

CSB/SJU BIOLOGY DEPARTMENT NEWSLETTER

Volume 3 Number 3

October 1, 1999

1. Message from the Chair

I was a little disappointed by the recent announcement that the Science Center would be renamed Engel Science Hall – I hoped that it would be named after me! Saupe Science Center (SSC) has a nice ring to it. Despite my disappointment at losing an opportunity to have my name memorialized, I'm very excited by generous donation by the Simon family to support the sciences at CSB/SJU. This gift clearly shows that people off-campus recognize and appreciate the excellent quality of science education that we offer.

This should be an exciting weekend. There will be lots of Homecoming activities - especially look for the Biology Club serving up juicy brats at the Taste of Saints. Yum.

2. Student News:

Thomas Warrington – is conducting a research project Dr Campos that is primarily concerned with the characterization of zonal occludin junctions in the blood retinal barrier of bovine tissue. Their main focus is to isolate ZO-1 and occludin using SDS-page. This project is a continuation of the research he conducted this summer.

3. Faculty News:

Dr. Ronald Henry - attended the fall meeting of the Minnesota Interlaboratory Microbiological Association (MIMA) on Sept 16th. Dr. Henry reports that there were some terrific presentations including: "HIV in the Year 2000: From the laboratory to the patient" by Dr. William Valenti, University of Rochester School of Medicine and Dentistry; and "The OTHER "Bad E. coli": Is UTI a communicable disease?" by Dr. James Johnson, University of Minnesota School of Medicine.

4. Curriculum News

5. Biology Club News:

Lot's of exciting activities are being planned. Contact Kari Recker for more information. Don't forget the Taste of Saints this weekend.

6. Calendar of Events:

Oct 2	Taste of Saints – Biology Club
Oct 12	Six Billion People Day
Oct 14	"What Medicine has to Offer/Not Offer in the Next 50 Years" - Dr. Philip Hessburg, President Detroit Institute of Ophthalmology - ASC; 4:30 PM
Oct 15	"Everything has not been Invented" - Dr. Philip Hessburg, President Detroit Institute of Ophthalmology - ASC; 4:30 PM
Oct 21	"Changing Perceptions of U.S. Oil and Gas Resources Based on Four Successive USGS National Petroleum Assessments"- Dr. Thaddius "Ted" Dyman - ASC; 4 PM
Oct 30	Halloween Science – Biology Club program for elementary kids
Nov 2	"Careers Working with the Environment"-TRC@CSB-7:00 PM

Nov 3-5 International Conference on Ethnomedicine and Drug Discovery
 Nov 4 NSF Applications are due
 Nov 6 GRE test date
 Nov 11 "Microbial Magic: The Production of New Drugs by Combinatorial Biology";
 Dr. David Sherman, University of Minnesota; Department of Microbiology
 Dec 2 "The South African Study Abroad Program 1999: What Really Went On?"
 Dr. Stephen G. Saupe; College of St. Benedict/St. John's University; Biology
 Department; SC 325; 4:00 PM
 Dec 11 GRE test date
 April 8 GRE test date

7.Internships/Scholarships/Jobs

Would you like to work "hands-on" with BIG CATS?

Turpentine Creek Wildlife Refuge is a volunteer-run, not-for-profit Humane Society for Big Cats (and some other animals). Among their family are 54 tigers, 19 lions, 23 cougars, and 2 leopards. These cats are unwanted products of the private trade in exotic animals. Most of them would have been destroyed if Turpentine Creek did not find them a home. The job includes cleaning cages, habitats and compound; feeding and medicating animals; assisting with maintenance, upkeep, and habitat construction; participating in occasional public promotions. Even though this is a volunteer position, Turpentine Creek will provide you with free housing in a comfortable cottage. Deadline for applications is November 1, 1999. For further information contact: www.turpentinecreek.org

Are YOU an Intelligent, Curious, and Ambitious Senior?

You are invited to apply for a graduate fellowship (with generous stipend) in one of their several interdisciplinary biomedical life science programs. Please send your completed application before January 15, 200. For additional information to contact: www.uab.edu/graduate.

Howard Hughes Medical Institute Office of Grants and Special Programs

program announcements and applications for the year 2000 and are available for the Predoctoral Fellowships in Biological Sciences and all other programs. To request further information on these programs at HHMI, contact: infofell@nas.edu or fellows@hhmi.org.

Internship-Student Conservation Association- Charleston, NH

The SCA is currently offering students the opportunity to participate in the Winter/Spring 2000 Conservation Internship Program. Individuals who successfully complete the internship may be granted education awards ranging from \$1,180 to \$4,725. Resource Assistant positions and Conservation Associate positions are available throughout the United States. For further information contact Jill Farry, internship director

Graduate Research Assistantship in Rare Plants

A Research Assistantship (RA) is available for a field-oriented student wishing to pursue an MS in plant science. The project will involve an analysis of habitats in northern Mississippi that currently are, or historically were, sites for threatened, endangered and sensitive (TES) plant species. Besides plant taxonomy and ecology, the RA will gain experience in GIS databases, which will be used to investigate the value of remote sensing data as a predictive tool for locating TES plant habitat. A field guide to TES plant species of the region will be prepared. Applicants must have an undergraduate degree (preferably in biology or botany), must be accepted into the Graduate School, and should have some previous experience in plant taxonomy and/or ecology. Position available January 2000. For more information on this position and our program, write to: Dr. Lucile McCook: bymccook@olemiss.edu

Are You Interested in Grad School but are lacking the Money?

If any of you are interested in grad school you are encouraged to apply for the NSF Graduate School Fellowship. The applications are long, but the payoff is great (3 years of paid tuition & fees + 3 years of \$15,000 stipend). Dr. Gordon Brown has the applications in his office (339 Old Science Center). Don't take your time, applications are due to NSF on 4 November.

Prairie Woods Environmental Learning Center (PWELC)

PWELC is a 424-acre outdoor learning center. As the name implies the land includes some native prairie and woods but also a number of wetlands. Facilities include 6 miles of trails groomed in the winter for X-C skiing; a traditional farm site with barn and granary; two houses undergoing restoration one of which will be available as housing by approximately mid-September. They are completing two new buildings with over 10,000 square feet of indoor programming space including: an exhibit hall, 6 classrooms, and a space for an indoor climbing wall and an observatory-meeting room with seating for 100. We also have a high ropes adventure course which was visited and used by over 2500 people last year.

In addition to the ropes course we are open on a daily basis for environmental education activities. School and other groups can access our programs by calling to get on our schedule.

PWELC has been functioning since 1992 as a nonprofit organization. Aside from the ropes course our programming is only intermittent. Its available but our visitation has been light. We are growing and developing, however.

We would be very interested in offering opportunities for on-site study by college students and instructors. This could be on a field trip basis or an extended stay since we have housing on site. We are developing a comprehensive land use plan, some of which will involve active management, which may present opportunities for study.

We don't have an internship program presently but we'd like to. Resource study is only one option in this regard. Environmental education and developing our program is another. ELC administration is yet another. Frankly I don't know what the best structure would be. Again we have housing on site which may offer a residential, or part-time residential option. We may be able to develop options for J-term, summer or vacations. Obviously, commuter options exist as well. For further information contact: John Hanson Director, PWELC-320/ 354-5894

Heart Research Scholarships

Who is eligible? - Minnesota students only. **How are the scholars selected?** - An American Heart Association, Northland Affiliate committee of medical professionals and lay people will choose the scholars on merit. For further information call 1-800-331-6889

8. Seminars/Lectures/Symposia:

There are some great seminars coming in the next few months (see Calendar of Events). Mark your calendars now.

“International Conference on Ethnomedicine and Drug Discovery”

The search for new drugs from traditional remedies - this conference will address the practical solutions to the issues concerned with the selection, processing and development of alternative medicines and cosmetics from the field, through the laboratory to the market place. November 2, 1999, Holiday Inn, Silver Springs, MD. For more information go to <http://www.bioresources.org>.

“Microbial Magic- The Production of New Drugs by Combinatorial Biology”-

By Dr. David Sherman in the MIMP (Micro, Immuno, Molecular Pathology) programs at the University of Minnesota. He is also the Director of Graduate Studies for this program so if you were interested in grad school this would be a good place to go to get all your questions answered. This seminar is intended for the micro and biochem students. The seminar will be held on November 11th in the auditorium.

“Changing Perceptions of U.S. Oil and Gas Resources Based on Four Successive USGS National Petroleum Assessments”

- T.S. Dyman, U.S. Geological Survey, Denver, CO 80225.

The U.S. Geological Survey (USGS) periodically conducts geology-based assessments of oil and gas resources of the United States. Four National resource assessments have been prepared in the past two decades (1975; 1981; 1989; 1995). These oil and gas assessments are based on available geologic and production data and provide a numerical hypothesis for petroleum-resource conditions at a particular point in time for purposes of planning and investment. These assessments also form the foundation for the periodic adjustments to our view of petroleum resource conditions made necessary by changes in technology and scientific understanding.

Successive USGS estimates of U.S. undiscovered conventional oil resources and identified oil reserves suggest different resource perceptions through time. From 1975 through 1989, estimates of both undiscovered conventional oil resources and identified oil reserves decreased. However, in 1995, estimates of reserves of identified conventional oil (proved reserves plus projected reserve growth) more than doubled to 80 BBO, whereas estimates of undiscovered conventional oil continued to decline to 30 BBO.

From 1975 through 1989, USGS estimates of undiscovered conventional gas fluctuated between 42 and 71 billion barrels of oil equivalent (BBOE). Estimates of identified conventional gas reserves steadily decreased from 56 in 1975 to 42 BBOE in 1989, reflecting a relatively dim view of the continuing productivity of discovered fields. However, at the time of the 1995 assessment, identified reserves of conventional gas had increased significantly to 76 BBOE, whereas the USGS estimate of undiscovered conventional gas remained flat relative to 1989 at 43 BBOE. In addition, a technically recoverable gas volume of 60 BBOE was recognized in continuous (unconventional) accumulations.

During the 20 years spanned by the four USGS National assessments, a net increase of 162 BBOE in total original U.S. oil and gas resources (cumulative production + identified reserves + undiscovered resources) was recognized. An important value of successive assessments such as these is that they provide a view towards a better understanding of U.S. oil and gas resources in the next few decades.

9. Miscellaneous

Tutors Needed to Join the CSB/SJU Upward Bound Team

Tutor responsibilities include:

- One day a week tutoring at 4 UB target schools-2 hours per school- transportation provided
- Attendance at one Saturday meeting a month on CSB/SJU campus-assistance with Saturday programming- three hours
- Weekly meeting with Site Coordinators and UB director- 1 hour
- Role model for high school students
- Tutors needed for all levels of math and science
- Work study and paid positions available

For more info, call Dora Schumacher, Director at 5887 or stop by P2 Richarda Hall, CSB

Are You Interested in Pre-Med?

Then check out the Pre-Med website: <http://www.csbsju.edu/chemistry/> . Pre-meds should REGISTER (unless they already did so last year) so that we can keep track of people interested in the program.

Scholarship Information

Contact Ms. Johanna Davis, CSB

Biology Department Web Site

Don't forget to visit the department's web site at: <http://www.csbsju.edu/biology/>.

DOWN IN THE DELTA: PRESERVING THE LOWER COLORADO

The Colorado River is all but forgotten as it spreads out into an extensive delta below the U.S. border. An EDF report describes what needs to be done to preserve this little-known oasis of diversity. http://www.edf.org/pubs/NewsReleases/1999/Sep/a_codelta.html

THE WOODPECKERS ARE BACK!

Under the protection of the safe harbor program, endangered cockaded woodpeckers are returning to their home grounds in North Carolina. http://www.edf.org/pubs/EDF-Letter/1999/Sep/a_safe.html

PHOTOGRAPHING THE 'LAST OF THE LAST' IN HAWAII

The *Hibiscus clayi*, a delicate Hawaiian flower, is one of only three known to exist in the world. By recording it -- along with the rest of Hawaii's seriously endangered wildlife -- photographers Susan Middleton and David Littschwager hope to save it. http://www.edf.org/pubs/edf-letter/1999/sep/i_hawaii.html

Interesting Reflection on Unintended Changes in the Rainforest.

David Tillman's phrase on the biological effects of the earth's commerce on its diversity, "the Pangaeization of the planet," sticks with me, a bur in my side, a reminder of side effects, unintended consequences. There is a short piece in the New York Times (September 9) on a side effect of deforestation in the Amazon, one that I hadn't thought about. One of the long-term effects, perhaps the long-term effect, is the limitation of seed dispersal which results in forests that are more genetically uniform.

According to the article - the work is reported fully in Nature - the study "showed that forest fragments as large as about 10 ha (25 acres) had a single maternal lineage." The work was done with a type of Brazil nut tree species where seeds are dispersed locally and pollen over long distances. "The deforested zones effectively prevent the influx of other seeds that might diversify the genetic makeup of the remaining forested areas." -- from Ed Hessler, SciMathMN.

Biological Seminars at the University of Minnesota -- they will no longer send a list via snailmail. Seminars can be accessed on the Web at http://www.cbs.umn.edu/college_info/seminar.html.

10. Joke of the week: (from Mr. Greg Ritz, Port Elizabeth, South Africa)

Have you ever received a letter of recommendation? What do you think about this one?

Dear Prospective Employer:

1 Bob Smith, my assistant programmer, can always be found
2 hard at work in his cubicle. Bob works independently, without
3 wasting company time talking to colleagues. Bob never
4 thinks twice about assisting fellow employees, and he always
5 finishes given assignments on time. Often he takes extended
6 measures to complete his work, sometimes skipping coffee
7 breaks. Bob is a dedicated individual who has absolutely no
8 vanity in spite of his high accomplishments and profound
9 knowledge in his field. I firmly believe that Bob can be
10 classed as a high-caliber employee, the type which cannot be

11 dispensed with. Consequently, I duly recommend that Bob be
12 promoted to executive management, and a proposal will be
13 executed as soon as possible.

Addendum: That idiot was standing over my shoulder while I wrote the report sent to you earlier today. Kindly re-read only the odd numbered lines.

11. Frequently Asked Questions:

For more information, contact:

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