Bonding Students to Chemistry & Biochemistry

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University Deadlines

- 9/8: Self-service registration and adjustments ends
- 9/8: Deadline to withdraw or drop classes using MyCSULB (by 10:00 pm)
- 9/8: Deadline to withdraw or drop classes without 'W' grade
- 9/8: Deadline for partial withdrawal with refund of fees
- 9/15: Deadline to add courses with NO $10 missed deadline fee
- 9/15: Deadline to file for CR/NC or Audit grade options with NO $10 missed deadline fee
- 9/15: Deadline to file for Credit by Examination
- 9/22: Final deadline to file for CR/NC or Audit grade options with $10 missed deadline fee

Career Development Center

- 9/2 @ 2:00pm: Job Search for Part-Time Jobs
- 9/3 @ 12:00pm: Tell me about Yourself: Your 60 second soundbite
- 9/4 @ 2:00pm: Resume Writing Essentials
- 9/8 @ 1:00pm: No Work Experience? Start Here
- 9/9 @ 3:00pm: Internships: Explore your options
- 9/10 @ 12:00pm: Explore Careers
- 9/11 @ 2:00pm: Personal Branding
- 9/15 @ 2:00pm: Resume Writing for STEM majors (CV)
- 9/16 @ 12:00pm: Interviewing Tools and Techniques
- 9/17 @ 1:00pm: Prepare for the Job Fair
- 9/18 @ 12:00pm-4:00pm: 2014 STEM (Science, Technology, Engineering, Mathematics) Job Fair! USU ballrooms
- 9/22 @ 12:00pm: Funding Graduate School
- 9/22 @ 2:00pm: Scholarships
- 9/23 @ 12:00pm: Applying to Graduate School
- 9/24 @ 2:00pm: Writing the Personal Statement
- 9/25 @ 11:00am-3:00pm: 2014 Graduate and Professional Schools Fair! Located at Speaker’s Platform
[All events are held in BH-250 unless noted]

Seminar Series

- 9/3: Steve White, UC Irvine. “Membrane Protein Folding: Biology Meets Thermodynamics” Host: Dr. Tapavicza
- 9/10: Krishna Foster, Cal State LA “Elucidating the Role of Aged Particulate Matter on Air Quality” Host: Dr. Braizer
- 9/17: Mark Van Cleve, Hycor Biomedical - Title TBA Host: Dr. Cohlberg

By: Annabelle Cantu
Seminar Series

- **9/24:** Cory Hawkins, UC Irvine “Towards Advanced Nuclear Fuel Cycle Separations: Reversing Conventional Actinide/Lanthanide Solvent Extraction Selectivity”  
  Host: Dr. Mezyk  
- **10/1:** Ryan Shenvi, The Scripps Research Institute “Chemical Synthesis of Secondary Metabolites” Host: Dr. Schramm

Seminars are held in HSCI-103 at 5:00pm

CNSM Department

- **9/4 @ 12:00pm:** Abstracts and registration forms for CNSM Student Research Symposium DUE!  
- **9/12 @ 11:00am-1:00pm:** CNSM Student Research Symposium (USU Ballrooms A, B & C)  
  For forms or more information: [http://www.csulb.edu/colleges/cnsm/sas/symposium](http://www.csulb.edu/colleges/cnsm/sas/symposium)

Upcoming Conferences

- **10/11 – 10/12:** 12th Annual UC Davis Pre-Medical & Pre-Health Professions National Conference at UC Davis – Special travel package w/ hotel and transportation included! Register by October 2nd! More info: [http://www.ucdprehealth.org/](http://www.ucdprehealth.org/)
- **11/22:** Southern California Conferences for Undergraduate Research (SCCUR) at CSU Fullerton - Abstracts due October 6th, 2014! Register by November 14th! More info: [http://apps.fullerton.edu/sccur_csuf/](http://apps.fullerton.edu/sccur_csuf/)

Student Affiliates of the American Chemical Society

- **9/2, 9/3 @ 10:30am-11:30am; 9/4 @ 11:30am-12:30pm:** Lab Garb Sale! Location HSCI-326. 9/5 @ 9:30am-10:30am at MLSC patio! New and used items available (while supplies last); this includes lab goggles, lab coats, lab aprons, lab notebooks and ACS study guides. Cash sale only!  
- **9/5, 9/12, 9/19, 9/26 @ 9:30am-10:30am:** SAACS Coffee and Donut hour! At MLSC patio.

For details, email csulbchemclub@gmail.com

**First meeting date Wednesday, September 17th**  
**Where:** USU Bowling Alley  
**Time:** 5:00 pm - 6:15 pm
Easily one of the friendliest, and most jubilant professors to talk with – if you can find him – is Dr. Marco Lopez. Dr. Marco Lopez is a southern California native, having grown up in both Inglewood and the San Gabriel valley. Lopez synthesized his passion for organic chemistry at California State University, Los Angeles. Though he originally planned on attending medical school, Lopez consequently became fervent about research. Between volunteering as a hospital aid and working in a research lab he saw the importance of doctors, but the work could not captivate his interest like research did.

Indecisive about disappointing his family, Lopez felt pressure to continue pursuing the medical route and was hesitant about changing the direction of his studies. For students who might be going through the same struggle he offers the advice of simply being honest with oneself about what they want to do with their life. While “it is not always easy to know what you want to do, ask a lot of questions, talk with people in fields of interest, talk with your advisors/mentors, and make the best decision you can”.

After choosing the research route he started work on his PhD in Bioorganic Chemistry at the University of California, San Diego, where he also received his masters degree. After being invited to apply for a position at CSULB, Dr. Lopez obliged… without informing his family.
1987 was a busy year for Lopez between completing his PhD, the birth of his son, and a job acceptance from CSULB’s Chemistry and Biochemistry department. Considering he had already arranged to do a year of post-doctoral studies at University of California, San Francisco, Lopez completed his research in northern California and returned to familiar southern soil with his family in 1989 to begin his work at CSULB, coincidently the same year his daughter was born.

Dr. Lopez has taught a variety of courses here at CSULB. These include CHEM 111A, 320A/B, 327, 420, 421/521 and 522. This semester Lopez will be teaching CHEM 220B, the newly refined second semester organic chemistry course previously known as CHEM 320B.

Some advice he offers his students is “to work hard, come talk to me, ask a lot of questions…” and if you are having problems to reach out to him. He admits to not being the “easiest” to get ahold of sometimes and strongly encourages students to be “pushy” if necessary. As he puts it, “as long as you are polite you can push anyone anywhere, and you need to push”.

Lopez’s biggest achievement thus far in his research came to him during a vacation in Mexico with his family whilst sipping vodka out of a coconut. By figuring out an important mechanism that successfully explained some strange binding results Lopez published his accomplishments, which led to him earning tenure. His research focuses on hemes, the most well known application being hemoglobin.

Many metalloproteins have heme groups at their core and functioning as their prosthetic group, which are recognized as hemoproteins. Hemes are large organic molecules made up of various amounts of carbon, hydrogen, oxygen, nitrogen, and of course, iron at the center!

Many proteins catalyze reactions or carry oxygen, like hemoglobin and myoglobin; Lopez’s lab is interested in understanding how these proteins work. One of the approaches used in the Lopez lab is the study of hemes by themselves - through analytical analysis and synthetic creation of new hemes. By doing so, the lab members compare how hemes work in proteins and learn about the proteins by how they differ compared with naked hemes.
Dr. Lopez will be looking for interested students to join his lab come late this summer and early fall semester. The requirements to participate in his lab are simply being passionate about doing research, and not being overcommitted. As far as coursework history goes freshmen are even eligible to work in his lab considering there is no heavy-duty training involved. Students interested in working with him should be willing to commit around five to ten hours a week. Interested students can get ahold of Dr. Lopez at marco.lopez@csulb.edu, or by swinging by his office located in HSCI-342.

Publications


Publications

Fun Facts
- Hobbies – spending time with family, playing chess and reading, or now, “listening” to books
- Music - 70s and 80s such as the Beegees, the ballads, Billy Joel, and Kenny Rogers, he was big into disco. Also fond of classical and lounge music
- Romanced a past flame of his by singing
- Favorite movie – My Fair Lady, which is all about how a student’s life changes with the influence of a teacher, it comes highly recommended!
- Favorite book – The Three Musketeers
- If he could be any element he would be Iron
- Common “cheesy” chemistry jokes: “Para-Docs” and ferrous wheel
- If he could compete in an organic chemistry version of “Iron Chef America” a sort of synthetic competition he would want to compete against Dr. Buonora and Dr. Nakayama, simply considering he has known them a long time
- Preferred superpower – strength
- Favorite superhero – Superman!
You walk into a chemistry lab and notice that something seems different, in addition to normal glassware you see multiple oversized apparatuses with various pipes attached to enormous glassware. All this resembles scaled up versions of chemistry sets, and then you realize this is not your normal chemistry lab. In fact, this is not even a chemistry lab, but the chemical engineering lab of Dr. Mendez.

Dr. Mendez is a faculty member of the Chemical Engineering department here on campus, and has been teaching ChE, or chemical engineering courses for the past four years. Dr. Mendez began his education at community college - it was there where he “fell in love with chemistry”: the result of a very influential chemistry professor. Later on he completed his graduate degree at the University of New Mexico where he chose to pursue a slightly different field of study from those who are passionate in chemistry. Instead of majoring in chemistry or biochemistry, he expanded his interest of engineering, combining the two to study chemical engineering.

For his PhD dissertation, he focused on polymers. Following his PhD, Dr. Mendez went on to the prestigious Cornell University to conduct his post-doctoral studies. Adding to his academic rapport, Dr. Mendez has authored close to 28 publications, mostly written during his PhD and post-doctoral years. Publishing remains one of his greatest accomplishments relating to research, as it is a long list of publicized work. Despite his successes his research career had its difficulties, for example, he found working with computer simulations a bit challenging.
Today Dr. Mendez is a recently tenured professor here at CSULB, a position, to him, is his dream job. A dream job because teaching is a profession that he always wanted to do - especially at a local California State University, because it allows him to stay close to family, and he enjoys helping his students succeed in their chemical engineering courses. He does his best to help students due to the fact that chemical engineering, like any engineering or science field, is academically intensive and demanding.

On campus Dr. Mendez teaches thermodynamics, separation processes, and ChE Lab I & II. He also enjoys clowning around with his students by advising that “all they really need to do well in his classes is show up and pay attention” - considering he goes over all the material that will be on his exams. In addition to his normal classes, Dr. Mendez also teaches ChE elective classes, including an elective green engineering class. This elective class provides a small insight into his passion for green engineering, which his research is centered around.

Dr. Mendez’s research focuses on green engineering and green materials. Some of his research ranges from algae biofuels to fuel cell technology. However, his main focus is a project aimed at developing a process for making use of waste material.

Currently Dr. Mendez is not looking for students to join his research lab. However, he acknowledges that there are certain students who are dedicated and will not take “no” for an answer when it comes to a research opportunity. It is these students he wants in his research lab, as they are persistent and show up daily. For those students that are already in his lab, he does not set a strict time requirement or schedule, rather he gives them the freedom to come in when they are available - ideally spending between fifteen to twenty hours a week conducting research.
Fun Facts

• When asked what element he would choose to be he chose Helium because it is a noble gas that is lighter than air
• He has completed many 5K and 10K races, marathons, and half-marathons
• He owns a dog, a Yorkshire mix
• Favorite book is “For Whom the Bell Tolls” by Ernest Hemingway
• He enjoys Jazz music
• His Favorite movie is Dr. Zhivago
Scholarship Opportunities

NAME: CSU Future Scholars Award
DEADLINE: 10/9/14
DESCRIPTION: Several $1,000 dollar scholarships will be awarded to CSULB students that completes a one page essay including the following information:
• What challenges or obstacles have you overcome in order to attend CSULB? Be sure to address your family background and achievements
• Describe your extracurricular activities, academic aspirations and career goals
ELIGIBILITY:
• Must be a California Resident, or classified as a California Resident for tuition purposes.
• Must be a graduate of a California high school or transferred from California Community College with a cumulative GPA of 3.0.
• Must be admitted as a regular student at CSU LB as a new freshman or transfer undergraduate student in the Fall 2014 term.
• Must be enrolled on a full-time basis during the 2014 Fall term, and be eligible for full-time enrollment for the 2015 Spring term.
MORE INFO: scholarships@csulb.edu

NAME: Beauchamp Family Scholarship
DEADLINE: 10/9/14 4:00PM
DESCRIPTION: Two $3,000 dollar scholarships will be given to students who complete a personal statement (2,000 words or less) answering the following Questions:
--Tell us how you handle the responsibilities of work and school. What struggles have you faced in balancing work and school?
--Discuss your career aspirations.
--How do you foresee this scholarship impacting your life?
ELIGIBILITY:
• Must have a minimum, cumulative 3.0 GPA.
• Must be a current undergraduate student at CSULB.
• Must be enrolled in at least six units at time of award.
• Must be enrolled at CSULB in the following spring semester (students graduating in fall or winter are not eligible).
• Must be working a minimum of 20 hours per week.
• Must not be receiving financial aid in the form of federal or state grants. If you are receiving loans and/or work study, you may apply (Check MyCSULB account to verify your status).
• Must submit proof of employment showing at least 20 hours per week (i.e. copy of pay stub or a letter of verification from supervisor).
• Must submit a copy of your current Financial Aid Award Summary from MyCSULB. If you do not receive financial aid, print out a blank page from the summary section.
MORE INFO: scholarships@csulb.edu
NAME: Women and Philanthropy Undergraduate Research and Creative Activity Scholarships
DEADLINE: 11/15/14
DESCRIPTION: Several $500 to $2,500 scholarships will go to female students that complete a description of their professional goals: (150 words or less) in which you describe the professional goals you would like to achieve and how your educational program will help you meet your goals. Your financial need: (150 words or less) in which you describe your particular circumstances regarding financial need and the impact this scholarship will have upon your situation. Also applicants should discuss whether or not they intend to work while attending CSULB. Be specific including details such as travel expenses, equipment, consumables, photocopying, software, fees, etc. Description of proposed research or creative activity: (300 words or less) Summary must be written IN YOUR OWN WORDS.
ELIGIBILITY:
• Must be an undergraduate student.
• Must be enrolled in a minimum of 6 units.
• Must maintain a minimum cumulative 3.0 GPA.
• Must have faculty supervision of research/creative activity.
• Financial need will be considered.
• Students who have been awarded this scholarship TWICE before are ineligible to apply.
MORE INFO: Women & Philanthropy at wp@csulb.edu.
Perhaps become a: Forensic Toxicologist

**Tasks:**
- Perform tests on tissue samples and bodily fluids to identify any drugs and chemicals present in the body as a part of a crime scene investigation team.
- Toxicologist primary task is to isolate and identify any substances in the body that may have contributed to the crime, such as: alcohol, illegal or prescription drugs, other chemicals, poisons, metals, or gases.
- Scientific tests are performed on samples collected by crime scene investigators for use to find a suspect and eventual evidence in court. Each test is highly methodical and must be documented for accuracy.
- Follow rules in terms of chain of custody for physical evidence (blood, tissues samples)
- The field has grown outside of strictly crime scene investigation and into various fields such as: drug testing for employers and traffic enforcement officials, testing for “date rape” drugs, testing for animal samples in the aftermath of a wildfire, environmental contamination, and performance-enhancing drugs.
- May be asked to testify in court and formulate opinions based on the results of their testing

**Education Level:**
- B.S. in STEM field; M.S. in pharmacology, toxicology or a related field
- Ph.D. degree in biochemistry, physiology, cell biology, toxicology or a similar biological science
- High level poison control centers require PharmD
- M.D.s require specialized training post grad

For more information about this career go to:
http://www.biospace.com/News/education-requirements-for-a-toxicology-job-with-a/165514
• September 1 – Francis William Aston (September 1, 1877 – November 20, 1945) was a British chemist that invented the famous mass spectrometer and also discovered the isotopes of non-radioactive elements, both earning him the 1922 Nobel Prize in chemistry.

• September 6 – John Dalton (September 6, 1766 – July 27, 1844) was an English chemist and physicist that is best known for his atomic theory in which he proposed the idea that elements are made up of individual atoms that cannot be broken down further into smaller parts.

• September 7 – Friedrich August Kekule von Stradonitz (September 7, 1829 - July 13, 1896) was a German chemist who was the first to discover that carbon had a valence of 4 and described in detail the structure of benzene, greatly expanding the understanding of organic chemistry.

• September 9 – Hans Georg Dehmelt, (September 9, 1922 – Present) a German scientist that shared the Nobel Prize with his partner, Wolfgang Paul, for the development of the ion trap. The ion trap is a device that allows ions to be contained for long periods of time in order to be studied in detail by using electric and magnetic fields to capture ions in a specific quantum state.

• September 15 – Aleksandr Mikhaylovich Butlerov (September 15, 1828 - August 17, 1886) was a Russian Chemist who was the first to discover double bonds in chemical structures. In addition, he is credited with the discovery of formaldehyde.

• September 20 – James Dewar (September 20, 1842 – March 27, 1923) was a Scottish chemist that is recognize for his invention of the Dewer flask. For those unfamiliar with Dewer flasks, they are double-walled flasks that are meant to maintain the temperature of the contained liquid. Also, he is credited for a device he developed to produce liquid oxygen.

• September 24 – George Claude (September 24, 1870 - May 23, 1960) was a French chemist that invented the iconic neon light, which produces light with an electrical current passing through a sealed tube of neon gas, visible even in the daylight.
There is risk every time you travel, risk of bringing something back home with you that is not a miniature replica of the Eiffel tower, or the feeling of accomplishment in helping those in a third world country. Rather, it is something that you do not have to make room for in your already over packed suitcase: a virus, in this case specifically, the Ebola virus. Found primarily in third world countries, mostly concerning countries in Africa, it comes from the viral family filoviridae, and has an average fatality rate of 83%-90% - making it one of the deadliest viruses known to man. There are five strains of the virus, Zebov being the strain that causes the most outbreaks and is the most widely referenced. Zeboy attacks the circulatory system and causes blood vessels to hemorrhage. While we, in developed countries, have not had to worry about this virus, it was recently announced that two Americans were found to have contracted the virus in Liberia; in addition, over nine hundred individuals across West Africa have also become infected. However, this is no reason to go out and buy a hazmat suit and every bottle of purel the drug store has to offer. Ebola, while contagious, is difficult to transmit from person to person, and can only be done through the transfer of bodily fluids. With such a large outbreak occurring, research for treatments are being done and progress is steady. The company Mapp Biopharmaceutical has produced an experimental antibody mixture which has seen positive results when used on infected primates. Other experimental drugs being used to combat Ebola are TKM-Ebola, and AVI-7537, both of which have shown positive results in primates and are currently undergoing human trial testing. Research is making headway every day in the fight against Ebola, to find out more and learn about other deadly viruses, if you dare, visit the sites and watch the videos below:

https://www.youtube.com/watch?v=gf2bObJGFkg
https://www.youtube.com/watch?v=TGyFhwdtCMk
http://cen.acs.org/articles/92/i32/Treating-Ebola.html
Alexis Camacho - Biology

Where did your internship/research take place, and how long was it? What did your internship/research consist of in terms of tasks/skills acquired/projects?

City of Hope for 10 weeks. Every student had different projects. Most relate to cancer work by doing benchmark or all the way to clinical and working directly with patients. My project was a clinical research study on the five-year survival rate for stage 3-4 lung cancer. Basically I went through patients’ charts and tried to determine what characteristics made for optimal survival. I kept a database and later analyzed the data to determine five-year survival.

What advice would you give fellow students regarding the importance of research/internships?

Being a part of these programs shows others you care about where your career is going. Not all research opportunities will be the best, but you learn from each experience and you make connections with others in your field. Immerse yourself in your work and it is through these experiences that you find what you love.

What is the most valuable lesson you learned from this experience?

Network as much as possible! Do not limit contact with just your mentor but also with other people working in your lab or around campus. Not only do you make friends but you also create relationships that can be beneficial to your future career.

Tharadet Man - Marine Biology

Where did your internship/research take place, and how long was it? What did your internship/research consist of in terms of tasks/skills acquired/projects?

This summer, I spent 10 weeks at Hopkins Marine Station of Stanford helping Dr. Allen and his graduate students investigate the effects of temperature variation on the ecological responses of intertidal limpets and microalgae. I focused on helping Thomas Kroupa on his master’s thesis regarding the metabolism of limpets after acute temperature stress. During my time, I learned how to identify species in the intertidal, measured metabolism through respiration, interpreted literature and began planning my own research project. I also plan to learn how to measure heat shock protein expression in limpet samples collected during metabolism trials.

What advice would you give fellow students regarding the importance of research/internships?

Start getting involved in research that you are interested in as soon as possible. Your time in Long Beach goes by faster than...
you think and being able to step out of your comfort zone of reading and regurgitating facts is not only fun but also lets you learn things that can’t be taught in a classroom or lab. (Also, have fun learning. Being a nerd is cool now so why not enjoy it)

What is the most valuable lesson you learned from this experience?
The most valuable lesson I learned was that research is a process that just doesn’t happen overnight. This may sound like a no-brainer but through my primary education, “forming the hypothesis” was a step in the scientific method that seemed to be less critical than the design of an experiment or the interpretation of results. With so many things that I’m interested in and want to learn, I found that finding a question to answer takes more time and commitment than I thought previously before this research opportunity.

Phuc Nguyen - Biochemistry

Where did your internship/research take place, and how long was it?
I perform my research at Dr. Roger Acey’s biochemistry research lab. I have been working in this lab since I freshman year. I perform research on a ubiquitous, metal-binding protein called Metallothionein (MT). There are two main objectives to my works: To devise a purification method for MT and to express the protein in large quantity using fermentation technique. My major tasks include operation of FPLC system and fermentation system. I perform chromatographic isolation of MT via ion exchange and gel filtration columns. I also ferment recombinant E.coli in large 5L culture.

What advice would you give fellow students regarding the importance of research/internships?
Research/Internship experiences are the closest to the "real world" that a student can get to. One must not forget that schooling is simply a training ground to prepare him/her for the "real world." In school, people spoon-feed us knowledge, and our only job is to cram it all up in our head (and of course spitting it back in exams). In the real world, however, nobody will spoon-feed us anything; we have to acquire the skills by ourselves, utilizing all our senses in order to be successful. There are vital skills that schooling simply cannot teach us, and it is through research/internship that we will be able to acquire some of them.

What is the most valuable lesson you learned from this experience?
The most valuable experience I learned is that it requires a great deal of tenacity and logic out of a scientist to be successful. Scientific research, however, to its basic level is deceptively simple. Most of the tasks being done in my project can be broken down to moving liquids from one place to another and pushing buttons. It doesn't take a genius to do these things. You simply need to be careful, keeping basic science knowledge in the back of your head, and you will be just fine. The hard part of research, however, is to make sense of the data and to design experiments to answer your scientific inquiries. Sometime you get lucky, and you found the answer in the textbooks, the literature, or from your PI. Most of the time, on the other hand, nobody knows the answer. You then have to perform a series of 'brute force' experiments to find out. These experiments are very dull and repetitive, and it is here that people usually opt out. Many simply can't stand the repetitiveness of the work. Nature is complex; there is no, at least not yet, one master equation to explain it all. It is, therefore, the job of the scientist to figure out nature's bits and pieces, one experiment at a time.
Hieu Nguyen - Biochemistry

Where did your internship/research take place, and how long was it? What did your internship/research consist of in terms of tasks/skills acquired/projects?
I did my research in Dr. Acey’s lab during most of the summer session, and my team was trying to purify and extract a protein called metallothionein. This consisted of learning how to grow and sonicate cells, and then testing for the presence and abundance of metallothionein. After testing for the presence of the protein, the sample containing the protein would be run through gel-electrophoresis, and the resulting gel would be sent to a company to sequence the DNA of the protein and confirm its identity. Even though I did my work during the summer session, I plan to continue working for Dr. Acey until I graduate.

What advice would you give fellow students regarding the importance of research/internships?
The most important advice I could offer to anyone who is interested in doing research is that it will change you. In doing undergraduate research, it is a must that one work unpaid. Over the course of the summer, there were nights where I had to compromise my schedule and stay late, even when I had come early in the morning. There were also times where experiments did not go as expected, and I learned how to accept those failed experiments as they were and try again.
With a paid job, I would have been fired so many times throughout for making the mistakes that I had made in my lab. I think that is what’s great about science and undergraduate research; you can fail and still succeed, as long as you learn from your mistakes. It gives you room to learn and grow.
All through the entire summer, I feel as if I had obtained something priceless that will be a part of me for the rest of my life; that thing is experience in the field of science, and I feel stronger from the experience.

What is the most valuable lesson you learned from this experience?
I would say that the most valuable skill I obtained out of this experience was the ability to pipette accurately and precisely with micropipettes. In testing for the presence of metallothionein, the ability to pipette well is crucial to the results of the experiment. Even a tiny mistake in pipetting could give odd numbers, making the results seem questionable. Having done these experiments countless times over the course of the summer, I would say that I have become somewhat of a pipetting veteran. However, I still have not achieved the title of “Gel-jockey.” That title belongs to one of my lab mates, but my next goal is to make that title mine.

Khai Nguyen - Biochemistry

Where did your internship/research take place, and how long was it? What did your internship/research consist of in terms of tasks/skills acquired/projects?
I’ve been working in the Sorin Lab since my second semester here at CSULB. I was lucky enough to get the stipend for the summer to support my research activities. The stipend was for 8 weeks on a full-time basis.
I’m required to analyze simulation data of the luteroviral pseudoknot RNA using Perl programming. Knowledge of visualization software is also needed. I use R & RStudio mainly for this purpose. In addition, knowing how to use MediaWiki (the software that runs wikipedia.org) to document my lab activities.

What advice would you give fellow students regarding the importance of research/internships?
I would recommend to stay open-minded and try to learn as many things as possible. It is important to always keep in mind that, once one is committed to doing research, the desire to know or to learn must take top priority. Also, do what one loves, money comes second.

What is the most valuable lesson you learned from this experience?
I’ve learned to document my activities in doing research so that my results could be validated/confirmed in the future.
Dagoberto Bernardo - Chemistry

Where did your internship/research take place, and how long was it? What did your internship/research consist of in terms of tasks/skills acquired/projects?

MHIRT research internships take place in three countries: Argentina, England, and Thailand. I was stationed in London, England for a total of ten weeks. During that time I grew methicillin resistant bacterial cultures of staphylococcus aureus (MRSA), performed phospholipid extractions on the bacterial cells, and conducted several different Langmuir Trough experiments using the extracted phospholipids. My project was concerned mainly on the effect of membrane lipid composition on drug resistance in MRSA. The main objective of my research was to investigate how and if acid adaptations in MRSA inhibit interactions with cationic antimicrobials.

What advice would you give fellow students regarding the importance of research/internships?
Expose yourself to different scientific disciplines. Internships are the best way to try something new, make mistakes, learn, and gain a unique experience.

What is the most valuable lesson you learned from this experience?
Traveling is invaluable.
# Professors Currently Accepting Undergraduate Research Students

<table>
<thead>
<tr>
<th>Professor</th>
<th>Number of Vacancies</th>
<th>Requirements</th>
<th>Current Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Brazier</td>
<td>One</td>
<td>Completion of general chemistry.</td>
<td>Jet-cooled emission spectroscopy of gallium carbide.</td>
</tr>
<tr>
<td><a href="mailto:chris.brazier@csulb.edu">chris.brazier@csulb.edu</a></td>
<td></td>
<td>Previously taken organic chemistry laboratory. One must also have blocks of time available to start and work up reactions, 3-4 hour blocks at minimum.</td>
<td>Laser induced fluorescence in a pulsed supersonic jet - experiment still in the construction phase.</td>
</tr>
<tr>
<td>Dr. Buonora</td>
<td>Two</td>
<td></td>
<td>We develop methods for the synthesis of organic molecules, with the goal of reducing cost and increasing the availability of pharmaceuticals and pharmaceutical precursors.</td>
</tr>
<tr>
<td><a href="mailto:paul.buonora@csulb.edu">paul.buonora@csulb.edu</a></td>
<td></td>
<td>At least one semester of organic chemistry laboratory and a grade of A or B in Organic Chemistry. You must enjoy chemistry and want to do something new in the laboratory. Has to commit to working at least 8 hours a week in the lab. Since I am retired and don’t teach formal classes, I’m available at almost any time that a student has free time. I can be there whenever you want one on one guidance.</td>
<td>We are studying alkylation reactions of acids, alcohols and phenols by ethyl and isopropyl sulfonimidates to make esters and ethers by a simple direct reaction that we call SNAAP. Please see the department web page for more details about our research. The chances of contributing to publishable results in journals and professional meetings are high.</td>
</tr>
<tr>
<td>Dr. Maricich</td>
<td>Three or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:tmaricic@csulb.edu">tmaricic@csulb.edu</a></td>
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<tr>
<td>PH2-210</td>
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<tr>
<td>Dr. Mezyk</td>
<td>Three or more</td>
<td>Completion of CHEM 111B with a B or better.</td>
<td>Water remediation, removal of chemical contaminants from wastewaters, drinking water chemistry, Nuclear chemistry, metal ion complexation, kinetics and thermodynamics.</td>
</tr>
<tr>
<td><a href="mailto:stephen.mezyk@csulb.edu">stephen.mezyk@csulb.edu</a></td>
<td></td>
<td></td>
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<tr>
<td>HSCI-358</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. Nakayama</td>
<td>Two</td>
<td>Organic I and II preferred, but will accept others with previous experience.</td>
<td>Synthetic organic chemistry lab that focuses on the synthesis organophosphorus compounds. Interested students check out the description of our work on the department website. They are also encouraged to contact me to discuss further details about our work.</td>
</tr>
<tr>
<td><a href="mailto:kensaku.nakayama@csulb.edu">kensaku.nakayama@csulb.edu</a></td>
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<tr>
<td>HSCI-340</td>
<td></td>
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</tr>
<tr>
<td>Dr. Shon</td>
<td>Two</td>
<td>Passed general chemistry and/or enrolled in organic chemistry.</td>
<td>Project 1: Understanding and optimizing critical structure-function relationships for 2D atomic layered materials-supported metal nanoparticle catalysts</td>
</tr>
<tr>
<td><a href="mailto:ys.shon@csulb.edu">ys.shon@csulb.edu</a></td>
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<tr>
<td>MLSC-337</td>
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<td></td>
<td>Project 2: Understanding molecular-level interactions and chemical/physical stability of multicomponent nanomaterial hybrids for drug delivery and theranostic devices</td>
</tr>
</tbody>
</table>
Professors Currently Accepting Undergraduate Research Students

Dr. Tapavicza
enrico.tapavicza@csulb.edu
HSCI-350

Three or more

Interest in physical/computational chemistry.
Enjoyment of mathematical and logical thinking.
Experience with computers and programming is helpful but not required.

We use quantum chemical methods and molecular dynamics simulations to study photochemical reactions.

Keywords: photobiology, photochemical switches, solar energy conversion, density functional theory, machine learning
Across
1. The chemistry of compounds of carbon
4. A method of dating—measuring the age of materials that contain matter of living origin
9. The amount of substance per unit volume in a solution
10. A method of investigating nuclear spin
11. A unit of pressure expressed in mmHg
12. A conical glass laboratory flask with a narrow neck

Down
2. A reaction with oxygen with the production of heat and light
3. The proportions in which elements form compounds
5. A branch of physical chemistry concerned with the study of rates of chemical reactions
6. pV=k
7. A suspension of small particles of a solid in a liquid formed by a chemical reaction
8. A liquid capable of dissolving other materials to form a solution
- I am organic
- You probably have used me every morning
- My sweet smell is very widely known during winter season
- I am a solid at room temperature
- I appear clear in color
- I contain a hydroxyl, isopropyl and methyl group

Who am I?

(will be revealed next issue)
**Announcements**

**Have a Great Night!**

HSI-STEM's Bienvenida is an annual STEM student and family event. The event provides bilingual English and Spanish information for parents of students in the College of Natural Science and Mathematics and College of Engineering.

This event is meant to link students and their families to CSULB in an effort to foster an environment that is conducive to student success in STEM. Students and Parents will hear from STEM professors on campus AND STEM industry professionals from various companies such as JPL.

Reserve Your Spot Today!

For more information: csulb.edu/hsi-stem

To register: bit.ly/registerbien2014

**HSI-STEM offers FREE tutoring**

FO5-208

Monday-Thursday 10 am-6 pm

**INSTAGRAM CONTEST: LAB PHOTO OF THE DAY**

Now that school has finally started, it's only right to show some science spirit with a photo of what you are doing in lab! Any aspect that portrays lab conduct is welcomed! Just tag us to enter and win a GRAND PRIZE. It ends September 30th, so start thinking of ideas and post your best one!

#thebeakercsulb