

**Featuring: Dr. Cuevas and Carolina Boet
Faculty/ Student Collaborative Research**



Interested in
Research?
This could be you!
Talk to your
Biology Faculty!

Dr. Cuevas and Carolina Boet are involved in a research project that is partially being funded by a Merck Grant and is a collaborative effort with Dr. Maha Foote from the Chemistry & Biochemistry Department. The objective of their study is to investigate the genotoxic effects of tamoxifen and its metabolites, specifically α -OH Tamoxifen (a non commercially available compound) due to DNA-adduct formation. Using human endometrial cell lines HEC 1A (ER positive) and HEC 1B (ER negative), distinction between tamoxifen DNA-adduct vs. ER regulation of gene expression will be possible. These cell lines will be treated with estrogen and four different selective estrogen receptor modulators. Potential target genes will be examined by Northern blot, real time PCR and microarray, and protein expression will be examined by Western blot. In addition, the presence and localization of drug-DNA adducts will be determined by using ligation mediated PCR (Dr. Foote's lab). The identification of genes regulated by drug DNA-adduct formation and its location will establish the potential genotoxicity of this drug and provide alternate explanation for tamoxifen molecular mechanism.

Student Researcher
Carolina Boet

Carolina was born and raised in El Salvador, Central America. Carolina lived in the capital city San Salvador. She decided to go to the University of Maryland at College Park with no idea of what she wanted to study. After a hard transition, a year of seeing one strange face after another, and a very cold bitter winter, she decided to transfer to Southwestern. Research Interests: Carolina states, "Working with Dr. Cuevas, Dr. Foote and Dr. Todd it's impossible not to become addicted to cancer research. Besides being an extremely active topic of interest among the population, it is interesting because of its complexity and mystery." Carolina's hobbies include reading *Discover* magazine, listening to music, and traveling.

Assistant Professor
Dr. Maria Cuevas

Dr. Cuevas is originally from Puerto Rico. She came to United States when she was 17 to attend Purdue University, where she obtained her BS in biology. With a fellowship sponsored by Monsanto Company, she then went to Northwestern University and received a MS in Biomedical Engineering. With a new interest in research, she attended Boston University and received her Ph.D. in Biology (Reproductive Endocrinology).

Dr. Cuevas is married and has two children (girl 10; boy 7). Her hobbies include cooking, reading and traveling. She has scuba dived, rock climbed, and hiked the Grand Canyon.

SEMINARS

Tentative speakers & topics - Look for more information in the department

- 10/7 Susan Golden, Texas A & M, Bacterial clock proteins
- 10/21 Mary Poteet, UT Austin, Plant ecology
- 10/28 Cheryl Walker, UT MD Anderson Smithville, Molecular toxicology and genetic susceptibility to cancer.
- 11/4 John Byrne UT Houston, Learning and Memory
- 11/11 Robert G. Howells, Texas Parks and Wildlife Dept.

Featuring this Thurs: Dr. Susan Golden

Susan Stephens Golden joined the Department of Biology at Texas A&M University in 1986. She was promoted to Associate Professor in 1990 and to Professor in 1995. During her graduate work she developed genetic tools for the cyanobacterium *Synechococcus elongatus* (PCC 7942), the first cyanobacterium shown to be subject to genetic transformation. This led to work on regulation of light-responsive photosynthesis gene expression in this organism during her postdoctoral research and at TAMU. In the early 1990s she began a collaborative project with C.H. Johnson (Vanderbilt University) and T. Kondo (Nagoya University) which demonstrated circadian rhythms of gene expression in *S. elongatus*, which is currently the only model organism for a prokaryotic circadian clock. The molecular basis of timekeeping in *S. elongatus* is now the focus of her lab. Her personal web page is: <http://www.bio.tamu.edu/users/sgolden/public/>



Tri Beta Announcements!



Tri Beta and SU Biology Dept.

Greenhouse Party

10/7/04
6pm at Greenhouse
- SEE MAP PG. 5

Tri Beta Induction

10/21/2004
6pm
Location: TBA
(hopefully Lord Caskey Center)
Dress: Business Casual

Tri Beta River Clean-Up

10/30/2004
Time: TBA (probably late morning to early afternoon)
At San Gabriel River

Class Registration Informational Meeting

11/4/04
6pm in FJS

Summer Research Informational Meeting and election of Spring officers

11/18/2004
6pm in FJS 148

Tri Beta Can Food Drive

11/15 to 11/23

Panel about medical school with current applicants

TBA (maybe 11/4 or 11/9)

Need Tri Beta Service Hours or Just Want to Do Some Research???



Volunteers are needed to help Becca Marfurt and Dr. Burks perform research on applesnails. Email burksr@southwestern.edu for more information.

Tentative Spring Course Schedule

- Cell Physiology 9-9:50 MWF/
Lab Wed 2-5 **Todd**
- Cell Biology 10-10:50 or 11-11:50
MWF **Todd**
- Classical/ Population Genetics 10-
10:50 or 11-11:50 MWF **Taub**
- Genetics Lab-M,W,or F 2-5,
T or TH 2:30-5:30 **Johnson**
- Environmental Science 10-10:50
MWF or TTH 8-8:50/ Lab M or W
2-4, T or TH 2:30-4:30 **Boles**
- Biology of Perception 1-1:50 MW
Sheller
- Molecular Genetics 9:30-10:45
TTH/ Lab 2-5 M or 2:30-5:30 T
Gonzalez
- Behavior Ecology 9:30-10:45 TTH
Fabritius
- Endocrinology 1-2:15 TTH/ Lab
T 2:30 – 5:30 or 2-5 W **Cuevas**
- Global Change Biology 8-8:50
MWF/ TH 2:30-5:30 **Taub**
- Ecology 1-2:15 TTH + lab either T
or Th 2:30 – 5:30 **Burks** (note 2
overnights planned)

BIOSCOPE FOCUS: Student Representatives for Search Committee for Brown Chair in Evolutionary Biology

Greg Hagemann and Aurora Lowe will serve as the student representatives for helping to select a new professor in Evolutionary Biology at SU.

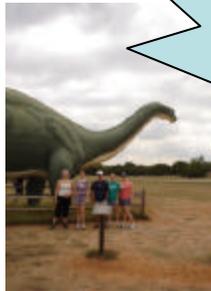
Aurora Lowe is a fifth year senior who went to St. Thomas in Houston and transferred to Southwestern her sophomore year. She is a biology major who also is certified to teach middle school and high school science. She will be applying to nursing school this year and hopes to combine her interests in education and medicine to teach health career courses in high school or at the university level.

CONTACT HER AT: lowa@southwestern.edu

Greg Hagemann is a junior who transferred from UT last fall. He is a biology major who would like to go to medical school at UT- Houston. Eventually, Greg would like to become an orthopedic or trauma surgeon.

CONTACT HIM AT: hagemang@southwestern.edu

LATEST NEWS:
Dr Boles'
Evolutionary Biology
class takes a field trip!



SU students huddle safely near herbivorous sauropod dinosaur.

SU students visit CEM



Recently Dr. Larry Boles' Evolutionary Biology Class went to Dinosaur Valley State Park and the Creation Evidence Museum in Glenrose, TX.

<http://www.southwestern.edu/~boles/dinoweb.html>

*Next time: Dr. Burks's lab
Research trip to Armand Bayou*

Make Advising Appointments toward end Oct/Early Nov!

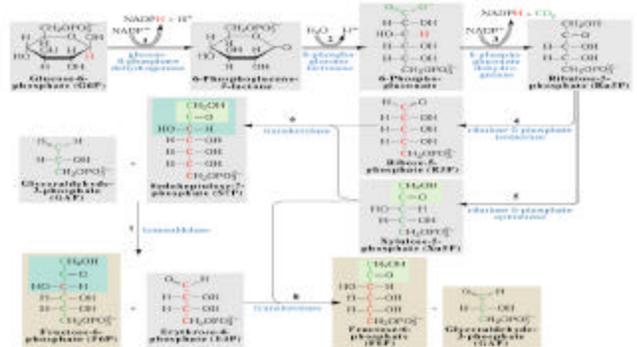


Learn something new from BioScope Magnifications:

PATHWAY: Pentose Phosphate
The Pentose Phosphate Pathway is important in biosynthesis as well as catabolism. It breaks down glucose to form ATP, NADPH, and various sugars necessary for macromolecule synthesis.

MOLECULE:– BRCA2

Cells with mutations in BRCA2, a breast cancer susceptibility gene, display a wide range of chromosomal abnormalities. Researchers think that this gene instability, apparently the result of the inactivation of BRCA2, helps generate additional mutations that drive cells to become cancerous (Marx 2004).



ECOSYSTEM:

North American Grasslands

Prior to European colonization, grasslands dominated the central portion of North America from Manitoba and Minnesota south to Texas. In the eastern portion of this range was the tall grass prairie, with the short grass prairie to the west. Throughout this range agriculture has greatly altered the landscape so that only isolated tracts of native prairie remain.



Photograph courtesy of Steve Torbix

- ORGANISM:** *Pomacea canaliculata* "Apple Snail" – invasive snail that is moving into Texas waters. Native to S. America.



Photograph courtesy of Becca Marfurt www.southwestern.edu/~marfurt

MINI-COURSE STUDENTS:

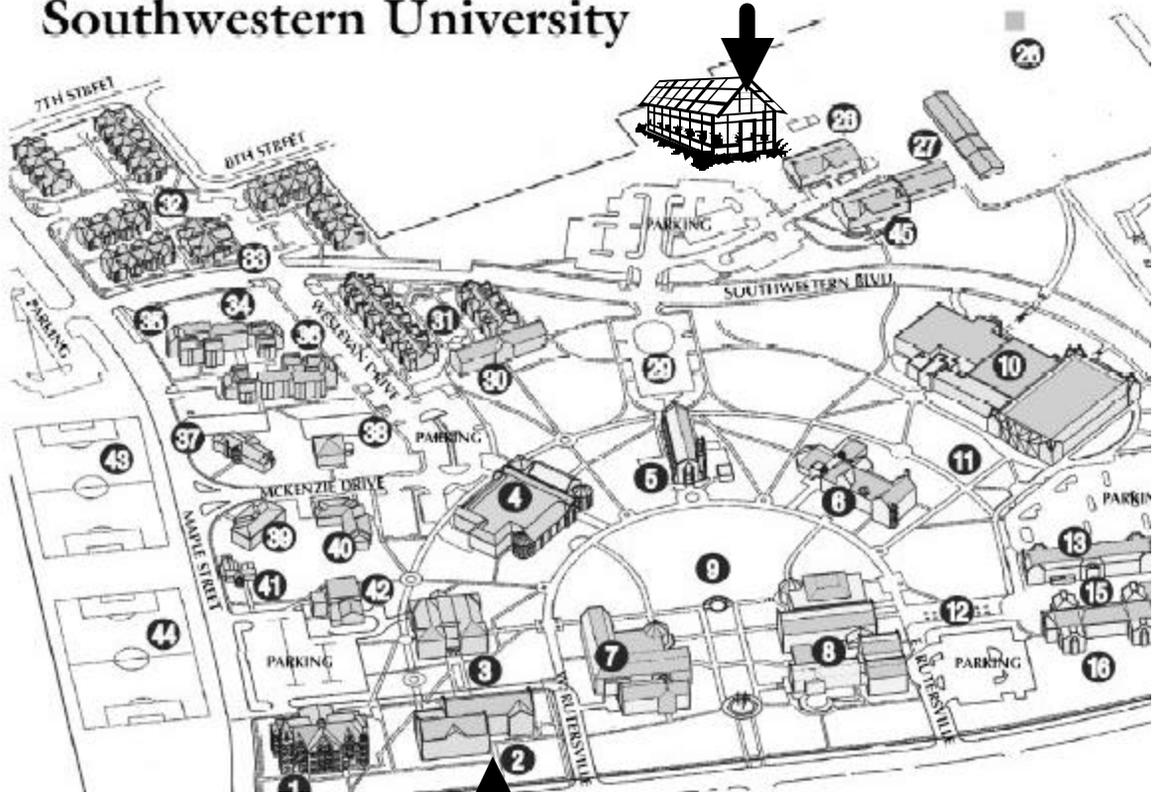
Need Tutoring???

Biology tutoring is now available Sun/Mon 8-10pm in the library (room 222).

BioScope aims to heighten communication and engagement between biology students and faculty. If you have ideas for activities that can bring Biologists together, please forward them to Biology Chair, Dr. Rebecca Sheller (shellerr). Also, if you haven't signed up on the Biology list-serve (su-biology), please do so ASAP as faculty often post Announcements about outside research and career opportunities.

Southwestern University

GREENHOUSE



BIOLOGY

COMING SOON!

ALL ARE WELCOME!

Tri Beta and SU Biology Dept.

Greenhouse Party 10/7/04

6pm at Greenhouse

Students and Faculty interested in submitting announcements, items for focus, profiles or highlights (i.e. Magnifications) to *BioScope* should email Lindsey Loveless (lovelesl) or Dr. Burks (burksr).

Next Issue: January 2005

The Department of Biology wishes everyone a Happy Fall Break and reminds those in the mini-course that the 5th 2nd round begins on Wednesday, October 13th!

AQUATIC ECOLOGY



Doyle flipped open his notebook and scrawled the disturbingly familiar entries: Victim: Unidentified. Age: Unknown. Crime: Salt & Battery.

Something for everyone!
All cartoons courtesy of www.nearingzero.net

BOTANY & EVOLUTION



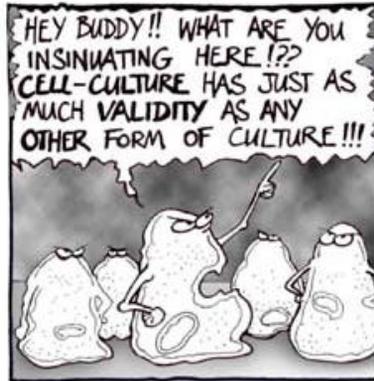
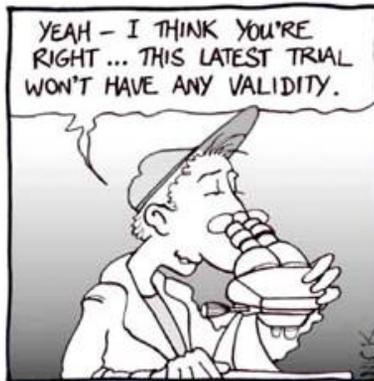
The next great step in carrot evolution.

NEUROBIOLOGY

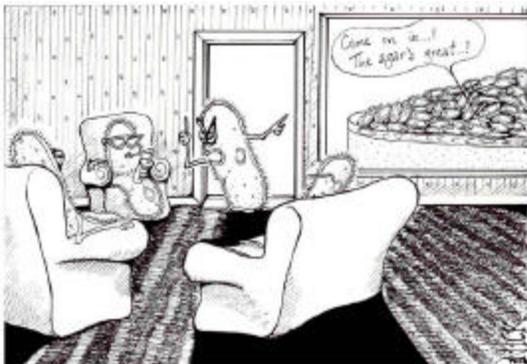


"You'll have to forgive Sidney. The left and right hemispheres of his brain are currently engaged in a struggle for dominance."

CELL BIOLOGY

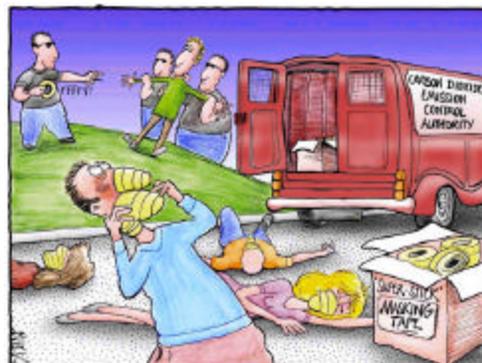


MICROBIOLOGY



"I wish you'd learn to put the lid on your Petri dish, Harry! We came here with four kids, and now it looks like we've got twenty million...!"

ECOSYSTEM ECOLOGY



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