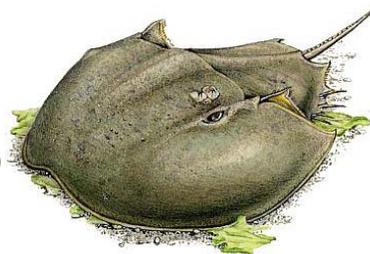


LIMULUS



NEWSLETTER

Department of Biological Sciences, Wagner College, Staten Island, NY

Volume 2009, Issue Fall-04

October, 2009

LETTER FROM THE EDITOR

I hope everybody had a great Halloween! About five more weeks and another fall semester is going into finals week. Amazing, how fast time rushes by.

I would like to thank all alumni and colleagues for their kind and encouraging comments about our newsletter commemorating Dr. Walter Kanzler. This special issue even got applause in the last Committee of the Whole meeting.

As can be imagined for a mid semester Limulus, this issue is packed with experiences. Biology Club and Tri Beta report about their past and upcoming activities. Dr. Kozak from Physics contributes his experiences at the Burgess Shale. He visited there last summer and will give a presentation in the ACE in spring. BI 217 visited the Snug Harbor Botanical Gardens. We get an overview with a number of beautiful photographs by our Assistant Editor Nidhi Khanna. Dr. Moorthy, frequent contributor to the Limulus, gives us her personal insights about women in science with a special tribute to the recent female Nobel awardees. The list of 2009 publications was updated, and the newsletter offers a review of the most recent visit at the MACUB meeting.

The current newsletter is rounded with opportunities, recommendations, a joke and the usual cartoon. I hope you enjoy reading the current issue of the LIMULUS.

Dr. Horst Onken

The Editor

BIOLOGY STAFF AND FACULTY NEWS

GREENHOUSE AND GARDEN

At the last department meeting, Dr. Onken was elected to be the coordinator for greenhouse and garden. The greenhouse will be restructured to house a plant diversity exhibition. Apart of the exhibition, bench space is offered for classes held in the Department of Biological Sciences. Forms and Functions of Life (BI 217) will study the influence of plant hormones in spring 2010. Microbial Ecology (MI 523) will investigate plant-microbe symbiosis and phytopathogenesis. Depending on the remaining space, students who want to do their Experiential Component of the Senior RFT may reserve space for their research project through Dr. Onken. Any students from outside the department who want to use the greenhouse or to participate in the greenhouse maintenance should contact Dr. Onken.

Most of the planters in the garden besides the powerhouse have been cleared for winter. Some work still remains to be

done and students are welcome to participate in these efforts. For spring 2010, it is planned to convert the planters in a theme garden that could be used for classes in the fall.

Contributed by Dr. Onken.

BIOLOGY CLUB NEWS

The Biology Club had a meeting on October 19th, and discussed a variety of issues. Members of the Biology Club participated in the annual Breast Cancer Walk that takes place in Clove Lakes Park. The club will be doing their on-campus community service event on Tuesday November 10th. The event is intended to raise awareness about animal cruelty. Members of the club will display a poster about animal cruelty in the union that day during lunchtime. Donations that go towards raising awareness about animal cruelty will be collected during lunchtime as well. The club will host a showing of an Animal Planet movie that all members of the Wagner community are invited to attend. The film will be shown at 8pm on November 10th, with location TBD.

The Bodies Exhibit trip at the South Street Seaport will take place on November 22nd. All Wagner students are welcomed to attend. Participants should be advised to meet everyone at the 10:40am shuttle. Fliers will be distributed in the following weeks and there will be a sign up sheet as well. Only 25 participants may attend, and several members of the club are already planning to attend, so act fast!

The next meeting will be on Monday, November 2nd at 9pm in the lobby of the 4th floor in Haborview Hall. Please contact the Biology Club president Cassandra Bray (Cassandra.bray@wagner.edu) if you have any questions.

Contributed by Nidhi Khanna and Cassandra Bray

TRI-BETA NEWS

Tri-Beta held their last meeting on Monday October 14th. Members completed their off-campus community service by participating in the Breast Cancer Walk that took place in Clove Lakes Park. Despite the gusty winds, and treacherous rain, many members of Tri-Beta went to the Breast Cancer Walk to support a good cause.

Tri-Beta also completed their on-campus community service for this semester. Members dressed up in Halloween costumes and participated in the Haunted Hallways event on Sunday October 25th. Haunted Hallways is an event that is open to the public (people outside of the Wagner community) and takes place annually. The Marketing Club sponsors the event, and various clubs and organizations are allowed to rent a room in





Main Hall. Each club is permitted to decorate their rooms and participants are encouraged to dress up in Halloween costumes. Children from all over Staten Island come to Main Hall and go "trick or treating" in all of the rooms, and Wagner students give them candy along with a good scare.

Members of Tri-Beta decided to have a "Mad Scientist" theme for their room. Students used skeletons and a variety of organs from the Biology laboratories. The event was an overall success.

Contributed by Nidhi Khanna

OPPORTUNITIES

COMMUNITY SERVICE OPPORTUNITY

Greetings Everyone,

I am Nidhi Khanna and I am currently a junior. I am working with this non-profit organization called *Planting Peace*. *Planting Peace* has many sub-organizations including one called *The Clean World Movement*. The *Clean World Movement* is trying to encourage more individuals around the world to recycle and to take better care of the planet. I am working with *The Clean World Movement* as the environmental director in my community. I am organizing some clean-ups in Staten Island during the semester. If anybody is interested in helping out, please feel free to contact me at nidhi.khanna@wagner.edu. Thanks for your interest and I look forward hearing from you! If you would like more information about the organization I am working with, please visit: <http://www.plantingpeace.org/>.

Contributed by Nidhi Khanna

RESEARCH WITH MOSQUITOES AND CRABS

Dr. Onken offers research opportunities for students in the frame of a project in which he collaborates with scientists from Washington



State University, the University of Idaho, and the University of Alberta (Edmonton, CA). The project is funded by the National Institute of Health and studies the physiology of the midgut of larval yellow fever mosquitoes (*Aedes aegypti*). Mosquitoes are vectors of a number of parasites, transmit devastating diseases like malaria, yellow fever and dengue, and are a major threat to the health of billions of people on our planet. The principal investigators of this project address larval mosquitoes, because it appears more straightforward to fight these vectors as long as they are confined in an aquatic habitat.

In collaboration with colleagues from the U.S. (Mt. Desert Island Biological Laboratories, Maine), Brazil (University of São Paulo in Ribeirão Preto, University of Paraná in Curitiba) and Canada (University of Manitoba in Winnipeg) Dr. Onken pursues research with Crustacea related to the osmoregulatory capacities and mechanisms of crabs. Together with Dr. Alauddin (Chemistry) and Professor Beecher (Biology), an ecophysiological study is in an early stage of planning.



Dr. Onken can offer research opportunities for two to three students. If interested contact Dr. Onken in his office (Megerle Science Hall Room 411), lab (Megerle Science Hall Room 406) or via e-mail (horst.onken@wagner.edu) or phone 420-4211.

Contributed by Dr. Onken

EXPERIENCES

A VISIT TO THE BURGESS SHALE



This past July, I gave a lecture entitled, "Aliens in Rocks" at the Geoscience Foundation in Field, British Columbia, Canada. I gave it as a part of my assignments as a Solar System Ambassador for NASA/JPL. In

addition, the following day, I was an assistant guide on a 22 kilometer hike to the Walcott Quarry in Yoho National Park, where I was able to examine various invertebrate fossils dating back over 530 million years ago.

The rock formations in the Burgess Shale provide us with a "time machine", taking us back through the evolution of life on the Earth. Could the strange creatures found in these rock formations have, in a similar fashion, also evolved on other worlds within our solar system? Could they have traversed the vacuum of space and possibly "seeded" our planet back in time? The plethora of lifeforms seen at this world famous site and the famous book, "A Wonderful Life" written by Stephen Jay Gould, clearly proves that Darwin's theory of Natural Selection is a valid explanation of evolution.



Although the hike up to the Walcott Quarry was very strenuous, it was the most amazing experience of my life.



Contributed by Harold Kozak

BI 217 CLASS VISITS SNUG HARBOR BOTANICAL GARDEN

Earlier this month, Professor Beecher took her Forms and Functions class to visit the Snug Harbor Botanical Garden. Fifteen enthusiastic students traveled with Professor Beecher and Graduate Assistant Zulmarie Franco to the Botanical Garden on a pleasant Wednesday afternoon.



Professor Beecher was teaching her class about photosynthesis and about plant forms and functions. The students were able to see an assortment of different plants at the Botanical Garden. As a current student in Forms and Functions, I learned from Professor Beecher that there are over 300,000 species of plants, and all plants are differing in their size and shape. In many plant species, photosynthesis occurs in the leaves and students were able to see all kinds of leaves in a wide-ranging of plants species. The trip was an overall fun experience and allowed students to relate the knowledge they learned in class to the “real world.” As a class, we were also supporting a local attraction that more Staten Island residents should appreciate. The Botanical Garden was established in 1977. For more information on the Botanical Garden, please visit (<http://www.snug-harbor.org/horticulture.html>).



Contributed by Nidhi Khanna





OPINION



The Nobel Prize was established from the will and estate of Swedish chemist and inventor of the high explosive dynamite Alfred Nobel in 1895. Originally the prize money was to be shared by the ones chosen from the fields of Physics, Chemistry, Physiology or Medicine, Literature, and Peace. The first set of Nobel Prizes in these categories was given in 1901. The Nobel Prize in Economics was added to the list in 1969. The front side of the three "Swedish" medals (Physics and Chemistry, Physiology or Medicine, and Literature) is the same, featuring a portrait of Alfred Nobel and the years of his birth and death in Latin; the Economics and Peace Prizes have a different design. Up to 1980 the "Swedish" medals, each weighing approximately 200 g and with a diameter of 66 mm, were made of 23-karat gold. Since then they have been made of 18-karat green gold plated with 24-karat gold. To date more than 800 men and 40 women have been the recipients of this prestigious award. Of all the women who have won the Nobel, Marie Curie and Barbara McClintock have been exceptional in that Marie Curie has been honored twice, in 1903 with a Nobel in Physics and in 1911 with a Nobel in Chemistry. Barbara McClintock was the only woman in science to win this prize solo. This year has been exceptional in that five women have won the coveted prize in Physiology or Medicine, Chemistry, Literature and Economics. That is a total of four fields out of six, which is quite remarkable.

Only 10 women compared to more than 500 recipients have won the Nobel Prize in the sciences. The fact that Nobels are given almost exclusively to academic researchers means that universities also share some responsibilities for this remarkable disparity. In the early days of the Nobel, laws and parental oppositions prevented many women from entering universities. In the United States women could get a university education, but no job. Until the 1970s, many leading research universities and technological institutes were only for men. To teach in women's colleges and coeducational universities American women were expected to stay single. Barbara McClintock, the Nobel Prize winning geneticist was a few years from membership in the National Academy of the Sciences when her boss at the University of Missouri threatened her in 1936 saying, "If you ever marry, you will be fired." McClintock stomped out planning to become a weather forecaster, until she found a job in a private college (from "Feeling for an Organism" biography of McClintock). Even today women scientists find it very hard to get that final promotion to a "FULL PROFESSOR" in American Academia. In 1971 a law was passed requiring universities to hire women into their faculties or risk losing federal dollars. Dr. Mary-Lou Pardue, who now holds a chair in Microbiology and is a member of the National Academy of Sciences, says this in

recounting the story of her hiring. "When I applied for a position at MIT, MIT's response was 'Thank you for your letter. We have had hundreds of responses to our ad.'" Women scientists even today face subtle discrimination. Communications can be complicated. As Pardue puts it, "you can't go up to a man at a meeting and say 'let us have a drink, and I will tell you about my science' without getting more than you bargained for." It is those honest sincere networking connections that men are privileged to that women hope and wish for but never get.

Being a full professor in a small Liberal Arts College in the field of Genetics, I have pondered over this question and here are my thoughts. I am the only female fulltime professor in the sciences in the college that I teach. "X" is the symbol for the unknown and we women have two of those Xs where as the men have only one. I wonder whether that has anything to do with it. From a genetics point of view that cannot be true, because I know that we have more genes on two of our X chromosomes than the men with an X and Y. The Y chromosome is such a small chromosome compared to the X and there are only very few genes on the Y. We know women in general live longer and are better multi taskers compared to men. So why is it that there is such a tremendous discrepancy? Only thing I can think of is that, societal, economical and other reasons contribute to this problem. It is very refreshing to see that these stereotyping and taboos are slowly melting away. This year has been a remarkable year for women in terms of winning the Nobel Prize and I want to applaud these winners.



Dr. Elizabeth Blackburn, Morris Herztein Professor of Biology and Physiology in the Department of Biochemistry and Biophysics at the University of California is a leader in the area of telomere, telomerase research. Dr.

Carol Greider, the co-winner of this award is a Professor at Johns Hopkins. The molecular nature of telomeres, the end of eukaryotic chromosomes that serve as protective caps essential for preserving the genetic information, and the ribonucleoprotein enzyme, telomerase and the roles they play in aging and development of cancer was the riddle that these scientists have been working on for the last several years.

Dr. Ada E. Yonath won the Nobel Prize along with two other scientists for her work on Ribosomes, the cell's most multifaceted machine, at the molecular level. She is a distinguished scientist from the Weizmann Institute of Science, Rehovot, Israel. Ribosomes, found in the cytoplasm of the cell are involved in protein synthesis. Proteins and enzymes are made based on the blue print information





carried in the DNA. Proteins and enzymes in turn control the chemistry of all living organisms. As Ribosomes are crucial to life they are also target for new antibiotics. An understanding of the innermost working of the Ribosomes is important for the scientific understanding of life. This knowledge can be put to practical and immediate use, since many of today's antibiotics cure various diseases by blocking the function of bacterial Ribosomes.



Herta Muller, winner of the Nobel Prize in literature was born in the German-speaking town of Nitzkydorff in Banat, Romania. Muller made her debut with a collection of short stories, "Niederungen," which was censored in Romania. She published the uncensored version in Germany. The same year she

also published "Druckender Tango" in Romania. In these two works Muller depicts life in a small German speaking village, and the corruption, intolerance and repression to be found there.



Elinor Ostrom became the first woman to win a Nobel Prize in Economics along with fellow American Oliver Williamson for analyzing economic governance: the rules by which people exercise authority in companies and economic systems. Ostrom is a political scientist at Indiana University who showed how common resources like forests, fisheries, oil fields and grazing lands can be managed successfully by the people who

use them rather than by the government or private companies. What 2009 has proved to us all is that given enough encouragement and equal chances, women can be just as successful as men. Stereotyping individuals and excluding opportunities for success to any group based on gender, race or other criteria should be a thing of the past.

Contributed by Dr. Moorthy

PUBLICATIONS

Ettinger, A., Lebron, J. & Palestis, B. J. (2009, in press). Sex-assortative shoaling in zebrafish (*Danio rerio*). *Bios*.

Izeirovski, S., Moffett, S. B., Moffett, D. F. & Onken, H. (2009). The anterior midgut of larval yellow fever mosquitoes (*Aedes aegypti*): Effects of nutrients on the transepithelial voltage and strong luminal alkalization. *Wagner College Forum for Undergraduate Research*.

Izeirovski, S., Moffett, S. B., Moffett, D. F. & Onken, H. (2009, in press). The anterior midgut of larval yellow fever mosquitoes (*Aedes aegypti*): effects of amino acids, dicarboxylic acids, and glucose on the transepithelial voltage

and strong luminal alkalization. *Journal of Experimental Zoology*, published online, DOI: 10.1002/jez.561.

Jagadeshwaran, U., **Onken, H.**, Hardy, M., Moffett, S. B. & Moffett, D. F. (2009, in press). Cellular mechanisms of acid secretion in the posterior midgut of the larval mosquito *Aedes aegypti*. *Journal of Experimental Biology*, in press.

Lamb, C. M., Moorthy, A. S., Corbo, C.P. & Fulop, Z. L. (2009). Teratogenic effects of lithium chloride on eye development in early embryogenesis of Zebrafish (*Danio rerio*). *In Vivo* 31(1): 24-31.

Moffett, D.F. and **Onken, H.** (2009, in press). The Cellular Basis of Extreme Alkali Secretion in Insects: A Tale of Two Tissues. In: *Epithelial Transport Physiology* (ed. George A. Gerencser). Totowa, New Jersey: Humana Press.

Onken, H., & Moffett, D. F. (2009). Revisiting the cellular mechanisms of strong luminal alkalization in the anterior midgut of larval mosquitoes. *Journal of Experimental Biology*. 212: 373-377.

Onken, H., Patel, M., Javoroncov, M., Izeirovski, S., Moffett, S.B. & Moffett, D.F. (2009). Strong alkalization in the anterior midgut of larval yellow fever mosquitoes (*Aedes aegypti*): Involvement of luminal Na⁺/K⁺-ATPase. *Journal of Experimental Zoology*. 311A: 155-161.

Palestis, B.G. (2009). Fluctuating asymmetry in common tern chicks varies with hatching order and clutch size. *The Auk* 126: 815-822.

Palestis, B.G. (2009). Use of artificial eelgrass mats by saltmarsh-nesting common terns (*Sterna hirundo*). *In Vivo* 30(3): 11-16.

Trivers, R., **B.G. Palestis** & D. Zaatari. (2009). *The Anatomy of a Fraud: Symmetry and Dance*. TPZ Publishers. Antioch, CA.

Zaatari, D., **Palestis, B.G.** & Trivers, R. (2009). Fluctuating asymmetry of responders affects offers in the Ultimatum Game oppositely according to attractiveness or need as perceived by proposers. *Ethology* 115: 627-632.

PROFESSIONAL MEETINGS

MACUB CONFERENCE

On a rainy Saturday morning, a handful of Biology students and faculty traveled to Kingsborough Community College where the annual Metropolitan Association of College and University Biologists Conference was held.

The conference began with a keynote address made by Debra E. Berg, M.D. Dr. Berg is in charge of the Healthcare Emergency Preparedness Program in the Bureau of Communicable Diseases for the New York City Department of Health and Mental Hygiene. Dr. Berg gave a lecture that focused on both the seasonal flu and swine flu. She encouraged the audience to get vaccinated for both the seasonal flu and swine flu. Both vaccinations are available to the public now, and are also made with eggs. She advised individuals that may be allergic to eggs to seek professional





consultation before receiving either vaccination. For more information about swine flu, please visit: http://www.cdc.gov/h1n1flu/vaccination/public/vaccination_qa_pub.htm.

Another keynote speaker at the conference, Dr. Richard Wrangham (Professor of Biological Anthropology at Harvard University), gave a lecture about his research focusing on how cooking has helped human beings evolve as a species. Dr. Wrangham claims that many primates devote most of their energy during the day just chewing up their food. According to Wrangham, cooking raw food enables humans to eat rather quickly and devote their time to other activities. Dr. Wrangham suggests that it is much easier to digest cooked food, and cooking is not only a social practice, but an important part of human evolution. For more information about this speaker please visit: <http://www.harvardscience.harvard.edu/culture-society/articles/invention-cooking-drove-evolution-human-species-new-book-argues>.

Wagner Professors, Dr. Stearns and Dr. Mosher gave a presentation together at a MACUB workshop. Dr. Stearns and Dr. Mosher spoke about the assessment program that Biology Department introduced in 2003. Senior Biology and Microbiology majors are evaluated in their final year at Wagner. Students take an assessment test and the faculty reviews these tests to see if students have an exceptional understanding of the material that students learn during their undergraduate careers. The results of these tests do not affect a student's overall grades.

Biology undergraduate students and Microbiology graduate students gave poster presentations of their research at the conference. Senior Michael Gutkin (Biology Major) received acknowledgment at the conference. Gutkin was awarded best presentation for his paper that was titled, "Scanning Electron Microscopic Characterization of Structural Reorganization of the Adult Zebrafish Optic Tectum in Organotypic Culture." Professor Corbo, Dr. Fulop, and Professor Rath all advised Gutkin with his research. The Limulus staff would like to congratulate Mike and all of the other Wagner students who participated in this prestigious conference.

Ten other students gave presentations. The names of the students and the titles of their research are below:

Yolana Fuks (senior biology major, chemistry minor) and Melanie Valencia (sophomore): "**Electrophysiology of the Isolated and Perfused Midgut of Adult Yellow Fever Mosquitoes (*Aedes aegypti*): First Results.**" Research under the supervision of Dr. Horst Onken, with co-authors from Washington State.

Lynsey Brandwein (junior psychology major, biology minor), Julianna Maniscalco (junior biology major) and Medije Mashkulli (junior biology major): "**Inhibition of Strong Midgut Alkalinization in Larval Yellow Fever Mosquitoes (*Aedes aegypti*) with HEPES Buffer.**" Research under the supervision of Dr. Horst Onken, with co-authors from Washington State.

Anna Lysenko (junior psychology major, biology minor) co-authored on paper presented by Kingsborough student Luesoni Johnson: "**Use of Zebrafish Embryos in Undergraduate Education: Teaching Science and Scientific Research in an Easy Way.**" Research under the supervision of Prof. Christopher Corbo, Dr. Zoltan Fulop and Prof. Linda Rath of Wagner College, and Kristin Polizzotto of Kingsborough Community College.

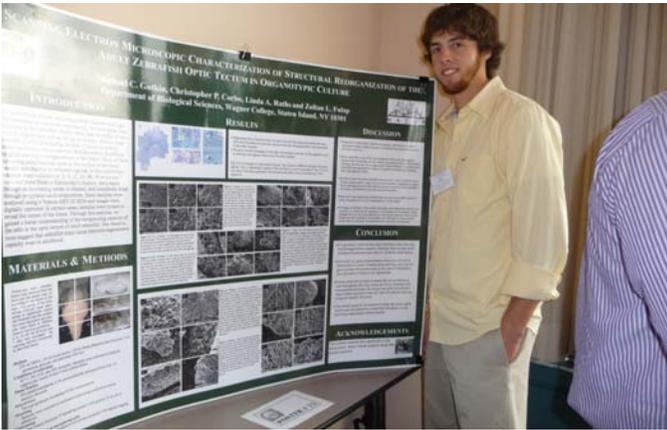
Jessica Browning (graduate student in microbiology): "**Antibiotic-Resistant Salmonella Contamination of Mute Swan (*Cygnus olor*) Eggs in the Jamaica Bay Wildlife Refuge, Brooklyn and Queens, N.Y.**" Research under the supervision of Dr. Adam Houlihan

Zulmarie Franco (graduate student in microbiology) and Marlene Streisinger (senior nursing major): "**Ultrastructural Characterization of Formed Elements in Peripheral Blood of Adult Zebrafish (*Danio rerio*).**" Research under the supervision of Prof. Christopher Corbo, Dr. Zoltan Fulop and Prof. Linda Rath

Contributed by Nidhi Khanna

PHOTO GALLERY ON NEXT PAGE!







ALUMNI

Dear Alumni,

If you are interested in contributing to our newsletter, you are very welcome to do so. Contact Dr. Onken by e-mail (horst.onken@wagner.edu) with your submission, comment, ideas or questions! We are excited to hear about where you are, how and what you do!

RECOMMENDATIONS

Dr. STEARNS RECOMMENDS PROJECT VOTE SMART
www.votesmart.org

If you seriously wish to become reliably informed as a voter regarding the positions of any U.S. candidate or elected official on practically any issue, I recommend www.votesmart.org. This web site is maintained in a fair, impartial manner by individuals representing all political persuasions. The web site is designed to educate—not persuade—the voter, “exposing the facts on over 40,000 candidates and elected officials” (p. 5, Project Vote Smart’s 2008 Voter’s Self-Defense Manual). In an age where politicians are advertised to the public like consumer products, where most media outlets have replaced serious and thoughtful comparisons with sensationalized fluff, where bias is evident in newspaper editorials and most other web sites, where very few journalists provide deep comparisons, where television and radio programs often substitute heated opinion for fact, and where debates have morphed into venues where positions are promoted rather than debated, this web site is refreshingly informative. Using www.votesmart.org, you can identify the three congressional members who represent you on Capitol Hill (the two senators who represent your state and the member of the House of Representatives who represents the district where you live). For each politician, the web site provides the individual’s voting record, background, positions on different issues, speeches and public statements, campaign contributions, endorsements, and interest group ratings, among other things.

PUZZLES, JOKES, QUOTES, CARTOONS

JOKE:

A biology professor was addressing his class, wanting to see if they’d read the assigned text.

Professor: Miss Smith, please stand. What part of the human body increases ten times when excited?

Miss Smith blushes and hesitates and giggles.

Professor: Miss Smith, please sit down. Miss Jones, please stand and tell me if you know what part of the human body increases ten times when excited.

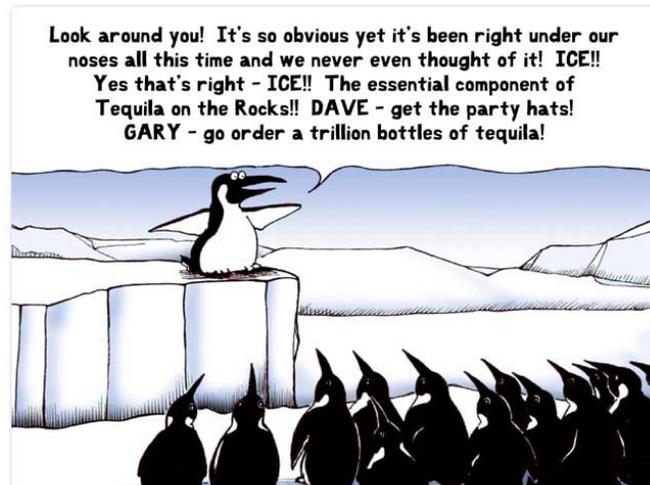
Miss Jones: Yes, Professor. It’s the pupil of the eye.

Professor: Very good. Thank you Miss Jones, you may sit down. Miss Smith, will you please stand again. I have three things to say to you.

1. You have not done your homework.
2. You have a very dirty mind.
3. You’re in for a big disappointment.



CARTOON:



Global warming is a government conspiracy designed to prevent innocent little penguins from enjoying themselves.

Cartoon from www.lab-initio.com

GUIDELINES FOR CONTRIBUTORS

Authors in all sections should keep in mind that not all readers are specialized in their area of interest. Keep your contribution on a level that everybody can understand.

Contributions may vary in length between about 50 and 500 words and must be submitted by e-mail to horst.onken@wagner.edu.

Photographs or other images that accompany an article are very welcome, but must be submitted as separate files (high quality jpg is the preferred file format) attached to the e-mail. Be aware that photographs/images may be minimized in size.

Indicate the section of the newsletter where you want your contribution to appear.

The deadline for submission of a contribution is the 20th of the month. Contributions received later may or may not be considered.

The editor reserves his right to edit your contribution or post an immediate response.

Editing may involve to publish contributions in other sections as indicated by the author.

All contributions will clearly indicate the author's identity.

All contributions are reviewed and publication may be refused by the editor.

The Editorial Board:

Editor: Dr. Horst Onken, Associate Professor

Assistant Editor: Stephanie Rollizo, Dept. Secretary

Student Assistant Editor: Nidhi Khanna (Biology major)

Student Assistant Editor: N.N.