives and sends messages from the body to the brain and back to the body, through a weak electrical current. It is also called a nerve cell.



This three-dimensional image, created by computers, illustrates how certain enzymes work together in a cell's metabolism (the focus of a new field called metabolomics)

NCCAM's Division of Intramural Research, scientists are using metabolomics to study L-carnitine (a dietary supplement) for its potential in helping to prevent loss of muscle mass in certain chronic diseases and in the aging process.

### Cutting-Edge Chemistry

**Mass spectrometry (MS)** uses a sophisticated instrument to identify chemicals in a substance by their mass and electrical charge. It has been around for almost a century, but is being used in new ways—for example, at the University of Illinois at Chicago College of Pharmacy, to study botanical dietary supplements in women's health. The goal is to analyze the supplements' chemical components and prepare standard formulations for use in clinical studies.

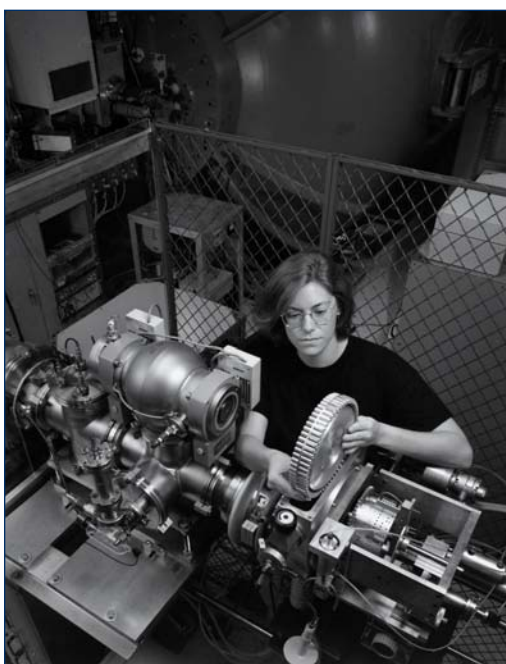
**Accelerator mass spectrometry (AMS)** uses an ultrasensitive technique that takes MS analysis to an even higher level through a very advanced device called a particle accelerator. Researchers at Purdue University (whose particle accelerator is as big as a football field) and the University of Alabama at Birmingham are using AMS to study isoflavones, a group of compounds found in some plants and especially in soy, for their effects on calcium absorption and bone loss in postmenopausal women.

### Computing New Answers

Some research tools bring computer technology and expertise from other fields (for example, in biology, other life sciences, physics, and mathematics) to bear on CAM research questions.

**Computer-assisted devices** in medicine are becoming smaller and more powerful. One way to use them is to study changes in the body that are hard to measure. In studies of treatments for menopausal symptoms, for example, participants have often reported the frequency and severity of their hot flashes through diaries or in interviews. However, these methods can have drawbacks that affect studies' validity and reliability. For objective measuring, instruments called sternal skin conductance monitors can be used, but so far, many have had limitations—for example, where and how long users can wear them. NCCAM has been supporting the development of improved monitors for hot flashes. These should provide more effective measuring tools in clinical studies of CAM therapies for menopausal symptoms.

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Inserting samples to be analyzed by accelerator mass spectrometry (AMS)

## Calendar of Events

This calendar lists events on CAM in which NCCAM or other components of NIH are sponsors or participants and includes information available at press time.

### February 2007

#### Meeting of the National Advisory Council for Complementary and Alternative Medicine:

February 2. *Location:* Neuroscience Center Building, 6001 Executive Blvd., Rockville, Maryland. See [nccam.nih.gov/about/advisory/naccam/](http://nccam.nih.gov/about/advisory/naccam/).

### March 2007

#### Distinguished Lectures in the Science of Complementary and Alternative Medicine:

March 21, 11 a.m. *Speaker:* Jerome Groopman, M.D., Recanati Professor of Medicine at Harvard Medical School and Beth Israel Deaconess Medical Center. *Location:* Masur Auditorium, Building 10, NIH, Bethesda, Maryland. The lecture will be Webcast live and archived. To find out more, see [nccam.nih.gov/news/lectures/index.htm](http://nccam.nih.gov/news/lectures/index.htm). ❖



Complex carbohydrates called glycans coat the surface of every cell in our bodies. Recently, scientists have gained the technological ability to learn more about glycans' structure in order to understand their function and how they might be used to prevent, diagnose, and treat disease. **Ram Sasisekharan, Ph.D.**, professor of biological engineering at Massachusetts Institute of Technology, lectured on glycans in natural products (with a focus on heparin, ginseng, and pectin) at NIH on October 25, 2006. The lecture, "Natural Products: Challenges and Opportunities" is part of the NCCAM series *Distinguished Lectures in the Science of Complementary and Alternative Medicine*. To view this archived lecture, go to [www.videocast.nih.gov/past\\_events.asp](http://www.videocast.nih.gov/past_events.asp) and use the search function.

## Tools That Are Transforming Discovery in CAM

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In **bioinformatics**, the researcher uses a computer to obtain, organize, analyze, and otherwise work with data from the life sciences. An NCCAM-funded study at the University of Southern California is using bioinformatics to analyze data on SAME (S-adenosyl-L-methionine, a dietary supplement) as a potential treatment for liver disease.

**Computational biology** consists of developing and applying various methods, such as computer-derived mathematical models and simulation techniques, to study systems in the life sciences. In the chiropractic study discussed earlier, investigators are using computational biology to interpret their data from spinal manipulation in animal models, as it applies to people.

### Looking to the Future

Margaret A. Chesney, Ph.D., Deputy Director of NCCAM, says, "NCCAM encourages innovation in the research enterprise. New tools, and innovative ways of using older tools, are ways that we learn not only more about CAM therapies, but the health problems for which people use CAM."

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### For More Information

#### **NCCAM Clearinghouse**

The NCCAM Clearinghouse provides information on CAM and NCCAM, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

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TTY (for deaf and hard-of-hearing callers): 1-866-464-3615

Web site: [nccam.nih.gov](http://nccam.nih.gov)

E-mail: [info@nccam.nih.gov](mailto:info@nccam.nih.gov)

#### **CRISP (Computer Retrieval of Information on Scientific Projects)**

CRISP is a database of information on federally funded scientific and medical research projects being conducted at research institutions.

Web site: [www.crisp.cit.nih.gov](http://www.crisp.cit.nih.gov)

#### **National Institute of General Medical Sciences**

Web site: [www.nigms.nih.gov](http://www.nigms.nih.gov)

#### **National Institute of Biomedical Imaging and Bioengineering**

Web site: [www.nibib.nih.gov](http://www.nibib.nih.gov)

These two institutes at NIH have glossaries (or links to them) on their Web sites, defining many technologies and tools being used in biomedical research. ❖



## Research Roundup

"Research Roundup" presents several examples of NCCAM-funded research recently published in peer-reviewed journals listed in the National Library of Medicine's PubMed database ([www.ncbi.nlm.nih.gov/entrez](http://www.ncbi.nlm.nih.gov/entrez)).

### New Findings on Sleep Disorders and CAM

Based on a national survey, NCCAM scientists found that over 1.6 million American adults use some form of CAM to treat insomnia or trouble sleeping.\* Nancy Pearson, Ph.D., Laura Lee Johnson, Ph.D., and Richard Nahin, Ph.D., M.P.H., of NCCAM evaluated results of the 2002 National Health Interview Survey, which was conducted by the National Center for Health Statistics and included questions on participants' use of CAM. Among the NCCAM authors' other key findings:

- Over 17 percent of adults reported insomnia or trouble sleeping in the past 12 months. In this group, 4.5 percent used some form of CAM to treat these problems.
- Nearly 61 percent of those who had insomnia or trouble sleeping were women. About 39 percent were men.
- People with a higher level of education were less likely to report having insomnia or trouble sleeping. Also, people who identified their race/ethnicity as White were more likely to have insomnia or trouble sleeping than those who were Black or Asian.
- The CAM users were most likely to use biologically based therapies (nearly 65 percent), such as herbal therapies, or mind-body therapies (more than 39 percent), such as relaxation techniques. Most who used these two types of therapies said they were at least somewhat helpful for insomnia or trouble sleeping.
- The survey indicated that insomnia or trouble sleeping hit its peak in middle age (45-64 years old), with a second increase in people 85 and older.
- The odds of having insomnia or trouble sleeping were significantly higher for people

with high blood pressure, congestive heart failure, anxiety and depression, or obesity. *Archives of Internal Medicine*, September 2006

### Polyunsaturated Fatty Acids for Depression

Omega-6 and omega-3 fatty acids (also called PUFAs, short for polyunsaturated fatty acids) are among the CAM therapies used with the intent to help symptoms of depression. Anna-leila Williams, M.P.H., of the Yale-Griffin Prevention Research Center, led a team who reviewed evidence on this topic. The authors found five randomized controlled trials to be of sufficient quality for review, although all were small and of short duration. All but one of these trials found some improvement from using PUFAs for symptoms of depression, particularly from omega-3 fatty acids. The authors concluded that while the evidence to support using PUFA supplements as a treatment for depression is not strong, enough potential exists to merit further research. *Journal of Affective Disorders*, May 2006



Omega-3 capsules

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### Review of CAM for Menopause

An NIH State-of-the-Science meeting in March 2005 addressed the management of menopause-related symptoms, including through the use of CAM.† More recently, a July 2006 review by Anne Nedrow, M.D., of Oregon Health and Science University, addressed this use of CAM. Dr. Nedrow and her colleagues reviewed 70 published studies on CAM for menopausal symptoms. Most (48 studies) tested biologically based practices such as soy products and herbal supplements; a few studies looked at other CAM therapies—such as progressive relaxation, osteopathic manipulation, and magnet therapy. Nearly half of the studies included in the review were of poor quality, which made their results unreliable. Differences among the studies made it challenging for the review authors to

compare the results and draw conclusions. However, they did conclude that although individual studies suggest benefits from certain CAM therapies, the overall evidence does not support their use for menopausal symptoms. The authors noted that results from higher quality studies (especially on the most commonly used CAM therapies for menopause) are needed to better compare evidence among therapies. *Archives of Internal Medicine*, July 2006

### A Mantram Studied in Adults With HIV

Research has shown that some spiritual practices may help people with HIV (the virus that causes AIDS) to cope with psychological distress and improve quality of life. Researchers led by Jill Bormann, Ph.D., R.N., at the VA San Diego Healthcare System investigated the use of one such practice—a mantram—by people with HIV. A mantram was defined by the authors as a word or phrase with spiritual associations that is repeated silently several times throughout the day. The 68 participants were randomly assigned to six 90-minute sessions in which they either learned how to use a mantram or participated in education/discussion groups. The mantram group showed a significant decrease in anger (one of the measures of psychological distress) and a significant increase in aspects of spiritual well-being (which may improve quality of life). The authors recommend that further research be done to confirm these findings. *Journal of Behavioral Medicine*, August 2006 ❖

\* See also "Can't Sleep? Science Is Seeking New Answers" in the Summer 2005 issue.

† To find out more, see the NCCAM Backgrounder *Do CAM Therapies Help Menopausal Symptoms?*



Left to right: Jennifer Monroe, Justin Meunier, Pui Wen (Susan) Cheung

## Training the Next Generation of CAM Researchers

NCCAM's mission includes training in CAM research, and internships through the NIH Summer Internship Program in Biomedical Research are an important part of that effort. On August 3, 2006, three NCCAM summer interns presented posters on their work (done with Dr. Marc Blackman, Dr. Julia Arnold, and Dr. Patrick Mansky of NCCAM) at an NIH-wide research poster festival.

Pui Wen (Susan) Cheung, a student in Georgetown University's CAM M.S. in Physiology Program, presented results from her study of prostate cells and DHEA. Her study demonstrated that prostate epithelial (surface) cells did not respond to DHEA alone in a culture dish, but did respond to DHEA when prostate cancer-associated stromal (structural) cells were added. However, they did not respond to the DHEA when normal prostate stromal cells were added. Future studies will help determine whether DHEA has an effect on the progress of prostate cancer.

Justin Meunier, a first-year student at Louisiana State University's School of Medicine, presented initial results from an ongoing clinical study

## Spotlight on Clinical Trials

The clinical trials below are among the many NCCAM-sponsored trials that were recruiting at press time. To find out more, go to [www.clinicaltrials.gov](http://www.clinicaltrials.gov) (for a specific trial below, enter the identifier).

### Treatment of Rheumatoid Arthritis With Marine and Botanical Oils

Both fish oil and borage oil are rich in omega-3 fatty acids, which may have anti-inflammatory properties. The researchers are examining the effectiveness of using these oils—ingested either alone or in combination—to treat rheumatoid arthritis, as well as how they may work in the body.

*Identifier:* NCT0007298

*Principal investigator's institution:* University of Massachusetts Medical School, Worcester

### The Role of Vitamins C and E in Maintaining Lung Health in People With Asthma

Eosinophils and neutrophils are inflammatory cells in people's airways and lungs. When these cells are activated, they make chemicals called oxidants; this irritates the mucosal cells in the airways, and mucus develops in the lungs. Substances that cause allergic reactions (allergens) can activate the inflammatory cells and thereby worsen asthma symptoms. Vitamins E (alpha-tocopherol) and C (ascorbate) have been shown to lessen the worsening of asthma associated with exposure to ozone (a gas that, at

evaluating the effects of chronic osteoarthritis pain on the nervous system and endocrine system in men. He also discussed a plan for further studies on the biology of the placebo effect.

Jennifer Monroe, a first-year student at the Chicago College of Osteopathic Medicine, presented her work at the NIH Clinical Center in developing a survey to analyze cancer patients' use of acupuncture to relieve their symptoms.

Other NCCAM interns, who worked with Dr. Michael Quon, were Joel Bronstein, a University of

ground level, is an air pollutant and a major ingredient of smog). Enhancing antioxidant and anti-inflammatory defenses in the airways and lungs could hold promise for treating respiratory diseases aggravated by allergies. This study is investigating a combination vitamin E and vitamin C therapy for this purpose.

*Identifier:* NCT00142610

*Principal investigator's institution:* University of North Carolina School of Medicine

### Black Cohosh Extract in Postmenopausal Breast Health

Black cohosh extract (BCE) is the largest-selling dietary supplement used to treat menopausal symptoms (such as hot flashes). How it may work is not yet clear—some studies indicate it is through the central nervous system, and others, through an estrogen-like effect. This study seeks to find out more about the effects of BCE, especially on the breast and on menopausal symptoms, and whether it increases the risk of developing estrogen-related cancers, such as breast cancer.

*Identifier:* NCT00064831

*Principal investigator's institution:* University of Missouri-Columbia ❖

Pennsylvania undergraduate; Andrew Chang of Walt Whitman High School, Bethesda, Maryland; and Dianna Liu of Tom C. Clark High School, San Antonio, Texas.

Dr. Arnold commented, "All of us in the Division of Intramural Research are grateful for the contributions made by these students and wish them great success."

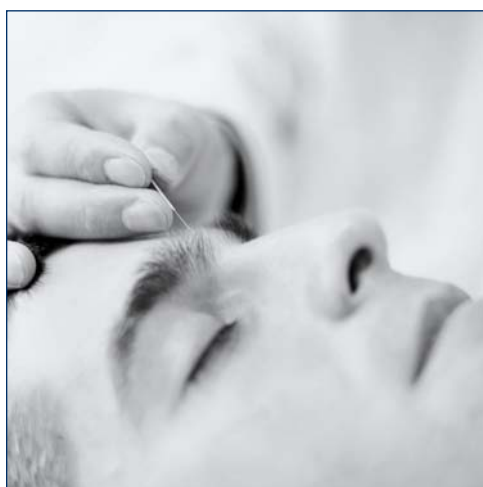
For more on this program, see [www.training.nih.gov/student/sip/index.asp](http://www.training.nih.gov/student/sip/index.asp). ❖

# CAM Offerings in U.S. Hospitals

A recently released survey on CAM, conducted for the American Hospital Association (AHA), describes the characteristics and CAM offerings of nearly 1,400 hospitals throughout the United States. CAM services and locations, finances and reimbursement, planning and staffing, and evaluation and research were the major topic areas. Health Forum LLC, a subsidiary of AHA, conducted the survey in 2005.

Among the findings:

- Nearly 27 percent of the hospitals that responded were offering one or more CAM therapies. The survey notes an increasing interest in CAM, including on the part of consumers, medical students, and recently graduated physicians.



Acupuncture

- Most of the hospitals offering CAM were in urban areas (68 percent). Half were medium-sized (100 to 300 beds). Thirty-six percent of the hospitals offering CAM were teaching hospitals (hospitals that train physicians).
- Among the hospitals that offered CAM, the top six CAM\* therapies (or groups of therapies) provided were

<u>Inpatient CAM Services</u>	<u>Percentage</u>
Massage therapy	37
Music/art therapy	26
Therapeutic Touch	25
Guided imagery	22
Relaxation training	20
Acupuncture	12

<u>Outpatient CAM Services</u>	<u>Percentage</u>
Massage therapy	71
Tai chi, yoga, or qi gong	47
Relaxation training	43
Acupuncture	39
Guided imagery	32
Therapeutic Touch	30

- The hospitals selected CAM therapies based on these criteria:

	<u>Percentage</u>
Patient demand	79
Scientific evidence base	65
Availability of practitioners	53
Market research	23

- The reasons for offering CAM services were

	<u>Percentage</u>
Patient demand	87
Reflects the hospital's mission	62
Clinical effectiveness of the therapies	61
To attract new patients	38
Physicians' requests	37
To be different from competitors	28
Possible cost savings	14
Employee requests	11
Other	9
Insurance coverage	4

- Eighty-one percent of CAM users at these facilities paid for the CAM services out-of-pocket. Insurance reimbursement paid for 37 percent.

Ananth S, Martin W. *Health Forum 2005 Complementary and Alternative Medicine Survey of Hospitals: Summary of Results*. Chicago: Health Forum LLC; 2006. ❖

## From the NCCAM Clearinghouse

The following **new publications** are available on the Web and from the Clearinghouse (see pg. 2):

- *Massage Therapy as CAM* (nccam.nih.gov/health/massage/)
- *Paying for CAM Treatment* (nccam.nih.gov/health/financial/)



The NIH Office of Dietary Supplements has released a new issue of the *Annual Bibliography of Significant Advances in Dietary Supplement Research*. It contains abstracts of the 25 research papers from 2005 judged as most noteworthy by an expert panel. For a copy, go to [dietary-supplements.info.nih.gov/research/annual\\_bibliographies.aspx](http://dietary-supplements.info.nih.gov/research/annual_bibliographies.aspx) or write the NIH Office of Dietary Supplements, 6100 Executive Blvd., Rm. 3B01, MSC 7517, Bethesda, MD 20892.

\* The report did not state how CAM was defined.

**CAM at the NIH:**

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## Alerts and Advisories

The U.S. Food and Drug Administration (FDA) recently issued cautions on several potentially harmful products used as CAM and sold without FDA approval. People who have used any of them should contact their health care provider. For more on FDA actions on dietary supplements, conventional foods, and other products, see [www.fda.gov/opacom/7alerts.html](http://www.fda.gov/opacom/7alerts.html).

■ **Zimaxx, Libidus, Neophase, Nasutra, Vigor-25, Actra-Rx, and 4EVERON.**

These products are sold as dietary supplements with claims to enhance sexual performance and treat erectile dysfunction. They contain variations of the active ingredients in drugs prescribed for erectile dysfunction and could dangerously lower blood pressure

when taken with certain prescription medicines.

■ **Bismacine, also known as chromacine.**

This injectable product is not approved by the FDA but has been used with the intent to treat Lyme disease. Bismacine contains high amounts of a heavy metal called bismuth, which could be poisonous and cause the cardiovascular system or kidneys to shut down.

■ **High-strength hydrogen peroxide products, including “35 Percent Food Grade Hydrogen Peroxide.”**

These products have been sold with claims for medicinal use but have no proven clinical value. Instead, they can cause serious harm and even death when taken by mouth. ❖