



Bonding Students to Chemistry & Biochemistry

Welcome to a new volume of *The Beaker*! *The Beaker*, a student publication, seeks to improve communication between the Chemistry Department and its students. Our goal is to keep students up to date on current events and well informed about the department. Furthermore, we would like to provide professors heading research labs with an outlet through which they can provide insight about their current lab projects, career advice, and life stories. Every issue also includes sections such as “Chemtainment” for all you scientific movie and book lovers, “Chemistry for today’s world” to keep you update on current chemistry news, and “The Fume hood” - a place to store all your opinions. We hope you enjoy the articles and we’re looking forward to another successful year.

Staff: Lauren Olson ▪ Kimmy Phan ▪ Monica Royer ▪ **Editor in Chief:** Cindy C. Pham

Website: <http://chemistry.csulb.edu/thebeaker.html> ▪ Facebook: [facebook.com/thebeakercsulb](https://www.facebook.com/thebeakercsulb) ▪ E-Mail: thebeakercsulb@gmail.com

Event Announcements

By: Kimmy Phan

University Deadlines:

- Submit FAFSA between Jan 1 - Mar 2
-Steps to Apply:
http://www.csulb.edu/depts/enrollment/financial_aid/how_to_apply_fa.html
- WPE Exam Date Feb 12
Deadline to apply for exam: Jan 27
- Jan 23 - Feb 17: Open University enrollment
- Feb 5: Self Service Registration and Adjustments ends
- Feb 5: Deadline to withdraw or drop classes using MyCSULB (by 10:00 pm)
- Feb 5: Deadline to withdraw or drop classes without 'W' grade
- Feb 5: Deadline for partial withdrawal with refund of fees
- Feb 6: In Person Registration begins
- Feb 6 – 17: In Person Registration and Adjustments
- Feb 10: Deadline to add courses without fee
- Feb 10: Deadline to file for CR/NC or Audit grade options without fee
- Feb 10: Deadline to file for Credit by Examination
- Feb 17: Final deadline to add courses with \$10 missed deadline fee
- Feb 17: Final deadline to file for CR/NC or Audit grade options with \$10 missed deadline fee

CNSM Department Announcements:

- Deadline: CNSM Fac. Res. Symp. Abstracts Due
Feb 3, 12am – Feb 4, 12am
- Deadline: CSULB Student Res. Competition Applications
Feb 3, 12am – Feb 4, 12am
- Deadline: Student Travel Grant Apps
Feb 3, 12am – Feb 4, 12am
- CNSM Student Research Competition
Feb 24, 12am – Feb 25, 12am

For More Information, email: csulbchemistry@gmail.com

Career Development Center Announcements

- Feb 14: Employer Presentation - Performance Contracting Group at 3:30-4:30pm in BH-250
- Feb 23: Spring Job Fair at 12-4pm in University Student

SAACS Announcements (Chemistry Club)

Meeting will be held on Jan 31 and Feb 28 @ 5:00pm
Location: TBA
There will be pizza at the first meeting!

Beach Clean up will be held on Feb 18 @ 10:00am
Location: 1 Granada Ave in Belmont Shore @ Ocean blvd.

It lasts for only 30 minutes so come join us on the beach!

For more information please contact President,
Carolyn Kusaba @ carolynandallen@gmail.com

February Seminar Series

All seminars are supported by Allergan and are located at the HSCI-103 at 4:00pm

Feb 1: A Dual Site Catalyst for Hydride Manipulation
Speaker: Dr. Travis Williams, USC
Host: Dr. Marinez, eric.marinez@csulb.edu

Feb 8: Many Faces of Ultrasensitive Biosensing: Surface Plasmon Resonance Phase Imaging, Surface Enzyme Chemistries and Biofunctionalized Nanoparticles
Speaker: Dr. Robert Corn, UC Irvine
Host: Dr. Shon, ys.shon@csulb.edu

Feb 15: Large Scale Direct Coupling Analysis of Residue-Residue Co-evolution Reveals Native Contacts in Many Domain Families
Speaker: Dr. Robert Corn, UC Irvine
Host: Dr. Sorin, eric.sorin@csulb.edu

Feb 22: Recent Applications of Amyloid-Targeting Agents: From Alzheimer's to HIV
Speaker: Dr. Jerry Yang, UC San Diego
Host: Dr. Acey/Cohlberg, roger.acey@csulb.edu or jeffrey.cohlberg@csulb.edu

Feb 29: Organic and Polymer Semiconductor Crystals for Plastic Electronics
Speaker: Alex Briseno, University of Mass. Amherst
Host: Dr. Lopez, marco.lopez@csulb.edu

Seminars are open to all students and snacks are always provided. If you would like to meet with the speakers for a free luncheon please contact the host for more information.

Faculty Spotlight: Department Chair, Dr. Krzysztof Slowinski

By: Cindy Pham; Editors: Monica Royer and Lauren Olson

Many of us have heard about chemistry sets as a child and some may have even owned one. For Dr. Slowinski, that playful chemistry set was the beginning of his journey towards becoming a chemist. As a child he loved fire, explosions and was curious about synthesis, and reactions that involved color change. His youthful curiosity led him to an interesting career.

As an undergraduate and graduate student, Dr. Slowinski attended Warsaw University in Poland. In Poland it is customary for students to attend the same university for their bachelor's, master's, and Ph.D degree. He received post doctorate training at UC Berkley and moved to CSULB in 2001.

Dr. Slowinski said that what truly drew him to CSULB was the small research groups and the interaction with undergraduate students. Many universities, he explained, are more focused on producing research results than involving students. Dr. Slowinski was impressed by how well the faculty and students worked together at CSULB. He explained that the focus of the university, student learning, was the main reason why he decided to teach here. Dr. Slowinski has taught Chem 251, 451, and 552 while still staying devoted to his research students.

His research, he explains, is a mixture of physical and biochemistry. The Slowinski lab is mainly focused on analysis of electrical conductivity of molecules and 2-D molecular assemblies. His group uses tunnel junction devices where a monolayer of molecules separates the two electrical contacts. They currently develop experimental strategies for the electrical detection of single-nucleotide polymorphisms (SNPs) and sequence-specific DNA-binding proteins (e.g. transcription factor) at the single molecule level via monitoring of the electrical properties of DNA molecules modified with covalently attached intercalator in electrochemically controlled nanoscopic tunnel junctions. The key objective is to determine if a single-point mutation or protein binding results in a measurable decrease of electrical conductivity of the helix. They plan to use these results to construct new sensors.



Dr. Slowinski took the position as chair of the department this fall. Facilitating the success of faculty and students is one aspect of being chair that he truly admires and is looking forward to. He is a strong advocate of undergraduate research. At the breakfast council meeting last fall, he encouraged our council to make greater contributions to fund students participating in research with faculty. Dr. Slowinski indicated that all students should consider getting involved in lab research as it “provides invaluable experience in problem solving, teamwork, scientific writing, and literature analysis. Students involved in the research process create new knowledge and communicate this knowledge to research community by participating in writing publications and preparing presentations. Research stimulates students’ curiosity, improves their communication skills, enhances their critical thinking, and creates sustained enthusiasm for science, in turn increasing their future professional success.” Dr. Slowinski’s lab is always open to students. If you are interested in joining his research group please contact him at krzysztof.slowinski@csulb.edu.

Slowinski Fun-facts:

- Born in Warsaw, Poland
- Loved it there, but didn't mind leaving for a new adventure
- Poland weather is like NYC weather, but winters are not as cold
- Has two sons ages 2 and 5
- Likes classical music, particularly 19th century opera
- Favorite conductor is Gustavo Dudamel
- Use to like rock climbing (as stated, 20 years ago)
- Cooks regularly for his family
- Surprisingly does not cook much Polish food, but loves cooking Italian and French foods
- Favorite dish: rack of lamb with roasted garlic and mint!
- Does not like movies
- Would be ytterbium if he were an element for "no reason"
- Favorite lab equipment is rubber policeman
- Favorite class to teach is 496

Selected Publications:

1. Adaligil, E., Slowinski, K. Electron Tunneling through Monolayers of Alkanethiols Self-Assembled on a Hanging Mercury Drop Electrode in the Presence of Aliphatic Alcohols, *J.Electroanal.Chem.* 2010, 649, 142
2. Adaligil, E., Shon, YS, Slowinski, K. The Effect of Headgroup on Electrical Conductivity of Self-Assembled Monolayers on Mercury: n-Alkanethiols vs. n-Alkaneselenols, *Langmuir* 2010, 26, 1570
3. Hammond, W.J., Arndt, J., Nguyen, T., Slowinska, K.U., Jackson, C., Burgoyne, H.A., Hill, M.G., Slowinski, K., Detection of DNA π -Stack Lesions Using Scanning Electrochemical Microscopy, *ECS Transactions*, 2009, 16 (38), 55
4. Gorodetsky, A.A., Hammond, W.J., Hill, M.G., Slowinski, K., Barton, J.K., Scanning Electrochemical Microscopy of DNA Monolayers modified with Nile Blue and Sequence-specific Detection of Protein Binding, *Langmuir* 2008, 24, 14282
5. Wierzbinski, E., Slowinski, K., In Situ Electrochemical Distance Tunneling Spectroscopy of Single n-alkanethiol and alkanedithiol Molecules in Water, *Langmuir* 2006, 22, 5205
6. Wierzbinski, E., Arndt, J., Hammond, W., Slowinski K., In Situ Electrochemical Distance Tunneling Spectroscopy of ds-DNA Molecules. *Langmuir* 2006, 22, 2426
7. York, R.L., Nacionales, D., Slowinski, K., Electrical Resistivity of Monolayers and Bilayers of Alkanethiols in Tunneling Junction with Gate Electrode. *Chemical Physics*, 2005, 319, 235
8. Sek, S., Bilewicz, R., Slowinski, K., Wiring of α , ω - Alkanedithiols Into Electrical Circuit. *Chemical Communications (Royal Society)* 2004, (4), 404
9. York, R.L., Nguyen, P.T., Slowinski, K., Long-Range Electron Transfer through Monolayers and Bilayers of Alkanethiols in Electrochemically Controlled Hg-Hg Tunneling Junctions. *Journal of the American Chemical*

The Fume Hood

By: Lauren Olson

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

Here are a few of our reader's best jokes in response to last month's topic:

A small piece of ice, which lived in a test tube, fell in love with a Bunsen burner. "Bunsen! My flame! I melt whenever I see you," said the ice. The Bunsen burner replied, "It's just a phase you're going through".

What do dipoles say in passing? "Have you got a moment?"

Two guys walk into a bar; the first one orders a glass of H₂O. The other guy shouts, "I'll have a glass of H₂O too!" The other guy dies...

This month:

Send us your favorite chemistry/biochemistry youtube videos.

Submit your answers to thebeakersulb@gmail.com or on facebook at:

<https://www.facebook.com/thebeakersulb>.

Chemertainment

By: Monica Royer

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

This month's movie:

"Starman"

This '80s romance stars a young Jeff Bridges as an alien - the Starman - that comes to Earth in response to an "invitation" sent into space by the UN. Once on Earth, he assumes the identity of a widow's dead husband and journeys with her to the rendezvous point where the mothership will take him back to his home planet. It's during these three days that Jenny teaches the Starman about Earth, humans, and love. Their journey ends on a bittersweet note: the Starman lives, but what of their star-crossed love? Watch and find out!

This month's book:

"The Science of Love" by Glenn D. Wilson

I'm sure anyone that has watched Moulin Rouge has heard the phrase, "love is a many splendored thing, all you need is love." Well, I say all you need is science! Love is great and all, but have you ever wondered about the science behind it? This February pick is sure to answer your questions about what love is, how we love, and who we love through an informative mixture of chemistry, biology, and sociology.

Chemistry for Today's World

By: Cindy Pham

"Your chemical connection to today's world"

This month's interesting article that we suggest is on the nanoparticles that increase the solubility of drugs. Drugs that are developed for pharmaceutical uses are often stopped before being "put on the shelf" because of their insolubility. The article featured on C&E news suggests the use of nanoparticles as one way of increasing their solubility. To find out more about the nanoparticles and determine if they can affectively increase drug solubility, click on the link below.

<http://cen.acs.org/articles/90/i4/Nanoparticles-Boost-Drug-Solubility.html>

Next Month's Issue Features...

Dr. Pickett of the Physics department, professor of Physics 151 and 152.

We are currently looking for two students to join our staff. Send us an email if you are interested!

thebeakersulb@gmail.com

Happy Valentine's Day Everyone!

