A rare form of brain cancer carries a sobering prognosis—the incidence rate and the mortality rate are the same. For those diagnosed with Glioblastoma Multiforme (GBM), it is a death sentence. Of the approximately 12,000 Americans identified as having GBM each year, half will die within 12 months, and the rest within three years. Currently, the only treatments known to extend survival times are exceptionally invasive surgeries to remove the tumor, and maximum dose radiation therapies—all of which lead to a discouragingly low quality of life. Because of this, researchers are racing to find better methods to stop or slow GBM.

In an article in the January 1, 2006 issue of the journal *Clinical Cancer Research*, Gelsomina “pupa” De Stasio, professor of physics at UW-Madison, and her colleagues report on research applying a new radiotherapy technique using the element gadolinium—an approach that might someday mean not only a much less invasive treatment for this disease, but possibly a cure.

The therapy, called Gadolinium Synchrotron Stereotactic Radiotherapy (GdSSR), relies on a gadolinium compound to find tumor cells and penetrate them, down into their nuclei, while sparing the normal brain.

“This induces DNA damage that the cancer cells cannot repair, and consequently causes cancer cell death,” De Stasio explains.

To be effective, healthy brain cells must be protected from the harmful exposure to gadolinium and the gadolinium must target the majority of the cancer cell nuclei. While the first requirement has been well documented, successfully fulfilling the second is what De Stasio describes in the recent article. She uses synchrotron spectroscopy to document that gadolinium reaches more than 90% of the cancer cell nuclei.

Because of the dire status of those diagnosed with GBM, De Stasio knows this alternative is desperately needed. She sees the technique as an alternative to invasive therapies that do not offer much promise for a longer life and are disruptive to the quality of life for patients in their final days.

De Stasio predicts that it will be a year before scientists know if the treatment works in animal models, another five years to know whether it works for patients, and perhaps a decade before the treatment is readily available. But while the timeframe seems long, De Stasio says she is committed to the laborious research hours.

“It’s the most lethal cancer there is,” De Stasio laments. “But fighting it is the type of work that makes you feel good about being a scientist. If you can really contribute to humanity and do something that’s useful for people, for sick people, it’s really incredibly gratifying.”

By John Morgan, Synchrotron Radiation Center

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**Advance points way to Noninvasive brain cancer treatment**

“A rare form of brain cancer carries a sobering prognosis—the incidence rate and the mortality rate are the same. For those diagnosed with Glioblastoma Multiforme (GBM), it is a death sentence. Of the approximately 12,000 Americans identified as having GBM each year, half will die within 12 months, and the rest within three years. Currently, the only treatments known to extend survival times are exceptionally invasive surgeries to remove the tumor, and maximum dose radiation therapies—all of which lead to a discouragingly low quality of life. Because of this, researchers are racing to find better methods to stop or slow GBM.

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**Using Light as a Research Tool**

The Synchrotron Radiation Center

At the Synchrotron Radiation Center (SRC) researchers use light as a research tool. The SRC produces light by hurling electrons around a track called Aladdin that is about the size of a baseball diamond and is mostly square with rounded corners. The result is light that ranges from the infrared to x-ray, which is captured and used for a diverse array of research applications.

Funded by the National Science Foundation, the national laboratory south of Madison attracts scientists from around the world who tackle fundamental and applied scientific problems. Recent research projects have included attempts to better understand Alzheimer’s disease and brain prion diseases, cutting-edge explorations of nanotechnology and nanocircuit fabrication, geological and earth science, as well as the new techniques in brain cancer therapy, described in this article.

For more information about the SRC, visit: www.src.wisc.edu
MARK YOUR CALENDARS

**Geriatrics and Palliative Care Conference**
April 7, 2006
(608) 263-6490

**Memorial Program**
April 30, 2006
High Point Church, Madison

**Lupus & Myelodysplastic Syndrome Conference**
May 6, 2006
Sheraton Hotel, Madison
Contact: Barbara Metcalfe, (608) 292-0455

**An Evening of Integrative Medicine**
Lu Marchand, MD – Integrative Medicine
May 10, 2006
Madison Marriott West, Middleton
(608) 263-0160

**Celebration of Life Picnic**
May 11, 2006
High Point Church, Middleton

**Race for the Cure**
June 3, 2006
Visit: madisonraceforthecure.com

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**Integrative Cancer Care**

**What is Integrative Cancer Care and how can it help?**

Integrative medicine is a healing-oriented medicine that considers the whole person—body, mind, spirit and lifestyle. It uses all appropriate therapies, both conventional and alternative, and focuses on the needs, values and well-being of the person, rather than the disease. Conventional medical care gives us options in treating a disease and its symptoms. Integrative medicine emphasizes the healing which can occur whether or not the disease is cured, giving people an ability to achieve high levels of health and healing. It expands the options for care and hope.

**How can integrative medicine enhance conventional cancer care?**

It is important for cancer patients to receive care from a team of high quality health professionals that they trust. This improves the outcome of care, decreases complications and symptoms, and lowers anxiety. Integrative medicine can help enhance immune function which helps control tumor growth.

Integrative medicine gives patients resources for:

- choosing therapies that help prevent cancer or prevent a recurrence;
- making lifestyle changes to promote optimal health;
- finding evidence-based information on nutritional supplements and herbs, and background on how to avoid harmful interaction with conventional therapies or make conventional therapies less effective;
- decreasing the side effects of conventional therapies such as chemotherapy and radiation therapy;
- preparing for surgery;
- surviving cancer in potentially a better state of health than before cancer occurred;
- working through the challenges of living with cancer, and making decisions with greater confidence, using inner wisdom as well as scientific information.

Integrative medicine consultants help patients choose the most effective therapies and assist them in using the cancer diagnosis as an opportunity for greater health, healing and growth, rather than one of hopelessness and overwhelming anxiety.

**How can people prevent cancer or avoid a recurrence?**

Nutrition: Nutritionists recommend five to nine servings of fruits and vegetables daily, along with fiber, whole grains, soy foods, multivitamin, calcium, magnesium and vitamin D, and omega-3 fatty acids, found in fish oil and flax seed oil for an optimal diet. Obesity increases cancer risks, as do tobacco, saturated and trans fats, processed foods, and too much alcohol. Herbs and supplements must be carefully selected for maximum benefit and to avoid harm. They are not a substitute for nutritious food.

Movement: Even moderate amounts of exercise such as walking one hour three to five times a week can prevent cancer and decrease recurrence. Movement therapies such as yoga, qigong, tai-chi, and Feldenkreis, benefit the body and can help emotional and spiritual healing.

Social support, connection, living in the present—Love, gratitude and forgiveness in life help patients find meaning, purpose and well-being. The UW Mindfulness Meditation and Stress Relaxation Program teaches methods to decrease stress and anxiety, savour life, and make the immune system more effective in suppressing cancer. Psychotherapy can help patients feel more empowered in coping with cancer, often leading to better decision making. Spiritual counseling also can be significant.

Caring for the spirit and energy system: Acupuncture, healing touch, massage, music therapy and aromatherapy encourage the energy system to work more effectively, and reduce the side effects of conventional cancer care.

**Another weapon in the fight against prostate cancer?**

A compound in many fruits and vegetables shows promise in combating prostate cancer—the most common invasive cancer and the second-leading cause of cancer deaths in American men. Research at the University of Wisconsin shows that Lupel, a chemical in plants such as strawberries, elderberries, mangos, figs, grapes, olives and capsicum, is effective against tumours in mice.

The UW research team, led by UW School of Medicine and Public Health professor of dermatology Hasan Mukhtar, PhD, studied the ability of Lupel to kill existing cancer cells in mice for more than 100 days without harming normal cells. The team found that Lupel and an antibody, known as an immunoconjugate, work together to destroy cancer cells before they proliferate or metastasize.

The team investigated Lupel alone and in combination with an antibody called anti-Fas monoclonal antibody. The anti-Fas monoclonal antibody is mass produced and only recognizes the prostate-specific antigen. (Antibodies stimulate an immune response, especially the production of antibodies. Tumor-associated antigens may be able to destroy tumor cells before they proliferate or metastasize.)

Mice receiving Lupel alone showed significant slowing of their cancer progression and a decrease in the levels of prostate-specific antigen (PSA). Mice receiving both Lupel and the anti-Fas monoclonal antibody showed a higher death rate in prostate cancer cells compared with the additive effect of the two compounds alone, suggesting a synergistic effect.

The study appeared in the December 1, 2005 issue of Cancer Research, published by the American Association for Cancer Research. The UW research was funded by the National Institutes of Health.

Lucille Marchand, MD is a professor in the UW School of Medicine and Public Health and is board-certified in holistic medicine, palliative medicine and family medicine. She is currently seeing patients at the UWCCC. For more information on integrative cancer services at UWCCC, or to schedule an appointment with Dr. Marchand, please contact Cancer Connect, (800) 622-8922.
A lot of living left to do

At 81, Edith Fiebig still mows her own lawn. At the insistence of her family, she bought a riding mower a few years ago—but it sits idle in the shed at her home in Beloit, Wis. Never one to take the easy way out, Edith prefers cutting grass with her old push mower.

Perhaps that’s why Edith didn’t give up when she was diagnosed with late-stage lung cancer in 1999. We can help make you comfortable, the doctor told Edith and her family, but the disease was just too advanced for treatment to work.

“We didn’t want to accept that as an answer,” said Edith’s granddaughter, Michele Riedel. “So we made up our minds to look for options.”

Edith consulted with the UW Comprehensive Cancer Center, just an hour’s drive from home. With the help of a multidisciplinary team of experts representing the full spectrum of cancer care, Edith and her family received something they thought they’d lost—hope.

As the only comprehensive cancer center in Wisconsin— as designated by the National Cancer Institute—the UWCCC draws on a team of more than 250 physicians and scientists working together to translate laboratory discoveries into new patient treatments. Renowned experts in a wide variety of medical disciplines and cancer types, they can offer an approach that looks at the “big picture” of cancer care—using medical oncology, radiation oncology and surgical oncology. Schiller explains. “The nice thing is, we’re all there together. We can all review the films and the patients’ cases together and develop a treatment plan, right then and there. It’s quicker and more effective when we’re all in the room at the same time.”

Looking back on the experience, Riedel says she’s nothing but grateful that her grandmother decided not to resign herself to the initial prognosis.

“It’s just been a miracle. If you’re diagnosed with cancer of any type, this is the first place I’d go. They never made us feel rushed,” she says. “They would sit there and take the time to answer our questions.”

Support services for caregivers coming this spring

The diagnosis and treatment of cancer is a difficult time. There are many new experiences, life changes, and a variety of emotional responses. This is true both for cancer patients and those who care and support them. Family and friends, the “informal caregivers,” are often key in providing physical and emotional support to patients.

Lori DuBenske, PhD has received an Ira and Ineva Reilly Baldwin Wisconsin Idea Endowment to develop a Cancer Caregiver Program at the UW Comprehensive Cancer Center. The Cancer Caregiver Program will provide a variety of education and support services to caregivers. These services will offer caregiver skills training, emotional support and resource referrals. They will aid caregivers in their care roles, both at home and in the clinic. Participating caregivers are likely to gain added confidence and satisfaction in their caregiving experience.

New services will include:

- Cancer Caregiver Network—a new drop-in caregiver support group will be held on the second Monday of each month, starting April 10, 2006. The group will meet from 4:00-5:30 pm in room K5/572 at UW Hospital and Clinics
- Counseling
- Educational workshops addressing caregiver issues
- Powerful Tools for Caregiving classes offered in collaboration with the Dane County Area Agency on Aging
- Caregiver resource area—offering support group listings, online resources, books,
- Share the Care Station—offering guides to setting up a team of family and friends to help someone;
- Caregiver resource packets

Watch for these services to begin this spring. Schedules for support groups and classes will be announced. For more information, please email: lbdenske@chp.wisc.edu or contact Cancer Connect at (800) 622-8922.

“TheWriteTrack”

Personal Health Tracker helps thousands cope with cancer

Like thousands of others in the United States, University of Wisconsin pharmacy professor Joe Wiederholt was diagnosed with colon cancer in 1994 when he was just 45 years old. Throughout his illness, Joe kept a journal to track his symptoms and side effects, as well as medications and other treatments. Joe’s journal and his passion for teaching and helping others became full partners in their cancer care led to the creation of the first cancer tracker and planner, the WriteTrack. Originally published as a hardcover book in 1997, to date, over 150,000 copies in three versions have been printed and distributed to cancer patients throughout the country.

Joe succumbed to his disease in 2001. Wishing to continue her late husband’s legacy, as well as to provide a proven and highly acclaimed tool for patients, families, and cancer care professionals, oncology nurse Peggy Wiederholt recently released the revised edition of The WriteTrack through Wiederholt Group, Inc. The new tracker offers guidance and support, and includes tracking calendars, information about cancer resources, inspirational quotes, and helpful suggestions made by cancer patients and health care providers who have used previous editions.

The WriteTrack Personal Health Tracker for Cancer Patients by Joe Wiederholt with Peggy Wiederholt is available through www.thewritetrack.net for $14.95.
Canine cancer vaccine shows early promise

Dog owners from across the nation have been contacting the UW-Madison School of Veterinary Medicine about an anti-cancer vaccine for dogs that may some day show promise for people.

Although it wasn’t publicized, other than by word of mouth, the experimental treatment has sparked interest in pet owners whose dogs have been diagnosed with melanoma. The disease, the equivalent of one form of skin cancer in humans, is very aggressive in dogs, usually manifesting itself in or around the mouth or toes. Despite conventional treatment, 78 percent of dogs with oral melanoma die within a year.

But about 40 percent of dogs with a melanoma tumor present responded to a vaccine created from actual melanoma tumor cells. In about 12.5 percent of the treated dogs, the tumor completely disappeared.

“Not all dogs with melanoma respond to this treatment,” cautions Ilene Kurzman, an associate scientist in the UW-Madison School of Veterinary Medicine and member of the UW Comprehensive Cancer Center who works in the veterinary medical school’s oncology section. “But those that do seem to do quite well.”

Dogs that first had surgery for their melanoma and then received vaccine lived cancer-free for approximately twice as long as dogs in previous studies that did not receive the vaccine. Further work is needed to improve the vaccine so that a higher percentage of dogs with melanoma will respond.

Kurzman says she would like to continue working on the vaccine in the hope that this innovative anti-cancer strategy will translate into similar novel treatments in people with cancer.

For more information contact Kurzman, (608) 263-9754 or kurzmanl@svm.vetmed.wisc.edu.

The percentage of women with breast cancer participating in online support groups is significant and has been growing steadily over the past decade. New research provides insights into the characteristics of women most likely to participate in those groups when barriers to computers and Internet access are removed.

The study found many stereotypes about who is apt to use online support groups are wrong. Assumptions about age, income and education did not predict participation, though minorities were less likely to be active users.

The study, conducted at the University of Wisconsin-Madison Center of Excellence in Cancer Communication Research, looked at 144 women recently diagnosed with breast cancer. They received free computer hardware, Internet access and were trained to use an online health education and support system, which they were able to use for six months. Researchers then examined who was most likely to use the online support groups.

The most novel finding, according to Shaw, was that the researchers expected free access and training would be great equalizers in reducing differences of age, education or income. Surprisingly, women with more positive appraisals of their physical, social and psychological states used the online support groups more frequently.

The most novel finding, according to Shaw, was that the frequent users reported having more support from their families. A review of the message transcripts showed women who are closer to their family and friends perceive they have more to lose from breast cancer, and therefore are more inclined to communicate about those feelings with others.

“Women often wrote about their fear that breast cancer might shorten their time to enjoy family and be around for important milestones as their children grow older. It might shorten their time to enjoy family and be around for important milestones as their children grow older. It appeared that the closer a woman felt to her family or larger social network, the more she feared her potential separation from them,” says Shaw.

The study was published in the January/February 2006 issue of the journal, CIN: Computers, Informatics, Nursing.
YES! I want to make a difference by giving to the University of Wisconsin Comprehensive Cancer Center

In October 2005, Boston Store East Towne and the UWCCC joined together for “Partners for a Purpose.” In honor of Breast Cancer Awareness Month, a one-day sale of items from Boston Store’s unique breast cancer awareness line occurred along with pampering facials, color makeovers and fragrance consultations for patients and staff. Pictured here is the team from Boston Store.

The UW Comprehensive Cancer Center was proud to be one of 12 Wisconsin organizations to receive a portion of the proceeds from the sale of Packer Pink Caps. An initiative between the Green Bay Packers and American Family Insurance Inc., the partnership raised more than $1 million for breast cancer research and patient programs through the sale of pink baseball caps with the Green Bay Packers logo. Each organization received $87,500.

Pictured (l to r) at the January 1, 2006 game are Packers President Bob Harlan, American Family Insurance Executive Vice President Jack Saltzgiver, UWCCC Director George Wilding and Packers Executive Vice President/COO John Jones.
Clinical trials are UWCCC’s key to progress in the battle against cancer

Brain Tumor
Glioblastoma Multiforme (GBM) is the most common type of adult primary brain tumor and is the most difficult to treat. Median survival for this type of brain tumor is approximately 10 months. The most promising treatment for this disease is surgery followed by chemotherapy and radiation therapy with chemotherapy continuing for up to one year.

A new trial has just been opened by the largest U.S. group doing research on newly diagnosed primary brain tumors, the Radiation Therapy Oncology Group. The trial will use both radiation therapy and Temozolomide, a chemotherapy pill shown to be effective in treating brain tumors and will investigate two different treatment schedules for delivering the chemotherapy.

The study, which will be open in the United States, Canada and Europe, is anticipated to be open at the UW in March 2006. To be considered for this trial, a patient must have a newly diagnosed GBM. Treatment on this protocol must begin within five weeks of surgery.

Breast Cancer
As many as one in three breast cancer patients suffer swelling in their arms as a result of their breast cancer treatment. This swelling, called lymphedema, can cause pain and decreased arm function. While there is no known “cure” for this condition, some women benefit from massage therapy and compressive sleeves, but earlier this year UWCCC researchers announced a new study using pycnogenol to address this problem.

“Pycnogenol is a plant extract that contains antioxidants and shows some evidence of benefit for common leg edema,” said Paul Hutson, PharmD, associate professor at the UW School of Pharmacy and a member of the UWCCC. “We believe that if it works on the leg, it may have the same effect in the arms of breast cancer patients,” Hutson said.

Head and Neck Cancer
The UWCCC has several studies open for patients with newly diagnosed forms of head and neck cancer.

One study is evaluating the effects of radiation using Intensity Modulated Radiation Therapy (IMRT) on hearing, swallowing, voice and salivary gland function. IMRT is a sophisticated radiation delivery technique with the capacity to diminish common normal tissue toxicities. Patients on this study can be treated with IMRT from a modern linear accelerator or from a new, FDA approved system for delivering IMRT called helical tomotherapy, which was developed at UW Hospital and Clinics.

A second study, sponsored by the National Cancer Institute, is for patients who have undergone surgery for an advanced head and neck cancer. The study is evaluating the addition of a promising new drug, cetuximab, with concurrent chemotherapy and radiation. Cetuximab is a molecular growth factor inhibitor that may help block cell signaling in squamous cell cancers. Patients receive weekly cetuximab and chemotherapy with daily radiation for six to seven weeks. Eligible patients must not have had prior radiation or chemotherapy for this cancer.

For more information about these and other clinical trials at the UW Comprehensive Cancer Center, contact Cancer Connect, (800) 622-8922 or (608) 262-5223 in the Madison area.

A complete listing of clinical trials at the UWCCC is also available on our website, cancer.wisc.edu