In early September, a team of scientists announced what has since been touted as the most important archeological find since the middle of the twentieth century. It began rather unceremoniously in 2013, when two recreational “cavers” named Steven Tucker and Rick Hunter descended into the famed Rising Star Cave outside of Johannesburg, South Africa. The duo soon discovered a less-mapped channel of the cave with bones scattered everywhere. They took photos and sent them to the renowned paleoanthropologist Lee Berger at Witwatersrand University in Joburg, who quickly put a Help Wanted call out on Facebook for “skinny” individuals with scientific backgrounds and caving experience. Within a short period of time, Berger had chosen the six most qualified “underground astronauts” - all women - petite enough to fit into the site and excavate the fossils.

Two years later, on September 15th, 2015, the world met Homo Naledi for the first time.

Throughout that period, Lehman College Anthropologist William Harcourt-Smith played a crucial role as a senior member of the team of scientists analyzing a fossil record that has fundamentally transformed our understanding of human evolution. Harcourt-Smith was the lead researcher on the foot bones of homo Naledi and the lead author on the October 6th Nature Communications article describing the 107 pedal elements and a near-complete adult foot excavated from the Dinaledi Chamber. In the article, Harcourt-Smith and his colleagues concluded:

The H. naledi foot is predominately modern human-like in morphology and inferred function, with an adducted hallux, an elongated tarsus, and derived ankle and calcaneocuboid joints. In combination, these features indicate a foot well adapted for striding bipedalism. We show here that the foot of H. naledi is predominately modern human-like in bony morphology and inferred function...The foot of H. naledi thus expands the range of locomotor diversity in both the hominin lineage and the genus Homo.

We asked Professor Harcourt-Smith about the discovery, the role he played, and the excitement it has generated:

NSS: This is being hailed as one of the greatest fossil discoveries of the past half-century, why?

WHS: Several reasons. First, it is very unusual to find so many fossils from one species in one place. Hominin fossils are incredibly rare.

(Continued on page 8)
Dean's Message

It is our pleasure to present to you the very first Newsletter of The School of Natural & Social Sciences. We do this in the interest of engaging in a vibrant communication pathway between our School and the Lehman community. As this first issue will show, we had many great stories to tell; and to think all these happened within the past twelve months is a testament to the quality of our faculty and the accomplishments of our students. We had many more outstanding news items to share with you, the reader, and had a hard time in selecting those that went in here versus those which will be published in the second issue of the Newsletter. Our hope is to publish these Newsletters once or twice a semester. I am grateful to Dean Christopher Malone, who singlehandedly wrote the bulk of the script and formatted the stories for this issue. It took quite an effort to produce this first issue. We hope to receive your feedback so that we can make necessary future improvements.

Joining Lehman College a little more than a year ago was an exciting moment for me. Keeping the Lehman community informed of the various “happenings” in NSS was a goal that I had hoped to accomplish within the very first year of my arrival here. Little did I appreciate the steepness of the learning curve I had to climb in the first year! The past year turned out to be largely a learning moment for me – studying the complexly intertwined procedures followed by CUNY, the State, and Lehman; CUNYFirst; LoMARS; the budget, and the factors that go into calculating faculty workload. More importantly, I wanted to get to know our School very well – its faculty, staff, and students, so that I could help build an ecosystem conducive to education and research. I was quite impressed with our faculty even before I accepted my position here; and the past year has only increased my respect for them. We have a very accommodating and competent staff throughout NSS and Lehman, whose dedication makes our lives that much better every day. I take this opportunity to thank them all. Finally, every institution has and will have great moments and its share of problems; but I would argue that NSS has a disproportionately greater share of the good moments. It is my belief that by keeping lines of communication open we will minimize problems and maximize the opportunities to achieve greatness. So, let’s keep talking!

Dean Gautam Sen

NSS Receives $733K STEM Education Grant

The School of Natural and Social Sciences has received a $733K grant in recognition of its groundbreaking efforts to improve STEM education at Lehman College. The funds were made available through New York State Governor Andrew Cuomo’s “Opportunity Agenda” for CUNY and dispersed through the highly-competitive $20 million CUNY Strategic Investment Initiative. The office of CUNY Chancellor James Milliken delivered the good news to Lehman College on November 3rd.

The Modern STEM Major Initiative will seek to accomplish three interrelated goals: first, redesign introductory gateway courses for natural science, social science, and health science majors; second, create new interdisciplinary majors that redefine the meaning of a science major and open new pathways to careers in science-related fields; and third, build into this new curriculum a robust, targeted experiential learning program that provides a vital link between the classroom and career opportunities. Much of the funding will go to upgrading classroom space in Gillet and Carman Halls with new technology, and providing students in science and technology courses with state-of-the-art computer equipment.

“Receiving this grant indicates the extent to which NSS at Lehman College is recognized as a leader in STEM education throughout CUNY,” said NSS Dean Gautam Sen. “I am so proud of the work our faculty and students are doing, and these funds will allow us to take it to new heights.”

The CUNY Strategic Investment Initiative funded efforts that showed promise in advancing the goals of access, student success, degree completion, academic technology, research, and workforce preparation. Each CUNY campus was allowed to submit up to three different proposals, and each proposal could not exceed $1 million unless it was a collaborative project involving multiple campuses. Most projects awarded were under $600,000. The NSS proposal was the only one chosen from Lehman College.

Dean Sen explained the logic behind the proposal: “We know what works in getting Lehman student into STEM careers. Innovative instruction methods that don’t leave students behind; cutting edge STEM curriculum that reflects the demands of today’s workplace; experiences in STEM fields while still in college that prepare students for careers at the same time give them a leg up when they graduate.”
Region’s Colleges Give Top Award to Pioneer River Scientist Joseph Rachlin

Calling Joseph Rachlin “a role model for student and teacher alike,” the Environmental Consortium of Colleges and Universities has given the Lehman College biology professor its Great Work Award for a life dedicated to the Hudson River ecology.

When environmental issues were still trying to gain a foothold in the Hudson River Valley in the late 1960s, Rachlin was already a wet and muddy grad student up to his elbows in river research. Now a veteran aquatic ecologist and director of the Laboratory for Marine and Estuarine Research at CUNY’s Lehman College, Professor Rachlin has spent 48 years doing something few scientists do – building a world-renowned research career within a few miles of home. A Bronx native, he has devoted his life to the study of the Hudson estuary, and Bronx, Saw Mill and East rivers, and at 80, his passion is undiminished as he leads students in research aimed at restoration of those urban waterways.

The Consortium bestowed its "Great Work Award" to Rachlin at their annual conference at Vassar College on Saturday, November 7th.

Professor Yuri Gorokhovich, Chair of the Earth, Environmental, and Geological Sciences Environment Department at Lehman, says Rachlin “miraculously combines service, teaching and leadership and shows students how beautiful and productive research can be at home, right in our neighborhood.”

Professor Rachlin is best known for his research into the life histories of both freshwater and marine aquatic organisms. He is a fellow of both the Linnean Society of London, and the American Institute of Fishery Research Biologists. In addition to his research activities he has served as the director of the CUNY Institute of Marine and Atmospheric Sciences. He is currently the Interim Dean for Research at Lehman.

The Environmental Consortium of Colleges & Universities was established in 2004 to advance an understanding of the cultural, social, political, economic and natural factors affecting the region. By promoting collaboration among its members, the Consortium works to provide ecosystem-based curricular and co-curricular programming aimed at improving the health of the regional ecosystem. Currently the Consortium includes 61 colleges and universities with over 220,000 students, faculty, staff and administration. Its mission is to harness higher education’s intellectual and physical resources to advance regional, ecosystem-based environmental research, teaching, and learning with a special emphasis on the greater Hudson-Mohawk River watershed.

Center for Human Rights and Peace Studies Hosts Conference on Global Refugee Crisis

CHRPS dedicated the entirety of its fall conference to the current global refugee crisis and the problem of noncitizen rights. Held on campus on November 4th, the program included analyses and perspectives from academics/activists who have witnessed firsthand the consequences of conflicts in the Middle East, Uganda, Central America and the Dominican Republic.

Lehman Anthropology professors Katerina Stefatos and Dimitris Papadopoulis led the conference off by discussing the current refugee crisis in Greece. The married couple spent two and a half weeks in August on the Greek island of Lesvos – the epicenter of waves of refugees struggling to make it to safety in Europe. The island has become a way station for thousands of Syrian, Afghan, and other asylum seekers fleeing oppressive nations. “Lesvos was a main entry point for refugees everywhere and suddenly there was this huge global interest about what’s happening on this tiny Greek island,” said Papadopoulis.

Professor Aquiles Castro Arias from the Autonomous University of Santo Domingo and human rights attorney Rosanna Antonia Espinosa Santana discussed the denationalization movement of Haitian-born residents in the Dominican Republic. For decades, Haitians have settled in the Dominican Republic to work in sugarcane fields and banana plantations and, more recently, in the booming construction sector. While the Dominican government used to grant citizenship to all children born in the country, those rights have been winnowed back over the last several decades. On September 23, 2013, the Dominican Constitutional Court, retroactively denied Dominican nationality to anyone born after 1929 who does not have at least one parent of Dominican blood, under the argument that undocumented immigrants are considered “in transit.” Over 200,000 people of Haitian descent born in the Dominican Republic are at risk of being deported.

The conference was organized by Dr. Victoria Sanford, Chair of the Department of Anthropology and Director of CHRPS. It culminated with a special guest appearance by the Public Information Office for the United Nations Office of the High Commissioner for Human Rights (OHCHR), André-Michel Essoungou.
Lehman Students Conduct Research on the Historic Changes in Kingsbridge Heights Community

This past summer, nine Lehman Sociology majors worked on a research project to study the Kingsbridge Heights neighborhood under the direction of Professors Tom Conroy and Dana Fenton. Kingsbridge Heights, which borders Lehman to the south, is undergoing major social and economic changes including redevelopment of the Kingsbridge Armory into the National Ice Center. This summer's research will provide a baseline for ongoing research that will study the impact of this "natural experiment" on its surroundings. Support by the Faculty Research Council's Student/Faculty Team Grant allowed the group to work with a graduate student in Geography and to work with photographic images of the neighborhood and will also support travel for students to present their work at the Eastern Sociological Society meetings. Several of the students are continuing their work during the academic year.

On October 1st, Women Wage Peace co-founder Michal Barak spoke on campus to Lehman faculty and students about the ongoing Palestinian-Israeli conflict. Barak is the executive director of The Center for the Study of Multiculturalism and Diversity in the Hebrew University.

Women Wage Peace is a rapidly growing movement of women advocating for the implementation of a non-violent, dignified and bilaterally or regionally acceptable political solution to the Israeli-Palestinian conflict. Initiated in the summer of 2014, following the end of the war in Gaza, it has since grown to include over 8,000 Jewish and Arab women, secular and religious, with diverse political views and affiliations. Their unanimous call is for the return of the vision of peace to public discourse and diplomatic activity. They intend to break the prevailing dichotomy of peace vs. security, replacing it with a vision of peace as security. The event was co-sponsored by the Department of Political Science, the Women Studies Center, and the Jewish Community Relations Council of New York.

"Michal’s presentation perfectly reflected many of the challenges and opportunities we all encounter in our scholarly engagement with issues of race, gender, peace, inclusion and equality," said Professor Chiseche Mibenge, Assistant Professor of Political Science and one of the organizers of the event. "I was happy to see Lehman College provide a platform for a peace movement like WWP. This hospitality is very much in line with the campus hosting the Security Council sessions in the immediate post-war period."

The event was also made possible because Lehman College academics like Professors Mibenge and Anne Rice were part of an Israel Faculty tour last summer sponsored by the Jewish Community Relations Council that introduced them to WWP and scholars in Palestine and Israel.
Lehman College Student Chapter of SHRM Receives 2014-15 Honorable Mention Award

Lehman College’s Student Chapter of Society for Human Resource Management (SHRM) received a 2014-2015 Honorable Mention Award from The Society for Human Resource Management (SHRM). The SHRM student chapter was selected for providing exceptional growth and development opportunities to its student chapter members.

The Lehman College SHRM Student Chapter, which worked under the guidance of Professor Shirley Bishop, Human Resource Management Lecturer in the Department of Economics and Business, received a digital logo for use in electronic or print communications and will be recognized in SHRM’s publications and at its conferences.

Professor Moira Sauane Receives $1 Million Grant from National Cancer Institute for Cancer Research

Dr. Moira Sauane from the Department of Biological Sciences has received a $1 million grant from the National Cancer Institute to support her groundbreaking research. Her work is focused on understanding how different proteins behave at the cellular and molecular level for the purpose of developing cancer therapies that kill cancerous tumors, while sparing healthy cells.

In 2013, Dr. Sauane and her team, which included several undergraduate Lehman students, identified the molecule that plays a pivotal role in killing human cancer cells. The discovery centered on the interaction of two proteins (Interleukin-24 and Sigma 1 Receptor) that promote the death of cancerous cells, and makes tumors more sensitive to radiation and chemotherapy. Their research was published in the journal Biochemical and Biophysical Research Communication, and later resulted in a patent.

Dr. Sauane is now collaborating with researchers from Harvard Medical School, which is granting her the use of variety of advanced molecular and cellular tools for experiments in her lab at Lehman.

“We at Lehman College, and in all of CUNY, strive to provide our students with the tools and the mentorship they need to achieve their full potential,” says Dr. Sauane. “I am grateful to the NCI for awarding this grant. It will greatly help us not only by allowing us to achieve specific research goals but also in our commitment towards our students.”

Physics and Astronomy Professor Matthew O’Dowd to lead PBS Digital Astronomy Series

This September, Assistant Professor in Physics and Astronomy Matthew O’Dowd launched his online video career of hosting a web series that explores the universe with intriguing episodes about black holes, the possibility of alien existence and the advantages of colonizing Venus instead of Mars. Each episode generally runs between six and 15 minutes.

O’Dowd’s inaugural Space Time episode premiered on September 23 and can be seen on PBS digital’s YouTube channel. Space Time takes viewers on a journey through the universe that is a provocative mix of astronomy and physics infused with pop culture and science fiction references to Star Wars and Doctor Who. The show’s light touch about intellectually rigorous subjects has attracted more than a hundred thousand subscribers and more than 3.7 million total views.

O’Dowd is thus far pleased with the response of the Lehman students to the series. “My students really enjoyed the episodes that are out so far. A number of students who have never been in my class have also approached me about it. It seems that lots of Lehman students are curious about science, which is great.”

Daniel Kabat, the Department of Physics and Astronomy chair, commended Professor O’Dowd for his transition from classroom to video host. “Professor O’Dowd is an engaging teacher,” he says. “He’s great at making exciting ideas accessible to his students at Lehman, and it’s wonderful he’s now able to reach a much larger audience online. It’s a great advertisement for the caliber of the physics department and for the quality of the education that Lehman can provide. Matt’s knowledge, enthusiasm and skills as a presenter really come through in these videos.”
Christopher Malone Named Associate Dean
Of the School of Natural and Social Sciences

Dr. Christopher Malone, a nationally renowned political scientist with 15 years of leadership and faculty experience at Pace University, has been appointed associate dean at the Lehman College School of Natural and Social Sciences. Dr. Malone started his new position at Lehman on August 24.

In addition to his years as an innovative faculty member at Pace, Malone was the school’s founding director of the American Studies program, director of the University’s Pforzheimer Honors College and until last September, chair of the department of political science. From 2004 to 2010, he appeared on C-Span, co-teaching a course on American Politics and Public Policy.

Dr. Malone has roots in the CUNY system: He received his Ph.D. from the Graduate School and University Center, The City University at New York, and taught undergraduate classes at Hunter and York Colleges. Earlier, he had earned his master’s degree from Fordham University and holds two separate bachelor’s degrees from Louisiana State University and Suffolk University. He’s a native Louisianan.

“I’ve always considered myself a CUNY person,” he admits. “I’ve always wanted to get back to CUNY, I didn’t know when, I didn’t know how. I saw a listing for an opening at Lehman and I jumped at the opportunity to apply.”

Dr. Malone will be working with Dr. Gautam Sen, the dean of the Lehman College School of Natural and Social Sciences to help implement goals for ten departments. One aspect of his new role is to make overall operations more “efficient for the faculty, the students, and the chairs in each of those ten departments.” That includes a disparate set of responsibilities including faculty development in research and teaching, recruitment and retention of students, and assessment of programs and strategic initiatives such as new academic programs. He is also planning to teach a state and local politics course in the spring.

“The School of Natural and Social Sciences is the heart of Lehman College in terms of the academic offerings,” says Dr. Sen. “I am a natural scientist and the school needed an experienced administrator in the social sciences area. I was particularly interested in someone with a quantitative bent, a broad appreciation of social science disciplines, a good personality, and strong organizational ability. Chris Malone brings with him all of these qualities. We are fortunate to have Chris on board.”

Malone is looking forward to facilitating a strong internship program that will have a powerful impact on the future of Lehman students.

“An area I think I can most help the NSS, is in the realm of experiential learning and civic engagement by connecting Lehman students to internships in communities in the Bronx and the rest of the city,” Malone said. “These opportunities in college usually lead to career opportunities once students graduate.”

Distinguished Professor of Physics Eugene Chudnovsky
Heads the 11th Annual International Workshop on Nanomagnetism and Superconductivity

The 11th annual International Workshop on Nanomagnetism and Superconductivity was held this past June 29th to July 3rd in Comarraga, Spain. Distinguished Professor of Physics Eugene Chudnovsky has organized and co-chaired the Workshop since its founding in 2005. The official part of the Workshop consisted of invited talks and one poster session on all areas of nanomagnetic and superconducting research: spintronics, novel magnetic and superconducting phases, and low-dimensional systems. The “unofficial” part included the annual Spain vs The Rest of the World Soccer game. Chudnovsky (seen in goal below) captained the Rest of the World to a 3-3 tie this year. “This is another incentive to bring more students from Lehman to Spain for the workshop,” says Chudnovsky. “In 2014 my undergraduate student Jonathan Mohallem, who is on the Lehman soccer team, saved our team from a big upset.”
MCS and NSBE Host Second Annual Hackathon Challenge

The Department of Math and Computer Science teamed up once again with the Lehman Chapter of the National Society of Black Engineers (NSBE) to host the second annual Lehman College Hackathon on October 16 and 17. The winning team – a group of students from Lehman and Hunter Colleges – took home the first prize of $3,000.

More than a hundred students from across New York City descended upon Lehman to collaborate in teams and compete to develop new applications, games, and websites within the high-pressure 24-hour time limit. Hackathon began around 10am on the 16th and wrapped up at noon the following day. Lehman president Dr. Ricardo Fernandez was on hand to award the winning team.

The winning product included a mobile app, website, and backend database designed to provide services for at risk stray animals as well as for beloved pets. Among other things, the system was designed to matchup volunteers with animals in need of a place to stay temporarily. It provided an attractive, functional, and easy to use interface to their database.

The event was held in the East Dining Room, but the students brought sleeping bags to catch a nap if needed across the way in the Faculty Dining Hall. Contestants met with potential employers and mentors from prominent companies including IBM, Goldman Sachs, JP Morgan Chase and Pandora who co-sponsored the event the Hackathon.

A team of professors from Lehman’s Department of Mathematics and Computer Science, led by Chair Dr. Brian Murphy, and representatives from Goldman Sachs and IBM judged the projects.

“MCS and NSBE Host Second Annual Hackathon Challenge”

The Hackathon Brain Trust: Lehman Students from the campus chapter of the National Society of Black Engineers

“ABC” Puts Student on the Path to a Medical Degree

Upon her graduation, Cecilia Asante (class of 2013) was the recipient of the John C. Saunders and Lucie Wood Saunders Scholarship, a $5,000 grant established to assist students who graduate from the Anthropology Department’s “ABC” program (Anthropology, Biology and Chemistry) and who have been accepted to any medical or dental school.

The funds have helped put Cecilia on track to earning her M.D. She received her M.S. in Basic Medical Science from New York Medical College in May 2015 and started the M.D. program in July.

Cecilia was in the second year of business school in Ghana when she decided to immigrate to the United States 7 years ago. She also chose a new career path; in Fall 2009, she enrolled at Lehman College in order to pursue the ABC degree – a unique interdisciplinary major with tracks in either physical anthropology or criminalistics and for premedical, predental, and preveterinary medicine.

“I have never regretted this choice,” says Cecelia. “The whole experience of the A-B-C major was gratifying. Through this discipline, I came to appreciate the universality of human life and how culture has shaped each individual one way or another. It is my goal to use this discipline as the lens through which I will see each of my patients, as being unique and thus require a unique treatment. After completing my education, I hope to return to the Bronx or serve another underserved community.”

Anthropology Department Chair Dr. Victoria Sanford is proud of what the major is accomplishing and the assistance the Fund gives students to realize their goals. “The ABC major sets students on the path to medical school and the Saunders scholarship is a great incentive to keep students on track to achieve their dream of becoming a doctor.”
Meet Homo Naledi (cont’d)

Second it expands our understanding of our own genus, Homo, and changes the way we think about it. These creatures were small brained, and yet were engaging in what seems to be fairly complex behavior (e.g., disposing of their dead, which is why we found 1500 fossils scattered in the same place).

NSS: What do you think it might mean for our understanding of human evolution?

WHS: It means that we have to reevaluate how we may define our own genus, Homo. We always thought that one of the defining features was obligate (i.e. 100% committed) upright walking, but now we have something that obviously spent some time in the trees.

NSS: You played an integral role as a senior scientist on the research team. Can you briefly explain what that entailed?

WHS: I led one of the research teams. We split things down to different regions of the body that related to important adaptations in our lineage. We had a head team, teeth team, hand team and so on. I led the team that worked on the foot, which is pretty important to understanding the evolution of upright walking.

NSS: Were you on site at Rising Star during the excavation process?

WHS: No, I wasn't, and I wouldn't have fit down the cave!

NSS: In an endeavor like this, there is probably a ton of excitement among the research team. Did you know what you had discovered immediately, or did it take time to realize it?

WHS: I knew pretty quickly that this was likely to be very exciting. There was already a lot of excitement about the excavation. However, as a scientist one has to be rational and objective, so I did my best to contain things until I got down to South Africa to work on it. Once I was there I was blown away by, first, how many fossils there were. That was amazing. Then came the slower task of identification and analysis. However, pretty quickly we realized that this was something that was unique, and therefore a new species, which was very exciting.

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NSS: There has to be an enormous amount of preparation to “translate” the science of the discovery into something for popular consumption. As a scholar and a scientist, how do you go about making sure that the general public understands the discovery and its importance?
Flipping Out on Chemistry

Chemistry Department at Lehman pioneers instructional innovation that is model for the rest of the country

After decades of attempts to reverse the trends, there is a growing consensus that efforts to direct more women and minority students to STEM fields are failing. The proportion of underrepresented groups in science still remains at or beneath where they were at the turn of the 21st century. In 2015, African American and Latino workers comprise only 15 percent of the advanced manufacturing, computing and engineering workforce, while women make up just 26 percent.

At Lehman College, the Chemistry Department, led by Chair Pamela Mills and Assistant Professor Donna McGregor, is trying to do something about that.

In common parlance, it is called the “flipped classroom” and gets away from the traditional “chalk and talk” lecture format that most college faculty utilize. In fact, a recent column in the NY Times suggested that the traditional lecture not only fosters a passive and arguably negative learning environment, it may actually discriminate against women, minorities, low income and first generation students.

In the flipped classroom, students use videos to learn content at home and then come into the classroom to engage in complex problem solving.

“We’ve used the flipped classroom in our gateway General Chemistry courses at both Hunter and Lehman Colleges, totaling 3500 students over the past two years,” says Dr. Mills. “Indications are that it is working. At the end of the one-year course we administered a national standardized chemistry exam. Students at both Hunter and Lehman did a full grade point better than the national average.”

This could have enormous implications for a campus like Lehman College, where two thirds of the undergraduate student body is female, 49 percent is Latino and another 31 percent is African American. The median family income for the Lehman student hovers around $30,000 per year, and the average age of the Lehman student is 27. In fall 2015, transfer students comprised 76 percent of the incoming class.

Mills, McGregor, and other faculty in the Chemistry Department have wagered that the flipped classroom model could potentially transform STEM outcomes for underrepresented groups. Others seem to agree: their results were so tantalizing that the National Science Foundation has funded a study to compare the flipped model with other active learning classrooms at Lehman and Hunter Colleges over the next 2 years.

“The question really is not whether it works, but why,” says Dr. McGregor. “We think that the structure of the model helps students develop key self-regulatory skills. In class students continually assess their knowledge, commit to answers, confront their errors, and interact with their peers. Out of class students must organize their time, arrange study sessions, and seek help if needed in order to meet the weekly requirements.”

The content of the course was designed to follow emerging principles in outstanding pedagogical practices. The videos are all vetted by chemistry faculty at CUNY. They are short and carefully linked to specific practice problems students solve online. Their content is carefully designed to support the growth of student knowledge. Each week students come to class to engage in “Peer Instruction”, an active learning strategy pioneered by Eric Mazur at Harvard in his physics courses. The classroom gives the professor the opportunity to respond directly to the class’s collective needs to speed up or slow down or review particularly thorny or difficult content. “We no longer waste time on concepts or skills the class has mastered and spend time on concepts and skills that are more difficult,” says McGregor. “Our expertise on learning is more efficiently employed.”

At Hunter College where both Mills and McGregor taught before coming to Lehman in 2015, the flipped classroom model was used in jumbo courses, with up to 900 students at a time. Pass rates exceeded 75%. Similar success has been shown here at Lehman in those same courses, which indicates that instruction has more to do with success than demographics. At least, that is the hope.

“I think its promise lies in the ability to improve test scores and pass rates in STEM disciplines,” argues Mills. “But a lot more is riding on the success of this pedagogical innovation than improved test scores and more complete data sets. In an increasingly diversified America, we just can’t afford – economically or morally – to shut the doors of opportunity to careers in STEM fields to women and minorities because we haven’t figured out how to teach it to them. We won’t let that happen at Lehman. They will learn if we re-learn how to teach chemistry and the other sciences.”
In many ways, Miguel Rondon’s (Class of 2014) story is the quintessential modern Bronx tale. He was born in Santiago, Dominican Republic. At age 2, his parents and his older sister immigrated to the Bronx with no family support network or friends to rely on. His parents spoke little English while he was growing up. His father never made it past the 8th grade in D.R., while his mother had only completed high school. “All of these things created difficulties when I asked for help with homework, conversations during parent teacher conferences and even filling out paperwork, and so on,” Rondon explains.

Despite these obstacles, the Rondons understood why they had come to the United States and chose to settle in the Bronx: to have their kids get an education and search for a better life. When he graduated from Lehman College in 2014 with a B.A. in Political Science, Miguel became the first person in his family to earn a four-year college degree.

But that was not enough. Rondon wanted to make sure he put his degree to work for the people of his community in the Bronx.

“I’ll admit that Lehman College was not my first choice, and neither was Political Science,” says Rondon. “But Lehman was close to home, and one of my mentors called it the ‘hidden gem of the Bronx.’ I agree. It was the best decision I could have made.” Rondon began taking political science courses and loved the material. By the time he was a senior, he knew he needed some “real world” experience if he wanted a career in government. So he secured an internship for a local City Council Member, Ritchie Torres.

As he was winding up his college career, Rondon decided to volunteer on the re-election campaign of State Senator Gustavo Rivera, who has represented the neighborhoods around the gates of Lehman College since 2010. Rivera won re-election in 2014, thanks in large part to the work of volunteers like Rondon. The Senator took note of his dedication and eagerness – and decided to hire him.

“It’s rare you see someone so young with the intellect, savvy, passion, and compassion that Miguel brings to his work,” Senator Rivera explained. “He understands intuitively what government and public service is all about: using your mind and heart to help those who don’t have the resources to help themselves.” All in the neighborhoods Rondon grew up in.

“It is a great feeling to be in the position to help people from my neighborhood, many of whom are like my parents who came here with very little and don’t speak English,” Rondon says. “Although sometimes it may be overwhelming due to the amount of people who come into the senate office needing assistance, it feels great when you have a success story and were able to make someone's life better.”

Just over a year into the job, Rondon has already moved into a crucial position in the Senator’s office. “I am now Special Assistant to Senator Rivera, managing his schedule and the day to day operations of the District Office. It’s located just across the street from CUNY on the Concourse off Fordham Road.” But already Rondon has his sights set on higher goals. He is currently pursuing his Master’s degree in Public Affairs at Baruch College, and in 10 years he sees himself well on his way his ultimate goal - Chief of Staff for a future President of the United States.

Wherever his political career leads him, Rondon is clear about its origins.

“Lehman opened the doors to this pursuit, to this path I am on. In Lehman I had great mentors and made a strong network of friends who have their minds in the right place who believe in me. Ultimately I want to live the American Dream like everyone else does. But at the end of the day, I want to be successful so I am able to give back to those who have given so much to me – family and my community.”
Dr. Renuka Sankaran in Biological Sciences recently received a USDA/NIFA Higher Education Challenge Grant to enhance minority student participation in the Plant Sciences. Sankaran will serve as the co-PD and receive $100,000 out of the $626,000 grant to mentor 4 undergraduates per year, provide mentored research experiences, and increase awareness in preparation for careers in plant sciences through internship training.

Dr. Eric Delson in Anthropology spent the year working on a number of collaborative projects dealing with the interpretation of fossil monkeys from Africa and Eurasia, which are in various stages of publication. This year he participated in three presentations at the annual meeting of the American Association of Physical Anthropologists, in St Louis, one on cranial shape and intrageneric diversity in the genus Cercopithecoides, a second on Cercopithecoides williamsi that shows the earliest fossil evidence for pollical reduction in a fossil colobine, and a third that is a review of Olduvai cercopithecoids revealing a newly recognized taxon and biochronological connection to South Africa. On top of the publications, Delson has organized an open-access online data base called PRIMO (PRImate Morphometrics Online-- http://primo.nycep.org) where he places all metrical data he and his colleagues have collected over the past 45 years for use by any interested colleague or student. He received a PSC-CUNY grant this cycle to reorganize and reprogram the web system for easier access.

Dr. Matthew Johnson in Math and Computer Science received an INSPIRE grant jointly funded by the Algorithmic Foundations program in the Computing and Communications Foundations Division in the Directorate for Computer and Information Science and Engineering, the Environmental Sustainability program in the Chemical, Bioengineering, Environmental, and Transport Systems Division in the Directorate for Engineering, and the Office of Integrative Activities (OIA) INSPIRE program.


Dr. Vincent Prohaska from the Psychology Department accompanied two of his students, Sara Mazo and Nadia Floyd, to the annual meeting of the New England Psychological Association where they presented on scholarships, grants, and awards available from Psi Chi, the international student honor society for the science of psychology. The students’ attendance was supported by funds raised by the Lehman College Psi Chi chapter.

Distinguished Professor of Mathematics and Computer Science Victor Pan received a $350,000 National Science Foundation Grant “Novel Methods for Fundamental Matrix and Polynomial Computations” several years ago and since has published one book chapter and 8 papers in Journals and refereed Conference Proceedings. Another 4 papers have been accepted by Journals subject to revision. Dr. Pan has been serving as an area editor of 2 journals "Theoretical Computer Science" and "Calcolo."
Dr. Dimitra Karabali in Physics and Astronomy recently secured a National Science Foundation grant: "RUI: Studies in field theory: Casimir effect, Yang-Mills theory", $105,000 for three years, starting September 2014, and PSC-CUNY grant, "Investigations on Casimir effect." Recent manuscripts include: "Boundary conditions as dynamical fields", D. Karabali and V.P. Nair, submitted for publication to Physical Review D, July 2015. Karabali was elected KITP (Kavli Institute for Theoretical Physics at Santa Barbara, California) Scholar for 2013-2015 and selected as a 2015 Outstanding Referee by the American Physical Society. She was invited to the following workshops: "Current themes in high energy physics and cosmology", August 17-21, 2015, Copenhagen, Denmark, and "Workshop on Geometric Aspects of the Quantum Hall Effect", December 14-18, 2015, Cologne, Germany.

Two Lehman College undergraduates, Liam Riley and Aileen Fernandez, received REUs this year in conjunction with a National Science Foundation grant held by Professor Cameron L. McNeil. Prof. McNeil, an archaeologist, is investigating landscape transformation and issues of sustainability at the pre-Columbian town of Rio Amarillo, which lies 20 km to the east of the UNESCO World Heritage site of Copan, an ancient Maya city. Undergraduate Liam Riley spent a month at the laboratory in Copan extracting starch grains and phytoliths from ground stone materials under the direction of Dr. Shanti Morell-Hart, an archaeobotanist. Aileen Fernandez spent 6 weeks in Copan analyzing chert lithic debitage to learn more about its production in ancient household contexts under the direction of Dr. Nathan Meissner.


Dr. Edward Kennelly in Biological Sciences recently returned from sabbatical in which he conducted 18 different lectures at universities and conferences in Asia. A total of about 800 people were in attendance. Kennelly was also elected President of the American Society of Pharmacognosy [http://www.pharmacognosy.us/](http://www.pharmacognosy.us/). He has 8 publications so far in 2015 along with several grants: Fulbright, CUNY Collaborative with College of Staten Island Professor Jimmie Fata; 111 Minzu University in China – year 8 of this strong collaboration that has brought 12 scientists to Lehman, and support Kennelly and his students to collect plants and give lectures in China.

This past summer, Dr. Rob Schneiderman in Math and Computer Science was a

Dr. Suzanne Yates from Psychology with student Daisy Berisha at graduation in 2015. Dr. Yates supervised Daisy’s year-long Honors in Psychology research project which was presented at the department’s Spring 2015 Colloquium. Her paper, titled "Boss or Bossy: Perceived Assertiveness in Women and Men in a group settings," won the annual Psychology Honors Prize. In Fall 2015 Daisy began her studies at the Pennsylvania School of Optometry at Salus University.

Dr. Christa Salamandra (seated middle left) from the Anthropology Department returned to her alma mater, Oxford University, for a two-day invitation-only conference celebrating the scholarship, teaching, and legacy of her mentor Dr. Paul Dresch – the renowned Social Anthropologist who has written extensively on Yemen and the rest of the Arab world. Salamandra delivered a paper at the "Paul Fest" titled *It’s Not about the Data: A Mirror for Fieldworkers*. 
visiting researcher at the Max Planck Institute for Mathematics, in Bonn, Germany. In Winter 2016 he has been invited to participate in a mathematics conference at the Banff International Research Station for Mathematical Innovation and Discovery, in Alberta, Canada. Schneiderman’s research is supported by a 5-year Collaboration Grant for Mathematicians from the Simons Foundation.


**Dr. Jeannette Graulau** from the Department of Political Science has submitted her manuscript *The Underground Wealth of Nations: on the Capitalist Origins of Silver-Mining, A.D. 1150-1450* to Yale University Press for publication in summer 2016. The book builds a succinct geographic survey of world mining regions before the sixteenth century, from the Beatic Cordillera in southern Spain, to the islands of Japan, drawing upon medieval legal sources. It describes the following mining aspects: division of labor; structure of mining shares; industrial organization; investors’ rights and responsibilities; and governance. The book’s central argument is that silver mining was a capitalist business long before the rise of what Immanuel Wallerstein called the modern world-system (A.D. 1450-1650).

**Dr. Katherine St. John** from Math and Computer Science has had her paper titled “Bounds on the Expected Size of the Maximum Agreement Subtree” accepted by the *SIAM Journal of Discrete Mathematics*. She is also the Principal Investigator on NSF Grant #1461094, “REU Site: Interdisciplinary Undergraduate Research in Discrete Mathematical and Computational Biology,” 2015-2018 ($230,602), which provides research experience for 10 undergraduate students a year. **Dr. Megan Owen** from Math and Computer Science is also investigator on the REU grant.

**Dr. Eleanor Wurtzel** from Biological Sciences has published the following articles with colleagues: “Control of carotenoid biosynthesis through a heme-based cis-trans isomerase,” In *Nature Chemical Biology* 11(8):598-605; “The Phytoene synthase gene family of apple (*Malus × domestica*) and its role in controlling fruit carotenoid content.” *BMC Plant Biology* 15:185; and “Mechanistic aspects of carotenoid synthesis,” in *Chemical Reviews* 114:164-193. She also serves on the American Society of Plant Biology- Women in Plant Biology Committee and serves on the Gordon Research Conferences (GRC) Board of Trustees. The GRC Board of Trustees evaluates new and existing conferences as well as provides fiscal oversight and directives to the GRC such as the new initiative to expand globally and develop conferences in Asia.

**Dr. Megan Owen** from Math and Computer Science received the NSF Research Experience for Undergraduate (REU) grant ($230,600) along with Dr. St. John for the next three years. She also received a Simons Collaboration Grant for Mathematicians this summer ($35,000 over 5 years). Along with Sameh Fakhouri, Dr. Owen is piloting the automatic code grading system Mimir for their sections of Programming II (CMP 326) and Data Structures (CMP 325).
Such a system allows students to submit their homework early, receive direct feedback, and revise as appropriate before final submission. It would bring Lehman into line with current best practices in programming pedagogy. Last summer, Dr. Owen had two Lehman undergraduates, Aurora Koch-Pongsema and Christian Aviles (seen in photo with Dr. Owen), work as research assistants. Aurora and Dr. Owen are currently writing a paper on new methods for visualizing and comparing distributions of phylogenetic (evolutionary) trees.

**Dr. Christina Sormani** in Math and Computer Science has been named a 2015 Fellow of the American Mathematical Society (AMS) for her contributions to geometry, including the study of Ricci curvature. Sormani was also cited for her mentoring activities, especially of young mathematicians from underrepresented groups. The Fellows program recognizes AMS members who have made outstanding contributions to the creation, exposition, advancement, communication, and utilization of mathematics.

**Dr. Naomi Spence** from the Department of Sociology received funding from the American Sociological Association's Carla Howery Teaching Enhancement Program to develop an experimental course “Survey Research on Latino Families in the U.S.” This pilot course will complement several departmental and University-wide efforts to build the research and critical thinking skills of students and provide guidance for the development of larger efforts. Spence’s project extends Sociology’s tradition of liberal learning that addresses several of the recommendations of the ASA Task Force on the Undergraduate Major. Dating back to the Sociology Department’s participation in the ASA-sponsored (and NSF-funded) Integrating Data Analysis (IDA) project. The course will address the topic of Latino families in the U.S. Widespread interest in Latino families in the United States stems from their continued significance for population growth and change given the population’s age structure and relatively high birth rates. Questions about how Latinos will affect population change through the maintenance or modification of family formation patterns are situated at a nexus of sociological concerns, including the sociology of the family, immigration and adaptation, and racial and ethnic stratification. This topic is expected to be of interest to Lehman students, many of whom live in Hispanic dominated neighborhoods in the Bronx and nearby areas. Indeed, these subjects garner significant interest when they arise in existing courses Sociology of the Family, Population and Society, and Immigration and Adaptation.

**Associate Professor of Anthropology Stephanie Rupp** is conducting research on the historical and social contexts of the emergence of HIV-1M, the strain of HIV that caused the global pandemic, resulting in 70 million infections globally. This research builds on twenty years of ethnographic research that she has conducted in the Congo River basin, in the forest where the subpopulation of chimpanzees, the reservoir for the simian (non-human primate) immunodeficiency virus, or SIV, is located. She is studying changes in relations between people and non-human primates including hunting and capture, changes in relationships between people, including colonial-era labor regimes and movement, and the introduction of new medical interventions such as colonial-era injection campaigns, surgeries, and blood transfusions. Professor Rupp is part of an international, interdisciplinary team of anthropologists, historians, virologists, and epidemiologists supported by a collaborative research grant provided by the National Endowment for the Humanities.