UAB Medicine launches one patient record for all clinics

The latest advance in patient care from UAB Medicine will enable all patients to have one electronic health record for all its clinics, updated in real time.

Caregivers will enter patient information into an electronic health record (EHR) that can be shared electronically, securely, throughout the hospital and clinics using the system named IMPACT — Improved Methods of Patient Information Access of Core Clinical Tasks.

The IMPACT electronic health record is being deployed in five phases through 2012. In May it was implemented in various units in The Kirklin Clinic and UAB Highlands plus satellite clinics in Hoover, Havensness, Morris, West End, Bessemer and other locations.

“...true patient-centered care, and I’m excited to see improvements in quality and coordination of care for our patients, and I’m excited to be involved.”

Sergio Stagno, M.D., president of the UAB Medicine launch team

Watts studying fish response to chemical dispersant

Omega-3 fatty acids that encode different stress-response proteins — proteins that protect against a stressor — are essential for the survival of a cell under attack. This is true for any animal, including fish exposed to oil or chemical dispersant as a result of the 2010 BP Deepwater Horizon oil spill.

Stephen Watts, Ph.D., professor of biology, and his team of researchers are investigating the threshold at which Gulf bull minnows show an inflammatory response to Corexit®, the dispersant used to clean the 2010 oil spill. Watts hopes that information will influence new technologies to monitor the health of animal populations in the event of another disaster.

“...even low, non-lethal levels of chemical byproducts can negatively affect animal health and well-being,” Watts says. “There is a significant amount of research on crude oil exposure on marine species, but minimal research on the direct effects of dispersants. The extreme amount of dispersant used in the Gulf spill requires more examination.”

Watts, who has researched fish and other marine animals for 30 years, selected the bull minnow because of the extensive database on the killifish and because it can easily be manipulated in the lab — much like the freshwater zebrafish he has studied extensively for the past four years.

It was Watts’ recent research on the zebrafish that yielded groundbreaking results: He says he has aided in the Corexit research project.

Watts and his colleagues found that detection of elevated biomarkers like mRNA or protein levels in zebrafish would provide an early warning that contaminants are present in the environment. Their research showed that these biomarkers, known as acute phase biomarkers, represent the first-stage response of any organism to an environmental stressor. These biomarkers, which are definitive markers of inflammatory stress, have only recently been evaluated in any fish species.

Watts demonstrated the effect in zebrafish and detected an increase in mRNA for C-reactive protein (CRP), serum amyloid A (SAA) and vitellogenin — markers that are important in diagnosing human problems, including heart disease.

“If these proteins are elevated, it indicates you have inflammation somewhere — not necessarily disease, but a potential enhancer for disease onset,” Watts says. “Our job was to go in and find out if these similar types of markers are found in fish like the zebrafish and the bull minnow, and they are. These fish have the identical inflammatory markers that humans have: CRP is present; Serum amyloid A is present. Vitellogenin is present. That means we could perhaps measure them.”

Next, the researchers attempted to artificially inflame the markers in zebrafish to make the levels elevate with omega 6 lipids.

“It had an extraordinary effect,” Watts says. “You could use other types of com-

See UAB MEDICINE p3

See WATTS p4
Deadline for tornado relief streamlined application process is June 27

The UAB Benevolent Fund has set up a special account to provide relief to faculty, staff and students with tornado-related emergency needs. The deadline for taking advantage of the program’s streamlined application process is Monday, June 27.

Applications submitted by both students and employees after the deadline will be processed through the regular Employee Emergency Assistance Program. This fund, managed by the Benevolent Fund Employee Emergency Assistance Program, is being maintained separate from other general Benevolent Fund donations.

Go to www.uab.edu/tornadorelief to learn more.

Don’t lose your personal days

UAB policy requires non-hospital bi-weekly-paid full-time regular employees to take any unused personal holidays by the last biweekly pay period — the June 5-18 pay period — or they will be forfeited. The new personal holiday balance for the 2011-12 period will be reflected on the June 19-July 2 pay statement.

A copy of the full holiday policy can be found in the UAB Policies and Procedures Library (HR policy 30) at www.uab.edu/policies.

The policy for monthly paid employees and hospital personal days don’t lose your personal days.

UAB student explores hockey’s history

Rebecca Dobrinski has put her history research on ice, tracking hockey’s expansion into the sunny South over the past 70 years. The UAB graduate student and hockey fan explains how newspapers, football, and fights helped educate audiences and sell tickets in UAB Magazine at www.uab.edu/ubmagazine.

Beat the pack on Thursdays in July

Are you ready to quit tobacco? You can. Sign up now to enroll in a free four-week program led by UAB Resource Center counselors from 10:15 to 11 a.m. July 7, 14, 21 and 28 in the West Pavilion Conference Center Room A. Register by completing the enrollment form available on the www.uab.edu/wellness website.

Register for CRRT update Aug. 11-12

An update of Continuous Renal Replacement Therapy (CRRT) practices and procedures for health-care provider and students, including physicians and fellows, pharmacists, and nurses will be held Aug. 11-12 in UAB Hospital.

For information on costs and approved contact hours and continuing education credits for UAB CRRT Academy 2011 call Daisy Sparks at 934-5227.

Weight-control classes begin June 20

UAB EatRight and UAB Employee Wellness are partnering to bring the 12-week, lifestyle weight-control classes to UAB Medicine.

Weekly classes are begin June 20 at locations across campus: 11 a.m. Monday in Old Hillman Room 236, 4:30 p.m. Tuesday in West Pavilion Conference. 6:45 a.m. Wednesday in TKC Learning Center and noon Thursday in WIC 5320. The cost is $125. Register by completing the form posted on the www.uab.edu/wellness website.

Continuing education on PTSD and more to be offered June 24

A continuing education program on psychiatric care and psychopharmacology across the lifespan will be offered June 24 in UAB School of Nursing. It is for professionals interested in the topics of adherence to psychotropic medications and common conditions such as post-traumatic stress disorder, dementia and personality disorders.

An update on some of the newer antipsychotics will also be offered. More information is online at www.uab.edu/nursing.

UAB Reporter online only during summer

The UAB Reporter will publish online editions only during the months of June and July. The newsletter will resume its biweekly printing and distribution schedule with the Aug. 8 issue.

The eReporter will continue its bi-weekly publication. Deadlines for the Tuesday and Friday eReporters are each Monday and Thursday at 10 a.m., respectively.

Fiesta Ball raises more than $55,000

The Young Supporters Board of the UAB Comprehensive Cancer Center hosted its fifth annual Cinco de Mayo event, Fiesta Ball 2011, on May 5 at Innovation Depot in downtown Birmingham. This year’s event was the board’s most successful ever, raising more than $55,000. All proceeds raised from the evening will be used to fund a young cancer researcher at UAB. Because cancer scientists must compete for dollars to support their research, it is becoming increasingly difficult — especially for young investigators — to receive funding as fewer grants are being awarded on a federal level. The success of this year’s event marks the first time the Young Supporters Board will be able to fully fund its young investigator grant without additional funding from the Cancer Center. The Young Supporters Board was established in 2006 and is made up of Birmingham professionals ages 25 to 34. Their mission is to raise funds and awareness for the UAB Comprehensive Cancer Center, the only comprehensive cancer center as designated by the National Cancer Institute in a five-state region.

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**GeoSentinel finds E. coli not big concern for travelers**

**What you should know**

- *E. coli* is a group of bacteria that live in the intestines of many animals, including humans. Most strains are harmless, but others can cause illness.
- *E. coli* infections can be mild to life-threatening.
- The strain now making people ill in Germany and other parts of Europe, known as 0111:H4, is a clone of bacteria known as Shiga-toxin-producing Escherichia coli, or STEC.
- According to the WHO, the strain identified in the German cases is rare, seen in humans before, but never in this kind of outbreak.
- Cases have now been notified from 11 countries in addition to Germany. These are typically people who have recently visited northern Germany or had contact with a visitor from northern Germany who was an *E. coli* case.

**The source of the deadly enterohemorrhagic *Escherichia coli* (E. coli) outbreak in Europe that has infected more than 2,100 and killed at least 22 is a mystery.**

David Freedman, M.D., director of the UAB Traveler’s Health Clinic and co-director of GeoSentinel, says it’s unclear how long the *E. coli* outbreak in Germany will persist. He says this outbreak may be more widespread in Germany because more food than normal was contaminated.

**E COLI OUTBREAK**

**CONTINUED from page 1**

University of Alabama Health Services Foundation, says IMPACT is the most ambitious project since the construction of the Kirklin Clinic.

“Literally hundreds of dedicated physicians, nurses, support and information technology staff are working to successfully implement the project,” Nagao says. “The quality, safety and continuity of patient care will all be enhanced by having patient-health information in one system and accessible to providers across the organization.”

**IMPACT will enable us to move into a new era of improved organizational communication,** says Towana Purdue, chief nursing officer in The Kirklin Clinic. 

“Providers will have patient information at their finger tips. Data extraction will be easier, opportunities for cost savings will be more easily identified, and we will be better prepared to comply with upcoming regulatory requirements.”

The data-capture and reporting capabilities will facilitate research and help achieve target health and efficiency goals, such as reducing errors, electronic ordering and e-prescribing, by linking physicians to clinical staff to administrative support in one record.

“The system also will help improve our compliance with the myriad health-care regulations we are subject to as an organization,” says Brian Bates, officer of corporate compliance for the UAB Health Systems Foundation.

Ray Watts, M.D., dean of the School of Medicine, says the timely and pivotal undertaking will have a significant, positive effect throughout the hospital.

“To have patient information in one system and available to our providers will empower everyone engaged in patient care in a way we have not previously experienced,” Watts says. “It will support better communication across the organization, ensure continuity of care and help us be more efficient. I recognize the level of individual and organizational commitment required to implement the system, and I applaud everyone’s efforts.”

Learn more about IMPACT, including implementation dates, training sessions and more at impactehr.hs.uab.edu.

June 13, 2011 UAB Reporter 3
Yao’s research may lead to early diagnoses of eye disease

UAB’s designation by the Carnegie Foundation as an institution with “very high research activity” has accustomed faculty, staff and students to hearing its world-renowned teacher-scholars have received competitive grants and other awards to support their research. Even so, it is still impressive that some of our youngest and brightest scientists have been thrust into the spotlight in the past seven months, with three professors winning National Science Foundation Career Awards — a prize that the foundation describes among its most prestigious.

Xincheng Yao, Ph.D., assistant professor in biomedical engineering, David Hilton, Ph.D., assistant professor in physics, and Ho-Wook Jun, Ph.D., assistant professor of biomedical engineering, each won the influential award to support the early-career development activities of professors who most effectively integrate research and education within the context of the mission of their organization. The UAB Reporter featured Jun’s work in the March 7 edition and Hilton’s research in the April 4 edition.

This month we look at Yao’s work and its promise.

Yao received his $400,000 NSF Career Award for research into the development of an optical coherence tomography instrument that provides sub-cellular- and sub-millisecond-resolution imaging of the human retina.

The technology promises a high-resolution method for non-invasive evaluation of retinal neural function and dynamics, which could significantly advance the study and early diagnosis of major eye diseases such as glaucoma and age-related macular degeneration.

Q. What was your reaction to being selected for this honor by the NSF?

A. I was really excited. This honor strengthened my enthusiasm and confidence for future career development.

Q. How did you become interested in this type of research?

A. I am attracted by the amazing function and delicate structure of the retina. As the front end of the vision system, the retina is responsible for effective capture of photons and also conducts several stages of neural processing of visual information.

Q. What is the unique aspect of your research, especially as it compares to other similar types of research?

A. We are pursuing simultaneous imaging of stimulus-evoked fast intrinsic optical signals (IOSs) over the whole thickness of the retina. Simultaneous monitoring of fast IOSs correlated with photoreceptor and post-photoreceptor neurons will provide insight into the neural sources and interaction mechanisms of fast IOSs in the complex retinal neural network.

Q. Why is high-resolution imaging of the human retina important in early diagnosis of glaucoma and macular degeneration?

A. The retina is a very delicate neural network that consists of many types of cells. It is well established that different eye diseases, such as glaucoma, diabetic retinopathy (DR) and age-related macular degeneration (AMD) can target different retinal cells. Therefore, high-resolution functional imaging of the human retina is important for better study and early diagnosis of eye diseases.

Q. Are you creating new technologies while building the instrument or revising previous designs?

A. This project is a natural extension of our recent studies of stimulus-evoked fast IOSs in the retina and other neural tissues. We are developing a rapid functional OCT and validate it for simultaneous imaging of photoreceptor and post-photoreceptor responses in the retina.

Q. Are there other instruments out there that can achieve this type of detail?

A. No.

Q. What impact do you hope the research will have in the fields of ophthalmology and optometry?

A. Successful implementation of the proposed research will lead to a high-resolution methodology that enables functional examination of both photoreceptor and post-photoreceptor responses in the retina, which will lead to improved study and diagnosis of major eye diseases, such as glaucoma, diabetic retinopathy (DR), age-related macular degeneration (AMD) and can target different retinal neurons.

WATTS

CONTINUED from page 1

pounds and get a dramatic initiation of some of these acute response proteins.

Locating the point at which inflammation occurs is crucial. While inflammation does not indicate disease onset, long-term response might be poor health, disease, poor reproductive success, weight loss and other issues. The ability to measure the inflammatory response in a timely manner could save marine life in future disasters.

Watts hopes technology being developed at UAB will enable workers to detect the elevated proteins of affected organisms in wild populations.

“We hope that the next time something like this happens and they see that first sheen of oil coming in, they might be able to go in and grab a couple of fish and test real quickly to see if they are being exposed,” Watts says. “Then they can take steps to protect them. This could be a future marker, and it’s something no one else has looked at."

Testing Corexit

Watts is five months into his 12-month project, and he has tested several components of Corexit that have been bought individually from chemical companies to find the level of concentrations that induce an inflammatory response.

He has made multiple requests with Nalco Holding Company — the producer of Corexit — for a sample to test.

“The Alabama Marine Environmental Science Consortium has asked that it be given to them so they can make sure the right people get it, but they’ve gotten nothing so far,” Watts says. “We do understand their concerns from a legal standpoint. We’re still hopeful, however.”

Based on what his current research of Corexit components has yielded, he doesn’t believe the levels used in the spill will be an issue to the bull minnow. Watts believes, however, that there is some level of the dispersant that will induce inflammation.

“But it’s very doubtful that the levels that were used were fatal to the fish or even induced inflammation,” Watts says. “I’ve looked at the chemical components of the Corexit, and these components are relatively non-toxic. But we want to see just how low of a concentration we can go until we can eliminate any stress effects on the fish."

BP has released $450 million for additional Gulf research, and Watts is working in concert with investigators from Texas A&M, LSU, West Florida and South Florida to assemble a consortium to do long-term studies on animals that live on the ocean floor.

The institutions are putting together a grant to submit in July. UAB’s component would be approximately $300,000 a year if funded.

“We’re joining this consortium to evaluate some of the invertebrate fauna that inhabit the nearshore communities, and we’re hoping to study those for a three-year period,” Watts says. “We want to see if there was any effect of the oil spill and compare the data we collect with the historical data sets we’ve had for 20 years. We’ve got historical data that shows what we can normally expect, and we can compare that to any new data we could collect.”

The success of the UAB program is largely due to a collaboration of CAS and the School of Medicine. Collaborators at UAB include Alex Szalai, Ph.D., (Immunology); Michele Powell, Ph.D., (Biology); Vithal Ghatia, Ph.D., (Biology); and doctoral graduate student Melissa Papes (Immunology).

The project is funded in part by a $25,645 grant awarded by the Alabama Marine Environmental Science Consortium.