

BIOFEEDBACK

Newsletter of the Biology Department and BioClub of Saint John's University and the College of Saint Benedict

KNOX INVOLVED IN THROMBIN RESEARCH

by Dr. Cheryl Knox,
CSB/SJU Biology Department

I (officially titled a "collaborator") am working with Dr. H. Jakubowski (CSB/SJU Chem Dept) on his NIH-AREA grant (\$75,000 for 3 years) to epitope-map thrombin. Biologically, thrombin is central to clotting of the blood and is also part of an anti-clotting mechanism with other blood factors. We are interested in locating the surface components of thrombin that allow these differential responses.

Our approach to this problem is to isolate antibodies that recognize different surface sites of the thrombin molecule. We are looking for an antibody that will physically block a surface region on thrombin and result in the elimination of one, but not all, of the activities of thrombin. We could then conclude that the blocked surface region is essential for the particular activity that was lost.

This summer Dr. Jakubowski and two chemistry students synthesized four polypeptides that represent suspect surface amino acid regions of thrombin. Each polypeptide must be verified and purified before being used as antigen with thrombin in a susceptible strain of mice. This work is in progress.

My job this summer was to begin the process of cloning antibody RNA molecules (from the spleen of an antigen injected mouse) into a vector named Immuno-ZAP. Contractual agreements were signed and various materials were purchased. As the result of this rather involved process, I will construct bacteria (plural) each of which will produce a mouse antibody to a region of the thrombin molecule. We hope that by using the polypeptides in conjunction with thrombin as antigen, we will have an abundance of different bacterial colonies each producing a different antibody against a suspect region.

On September 12, Dr. Jakubowski and I injected 4 mice with thrombin. (The polypeptides are not yet ready for injection).

It was two adult humans against four, 12-week old female mice and the mice nearly won! Mice and humans seem to have survived the ordeal. We will have to wait 2-2.5 weeks to assay for anti-thrombin titer from each mouse. The one with the highest titer will donate her spleen to Science.

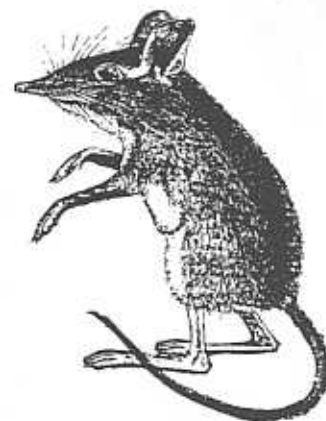
ABLE BODIES MEET

In June, Dr.'s E. Wurdak and N. Zaczkowski (CSB/SJU Biology Dept.) crossed the prairies of the Northern Great Plains to participate in the annual meeting of the Association for Biology Laboratory Education (ABLE) at the University of Wyoming in Laramie. The meeting was unique. Over a four-day period, participants have hands-on experiences with a variety of proven field and laboratory exercises designed for college courses. Some workshop titles were "insect locomotion", "protozoan population ecology", "organelle isolation", "DNA recombination" and "stream ecology." Special activities included field trips to high prairies, lodgepole pine and Engelmann spruce forests, and the alpine tundra of the Medicine Bow Range. Dr. Zaczkowski said that "the tundra with its flag-treed krumholtz and myriads of inch-high flowering plants was a nice experience for Stearns County flatlanders."

RAPTOR RELEASE RESEARCH

by Amy Forslund,
CSB Freshman PreVet Major

Who would ever have thought that I would have spent almost every summer day next to the City Hall in La Crosse, WI? I was a volunteer in a peregrine falcon release project designed to help this rare bird survive and continue existence in the United States. Peregrine falcon numbers have diminished due to the well-known pesticide DDT. The Raptor Center at the U-Minnesota sent us fifteen young birds. They were kept in a hack box on City Hall until



VOL. 14 NO. 2
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they were ready to be released. We had to help the young falcons learn how to fly and kill prey on their own. I also helped on the roof putting out food (quail), water, cleaning, observing, and even setting up a trap to catch a falcon that we noticed had broken a beak. I also helped in handling the birds when they were injured and needed to be taken to the veterinary clinic or when we marked them with spray paint so that we could tell them apart. Although four of the birds died, I hope that somewhere in the midwest my eleven peregrine falcons are surviving on their own in the wild.

RESORT NATURALIST

*by Corina Sarsland,
CSB Senior Natural Science Major*

This was an exciting summer for me, I worked as a Resort Naturalist at Lost Lake Lodge in Nisswa, MN. Each week I put in 50-60 hours, planning and presenting environmental programs for guests and their children. It was a good opportunity to apply biology in a real life setting. People really appreciated the programs we offered. I would recommend this type of job for anyone interested in environmental education and public awareness.

SAUPE ELECTED TO MAS BOARD

Dr. S. G. Saupe, CSB/SJU Biology Dept., was recently elected to serve on the Board of Directors of the Minnesota Academy of Science. The purpose of the Academy is to foster scientific communication between academia, industry, and government. The Academy organizes the state Science Fair program and holds annual meetings in September and May. Undergraduates are encouraged to present the results of their research at the May meeting. Dr. Saupe is glad to serve on the Academy because "MAS is in a crucial period in its history. Major changes are being planned that will be necessary if the organization is to grow, and possibly even survive, through the nineties."

BIOFEEDBACK WELCOMES CONTRIBUTIONS

If you have had a paper published or just have some news to share with the biology department, please submit it in writing (legibly please) to Dr. S. G. Saupe, SC314 before the tenth of each month.

SEARCH INITIATED FOR TOP TEN ENVIRONMENTAL SONGS OF ALL TIME

by J. E. Sutherland, CSB/SJU Biology Dept

Dr. S. Saupe and I (both amateur musicologists) wish to compile a list of songs and other musical selections that feature environmental themes. Examples include: "Big Yellow Taxi" by Joni Mitchell; "Garbage" by Pete Seeger; "Between a Rock and a Hard Place" by the Rolling Stones; "Houses in the Fields" by John Gorka; "Gotta Get Down" by Claudia Schmidt; "Paradise" by John Prine; "All God's Critters Have a Place in the Choir" by Bill Staines; "Blind to the Truth" by Dan Fogelberg; "The Four Seasons" by Antonio Vivaldi; and "The Seasons" by Joseph Haydn. As you can see from these examples, we expect to obtain a very eclectic list. Just to demonstrate the degree of our open-mindedness, we will even accept John Denver songs (gag!). We eagerly seek your nominations and will publish the results in a future Biofeedback. Please submit your lists to Dr. Saupe or me by November 1. Thanks for your help!

OVERHEARD!

Sister Phyllis Plantenberg, CSB/SJU Biology Dept, overheard one Johnnie say to a friend upon leaving the Science Museum, "Every animal you could imagine. Stuffed!" His friend replied, "Sweet!"

SUTHERLAND TURNS THIRTY - IS HER LIFE (AS SHE KNOWS IT) OVER?

Recently the Biology faculty gathered to solemnly observe the passing of Ms. J. Sutherland's youth. Dr. Cheryl Knox delivered a stirring eulogy in which she remarked upon Ms. Sutherland's lack of backgammon ability and intolerance for hot peppers. Prof. Charles Rodell then left everyone misty-eyed after his ode to "Ol Jess". Following the ceremony, refreshments (cake with black icing) were served. Jessica would like to thank everybody for this observance. The text of Prof. Rodell's poem is printed below, followed by a response by Prof. Sutherland.

OL' JESS

A poem in honor of Ms. J. Sutherland's 30th birthday

*by Dr. C. Rodell (Poet Laureate of CSB/
SJU Biol. Dept.)*

We mourn here the passing of one of the best
I'm referring, of course, to Jessica S.

Mourn her, you say, she looks fine to me
Alas, her ten's digit's changed from a two
to a three

And it's a fact well known by fish, beast,
and birdy
Your life is kaput when you hit the big
thirty

When we all knew her, she was such a
fine kid
Now she's entered the life we refer to as
mid

So Jess if you're aching and your joints
sometimes crack
Just be glad that you don't have to play
for the Pack

And though thirty sounds old, over that
don't get teary
It's been forty-six years since the Cubs
played the Series

So don't think it unfair though you've
lived your life stellar
Remember in the end what they did to
Old Yellar

She was once filled with vigor with life
and with zest
And now, as you see, she's become just
Ol' Jess

A RESPONSE

*by J. E. Sutherland, A Pretender to the
Throne*

As now I look upon life with thirty year
old eyes,
I'd like to thank you all for my funeral
surprise,
Especially touching was the poem by Dr.
Chuck Rodell,
If I can rhyme as well when I'm his age,
time will only tell,

The reference to the cubbies was disturb-
ing at best,
I do hope I see a pennant before I'm laid
to rest,
But, dear Chuck, average life spans being
what they are,
I think my odds of witnessing this are
better than yours by far,

And Cheryl, about that backgammon and
my being, in your words, a "poor
sport",
I'm not going to hold a grudge for I am
not of that sort,
Did you ever consider that I let you win,
in deference to your seniority,
After all, at the time, I was only twenty-
nine; you were over forty,

Yes, it is true that my 30th birthday left
me exasperated,
But rumors of my demise have been
greatly exaggerated,
I am still younger than all but one of you
so it seems, in essence,
That I have not yet approached your
collective states of senescence.

ALUMNI NEWS

Charles (Chad) E. Cason, III a 1987
biology graduate from St. John's Univer-
sity has informed us that he has been
offered a graduate position in fisheries
biology at Louisiana State University at
Baton Rouge. For the past three years,
Chad has been working for the Wiscon-
sin Department of Natural Resources as a
fisheries technician. Some of the projects
he assisted in include trout stream habitat
improvement, creel surveys, and fish
population assessment. He has also
designed a project to study the growth
rates of northern pike. The biology
department wishes Chad luck in his new
position. **GOOD LUCK CHAD!**

Joan Rabaey a 1988 biology graduate
from the College of St. Benedict recently
informed us that this past summer she
graduated from the Mayo Physical
Therapy School with her Masters degree.
She took the summer off to relax and is
now looking for a job preferably in
Colorado or North Carolina. **CON-
GRATULATIONS JOAN!**



BIOFEEDBACK

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MEDSCHOOL BOUND!

Biofeedback offers its most hearty congratulations to Kathy Bentler (music major), Molly Flannagan (liberal studies major), Joseph McLaughlin (natural science major), Neil Skemp (biology major), Gary Trobec (biology major), and , who have been awarded early admissions to the Medical Program at the University of Minnesota! (If we missed anyone, please let us know so we can also honor you!) CONGRATULATIONS!!

JENSEN PUBLISHES RESEARCH

Recently, Dr. Ellen C. Jensen, CSB/SJU Biology Dept, published two research papers. One paper, "Photomorphogenesis in *Penicillium isariaeforme*: Exogenous Calcium Substitutes for Light", was published in *Photochemistry and Photobiology*. The other, published in the *Proceedings of the National Academy of Science*, was titled, "Insect Immune Response to Bacterial Infection is Mediated by Eicosanoids". Dr. Jensen said, "*Penicillium isariaeforme* is a wierd

fungus. At one stage in its life it grows towards light. This research was centered around trying to discover why the fungus grows towards the light." Her other research centered on trying to discover if insects have an immune system. It is also to see if that immune system is comparable to the immune system found in mammals and other forms of life. Congratulations, Dr. Jensen on your publications!!!

CHICKADEE RESEARCHERS WANTED

Dr. Marcus Webster, CSB/SJU Biology Dept, is asking for help with his chickadee research. Students interested in birds, field biology, or physiology should contact him at x3176 or stop by his office (S319). Neither pay nor credit is available, but the experience may be fun and valuable for team members. All Dr. Webster asks, besides enthusiasm, is that students make a firm time commitment of three (3) hours per week. Hours flexible.

P A G E F O U R

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