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## Patient Education at International CAM Research Meeting

Patient education took center stage as one of only five symposium topics selected for the International Congress on Complementary Medicine Research, which took place May 19-21, 2010, in Tromsø, Norway. The 90-minute symposium was designed to identify best practices in developing cancer patient education materials on the topic of complementary and alternative medicine (CAM).

The “What are Best Practices in Developing Cancer CAM Patient Education Materials?” symposium gathered subject matter experts from three of the top National Cancer Institute designated Cancer Centers in the United States. Symposium panelists included:

- Lorianne Classen, M.P.H., CHES; Senior Health Education Specialist, Patient Education Office, M. D. Anderson Cancer Center ([www.mdanderson.org/education-and-research/departments-programs-and-labs/programs-centers-institutes/integrative-medicine-program/index.html](http://www.mdanderson.org/education-and-research/departments-programs-and-labs/programs-centers-institutes/integrative-medicine-program/index.html));
- K. Simon Yeung, M.B.A., PharmD, LAc., “AboutHerbs” Web Site Manager, Memorial Sloan-Kettering Cancer Center ([www.mskcc.org/mskcc/html/11570.cfm](http://www.mskcc.org/mskcc/html/11570.cfm)); and
- Anne M. Doherty-Gilman, M.P.H., Associate Director, Leonard P. Zakim Center for Integrative Therapies, Dana-Farber Cancer Institute ([www.dana-farber.org/pat/support/zakim/default.html](http://www.dana-farber.org/pat/support/zakim/default.html)).

During the first portion of the symposium, the panelists shared their respective institutions’ definition of patient education and presented several examples of high-quality materials they developed.



*Panelists respond to audience questions. L-R Lorianne Classen, Anne M. Doherty-Gilman, and K. Simon Yeung.*

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The Communications and Outreach Program Manager at the Office of Cancer Complementary and Alternative Medicine (OCCAM) Shea Buckman, M.A., moderated the remainder of the symposium, which posed three main questions:

1. What is the best process for developing high-quality patient education materials?
2. What policies help ensure you develop materials that are high-quality?
3. How important is the background of your personnel to the development process?

The session tackled specific issues including literacy concerns, criteria for resources used in the creation of evidence-based information, and creating a patient education team with the preferred skills and backgrounds.

Discussion amongst the panelists examined the development process for patient education materials. In deciding what topics on CAM to cover, panelists mentioned assessing clinical staff's perspective on the information needs of patients, conducting focus groups and interviews with patients, and reacting to patients' frequently asked questions.

Panelists stated that patient education departments took the brunt of responsibility and onus for developing patient education materials, while other front line personnel – such as doctors and nurses – helped make decisions on what should be covered.

Resources commonly used when creating new materials included the Natural Standard database, the National Center for Complementary and Alternative Medicine and other National Institutes of Health Web sites and publications, peer-reviewed literature, and classical CAM textbooks on particular modalities.



*Lorianne Classen introduces her institution during the patient education panel.*

Panelists agreed that expert review, comprised of clinicians and other administrative personnel, and approval systems are mandatory for their organizations.

While most decisions on what format patient education materials take (e.g. video, brochure, fact sheet) were cost driven, most panelists agreed that you should start with patient teaching sheets and list one topic at a time versus multiple topics.

Panelists aimed to keep their materials at a sixth grade reading level and were careful not to include many medical jargon terms or acronyms, always allowing room for descriptive pictures and white space.

Another important component to best practices for patient education is creating policies and referral standards for materials. In the case of linking policies, all of the panelists' institutions include links to government Web sites and other cancer related non-profits like the American Cancer Society, but some refused to link to commercial sites.

Updating materials proved to be a point of difference among the panelists. While two of the centers agreed that three years was sufficient for videos and non-time sensitive topics, one institution aims to update their facts sheets yearly.

Finally, the panelists, who had varying educational backgrounds themselves, shared what skills, training, and credentials they thought patient education professionals should have to be effective.

One panelist said, "The experts may not be good writers, and the medical writers need the experts. So it's a team effort". Since providers don't always have a patient education background, it's important to ensure that everyone is speaking to each other on what is best for the patient.

"The symposium was an incredible opportunity to discuss the importance of communication with patients about integrative therapies. I was pleased that ICCMR chose to highlight this topic, as how we reach out to patients and educate them on integrative therapies is an integral and necessary part of offering the most efficacious and comprehensive cancer care. I look forward to continuing this important work with NCI," Anne Doherty-Gillman said.

The ideas presented in the symposium are a first discourse on the topic of best practices in cancer CAM patient education. The content from the symposium will be summarized and submitted for publication to stimulate future discussion. 🐼



*Dr. Rocky Feuer*

## A Conversation with:

Eric “Rocky” Feuer, Ph.D.  
Chief  
Statistical Research and Applications Branch  
Surveillance Research Program  
Division of Cancer Control and Population Sciences

### **What are the main goals of the Cancer Intervention and Surveillance Modeling Network (CISNET)?**

There are three main goals: 1) to understand the impact of cancer control interventions – that includes screening, treatment, and prevention – on current and future trends in U.S. cancer incidence and mortality; 2) to extrapolate evidence from randomized, controlled trials and epidemiologic and observational studies in order to determine the most efficient and cost-effective strategies for implementing technologies in the U.S. population; and 3) to be responsive to the challenges due to the increased pace of new technology by helping to determine which new technologies are the most promising when scaled up to the population level. The cancer sites included so far are breast, prostate, colorectal, and lung.

### **What is simulation modeling and how is it utilized in cancer control and surveillance research?**

Simulation modeling is synthesizing disparate bits of information to simulate real and hypothetical experiences in the U.S. population in

order to answer questions that would be difficult to address otherwise. We utilize data from randomized controlled trials, meta-analyses, observational studies, national surveys, cancer registries, and studies of practice patterns to evaluate the past and potential future impact of cancer control interventions in prevention, screening, and treatment.

### **Translational research is a priority at the National Cancer Institute. Can you give us an example of a successful CISNET translational project outcome?**

Breast cancer mortality fell by around 25% in the U.S. between 1989 and 2000. Before that, the death rate had been very flat. One thing people wanted to know was what caused it to decline. The two major factors possibly responsible for the remarkable decline were the introduction of both screening mammography and adjuvant therapy (both multi-agent chemotherapy and hormonal therapy) for breast cancer during the period 1975-2000.

At the time, there were eight randomized controlled studies of mammography screening. In 2000, the Cochrane Collaboration group in the United Kingdom performed a meta-analysis of these studies and threw out all of the studies they felt had flaws in their randomization. A meta-analysis of the two remaining trials showed no effect of screening on both breast

cancer and all-cause mortality. Their conclusions caused a huge controversy in the U.S. and elsewhere. We’ve been giving all these women mammograms, and it doesn’t do a thing? The “gold standard” of evidence in medicine is randomized clinical trials, and we’d already done those studies for mammography. We probably weren’t going to do many, if any, more. We asked ourselves where do we go from here?

By coincidence, this controversy erupted just when CISNET was getting started. At that time, we had seven grantees for the new program doing breast cancer modeling. They were developing models to simulate the lives of women with respect to their “natural history” of breast cancer- i.e. women are born, some develop breast cancer, some of those breast cancers grow large enough to become screening detectable, and eventually large enough to cause symptoms. When the cancer is diagnosed, it is treated, and the woman eventually dies of either breast cancer or another cause. Because much of the natural history of breast cancer is never observed, it must be modeled based on indirect evidence, and there are many different approaches to doing this.

One innovation of the approach employed in CISNET is the use of a comparative modeling approach, which explores differences between models in a systematic way. Comparative modeling produces a range of results

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across models and, when consensus can be reached, greatly enhances the credibility of modeling results by highlighting their reproducibility. The CISNET models shared common input with respect to the dissemination of mammography and adjuvant therapy in the U.S. population.

We can simulate through CISNET what happened in the U.S. population during the period when breast cancer deaths fell. We did and found that – across all seven models – it would've been very difficult to explain the entire decline in breast cancer mortality just by changes in treatment alone. On average, about half the decline was due to mammography and half due to adjuvant therapy. This is not definitive evidence, but it is strong evidence, using modeling and population data when we'd exhausted all other means. Our findings were published in the *New England Journal of Medicine* and were reported on the front page of the *New York Times*.

**Do you see any potential opportunities for applying CISNET's simulation modeling approaches to gain a better understanding of the phenomenon of complementary and alternative medicine (CAM) use by cancer patients? If so, can you describe a specific example?**

OCCAM (Office of Cancer Complementary and Alternative Medicine) Director Dr. Jeffrey White gave a presentation at the CISNET meeting in January 2010. I asked him to provide some examples of CAM interventions with the strongest evidence, which might get researchers and modelers in CISNET thinking about how they could take those CAM approaches and incorporate them into their models. The two examples Dr. White proposed were: 1) impact of diet and exercise on breast and colon cancer survival; and 2) impact of dietary antioxidants on lung cancer survival.

Dr. White gave an overview of the results of the previous clinical trials. The studies didn't find huge improvements in survival, but the results were statistically significant. The studies seem to have been done in a fairly rigorous way.

Then, the question is what can CISNET do? These CAM interventions are things that can potentially be done fairly inexpensively. If their use was scaled up to the population level, how many person-years of life might be saved? What is the cost per person-year of life (or quality-adjusted person years of life) saved to put some of these CAM strategies on the same scale as other standard medical interventions used in cancer? We could see how cost-effective these CAM interventions might be. One unique aspect of some CAM interventions is that they

not only have a potential beneficial impact on cancer mortality but also have a potential positive impact on other causes of mortality. Thus, these interventions infer a double benefit, which modeling can quantify.

**Does CISNET have any current or upcoming projects related to CAM?**

We don't currently have any projects related to CAM in cancer. However, we are open to future collaborative opportunities. We're in the midst of renewing the funding for CISNET, and there may be future opportunities for supplemental funding to facilitate these types of collaborations. CISNET can also work with OCCAM to develop what would be the right prototype opportunity to do some modeling in the CAM field. It would be nice to get one very good case example, like the researchers who studied diet and exercise interventions, who could team up with a CISNET group and model some of this. It might be a nice proof-of-principle of what modeling could add to some of the CAM research being done.

More on CISNET can be found at <http://cisnet.cancer.gov/> 

## News from the Field

### A Time for Change

To better assist the people we serve and to more accurately describe program activities, the Office of Cancer Complementary and Alternative Medicine has officially changed the names of two of its programs. As of

April 2010, the new name of the Research Development and Support Program is the Extramural Research Program or ERP. Likewise, the Practice Assessment Program is now the Case Review and Intramural

Science Program or CRISP. Activities, staff, and organizational structure of each program remain the same.

For more information about each program, visit [www.cancer.gov/cam/about\\_programs.html](http://www.cancer.gov/cam/about_programs.html). 

## NCI's Fourth CAM Annual Report Now Available

The National Cancer Institute (NCI) is pleased to announce the release of its fourth annual report on cancer complementary and alternative medicine (CAM) research. NCI's Annual Report on Complementary and Alternative Medicine: Fiscal Year 2008 provides an overview of NCI-supported work in the field along with details on selected CAM projects relating to research, communication, and training between October 1, 2007 and September 30, 2008.

The report includes research project summaries, a portfolio analysis, and a selected list of peer-reviewed journal articles. New to this year's report is a section that highlights NCI CAM training grant awards.

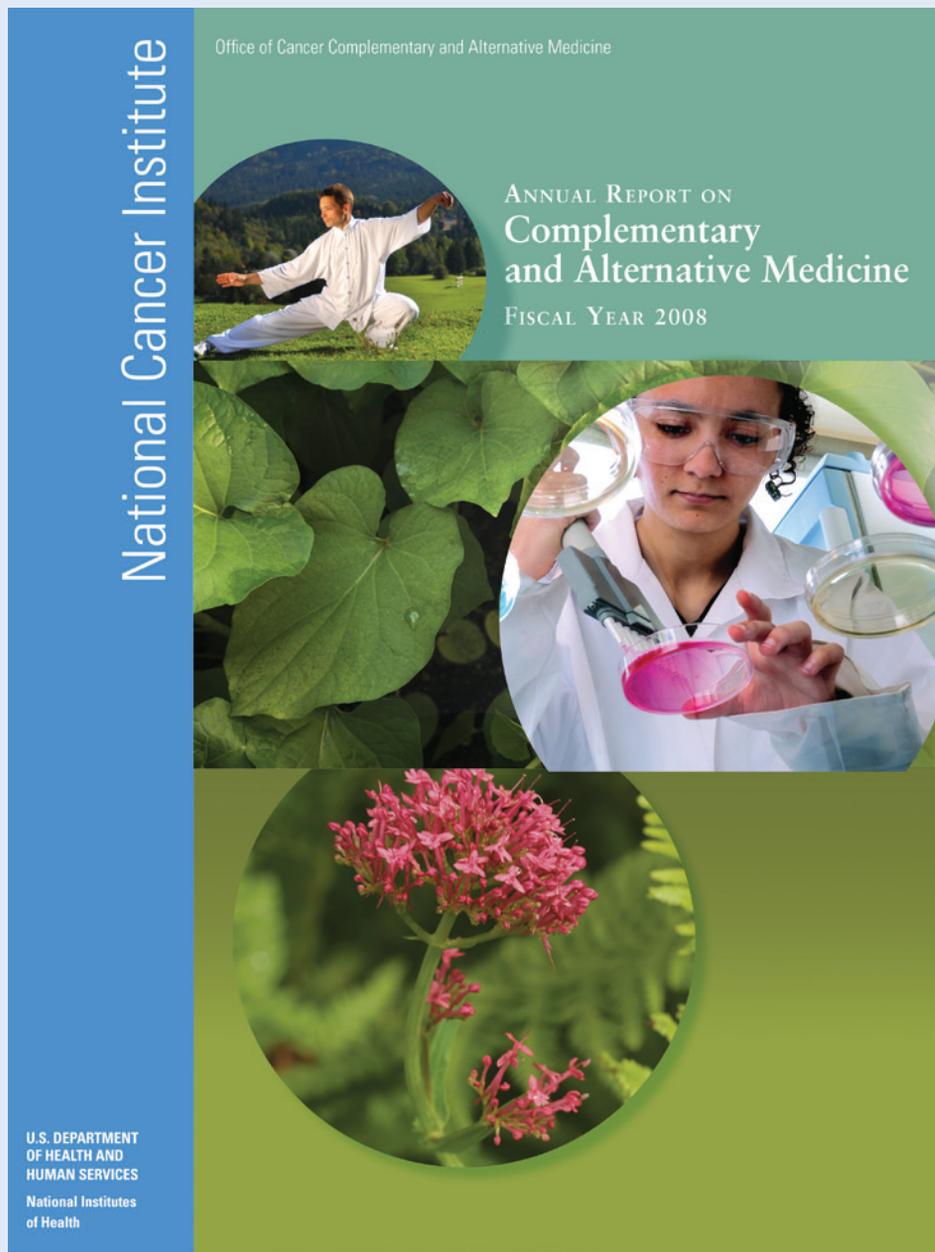
Examples of articles in the report include:

- Physical Activity Levels Studied in China for Impact on Cancer Risk
- Green Tea Shows Promise in Preventing Pancreatic Cancer
- Ginger Extract to Be Tested for Lung Cancer Prevention

To provide an overview of NCI's cancer CAM portfolio, the research projects selected for the report represent a variety of NCI Divisions, grant mechanisms, research types, CAM therapies, research institutions, and types of cancer.

NCI's CAM Annual Report for fiscal year 2008 is available on the OCCAM

Web site at [www.cancer.gov/cam/cam\\_annual\\_report.html](http://www.cancer.gov/cam/cam_annual_report.html).



## NCI Signs MOU with a Second Chinese Institution

On March 18, 2010, NCI signed a Memorandum of Understanding (MOU) with the Key Laboratory of Chemistry for Natural Products of Guizhou Province and China Academy of Sciences. This agreement, which will allow NCI to screen plant compounds for anti-cancer activity, is identical to another MOU signed with the Kunming Institute of Botany nearly a year and half earlier. For more details on this MOU, read about the previous MOU with Kunming Institute of Botany at [www.cancer.gov/cam/newsletter/2009-spring/rare\\_plant\\_compounds\\_at\\_NCI.html](http://www.cancer.gov/cam/newsletter/2009-spring/rare_plant_compounds_at_NCI.html).

## Complementary and Alternative Medicine Commonly Used by Pediatric Patients

Reprinted from the *NCI Cancer Bulletin*, vol. 7/no. 7, April 6, 2010  
[www.cancer.gov/ncicancerbulletin/040610/page3#c](http://www.cancer.gov/ncicancerbulletin/040610/page3#c)

Many pediatric cancer patients use complementary and alternative medicine (CAM), according to a systematic review published online March 22 in *Pediatrics*. The research team led by Dr. Felicity Bishop of the University of Southampton in the United Kingdom reviewed 28 studies that surveyed a total of 3,526 children from 14 countries between 1975 and 2005. Twenty-three of the studies were performed between 2000 and 2005, and 10 were performed in the United States.

The researchers found that 2 to 48 percent of surveyed children used herbal remedies (measured in 13 of the studies), 3 to 47 percent used dietary and nutritional interventions (measured

in 13 of the studies), and 2 to 19 percent used megavitamins (measured in 7 of the studies). Other CAM modalities used included faith healing, mind-body therapies, and massage therapies.

Those surveyed cited various reasons for the child's CAM use, including to help cure or fight the child's cancer and to provide symptom relief (both from the cancer itself and from side effects of standard treatment). CAM use did not appear to be associated with the gender, age, ethnicity, or family income of the pediatric patients, indicating wide use across demographic groups.



Because some commonly used herbs and supplements can negatively interact with standard cancer treatments, the authors cautioned that “pediatric oncologists need to be aware that their patients (and their patients’ parents) will be seeking and integrating other therapeutic approaches while undergoing conventional treatments.”

## Funding Opportunities

### Program Announcement Explores Stress, Disease, and Aging

Few research studies have fully explored the relationship between psychosocial stress, disease, and aging. In July 2009, the National Cancer Institute (NCI) and the National Institute on Aging published the Program Announcement (PA) PA-09-216, “Mechanisms Underlying the Links between Psychosocial Stress, Aging, the Brain and the Body (R01).” This announcement encourages research that evaluates the “mechanisms and processes that link psychosocial stressors to health outcomes in older individuals”. The primary goals of this PA are to investigate the underlying mechanisms of aging and identify potential intervention targets.

NCI participated in this PA to further explore cancer's relationship to aging. Research is sought that explores “the

mechanistic links between psychosocial stress, corresponding biological mediators and signaling pathways, and processes related to tumor progression with subsequent consequences for disease related outcomes”. Both human and animal studies will be supported.

To meet the objectives of this PA, research should be generally focused in the following four areas:

1. aging and how neural mechanisms respond to psychosocial stress and affect other body systems;
2. characterizing the behavioral, psychological, and social mechanisms and pathways involved in transducing psychosocial stressors into health outcomes;

3. how stressors modulate physiological process underlying life-span, immune mechanisms, and metabolism; and
4. how psychosocial stress contributes to the development or progression of geriatric syndromes, chronic medical conditions, and disabilities in later life.

For more information on this PA, please visit <http://grants.nih.gov/grants/guide/pa-files/pa-09-216.html> or contact

Dr. Paige McDonald at [Paige.McDonald@nih.gov](mailto:Paige.McDonald@nih.gov).

## NIH-Wide Consortium Tackles Pain Through Innovative Funding Opportunities

Research on cancer pain and its management, measurement and mechanisms is the topic of an exciting National Institutes of Health (NIH)-wide Pain Consortium funding opportunity announcement (FOA). Originally released on October 8, 2009, the purpose of the announcement: PA-10-006 titled “Mechanisms, Models, Measurement, & Management in Pain Research (R01)”, is to stimulate a wide range of basic, clinical, and translational studies on pain as it relates to the missions of the NIH Institutes and Centers that make up the NIH Pain Consortium.

The lead funding agency, National Institute of Nursing Research, along with the National Cancer Institute and several others, seek to help fund research into new advances in every area of pain research from the micro-perspective of molecular sciences to the macro-perspective of behavioral and social sciences.

The NIH Pain Consortium, established in 1996 to enhance pain research and promote collaboration among

researchers across NIH, realizes that while great scientific progress in pain research has been accomplished, the understanding and treatment of pain still remains incomplete. The NIH Pain Consortium supports research on all conditions in which pain is a prominent feature, including cancer and bone pain secondary to cancer.

The consortium also encourages research into novel approaches to pain management from the field of complementary and alternative medicine (CAM). Research is encouraged in several broad categories including models of pain, genetics of pain, biobehavioral pain factors, and health disparities. CAM subset special interests within those categories include:

- Mechanisms and process variables that are responsible for the efficacy of behavioral and CAM interventions for pain. This research includes studies to better understand the effect of patients’ expectations and beliefs, psychophysiological states

(e.g., anxiety, relaxation, stress), adherence, and specific cognitive (e.g., imagery) and sociocultural (e.g., support systems) components in behavioral and CAM interventions to treat pain.

- Interaction of biological markers; central nervous system mechanisms; and drug, behavioral, and CAM interventions.

Refer to the announcement for further guidelines on research and eligibility criteria at <http://grants.nih.gov/grants/guidel/pa-files/PA-10-006.html>. Interested researchers are encouraged to contact agency contacts according to inquiry type prior to submission. OCCAM also welcomes questions regarding funding opportunities. Please contact Extramural Research Program Director Dr. Isis Mikhail at [mikhaili@mail.nih.gov](mailto:mikhaili@mail.nih.gov).

Researchers should also take note of new NIH grant submission guidelines available at the following Web site: <http://era.nih.gov/ElectronicReceipt/>.

## Research Resources

### Resubmitting? Shorter Page Limits Apply To You, Too

January 25, 2010 marked the change to new restructured application forms and instructions, including shorter page limits. Those of you resubmitting applications may be wondering if the changes apply to you – and the answer is yes! All competing applications - including resubmissions - must use the new forms and follow the new page limits. ([http://enhancing-peer-review.nih.gov/restructured\\_applications.html](http://enhancing-peer-review.nih.gov/restructured_applications.html))

As a result, most of you will have to turn your original application’s Research Plan into a 6- or 12-page Research Strategy. (Don’t forget there is an extra page for Specific

Aims.) Ordinarily, when submitting a resubmission application, changes should be marked throughout the text. However, if the changes are so extensive that essentially all of the text would be marked, the application guide instead directs you to explain your changes in the Introduction.

During the first few application rounds with shortened page limits, the National Institutes of Health expects resubmission applications to have extensive changes that will not be marked in the text. If this is the case for you, be sure to summarize your changes in the Introduction (which is generally limited to one page

[\[http://enhancing-peer-review.nih.gov/page\\_limits.html\]](http://enhancing-peer-review.nih.gov/page_limits.html)). For more information, refer to the application forms and instructions (<http://grants.nih.gov/grants/forms.htm>) and the table of page limits, [http://enhancing-peer-review.nih.gov/page\\_limits.html](http://enhancing-peer-review.nih.gov/page_limits.html). To make sure you are using the right forms, see Confirming the Correct Electronic Forms Choice ([http://enhancing-peer-review.nih.gov/docs/confirming\\_the\\_correct\\_electronic\\_forms\\_choice.pdf](http://enhancing-peer-review.nih.gov/docs/confirming_the_correct_electronic_forms_choice.pdf)).

For more information on the shorter page limits, please visit [http://enhancing-peer-review.nih.gov/restructured\\_applications.html](http://enhancing-peer-review.nih.gov/restructured_applications.html).

## New Notices for the American Recovery and Reinvestment Act Awards

### Notice on the Proper Management of the American Recovery and Reinvestment Act (ARRA) Spending to Promote Job Creation and Increase the Pace of Scientific Research; and Policy Limiting Second No-Cost Extensions to Recovery Act Grants – *NOT-OD-10-067*:

The purposes of this Guide Notice are to:

1. reaffirm to National Institutes of Health (NIH) grantees that the primary goals of all NIH ARRA awards are to create U.S. jobs and increase the tempo of biomedical research;
2. remind Project Directors/Principal Investigators (PD/PIs) and grantee institutions that NIH fully expects ARRA grantees to expend funds in a timely and expeditious manner in accordance with the expected pace of research;
3. remind grantees that all ARRA expenditures remain subject to terms and conditions on the Notice of Award, including the NIH-Department of Health and Human Service Standard Terms and Conditions for ARRA Awards (<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-120.html>)

and all referenced regulations and the Office of Management and Budget Circulars; and

4. notify grantees that NIH expects all grant activities are to be completed consistent with the schedule of the approved project period. While the NIH Terms of Award provide for extending the final budget period of a project period for up to twelve months to allow for completion of the planned project; prior approval requests for additional extensions will only be considered in very limited circumstances.

### Reminders on Annual Reporting Requirements and Notice of Revised Financial Closeout Requirements for ARRA funded Administrative Supplements and Competitive Revisions – *NOT-OD-10-066*:

The purposes of this Guide Notice are to:

1. remind NIH grantees that information on ARRA-funded Administrative Supplements and Competitive Revisions must be included in the annual progress report of the parent grant;

2. remind grantees of the special reporting requirements for administrative supplements providing summer experiences for students and science educators; and
3. inform grantees of revised financial closeout requirements when multiple ARRA-funded Administrative Supplements and/or Competitive Revisions are awarded to the same parent award.

### Update on ARRA Quarterly Reporting Requirements for Non-Competing Continuation Awards and Relinquished Projects; and Guidance to Avoid Common Errors – *NOT-OD-10-065*:

The purposes of this Guide Notice are to:

1. provide ARRA quarterly reporting guidance for NIH non-competing continuation awards;
2. provide guidance on reporting requirements for relinquished/transferred ARRA grants; and
3. help grantees avoid some common errors identified in previous reporting periods. 

## Using Vertebrate Animals in Your Research? New Update

### Instructions for Completion and Peer Review of the Vertebrate Animal Section (VAS) in NIH Grant Applications and Cooperative Agreements – *NOT-OD-10-027*:

This Notice is to clarify the information that must be included in

the Vertebrate Animal Section (VAS) of grant applications and cooperative agreements (subsequently referred to as applications) that use live vertebrate animals in research. It also explains how the VAS is evaluated as part of the NIH peer review process and

is considered as part of the overall scoring. Distinction is made between the oversight role of the Institutional Animal Care and Use Committee and review responsibility of the NIH Scientific Review Group. 

### Sign-up for OCCAM's Listserv

Stay up-to-date on the latest cancer CAM news at NCI with OCCAM's listserv, *OCCAM Announcements*. As a listserv subscriber, you will receive a monthly email about upcoming workshops and lectures, new funding opportunities, publications, and other resources. To subscribe, simply visit OCCAM's Web site: [http://www.cancer.gov/cam/news\\_listserv.html](http://www.cancer.gov/cam/news_listserv.html).

### Mind-Body Approach Studied to Ease Hot Flashes in Cancer

Menopausal hot flashes, whether induced by breast cancer treatment, surgery, or older age, can cause stress, sleep disturbances, and otherwise negatively affect the quality of life for many women. The current medications and hormone therapies used to alleviate hot flashes are sometimes not effective, have side effects, or may not be a medically appropriate option for some survivors. This has led to an increase in research of new interventions for hot flashes.

NCI is funding a pilot study\* looking at a mind-body intervention involving hypnosis combined with a low-dose antidepressant to treat hot flashes. “We’ve done research for quite awhile on pharmacologic agents for hot flashes,” noted co-principal investigator (PI) Debra Barton, R.N., Ph.D., FAAN, associate professor of oncology at the Mayo Clinic. “Many of the things that work for hot flashes that are non-hormonal happen to be antidepressants that affect serotonin,” known as selective serotonin reuptake inhibitors or serotonin norepinephrine reuptake inhibitors (SNRIs).

However, side effects from the typical doses of antidepressants can lessen their value and appeal to cancer patients. Previous studies have shown these agents reduce hot flashes by only about 50% - 60% for around half the women who try them.

NCI has funded previous research, which demonstrated beneficial effects on hot flashes in breast cancer patients

using only hypnotherapy. One of the researchers studying hypnotherapy – Gary Elkins, Ph.D., of Baylor University – is supervising the hypnosis in the current pilot study as co-PI with Dr. Barton.

“In my career in nursing and research, I’ve come to really believe in the mind-body connection,” Dr. Barton stated. “It makes sense to me to approach symptom management from a multimodal perspective. What I’m hoping is we can use tiny doses of drug, just enough to do what needs to be done with the serotonin without side effects. Hypnosis could possibly enhance the drug effect and achieve greater control of hot flashes.”

Dr. Barton and her colleagues have begun the pilot study, which will enroll 100 women. To be eligible for the study, the women must be currently healthy, experiencing hot flashes and have a history of breast cancer, have naturally induced menopause, or surgically induced menopause. The women will be randomly assigned into four treatment groups: 1) hypnosis plus the SNRI venlafaxine ER (75 mg); 2) control (placebo) hypnosis technique using a “white noise” CD plus venlafaxine ER; 3) hypnosis plus a placebo drug; or 4) control hypnosis technique plus placebo drug.

Individuals in the hypnosis arms of the study will initially have four weekly one-on-one sessions “where we introduce them to hypnosis,” Dr. Barton said. “We do an induction and

then start with two standard cooling suggestions: either a lake of cool water or snow on the mountain tops. From those suggestions, the women individualize to whatever is a good image for them so they can experience coolness. By the third session, we begin to teach them self-hypnosis.”

After the training sessions, the women are given a hypnosis CD to use at home. “We ask them to listen to the CD at least four times a week, preferably every day,” she noted. The control groups have the same number of one-on-one sessions with a therapist and also listen to a “white noise” CD at home. “For these individuals, we ask them to just think about their hot flashes in any way that could be helpful for them,” Dr. Barton added.

If the pilot study demonstrates good results, “we’re planning to move ahead with a larger follow-up clinical trial,” she said. “The goal is to be able to teach the self-hypnosis technique in just a couple of sessions and eventually have most of it delivered through MP3-type devices so that the intervention can be easily disseminated.” Dr. Barton hopes the mind-body intervention will reduce hot flashes by at least 70%-80%. Estrogen treatments are around 80%-90% effective in reducing hot flashes. We don’t currently have any other treatments for hot flashes that are that good.”

\*Grant number: 5R21CA131795-02

### Researchers Studying Dietary Combination in Breast Cancer

When Rafat Ali Siddiqui, Ph.D., was growing up in Karachi, Pakistan, he had no idea that one day his work as a cancer researcher in the United States would involve tumeric, a botanical staple of the diet and culture

in his native country and south Asia. Curcumin is the active ingredient in tumeric and used in many curry dishes.

At his lab at the Methodist Research Institute at the Indiana University

School of Medicine in Indianapolis, Dr. Siddiqui is testing the combination of curcumin and docosahexaenoic acid (DHA) - the most unsaturated omega-3 fatty acid found in nature.

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Many potential health benefits have been associated with increased DHA in the diet and recent laboratory research also has demonstrated anti-cancer effects. Both curcumin and DHA have shown activity against cancer cells and tumors in laboratory cell experiments and animal models.

The use of curcumin as a therapeutic in humans has one potential problem; curcumin is not well-absorbed when ingested alone. Curcumin does not accumulate in significant quantities in most human tissues, and the same is true of DHA (brain and eye cells are exceptions). As a result, their potential anti-cancer effects may be limited by basic human biology. The doses used in many of the promising lab experiments might not be achievable in humans.

“We think we may have a solution,” said Dr. Siddiqui. “We might be able

to achieve the same effects with much less material if the molecular events from the curcumin and DHA actually influence each other.”

NCI is supporting his research to demonstrate the synergistic effect of curcumin and DHA in breast cancer.\* Early results from Dr. Siddiqui’s lab suggest that curcumin and DHA affect the p21 gene, a molecular pathway known to be important in apoptosis – the programmed death of the body’s cells, which can go awry in cancer. Curcumin and DHA affect p21 gene expression in different ways and using them in combination may have a larger effect than using either ingredient alone.

“We are starting to identify the specific genes that are most affected by the synergy between curcumin and DHA,” Dr. Siddiqui explained. Using microarray analysis in a breast cancer cell line, his research team found 19

genes that responded at least twice as strongly when DHA was added to curcumin. Future work will delve more deeply into the molecular interactions that may be driven by these genes in this particular setting.

Dr. Siddiqui said it is too early to tell whether these molecular events will apply equally, or at all, to cancer prevention as well as to cancer treatment. While his current research targets actual cancer cells in the lab and in rodents, it may turn out that the curcumin-DHA combination also prevents potentially cancerous cells from transforming into cancer cells. If that preventive effect is demonstrated, this dietary combination could have a significant impact, particularly if, as Dr. Siddiqui suggests, “People may be more likely to change their diet than to take a drug to prevent cancer.”

\*Grant number: 1R03CA137765-01A1



## Acupuncture Reduces Joint Pain in Some Women with Breast Cancer

Adapted from the NCI Cancer Bulletin, vol. 7/no. 2, January 26, 2010  
[www.cancer.gov/clinicaltrials/results/acupuncture-breast-cancer0210](http://www.cancer.gov/clinicaltrials/results/acupuncture-breast-cancer0210)

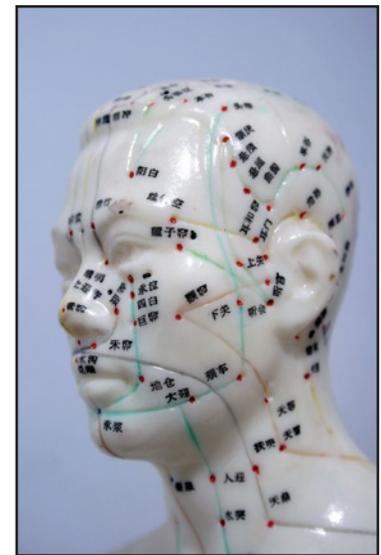
In a small randomized clinical trial, breast cancer patients experiencing joint pain and stiffness from aromatase inhibitor (AI) treatment reported an improvement in pain from acupuncture. Eighty percent of women receiving acupuncture reported at least a 2-point improvement on a 10-point pain scale, compared with 22 percent of women who received a sham treatment. These results were published January 25 in the *Journal of Clinical Oncology*.

Researchers led by Katherine D. Crew, M.D., M.S., of Columbia University enrolled 51 women in the trial, 43 of who were randomly assigned and 38 of who completed the treatment. Scheduling difficulties accounted for most of the women who enrolled but did not begin or finish treatment. All of the women were blinded to their treatment assignment, which consisted

of either 12 acupuncture sessions or 12 sham treatments (in which needles were lightly inserted into the body at points thought to have no effect on pain) over the course of 6 weeks. The researchers used three different scales to measure changes in joint pain, stiffness, and knee and hand function.

At the beginning of the study, women in the acupuncture group reported a mean worst pain score of 6.7 (on a scale from 1 to 10), compared with a mean score of 5.6 in women in the sham group. After treatment, women in the acupuncture group reported a mean worst pain score of 3.0, compared to 5.5 in women in the sham group. These numbers corresponded to a 50 percent improvement in pain scores for the acupuncture group.

“To our knowledge,” concluded the authors, “this report is the first



randomized, placebo-controlled trial establishing the use of an intervention to control AI-related joint symptoms, which should be confirmed in a larger randomized trial.”

For more information, visit [www.ncbi.nlm.nih.gov/pubmed/20100963](http://www.ncbi.nlm.nih.gov/pubmed/20100963).

## Diet May Protect Against Gene Changes in Smokers

[www.cancer.gov/newscenter/pressreleases/Dietaryfactorslungcancer](http://www.cancer.gov/newscenter/pressreleases/Dietaryfactorslungcancer)

Leafy green vegetables, folate, and some multivitamins could serve as protective factors against lung cancer in current and former smokers, according to a study that is a first step in understanding a complex association. The study was supported by the National Cancer Institute (NCI), part of the National Institutes of Health. The study appeared online January 12, 2010, in *Cancer Research*.

Researchers, led by Steven Belinsky, Ph.D., Lovelace Respiratory Research Institute, Albuquerque, N.M., examined cells that were coughed up by current and former smokers. Upon careful study of the cells and by comparing those cells with profiles of smokers' dietary intake of leafy green vegetables, folate, and some multivitamins, they found that those particular substances could influence the prevalence of cellular gene methylation. Gene methylation is a chemical modification used by the cell to control gene expression.

The addition of methyl groups, which are simple four atom molecules, to DNA can affect whether the gene is expressed, i.e., whether the gene's signal to produce a protein is actually sent. Many genes involved in critical cell functions, including cell division, are methylated in lung tumors. Gene methylation is likely to be a major mechanism in lung cancer development and progression, as well as a potential marker for the early detection of lung cancer.

In the study, slightly more than 1,100

current and former smokers from the Lovelace Smokers Cohort submitted sputum samples and completed questionnaires regarding their dietary intake. Most (75 percent) of the participants were women who had been enrolled in the study since 2001. Men were not enrolled until 2004.

The researchers analyzed cells in the sputum samples for the methylation status of eight genes that were linked to increased risk for lung cancer in previous studies. Two of the genes, p16 and MGMT, have been found to be highly associated with increased methylation rates.

The researchers next investigated associations between 21 dietary variables and methylation. Both higher intake of leafy green vegetables and higher intake of folate were significantly associated with a reduced probability of high methylation. Current multivitamin users also had less DNA methylation, although there was no association between the duration of multivitamin use and methylation.

"Aberrant gene methylation is a known mechanism in the development of cancer from cigarette smoke carcinogens," said Jacob Kagan, Ph.D., of the Cancer Biomarkers Research Group in NCI's Division of Cancer Prevention.

There has been considerable debate regarding the relationship between diet and cancer prevention. Previous studies, such as the Alpha-Tocopherol, Beta-Carotene Cancer Prevention

Trial, showed an increased risk of lung cancer in smokers who took beta-carotene supplements. In contrast, the current study shows reduced gene methylation with the intake of multivitamin supplements that are rich in phytochemicals, such as vitamin C, carotenoids, lutein, folic acid, and vitamins A and K--the same agents present in leafy greens.

Previous studies have suggested an association between a low folate intake and increased lung cancer risk in current and former smokers. Higher folate intake has been associated with lower methylation of genes in colorectal tumors as well.

"Additional research is needed to independently validate the current observations and also to help resolve contradictions between varying studies. This particular study used a well-planned design and can serve as a basis for future identification of the mechanistic targets of these dietary factors. Such studies are important steps for the future success of chemopreventive strategies," said Sudhir Srivastava, Ph.D., chief, Biomarkers Research Group, NCI.

The authors of this study believe that since gene methylation is a promising marker for lung cancer, understanding the factors underlying methylation is a high priority and could be used for early detection and chemoprevention of lung cancer. They also recommend that lung cancer prevention interventions be developed that take into consideration the influence of dietary factors on cancer risk. 🌱

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**Reference:** Stidley CA, Picchi MA, Leng S, Willink R, Crowell R, Flores KG, Kang H, Byers T, Gilliland FD, and Belinsky SA. Multi-Vitamins, Folate, and Green Vegetables Protect Against Gene Promoter Methylation in the Aerodigestive Tract of Smokers. Online Jan. 12, 2010, *Cancer Research*.

## Shark Cartilage Extract Ineffective Against Lung Cancer

Reprinted from the NCI Cancer Bulletin, vol. 7/no. 11, June 1, 2010

[www.cancer.gov/ncicancerbulletin/060110/page3#d](http://www.cancer.gov/ncicancerbulletin/060110/page3#d)

A clinical trial to rigorously evaluate a shark cartilage extract as a cancer treatment found no benefit for patients with non-small cell lung cancer. Patients who took the extract, AE-941 or Neovastat, along with chemotherapy and radiation therapy lived no longer than patients who did not, according to a report published online May 26 in the Journal of the National Cancer Institute. Negative results from the study were first reported at the American Society of Clinical Oncology annual meeting in 2007. (See [www.cancer.gov/cam/newsletter/2007-fall/5.html](http://www.cancer.gov/cam/newsletter/2007-fall/5.html) for related story.)

The phase III randomized placebo-controlled clinical trial was

cosponsored by NCI and the National Center for Complementary and Alternative Medicine. The study closed early because of slow patient accrual. Only 379 eligible patients were included in the final analysis. “It is, nevertheless, the largest phase III study ever conducted, to our knowledge, of a shark cartilage–derived agent, and the study outcome is unambiguous,” the researchers noted. The manufacturer of AE-941, Canadian pharmaceutical company Æterna Laboratories, worked closely with the investigators to ensure the purity of the extract used in the trial.

In a separate editorial about the study results, Dr. Jeffrey White,

director of the NCI Office of Cancer Complementary and Alternative Medicine, noted, “This study was well designed and conducted and has generated important and useful findings with regard to one specific product, AE-941.” Dr. White cautioned against concluding that the study “completely disproved the efficacy of shark cartilage” or other natural materials for treating cancer. “The potential value of complex mixtures of natural materials in the anti-cancer armamentarium remains an open question for many and one that can only be answered one step at a time with high-quality research,” he wrote. 🐟

## CAM Information

### OCCAM on the Web

Social media applications are ubiquitous in our culture. Facebook, Twitter, YouTube, Second Life, countless blogs, and thousands of Web sites barrage us with up-to-the-second news about everything from what we ate for lunch, to politics and health care. According to the Pew Internet and American Life Project 6 out of 10 people living with cancer have Internet access, and 1 in 5 Internet users that have cancer use social network sites<sup>1</sup>.

YouTube, an online video community, is a Web site where users can watch and upload videos 24 hours a day. NCI, realizing the power of this medium to help spread information about cancer

treatments and prevention, created its own YouTube channel. The NCI YouTube channel, [www.youtube.com/ncigov](http://www.youtube.com/ncigov), launched in August 2009, is the NCI’s official conduit for cancer information videos. Videos include information for patients on how to participate in clinical trials, topic updates from NCI staff, and in-depth profiles of key cancer researchers.

Dr. Jeffrey D. White, director of the Office of Cancer Complementary and Alternative Medicine, shares a message on complementary and

alternative medicine (CAM) and cancer with viewers in a YouTube video. The video, available at [www.youtube.com/ncigov](http://www.youtube.com/ncigov), highlights the importance of talking to your doctor about your use of CAM, common concerns about CAM use, and resources to check for further information. This video is the first in what will eventually become a series of cancer CAM videos produced by NCI. Check back often for more videos on CAM as well as other cancer topics. 🐟

<sup>1</sup> Fox, S. (2009, Oct.5) Research on e-patients and the use of social media for health. *Pew Research Center’s Internet and American Life Project*. Retrieved, April 9, 2010 from <http://www.pewinternet.org/Presentations/2009/29--PatientCentered-Learning-and-the-Health-20-Movement.aspx>.

### New Federal Resources on CAM

***Herbal Dietary Supplements: Examples of Deceptive or Questionable Marketing Practices and Potentially Dangerous Advice*** – Government Accountability Office (GAO)

Recent studies have shown that use of herbal dietary supplements--chamomile, echinacea, garlic, ginkgo

biloba, and ginseng--by the elderly within the United States has increased substantially. Sellers, such as retail

stores, Web sites, and distributors, often claim these supplements help improve memory, circulation, and

other bodily functions. GAO was asked to determine (1) whether sellers of herbal dietary supplements are using deceptive or questionable

marketing practices and (2) whether selected herbal dietary supplements are contaminated with harmful substances. The results of the GAO

investigation are available in the following report:  
[www.gao.gov/products/GAO-10-662T](http://www.gao.gov/products/GAO-10-662T).

### ***Guidance from an NIH Workshop on Designing, Implementing, and Reporting Clinical Studies of Soy Interventions*** – National Institutes of Health

The NIH-sponsored workshop, “Soy Protein/Isoflavone Research: Challenges in Designing and Evaluating Intervention Studies,” held on July 28-29, 2009, provided guidance for the next generation of soy protein/isoflavone human research. Session topics included population exposure to soy; the variability of the human response to soy; product composition; methods, tools, and resources available to estimate exposure and protocol adherence; and analytical methods to assess soy in foods and supplements and analytes in biologic fluids and other tissues. The intent

of the workshop was to address the quality of soy studies, not the efficacy or safety of soy. Prior NIH workshops and an evidence-based review questioned the quality of data from human soy studies. If clinical studies are pursued, investigators need to ensure that the experimental designs are optimal and the studies properly executed. The workshop participants identified methodological issues that may confound study results and interpretation. Scientifically sound and useful options for dealing with these issues were discussed. The resulting guidance is presented in this Journal of

Nutrition article with a brief rationale. The guidance is specific to soy clinical research and does not address nonsoy-related factors that should also be considered in designing and reporting clinical studies. This guidance may be used by investigators, journal editors, study sponsors, and protocol reviewers for a variety of purposes including designing and implementing trials, reporting results, and interpreting published epidemiological and clinical studies.

[www.ncbi.nlm.nih.gov/pubmed/2039288](http://www.ncbi.nlm.nih.gov/pubmed/2039288)

### ***Antioxidant Supplements for Health: An Introduction*** – National Center for Complementary and Alternative Medicine

This fact sheet provides a general overview of antioxidants – with a focus on dietary supplements – and suggests sources for additional information.

<http://nccam.nih.gov/health/antioxidants/>

## **Join Us for the Summer and Fall 2010 Lectures**

### ***Antiangiogenic Properties of Sweet Tea***

Dr. Zhijun Liu, Medicinal Plant Lab, Louisiana State University Agricultural Center  
July 14, 2010

### ***Melatonin and Breast Cancer***

Dr. Stephen Hill, Department of Structural and Cellular Biology, Tulane University School of Medicine  
August 11, 2010

### ***Effect of GCS-100, a polysaccharide derived from citrus pectin, on Lymphoma Cells***

Dr. Linda Baum, UCLA School of Medicine  
September 8, 2010

### ***Methylselenocysteine and Colon Cancer***

Dr. Youcef Rustum, Roswell Park Cancer Institute  
October 13, 2010

### ***Anti-inflammatory and Anticancer Activity of Vitamin E Forms and Their Metabolites***

Dr. Qing Jiang, Purdue University  
November 10, 2010

More information about past and future lectures is available on the OCCAM Web site:  
[www.cancer.gov/cam/news\\_lectures.html](http://www.cancer.gov/cam/news_lectures.html).



*The OCCAM Monthly Lecture Series hosts engaging speakers such as Dr. Sandra M. Gaston in March 2010.*

### OCCAM Staff Members Outreach with New Communities

#### *17<sup>th</sup> Annual International Symposium for Functional Medicine*

The Office of Cancer Complementary and Alternative Medicine (OCCAM), for the first time, attended the 17th Annual International Symposium for Functional Medicine held May 20-23, 2010 in Carlsbad, CA. The theme of this year's symposium, hosted by the Institute of Functional Medicine (IFM), was "Confronting Cancer as a Chronic Disease: Primary Care Takes a 360-degree View".

The IFM defines functional medicine as "patient-centered health care that addresses the unique interactions among genetic, environmental, and lifestyle factors influencing both health and complex chronic disease."

The symposium was offered to help attendees improve their "capacity to confidently assess and implement effective [functional medicine] strategies aimed at understanding and counseling your patients in the prevention, management, and survival of cancer".

OCCAM Director Dr. Jeffrey D. White, M.D. spoke at the symposium and delivered information about the National Cancer Institute's (NCI) research portfolio and communication initiatives related to complementary and alternative medicine (CAM) and functional medicine. He encouraged researchers in attendance to apply

for grant funding to help further the science of CAM. He also spoke about the NCI Best Case Series Program, encouraging researchers to gather and submit cases of cancer patients who have been treated with CAM and show tumor or disease regression.

Dr. White noticed this of the attendees, "They are a community who embraces the expansion of their conventional practices to include evidence-based nutritional therapeutics. Many are interested in growing the body of research and applying the best concepts of CAM to the care of their cancer patients." 🌊

#### *45<sup>th</sup> Annual U.S. Public Health Service (USPHS) Scientific and Training Symposium*

The 45th Annual U.S. Public Health Service Scientific and Training Symposium was held May 24-27, 2010 in San Diego, California. The symposium drew more than 1,000 attendees from Federal agencies such as the Indian Health Service, the Office of Public Health Emergency Preparedness, Bureau of Prisons, the Department of Homeland Security, the National Disaster Medical System, the Health Resources and Services Administration, the Centers for Disease Control and Prevention, the U.S. Food and Drug Administration, the Medical Reserve Corps, and the National Institutes of Health.

The symposium offered a range of continuing education seminars on the latest trends and innovations in public health care delivery, administration, and research. Targeted training courses were offered that emphasized the maintenance of our nation's security

and public health infrastructure for disaster preparedness and readiness response.

Dr. Regina Benjamin, U.S. Surgeon General, moderated a panel at the symposium opening involving the three Department of Defense surgeon generals. Dr. Howard Koh, the assistant secretary for health for the U.S. Department of Health and Human Services delivered the opening keynote. Other central speakers were Mark Trahan, nationally-renowned expert on healthcare reform, and Rear Admiral Scott Deitchman, USPHS, who spoke on "Leadership: Lessons from the Arts."

On Nurse Category Day, complementary and alternative medicine (CAM) was a new topic of interest to nurses. Dr. Josephine Briggs, director of the National Center for Complementary and Alternative

Medicine, spoke along with the National Cancer Institute's (NCI) Office of Cancer Complementary and Alternative Medicine's (OCCAM) Commander Colleen Lee, M.S., CRNP, AOCN. The two presenters described CAM as it relates to its current patterns of use in the general and oncology populations, main indications, safety concerns, research perspectives, and trends. Commander Lee addressed the activities of OCCAM and the role of nursing in integrative oncology in the clinical practice, education, and research arenas. Commander Lee commented, "Nursing has the opportunity to claim a fundamental role in integrative oncology. It is imperative that we expand our knowledge, promote evidence-based practice, and conduct methodologically-sound research." 🌊

## Contact Information

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<http://cancer.gov/cam>

## Featured Scientific Meetings

<b>Date</b>	<b>Meeting</b>	<b>Location</b>	<b>OCCAM Staff Attending</b>
April 12-15, 2010	9 <sup>th</sup> Annual Oxford International Conference on the Science of Botanicals	Oxford, MS	Dr. Jeffrey D. White
April 17-21, 2010	101 <sup>st</sup> American Association for Cancer Research Annual Meeting	Washington, D.C.	Dr. Jeffrey D. White Dr. Libin Jia Dr. Dan Xi Dr. Farah Zia
April 20-23, 2010	National Cancer Registrars Association 36th Annual Education Conference	Palm Springs, CA	Dr. Isis Mikhail
May 13-16, 2010	35 <sup>th</sup> Annual Congress-Oncology Nursing Society	San Diego, CA	Commander Colleen Lee
May 19-21, 2010	5 <sup>th</sup> International Congress on Complementary Medicine Research*	Tromsø, Norway	Liz Austin Shea Buckman Dr. Isis Mikhail
May 20-23, 2010	The 17 <sup>th</sup> International Symposium on Functional Medicine	Carlsbad, CA	Dr. Jeffrey D. White
May 21-26, 2010	Medical Library Association Conference	Washington, D.C.	Dr. Jeffrey D. White

*continued on next page*

<b>Date</b>	<b>Meeting</b>	<b>Location</b>	<b>OCCAM Staff Attending</b>
May 24-27, 2010	USPHS Scientific and Training Symposium	San Diego, CA	Commander Colleen Lee
June 4-8, 2010	American Society of Clinical Oncology-Annual Meeting 2009**	Chicago, IL	Dr. Farah Zia
August 11-15, 2010	25 <sup>th</sup> Anniversary of the American Association of Naturopathic Physicians*	Portland, OR	Liz Austin Dr. Oluwadamilola Olaku
September 4-6, 2010	Cancer Control Society-38 <sup>th</sup> Annual Cancer Convention	Universal City, CA	Dr. Farah Zia
November 6-10, 2010	138 <sup>th</sup> American Public Health Association Annual Meeting	Denver, CO	Dr. Isis Mikhail
November 13-14, 2010	Society for Integrative Oncology*	New York City, NY	Shea Buckman Dr. Isis Mikhail Dr. Dan Xi

\*Indicates that an OCCAM staff member will be at the NCI or OCCAM exhibit booth.

\*\*The NCI booth will host a Meet-the-Expert session with Dr. Farah Zia on June 7, 2010 at 11:00 a.m.

To obtain a copy of this newsletter or for inquiries on cancer and CAM, please contact 1-800-4-CANCER (1-800-422-6237).



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CANCER  
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NIH Publication No. 10-5854  
June 2010

