



Bonding Students to Chemistry & Biochemistry

Event Announcements

By: Kimmy Phan

CSULB and CNSM

Dec 1st: Deadline to apply for CSU Visitor or Concurrent Enrollment

Dec 22nd: Deadline to file Request for Educational Leave without \$10 missed deadline fee

Don't forget to register for spring classes and to complete your to-do list to avoid any holds!

SAACS Announcements

SAACS Meeting will resume and will be announced in the first week of spring.

SAACS along with CNSM is having a fundraiser Dec. 1st at Cha for Tea. Please pick up a flyer so that your purchase can go towards CNSM.

If you have any further questions or would like to join SAACS please contact President Carolyn Kusaba at: Carolynandallan@gmail.com

December Seminar Series

“Identification of Efficient Enhancers for Antifreeze Protein Activity”

Presented by Xin Wen of CSULA

When: Wed, December 7th from 4-5pm @ HSC1-103

Hosted by Dr. McCain - please contact brian.mcClain@csulb.edu for more info or if you would like to join the speakers for a free lunch.

Career Development Center Announcements

[All workshops are located at BH-250 unless otherwise noted]

Dec 1st: Search & Secure An Internship from 2-3pm

Dec 26th-30th: Campus closed for Winter break

*If you miss any of the workshops and need them for a class please call and schedule an individual one with the CCC.

Association of Pre-Pharmacy (APP) Announcements

Southern California Pre-Pharmacy Society Symposium on January 28th.
Time and Location TBA

APP Meetings will resume in the spring

If you have any questions or would like to join APP next semester please contact President Mariko Yokokura at : <mailto:marikoccyokokura@gmail.com>

Highlights of November Events

Dr. Ken Shea from UCI and Dr. Daisy Sahoo from Medical College of Wisconsin came and spoke last month at the seminar series.

For students whom may have missed the CNSM mixer this semester, please make sure to come out for the free food and good company next semester!

Faculty Spotlight: Dr. Eric Sorin

By: Monica Royer; Editors: Karen Yu and Lauren Olson

A Southern California native, Dr. Sorin, is one of the most recognizable professors within the department with his signature ponytail, sunglasses, flip-flops, and easygoing personality. His seemingly odd decision to become a computational scientist boggled his parents, who were under the impression that he was either going to blow up the world or make LSD. Little did they know that an innovative career in chemistry awaited him.

This animated professor holds a Ph.D. from Stanford University in Chemistry/Chemical Physics. As an undergrad, Dr. Sorin intended to pursue a career as a “laser jockey.” His undergrad research focused on FTIR and Raman microscopy studies of organic molecules, and he was recruited by Stanford Professor Michael Fayer to continue in this direction. Six months after joining Prof. Fayer’s group, Dr. Sorin realized he wanted to devote his studies to computational chemistry, and left his experimental inclinations behind. While his academic studies focused on physical chemistry and bioinformatics, his graduate research applied these areas to computational biophysics. He was one of the first graduate students to join the *Folding@Home Distributed Computing* project, using computers donated from around the world to collectively crunch numbers for research projects aimed at modeling molecular biology.

The biggest struggle Dr. Sorin experienced while obtaining his PhD was balancing grad school with his family life. He moved to Stanford with a wife and three children, and found that he had a greater degree of responsibility thrust upon him than most of his younger peers. Although he does not regret having taken the path that he did, he could not imagine anyone wanting to replicate it. Dr. Sorin believes that undergraduate students should take their time in order to get the most out of their education. Too often he sees students in a hurry to graduate early, not appreciating college life and the intellectual opportunities it provides.

Even as an undergrad at UC Riverside, Dr. Sorin knew he wanted to teach. Aside from having annual winter and summer vacations, Dr. Sorin also loves his flexible work schedule and the selection of courses that he gets to teach. He chose to teach at CSULB for several reasons. It was in an area that both he and his wife were familiar with and enjoyed and during his first interview at the university he knew it was the right place for him: he enjoyed meeting with students and his soon-to-be colleagues in the department, and really appreciated the atmosphere. Dr. Sorin currently teaches a variety of courses in physical and computational chemistry with a focus on biological applications.

Dr. Sorin primarily teaches Chem 377A/B, physical chemistry for Biochemistry majors. He also teaches his graduate course (Chem 480/580) once every two years, which focuses on the computational chemistry and physics involved in his research.



A “clean-cut” look for Professor Sorin during his graduate school years at Stanford, with his long-time friend Rico, a 5 pound Argentine tegu, one of the many exotic species he and his wife kept and bred before coming to Long Beach.

If you have the pleasure of taking Dr. Sorin for any of these classes, be prepared for exams that are very challenging and seemingly impossible to finish. “My students tell me my exams cause cancer,” chuckles Dr. Sorin. There is one tip he offers to anyone taking one of his classes: “Listen to what I say. It’s like cooking – follow the directions and you’ll get P-chem!” Aside from teaching physical chemistry he also has multiple research projects he is currently leading.

Dr. Sorin is conducting research in two main areas. His first project looks at the docking/binding mechanisms of small drug molecules in big enzymes and is part of collaboration with the Acey and Nakayama labs. Dr. Sorin’s lab performs rational drug design – refining the library of possible drug molecules. They have recently begun to use computer simulations to better understand how enzymes and substrates bind to each other, and perhaps discover a new or more complete description of the mechanism by which drug binding occurs. His second area of research examines RNA folding – an area of study that is not well known. Though his lab is presently full, he is always looking for motivated students with the right kind of easy-going personality. Experience in computer programming is recommended but not required, and most students from the Department have little, if any, computing experience when they join his lab; students should expect to work 10-20 hours a week per

semester and 30 hours a week during summer. Dr. Sorin's main goal for his research students is to succeed; he wants each student to co-author a paper, give poster and oral presentations, and get into high-caliber graduate and professional programs.

Among Dr. Sorin's many endeavors as a scientist, his biggest accomplishment was establishing the equilibrium simulation of conformational dynamics in peptides, RNAs, and small proteins, something that had never been done before! Dr. Sorin is a phenomenal physical and biophysical chemist as well as an involved research advisor that many students would enjoy getting to know. If this is the kind of scientist you are interested in working with or aspire to be, please contact him at eric.sorin@csulb.edu.

Sorin Fun-facts:

- Neither of Dr. Sorin's parents are scientists.
- Despite his consistent look of sandals and sunglasses, he's not that fond of beaches – he's more of a mountain person.
- Dr. Sorin and Dr. McClain almost worked together in the same research lab at Stanford, but never met while working there.
- Pets: 2 dogs, 3 cats, 2 rats, 2 tarantulas (and 2 teenagers!).
- Hobbies: archery, video games, plays the guitar and bass, and spent many years breeding boxers and exotic animals.
- Music: almost anything, including classical instrumental music, good 1990's rap, classic thrash, and rock 'n roll of any flavor, including all forms of metal, punk, and reggae.
- Favorite Movie: *The Matrix part 1*.
- Favorite Scientific Movie: *The Race for the Double Helix*.
- Favorite Books: Stephen King novels, the Robert Jordan "Wheel of Time" series, and the Terry Goodkind "Sword Truth" series (but says the TV series is a "ridiculous mockery of the books, so don't watch it!").
- Favorite molecule: "Definitely RNA!"

Selected Publications: (*undergrad authors @ CSULB)

1. Equilibrium Conformational Dynamics in an RNA Tetraloop from Massively Parallel Molecular Dynamics. Allison J. DePaul*, Erik J. Thompson*, Sarav S. Patel*, Kristin Haldeman*, & Eric J. Sorin(2010). *Nucleic Acids Research* **38**, 4856-4867 (Featured Cover Article).
2. Computer Simulations of Protein Folding. Vijay S. Pande, Eric J. Sorin, Christopher D. Snow, & Young Min Rhee (2008). Chapter appearing in *Protein Folding, Misfolding and Aggregation: Classical Themes and Novel Approaches* (ed. Victor Munoz), Royal Society of Chemistry-Biomolecular Sciences.
3. Nanotube confinement denatures protein helices. Eric J. Sorin & Vijay S. Pande (2006). *JACS* **128**, 6316-6317.
4. Exploring the Helix-Coil Transition via All-Atom Equilibrium Ensemble Simulations. Eric J. Sorin & Vijay S. Pande (2005). *Biophys. J.* **88**, 2472-2493.
5. Simulations of the Role of Water in the Protein-folding Mechanism. Young Min Rhee, Eric J. Sorin, Guha Jayachandran, Erik Lindahl, & Vijay S. Pande (2004). *PNAS* **101**, 6456-6461.
6. Does Native State Topology Determine the RNA Folding Mechanism? Eric J. Sorin, Bradley J. Nakatani, Young Min Rhee, Guha Jayachandran, V Vishal & Vijay S. Pande (2004). *J. Mol. Biol.* **337**, 789-797.
7. β -hairpin Folding Simulations in Atomistic Detail Using an Implicit Solvent Model. Bojan Zagrovic, Eric J. Sorin, & Vijay S. Pande (2001). *J. Mol. Biol.* **313**, 151-169.

The Fume Hood

By: Lauren Olson

"A place where your noxious thoughts can be carefully filtered and fed back to the public!"

Results from last month's question:

Not only are they great leaving groups, but the halogens have won your hearts as well. Our polls shows that the halogens are your favorite category of element's on the periodic table.

Since finals are right around the corner, we're confident that everyone's stress levels are elevated. Depending on the student, your tension may be ranging anywhere from mild nervousness to outright neurosis. Either way we thought some jokes might lighten the mood, so let us know your favorite science jokes! Please send your jokes to our email or facebook link below.

Let us know at thebeakercsulb@gmail.com or post your responses on Facebook @ [facebook.com/thebeakercsulb](https://www.facebook.com/thebeakercsulb)!

Chemtainmentment

By: Monica Royer

"Scientific & Sci-fi recommendations from a chemistry nerd"

This Month's Book Suggestion:

"The Truth about Santa: Wormholes, Robots, and What Really Happens on Christmas Eve" by Gregory Mone

Ever wonder if Santa's annual Christmas trek could actually be real, or at least plausible? This book explains the science behind his "techniques" and has a lot of laughs along the way, providing everyone from students to parents with a new arsenal of answers when the validity of old St. Nick and his flying sleigh are in question

This Month's Movie Suggestion:

"Mystery Science Theater 3000: Santa Claus Conquers the Martians"

This episode of the cult comedy series centers on the 1960s cinematic travesty involving Martians and the quest to have their own Christmas - Santa Clause and all. When Santa's arrival on Mars causes a rift between the Martians, what will be Santa's fate? Find out in this holiday themed sci-fi rarity

Chemistry for Today's World

By: Cindy Pham

"Your chemical connection to today's world"

The debate between finding new oil wells to drill or turning to alternative energy continues. The effects that this issue has on jobs for future chemical engineers and chemist is one reason why this issue is important.

Finding an alternative energy can help encourage more scientist to focus on alternative energy and open up a new market of jobs. This will also help limit the amount of pollution that enters our atmosphere.

On the other hand, some may argue that drilling oil will also be good for the economy because more scientists and engineers will be needed to operate and maintain an oil refinery.

However the decision is of course for the reader to make as to which side is the right one. The link below is a short article on the debate.

<http://www.nytimes.com/2011/11/26/nyregion/hydrofracking-debate-spurs-huge-spending-by-industry.html? r=1&ref=science>

Next Semester's Issue Features...

We will be back in the spring with Dr. Slowinski's "spicy" tale of how he met Dr. Slowinska.

Good luck with finals everyone!

If you enjoy hearing from us each month and interested in joining the Beaker please email us or facebook us **before end of spring!** Positions will be available for the next academic year as our senior staff members will be graduating!

