Students join former VP Biden at leadership conference

UIC forms partnership with Central Intelligence Agency

Memoir reflects on personal, political life

SURGEONS LAUNCH COMPANY
Mother-son team develops therapy for rare disorder / pg. 5
UIC students join Biden at leadership conference

By Farooq Chaudhry — mchaud23@uic.edu

As former Vice President Joe Biden took the stage at the Association of Fraternal Leadership and Values (AFLV) Central Conference to address more than 3,000 fraternity and sorority leaders about sexual assault on college campuses, he was accompanied by UIC student leader Cristian Baeza.

Baeza, a junior who is a member of the Lambda Theta Phi fraternity, was one of 15 student leaders from UIC chosen to attend the conference in February in Indianapolis, Indiana.

The four-day conference was filled with workshops on leadership skills, community service and advocacy. Biden was there to speak about his “It’s On Us” campaign, which challenges college campus communities to make a pledge to end sexual violence on campus.

Hearing encouragement from Biden left a profound impact on Baeza. “Being on stage with Joe Biden re-energized me and made me want to fight for [sexual assault prevention] even more on campus,” said Baeza, who is studying human development and learning at UIC.

“To have someone of that position to back up the position you fight for on campus gives it legitimacy, and you want to fight for it more. Just to hear his words of encouragement and to hear him talk about how you should step up, it motivates you.”

Kevin Cane, UIC’s director of Fraternity and Sorority Life, believes the conference is a tremendous opportunity for student leaders. “It’s about finding your inner voice and understanding your own strengths, learning about others and the intersection between your strengths and others, and then understanding what it takes to move or drive a community forward,” Cane said.

Student fraternity and sorority leaders were selected to attend the conference after going through an application process.

Cane said opportunities like this help students to grow as community leaders. “Students feel energized, enlivened and compelled to use their own individual strengths, learn from the diverse talents around them, and make a greater community change than they could alone,” Cane said.

UIC News is the news source for the community of the University of Illinois at Chicago, located in the heart of Chicago with more than 30,000 students and 10,000 employees.

UIC is published and distributed across campus every Wednesday during the fall and spring semesters and monthly during the summer.
UIC forms partnership with CIA

By Jeffron Boynés — jboynes@uic.edu

UIC has launched a new partnership with the Central Intelligence Agency that will enhance student career opportunities at the university.

UIC will receive resources to support academic enrichment and workforce development activities for students. The new pilot partnership, called the Signature School Program, will also draw on UIC’s rich academic programs, the graduation rate of its students, as well as the diversity of its student population. The agreement “will establish a solid partnership between UIC and the CIA and provide our students a greater breadth of career opportunities,” said UIC Chancellor Michael Amiridis. “The Signature School Program will provide UIC students with direct access to careers and internships within the agency for many years to come. It’s a win-win situation for both of us.”

Under the program, UIC will partner with the agency to expand current career services programming and provide additional opportunities for students to be exposed to careers in the federal government.

“The CIA is committed to building a diverse workforce that has a broad range of ethnic and cultural backgrounds, language expertise, and educational and life experiences to ensure diversity of thought and the ability to operate effectively worldwide,” said Maja Lehnus, the CIA’s associate director for talent.

Some of the examples of the collaboration of the Signature School Program include:

• The CIA will have a regular recruiting presence on the UIC campus to build relationships and sustain contact with qualified student applicants.
• UIC students will have opportunities to engage in on-campus interviews, information sessions, workshops, simulations and networking activities with CIA personnel.
• Students will participate in unclassified discussions, presentations and seminars that discuss the business of intelligence and learn about employment opportunities within the CIA.
• Students will also participate in selective professional development events, such as mock interviews, résumé reviews and panels to strengthen their career search.

“Tantillo said.

The College of Liberal Arts and Sciences is bolstering an already strong roster of natural science researchers, thanks to the success of the HIV/AIDS drug Prezista.

UIC’s intellectual property associated with this lifesaving medicine, which was developed by former UIC chemistry professor Arun Ghosh, is the most successful royalty-producing patent ever developed by faculty in the University of Illinois System.

Using the royalty income generated by the patent, the college has established four new endowed chairs in order to recruit and retain highly accomplished natural sciences faculty.

“While LAS, to date, already has an impressive number of endowed chair positions thanks to the generosity of its donors, the LAS Endowed Chairs in the Sciences will be the first in the sciences and the first that are funded by research,” said Astrida Orle Tantillo, dean of the college. “With about half of the college’s incoming students interested in a degree in the sciences, this cohort of renowned faculty will further contribute to UIC’s strength in being a primary institution for students seeking careers in health care.”

The college held an event Feb. 12 to celebrate the investiture of Wonhwa Cho, professor and head of chemistry, as its inaugural LAS Endowed Chair in the Natural Sciences.

Research supports new endowed chairs in LAS

By Brian Flood — bflood@uic.edu

The endowed chair has a special meaning to me because I have spent my entire independent research career at UIC and because all the work leading to this recognition has been performed here at UIC by UIC people,” he said. “It will allow me the freedom to pursue high-risk, high-reward projects for which it is difficult to obtain financial support through regular funding mechanisms.”

His work has been widely published in top scientific journals and continuously funded by the National Institutes of Health for over two decades.

Cho’s three concurrent NIH grants as sole principal investigator underscore his contributions to the field, including a recent five-year, $2.8 million Maximizing Investigators’ Research Award, which is designed to reward some of the most respected NIH-funded researchers.

The second chair, a joint hire between the chemistry and physics departments, will join UIC in August. One of the two remaining endowed chairs will be in biological sciences and another one will be a dual appointment in chemistry and physics.

“The college is excited to be the home of this scientific cohort focused on discovery-based research and scientific innovation,” Tantillo said.
Centers celebrate ‘Spaces for Wellness’ with events on personal, community care

By Carlos Sadovi — csadovi@uic.edu

The UIC Centers for Cultural Understanding and Social Change announces its spring 2018 program series, which focuses on strategies for personal and community care. This spring’s theme is “Spaces for Wellness” and includes collaborative programming efforts among the seven centers.

Events include:

“Accessing Joy: Creative Strategies for Community Care”
Wednesday, March 7, 3–5 p.m.
African-American Cultural Center
Addams Hall, Gallery 207
An interactive arts workshop that explores how joy can be mobilized to promote community care. Featuring the works of visual artist Nathan Mansakahn.

“Erasing the Distance: Countering Stigma through Storytelling”
Wednesday, April 4, 3–5 p.m.
Rafael Cintrón Ortiz Latino Cultural Center
Lecture Center B2
A performance and dialogue featuring true stories from people whose lives have been directly impacted by mental health issues. Performed by “Erasing the Distance,” a national leader in generating insight and compassion around mental health issues.

“Out of the Shadows: Challenging Stigma around Mental Health in Arab and Muslim Communities”
Thursday, April 12, 4–6 p.m.
Arab American Cultural Center
111 Stevenson Hall
A discussion, performance and activity aimed at promoting community-based wellness and healing in the face of stigma that many immigrant communities often associate with mental illness and disability. Facilitated by Arab American counselor and licensed social worker Souzan Nassar.

“Brave Spaces: Gender and Mental Health”
Wednesday, April 18, Noon–2 p.m.
African-American Cultural Center
Addams Hall, Gallery 207
A workshop that explores the correlations between gender, mental health and stigma. The event is facilitated by Apna Ghar, an organization that provides holistic services and conducts outreach and advocacy across immigrant communities to end gender violence.

“Working in Intolerable Spaces/Times: Living Towards Justice in Academic Institutions”
Monday April 23, Noon–2 p.m.
Rafael Cintrón Ortiz Latino Cultural Center
Lecture Center B2
Margaret Price, author of Mad at School: Rhetorics of Mental Disability and Academic Life, will give a public lecture on the politics of inequality that impact how disability is perceived and offers alternative frameworks through which we might reimagine who disabled people are and what they need.

The Centers for Cultural Understanding and Social Change is a collaborative group of seven centers with distinct histories, missions and locations that promote the well-being and cultural awareness of underrepresented groups at UIC. The aim of the centers is to expand cultural understanding by providing opportunities for intercultural engagement among students, faculty, staff and Chicago communities.

All events in the “Spaces for Wellness” programs are free and open to the public. For more information about the events, visit bit.ly/2sXuFG8 or email diversity@uic.edu

‘U and I Care Week’ highlights resources
By Jessica Larocque — jlaroc4@uic.edu

UIC will host “U and I Care Week” from March 12–16 to address issues such as fighting homelessness and hunger, financial literacy, celebrating diversity, mental health awareness, and practicing self-care.

View a complete list of events at dos.uic.edu/uicare

The events are sponsored by the U and I Care Program, which provides a network of care for UIC students. An initiative of the Office of the Dean of Students, the program offers options for students facing personal difficulties.

“It is an initiative that aims to provide resources and assistance to students who are dealing with personal life situations,” said Cynthia Rosales, student advocacy assistant. “U and I Care also serves as a resource for faculty and staff to raise awareness of the options available in order to best assist students.”

Resources are available for free on topics ranging from work-life or school-life balance, transportation, housing, financial assistance and more.

For more information, visit dos.uic.edu/uicare

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Researchers launch company to develop therapy for Duchenne muscular dystrophy

By Sharon Parmet — sparmet@uic.edu

Two UIC orthopedic surgeons have launched a new company that will develop a unique cell-based therapy for the treatment of a rare but deadly form of muscular dystrophy called Duchenne muscular dystrophy.

Dr. Maria Siemionow, professor of orthopedic surgery, and her son, Dr. Kris Siemionow, associate professor of orthopedic surgery in the UIC College of Medicine, are the co-founders of Dystrogen Therapeutics SA.

Duchenne muscular dystrophy is an X-linked genetic disorder characterized by progressive muscle degeneration and weakness, affecting approximately 1 in 4,000 newborn boys.

People with Duchenne muscular dystrophy don’t have the gene for dystrophin, a structural protein that helps keep muscle cells intact. Symptom onset is in early childhood, usually between ages 3 and 5. The disorder causes muscle weakness and loss of motor function and ultimately results in respiratory or cardiac failure and death. With advances in treatment, many with Duchenne muscular dystrophy live into their teens and 20s, and some into their 30s, but there currently is no cure for the disease.

Promising treatments include gene therapy and stem cell therapy, but each have their drawbacks. Gene therapy relies on delivering good copies of missing or dysfunctional genes to cells via viruses. Not only can cells become immune to viral infection, rendering the therapy ineffective, but there also is no guarantee that viruses will only infect the intended cells. Stem cell therapy, where cells that contain the dystrophin gene are implanted into a recipient, require that the recipient take immunosuppressive drugs to prevent rejection.

Dystrogen Therapeutics will advance the use of blended cells called “chimeric cells” to treat Duchenne muscular dystrophy.

“The idea is to create a cell that contains the dystrophin protein, which is lacking in the recipient,” said Maria Siemionow. “If a donor cell that can produce dystrophin is taken from a close relative of the recipient — in the case of Duchenne the donor is usually the father — and fused with a cell from the recipient, the resultant chimeric cell is less likely to be rejected by the recipient because it contains self-markers and closely related markers,” said Siemionow. “These chimeric cells can do a much better job of evading their host’s immune system than traditional donor cells, and can reduce or even eliminate the need for the recipient to take immunosuppressive drugs to prevent rejection.”

In a January 2018 paper in Stem Cell Reviews and Reports, Maria and Kris Siemionow and colleagues reported that when chimeric mouse cells made by fusing a cell that produces dystrophin with one lacking dystrophin were implanted into a mouse model of Duchenne muscular dystrophy, levels of dystrophin in the muscles rose by about 35 percent. The new cells were composed of both donor and recipient structures and interacted with their surroundings like normal cells. The chimeric cells remained viable and produced dystrophin for 30 days. Mice whose muscles were injected with chimeric cells performed better on muscle function tests.

“The use of chimeric cells represents a truly unique approach to delivering a needed protein while avoiding problems associated with other therapeutic methods,” said Kris Siemionow. “Only a 20 percent increase in dystrophin levels is needed to significantly reduce many of the symptoms associated with Duchenne muscular dystrophy, and in our mouse models, we are able to boost production to 35 percent,” he said. “We are very enthusiastic about our treatment and are looking forward to continued successful studies and hopefully pre-clinical trials in the near future.”
Why is mining-related lung disease on the rise?

By Sharon Parmet — sparmet@uic.edu

The passage of critical mine health and safety legislation in the late 1960s, along with advances in technology and safety practices, helped to decrease the prevalence of lung diseases for miners. But starting in the mid-1990s, there was a significant documented increase in lung diseases among coal workers, especially among younger workers.

A $1.8 million, three-year grant will fund a research project led by Robert Cohen, clinical professor of environmental and occupational health sciences in the School of Public Health, to determine why mine dust-related lung diseases, including progressive massive fibrosis and rapidly progressive pneumoconiosis, are on the rise.

The grant is from the Alpha Foun- dation for the Improvement of Mine Safety and Health, Inc. "We need to better understand the relationship between mine dust exposures and the recent increase in severe lung disease among miners in order to identify and mitigate risk factors," said Cohen.

Progressive massive fibrosis, the most severe form of coal workers' pneumoconiosis, occurs when masses of fibrotic tissue form in the lungs in response to coal dust or other mineral dusts. Rapidly progressive pneumoconiosis, also known as black lung disease, is caused by the accumulation of coal dust in the lungs. Both can cause severe respiratory distress, and many sufferers are placed on oxygen for the rest of their lives. Some patients may even require lung transplants.

Following the enactment of the Federal Coal Mine Health and Safety Act in 1969 in the U.S., there was a decline in coal workers' pneumoconiosis from 6.5 percent in the 1970s to a low of 2.1 percent in the 1990s. But data from the U.S. National Institute for Occupational Safety and Health shows that coal workers' pneumoconiosis has increased to 3.1 percent in the 2000s, including the most severe forms of the disease.

The research project will take a multidisciplinary approach, bringing together experts in mining engineering, mineral science, pulmonology, occupational medicine, pathology and epidemiology.

"This is really the first study that will attempt to link mine dust exposure characteristics, clinical findings, pathology and lung dust characteristics to help identify the critical risk factors associated with the development of PMF and RPP," said Cohen. The researchers hope that their findings will help in the development of interventions that can reduce these risks and help prevent disease.

Cohen explains that most research on the recent increase in progressive massive fibrosis and rapidly progressive pneumoconiosis has focused on X-ray findings, but there is little in the scientific literature that identifies particular mineral dusts or characterizes their toxic effects on the lungs. Few existing studies take into account patients' medical history, including whether a patient is also a smoker, or which mines they worked in, the types of minerals found in the mines and the amount of time the workers spent working in those mines.

The researchers will examine biopsy, explant or autopsy lung tissue specimens from miners with progressive massive fibrosis and rapidly progressive pneumoconiosis. While the samples will come from all over the U.S., the majority are from miners who worked in central Appalachia and were collected within the last 10 years. Cohen and his colleagues hope to collect medical records and occupational and health histories to go with at least 100 tissue samples.

Some samples are already linked to medical records and X-rays, but for occupational histories associated with the workers from whom the samples were collected, the researchers will need to track down and interview the miners themselves, if still alive, or their relatives to try to piece together work histories.

The researchers will compare these lung tissue samples with much older samples from the National Coal Workers' Autopsy Study made available through the National Institute for Occupational Safety and Health. The majority of these samples were taken from coal miners after their deaths between 1970 and 1996.

"The idea is to compare modern tissue samples with the historical samples to see if dust particulates have changed significantly in any way over time, and if that may be a contributing factor to the recent increase in disease," said Cohen.

The researchers will also collect dust samples from mines that are similar to the ones worked in by the miners whose tissue samples are being analyzed. The aim is to gather as much information about the type and size of particles that make up the dust in these mines.

"One of our hypotheses is that mining technology has become much more sophisticated in the last few decades, and because of this, dust particles have be-
Menstrual cups may help prevent vaginal infections

By Sharon Parmet — sparmet@uic.edu

UIC researchers will conduct a study to determine how the use of menstrual cups helps prevent vaginal infections and sexually transmitted infections.

“One of the most common vaginal infections, bacterial vaginosis, doubles the risk for acquiring or transmitting HIV,” said Supriya Mehta, associate professor of epidemiology in the UIC School of Public Health and principal investigator on the study.

Mehta and her colleagues have received a $1.9 million grant from the National Institutes of Health to investigate whether the use of menstrual cups among girls in Kenya changes the vaginal microbiome and if this is a factor in reducing the rate of sexually transmitted and vaginal infections. They will also look at how the vaginal microbiome changes as girls become sexually active and whether these changes are modified by the use of menstrual cups.

The project is part of a larger study that seeks to determine whether menstrual cups can improve school attendance and reduce HIV and herpes simplex virus-2 among more than 4,000 girls. The larger research is being led by Penelope Phillips-Howard of the Liverpool School of Tropical Medicine in the United Kingdom.

In a previous randomized study involving girls ages 14 to 16 in Kenya, researchers compared girls who received only menstrual hygiene counseling with girls who were provided the menstrual cups. After a year, the girls using the menstrual cups showed a 35 percent reduced prevalence of bacterial vaginosis, a common bacterial infection, and 52 percent reduction in sexually transmitted infections.

For many young women living in Kenya, lack of access to menstrual hygiene products, including pads and tampons, can prevent them from attending school. Some girls and women engage in risky or coercive sex in order to obtain these products and are subsequently at an increased risk for contracting sexually transmitted infections.

While menstrual cups have been around for decades, they have recently gained popularity in the developed world as an alternative to pads and tampons, which contribute to waste in landfills. Made of high-grade silicone, the flexible cup is worn internally in the vaginal canal, where it collects menstrual flow. The contents can be discarded, and the cup can be washed and reused.

Other investigators on the grant include Stefan Green, Runa Bhaumik and Robert Bailey of the UIC School of Public Health; Feiko ter Kuile of the Liverpool School of Tropical Medicine, and Fredrick Otieno of the Nyanza Reproductive Health Society.

If we can better understand how using the menstrual cup reduces the risk for bacterial vaginosis, we can also start building a stronger case for cup use to reduce HIV as well.”

UIC researchers will study how menstrual cups can help prevent vaginal or sexually transmitted infections.
AIN’T EASY TO LOVE AND HARDER TO HOLD
Gallery 400 exhibit features work from MFA students Shir Ende, Betsy Johnson, Marlo Koch, Caitlin Ryan and Nick Van Zanten.
Exhibit hours:
Tues.-Fri.: 10 a.m.–6 p.m.
Sat.: Noon-6 p.m.
And by appointment
Gallery400.uic.edu

MARCH 8
SPECIAL EVENT

THE MYSTERY OF THE CRUELTY OF THINGS
Nathan Hensley of Georgetown University discusses “Sovereignty and Form Circa 1866.”
3–4:30 p.m.
Institute for the Humanities Lower level, Stevenson Hall

MARCH 9
LECTURE

OUR SECOND SELVES, THESE SHADOWS BE
Wind Ensemble Concert, presented by the UIC School of Theatre and Music.
7:30–9:30 p.m.
UIC Theatre

MARCH 9
CONCERT

CRUSH YOUR RETIREMENT
Hear recent retirees talk about the retirement process and what comes next during this brown bag lunch. Sponsored by the UIC Chapter of the State Universities Annuitants Association.
11:30 a.m.–1 p.m.
302 Student Center East

MARCH 11
CONCERT

ORCHESTRA AND JAZZ ENSEMBLE CONCERT
Presented by the UIC School of Theatre and Music.
3–5 p.m.
UIC Theatre

MARCH 8
SPECIAL EVENT

HEALTH HUMANITIES LIBRARY DEDICATION
Recognizing former UIC professor Suzanne Poirier, visionary leader in building a humanities presence in health sciences education, and the RIC Donnelly Ethics Program for the gift of their collections.
4–5:30 p.m.
College of Medicine Faculty Alumni Lounge 1819 W. Polk St.

MARCH 9
CONCERT

AN EVENING WITH ANA NAVARRO
Ana Navarro, a Republican commentator on CNN and recurring panelist on “The View,” discusses the country’s social and political climate. Sponsored by the Student Activities Board.
6:30–8 p.m.
UIC Forum
Students free with i-card; employees and the public can buy tickets for $25 at go.uic.edu/AnaNavarro18
Can you burn calories while sitting at a desk?

By Jackie Carey — jmcarey@uic.edu

A UIC study suggests that continuous movement while sitting may increase metabolic rate more than standing at a desk.

Craig Horswill, clinical associate professor of kinesiology and nutrition, said the study adds to the growing body of evidence that suggests strategies for increasing non-exercise active thermogenesis — defined as spontaneous activity unrelated to a fitness routine — are needed to help overcome the detrimental effects of prolonged sitting. Sitting has been identified as a risk factor for early mortality, independent of the presence of a disease, such as cancer or diabetes. Up to 7 percent of deaths have been attributed to sitting alone.

“Sitting is bad for our health, but it is a big part of daily life for many people,” said Horswill, an expert in exercise and metabolism in UIC’s College of Applied Health Sciences. “Exercise is a good way to counteract the negative effects of sitting, but just incorporating physical activity into one part of our day may not be enough to overcome the damage caused by prolonged sitting and an otherwise sedentary lifestyle.”

Because the workday is a major contributor to sedentary behavior, with more than 20 percent of workers in the U.S. reporting more than 8 hours each day, tactics that promote workstation activity have emerged in recent years, including standing desks, as well as dynamic pedal and treadmill workstations.

Horswill and his colleagues compared the metabolic rate produced by three workstations: seated at a desk, seated at a desk equipped with a device that stimulates leg movement and standing at a desk. The device, which is commercially available, was a movable footrest, suspended from the underside of the desk, which enabled the feet to swing, twist or teeter.

Participants in the study familiarized themselves with the workstations during one visit. On a second visit, researchers collected metabolic rate and heart rate data during three progressive stages: seated, seated with the device and standing. Each stage was 15 minutes.

The researchers found that modest movement while seated elevated the metabolic rate more than sitting and more than standing, by 17 and 7 percent respectively, and had no detrimental effect on cognitive function. The findings are published in WORK, a journal affiliated with the Canadian Association of Occupational Therapists and endorsed by the International Ergonomics Association.

“These results suggest that non-exercise active thermogenesis, which we call NEAT, can increase movement and calorie burning, and may have the potential to impact health,” said Horswill, the senior author on the study. “We expected to see the metabolic rate increase with each progressive stage, but instead found that metabolic rates from movement while seated were either equal to or higher than rates while standing.”

Horswill says the study needs to be further validated, but that the findings should be especially applicable to individuals poised to benefit from NEAT but unable to access popular standing desks because of injury, disability or discomfort.

“SITTING IS BAD FOR OUR HEALTH, BUT IT IS A BIG PART OF DAILY LIFE FOR MANY PEOPLE.”

Racial Disproportionality in Child Welfare:
Fallacy or Reality?

Dr. Marian S. Harris, PhD, LICSW, ACSW

Dr. Harris is a Professor of Social Work at the University of Washington Tacoma’s Social Work and Criminal Justice Program. She is known nationally and internationally for her work as a child welfare researcher and scholar.

The 24th Karen J. Honig Memorial Lecture
Presented by Jane Addams College of Social Work

Wednesday, March 21, 2018 • 4:00 p.m.
UIC Student Services Building, Rooms A, B & C
A reception with refreshments will be held immediately after the lecture.

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“These results suggest that non-exercise active thermogenesis, which we call NEAT, can increase movement and calorie burning, and may have the potential to impact health,” said Horswill, the senior author on the study. “We expected to see the metabolic rate increase with each progressive stage, but instead found that metabolic rates from movement while seated were either equal to or higher than rates while standing.”

Horswill says the study needs to be further validated, but that the findings should be especially applicable to individuals poised to benefit from NEAT but unable to access popular standing desks because of injury, disability or discomfort.

“This is more evidence that NEAT, something everyone can do throughout the day, may be an important strategy for improving health, and even reducing early death,” Horswill said.
Obese, anorexic women have low levels of ‘feel good’ neurosteroid

By Sharon Parmet — sparmet@uic.edu

Women at opposite extremes of the weight spectrum have low levels of the neuroactive steroid allopregnanolone, according to research published in the journal *Neuropsychopharmacology*.

Previous research has linked low levels of allopregnanolone — known to scientists as “allo” — to depression and anxiety, which are common mood disorders associated with anorexia nervosa and obesity.

Allo is a metabolite of the hormone progesterone, one of the two major female hormones (the other being estrogen). Allo binds to receptors for the neurotransmitter gamma-aminobutyric acid (GABA) in the brain. These receptors are also the targets of anti-anxiety drugs such as benzodiazepines. Allo works by enhancing the signal produced when GABA binds to its receptor, generally producing a positive mood and feelings of well-being.

More than 50 percent of women with anorexia nervosa have depression or anxiety, and 43 percent of adults who are obese have depression.

Low levels of allo have been linked to depression and anxiety in numerous previous studies, including people with depression and post-traumatic stress disorder. But the chemical — and its impact on mood — has not been measured in anorexic or obese women.

“We are beginning to see more and more evidence that low allo levels are tightly linked to depression, anxiety, post-traumatic stress disorder and other mood disorders,” said Graziano Pinna, associate professor of psychiatry at the UIC College of Medicine and an author on the paper. “To see that women with anorexia nervosa and obesity have low levels adds to the picture that the role of allo is under-recognized in mood disorders.”

Pinna’s colleagues, led by Dr. Karen Miller, professor of medicine at Harvard Medical School, recruited 12 women with anorexia nervosa and amenorrhea (stopped having their menstrual periods) whose body mass indices were less than 18.5; 12 normal-weight women with BMIs between 19 and 24; and 12 obese women with BMIs at 25 or higher. None of the women had received a diagnosis of depression or ever took antidepressants. The average age of the participants was 26 years old.

Participants completed questionnaires to assess for depression and anxiety and had blood drawn. Blood measurements of allo and other hormones were performed by Pinna’s lab at UIC. The lab had previously developed a novel, highly sensitive method technology to detect sex hormones and their metabolites. Pinna’s lab is one of only three in the United States performing these measurements, which use gas chromatography and mass spectrometry to pick up extremely small levels of these chemicals in blood serum, saliva and brain tissue.

The researchers found that in women with anorexia nervosa and in obese women, blood levels of allo were 50 percent lower than they were in women with normal BMIs, and women who were clinically obese had allo levels approximately 60 percent lower than women with normal weights.

The researchers also found that levels of allo in all participants correlated with the severity of their depression and anxiety symptoms as measured by the questionnaires. Participants with lower levels of allo had greater severity of depression symptoms.

Progesterone levels were similarly low across all groups, suggesting that the decrease in allo in participants with anorexia nervosa and obesity may have been caused by improper functioning of enzymes responsible for the metabolism of progesterone into allo.

Pinna is leading preclinical studies of drugs designed to boost allo levels using several pharmacological strategies.

Mapping nanoscale chemical reactions inside batteries in 3-D

By Sharon Parmet — sparmet@uic.edu

Researchers from UIC and Lawrence Berkeley National Laboratory have developed a technique that lets them pinpoint the location of chemical reactions happening inside lithium-ion batteries in three dimensions at the nanoscale level. Their results are published in the journal *Nature Communications*.

“Knowing the precise locations of chemical reactions within individual nanoparticles that are participating in those reactions helps us to identify how a battery operates and uncover how the battery might be optimized to make it work even better,” said Jordi Cabana, associate professor of chemistry at UIC and co-corresponding author on the paper.

As a battery charges and discharges, its electrodes — the materials where the reactions that produce energy take place — are alternately oxidized and reduced. The chemical pathways by which these reactions take place help determine how quickly a battery becomes depleted.

Tools available to study these reactions can only provide information on the average composition of electrodes at any given point in time. For example, they can let a researcher know what percentage of the electrode has become permanently oxidized. But these tools cannot provide information on the location of oxidized portions in the electrode. Because of these limitations, it is not possible to tell if reactions are confined to a certain area of the electrode, such as the surface of the material, or if reactions are taking place uniformly throughout the electrode.

“Being able to tell if there is a tendency for a reaction to take place in a specific part of the electrode, and better yet, the location of reactions within individual nanoparticles in the electrode, would be extremely useful because then you could understand how those localized reactions correlate with the behavior of the battery, such as its charging time or the number of recharge cycles it can undergo efficiently,” Cabana said.

The new technique, called X-ray ptychographic tomography, came about through a partnership between chemists at UIC and scientists at the Advanced Light Source, at Lawrence Berkeley National Laboratory in California. Advanced Light Source scientists developed the instrumentation and measurement algorithms, which were used to help answer fundamental questions about battery materials and behavior identified by the UIC team.

Together, the two teams used the tomographic technique to look at tens of nanoparticles of lithium-iron phosphate recovered from a battery electrode that had been partially charged. The researchers used a coherent, nanoscale beam of X-rays generated by the high-flux synchrotron accelerator at the Advanced Light Source to interrogate each nanoparticle. The pattern of absorption of the beam by the material gave the researchers information about the oxidation state of iron in the nanoparticles in the X-ray beam. Because they were able to move the beam just a few nanometers over and run their interrogation again, the team could reconstruct chemical maps of the nanoparticles with a resolution of about 11 nanometers. By rotating the material in space, they could create a three-dimensional tomographic reconstruction of the oxidation states of each nanoparticle. In other words, they could tell the extent to which an individual nanoparticle of lithium iron phosphate had reacted.

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Memoir reflects on political, personal life

Dick Simpson has established himself as one of Chicago's top political commentators for delivering candid views on Chicago and state politics.

In his recently published memoir, The Good Fight: Life Lessons from a Chicago Progressive, the longtime UIC political science professor turns the table with an introspective look at his aldermanic career, social activism and personal life spanning five decades.

"I hadn't thought I would ever write a memoir and it became possible only after I discovered a basic format of short vignettes of 1,500 words or less," he said. "Once I began to recount the stories and what those aspects of my life meant to me, it was suddenly relatively easy to write, but it took endless revisions and changes to make the book flow like I wanted."

In 1967, Simpson accepted a teaching position at UIC, settled on Chicago's North Side, and promptly immersed himself in various political campaigns. Four years later, he ran for and won the 44th Ward aldermanic seat, which he held for two terms until stepping away in 1979.

As alderman, Simpson created a Ward Assembly so residents could make their case on key issues to influence his vote in City Council. He was known for advancing progressive legislation and led the independent aldermen who opposed Mayor Richard J. Daley's political machine in city government.

Symbolizing Simpson's clashes with the political establishment, the book cover features a photo of police physically restraining him in the City Council chamber. The incident occurred after Daley ordered him silenced for criticizing city insurance business being directed to Daley's sons.

"Behind the scenes, I got along well with the aldermen, but Daley and I had only two brief private conversations, like when I congratulated him on winning his re-election in 1975," Simpson recalled. "Our clashes were all out in the open and public and about the future of the city we both loved."

During the 1980s, Simpson continued teaching at UIC, led a Chicago-based civil rights and human rights organization, graduated from theological seminary, and became a minister at Wellington Avenue United Church of Christ.

He ran unsuccessful campaigns in 1992 and 1994 against the powerful Congressman Dan Rostenkowski, who later was convicted on federal corruption charges.

Simpson openly writes about the difficulties he faced to balance work, family and exterior demands versus the need for interior growth.

"My obvious failures at times, like losing my congressional election, were eclipsed by the greater personal losses to divorce and my wife's death from cancer," he said. "But I have grown and continue to grow personally from both my private and public life."

His often-cited research, which includes several reports and a book about political corruption in Chicago and Illinois, has resulted in several government reforms. Simpson's other publications include co-authored books on Chicago politics, government and economy in the 21st century, and a book for educators on teaching political engagement at the colleges and high school levels.

The latter issue, civic engagement among young voters, is an area of focus for Simpson at UIC, where he has played a key role in campus efforts to boost student voting rates that rose from 42 percent in 2012 to 55 percent in 2016.

Expect voting to remain high in 2018, he said.

"It has taken a long time, but I think 2018 will see a reemergence of the 1960s — my generation — because students see once again what is at stake with immigration, the tax bill that effects them directly, the effect of state government cutbacks, and the potential of wars they may have to fight abroad," he said.

Simpson said UIC has helped shape his life and he wants readers to learn from both his success and mistakes.

"I hope readers take away lessons that make their public and their private personal life better," he said. "But most of all, that they are engaged to continue the good fight."

The Good Fight, published by Golden Valley Press, is available online and at the UIC Bookstore.
Flames finish season in league quarterfinals

By Dan Yopchick — yopchick@uic.edu

In a Horizon League Championship quarterfinal contest that featured eight ties and eight lead changes, the Milwaukee Panthers advanced with an 80-75 victory over the Flames Sunday at Little Caesars Arena in Detroit.

Despite topping Milwaukee (16-16, 8-10 Horizon League) twice in the regular season by 16.5 points per game, the Panthers had UIC’s (17-15, 12-6 Horizon League) postseason number yet again and eliminated the Flames from the conference tournament for the second consecutive season.

Milwaukee took advantage of 16 UIC turnovers and turned the miscues into 25 points.

Sophomore Tarkus Ferguson paced the Flames with a season-high 23 points, adding a game-best seven assists and five rebounds. He shot 70 percent from the floor, 60 percent from downtown and 100 percent from the charity stripe.

Trailing by six in the early going, the Flames uncorked an 11-0 run to take a five-point lead over Milwaukee in the first three minutes.

The Panthers steadied their ship and eventually gained a six-point lead with 7:46 to go.

A slam dunk from Marcus Ottey pulled the Flames back within a point for the third time in less than three minutes before Dikembe Dixson helped the Flames regain the lead at 33-32 with 2:13 left in the period. The teams entered the locker room even at 37 points each.

A basket in the paint for Tai Odiase just 13 seconds into the second half put UIC ahead. The Flames maintained control and built the lead up to seven points with 12:32 remaining on another acrobatic layup from Ottey.

Milwaukee took back the lead with about nine minutes left.

UIC was down by seven with 2:39 to go when Milwaukee’s Bryce Barnes was whistled for traveling. He shoved UIC’s Jordan Blount after the play and drew a technical foul. Ferguson made both free throws to cut the deficit to five, but the Flames turned the ball over on the next possession and failed to capitalize further.

Women’s basketball falls in league tournament

By Tim Hurley — thurley@uic.edu

The women’s basketball team (8-22, 1-17 Horizon League) had its season come to a close Friday with an 80-46 loss to No. 7 Oakland (15-15, 7-11 Horizon League) in the first round of the 2018 Little Caesars Horizon League Basketball Championship.

Oakland got out to a 13-2 lead early after an 11-0 run. Another triple extended the Golden Grizzlies lead, 20-6, but the Flames had a five-point surge to end the first quarter, 22-11.

Brittany Byrd sank her second three of the day, and Taylor Toney laid one up to give the Flames some offense, 30-17.

Teodora Zagorac converted a three-point play with a layup and a foul shot to get things going for the Flames, but Oakland put up a three in its next possession, 39-20.

Later, Oakland put in a pair of threes as part of an 8-0 run to extend its lead, 56-26.

Brittany Byrd and Taylor Toney combined for four points to star the Flames in the fourth, but Oakland erupted into a 6-0 run, 64-31. Tia Tedford broke up the run with two free throws, but the Golden Grizzlies scored eight to go up, 72-35.

The Flames fell by a final score of 80-46.

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The Flames fought a tough match Sunday versus Milwaukee. (Photo: Jose Juarez)