

2014 Newsletter

# EARTH, PLANETARY, AND SPACE



**UCLA**

# SCIENCES



# Greetings from the Chair

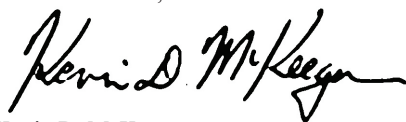
As I reflect on the myriad activities and accomplishments of the talented students, staff, and faculty of the Department of Earth, Planetary, and Space Sciences over the last year, I am reminded of why time seems to fly ever more quickly – it is because so much is going on! We hope that this annual newsletter helps you to keep abreast of the many happenings in EPSS, but a visit would be better still, and we want you to know that you are always welcome here in Geology and Slichter Halls. Since I last wrote, we have been pleased to welcome two new faculty members: geomicrobiologist Tina Treude and space physicist Marco Velli. Tina taught at the GEOMAR – Helmholtz Center for Ocean Research in Kiel, Germany, whereas Marco comes to us from the University of Florence. You can learn more about their backgrounds and plans for research directions at UCLA on pages 6 and 7.

One of the reasons that we can attract top faculty to relocate from Europe is the reputation for research excellence that UCLA garners worldwide. There are many ranking “services” and UCLA does well in all of them, but of particular note is that in the 2014 Times Higher Education ranking, UCLA was considered first among public institutions in the world for Physical Sciences and ninth overall and seventh in the U.S. (one notch ahead of Berkeley). Not surprisingly then, EPSS faculty, students, and researchers continued this year to gather honors and accolades for their work. Almost simultaneous to his appointment as an EPSS professor, Marco Velli was named Fellow of the American Geophysical Union. Professor-in-residence Axel Schmitt won a coveted Fulbright U.S. Scholar Award that will fund his research in Turkey next spring. Research geochemist Oscar Lovera was the inaugural recipient of the Dodson Prize, recognizing his extraordinary contributions to the development of the field of thermochronology. Not to be outdone, our graduate students also were given international awards: Patrick Boehnke received the Eugene M. Shoemaker Impact Cratering Award and Carolyn Crow the Wiley-Blackwell award from the Meteoritical Society.

Members of the EPSS department are continuing as leading explorers of our solar system. Professor Dave Paige and his team will take us back to Mars in 2020 with a ground-penetrating radar instrument, and we all look with great anticipation to the arrival of the DAWN spacecraft at the dwarf planet Ceres in early spring. Smaller spacecraft that will explore the near-Earth radiation environment are being designed and built in the department by a team of undergraduates. You can read more about ELFIN on page 11. The inner workings and volatile budget of this planet were topics of discussion when the Deep Carbon Observatory met for a workshop in October. Also in October, we welcomed alumni back to campus to hear from Distinguished Alumnus Alan Harris (M.S. '67, Ph.D. '75) on the topic of “killer asteroids”. According to Dr. Harris, and perhaps not surprising to many of you, it turns out that being killed by an impacting asteroid is less likely than meeting one’s demise by regularly commuting on LA freeways. Of course, if traffic continues present trends then this will no longer be true as all collisions will be only low-energy events.

We are very pleased to announce the continuing success of the Don Carlisle Undergraduate Research Fund. Thanks to the generosity of Don and his wife Gloria, undergraduate research in the department will be funded for years to come. Learn more on pages 8 and 9. With your generous support, we were able to purchase a field vehicle that made its maiden voyage to summer field camp last June. Your donations also fund our colloquia, our newsletter, our alumni lecture, our summer field program and so many other programs vital to department life. On behalf of all our faculty, staff, and students, I extend my sincere gratitude for your generosity and I hope to see you at one of our upcoming events or hear from you in the coming year! Happy Holidays!

With best wishes,



Kevin D. McKeegan



Chair McKeegan & Chancellor Block pose with a Bruin whom you may recognize. We are ready to take on any EPSS Alumni in 3-on-3 hoops!

## IN THIS ISSUE

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**Cover image:** Chancellor Block visited EPSS to open the new UCLA Meteorite Gallery. Pictured with the Chancellor are Dean Joe Rudnick, Chair McKeegan, Professor Wasson, and major donors Arlene and Ted Schlazer. Read more on pages 3 - 5.

Image credit: ADONA Photography

# Grand Opening of the UCLA Meteorite Gallery

California's largest collection of meteorites, and the fifth-largest collection in the nation, is officially on display in the UCLA Meteorite Gallery. The museum, which celebrated its grand opening on January 10, 2014, is located in Geology 3697 and is open to the public.

A centerpiece of the museum is a 357-pound iron chunk of an asteroid that crashed into Arizona some 50,000 years ago, creating a mile-wide crater just east of Flagstaff. Visitors are allowed to touch the venerable object, which like most other meteorites and like the Earth itself is 4.5 billion years old. EPSS Professor John Wasson is the gallery's curator and a professor of geochemistry and chemistry.



Future scientist Charlotte Boyce...



Meteorites are rocks ejected from asteroids, comets, planets or the moon that have traveled through interplanetary space and landed on the Earth's surface. The vast majority come from asteroids.

"Our goal is to make this gallery the world's best scientifically oriented meteorite museum," Wasson said. "Our collection is by far the largest in California and is a gift to the people of Southern California. The opportunity to learn in scientific detail about meteorites has not been available in California before."

The collection houses specimens of nearly 1,500 meteorites that illustrate the scientific processes that were active in the early solar system. About 100 of these — representing a wide variety of meteorite types — are currently on display. Image above: Chancellor Block, Dean Rudnick, Arlene & Ted Schlazer, and Chair McKeegan at the grand opening. Read more about the Schlazers on page 4.

This article originally appeared in *UCLA Today*

## The Hunt is On!



On April 26, 2014, EPSS professor Jean-Luc Margot led a group of alumni, department friends, faculty, staff, and students on a hunting expedition on the dry lakes around Barstow, California. Buffeted by cold winds, the intrepid hunters searched for meteorites in a wide vista of dried terrain. Unfortunately, they were largely unsuccessful except for a small piece of meteorite, characteristically black, found by Michelle Myers, a graduate student in the UCLA Henri Samueli School of Engineering and Applied Science.

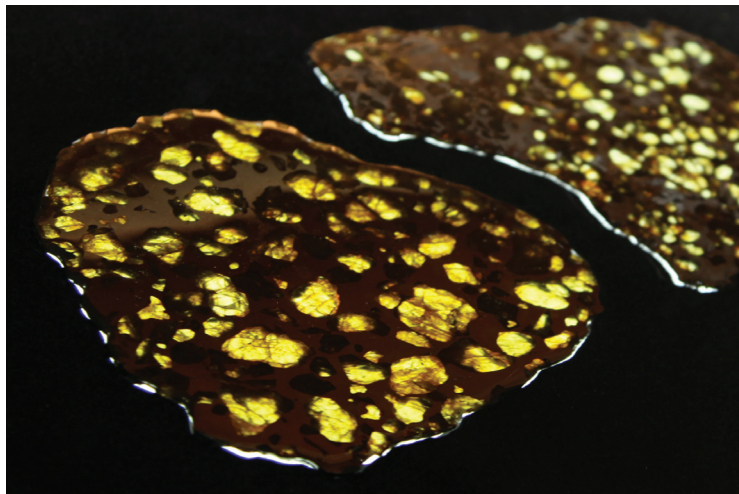


Michelle Myers shows off her find.



# New Meteorites Touchdown at UCLA

Meteorites are among the rarest of treasures to be discovered on Earth, primarily because they aren't Earthly at all. The remnants of much larger space rocks, meteorites have remained virtually unchanged since the time when planets were forming, preserving precious evidence of what the early solar system was like. After spending billions of years floating through space, some of these celestial fossils happen to fall to Earth, giving scientists a glimpse into the distant past. Over the course of many decades, the Department of Earth, Planetary, and Space Sciences has amassed one of the most extensive meteorite collections in the world. Members of the public can experience these pieces of cosmic history for themselves in the recently renovated UCLA Meteorite Gallery. Located in the Geology building, the museum showcases the most impressive specimens the collection has to offer including a brand new exhibit containing several meteorites generously donated from the private collection of Arlene and Ted Schlazer (pictured above).



Above: Imilac & Seymchan pallasites from the Schlazer collection.

inspired by the complex Widmanstätten patterns she observed in her iron-meteorite specimens. “Every one of them was a wonder to me because they were all different and every pattern was unique,” she said.

Arlene’s artistic endeavors served as a springboard into the world of meteorite research. She kept abreast of the latest scientific discoveries in the field, and even had one of her photographs cited in a scientific publication.

Right: EPSS Researcher Alan Ruban discusses meteorites at the gallery opening.



Having been avid rock and mineral collectors for years, the Schlazers were naturally drawn to the world of meteorite collecting. In fact, the first time Arlene glimpsed a meteorite at a swap meet, it immediately sparked her interest. “The whole concept that you are holding something that is 4.5 billion years old is fascinating to me,” she said. “It seemed like each one held its own story.”

To Arlene, the value of meteorites lies not only in their scientific importance, but also in their aesthetics. Armed with a household scanner and a diverse collection of meteorites, Arlene has created many works of art



Over the course of eight years, the Schlazers acquired more than 300 meteorites, one of which Arlene is particularly proud of: after hours of searching a dry lakebed near her home in Las Vegas, she discovered her own meteorite. This fortuitous discovery was the pinnacle of Arlene’s meteorite collecting career, and she likens the experience to finding “a cosmic needle in a terrestrial haystack.”

In July 2013, the Schlazers personally delivered 64 of their best specimens to UCLA. “I feel confident that our collection is in the best hands science can offer and hope that it will be enjoyed for many years to come,” Arlene said. The Schlazers’ donation includes a large variety of specimens ranging from stony and iron meteorites to impact glass. They will join the nearly 1500 other specimens already in the UCLA Meteorite Collection, some of which are currently on display.

### **KIM DEROSE AND IVY CURREN**



The UCLA Meteorite Museum is located in Geology 3697 and is open to the public weekdays from 9am – 4pm and Sundays from 1pm - 4pm. Those interested in providing financial support for the museum should visit: <http://giving.ucla.edu/meteorites/>.

Above: photographs taken at the UCLA Meteorite Gallery grand opening. Image credit: ADONA Photography



# *new faculty*

## EPSS Welcomes Dr. Marco Velli & Dr. Tina Treude

### **MARCO VELLI**



Dr. Marco Velli, a space plasma physicist, started at UCLA in July. He has recently served on the faculty of the University of Florence and continues to conduct research at the Jet Propulsion Laboratory in Pasadena, CA.

An amateur astronomer who built telescopes as a child, Velli chose a related field as a student: plasma astrophysics. He received his training in Italy with degrees from the University of Pisa and the Scuola Normale Superiore.

Currently, Velli is working to understand magnetohydrodynamic turbulence, which he describes as “the mechanism that provides the trigger for many of the energetic events we observe on the Sun.”

Velli became interested in joining UCLA because of its strong program in space physics and because his father once taught Italian here. Velli remembers visiting his father’s office in Royce Hall.

When asked about his vision for the department, Velli hesitated, saying, “It’s too early to say what needs to change except it’s good to have new people in the department.”

Vellis is confident however that UCLA is the best place to be to face the challenges of the future. “The way forward in space exploration is through the use of smaller satellites, as

the way Vassilis Angeopoulos is using ELFIN (see page 11). The use of clusters of small satellites is a field where UCLA could be very strong.”

He is principal investigator of Heliospheric Origins on the Solar Probe Plus mission, the first spacecraft to fly within 10 solar radii of the Sun’s surface, directly studying the outer solar corona and acceleration region of the solar wind. SPP is part of NASA’s Living with a Star Program, designed to understand aspects of the Sun and Earth’s space environment that affect life and society. As the mission’s observatory scientist he will provide an independent assessment of scientific performance and act as a community advocate for the mission.





## TINA TREUDE

Dr. Tina Treude joined UCLA from Geomar in Germany. She studied biological oceanography in Kiel and marine biogeochemistry at the Max Plank Institute. There, she focused on microbial processes in methane-rich sediments.

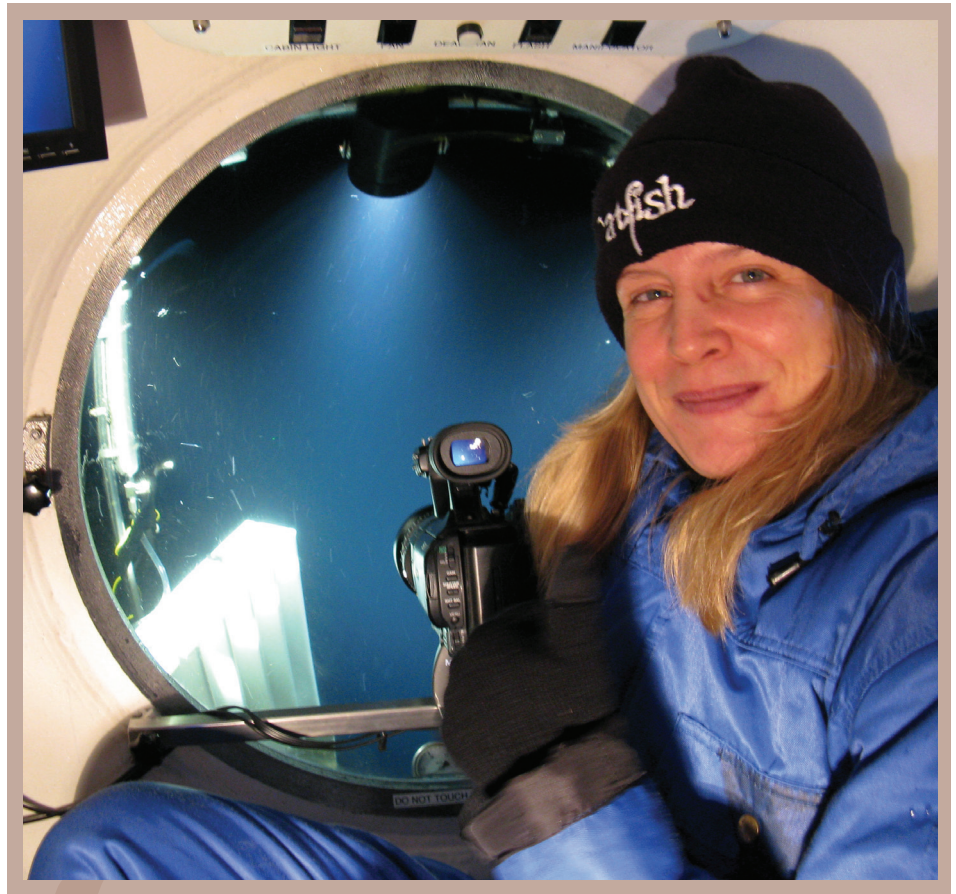
As with Velli, her interest in science started as a child. Treude recounts, “I was about seven years old when I decided to become a scientist. More specifically, at that time, I wanted to be a zoologist thanks to my many pets. When I started scuba diving at the age of 13, I realized it had to be marine biology. Still in love with animals, I had no idea that I would finally work with marine microbes.”

Treude is an experienced teacher, having lectured at the GEOMAR Helmholtz Centre for Ocean Research in Kiel, Germany. Her topics included Biogeochemical Processes in Marine Sediments and Scientific Writing.

Treude is also a faculty member in Atmospheric and Oceanic Sciences. She appreciates UCLA's broad-ranging scientific programs. “Life sciences, chemistry, and environmental sciences are just a few steps away. Perfect for my integrative research. Furthermore, the ocean is close by (even the deep-sea) and Southern California is one of the most attractive places world wide when it comes to geomicrobiological research.”

Treude works on sea-floor microbial processes and their interaction with the water to understand their importance in altering or balancing global processes. “Tiny microbes are major players in shaping our environment and it needs to be understood how they operate. The seafloor is important for recycling and storage, which is why I focus most of my work on this environment.”

In addition to her fully operating research group in Germany, Treude plans to conduct field work in the Santa Monica and San Pedro Basins. Los Angeles will be especially propitious for this research. Treude explains, “These basins offer a deep sea with an oxygen minimum zone and methane seeps right in front of my door. There will be much to explore and on a more frequent basis than was possible for me in Germany which has no deep sea.”





# Don Carlisle makes generous contribution to undergraduate research

Emeritus Professor Don Carlisle and his wife Gloria Galvez-Carlisle have generously endowed the Don Carlisle Undergraduate Research Fund. Proceeds from this endowment will allow undergraduates to get hands-on research experience with EPSS faculty and researchers. Meet the first four recipients:

## TYLER VOLLMER

Tyler Vollmer hails from Riverside, California and currently has a double major in geophysics and math/atmospheric and oceanic sciences. Vollmer is using Electron Back-Scatter Diffraction to detect diagenesis of different foraminifera with Professor Aradhna Tripathi. He has very much appreciated the opportunity to do research, “Hands-on research made me fall in love with science. At first, I wasn't sure how the material that we learn in class will correspond with real-world problems. After doing research, I finally found that bridge between class and real life. Overall, hands-on research just got me excited for my career in science.” Vollmer also plans on applying to graduate school in geology. He speaks enthusiastically of EPSS, “The atmosphere of EPSS is absolutely amazing. Although part of a large university, the EPSS department has that small school feel. Everyone in the department is extremely nice and very welcoming. It feels like a second home to me.”

## STEVE TOMLINSON

A geophysics and space physics major from Sacramento, California, Tomlinson worked with Dr. Jeremy Boyce on lunar apatite hygrometry which has resulted in a Science publication titled, 'The Lunar Apatite Paradox'. Tomlinson appreciates research because it improves critical thinking and problem-solving. He explains, “ Often times the problem is something that has never been done before, so you have to formulate a plan or create a method and look at it from every angle, and then keep modifying it until it agrees with our best physical understanding. Tomlinson plans to continue his research and will apply to graduate school after UCLA. The best thing about EPSS is the unique opportunity available to every student. When asked why he liked EPSS, he replied, “No matter what your interests are, there is a way for you to get involved and contribute to the cutting-edge research being done in this department.”

## TONG MU

A major in electrical engineering from Sunnyvale, California, Mu worked on the SPINlab NoMag project with Professor Jon Aurnou. She very much appreciates the hands-on research experience because she was able “ to apply the concepts of what I learned in my classes in a real world project and build items and write code that actually serve a purpose. Additionally, I learned more about the ubiquity of many of the issues including timing delays, the huge importance of efficiency, or noise in the system; issues that I have learned about in my classes, but have never realized the gravity of or the constant presence of them.” When asked what she likes about EPSS, she replies, “the way it is very personal and students are easily able to know the faculty and the professors very well.... all the professors are very open and it seems easy for students to form student-professor bonds and get into research.”

Photo: (left to right) Brenda Pack, Don Carlisle, Tyler Vollmer, Gloria Galvez-Carlisle, Steve Tomlinson, Tong Mu.





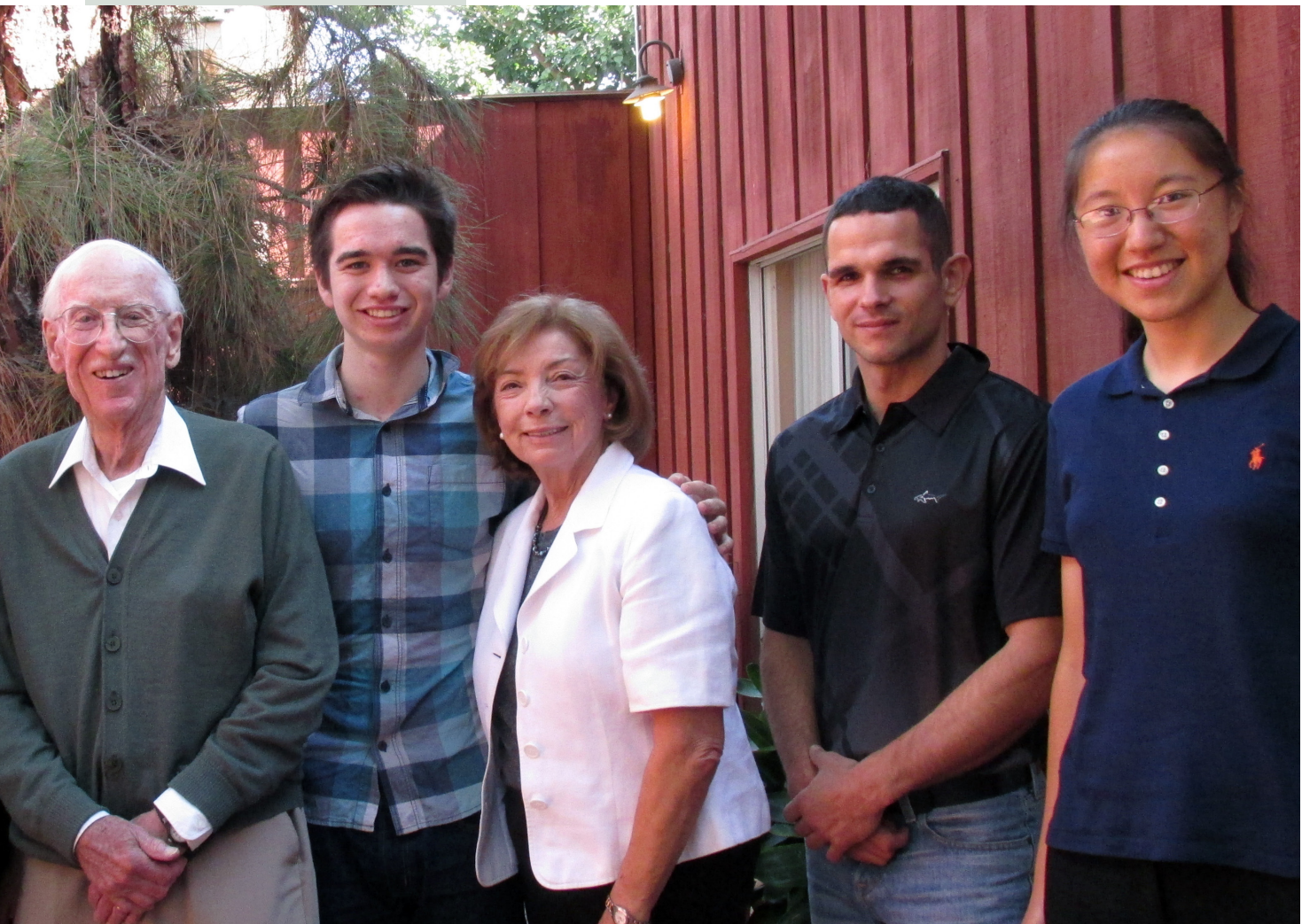
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thank  
you

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## BRENDA PACK

A geology major from Orange County, California, Pack worked with Professor Axel Schmitt using U-Th zircon isotopes to date samples from the most recent eruptions of the El Chichon volcano in Chiapas, Mexico. She reports, "I've really enjoyed working on this project and am in the process of finishing up on the remaining samples. This hands-on research has contributed to my education by learning to challenge myself and apply what I have learned from my geology courses and apply them to my research. I realized that not only is learning about answering comprehensive questions from a textbook, but utilizing textbook knowledge and readings and applying them to real-life applications. Most importantly, this research experience has given me a stronger conviction to further my education at the graduate level." After UCLA, she hopes to apply to graduate school in geochemistry. What she appreciates most about EPSS is the friendliness of the department. Pack says, "As I jokingly tell my colleagues, this Geology Building is my second home!"





Around the department...

## EMERITUS PROFESSOR WAYNE DOLLASE PROVIDES ONLINE GUIDE TO CAMPUS FLORA

Moore Hall's sausage trees — *kegelia Africana* — and Dickson Court's Moreton Bay fig trees — *ficus macrophylla* — are just two of the 522 genus/species listed in an online database of plants whose natural beauty is showcased on UCLA's 419-acre campus.



The database, Campus Plants, resides on the Mildred E. Mathias Botanical Garden website, but it excludes the more than 5,000 plants in the botanical garden. The database was created by EPSS professor emeritus Wayne Dollase. He's a mineralogist for whom the crystal Dollaseite was named in 1987 in recognition of his extensive research on the epidote-group mineral.

As an assistant professor who first arrived on campus in 1966, Dollase came to know UCLA's plants and their history during campus tours and from a 48-page booklet written by UCLA botanist Mathias that was available in the campus bookstore. When that booklet was no longer available, he decided to create an online version which was clearly a labor of love for Dollase.

"Our campus boasts beautiful landscaping, ranging from the grand old deodar cedars at Royce Hall to the latest in water-wise landscaping found around the Court of Sciences Student Center," Dollase wrote.

"There is much to explore, including the blue-flowering jacarandas of the Sculpture Garden just south of the red-flowering coral trees at McGowan, palms in Bunche Hall and Boelter Hall interior courtyards, and exotic plantings at the Wooden Center second-floor balcony."

His sage advice: "Take a few minutes now and then to watch our campus bloom."

- JUDY LIN

Scan the QR code above or visit <http://www.botgard.ucla.edu/plants> to access the plant database.



### NEW EPSS VEHICLE

Thanks to the generosity of EPSS alumni, the department was able to purchase a brand-new 2015 Chevy Suburban to use for field work. Its first outing was summer field class with Professor An Yin.



### DEEP CARBON OBSERVATORY

EPSS was proud to welcome the executive committee of the Deep Carbon Observatory to the UCLA campus in October. There were several days of meetings and the executive committee meeting was followed by a workshop for the Extreme Chemistry and Physics group, pictured above.



# ELFIN - UCLA UNDERGRADUATES PRODUCE FIRST SATELLITE BUILT ENTIRELY ON UCLA CAMPUS

To conduct research on space weather, an enterprising group of UCLA undergraduates is manufacturing the first satellite built entirely on the UCLA campus.

The Electron Loss and Fields Investigation CubeSat, or ELFIN, is a tiny satellite the size of a loaf of bread that still packs the scientific punch of significantly larger, more expensive satellites. When launched, ELFIN will determine how solar wind particles and radiation behave in Earth's environment, a topic of increasing concern because magnetic storms can wreak havoc on space infrastructure like GPS, communication and weather satellites, and even damage the electrical grid here on Earth.

"With the advent of space tourism and the increased reliance on satellites, understanding space weather is becoming increasingly important to our society," said Vassilis Angelopoulos, an EPSS professor and ELFIN principal investigator. "We need to study the electron loss process to assemble the full picture of how space radiation is driven by solar particles."

From the beginning, ELFIN had only scant internal funding, and the outlook for completion was unclear. In spite of this uncertainty, a team of several dozen intrepid undergraduate students took on the project as their own, collectively putting in thousands of hours as a labor of love, developing and testing the satellite's subsystems with the hope that the project would someday be fully funded.

After three years of diligent work and patience, the tide finally turned in 2013 when the U.S. Air Force awarded the team a \$110,000 grant to continue development and buy much-needed parts. Last February, the opportunity to achieve their goal became even more real for these space Bruins when NASA's CubeSat Initiative and the Low-Cost Access to Space program guaranteed them a launch spot.

Finally on May 23, the team was awarded \$1.2 million jointly from NASA and the National Science Foundation, ensuring enough funding to put the space-qualified hardware in orbit and to operate it for six months from the UCLA Mission Operations Center, to be located on campus.

A collaboration between the Aerospace Corporation and UCLA's departments of Earth, Planetary and Space Sciences; Mechanical and Aerospace Engineering (MAE); and Atmospheric and Oceanic Sciences, ELFIN will not only benefit UCLA students, who will have the opportunity to work on a real-world space program, but will also resolve a critical space physics question.

"ELFIN will train tomorrow's leaders in space science and engineering," said Richard Wirz, a professor in the UCLA Department of Mechanical and Aerospace Engineering and a mission co-investigator. "This educational experience enables students to apply what they learn in the classroom in a hands-on, team setting and do whatever it takes to reach a scientifically compelling and challenging goal."

**- EMMANUEL MASONGSONG**

Right: the ELFIN team.





# more around the department...



**Left:** Chair McKee congratulates and thanks distinguished alumnus Alan Harris after his lecture.

**Below:** Drew Levy and John Rosenfeld check out Gary Glesener's ingenious models for science education.

**Below:** Undergraduate Una Schneck went meteorite hunting with Professors Margot and Wasson; unfortunately her find was a "meteorwrong."

**Bottom right:** Professor Sinan Akciz out in the field with the students from EPSS 112.







**Above, left, and bottom left:** EPSS outreach. Emmanuel Masongsong explaining the magnetosphere at a local school.

**Below:** EPSS student advisor, Lauri Holbrook, demonstrates Bruin spirit in full force at UCLA Bruin Day, a campus wide undergraduate admissions recruiting event.





# COMMENCEMENT

# 2014





# Degrees

## BACHELOR OF ARTS

Jonathan Grice Bridgeman  
Miguel Angel Gutierrez  
Ariel Noel Nuno  
Jorge Erick Robles  
Younseok Seo  
Ramnit Kaur Sidhu  
Grace J. Wang

## BACHELOR OF SCIENCE

Jason Frans Borgman Brouwer  
Nicholas Mirek Buzga  
Tomas Neil Capaldi  
Austin John Chadwick  
Hannah Rose Cohen  
John Franklin Eggers  
Steve Flores  
Amanda Kathryn Garcia\*  
Brent Elliot Harris  
Jared Lee Hodes  
Samantha Mi Huston  
Shayda Imani  
Elias Collins Karkabi  
Jonathan Lajcaj  
Michael Joseph Lavell  
Evelyn Marie Loya  
Genevieve Mairén McGuire  
Diana Nguyen  
Grace Alexandra Parker  
Napoleon Pempena VII  
Andrew Richard Perrine  
Timothy Christian Pilegard  
Alexander Shmurakov  
Evan Tang  
Erin Michelle Wales

## MASTER OF SCIENCE

Kevin Thomas Coffey  
James Hiro Eguchi  
Alexander John Freed  
Junko Isa  
Michelle Kay Jordan  
Sarah Beth Nymeyer  
Elizabeth Marie Palmer  
Ronald Lee Powell  
Joseph Earl Ramsay  
Matthew Edward Walker  
Wan Ning Wu  
Zheng Xing

## DOCTOR OF PHILOSOPHY

Elizabeth Ann Bell  
Hao Cao  
Feifei Jiang  
Hairong Lai  
Justin Hao Lee  
Shanshan Li  
Christine Elizabeth Gabrielse Lin  
Jiang Liu  
Anne Elizabeth Strader  
Matthew Mateusz Wielicki  
Kaiqing Yuan  
Xiaoja Zhang

\*valedictorian



# Gifts and

## MAJOR GIFTS

UCLA is a leading force in Earth, space, and planetary sciences research and education. Your major gift commitment today will help the department maintain its leadership position by sustaining and encouraging the groundbreaking endeavors of outstanding faculty, students, and researchers. Your visionary philanthropy will also serve as an important source of inspiration to others, stimulating further financial sustainability for Earth, planetary, and space sciences at UCLA.

### AREAS OF NEED

**NAMED GRADUATE AWARDS & FELLOWSHIPS** The quality of research and teaching is bolstered by the high caliber of graduate students the department is able to recruit. Faculty is also attracted to our department based on the exceptional reputation of our graduate students. More funds are needed to secure graduate student placements from among the best and brightest worldwide.

**NAMED ENDOWMENT FOR SCIENTIFIC TECHNICAL STAFF** Technical staff serve a vital role in EPSS educational and research work, through managing and maintaining lab equipment, developing new applications and analytical methods, and ensuring that research towards groundbreaking discoveries continues to move forward. Funding for technical staff has decreased in the past few years, and private support is critical to maintaining these important positions.

**NAMED ENDOWED CHAIRS** In order to maintain a competitive edge in the academic marketplace, EPSS needs endowed chairs to recruit and retain the highest caliber of faculty worldwide. Endowed chairs support research, teaching, and encourage innovation and risk-taking often not supported by federal grants.

**NAMED FIELD VEHICLES** To help continue our tradition of field experience, we are in need of three rugged, all-terrain vehicles to transport students, faculty, and equipment to remote sites for invaluable field research and educational opportunities.

**NAMED ENDOWED PRIZE POSTDOCTORAL FELLOWSHIPS** There is a need to attract top-notch post-doctoral researchers to EPSS. These prestigious placements help the department attract and retain high-quality scholars from all over the world as well as bring new academic perspectives to EPSS' exploratory and supportive department. Due to the lack of federal funding for these positions, there is a current critical need to fund post-doctoral geology researchers.

**NAMED UNDERGRADUATE SCHOLARSHIPS** The department aspires to matriculate more undergraduate students pursuing a degree in geology, geophysics, and our various minors. In order to achieve this goal, we need to offer better financial packages for talented undergraduates based on both need and merit. Undergraduate scholarships set us on the right course by inspiring young minds to pursue a career in Earth, planetary, and space sciences.

### IMPACT

Post-doctoral fellows and scientific technical staff are at the heart of our research focus, which help us recruit and retain top-performing faculty worldwide. These distinguished scholars pave the way to major breakthroughs and important findings in every EPSS research area. The international acclaim they bring to the department also helps attract exceptional, inspired, and motivated graduate and undergraduate students, and helps continue our tradition of excellence.

### HOW YOU CAN HELP

A named major gift commitment can be in the form of current use funds or an endowment. Current use naming gift opportunities begin at \$25,000 and an endowment may be established at UCLA for a minimum of \$100,000. Major gifts can be paid over a period of five years. We will work with you to discover payment options that can fit within your budget.

You may also consider honoring a loved one or faculty member through named endowments or other named opportunities.

If you are interested in supporting UCLA's Department of Earth, Planetary, and Space Sciences, and would like to learn more about any major gift opportunities, please contact:

Brooke Sanders, Sr. Director of Development for Physical Sciences (310) 794-9045 or [bsanders@support.ucla.edu](mailto:bsanders@support.ucla.edu).



# Giving

Your generosity will have a direct impact on the areas of highest priority in the department, and address pressing needs to support the vital work of students and faculty. Please consider a gift to the EPSS ALUMNI CHAIR'S DISCRETIONARY FUND. This general department fund allows us the flexibility to serve the current and greatest needs across the department and research program areas, including the following:

## AREAS OF NEED

**STUDENT SUPPORT & SCHOLARSHIPS** Student support funds enable vital instructional enhancements for the classroom and field research. Scholarships further enable a superior education for talented, deserving students, and are awarded on the basis of financial need, academic merit, or a combination of both.

**FACILITY IMPROVEMENT** Needed facility improvements will help provide a collaborative environment for all of our students, faculty, and researchers.

**UNDERGRADUATE LAB EQUIPMENT** Quality equipment can last us for years to come, and enriches the classroom experience exponentially for our undergraduates.

**ALUMNI & PUBLIC OUTREACH** Through colloquia, public seminars, alumni outreach activities, commencement, and community outreach events, we share our research and passion with the public.

**SUMMER FIELD RESEARCH** Your support will allow students to put the principles and techniques they have learned into practice in the field, and will ensure that students continue to enjoy essential research experiences outside of the classroom.

## Alumni Opportunities

### EARTH, PLANETARY, AND SPACES SCIENCES COLLOQUIUM

EPSS hosts a large variety of weekly colloquia to which all alumni are invited. Our main departmental colloquium is held Thursdays at 4 p.m. but there are other talks throughout the week. Tuesday is Geocheminar; Wednesday: Tectonics and Seismology; Thursday: Planetary Lunch; Friday: iPLEX lunch and Space Physics Seminar. You can access a full calendar of these presentations on the EPSS website.

### STAY IN TOUCH

We love to stay in touch with our alumni! Please keep the Earth, Planetary, and Space Sciences department up to date on your personal and professional information. Just send an email to Kathleen Micham, [kmicham@epss.ucla.edu](mailto:kmicham@epss.ucla.edu). We like to receive photos too!

As an alumnus, you are eligible for lifetime @ucla.edu email forwarding to an account of your choice. Please visit this website to learn more: <https://www.bol.ucla.edu/services/accounts/lifetime/>

## IMPACT

The undergraduate and graduate experience in EPSS is central to fostering a life-long love of the Earth, planetary, and space sciences, and helps instill a sense of curiosity in the world around us. Support for the department's greatest needs through the EPSS Alumni Chair's Discretionary Fund is vital to maintaining a robust, innovative, and distinguished department. Your gift to the EPSS Alumni Chair's Discretionary Fund also qualifies you for participation in the UCLA Chancellor's Society program.

To learn more about this program, please visit: <http://www.uclafund.ucla.edu/getinvolved/chancellorsassociates>.

## HOW YOU CAN HELP

Every gift has the potential to make a lasting impact on our students, faculty, and scientists. If you are interested in supporting UCLA's Department of Earth, Planetary, and Space Sciences, please visit the department's giving page at [www.ess.ucla.edu/giving](http://www.ess.ucla.edu/giving) to learn more about annual gift opportunities and make your gift today.

ANNUAL GIFTS

### METEORITE GALLERY

Now open to the public every weekday 9:00am to 4:00pm, the UCLA Meteorite Gallery on the third floor of the Geology Building underwent significant improvements this summer. The collection continues to grow as well. Thanks to a very generous donation of meteorite samples from the Schlazer family, the gallery now features beautiful back-lit pallasite samples. We would also like to thank the Utas Family for their recent meteorite donation. For more information about the gallery, visit the meteorites website: <http://www.meteorites.ucla.edu>.



# Donor Recognition

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*\*Gifts to the Department of Earth, Planetary, and Space Sciences from July 1, 2013 to June 30, 2014. Gifts made after June 30th will be listed in the 2015 newsletter.*



# Alumni Updates

**Charlie Corbato, B.A. '54 (Earth Physics & Exploration Geophysics), Ph.D. '60 (Geology)** writes: I taught very briefly at U.C. Riverside and then at UCLA before moving to the midwest to what was at that time the Department of Geology at the Ohio State University in Columbus. I served as departmental chairman for eight years and then as associate provost before retiring in 1992 from the School of Earth Sciences. Then I worked for the Ohio Board of Regents for five years before retiring for a second time. Since then my time has been occupied by volunteer work, trying to maintain my good health, and staying in touch with our three children and three grandchildren scattered in Utah, Michigan, and Massachusetts. My good wife and I have now been married for a little over 57 years.



**Don Cosek, B.S. '74** writes: I'm a prosecutor and the supervisor of the Animal Protection and Code Enforcement Units at the Los Angeles City Attor-

ney's Office. The hawk in the picture (below, left) is from one of my cases. The hawk was saved...I got to release it back in to the wild. The guy that had it stuffed into a tiny cage went to jail. Besides my career, my passions are travel and cooking (...I went to Chef's school). My favorite rock is still Half Dome quartz monzonite.

**Masato Nagata, Ph.D. '83** writes: after finishing my Ph.D. in December 1982, I moved to UK as a postdoc to work with Professor P. H. Roberts (he moved to UCLA in 1985) at the University of Newcastle upon Tyne. Then, I held two postdoc positions in UK at Cambridge University and St. Andrews University. In 1989, I moved to Australia as a visiting Lecturer at New South Wales University for one year. I briefly worked at University College London as a postdoc in 1990 before I took a permanent Lectureship at the University of Birmingham, UK. I moved to Japan to take up the position of Professor at Kyoto University in 1998. In 2013 I retired from Kyoto University, with the title of Professor Emeritus. Currently, I am a Professor at Tianjin University in China with a three-year contract.

**Kenneth Kelsch, B.S. '88** transitioned from Kuwait to the Kurdistan Region of Iraq working on an exploration project for Chevron. He writes: it has been eighteen years since I left southern Cal-

ifornia and after 25 years with Chevron I am now working in Houston. The current project is a complex structural project with carbonate rocks. So far the project has been exciting. The people of Kurdistan are amazing despite what media or neighboring countries may say. Unraveling both the history and the geology in Kurdistan is a dream come true. Field mapping techniques practiced in the field while at UCLA are a critical talent. For my family, I'm pleased my eldest (Kelsey) is in pharmacy school in her first year, my son (Austin) is starting his general education in his 1st year of college and my youngest (Hayley) is a senior who can't wait to graduate and get to college.

**Mark Ching, B.S. '07** now works in the Groundwater Rights group at the Los Angeles Department of Water and Power. He recently obtained his Professional Geologist license. Mark has also crossed over to the "dark side" and was commissioned as a Medical Officer in the Army Reserve. He recently welcomed a new member to his family; Snowball Gonzales Ching was



rescued from the cat shelter on November 8, 2014.

**A.J. White, B.S. '11** writes: I graduated with a geology minor in 2011 and am now doing paleoclimatology research for an MS in Geology at CSU Long Beach.

**Tomas Capaldi, B.S. '14** writes: currently I am a Ph.D. student at University of Texas, Austin, Jackson School of Geosciences. I am involved in research on Cenozoic sedimentation and structural evolution in Andean foreland basin system in western Argentina. Thank you to all the Professors and graduate students that are key to the undergraduate geology program at EPSS. Pictured below.

**And an update from emeritus professor Peter Bird:** In his first 3 years of retirement, Peter Bird has participated in many seismic-hazard projects by computing forecasts of long-term seismicity in California, the western US, Europe, and the world. His wife Jean is doing light consulting to private schools, and studying history in the UCLA Senior Scholars program.

Tomas Capaldi (below)



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Our newest faculty member, Dr. Tina Treude, makes her acquaintance with the beloved Bruin Bear!