



Bonding Students to Chemistry & Biochemistry

Editor-in-Chief: Jacqueline Dominguez ▪ **Co-Editor-in-Chief:** Hannah Pham

Staff: Dagoberto B. Ramos, Briana Nickol, Tuyen Ngoc Tran

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

▪ E-Mail: thebeakercsulb@gmail.com

Event Announcements

By: Dagoberto B. Ramos

University Deadlines:

- 2/3: Self Service Registration and Adjustments ends
- 2/3: Deadline to withdraw or drop classes using MyCSULB (by 10:00 pm)
- 2/3: Deadline to withdraw or drop classes without 'W' grade
- 2/3: Deadline for partial withdrawal with refund of fees
- 2/4: In Person Registration begins
- 2/4-2/17: In Person Registration and Adjustments
- 2/10: Deadline to add courses without fee
- 2/10: Deadline to file for CR/NC or Audit grade options without fee
- 2/10: Deadline to file for Credit by Examination
- 2/17: Final deadline to add courses with \$10 missed deadline fee
- 2/17: Final deadline to file for CR/NC or Audit grade options with \$10 missed deadline fee
- 2/17: Last day to enroll in Open University

Seminar Series:

- 2/12: Tilly Wang, CSU Dominguez Hills. "Enhanced radiation response in MCF-7 radioresistant breast cancer cells by targeting peroxiredoxin II" Host: Schwans
 - 2/19: Hilary Coller, UCLA. "Quiet time: The secret life of quiescent fibroblasts" Host: McAbee
 - 2/26: Richard Zare, Stanford Univ.. "Allergan Distinguished Lecturer" Host: Brazier
- All seminars take place in HSCI-105 from 4pm-5pm

Career Development Center:

- 2/3 @ 1pm: Cover Letters and More
 - 2/4 @ 1pm: Job Search for International Students
 - 2/5 @ 2pm: Interviewing Techniques
 - 2/6 @ 12pm: Applying to Graduate School
 - 2/10 @ 1pm: Job Search Success
 - 2/11 @ 12pm: Internships for International Students
 - 2/12 @ 2pm: Planning Your Career
 - 2/13 @ 12pm: Linked in Part II: Active Networking, Introductions and Job Search
 - 2/17 @ 2pm: Letters of Recommendation
 - 2/18 @ 12pm: Managing Your personal Finances
 - 2/19 @ 1pm: Resume Writing for STEM Majors
 - 2/20 @ 12pm: Prepare for the Job Fair
 - 2/21 @ 3pm: Get Styl'd to Work by THE LIMITED
 - 2/24 @ 2pm: Resume Writing Essentials
 - 2/25 @ 12pm: Business Etiquette
 - 2/26 @ 1pm: Prepare for the Job Fair
 - 2/27 from 12-4pm: **Spring Job Fair**. [University Student Union]
 - 2/27 @ 5pm: NAVAIR- Naval Air Weapons Division- Employer Presentation [University Student Union]
- All events take place in the Career Development Center BH-250 unless stated otherwise.

CNSM:

- 2/14 from 7:45-11am: Responsible Conduct of Research Workshop. RSVP to Nancy.Lewis@csulb.edu
- 2/14 @ 12pm: Town Hall meeting with CSULB President Para and Provost Dowell in HSCI 105
- 2/21; 26th Annual **Student Research Competition**. College of Business Building.

Faculty Spotlight: Dr. Paul Weers

By: Dagoberto B. Ramos Edited by: Jacqueline Dominguez

Dr. Paul Weers grew up in Holland, near the city of Utrecht. He first thought about becoming a teacher early in his academic career as a high school student. He deviated from this idea through the course of his career but obviously returned to it later in life. Dr. Weers attended the University of Utrecht, where his involvement in research as an undergraduate student immediately and indefinitely sparked his interest; both his undergraduate and PhD were completed at the university. After a brief postdoc at a research institute near Amsterdam, Dr. Weers missed the campus life and decided he wanted to become a professor at a university. In order to acquire such a position, it was necessary to go abroad. Dr. Weers travelled across the pacific and spent four years in Edmonton, Alberta, where he worked in the lipid and apolipoprotein research group. Initially, the goal was to return to Holland, but Dr. Weers fell in love with the space and beauty of Canada and decided to stay in North America where the opportunities to become a faculty member and be involved in research are more prevalent. After four years in Edmonton, the research group moved to the Children's Hospital and Research Center located in Oakland, California, where he spent two more years. His desire to become a professor never left him and so he began to apply to faculty positions. He was invited to become a professor at CSULB where he has been since 2003.

As a professor at CSULB, Dr. Weers enjoys teaching, interacting with students, and the freedom to conduct research in whatever interests him. His research involves the study of apolipoproteins, specifically insect apolipoprotein III and human apolipoprotein A1.



He and his research group are determining how these proteins protect against bacterial infection, finding how important they are to the human immune system and how apolipoproteins bind to lipids by characterizing the interactions during lipid-protein binding. Dr. Weers uses apolipoprotein III as a model because it is a great system to work with undergraduate students to teach them about research and train them in a variety of biochemistry techniques as bucketloads of protein can be produced and the protein is relatively easy to handle. It is not necessary to be an A student to be a good researcher, says Dr. Weers; he looks for enthusiasm and eagerness to be involved in research and requires at least a one-year commitment from students. His lab is currently full, but come by the end of Spring 2014 he may be looking for additions to his lab. Dr. Weers currently teaches CHEM 441A,B, 443, 541 and 546. If interested, email him at paul.weers@csulb.edu.

Fun Facts:

Enjoys: Hiking, scuba diving, bird watching, soccer, photography

Went on a safari in Zambia last summer.

Favorite Animal: Roadrunner, courtesy of Looney Tunes.

Music: Pink Floyd and Dire Straights.

Food: Raw Herring, a Dutch delicacy.

Movie: Apocalypse Now, The Good, the Bad and the Ugly.

Publications

1. Wan, C.-P. L., Chiu, M.H., Wu, X, Lee, S., Prenner, E., and Weers, P.M.M. (2011) Apolipoprotein-induced conversion of SUVs into nanodisks. *Biochim. Biophys. Acta (Biomembranes)* 1808, 606-613.
2. Weers, P.M.M., Patel, A.B., Wan, L.C.-P., Guigard, E., Kay, C.M., Hafiane, A., McPherson, R., Marcel, Y.L., Kiss, R.S. (2011) Novel N-terminal mutation of human apolipoprotein A-I reduces self-association and impairs LCAT activation. *J. Lipid Res.* 52, 35-44.
3. Narayanaswami, V., Kiss, R.S., Weers, P.M.M. (2010) Review, The helix bundle: a reversible lipid binding motif. *Comparative Biochemistry Physiology A. Mol. Integr. Physiol.* 155, 123-133.
4. Chiu, M.C., Wan, C.-P. L., Weers, P.M.M., Prenner, E.J. (2009) Apolipoprotein III interaction with model membranes composed of phosphatidylcholine and spingomyelin using differential scanning calorimetry. *Biochim. Biophys Acta (Biomembranes)* 1788, 2160-2168.
5. Vasquez, L.J., Abdullahi, G.E., Wan, C.-P. L., Weers, P.M.M. (2009) Apolipoprotein III lysine modification: effect on structure and lipid binding. *Biochim. Biophys Acta (Biomembranes)*, 1788, 1901-1906.
6. Hauser, P.S., Raussens, V., Yamamoto, T., Abdullahi, G.E., Weers, P.M.M., Sykes, B.D., and Ryan R.O. (2009) Semisynthesis and segmental isotope labeling of apoE3 N-terminal domain using expressed protein ligation. *J. Lipid Res.* 50, 1548-1555.
7. Wong, K., Beckstead, J.A., Lee, D., Weers, P.M.M., Guigard, E., Kay, C.M., and Ryan, R.O. (2008) The N-terminus of apolipoprotein A-V adopts a helix bundle molecular architecture, *Biochemistry* 47, 8768-74.
8. Nguyen, T.-S., Weers, P.M.M., Raussens, V., Wang, Z., Ren, G., Sulchek, T., Hoeprich, P.D., and Ryan, R.O. (2008) Amphotericin B induced interdigitation of apolipoprotein stabilized nanodisk bilayers. *Biochim. Biophys. Acta* 1778, 3033-312.
9. Beckstead, J.A., Wong, K., Gupta, V., Wan, C.-P. L., Cook, V.R., Weinberg, R.B., Weers, P.M.M. and Ryan, R.O. (2007) The C terminus of apolipoprotein A-V modulates lipid-binding activity. *J. Biol. Chem.* 282, 15484-15489.
10. Leon, L.J., Idangodage, H., Wan, L. C.-P, and Weers, P.M.M. (2006) Apolipoprotein III: lipopolysaccharide binding requires helix bundle opening. *Biochem. Biophys. Res. Commun.* 348, 1328-1322.
11. Leon, L.J., Pratt, C.C., Vasquez, L.J., and Weers, P.M.M. (2006) Tyrosine fluorescence analysis of apolipoprotein III . lipopolysaccharide interaction. *Arch. Biochem. Biophys.* 452, 38-45.
12. Weers, P.M.M., and Ryan, R.O. (2006) Apolipoprotein III: role model apolipoprotein. *Insect Biochem. Mol. Biol.* 36, 231-240.



Scholarships and Fellowship Opportunities

By: Hannah Pham

NAME: **Dedicated Student Award**

DEADLINE: March 30th

DESCRIPTION: \$150.00 award will be issued to two SAACS members who complete a short answer essay answering the following three questions:

- What are your professional goals after graduating from CSULB?
- What is motivating you to pursue those career goals?
- How does SAACS help you in achieving your goals? (If you are a new member, explain how SAACS can potentially help you achieve your goals.)

ELEGIBILITY: Must be a member of SAACS.

NAME: **2014 Department of Chemistry and Biochemistry Competitive Awards and Scholarships**

DEADLINE: March 3rd

DESCRIPTION:

- **Henderson Award:** Given to a graduating BS or MS student who plans to enter a Ph.D. program in chemistry or biochemistry and who best demonstrates the example of scholarship of the late Dr. Robert B. Henderson.
- **Kenneth L. Marsi Scholarship:** Given to an outstanding junior or senior majoring in chemistry or biochemistry.
- **Michael Monahan Memorial Summer Research Scholarship:** Given to an outstanding undergraduate student to support summer research.
- **NHK Laboratories Inc., Award:** Given to an outstanding student majoring in chemistry or biochemistry.
- **Wynston Award in Biochemistry:** Given to an outstanding junior in biochemistry planning to apply for admission to a health professional school for study beginning in 2015.

ELEGIBILITY: Must be an undergraduate and print and complete the application package found here: <http://chemistry.csulb.edu/department-awards.html#Competitive>.

NAME: **Priscilla Carney Jones Scholarship**

DEADLINE: May 1st

DESCRIPTION: To assist female undergraduate majors in chemistry or related disciplines who are beginning their junior or senior years of study. The scholarship is a one-time award on the basis of both need and scholarship. The award amount is subject to available funding, but will be a minimum of \$1,500.

ELIGIBILITY: Find eligibility and the online application here:

<http://www.acs.org/content/acs/en/funding-and-awards/awards/other/diversity/priscilla-carney-jones-scholarship.html>

Career Explorer

By: Jacqueline Dominguez

Ever wonder what you can do with your professional science degree?

Perhaps become a:

FOOD CHEMIST!

What they do:

Help with processing, packaging, preserving, storing, and distributing foods and drinks to make them safe, economical, and appealing for consumers. Flavor chemists use natural or artificial ingredients, sometimes in combination, to develop flavors.

CERTIFICATION:

Must pass a five-year apprenticeship with a flavor house, as well as a written and oral test.

WORKSPACE:

Food chemists are employed mainly by industry, both in food-processing and ingredient supply companies. Food chemists also work for government agencies at the local and federal level, including the Food and Drug Administration (FDA) or U.S. Department of Agriculture (USDA). Food chemists who work for the government do basic research as well as study nutritional value and safety.

SKILLS:

- A strong understanding of organic chemistry.
- Careful observation of samples, data, and changes over time is often required.
- Decision-making skills are also important, as well as the ability to look at the bigger picture and see how their data can, or should, impact the food supply, farms, or other agricultural or food products.
- Interpersonal skills are required to work with others, and communication skills are needed to share the methods, results, and implications of their findings. Food chemists must also be able to communicate directions effectively to technicians and assistants

Salary:

Median annual wage: \$58,070 (2012)

For more information check out:

<http://www.acs.org/content/acs/en/careers/college-to-career/chemistry-careers/food-chemistry.html>



This Month in Chem. History

By: Tuyen Ngoc Tran

- February 1—Emilio Segrè (Feb 1, 1905-April 22, 1989) co-discovered technetium (Tc) and astatine (At), and the antiproton, for which he was awarded the Nobel Prize in Physics (1959).
- February 1—Roger Yonchien Tsien (February 1, 1952-present) was one of the recipients of Nobel Prize in Chemistry (2008) for “his discovery and development of the green fluorescent protein (GFP).”
- February 8—Bernard Courtois (Feb 8, 1777-Sept 27, 1838) was a French chemist who discovered iodine (I) from seaweed.
- February 16—Robert Williams (Feb 16, 1886-Oct 2, 1965) was determined the molecular structure of Vitamin B₁ (thiamine) and published his discovery in 1936.

Chemistry for Today's World

By: Briana Nickol

A Look back on 2013

Each passing year brings new challenges, new discoveries, and new wonders to be curious about in the field of Chemistry, Physics, and other sciences. The origin of matter was theorized by describing how particles gained mass with proven discovery of the Higgs Boson particle, chemical reactions were able to be modeled onto computers, and water was discovered to have existed on Mars by NASA's Curiosity Rover. These and other scientific discoveries have paved the way for future research into other areas of research, and new questions to be answered in the up and coming year.

<http://cen.acs.org/articles/92/web/2014/01/Top-Chemistry-Moments-2013.html>

<http://www.youtube.com/watch?v=3T6iGTvVgag>

<http://www.youtube.com/watch?v=R3q1h4-ogmY>

Keep Going

Batteries. Simple devices that power our world and the ever-evolving technology that is a constant present in our daily lives. From that Prius that cut you off this morning on your way to school, to that tablet you're watching Season three of Sherlock on, it all runs on battery power. In order to provide your electronics with energy, the battery works by storing chemical energy in the form of electrolytes and an acidic solution and turning it into electricity through redox reactions. But while these are helpful on a small scale, scientists are looking to power cities with a new kind of battery, the flow battery. Recent discoveries in low-cost materials, including redox-active metals and precious-metal catalysts, have allowed the possibility of this battery to become commercially used in the upcoming years. This is hoped to be an alternative solution to solar or wind power, which can only function under certain conditions, that will power cities on a consistent level of energy.

<http://cen.acs.org/articles/92/i2/Low-Cost-Flow-Batteries.html>

<http://www.youtube.com/watch?v=UxIJQ2ZLMIs&list=FLOpBDSjyAmHKEkKCTcwtCGQ&index=3>



Decode The Chemistry Quote!

By: Hannah Pham

*Hint: Use the Periodic Table!

A _B_ _C_ _D_ _E_ _F_ _G_ _H_ ,
 I _J_ _K_ _L_ _M_ _N_ , _O_ _P_
 " _Q_ !" _R_ " _S_ ' _T_ ..." - Isaac Asimov

- A) $69 - m + 2 =$
- B) $42 + 21 - c + 52 - e =$
- C) $99 - s + 54 - e + 6 + 53 + 22 + 7 + 12 - m =$
- D) $15 + 1 + 88 + 34 =$
- E) $73 - a + 8 =$
- F) $2 + 18 =$
- G) $49 =$
- H) $21 + 53 + 63 - u + 7 + 58 =$
- I) $52 - e + 2 =$
- J) $8 + 10 =$
- K) $90 + 85 =$
- L) $2 + 88 + 3 - i + 110 =$
- M) $10 + 74 =$
- N) $105 - b + 53 + 16 + 27 + 23 + 68 + 53 + 99 =$
- O) $53 + 16 =$
- P) $7 + 8 + 73 - a =$
- Q) $63 + 75 + 19 + 18 - r =$
- R) $5 + 113 - u =$
- S) $90 + 85 + 16 =$
- T) $9 + 92 + 11 - a + 60 - d + 39 =$

The more you know: Isaac Asimov was an American author and professor of biochemistry at Boston University, best known for his works of science fiction and for his popular science books, like I, Robot.

*The answer will be available in the next issue!



Like us on Facebook at:
<http://www.facebook.com/thebeakersulb>