

UC IRVINE

Wellness tips from Mahtab Jafari

- **Eat and drink less sugar.**
- **Be thankful:** "We really forget how blessed we are. We focus on things we don't have," she said. "This is something that I practice. I wake up and go to bed remembering some of the things in my life I'm grateful for."
- **Move:** She uses the term "move" as opposed to exercise because she means any kind of movement, such as a walking, is healthy. "Move in the nature." If you don't have time to walk on the beach or hike, you can walk around your neighborhood.
- **Help someone:** People who help others feel happier, she said. You can help by volunteering for an organization. But being of service to someone doesn't have to be as formal as volunteering for a nonprofit. "One of my students formed a study group for struggling students. It's just little things."

Life 101

Students: 110 per class
First offered: Winter 2013
Next class: Winter 2014
Units: 2
Length: One hour and 40 minutes, once a week for 10 weeks.
Prerequisite: "I wanted the course to be stress free All they needed to have was enthusiasm to learn, to question and to come and be present."
Topics include: Changing poor habits, stress management, nutrition do's and don'ts to optimize wellness, bad drugs, movement and exercise, emotional intelligence and social responsibilities.



MICHAEL GOULDING, ORANGE COUNTY REGISTER

Pharmaceutical sciences professor Mahtab Jafari shares a laugh with some of her students while photographing fruit flies in the lab.

LIFE LESSONS

UCI pharmaceutical science professor Mahtab Jafari saw students using drugs to get through the stress of studying. So, she developed a course to help them find a balance outside of class.



SHERRIL CRUZ
REGISTER WRITER

Mahtab Jafari discovered that many of her students were using pharmaceuticals such as Ritalin to stay awake and Xanax to get to sleep.

One drug was counteracting the other, said Jafari, associate professor of pharmaceutical sciences at UC Irvine. "Then they go through this vicious cycle of no sleep or too much sleep," she said. "It compromises the immune system."

Students were under academic stress, worried about their GPA, she said.

They also came to class with energy drinks. If she could take a trash bag and empty the store shelves of things that are bad for you, she might start with energy drinks.

With teaching duties and a full slate of ex-

periments going on in her lab, Jafari said she had enough to do, and putting too much on her plate is one of the things that cause her to be stressed.

But she decided she needed to do something to help her students better balance their lives.

She developed Life 101, a two-unit course that launched last winter semester. "I felt my students needed it," she said.

The class is now required for pharmaceutical majors. It is open to all majors. One day she hopes to open the class to the public.

The course, which begins again in January, addresses 10 topics over 10 weeks.

SEE JAFARI • PAGE 2

“She wants to make students’ lives easier, open their eyes and plant the seed in their head that it’s not just all about getting that A.”

BEATRICE CHIANG
PHARMACY TECHNICIAN AND STUDENT

UCI IN FOCUS

Study: Fight bacteria with bacteria

When hit with a bad spell of food poisoning caused by salmonella, it's not often one's first thought to battle the symptoms with E. coli. But UC Irvine researchers have discovered that using a probiotic strain of E. coli can help battle against the notorious salmonella bacteria. It's called Nissle 1917.

"You always hear about the E. coli that causes diarrhea or the E. coli that causes bladder infections, but most people don't hear about the fact that there are some very good E. coli strains that live in the intestines," said Manuela Raffatellu, lead researcher on the UC Irvine team that made the discovery.

HOW IT WORKS

Nissle 1917 competes with a salmonella pathogen to obtain iron in the body. Iron is a nutrient that is necessary for salmonella to replicate and spread in the gut. Nissle



ANNA ILIFF
REGISTER WRITER

and salmonella enter a tug-of-war for the nutrient, but Nissle wins the battle because it can acquire iron quicker and more efficiently than salmonella. This then reduces symptoms and preserves the nutrient while starving out the bad bacteria.

"If we knock out the iron acquisition in salmonella, then it doesn't grow very well," Raffatellu said. "It really needs iron to colonize. All bacteria want to do is replicate and grow and get food. You just need to find one that is better in doing so to displace salmonella. Nissle doesn't eliminate salmonella completely, but it facilitates the elimination."

Nissle 1917 has long been used to treat patients with inflammatory bowel diseases and it is an active ingredient in a popular German product known as Mutaflor. Muta-

SEE BUGS • PAGE 5



JEBB HARRIS, ORANGE COUNTY REGISTER

Assistant professor Manuela Raffatellu and her team have discovered that a strain of E. coli - cultured at right - can be used to battle salmonella infections.

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JAFARI

FROM PAGE 1

The topics deal with nutrition, exercise and informing students about drugs. They also delve into mental and spiritual well-being, which includes embracing people from different backgrounds, and emotional intelligence, which is the ability to perceive, understand and manage emotions.

"She wants to make students' lives easier, open their eyes and plant the seed in their head that it's not just all about getting that A," said Beatrice Chiang, a pharmacy technician and one of the students who helped Jafari develop the course.

"Emotional intelligence is more important than IQ when you go out into the real world," Chiang said.

The future of pharmaceutical science will be a holistic approach, taking into account a person's mental, emotional, spiritual and physical health, Chiang said. "This is something that the public is going to demand."

"When it comes to wellness and health, I'm a big believer in preventive medicine," Jafari said.

"I teach pharmaceutical sciences and pharmacology, but if you come to one of my lectures you would be surprised at how anti-drug or anti-quick fixers I am."

She doesn't suggest anyone throw away their medicines. Medications are necessary, she said. For example, pharmaceutical drugs are needed for pain management and to fight infections.

"Someone who is clinically depressed needs to take



MICHAEL GOULDING, ORANGE COUNTY REGISTER

Professor Mahtab Jafari: "When it comes to wellness and health, I'm a big believer in preventive medicine."

medications. They need to take antidepressants to balance the chemical imbalance," she said.

"But before we get there, we need to focus on wellness and prevention." Drugs should be saved as a last resort, she said. They come with side effects.

Jafari's medicine of choice is nature: Bommer Canyon in Irvine, Crystal Cove beach and El Moro Canyon. She hikes two to three times a week and she walks on the beach at least twice a week.

Walking only a half hour a day can make a marked improvement in peoples' lives, she said. Walking increases the amount of endorphins - "happy hormones" - in the brain, she said.

The class helped student Pia Dizon get perspective. "She put the science behind why we should be exercising," said Dizon, who is in her fourth year at UCI studying pharmaceutical science.

"I realized I was taking my academics too seriously," she said. "My life wasn't super balanced. I realized it was important to also take my health into account."

Dizon cut back on oily foods and started running once a week and then two times a week. "I try to balance my life more," she said.

Another big theme in class is kindness.

"It's not just about how you perform in class. It's about how you treat yourself and how you treat oth-

er people," Dizon said.

The things she learned in Life 101 also ties into caring for patients, Dizon said. "This is really helpful to treat patients."

Instead of treating people with drugs, changing lifestyle can be a better option, Dizon said.

Jafari weaves personal stories into her lecture. It makes the class more meaningful for her students.

She shares the story of her first C grade in grad school, and then her second and third.

She has shared one of the most stressful times in her life: sixth grade, living in Iran. She and her family would spend hours in the basement listening to the Iraqi planes drop bombs.

"We were sitting there waiting, hoping that our neighborhood is not the neighborhood that is going to be bombed tonight, and that we would be alive tomorrow to go to school," she said.

Her family fled Iran in the middle of the Iran-Iraq War and moved to France, where she attended high school and had to learn French. Then they came to California.

Jafari has an upbeat demeanor, but she tells her students that she's not always happy. Sometimes she's melancholy.

"I fall too," she'll tell them. "Sometimes you fall and in a few days or a few weeks you get up. Sometimes you fall and you're just comfortable sitting there because you're miserable."

It's also good to be real. "We don't always have to be happy," she said. "The key is when you get up."

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PHOTOS: JOSHUA SUDOCK, THE REGISTER

Liam Gillanders, left, and Michael Hannum, right, hack the sound box of a children's toy during a workshop.

Researchers aim to make hacking child's play

The classroom at Brea Olinda High School was a cacophony of high-pitched beeping coming from electronic toys

playing "Silent Night" and other tunes.

High school students were altering the sound boxes of the toys as part

of a "toy hacking" workshop, led by UC Irving research scientist Garnet Hertz.

"It's hard to figure out how computer chips work - how to get them to work the way you want," said Liam Gillanders. Gillanders and fellow student Michael Hannum were trying to get the sound box inside their Mozart-playing crib toy to make some other kind of noise.

The goal for the students isn't necessarily to learn how electronics work, though that could be a by-product of the workshop.

The idea is for the students to try something new and get creative, said their high school computer science teacher, Todd Salesky, who offers these kinds of enrichment workshops as part of the school's Global IT Academy.

"We're trying to appeal to a broader audience," he said. "I'm trying to teach them to be technical."

Students in the Global IT Academy program at Brea Olinda take one elective each year in computer sci-

ence.

Salesky is aiming to prepare students for college and the job market. "The idea behind the program is to have experiences beyond the classroom," he said.

On this day, UCI researchers were conducting a study to see if their hands-on toy hacking workshop boosted the students' interest in science. The researchers surveyed the students before the class and had planned to survey them after.

The toy hacking project is funded by a National Science Foundation grant. The UC Irvine researchers plan to take the workshop to other schools and train teachers how to do their own, said Amelia Guimarin, a UC Irvine graduate and anthropologist who assisted at the workshop.

Hertz assisted the students in making use of a potentiometer, which regulates the flow of electricity. The potentiometer can make "Silent Night" sound like it's dying.

The toy hacking workshops were originally designed for adults, Hertz said. He has four children, and after observing his daughter go through elementary and middle school, he thought he could make science more interesting for school-age kids.

He's still got kinks to work out, such as how to make toy hacking less dangerous. It's possible to start a fire. "There is physical danger. The kids totally love that," he said. "It adds to the excitement."



UCI research scientist Garnet Hertz, left, helps Matthew Plunkett with some soldering at Brea Olinda High School.

Lab testing claims of supplements

By SHERRI CRUZ
ORANGE COUNTY REGISTER

Mahtab Jafari's research lab tests health claims of supplements such as green tea, turmeric and Rhodiola rosea, a plant commonly called golden root.

"My approach to supplements is exactly the same as pharmaceuticals," Jafari said.

In her lab, she asks: What is the evidence that the supplement is working?

"For the most part, we take supplements that we don't need," she said.

Supplements aren't regulated by the U.S. Food and Drug Administration. Like pharmaceuticals, they can have side effects and they can adversely interact with other drugs.

Supplements should be taken based on a blood test, Jafari said.

Her lab recently found that Rhodiola helps fruit flies live longer.

Fruit flies are popular test specimens because 75 percent of human disease genes are shared with fruit

Pharmaceutical Sciences

Pharmaceutical Sciences is a hybrid of biological sciences, physical sciences and clinical science. It is the study of how pharmaceuticals are discovered, developed, tested and used. It is one of the newest majors at UC Irvine.

Career fields: Pharmacy, medicine, graduate studies, dental, health care.

UCI's Department of Pharmaceutical Sciences was launched in 2008. Mahtab Jafari was recruited in 2005 to develop the major for UC Irvine. Her proposal was approved in 2006. Richard Chamberlin is chairman of the department. By 2014, the department expects to graduate 250 students a year, up from 12 students a year three years ago.

flies, she said. They're also easy to obtain. Researchers share fruit flies without cost, she said. Specific fruit flies are bred for different kinds of tests.

"They're very easy to work with," she said.

When her results were published, she had many people asking her if they should take Rhodiola. She told them: "If you're a fruit fly, then yes. But if you're not a fruit fly, I don't know."

That's why there are clinical studies. A clinical trial puts the results in fruit

flies to the test in humans, she said.

An Internet search of Rhodiola comes up with all sorts of claims, including increasing mental performance and physical endurance.

Jafari's lab is testing Rhodiola for its weight-loss claims. That claim hasn't been proven, she said.

The lab is also examining how Rhodiola affects the locomotion of fruit flies. "We measure their physical performance."

That's done by using a la-

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THE SOCIAL SCIENCE OF 'THE WALKING DEAD'

By **JOANNE CHRISTOPHERSON**
UC IRVINE FACULTY

My first reaction upon being invited to participate in the UCI massive open online course, "Society, Science, Survival: Lessons from AMC's The Walking Dead," was "Sign me up!" What an exciting prospect it is to draw on issues presented in this record-breaking TV series in order to teach social science topics.

After binge-watching all three seasons of the show (taking notes, of course), I had trouble picking only three topics. The series is rich with complex characters, conflicting egos, life-threatening situations, celebrations of even small successes, sweet moments of intimacy, poignant moments of loss, frightening plot twists ... the list goes on. And, it turns out the zombies are not the scariest people in the show.

I settled on three topics that intrigued me as a social scientist: how do people behave under threat; how would we start a society from scratch; and why is there so much stereotyping by the characters.

SURVIVAL

I started off by trying to understand the behavior of the characters at the end of the apocalypse – as we find them in the opening show. They don't know each other yet so they need to form bonds and cooperate to survive.

My thoughts turned to prominent American psychologist Abraham Maslow. His elegant Hierarchy of Needs theory has a lot to tell us about human behavior when we are in survival mode. Simply put, we have to meet our needs at the lowest level before we can move on to higher-order needs. The needs for food, air, and water are at the most basic level. We cannot survive without them, so our first task is to ensure our physiological needs are taken care of. In fact, we will take risks to accomplish this, as we see in the series. Maggie and Glenn take on this task for the group and they are often in serious danger on these runs.

The second level is safety – we start looking for a haven from threats. Our survivors have had a camp and a farm where food and water were plentiful. They were settled until they were overrun with zombies. Once their location was no longer safe, they were motivated to move on.

Once they found the prison, isolated the resident prisoners and located a food source, they could settle down. Then they were able to move to a higher level of needs.

In these safe locations they began to build the bonds they needed to survive as a group and we see relationships grow. Glenn and



FRANK OCKENFELS, AMC

"The Walking Dead" includes many rich stories, social science lecturer Joanne Christopherson says.



STEVE ZYLIUS, UC IRVINE

Joanne Christopherson, Ph.D.

Joanne Christopherson is a lecturer in UC Irvine's School of Social Sciences and associate director of its Demographic and Social Analysis master's degree program. She graduated summa cum laude from UC Irvine with a doctorate in environmental health science with a concentration in epidemiology. She's a fan of psychological thrillers with multi-dimensional characters and situations.

Maggie develop a sexual intimacy. Daryl and Carol show mutual respect, and it's great to see two broken people growing and caring about one another and the rest of the group.

The next level is esteem needs that we gain by accomplishing tasks. Most of the characters are not moving to these higher levels, but Glenn is involved in a gunfight with two interlopers who want to

join the group at the farm. He hides and later tells Maggie he was ashamed that he hid because he was caring about her. He sacrificed his esteem needs because he was still uncertain about his relationship with her. Once his relationship is solid, we see him taking on a leadership role in the group.

The highest level of Maslow's hierarchy is self-actualization, when the other needs are met and one has the luxury of pursuing self-fulfillment and full spiritual, emotional and intellectual potential as a human being. We do not see that level in this series, but I suspect some of the characters were self-actualized before the apocalypse. Personally, I believe Dale was but Hershel wasn't. He may be by the end of the series, but he was not at the farm.

So, we see why the characters take risks for basic needs, why relationships are hard to build, why there are constant struggles for leadership, and why it seems they are stuck sometimes.

REBUILDING SOCIETY

A second theme that arose was rebuilding society – starting from scratch. How would we begin to rebuild when we have nothing but each other? No technology, no imminent rescue and no escape.

What kind of society will our survivors build? Rick announces at the entrance of the prison that their group is no longer a democracy. Well, what will they have then? Do they need a leader? Do they need more than one? How will they agree on the rules? Daryl commented early on that the group was broken and Dale came

• With our Living Textbook feature, the Register invites university faculty to share their knowledge and expertise with readers.

to agree with him when the group could not come to unanimous agreement on anything.

So, let's introduce some historical figures who proposed answers to the question: How shall we live?

Aristotle believed we are social and friendly and that the basis of society is cooperation. For him, society has the responsibility to educate us so we can find our purpose in life.

Thomas Hobbes believed human nature is selfish and greedy and we do not need to cooperate in order to survive. He thought life was nasty and short and a no-win situation – everyone takes care of themselves. For him, society needs a strong authority figure to ensure safety for society and to resolve disputes.

Adam Smith agreed that people are selfish and greedy, but said we are also compassionate. He believed economic laws are self-regulating and that everyone pursuing self-interest leads to prosperity for all. We are capable of moral judgment and sympathy and no government intervention in economic affairs is necessary.

Karl Marx agreed with Adam Smith that economic laws shape society, but that capitalism creates class conflict. He proposed a classless creative society where the

people control the means of production and no surplus labor is exorted from workers to ensure profits.

Emile Durkheim believed that society shapes the individual and that if people are not bonded to the group with agreement on values and norms, the society is weak. Weak societies are marked by high suicide rates, according to his theory. We see a number of suicides in the group by people who just give up – Hershel's daughter's aborted attempt would fit this model.

Max Weber's theory is that the actions of individuals shape the society. If individual actions are rational and carried out methodically, society will be different than if actions are emotional or irrational.

GENDER AND ABILITY

A third theme came to mind when I observed much stereotyping among the characters. The social roles of our survivors have eroded to their function within the group. Gone are the occupational and family roles. We're left with gender and ability. There are abundant examples of this.

Andrea wants to help with security at the farm; Lori thought she should be in the kitchen. Glenn has to remind people he is Korean, not Chinese. Axel thought Carol was a lesbian because her hair is short; people looked to Rick and Shane as leaders because they were police officers; Lori worried about Hershel operating on Carl because he is a veterinarian.

According to Social Identity Theory, we generalize and categorize people for efficiency and to provide expectations of behaviors. When these generalizations become judgmental, we risk stereotyping. All stereotypes are undesirable – whether good or bad. They keep us from seeing people as individuals. Normally, we take the time and make the effort to inhibit stereotypes and judgments in our everyday world. But when we are under threat, we are more likely to jump to conclusions about people and be mistaken. Enlightenment goes out the window.

Merle and Daryl are obvious examples of this. Merle is racist and ignorant. His worldview is not subject to negotiation even when it's in his best interest to be more open. Daryl seems the same at first, but he gets to know the others and his contempt dissolves into acceptance and eventually admiration. Am I going too far, here? OK, acceptance.

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Exploring the uncanny through literature

Jayne Lewis focuses on unsettling or even frightening texts.

Déjà vu. The feeling of uneasiness. Encounters with the supernatural. Hauntings.

Every Monday and Wednesday morning, about 20 students from Professor Jayne Lewis' English class get together over ghost stories and tales of the vile and strange to discuss how literature can reflect the gray areas in life that make us squirm.

They're learning about the uncanny: that creepy, crawly, inexplicable sensation that moves through the body when encountering something unusual.

"We live in an uncanny world," Lewis said. "And it's a kind of sensation that I think everyone is familiar with."

Lewis, who specializes in 18th century and Gothic literature,

grew up with a love for the spooky and strange, a commonly reoccurring theme in her own work. Reading Shirley Jackson's "The Haunting of Hill House" as a child was something of an epiphany in her life.

Since joining UC Irvine nearly a decade ago, Lewis regularly taught courses that center around the uncanny.

"Not many professors seem to offer courses on the topic," she said. "I think there is something marginal about literature of the supernatural, ghost stories or tales of the uncanny. So many major writers have written ghost stories but they are seldom considered to be a main work. One of the reasons that this topic isn't covered a lot is because it still has kind of a dubious status."

Lewis' course is centered on concepts found in Sigmund Freud's 1919 essay, "The Uncanny." In his essay, Freud describes the uncanny as something that is familiar but strange at the same time. The ambiguity of the situation or the object then provokes an uncomfort-



COURTESY OF JAYNE LEWIS

Jayne Lewis is a professor of English at UC Irvine.

able feeling similar to revulsion. Freud suggests that the uncanny is related to a person's secret or unconscious, innermost desires.

"It's when the boundaries of a human being and a non-human are blurred," Lewis said.

Situations in which that line is blurred includes human-like animals, ambiguity between the living and the dead, and in hu-

man relationships with machines, such as with Apple's Siri function on the iPhone or life-like robots that resemble us.

To examine these elements of the uncanny, Lewis' course looks at literature for an emotional and rational understanding about what causes an uncanny sensation. She says it's often a self-generated response, and even a reflection of something unknown within one's self.

"In life there is an element of the inexplicable that preys in the edges of our minds," she said. "That's what we're talking about in my class, but we're using literature to do it. Literature takes ambiguity and freezes it. It slows down the experience so you can come in and out and really think about what's going on."

"Life is full of gray areas. I want my students to realize that complexity gives them insight into themselves in a world where we're redefining what it means to be human."

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Halloween film recommendations

Peter Krapp, film and media studies professor:

- "Hobo with a Shotgun"
- "Monster Brawl"
- "The Blair Witch Project"
- "Abbott and Costello meet Frankenstein"

Catherine Liu, film and media studies professor:

- "Funny Games"
- "Cloverfield"
- "Carrie"
- "Rosemary's Baby"
- "The Exorcist"
- "28 Days Later"

Halloween reading

Recommendations from professor Jayne Lewis:

- "The Haunting of Hill House" by Shirley Jackson
- "The Shining" by Stephen King
- "Beloved" by Toni Morrison
- "Frankenstein" by Mary Shelley
- "The Tell-Tale Heart" and "The Cask of Amontillado" by Edgar Allan Poe

UCI SPORTS



BACK IN THE ZONE

COURTESY OF GLENN FEINGERTS, UC IRVINE

Enrique Cardenas leads UC Irvine in points.

Enrique Cardenas has weathered personal and team struggles to spark UC Irvine's return to the top realm of college soccer.

Enrique Cardenas' professional soccer dreams were within reach before he even graduated high school. As a sophomore at Coachella Valley High School, he was offered a contract to play professionally in Mexico.

It was everything he had wanted since he was 4 years old, and he was at the height of his game as a CIF Player of the Year in his division.

But he turned down the opportunity to stay closer to his family and attend UC Irvine instead. Cardenas thought the move would give him not only an education but a chance to further develop his skills and possibly play as a pro after.

Yet while UCI was on its way up, winning a second consecutive



MIRIN FADER REGISTER WRITER

Big West Conference title in 2009, his first year, Cardenas struggled.

Cardenas suffered a hamstring injury and also had a difficult time with the transition from high school to Division I college soccer. He didn't play as well as he had hoped, and as a result he hardly played in matches. He then became academically ineligible and redshirted that year.

"It was such a huge jump and I wasn't ready for it," Cardenas said. "Soccer was my therapy up to that point, and when it wasn't going well, I was miserable. I was out of my comfort zone."

He almost withdrew from school, but his family persuaded him to stay.

"I had to really dig deep and



COURTESY OF MARLIN AGOUB, UC IRVINE

Enrique Cardenas, shown in action against Sacramento State, nailed two penalty kicks in a 3-1 upset of No. 11 UCLA on Sept. 19.

find ways to cope," Cardenas said. "I let go of all of the pressure I put on myself, and I said, 'I'm just going to have fun, enjoy it, and just play.'"

In 2012 as a junior, the midfielder started 17 matches, scored two goals (including a game-winner) and had three assists.

But UCI was going through an uncharacteristic down year. After compiling 14-3-3 and 16-6-1 records in 2010 and 2011, UCI in

2012 produced a dismal 5-14-1 record.

The Anteaters did not resemble the program that compiled 65 wins, three Big West Conference titles and three NCAA Tournament berths over the previous five years.

"It was the most frustrating experience of my life," Cardenas said. "We fell apart at times. We would lose games in the 89th minute, 110th minute. It was demor-

alizing, but we used that as motivation for this season."

Cardenas used his struggles early on to help put UCI back on the college soccer map as a senior this fall.

UCI won more games in this year's preseason than it did in all of the 2012 campaign.

Cardenas helped UCI defeat nationally ranked opponents, including a 1-0 victory against No. 16 University of Louisville on Sept. 13 and a dominant 3-1 upset of No. 11 UCLA on Sept. 19.

Against UCLA, Cardenas converted two momentum-changing penalty kicks. The first came in the 57th minute to extend the Anteaters' lead to 2-0, and the second was scored in the 78th minute to seal the 3-1 triumph.

"It was a huge moment for us. We felt like we turned the corner finally," Cardenas said. "We really showed the entire country what we could do."

Cardenas is enjoying his best season. As of Oct. 18, Cardenas led UCI in points with 15, scoring five goals and tallying a team-high five assists. He nailed the game-winner in UCI's season-opener against Marist for a 1-0 win.

His leadership has also significantly impacted the team.

Cardenas often asks for extra time after practice to study game films, encouraging his teammates to stay later, too. And after last season, Cardenas banded the team together to emphasize starting fresh this season.

"Enrique is a very passionate guy, and the rest of our players really feed off of that," said UCI head coach George Kuntz. "He wears his heart on his sleeve. He bleeds for this team. It's hard for other guys not to see how hard he plays and how he puts it all out on the line for us every night."

UCI also cracked the NCAA Division I Top 25 rankings this season, a nice return for a team who was used to the national spotlight.

"To fall off last year and (then) earn your way back is a really good feeling," Cardenas said.

With the conference tournament coming up in November, UCI is far from satisfied.

"We're excited, and everyone's pushing each other, but we're not complacent," Cardenas said. "We're a very hungry team. We know how hard we work, we know the depths of our talent, but we still need to perform better."

Though Cardenas is now a focal part of UCI's attack, he remembers when he wasn't sure if he could find a niche on the team his freshman year.

"I'm so glad I stayed here. I'm really grateful," he said. "I appreciate those tough moments because I know it made me the player and person I am today. It's easy to be in your comfort zone, but when you're challenged and you fall, that's where you begin to grow."

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UCI HOT SHOTS

The women's soccer team hosted Long Beach State on Oct. 17. The Anteaters lost, 2-1.



Cami Privett, left, dodges a tackle by Long Beach State's Natalie Zeenni.



PHOTOS: KYUSUNG GONG, FOR THE REGISTER

Zoya Farzaneh gets ready to trap the ball during UCI's game with Long Beach State.



Natalia Ledezma dribbles away from defenders.



Team members celebrate a great play.

go+do

FOCUSING ON MINIMALISM

By ANNA ILIFF
ORANGE COUNTY REGISTER

A concert rooted in familiar patterns and themes will come to UC Irvine's Claire Trevor School of the Arts Saturday at Winifred Smith Hall.

Featuring renowned composer and pianist Alan Terricciano and award-winning, visiting artist Andre Gribou, "Minimalism and its Discontents: A Concert about Repetition" will submerge concertgoers in a sea of repetitious sounds from 1722 to present day.

"It's an unusual program, but it is a lot of fun," said Terricciano, a UCI professor of dance. "I always want an audience member to think about what music can accomplish and what it can do."

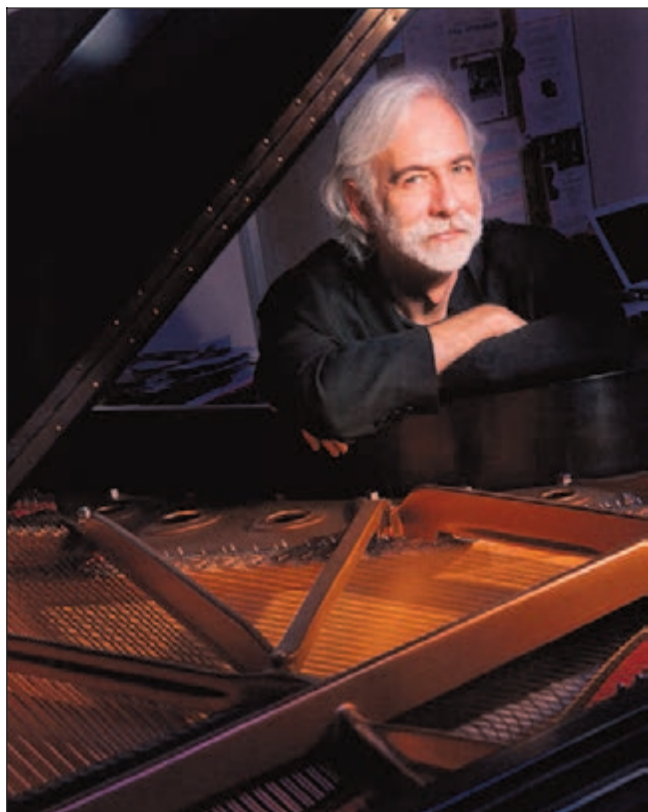
The concert will include famous favorites from Beethoven and Bach, as well as a piece by minimalist figurehead Philip Glass.

Minimal music was popularized in the 1960s and is characterized by consonant harmony, a steady pulsating sound, gradual change and repetition of musical phrases.

"Minimalist music is built entirely on patterns and slow transformations. It evolves," Terricciano said.

Gribou will premiere "Etude for Disklavier," a new piece composed by Terricciano that will be played on a Disklavier.

A Disklavier is a player piano that uses a digital file to trigger keys a piano's keys and pedals. Terricciano's piece features two scores: one for the Disklavier and one for the pianist. The pianist then fights against the Disklavier to



OHIO UNIVERSITY
Andre Gribou will perform Saturday as a guest artist at UC Irvine's Claire Trevor School of the Arts.



COURTESY OF ALAN TERRICCIANO
Alan Terricciano, a UCI professor, will have a composition in the concert.

create the finished, harmonious piece.

"You've got to take advantage of the fact that a Disklavier can do things that a human cannot," he said.

The concert will con-

Alan Terricciano Concert

When: 8 p.m. Saturday
Where: Winifred Smith Hall, Claire Trevor School of the Arts, UC Irvine
Cost: \$11-\$15
Information: 949-824-2787

clude with John Adams' "Hallelujah Junction," a complex but complementary piece that will intrigue, Terricciano said.

"It's a piece that looks at minimalist techniques in a romantic way," Terricciano said. "It's an interesting alter ego to the Beethoven piece which is a late classic, early Romantic work that foreshadows minimalism."



ANGELA PIAZZA, ORANGE COUNTY REGISTER

UC Irvine's LGBT Resource Center intern, Bo De Lange, disassembles a National Coming Out Week display.

Campus celebrates LGBT students' stories

By ANNA ILIFF
ORANGE COUNTY REGISTER

Colorful pieces of paper with words of encouragement and personal stories about coming out as a member of the lesbian, gay, bisexual and transgender community were on display at UC Irvine for National Coming Out Week from Oct. 7 to 11.

Hosted by the Lesbian Gay Bisexual Transgender Resource Center, National

Coming Out Week offered students an opportunity to share their stories.

The Center provided support training, an anonymous online chat session with student counselors and a luncheon for students with questions about LGBT issues.

To show support for the LGBT community, students were encouraged to wear red T-shirts.

National Coming Out Day was celebrated on Oct. 11.

BUGS

FROM PAGE 1

flor is not sold in the United States.

ABOUT SALMONELLA

The Centers for Disease Control and Prevention states that there about 42,000 reported incidents of salmonella infections in the United States each year. However, because many people choose not to receive medical attention, the CDC estimates more than 1.2 million cases a year in the United States.

Salmonella infections cause symptoms such as diarrhea, fever, and stomach cramps for 12 to 72 hours after contraction. Typically, those infected with salmonella have symptoms for four to seven days.

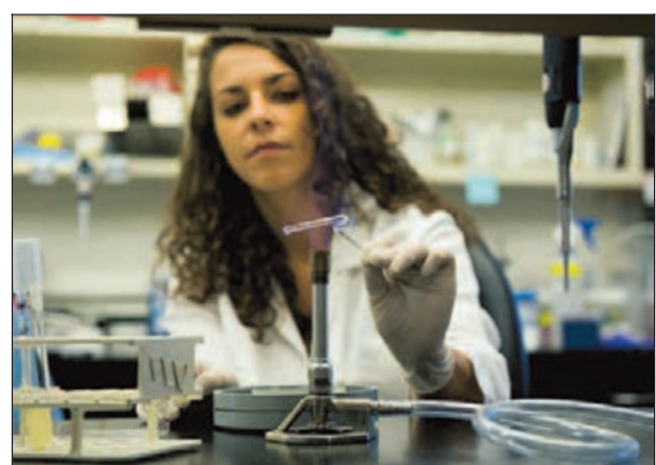
Although the symptoms dissipate fairly quickly, humans continue to shed salmonella bacteria for weeks after the initial infection and are at risk of contaminating others, Raffatellu said.

COMMON SOURCES

- Infected food, such as chicken or eggs that have gone bad or were not thawed or cooked properly
- Unhygienic surfaces
- Excretions or shedding from infected people and animals
- Standing water
- Amphibians and reptiles such as pet turtles, snakes, iguanas and frogs

WHAT IS A PROBIOTIC?

Probiotics are bacteria that benefit the host. When probiotics are added to the microbial population in the intestines, they can inhibit pathogens



JEFFB HARRIS, ORANGE COUNTY REGISTER

In a lab at UC Irvine, graduate student Martina Sassone-Corsi sterilizes a spreader as she prepares a culture of salmonella bacteria.

such as salmonella.

When a patient takes antibiotics, both good and bad bacteria are killed, Raffatellu said. This reduction of good bacteria can cause digestive problems including diarrhea, yeast infections and urinary tract infections.

"It's known that if you take antibiotics, you are more susceptible to infections like salmonella because you kill the flora," said Raffatellu. In our study, we're showing how one component that was isolated from the normal flora provided colonization resistance to infections."

WHY IT MATTERS

"Although we focused on salmonella, our findings suggest that this approach can be effective against other gut bacterial pathogens that need iron to grow," Raffatellu said. "By understanding how these 'bad bugs' get nutrients, we can further study methods to eradicate them."

NEXT STEP

Researchers at UCI plan to continue studying probiotics in the body to deter-

mine why certain people are more naturally protected from bacterial infections such as salmonella. Raffatellu said doctors at UCI are also developing therapeutic drugs that will block nutrient acquisition, like zinc and iron, by these "bad bugs" in the intestines.

THE TEAM

UC Irvine:

- **Manuela Raffatellu**, a UCI researcher and assistant professor of microbiology and molecular genetics. She is also a member of UCI's Institute for Immunology
- **Milad Pezeshki**, research assistant
- **Robert Edwards**, assistant professor in residence in pathology
- **Janet Liu**, graduate student researcher
- **Roxanna Ochoa**, graduate student researcher
- **Heidi Contreras**, graduate student researcher
- **University of Washington:**
- **Stephen J. Libby**, research associate professor
- **Ferric Fang**, professor of laboratory medicine and microbiology

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monday 28th

FILM

Asian Horror Film Festival: "The Host" is about a monster emerging from Seoul's Han River and focusing its attention on attacking people. One victim's loving family does what it can to rescue her from its clutches. Must be 17 or older to attend. 7 p.m. at the outdoor theater of the Maya Lin Plaza. Free admission. Reservations required at www.arts.uci.edu/asian-horror-film-festival

saturday 2nd

COMMUNITY

Beall Center Family Day: Beall Center seeks to stir the imagination and motivate young people to delve into the basics of science, technology and visual literacy. Includes hands-on art and science activities, art and technology demonstrations, videos and more. 11 a.m.-4 p.m. at Beall Center for Art + Technology, Claire Trevor School of the Arts, 712 Arts Plaza. Free admission. Information: 949-824-6206 and beallcenter.uci.edu

monday 4th

WELLNESS

Meditation for Health: This class introduces meditation and discusses its various types and styles. This is spiritual, not religious, and no special clothing or equipment is required. 6:30-7:30 p.m. at UC Irvine Health Douglas Hospital, 101 The City Drive South, Conference Room 3005, Orange. Tickets: \$40. Information: 877-824-3627.

thursday 7th

OPEN HOUSE

Claire Trevor School of the Arts Open House: Find out what the students and faculty are up to at the school of the arts. Visitors can attend rehearsals for upcoming performances, professional and student art exhibits in three galleries and a new-media installation that melds art and technology in the Beall Center. 5:30 p.m. at Claire Trevor School of the Arts, 4000 Mesa Road, Irvine. Free admission. arts.uci.edu

saturday 9th

MUSICAL

Bloody Bloody Andrew Jackson: The musical reimagines the seventh U.S. president as an angst-driven rock star. Evenings: 8 p.m. Nov. 9, 14, 15, and 16. Matinees: 2 p.m. Nov. 10, 16, and 17. Claire Trevor Theatre. Tickets: \$11-\$15. Information: 949-824-2787 or www.arts.uci.edu/tickets

wednesday 13th

MUSIC

Noon Showcase Concert: Outstanding Music Department students perform. Noon at Winifred Smith Hall. Free admission. Information: 949-824-2787.

LITERARY

Author Series: The School of Humanities Author Series presents Michael Ryan, author and co-director of the Graduate Programs in Writing (Poetry) at UC Irvine. 6 p.m. at Humanities Gateway 1030. Free admission. Information: 949-824-6117.

friday 15th

LECTURE

Satellite Observations of Southern California Coastal Circulation and Pollution Hazards: The lecture is with Ben Holt from Jet Propulsion Laboratory, Caltech. 1:30-2:20 p.m. at McDonnell Douglas Engineering Auditorium. Free admission. Information: 949-824-5333.

saturday 16th

BUSINESS

Executive MBA and Health Care Executive MBA Info Session and Lunch: Session will cover an overview of the Executive MBA degree, program specifics, Merage School resources and admissions information. Lunch with students following. 11 a.m. at The Don Beall Center for Innovation and Entrepreneurship. Contact Kris Dalton at 949-824-0561 for reservations.

tuesday 19th

MUSIC

Wind Ensemble Concert: The concert will include traditional and modern compositions performed by students from the CTSA Music Department. 8 p.m. at Claire Trevor Theatre. Free admission. Information: 949-824-2787.

wednesday 20th

MUSIC

UCI Small Groups Concert: Jazz musicians in concert. 8 p.m. at Claire Trevor Theatre. Free admission. Information: 949-824-2787.

ALUMNI NOTES

BRAVO!



COURTESY OF BRAD ALAN LEWIS
Brad Alan Lewis, author of "Storming on the Deep Blue Sea."

Olympic rower dips writing oar in water

By ANNA ILIFF
ORANGE COUNTY REGISTER

When Brad Alan Lewis was a student at Corona del Mar High School in the 1970s, he developed a love for being out in the vast, blue sea – a place he describes as freeing and an escape from distractions.

It comes as no surprise that his latest fiction book is set in the same place he made a name for himself as a rower more than 30 years ago.

Lewis' high school rowing team would spend hours at old UC Irvine boathouse for practices, and it was there that he met the university's coach, who offered him a position on the Anteaater crew.

After earning a bachelor's degree in psychology and a master's degree in administration, Lewis, Class of '77, pursued a career in competitive rowing. And 1984, Lewis represented the United States at the Olympics in Los Angeles, where he won a gold medal with his double sculls rowing partner Paul Enquist.

Although Lewis enjoyed the excitement of competitive rowing, he harbored another passion – writing.

"When I decided I wanted to write, I had to go back to the basics," he said. "It took me years to write my first book and it was a long, involved and difficult process. I taught myself to write the

same way I taught myself to row. I studied how the really good guys did it and then mimicked them. Rowing was wonderful training for writing."

Lewis has written and self-published several books, some drawing from his rowing and sailing experience and some that are crafted works of fiction.

Earlier this year, Lewis published his latest book, "Storming on the Deep Blue Sea," which follows two interweaving tales of Orange County men who flee to the ocean to escape trouble on land. Although the two come from very different backgrounds, they are united by a yacht named "Blackster."

"The ocean is their great escape," he said. "One has quite a bit of sailing experience and the other has none. What's exciting is that the story leaves off with some serious sailing ahead and the two will continuously cross paths."

Lewis calls his book "fiction with a very sharp edge," and says it is not for the faint of heart. The first story follows Scott Baake, a man in an unhappy marriage who plots to kill his wife. His plan to sail away backfires when he discovers his boat is missing.

"It's fair to say the protagonists are very flawed characters," he said. "It's a unique story and a lot of fun."

"Storming on the Deep Blue Sea" is available through Amazon.

PROFESSORS PLAY PART IN NOBEL RESEARCH

Eight UC Irvine professors from the School of Physical Sciences were recognized for their involvement in Higgs boson data analysis that led to a Nobel Prize in Physics this year.

The Nobel Prize in Physics was awarded to Peter Higgs and Francois Englert for their theory on the Higgs boson, which gives elementary particles mass.

About 2,000 physicists from United States institutions, including laboratories from the U.S. Department of Energy and universities, contributed to the discovery.

The UC Irvine professors who participated in research include **Jonathan Feng, Arvind Rajaraman, Tim Tait, Agnes Taffard, Daniel Whiteson, Mu-Chun Chen, Yuri Shirman and Andrew Lankford.**

"This is a fantastic achievement, a demonstration of the predictive power of theoretical physics applied by brilliant minds to conceive the Higgs field and the ingenuity of scientists to address unprecedented technical challenges to its observation," Lankford, former deputy director of the ATLAS experiment, a Large Hadron Collider particle detector, said. "It's exciting that we at UCI played a role in this discovery."

"The Nobel Prize for the Higgs boson represents the culmination of a major chapter in the history of particle physics," said Tait, UCI professor of physics and astronomy who researches how the Higgs boson relates to the broader scope of fundamental particles. "Even more than the prize itself, the discovery illustrates the fact that we can understand how nature works, form hypotheses, and then build experiments to test them."

STUDENTS WIN RACE WITH FUEL-EFFICIENT CAR

UC Irvine students were named Overall Winners for designing the most-fuel-efficient vehicle at the California Challenge, part of the U.S. Department of Energy Solar Decathlon and XPO that took place in Irvine earlier this month.

The California Challenge is a race to see how far one car can run on \$1 worth of an energy source



GREG ANDERSEN PHOTOGRAPHY

UC Irvine students Robert Zane and Ting Yu hold the Overall Winner trophy from the California Challenge.



Feng



Rajaraman



Tait



Taffard



Whiteson



Chen



Shirman



Lankford

such as electricity, gas or methane.

Students from professor **Michael McCarthy's** race-car class in Henry Samueli School of Engineering assembled their Delta car, which received top honors at the

challenge and won the Energy Invitational Class.

"Delta is the workhorse," McCarthy said. "It's a strong competitor every time ... We get good performance out of it."

Delta runs on compressed natural gas and won the grand prize at the UCI Energy Invitational last year.

UCI COMMUNITY MAKES PROMISES FOR EDUCATION

As part of the University of California's major fundraising campaign, "Promise for Education," several members of the UC Irvine community have come together with their own pledges to raise money for Anteaater scholarships. Some are quirky and some are touching, but each promise is attached to a personal fundraising goal.



Drake

Chancellor **Michael V. Drake** pledged to host a cycling tour of the city of Irvine if he reached \$10,000 in donations, which he has already surpassed. Social Sciences Dean **Bill Maurer** has promised to dress up as a Star Trek character if his goal of \$5,000 is met.

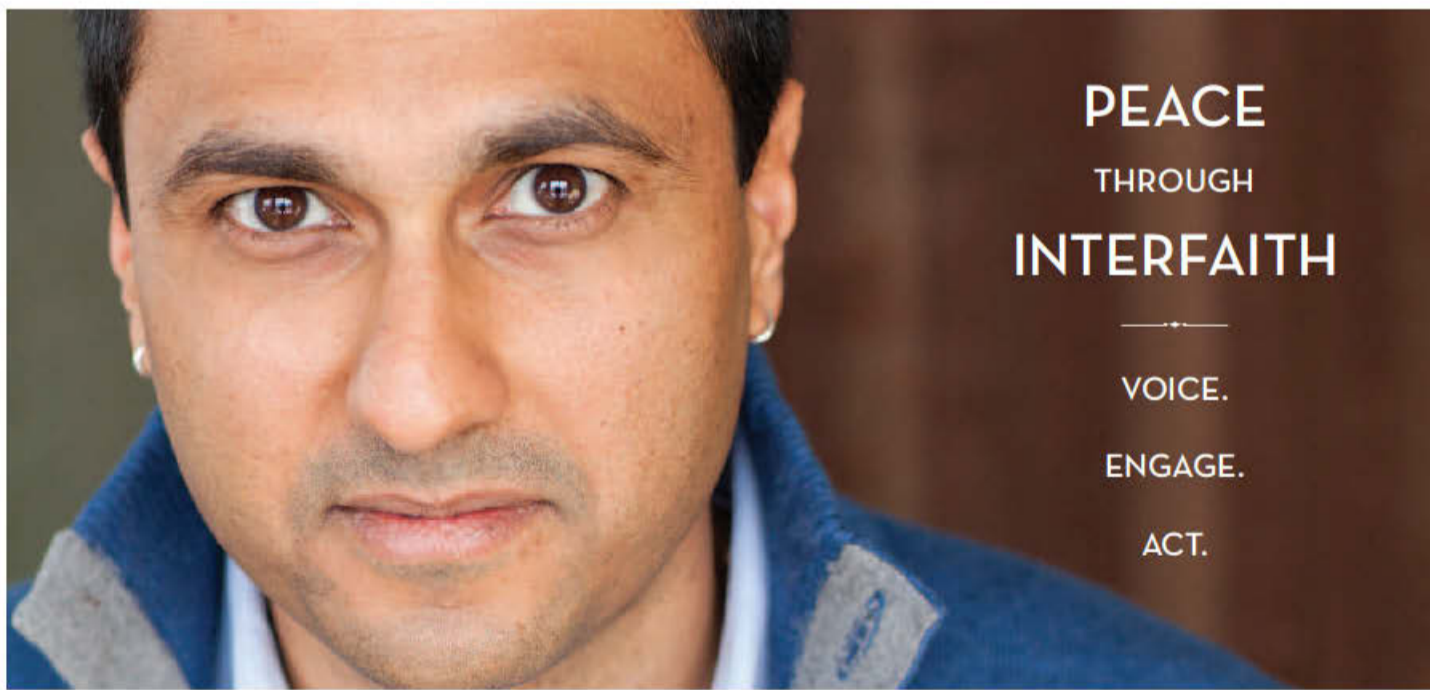
The six-week-long campaign runs until Oct. 31. For a full list of promises or to create your own visit promiseforeducation.org.

-Anna Iliff

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AN EVENING WITH EBOO PATEL

7 p.m. Tuesday, November 5

Pacific Ballroom, UCI Student Center, University of California, Irvine

Eboo Patel is an internationally-recognized speaker on interfaith engagement and cooperation. He will talk about the importance of religious pluralism in building, strengthening and sustaining our democracy. Eboo challenges and inspires people of all faiths to work together to make our world a place where diverse traditions can thrive side by side.

He has authored several books including *Acts of Faith: The Story of an American Muslim, the Struggle for a Soul of a Generation* and *Sacred Ground*. Eboo has presented at the TED conference, the Clinton Global Initiative, the Nobel Peace Prize Forum and universities around the world. He is a regular contributor to the *Washington Post*, *USA Today*, NPR and CNN, and named one of America's Best Leaders by *U.S. News & World Report*.

Eboo is the founder and president of Interfaith Youth Core (IFYC), a nonprofit that supports interfaith dialogue, projects and leadership training at college campuses across the nation. He holds a doctorate in the sociology of religion from Oxford University where he studied on a Rhodes scholarship, and is an Ashoka Fellow, part of a select group of social entrepreneurs whose ideas are changing the world.

TICKET AND EVENT INFORMATION
www.livingpeace.uci.edu

\$8 general seating • UCI students, faculty and staff FREE with reservations

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