



Departmental News

Department of Pediatrics ~ LSUMC New Orleans

PUBLICATIONS



Michael Lan, PhD



Mary Breslin, PhD

Michael Lan, PhD and **Mary Breslin, PhD** co-authored a paper which has found a wide resonance in the diabetes research community. "Zinc Finger Transcription Factor INSM1 Interrupts Cyclin D1 and CDK4 Binding and Induces Cell Cycle Arrest," was published in the *Journal of Biological Chemistry*, Vol. 284, Issue 9, 5574-5581, February 27, 2009. The research reveals the molecular mechanism of how a protein determines the fate of the cells that make and release insulin. The article received an abundance of press coverage, including a piece in Baton Rouge's the *Advocate* as well as several online science news websites. All publications quoted senior author Dr. Lan's observation that "Taken together, we provide evidence to support that INSM1 binds to cyclin D1, a critical factor in cell growth, and interrupts normal cellular proliferation. Our study furthers our understanding of how to control islet cell growth in the culture system, which may ultimately benefit diabetes." The research team also included Tao Zhang, Wei-Dong Liu, and Nicolle A. Saunee from The Research Institute for Children. The *Advocate*'s article is printed on the third page of this newsletter.

Michael Marble, MD co-authored an article with Department of Pathology's Robin McGahey, MD, MSGC, in January. *Clinical Dysmorphology* published "45, X/47,XX,+18 and ring (18) mosaicism with mild phenotypic features including normal stature: clinical report and review of the literature."

MORE PRESS COVERAGE



Ryan Pasternak, MD, MPH was quoted in a *Times Picayune* article about the emergence of school-based health clinics in the New Orleans metropolitan area after Hurricane Katrina. Addressing the problem of reaching a teenage population that is affected by numerous health risks but is without adequate preventive and primary medical care, Dr. Pasternak said "Teaching students how to avoid that cycle by practicing comprehensive health management is part of a paradigm shift for our city." The reporter cites other local officials as saying the New Orleans clinics are quickly becoming a model for the rest of the nation. You can find the complete article printed on the last page of this newsletter.

FACULTY REMINDERS

Mark your calendars for future Faculty Meetings. Meetings begin at 12:00 noon and lunch is served.

March 20 -- Children's Hospital Tower 2 Center
April 17* -- Children's Hospital Tower 2 Center
May 15 -- Children's Hospital Tower 2 Center
June 19 -- Children's Hospital Auditorium

*Please note April's meeting date was incorrect in last month's newsletter.

SOUTHERN REGIONAL MEETINGS



Jeff Surcouf, MD, Caroline Straatmann, MD, Luke Wall, MD, Lynn Tran, MD, Cori Morrison, MD and Rachel Dawkins, MD at the 2009 Southern Regional Meeting in New Orleans.

The Southern Regional Meetings of academic medical societies was held on February 12-14 at the Hotel Intercontinental. Numerous members of the department participated in the poster session which was jointly sponsored by several organizations including the Southern Society for Pediatric Research and the Ambulatory Pediatric Association. Contributions are listed below.

Anaphylaxis due to gadolinium: a case report.
A Fiorillo and P Kumar

Peripheral t-cell lymphoma (PTCL) in a pediatric patient with myelodysplastic syndrome (MDS).
CA Morrison, M Luquette, L Yu

Novel professionalism curriculum for a pediatric residency program. R Dawkins and S Fogarasi

“My gentle giant”: Gorlin-Gotz syndrome.
CL Moll and G Yandle

A typical headache in an atypical tumor.
CL Moll and G Yandle

Fulminate neonatal cardiorespiratory collapse caused by coxsackievirus B1 myocarditis.
L Wall, L Tran, J Surcouf, A Sanzone, D Albrecht, R Craver

Vein of galen malformation presenting as persistent pulmonary hypertension: case report.
J Surcouf, L Tran, J Ferry, B Barkemeyer, D Rivera

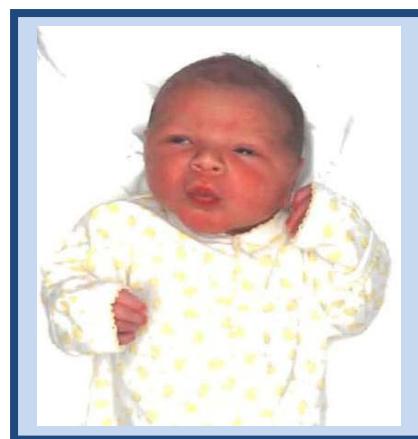
Multiple congenital anomalies in an infant of an obese diabetic mother: case report.
L Tran, J Surcouf, J Ferry, S Olister

Delayed renal graft function due to recurrent FSGS. C Straatmann, S Florman, V Vehaskari

NEW BABIES



Harriet Elizabeth DuRant, the beautiful daughter of **Farrow DuRant, MD** and her husband, Robert DuRant, was born on November 12, 2008. She weighed 6 lbs, 11 oz.



Noah Rafael Vargas, the handsome grandson of **Alfonso Vargas, MD**, was born on January 27 weighing 8 lbs, 3.6 oz. It is the third child for Juan Carlos and Jennifer Vargas.

APRIL SUBMISSIONS

Please send your submissions for the next issue of the newsletter to Kelly Allerton. You can reach Kelly by telephone (896-9800), fax (896-2720), or email (kslumb@lsuhsc.edu).



LSUHSC research may benefit diabetes by increasing understanding of how to control islet cell growth

From www.eurekalert.org

New Orleans, LA – Michael Lan, PhD, Professor of Pediatrics and Genetics at LSU Health Sciences Center New Orleans, is the senior author of a paper revealing the molecular mechanism of how a protein determines the fate of the cells that make and release insulin. Zinc Finger Transcription Factor INSM1 Interrupts Cyclin D1 and CDK4 Binding and Induces Cell Cycle Arrest, a paper in press currently available online, will be published in the *Journal of Biological Chemistry*, Vol. 284, Issue 9, 5574-5581, February 27, 2009.

Dr. Lan's laboratory is studying INSM1, a protein involved in the regulation of hormone-producing, or endocrine, cells. INSM1 plays a critically important role in the development of pancreatic beta cells— the only cells in the body that secrete insulin. Beta cells are located in islet cell clusters throughout the pancreas. Diabetes mellitus type 1 results from the destruction or dysfunction of islets and their beta cells. Type 2 diabetes results from the body's inability to use insulin properly and a gradual decrease in the pancreas's ability to make it.

In this study, the research group used pancreatic cancer cells to investigate the effects of INSM1 on cell cycle function. INSM1 is a transcription factor—a protein that binds to specific sequences of DNA and controls the target gene expression or

action. The researchers developed an inducible system to "turn on" INSM1 in pancreatic cancer cells and found that it resulted in a significant reduction in the cells' growth rate. They showed that the mechanism for this growth inhibition was due to an interaction between INSM1 and cyclin D1, an important cell growth promoting protein. Through the interaction between these two proteins, the growth of the tumor cells was impaired. Further, transplantation of these INSM1 on pancreatic tumor cells into mice showed the growth rate of these tumor cells was significantly inhibited compared to the control cells.

"Taken together, we provide evidence to support that INSM1 binds to cyclin D1, a critical factor in cell growth, and interrupts normal cellular proliferation," notes Dr. Lan. "Our study furthers our understanding of how to control islet cell growth in the culture system, which may ultimately benefit diabetes."

According to the Centers for Disease Control and the National Institutes of Health, as of 2007, 23.6 million people, or 7.8% of the US population, have diabetes. This represents 17.9 million people who have been diagnosed and 5.7 million who do not yet know that they are diabetic. Diabetes was the seventh leading cause of death listed on US death certificates in 2006. Studies have found that

only about 35-40% of decedents with diabetes had it listed anywhere on the death certificate and only 10-15% had it listed as the underlying cause of death.

The research team included Mary Breslin, PhD, Assistant Professor of Biochemistry and Molecular Biology at LSU Health Sciences Center New Orleans, as well as Tao Zhang, Wei-Dong Liu, and Nicolle A. Saunee from The Research Institute for Children. The Research Institute for Children is a partnership between LSU Health Sciences Center New Orleans and Children's Hospital New Orleans.

LSU Health Sciences Center New Orleans educates the majority of Louisiana's health care professionals. The state's academic health leader, LSUHSC comprises a School of Medicine, the state's only School of Dentistry, Louisiana's only public School of Public Health, Schools of Allied Health Professions and Graduate Studies, as well as the only School of Nursing in Louisiana within an academic health center. LSUHSC faculty take care of patients in public and private hospitals and clinics throughout Louisiana. In the vanguard of biosciences research in a number of areas worldwide, LSUHSC faculty have made lifesaving discoveries and continue to work to prevent, treat, or cure disease. LSUHSC outreach programs span the state.

School clinics deliver care to students

By Bill Barrow, *Times Picayune*, February 9, 2009

Program becoming model for the nation

In the wake of Hurricane Katrina, a long list of politicians, business executives and civic leaders promised -- or at least hoped aloud -- that New Orleans and its surrounding areas would come back "bigger and better."

Amid a recovery still lagging by some measures, that optimistic forecast is making some headway when considering a budding program for school-based medical clinics, a narrowly tailored component of a health-care delivery system that was devastated by the 2005 storm.

Before Katrina, there were five in-school clinics in Orleans Parish. Today, a collaborative of school officials, not-for-profits, private financial backers and area hospitals and medical schools has opened eight clinics in the region, with four more on the way. They are working under the banner School Health Connection organized by the Louisiana Public Health Institute.

Of the clinics that already provide services, four are in Jefferson Parish, three are in New Orleans and one is in St. Bernard Parish. All of the planned sites nearing completion are in New Orleans, meaning the city's total count soon will surpass its pre-flood level. Organizers are in the early stages of planning for a clinic that would be the first of its kind in Plaquemines Parish.

"Though the need is high across the country, only a select few lucky cities are beginning to work on this and recognize it as a viable health-care resource for children's primary care," said Sherry Lecocq of the Public Health Institute, which launched the project with an \$8.7 million grant from the Kellogg Foundation.

"We feel New Orleans is quickly becoming a model for the rest of the nation."

It's just right there'

Each clinic is staffed with at

least one doctor, at least one nurse practitioner, nurses and other providers who offer comprehensive primary care: physicals; preventive screenings and immunizations; treatment for minor illness and injury; management for chronic conditions like asthma and diabetes; mental health evaluations and counseling; and referrals to specialists.

Students do not have to pay, though the clinics bill Medicaid and private insurers, provided the latter agree to waive co-pays due at the time of a visit.

The potential benefits are obvious for the students on the respective campuses.

"It's beyond having a school nurse and a social worker," said Marsha Broussard, who directs the program for the Public Health Institute. "Healthy kids are happier. Healthier kids learn better."

Will Powell, a senior at New Orleans Charter Science and Mathematics High School, said using his school's clinic allowed him to get on-site relief of a stomach ache without having to leave school or draw an adult family member away from work.

"It's just right here," Powell said of the facility, which moved this year from two classrooms to a remodeled house -- detached from the main building -- with a waiting area, office and lab space, and three private exam rooms.

Teens face risks

Broussard and others also put the expansion of school clinics in the wider context of discussions about redesigning Louisiana's health-care system. In particular, they cited expanded access to services and a greater emphasis on primary care.

Dr. Ryan Pasternak, a Louisiana State University pediatrician who leads LSU's participation with several clinics, said teens "often are trapped in a system designed for young children and adults."

Broussard recalled the frustrations of her son when she took

him as a teenager to a pediatrician's office with a lobby full of toddlers and toys. "This is a population that is hard to reach," she said.

That problem is compounded in an age demographic affected by numerous health risk factors, from sexual activity and substance abuse to mental health issues that can often accompany the transition from childhood to adulthood. Without viable options, the program's advocates say, the current student population will grow into another generation of adult Louisianians who go without adequate preventive and primary medical care, eventually landing in hospital emergency rooms, where treatment is much more expensive.

"Teaching students how to avoid that cycle by practicing comprehensive health management," Pasternak said, "is part of a paradigm shift for our city."

Agencies share costs

The growth of the clinics also comes as some of the same entities -- the Public Health Institute, Tulane University and nonprofit groups such as Daughters for Charity -- work to expand community health clinics that offer the same primary care benefits to a wider population.

The school clinics, however, appear to be on surer financial footing, Broussard said.

While many neighborhood clinics depend on a patchwork of financing, including grants that are approaching their expiration, Broussard said the original Kellogg grant has covered most initial capital investments. Operating costs -- about \$300,000 to \$350,000 a year -- are spread among school systems and the sponsoring agencies like LSU, Tulane and Ochsner Health Systems.

"It will take a continued effort by all our partners," she said. "But if you're looking for something that works, this works."