

CHEM BOND

UC's INDUSTRY ENTERPRISE

Department of Chemistry alumni are taking industry by storm in aeronautics, pharmaceuticals and more.

From the Editor



Greetings! As the editor of ChemBond, I am excited to bring you our 2010 issue, filled with the accomplishments of the Department of Chemistry from the past academic year.

The 2009-2010 school year was a great one for the department. Inside this issue, you will read about many of our accomplishments. Our faculty has received numerous accolades, as well as funding for research from government agencies such as the National Science Foundation and the National Institutes of Health.

After five years of doing an excellent job as head, Pat Limbach has stepped down. Bill Heineman became head effective Sept. 1. We all thank Pat for his hard work and wish Bill the best of luck with his new responsibilities. Also effective Sept. 1, we have a new colleague, Peng Zhang. We will include more information about Peng in the 2011 issue.

This issue of ChemBond focuses on what our graduate students have done after they left UC. They have extended the knowledge gained here in ways that most of us could not even imagine. I think you will find their accomplishments impressive.

I invite you to share your alumni news with us on our department's website (www.che.uc.edu/alumni_community), as well as any suggestions you may have about ways our department can improve, grow and excel.

Thank you for your continued interest in the Department of Chemistry.

Sincerely,
Allan Pinhas
Professor and Assistant Head

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Space photo by NASA

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— Tell us what you think!

McMicken College of Arts and Sciences strives to keep chemistry alumni and friends informed of the latest news in the department. Please take a few minutes to tell us what you think about ChemBond in our on-line survey at www.surveymonkey.com/s/artsci_newsletters.

'Up and Coming' Chemistry Faculty Get National Science Foundation Recognition

Every assistant professor hired by UC's chemistry department from 1998 to 2008 has received the prestigious NSF CAREER grant, given to junior faculty in recognition of their research and teaching potential. By: Wendy Beckman

Every action has an equal and opposite reaction. Pay it forward. So what does Newton's "Third Law of Motion" have to do with a concept espoused by Benjamin Franklin? These two principles combine for some powerful teaching and research in the chemistry department at the University of Cincinnati.

Since 1995, the National Science Foundation (NSF) has awarded grants to junior faculty through the Faculty Early Career Development (CAREER) Award program. The grants are among the most prestigious awards that junior faculty members can receive. Many faculty at the University of Cincinnati started their careers at the university with such a research boost from the NSF — especially those in McMicken College's Department of Chemistry.

"I'm very proud of our young faculty."

-Former Department Head & Professor Pat Limbach

"Every one of our assistant professor hires, dating back to 1998, has received a CAREER award," says former department head Pat Limbach. "What's truly impressive is the consecutive string of assistant professor hires who have received this award."

Only offered to assistant professors without tenure, the CAREER

awards are intended for faculty members who are beginning their careers in tenure-track appointments. UC's young chemists are studying photons, toxins in food, green chemistry, cytoskeletal protofilaments and more. Four of them have been promoted to associate professor and one has been promoted to full professor since receiving their awards.

An important component of the award is also advancing education of young students. For example, the CAREER recipients often offer their research groups to mentor the Women in Science and Engineering participants. In the summer of 2009, Whitney Howard worked in Bill Connick's lab studying new materials for chemical sensing as part of the annual Research Experiences for Women Undergraduates program.

Limbach is justifiably pleased with the caliber of the chemistry department.

"I'm very proud of our young faculty."



2001

Professor **Anna Gudmundsdottir**, hired in 1998, CAREER award in 2001 for "Photolysis of Alkylazides in Solution and in Crystals."



2002

Associate Professor **William Connick**, hired in 1998, CAREER award in 2002 for "Studies of Two-Electron Photo-Reagents."



2005

Former Associate Professor **Theresa Reineke**, hired in 2002, CAREER award in 2005 (moved to Virginia Tech in 2008) for "Synthetic Design and Biological Study of Novel Polymeric DNA Delivery Vehicles."



2006

Associate Professor **James Mack II**, hired in 2003, CAREER award in 2006 for "Utilization of Mechanochemistry for Solvent Waste Reduction."



2009

Assistant Professor **Ruxandra Dima**, hired in 2006, CAREER award in 2009 for "Multiscale Investigations of Micromechanics of Cytoskeletal Protofilaments."



2009

Associate Professor **Suri Iyer**, hired in 2004, CAREER award in 2009 for "Tailored Glycoconjugates for the Precise Detection of Toxins and Pathogens."



2010

Assistant Professor **Hairong Guan**, hired in 2007, CAREER award in 2010 for "Nickel and Iron Complexes as Efficient and Selective Catalysts for Carbon Dioxide Reduction and Organic Synthesis."



2010

Assistant Professor **George Stan**, hired in 2006, CAREER award in 2010 for "Computational Modeling of Biological Nanomachines - Protein Unfolding and Translocation by Clp ATPases."

Department News

— Alumni

Lee A. Fleck ('69, BA) commissioned the first water bottling plant for the U.S. Army in a war zone during Operation Iraqi Freedom just before his retirement after nearly 40 years. This first of a kind facility provided a safe supply of drinking water for US troops. The success of this endeavor was published on the front page of the March 30, 2006 publication of the Pentagon newspaper Stars and Stripes.

Elizabeth Ann (Bockerstette) Gaitley ('06, BA) graduated with her master's in physician assistant studies in July 2009 and married Oct. 2, 2009.

Amy E. Irwin ('92, BS; '97, PhD) has just joined the faculty at Pikeville College in Pikeville, Ky. as a professor of chemistry. She and her son Philip (20) have just relocated to Pikeville from Pittsburgh. They are excited about getting to know the small town of Pikeville and the family they've adopted by joining the college community.

James F. Lang ('58, BS; '70, MS) has two granddaughters currently attending UC. One is a sophomore in DAAP, the other is a freshman in the College of Business.

Hong Shen ('95, MA; '97, PhD) received his Juris Doctorate with Honors from Concord Law School of Kaplan University on Feb. 27.

What's New With You?

Please help us update our alumni files and let your friends know what you have been doing in future publications. To share your news online, visit www.artsci.uc.edu/alumni.

Sign Up For McMicken Monthly

Have all the latest news from McMicken College delivered straight to your inbox once a month. Keep informed and sign up today for the McMicken Monthly e-newsletter at www.artsci.uc.edu/mcmickenmonthly.

— Undergraduate

Justin Baum earned the Lubrizol Scholarship for an outstanding sophomore or junior chemistry major with great potential.

Aaron Decker received a University Research Council (URC) Summer Research Fellowship.

Alexander Duncan received the Stella Potter & Hoke S. Greene Scholarship for an outstanding sophomore chemistry major demonstrating outstanding academic achievement.

Amaleah Hartman received the Darl McDaniel Scholarship for an outstanding freshman chemistry major with great potential.

Chelsea Korte received the M. Brayton Graff Senior Scholarship for an outstanding junior chemistry major showing great promise and potential in the field.

Justin Morrison received the Henry Storch Award for the senior chemistry major with the highest grade point average in subjects outside the major area.

Graciella Negri earned the Thomas E. Senior Scholarship for an undergraduate chemistry major showing great promise.

Chemistry Phi Beta Kappa electees are **Mostafa Ibrahim** and **Justin Morrison**.

Bradley Theilman received the Award for the Highest Achievement in First-Year Chemistry.

— Graduate Students

Eme Amba received the CGSA Graduate Student of the Year Award for outstanding all-around contributions to the Chemistry Graduate Student Association and the Department of Chemistry.



Eme Amba

Eme Amba, Bridgett Coleman and **Teresa Cook** were selected to give oral presentations at the NOBCChE Northeast Regional Meeting held at Massachusetts Institute of Technology.

Papri Bhattacharya received an ACS Division of Inorganic Chemistry travel award to attend the fall 2010 ACS National Meeting in Boston, Mass.

Sumit Chakraborty was selected to receive an ACS Division of Inorganic Chemistry travel grant to participate in the 237th ACS National Meeting in Salt Lake City.

Sumit Chakraborty, Ashish Kulkarni, Upul Ranaweera, Will Shearouse, Dan Waddell and **Qilin Chan** were awarded URC Summer Graduate Student Fellowships.



Bridgett Coleman

Bridgett Coleman received the Procter & Gamble Fellowship for recognition of outstanding research performance by a graduate student showing great potential.

Yun He won third place for her poster presentation at the 14th annual conference of the Chinese American Chemical Society, Great Lakes Chapter (GLCACs).

Karolin Kroening received student travel stipend for the Fall American Society for Mass Spectrometry Workshop and has been chosen as one of the Society for Applied Spectroscopy's (SAS) Graduate Student Award winners for outstanding research in the field of spectrometry.

Dan Lewallen received the graduate excellence award for exemplary scholarship in physical sciences and engineering.

Lisa Meyers was an Argonne National Lab Summer Scholar and received the Thomas B. Cameron Prize.

Will Shearouse received the Cassandra McGee Service Award, the Milton Orchin Award and the Hillstrom Travel Award.



Floyd Stanley was a Lawrence Livermore Scholar over the summer and received a Nuclear Forensics Graduate Fellowship for the 2010-2011 academic year. He also

Floyd Stanley received the William V. and Mary L. Caruso Award.

Stephen Taylor received the University of Cincinnati's graduate student of the year award and the James O. Koehler Prize for outstanding all-around contributions in research, teaching and service to the department by a graduate student.

Dan Waddell received the Ann P. Villalobos Fellowship for recognition of outstanding research performance by a graduate student.



Dan Waddell

— Postdoc

Manori Jayasinghe and **Jie Zhang** received UC's University Research Council Postdoctoral Fellowships.

— Faculty

Bruce Ault was approved and recognized by the Board of Trustees as Distinguished Teaching Professor.

Neil Ayres received a URC Interdisciplinary Grant.

Albert Bobst received the 2010 Hans H. Jaffé Faculty Award for excellence.

Joseph Caruso was named a fellow of the Society for Applied Spectroscopy.

James E. Mark was honored as an inaugural fellow of the ACS Division of Polymer Chemistry.

Edward Merino received a URC Faculty Research Grant.

Chemistry Department Receives \$1.2M for Lab Renovations

As part of the American Recovery and Reinvestment Act (ARRA), the National Science Foundation granted UC \$1.2 million to renovate three chemistry research labs.

Three chemistry research labs in the University of Cincinnati's Rieveschl Hall will receive makeovers thanks to a \$1.2 million grant from the National Science Foundation (NSF).

The funding—part of the American Recovery and Reinvestment Act (ARRA)—will support the renovation of existing lab space to create:

- a modern inorganic synthesis and characterization facility,
- a laser spectroscopy facility and
- a consolidated computation cluster for theoretical chemists.

Patrick Limbach, professor of chemistry, who coauthored the grant proposal with Greg Robinson, university architect, says that the renovations will allow faculty and graduate students to conduct research that they can't currently do in the existing space.

"These renovations will modernize chemistry research spaces," says Limbach. "The upgrades will be long-lasting and will provide us with an infrastructure that matches the talents of our faculty and graduate students."

Renovations will affect about a quarter of the chemistry department's 105 graduate students and will directly impact several of the 25 faculty members.

Two of the many projects that will benefit from the renovations include computational modeling of the forces that affect cells and the proteins within its cytoskeleton, led by Ruxandra Dima, assistant professor, and the development of organic magnetic materials, led by Anna Gudmundsdottir, professor.

The renovation project will be funded until August 2013. The NSF proposal was a collaborative effort between chemistry faculty and the university's planning, design and construction office, with support from UC's Office of Research.

This renovation grant is the third the university has seen since ARRA funding was made available. Other renovation projects include research labs in the Kettering Building—home to the environmental health department on UC's medical campus—as well as research space in the Medical Sciences Building, also on the medical campus.

Additional renovations within Rieveschl Hall's 400-, 500-, 600- and 700-level labs have been underway for more than a year. Already complete as part of this project is the renovation of the freshmen organic chemistry labs (*see "Chemistry Labs Get Facelift" on page 7*). Renovations consist of ventilation-system upgrades as well as updates to mechanical, electrical, plumbing and lighting systems and lab utilities.

Notes from the *Oesper Collections* Found Tucked in a Book

By: William B. Jensen,
Professor of Chemistry

In addition to its collections of antique chemical apparatuses and its print and portrait collections, the Oesper Collections in the History of Chemistry house more than 17,000 rare books and journals. Many originally resided in the chemistry library, which dates from 1874, and older books are being continuously transferred from the library to the collections as they become outdated and as new acquisitions make increasing demands on the available space.

From time to time, these transfers result in the discovery of some note or photo which was tucked into their pages many decades earlier. Recently two such discoveries were made. The first of these is a previously unknown snapshot of Thomas B. Evans, who served as the third head of the chemistry department and as dean of the College of Engineering from 1905 until his premature death at age 44 in June of 1907.

Born in Cincinnati in 1863, Evans received his undergraduate training at the Columbia School of Mines and a PhD from the University of Erlangen in 1886 for work done under the famous German chemist, Emil Fisher. From 1888 to 1898 he worked for various companies, including Procter and Gamble, as an industrial chemist. In 1898 he joined the University of Cincinnati's Department of Chemistry as an instructor in technical chemistry, becoming assistant professor in 1899 and full professor and chair in 1901.

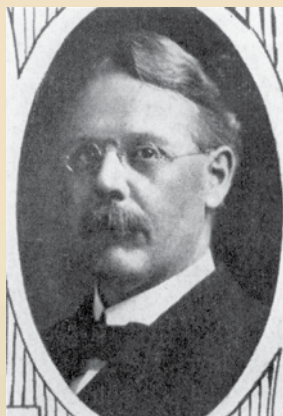


Figure 1: Thomas B. Evans as he appeared in the student yearbook, "The Cincinnati."

Previous to the find, the only known image of Evans was a small, highly stippled, vignette from the student yearbook (figure 1). Upon his death, Evans' widow gave all of his books to the chemistry library, and most of these now reside in the Oesper Collections. The snapshot in question (figure 2) was recently found inside Evans' copy of the 1906 edition of Alexander Smith's "Introduction to General Inorganic Chemistry." The faded sepia print shows Evans (standing on the right) with a group of four unidentified colleagues.

The second find is a portrait (figure 3) of the American chemist Samuel Parsons Mulliken (1864-1934). He is best known for his massive reference work, "A Method for the Identification of Pure Organic Compounds by a Systematic Analytical Procedure Based on Physical Properties and Chemical Reactions," and as being the father of Robert S.



Figure 2: Snap-shot of Thomas Evans (standing right) found tucked in the pages of the 1906 edition of Alexander Smith's "Introduction to General Inorganic Chemistry."

Mulliken, who won the 1966 Nobel Prize in Chemistry for his work on molecular orbital theory. The analytical scheme developed by the elder Mulliken would form the basis of the courses in qualitative organic analysis. It was a standard feature of the chemistry curricula in American universities between 1918 and 1970, when the preparation of derivatives and the determination of melting points and solubilities were finally displaced by newer methods of analysis.

The portrait, which shows Mulliken in his army uniform and dates from his service during World War I, has obviously been clipped from a magazine. It was found tucked in the pages of the department's copy of Mulliken's magnum opus when it was transferred to the collections. It had been placed there more than 70 years ago by someone who obviously not only admired Mulliken's work, but who possibly also remembered that Mulliken had been briefly associated with UC many decades earlier as an assistant to Evans' predecessor, Thomas Norton, during the years 1888-1889.



Figure 3: A portrait of Samuel Parsons Mulliken found in volume 1 of his reference work, "A Method for the Identification of Pure Organic Compounds."

Chemistry Labs Get

FACELIFT

Beginning fall quarter, all freshmen and organic chemistry students will conduct their science experiments in newly renovated, highly technical laboratories. By: Kim Burdett

The Department of Chemistry is seeing a \$15 million dollar facelift that will affect all freshman and organic chemistry laboratories in Rieveschl Hall.

The state-of-the-art labs will feature multimedia projectors, more workspace for students and an upgraded version of MeasureNet, the electronic data collection system developed by chemistry department faculty and staff (and currently used by more than 60 colleges worldwide) that enables electronic acquisition of experimental data from individual student workstations.

The labs, which see nearly 1,500 students each quarter, previously didn't have audio/visual capabilities and only limited real-time data acquisition facilities. New modes of operation will now be possible, such as using video pre-lab presentations or combining and displaying the results of all students working on one of the workstation networks, enhancing the educational experience for the students.

"The new labs provide a much more conducive learning and working environment for the students," says former department head and professor Patrick Limbach. "There is more technology incorporated into the lab, which enables state-of-the-art teaching."

The organic labs will feature a room full of ventilated fume hoods—devices designed to limit users' exposure to hazardous material—that allows students to conduct

experiments in a safer lab environment similar to organic chemistry labs in the chemical industry.

The first phase of the renovations was completed by March 1, permitting freshmen to make use of the lab during spring quarter. Two more freshman labs and two new organic labs have been completed.

Other changes included renovating the supply stockroom and creating a student lounge and a TA help room for all freshmen and organic chemistry students.

"The labs will be as good as laboratories can get. It'll be a vast improvement from where we were," says former academic director David Knowles, who along with undergraduate program director and professor Bruce Ault, oversaw the renovations. "It gives staff and faculty a great scope to improve the number of experiments they run and the experiences of students will also be greatly enhanced."

He continues, "It's a great boon for the department."

The lab renovations were made possible with funding from McMicken's Office of the Dean and the Office of the Senior Vice President and Provost.

"The labs will be as good as laboratories can get."

-Former Academic Director
David Knowles



UC's INDUSTRY ENTERPRISE

These illustrious chemistry alumni are making their marks in the corporate world. By: Kim Burdett

Benadryl, the polio vaccine, the Golden Gate Bridge. Alumni at the University of Cincinnati have some impressive feats on their resumes. In the Department of Chemistry alone, more than 3,000 students have graduated and garnered accomplishments in academia, industry and life.

Just as diverse as the backgrounds of these alumni are the fields in which they have landed. After all, a PhD in chemistry doesn't necessarily mean a lifetime of lecture halls and laboratories.

Go ahead and ask the alumni featured here. All four have earned their doctorates in UC's Department of Chemistry, and all four are doing successful, unique work in their fields. Whether they are meeting with the Food and Drug Administration on new pharmaceutical products or building NASA-dubbed spectrometers, all have said the same thing: UC played a significant role in preparing them for their careers in industry.

Weighing In On the Matter

It should come as no surprise that Juris Meija—dubbed the “chemistry guru” during his time on campus—was recently inducted into the Commission on Isotopic Abundances and Atomic Weights.

A prestigious international group of 12 members, the CIAAW is responsible for evaluating the atomic weights and isotopic abundances of elements.

Meija, 30, is the youngest current member in the CIAAW and is the first Latvian in the organization's century-long history.

“The commission is the final authority on atomic weights and making any changes that are currently associated with the periodic table,” says Joseph Caruso, professor and advisor of Meija. “It's a small and select group. It's a big deal.”

After graduating from UC in 2005 with his PhD, Meija worked as a postdoctoral fellow for the National Research Council Canada. As a scientist for the chemical metrology group of the Institute for National Measurement Standards (NRC-INMS), Meija and colleague Zoltán Mester published a series of papers challenging the paradigms on the evaluation processes of atomic weight measurement results.

“We were able to find a fundamental flaw in the way people interpret or analyze atomic weight results,” Meija says.

When he presented his research to the CIAAW, the members not only took his theory into consideration, as Meija had hoped, they offered him to be a part of the prominent organization.

“I was just trying to present my theory. It was my best shot to disseminate my research and hopefully have it taken seriously,” Meija says. “I was not expecting to be elected into the club.”

Caruso is not at all surprised by Meija's new role.

“Through his publications and presentations, he's been noticed worldwide for the capabilities he has in the area of isotope chemistry,” he says. “It's an honor for us to have had a student of Juris' capability.”



Photo courtesy of Anne Vonderheide

Marketing Chemistry

For a company that develops a variety of analytical science solutions such as ultra performance liquid chromatography (UPLC) and mass spectrometry systems, Dorothy Phillips (PhD, '74) is somewhat of a gatekeeper for Waters Corporation. As the director of strategic marketing, she is instrumental in the company's decision to create the products in the first place.

"I decide if the technology has a potential for us to license," the biochemistry alumna says. "It requires me to see the larger picture from a competitive standpoint. How do you commercialize a product? What impacts a market? I just really have to be aware of my competitors."

When she first began at the company, Phillips helped develop Oasis—a sorbent that extracts compounds from a solution, like drugs from a blood sample. Its main use is for pharmaceutical clinical trials, but it is also applicable for forensics and drug-testing athletes.

Colleagues urged Phillips to become the product's brand manager and since then she's moved up the ranks. While she now has a marketing role with a broader scope, Oasis continues to be Waters' best-selling sample preparation product and the leading sorbent of its kind worldwide.

"I think she is one of our more illustrious alumni with a great career in industry," says Chemistry Professor Albert Bobst, Phillips' advisor during her time at UC.

Her successes have been noticed. Phillips received the first-ever Waters Leadership

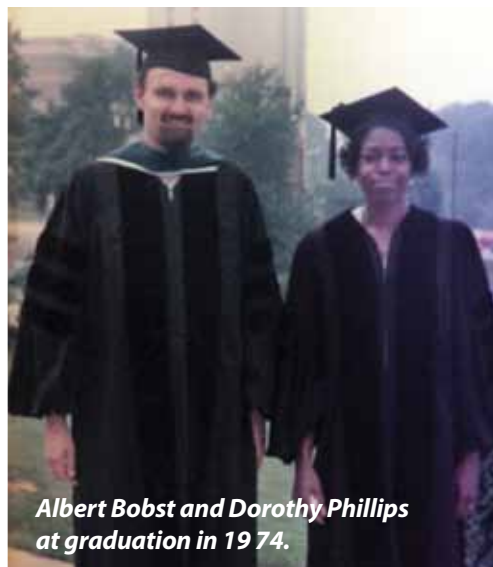


Dorothy Phillips

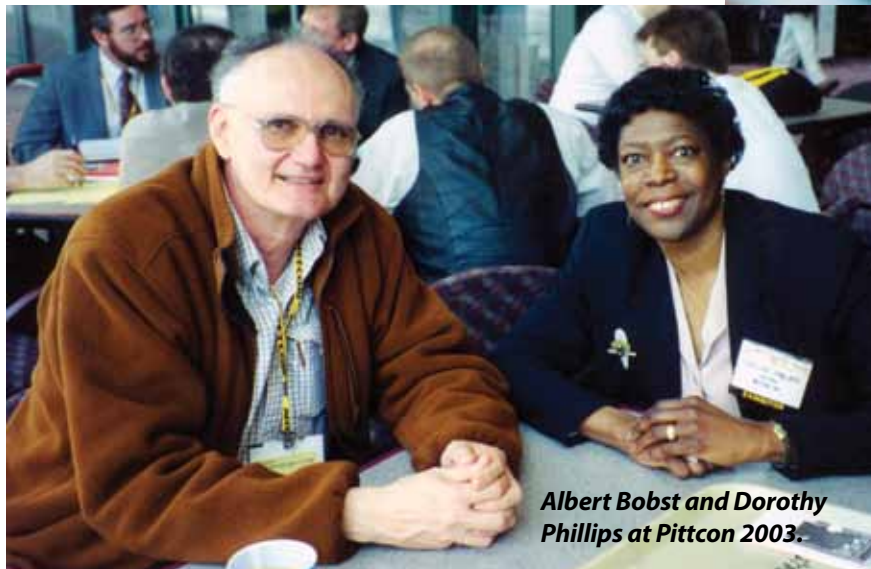
Award and she was selected as a fellow of the American Chemical Society. She also earned a Distinguished Alumni Award from UC's McMicken College of Arts and Sciences.

As the first female African-American to earn a PhD from the department, Phillips says only positive things about her time on campus.

"It was a nice environment," she recalls. "Dr. Bobst was a great mentor and leader for me and my research. He was demanding but fair and it served me extremely well."



Albert Bobst and Dorothy Phillips at graduation in 1974.



Albert Bobst and Dorothy Phillips at Pittcon 2003.

Photos courtesy of Dorothy Phillips and Albert Bobst

To the Moon, ALICE

Chemistry alum David Landis (BA, '90; PhD, '94) can add an interesting achievement to his resume: he helped send ALICE to the moon.

In this case, ALICE is a NASA-dubbed spectrometer that was part of the scientific payload on their Lunar CRater Observation and Sensing Satellite (LCROSS) mission, the media-hyped operation last October that confirmed the presence of water on the moon.

“I think it’s amazing that I was able to participate in a potentially important discovery that—aside from potentially providing useful resources for manned missions to the moon—may help us answer the unanswered question of how the moon was formed,” Landis says.

NASA scientists announced that water was apparent in two spectroscopic measurements taken during the mission, including the UV and visible spectrometer Landis worked on. He also helped design and develop the optics that were responsible for viewing the scattered and reflected light in the dust cloud (called the ejecta plume) after the rocket impacted the moon’s surface.

“The spectrometer can tell you what the kicked-up material is made of, whether it’s made of water, organic molecules, metals or something else. It has the ability to tell you the chemical composition, as well as the size and shape, of the particles that exist in the ejecta plume.”

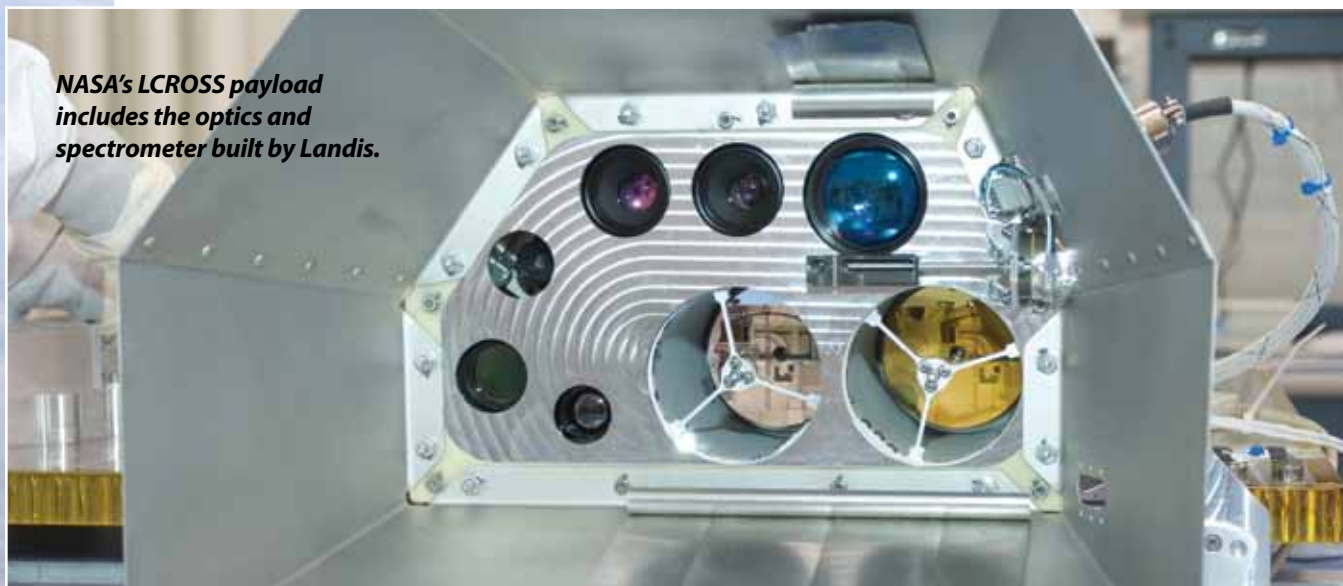
His work was such a success NASA contracted him for more custom-made spectrometers on two new missions: LADEE and O/OREOs.



David Landis (center), seen here with LCROSS science team member Pete Schultz of Brown University (left) and NASA’s LCROSS principle investigator Anthony Colaprete, was the only private sector member of the science team to work on the LCROSS mission.

Building these spectrometers requires skilled manual dexterity and intuitiveness. It helps that Landis built a fiber optic sensor from scratch for his dissertation at UC.

“David has always looked for new ways to make things. He’s mechanically gifted,” says Professor Emeritus Carl Seliskar, Landis’ advisor. “What he’s doing today with NASA is a large-scale version of many of the things he’s developed in the past.”



NASA's LCROSS payload includes the optics and spectrometer built by Landis.

Photos courtesy of Peter Schultz and NASA

The Drug Regulator

Staying in labs until 2 a.m., working exhaustively on protein extractions, maintaining the Isco HPLC system—to say her experience at UC prepared Ann Villalobos for her position as a research scientist at Johnson & Johnson is an understatement.

“The chemistry department really takes care of its students,” Villalobos (PhD, '90) says. “We were taught everything a grad student should know and were trained to be practicing chemists later on.”

Now 20 years after leaving campus, Villalobos continues working at Johnson & Johnson-owned companies. She recently hung up the lab coat to become their first in-house technical expert. The international pharmaceutical manufacturer previously hired external expert consultants but gave Villalobos the job to become more efficient.

As the unofficial “voice” of the drugs, Villalobos investigates new products, writes reports, and acts as the face of the company to regulatory agencies like the Food and Drug Administration. Substances she’s worked on include Eprex and Procrit, drugs that treat anemia.

“I write the protocols,” she explains. “It’s important to be critical and objective. Of course you want it to be approved but at the same time it needs to be unbiased.”

Her successes are no surprise to her PhD advisor Brian Halsall. “She’s a very quiet, unassuming person but she’s as strong as an ox in terms of dedication and sticking with a problem,” he says. “She went on to do great things.”

And she hasn’t forgotten UC during her career. Not only has she set up the Ann P. Villalobos Graduate Fund in the department, she has urged her niece and future nephew to get their graduate educations at UC as well.

“Whenever I go back to visit, it still feels like I’m at home in the department,” she says. “I’m really thankful I came to UC from my home country of the Philippines. And I’m so proud to be a graduate.”

Ann Villalobos



Photo courtesy of Ann Villalobos

More Alumni in Industry

Mike Dotson (PhD, '01) is a chemist at Michelin, where he is working on the assembly of their Urban Electric Vehicle Tweel—a version of their airless tire/wheel combination that has been used on NASA’s Lunar Rover.

Diane Schmidt (PhD, '81) is a section head at Procter & Gamble, working specifically with Olay products. She was named a member of the American Chemical Society’s 2009 Board of Directors.

Elizabeth Weisburger (PhD, '47; Hon. DSc, '81) was among the initial group of fellows inducted into the American Chemical Society in 2009. With a career in chemical toxicology, Weisburger has done extensive work with carcinogenesis at the National Cancer Institute as an officer in the Commissioned Corps of the U.S. Public Health Service. She’s received numerous awards, including the Hildebrand Prize, the Garvan Medal from ACS, and the Distinguished Service Award from the American College of Toxicology.

The Ivies Wanted Him Four Years Ago — They Want Him Even **MORE** Now That He's Seen UC

Mostafa Ibrahim chose UC over Yale, Columbia, Johns Hopkins and several other top schools. He says he definitely made the right choice.

By: Wendy Beckman

When Mostafa Ibrahim was selecting a college, he was fortunate to have several choices of colleges from which to choose. He was accepted to Yale, Columbia, Hopkins and several other top schools — but he chose to come to the University of Cincinnati.

Ibrahim's story was featured in Time magazine's August 2006 cover article "Who Needs Harvard?" The article was about how students are giving up the "name and prestige" for "lesser-known" schools for various reasons, such as financial aid.

"Back then in high school, I was preparing for the future. I figured that if I went to one of those other schools, I would have loans building up at whichever school, then another \$150 to 200 thousand for the next four years of med school. That was not anything I was prepared to do. So four years ago finances were the biggest factor in my decision," he says. "But looking back in hindsight, at how much I've grown as a person at UC, and the friends and faculty I've met here, I wouldn't change a thing. I'm glad that I did have the offer of the Darwin T. Turner Scholarship at the University of Cincinnati."

The Darwin T. Turner Scholars Program is one of the oldest ethnic scholarship programs in America. It was named after Darwin T. Turner, the youngest person ever to graduate from UC, having done so at the age of 16. The program provides full-tuition scholarships and stipends to academically talented students of color. Ibrahim also received a Cincinnati scholarship.





“Both my brother and my sister came to UC and were chemistry majors and we all had Dr. Lieberman.”

-Mostafa Ibrahim

Mostafa Ibrahim and Deborah Lieberman

Photo by: Dottie Stover

“From the academic and personal being a Turner scholar was one of the best parts of my being at UC,” he says. He notes that with UC’s 23,000-plus undergraduates on campus, it might be an easy place for a first-year student to feel lost or like another face in the crowd. “But when you go into the Turner office, Dr. Eric Abercrombie and Dr. Brandi Hutchins know your name, what you’re about, what your goals are. You’re not just a number. You’re part of the Turner family. They make an extreme effort to know all the Turner scholars.”

Eric Abercrombie, director of Ethnic Programs & Services and director of the African-American Cultural and Research Center, is proud of Ibrahim’s accomplishments at UC.

“I know where he came from,” says Abercrombie. “And I can think of no other student who had such pressure of the visibility in making what was a very difficult decision in selecting UC over very prestigious Ivy League schools.”

“And he was successful — he withstood the pressure,” Abercrombie adds. “Now all the schools are after him.”

As a chemistry major in the McMicken College of Arts and Sciences, his favorite faculty members were Deborah Lieberman and Allan Pinhas.

“Both my brother and my sister came to UC and were chemistry majors and we all had Dr. Lieberman,” says Ibrahim. “At this point I think it’s almost more like a friendship and we are past the point where I’m like a student in the class. Especially with Dr. Lieberman, she’ll just see me in the hall and come up to me and talk or I’ll just drop in on her office to talk with her. Drs.

Lieberman and Pinhas were a big help to me in deciding where to go to medical school.”

So in his four years at UC, Ibrahim has made many connections with both faculty and staff that have made it clear that his being one of 23,000-plus undergrads at UC was a good thing. Now he’ll be doing it all over again at another university.

He’s chosen Yale University for med school.

“I fortunately had my options, but again, I understood from what UC has taught me that it’s not the name of the school where you go to — it’s what they offer you,” says Ibrahim. “This is one of the most important decisions I’ll ever make in my life. I looked at the curriculum of each school. When I went to my interview, I stayed and asked a lot of questions. Yale emphasizes a lot of independent learning and I liked that.”

Ibrahim feels that he will flourish in an environment that requires him to be self-motivated.

“I learned that here doing my undergraduate research where the projects were my projects and I was pretty much self-directed,” he says. “Dr. Pinhas was my research advisor and mentored me, of course, but I had to motivate myself.”

“My personal growth and academic growth, the faculty I’ve met, friends I’ve met — I’ve learned so much in the past four years here that I don’t think I would have learned anywhere else,” he says.

Stellar Symposia

By: Kim Burdett

The department brings world renowned scholars to campus for the annual Oesper and Zimmer lectures.

Chemistry Department Honors Susan Lindquist as 2009 Oesper Recipient

The 2009 recipient of the Ralph and Helen Oesper Award was Professor Susan Lindquist of Massachusetts Institute of Technology and the Whitehead Institute of Biomedical Research.

An expert in protein folding, her groundbreaking work has shown how changes in protein conformation affect processes such as stress tolerance, neurodegenerative disease and heredity, and has highlighted the importance of molecular chaperones—proteins whose function is to assist other proteins in achieving proper folding. Lindquist and her group pioneered the use of yeast as a discovery platform for new chemical and genetic therapies for neurological conditions such as Parkinson's and Huntington's diseases.

She is a member of the National Academy of Sciences and the Institute of Medicine.

The annual Oesper Symposium brings other internationally renowned chemists to the University of Cincinnati to celebrate the Oesper awardee as well. At the Oct. 30 banquet where Lindquist received the award, Elaine Fuchs of the Rockefeller University delivered the keynote address, titled "Stem cells: Biology and Promise for Regenerative Medicine," summarizing her work on skin stem cells.



Zimmer Scholar Plans International Collaboration

Christian Reber, professor of chemistry at the University of Montreal was the 2010 Hans and Marlies Zimmer International Scholar In-Residence, coming to the department to discuss his research on photochemistry and the spectroscopic study of the electronic structure of molecular solids.

His presentation, "Optical Spectroscopy of Transition Metal Compounds: From Coordination Geometries and Excited-State Properties to Tunable Intermolecular Effects," was given on April 16 and was the culmination of a weeklong visit by Reber as the Zimmer Scholar.



Christian Reber, seen here with Marlies Zimmer and Bill Connick.

The program provides the capability to invite internationally recognized scholars to the department to spend time with faculty and students, discussing research and developing collaborations.

The 2003 Zimmer Scholar, Gunther Wittstock of the Carl von Ossietzky University of Oldenburg in Germany, also visited the chemistry department during Reber's visit.

"What I like about the Zimmer is the emphasis on interacting with the students," Reber says. "I appreciate it very much."

Reber plans to build collaborations with UC Professor Bill Connick. Already a UC student has spent time at the University of Montreal in Reber's research group.

"My longer term goal is for me to get to know the department a little bit and strengthen my collaboration with the Connick group and initiate a student exchange. I think that is one of the most beneficial aspects of the Zimmer," he says. "I owe a big thank you to everyone who has made this possible."

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Changing the Ranks

Chemistry finds a new department head in longtime UC professor Bill Heineman.

By: Kim Burdett

Bill Heineman, Distinguished Research Professor of Chemistry, has been named the new head of the Department of Chemistry.

Heineman joined the faculty at the University of Cincinnati in 1972 and has set high standards in research aptitude and productivity for the department. Inducted into the inaugural class of Fellows of the American Chemical Society in 2009, Heineman is also a Fellow of the American Association for the Advancement of Science.

He has published over 400 research papers and patents and has presented over 500 lectures. He is also the coauthor of the laboratory manual "Chemical Experiments for Instrumental Methods," the textbook "Chemical Instrumentation: A Systematic Approach," and coeditor of the textbook "Laboratory Techniques in Electroanalytical Chemistry."

"Bill Heineman has and continues to have an extremely distinguished career. He is one of our best researchers, with collaborations all across campus," says Valerie Hardcastle, dean

of the McMicken College of Arts and Sciences. "That he is willing to step up to the headship

at this point in his life speaks volumes about Bill's strength of character and his dedication to the Department of Chemistry."

As head, he hopes to continue the upward trend of higher enrollments and external funding for research.

Heineman is taking over the role from former head Patrick Limbach, who oversaw the department for five years.

"I'm very fortunate to become head in a department that already has a good infrastructure in place," Heineman says. "Pat was an excellent head, so I feel like I'm taking over a ship that's already pointed in the right direction. I just have to make sure it continues in that direction."



Bill Heineman