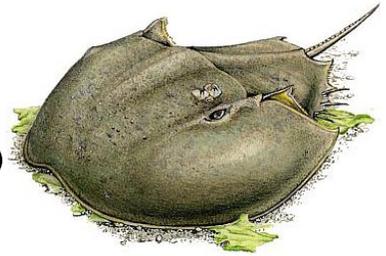


# Limulus



## NEWSLETTER

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

Volume 2012, Issue Fall-01

September, 2012



New photograph of the Biological Science Department taken by Anna Mulé becomes photo of the day on September 20.

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### LETTER FROM THE EDITOR

My “Welcome Back” is somewhat late. Sorry, but the summer and the beginning of the fall semester were special. We have very bad things to report, but also very good news. In contrast to our habit, this September newsletter does not look back to the spring semester. There is more than enough to report from the summer and the first month of classes. I hope you enjoy the September Limulus, and I wished many of you would contribute to the next special issue (see next page)!  
Best regards,  
Dr. Horst Onken, The Editor





## BIOLOGY STAFF AND FACULTY NEWS

### Dr. ROY MOSHER DIED A SEVERE LOSS FOR THE DEPARTMENT



Dr. Roy Mosher, 50, much favored and beloved colleague and professor, died on June 21, 2012. A memorial was held on September 20. Spiro Hall, room 2, was packed with faculty and students. After an opening by the college choir, the college chaplain, Reverend Smith, the president of the college, Dr. Guarasci, the provost, Dr. McNair, the colleagues Dr. Palestis, Mrs. Rollizo, Professor Alba, and Professor Wang, and a student, Julia Mullins, shared their

memories of Dr. Roy Mosher.

As we did in October of 2009 for Dr. Walter Kanzler, the *Limulus* wants to dedicate the next issue entirely to the memory of Dr. Mosher. Please, contribute by sending your memories of Dr. Mosher to Dr. Horst Onken at [horst.onken@wagner.edu](mailto:horst.onken@wagner.edu) until October 25.

### Dr. CHRISTOPHER CORBO A SIGNIFICANT GAIN FOR THE DEPARTMENT



Christopher Corbo, who graduated in 2006 with a BS in Biology and 2008 with a MS in Microbiology from Wagner College, is back!!!

As our newest faculty member in the department of biological sciences, Dr. Corbo received his PhD from the City University of New York this summer.

He fills the position in microbiology that was open after Dr. Adam Houlihan left two years ago.

Chris studied alongside Dr. Roy Mosher, who recently passed away,

and learned a lot from his teacher and mentor, while keeping an adjunct position here. Chris assisted Dr. Mosher on the formation of our five year BS/MS that was implemented almost three years ago (January 2010).

Another important influence on Dr. Corbo is the guidance given to him by Dr. Zoltan Fulop, with whom he conducted neuro-immunological research using zebra fish. Together, they received several scientific recognitions, including MACUB and ECSC. He also published four papers with Dr. Fulop, one including our Dr. Ammini Moorthy and one with Dr. Andrew Needle from Art.

In addition to his expertise in microbiology, Dr. Corbo is also the director of our Electron Microscopy Center, located in the basement of the science building. He and Dr. Kathleen Bobbitt teach many of the microbiology classes, and are the advisors for both the undergraduate and graduate students in

the program.

Dr. Corbo arrived at Wagner in 2002, the same year that Dr. Mosher arrived. Being colleagues and friends for nearly ten years, Chris also poignantly steps into the position of Director of the Microbiology Graduate program.

*Contributed by Stephanie Rollizo*

This contribution is followed by some photographs from Dr. Corbo's PhD defense:



*Photographs contributed by Dr. Moorthy*





### TENURE AND PROMOTIONS

Dr. Heather Cook was promoted from Assistant to Associate Professor. Dr. Horst Onken was tenured and promoted from Associate to Full Professor.



Contributed by Stephanie Rollizo with photographs by Anna Mulé

### NEWS FROM CLUBS AND SOCIETIES

#### BIOLOGY CLUB

This year, the Biology Club has a brand new executive board, led by Enri Citozi as the new club president. The club has already received its budget and will be hosting several events, both on and off-campus. Members are well on their way to planning their semester and have even had two meetings since the club fair, where many new members have signed up. The Biology Club will first attend the annual Making Strides Against Breast Cancer Walk in Clove Lakes Park along with numerous other Wagner organizations on October 21<sup>st</sup>. The Biology Club will be having a movie night fundraiser prior to the walk on Wednesday, October 17<sup>th</sup> at 7:00pm. The goal is to collect donations for the ACS Breast Cancer Research Foundation. The biodiversity film, “Planet Earth”, will be screened. The event is open to the entire campus. Look out for an e-mail in the coming days for the location. The club will be providing good food and offer favors in return for a donation to a great cause. Also, for the first time this year, members will be creating a brand new, hand-made Biology Club banner to honor the walk.

The Greenbelt Conservancy is a new collaboration for the Biology Club. The Conservancy is an organization involved in spreading awareness and education about Staten Island’s Greenbelt, which covers 2,800 acres of forest, wildlife, and hiking trails. The Greenbelt event is a community service project to raise funds for the Greenbelt Conservancy on Staten Island to preserve Staten Island’s natural landscapes. The event will take place on November 9<sup>th</sup> at RABS bowling lanes and is \$12 for college students. The event is open to non-members as well. The Biology Club hopes to host many events throughout the academic year. “The mission of the Biology Club is to promote interest in the biological sciences through the Wagner community,” says vice-president, junior Rad Meylikh. The executive board will work closely with its members to continue to uphold the Biology Club as one of the largest clubs on campus.



Contributed by Janna Denisenko

#### TRI-BETA BIOLOGY HONORS SOCIETY

This past April, Beta Beta Beta Biological Honor Society held a ceremony for new inductees, bringing the total number of members in the society to nineteen for the current academic year. Tri-Beta has another event-filled semester coming up for Fall 2012. Many of the society’s projects are orientated towards community service. The society goes beyond the two service projects required for each Wagner organization. This allows old and new members to partake in charitable events.

Tri-Beta has already participated in the “Light the Night Lymphoma and Leukemia Walk” that took place on September 29<sup>th</sup>. In honor of October being National Breast Cancer Awareness Month, members representing Tri-Beta will attend the ACS Making Strides Against Breast Cancer Walk in Clove Lakes Park on October 21<sup>st</sup>. Those attending under a different organization can also sign up with Tri-Beta at the walk to represent the society.

Two widely successful events for Tri-Beta will also be making a comeback this semester. Both will be held in November. The first of the two events is a faculty lunch for the members of the science department. The society hopes to repeat last year’s luncheon where students and professors interacted while enjoying delicious Italian delicatessens and even raffling off a gift basket. The other event is the 2<sup>nd</sup> annual Thanksgiving Food Drive where Tri-Beta leaves labeled boxes in Megerle Science Building, allowing members, passing students and faculty to drop off cans and non-perishables. The Food Drive aims to support local food pantries on Staten Island during the



holiday season. Look out for Tri-Beta collection boxes starting in November to support the society and to donate to organizations in need.



Contributed by Janna Denisenko with a photograph by Joanna Emilio

### BIOPSYCHOLOGY FELLOWSHIP

It has been an exciting fall semester so far for the Biopsychology Fellowship. The organization has undergone a huge upheaval from its former standing as an honor society. Formerly known as the Biopsychology Honor Society, the society now makes its debut at Wagner as The Biopsychology Fellowship.

Firstly, as the president, I would like to congratulate the new executive board of the Biopsychology Fellowship for becoming the first executives of this new organization. Praise and applause to Vice President Michael Broe, Community Service Representative, Kristiana Kalibat, Secretary, Katie Yoest, and Treasurer, Kristen Lee.

In previous semesters, the Biopsychology Honor Society was dedicated to formally recognizing the academic achievements strictly of Wagner Biopsychology students. However, the executive board decided that the society needed a different approach, to directly target social issues on campus and be more of a social organization. The Honor Society restricted its membership solely to Biopsychology students with 3.5 GPA's an over, which was respectfully admirable. Nevertheless, with no national accreditation, the Biopsychology Honor Society was not a real academic recognition that students desire to credibly represent on their resumes. Psi Chi (international psychology honor society) and Tri Beta (national biology honor society) are already legitimate membership honor societies open to biopsychology students.

The new approach in the Biopsychology Fellowship is to be an outlet for community service and leadership. The initiative of the organization is to bring awareness to drug and alcohol abuse to college students and young elementary students by being peer leaders and peer educators. The Biopsychology Fellowship now advocates peer leadership through the peer education program at Wagner College, which trains students under the Bacchus and GAMMA Network. Through this program, students become leaders and role models familiar

with wellness, diversity and culture, healthy relationships, and alcohol and other drugs. With biopsychology majors' knowledge of psychopharmacology, they have a better understanding of the psychological and neurobiological effects of drug use, a better familiarity to become a role model of knowledgeable responsibility when it comes to drug use. The fellowship also plans to partner with Boys and Girls club or the YMCA as an outlet to science students to work with children in interest in pursuing pediatric clinical careers in psychology or medicine.

Still in the building stages of the organization, The Biopsychology Fellowship is commencing in its campus events such as its upcoming "Mind Hacks" event, demonstrating the self-manipulation of the brain and its pre-final self-relaxing hypnosis event.

Contributed by Philip Fomina.

### PRE-HEALTH SOCIETY

Welcome back!

The Pre-Health Society has held a total of three meetings. We welcome the new 2012-13 executive board: *President* – Pakinam Mekki, *VP of Medicine* – Faiz Abed, *VP of Dentistry* – Sydney Susino, *VP of Allied Health* – Samar Alwani, *VP of Community Service* – Khaled Mekki, *Treasurer* – Noor Hussain, *Secretary* – Kymberlie Vargas

We held our first meeting on September 6<sup>th</sup> during which we welcomed thirty-five new members to our organization! We discussed the different qualities health professional schools look for in a competitive applicant, which include: GPA, coursework, standardized exam scores, extracurricular activities, letters of recommendation, personal statements, and interviews. These factors should help paint a picture of passionate and driven leaders who genuinely care about their communities.

On September 13<sup>th</sup>, the Pre-Health Society welcomed alum Salvatore Valenti '10. Salvatore is from Staten Island, and he transferred to Wagner College after his sophomore year. He majored in microbiology, and, subsequently, he graduated with departmental honors in 2010. After graduation, he was enrolled in a Ph.D. program at New York Medical College, and during his time there, he applied and was accepted to medical school. He now attends Touro College of Osteopathic Medicine in Manhattan. During his presentation, Salvatore gave wonderful advice to pre-health students. His advice included: *the MCAT score is the jewel of your application. Aim for a composite score of 30. Don't rush to take the MCAT, and don't take it more than twice. Prioritize your time well. Admission committees look at GPA, volunteer work, leadership roles, work experience and research experience. Be natural during your interview. Emphasize what makes you unique. Take advantage of the opportunities you have at Wagner. Build solid relationships with your professors.* After the presentation, Alexa Viniotis says, "As a freshman, it was nice to hear from someone who is successful now and was an undergraduate student here only a few years ago. Although it may seem overwhelming, it is good to be exposed to the work required to get into medical school now rather than later."

During our last meeting, on October 5<sup>th</sup>, we shined the spotlight on three pre-health students and their involvement in





external programs. Noor Hussain '13 and Rayna Silva '14 participated in the **Summer Medical and Dental Education Program (SMDEP)**. SMDEP is a six-week summer medical and dental preparatory program. It is a free program, which includes housing, meals and transportation. The program also provides participating students a small stipend. Noor participated with the pre-medical SMDEP program at Howard University in Washington D.C. Through the program, she took courses that helped her build a solid academic and social foundation, including biology, organic chemistry, physics, epidemiology, health policy and communication. Noor also had personal one-on-one help writing her medical school personal statement as well as the opportunity to shadow physicians in different fields. Like Noor, Rayna participated in the pre-dental SMDEP program at Case Western Reserve University of Dental Medicine. Similar to Noor's experience, Rayna had the opportunity to review basic science and to undergo mock interviews and reading/writing workshops. In addition, she got the opportunity to shadow dentists and watch oral surgeries! Both Noor and Rayna loved the program, and they encourage other Wagner students to consider applying! If you are a freshman or a sophomore, you are eligible to apply for the program online at [www.smdep.org](http://www.smdep.org). The application is free, and it opens on November 1.

Kymberlie Vargas '14 also participated in an external program called NERA MedPrep. MedPrep is a free, three-year summer program that targets traditionally underrepresented and/or economically disadvantaged New York City resident college pre-medical freshmen and sophomores. Kymberlie applied to MedPrep during her freshman year, and was accepted to the program at Columbia University College of Physicians and Surgeons. During her first summer, she took foundation classes in general chemistry, organic chemistry, physics, biology and verbal reasoning. She also got a one-on-one evaluation of her study skills, reading abilities, and time management skills. During the second summer, MedPrep gave her a free MCAT prep course as well as home study books. In addition, the program placed her in a nursing home facility, where she gained clinical experience through working with geriatric patients! During her third summer, the program will provide her with research opportunities, where she will research health-related issues affecting underserved communities. The program will give her instruction on how to generate personal statements as well as allow her to practice mock admissions interviews. Kymberlie describes the program as "rigorous, but rewarding," and she encourages all Wagner freshmen and sophomores to consider applying. For more information, please visit [www.neramedprep.org](http://www.neramedprep.org).

The Pre-Health Society is getting ready for upcoming academic events, including visiting Mount Sinai School of Medicine and Touro College of Osteopathic Medicine, and community service events, like the Making Strides against Cancer walk in Clove Lakes park.

If you have any questions or concerns, please do not hesitate to email me, Pakinam Mekki, at [pakinam.mekki@wagner.edu](mailto:pakinam.mekki@wagner.edu)

Best of Luck,  
Pakinam

Contributed by Paknami Mekki



## EXPERIENCES

### THE TREE OF LIFE: TEACHING OF EVOLUTION AND GENOMICS:SUMMER WORKSHOP AT NYU

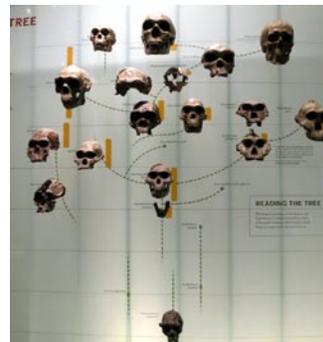
This summer I was fortunate enough to attend a stimulating one-week seminar/workshop on "The Tree of Life: Teaching Evolution and Genomics" in New York City, courtesy of the Faculty Resource Network (FRN) of the New York University. The FRN of NYU was established in 1984 to help small Liberal Arts Institutions by providing their faculty members with professional development opportunities in the face of limited human and financial resources.:



Wagner College joined this network in the early 1990s when Dr. Eleanor Rogg was the Provost. Over the years many Wagner faculty from different departments have participated and benefited from this affiliation. FRN's award winning and nationally recognized programs have to date provided opportunities to more than 16,000 faculty members from colleges and Universities across the USA. Faculty members participating in these programs are expected to take back their acquired knowledge and use them to benefit their home institutions.

What is the Tree of Life anyway? Here I am using the term strictly in the context of Biological Sciences. A little bit of background before I share my experience.

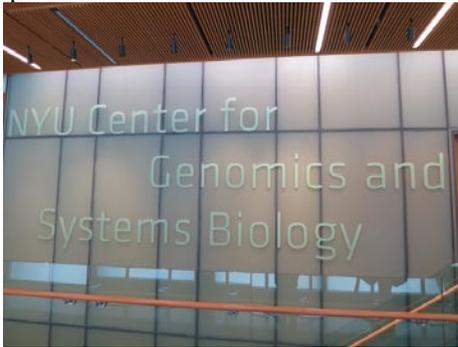
Back in 1859 Charles Darwin in his epic book *The Origin of Species* included just one illustration; a tree depicting branching and extinction through time. The idea behind this was that species share common ancestors at various points in time and that this relationship among all living organisms can be portrayed as a "Tree of Life". Since then there have been many attempts to portray the Tree of Life (TOL) with tree-like diagrams based on similarities in the structure and form of organisms.





The discovery of DNA/RNA, the identification of genomes and advances in computer technology have given rise to specialized fields of Bioinformatics (application of computer technology to the study of Biology) and Phylogenomics (evolutionary study using the molecular sequencing data of groups of organisms) that offer scientists new ways of defining and constructing the TOL.

During the middle of the twentieth century Willi Henning introduced analytical methods to study phylogenetic relationships.



Molecular biology, systematic and population biology, hereditary (genome level) information are used in testing hypotheses on relationships among organisms are used in the reconstruction of trees. A phylogenetic tree shows the inferred evolutionary relationships among different species based on the similarities and differences among their genetic characteristics and/or physical structures. The taxa (a taxonomic unit in a biological system of classification of organisms) joined together in a tree are assumed to have a common ancestor and in a rooted phylogenetic tree each node with descendants represents the inferred most recent common ancestors. This is an ongoing process. Will there be a single TOL that is all encompassing? No one knows.

As recognized in the National Science Foundation Workshop documents, "increased knowledge of phylogenetic relationships will improve human health, push the frontiers of comparative developmental biology, meet threats to agriculture and forestry from invasive species and pests, and improve management of our natural resources. Perhaps most important, without substantial growth in our knowledge of the Tree of Life, it will become increasingly difficult and inefficient to manage, understand, and manipulate biological information held in numerous databases worldwide, including the burgeoning information from the genomic sciences".



The NYU FRN workshop is targeted towards teachers to enable them to learn about the scientific advances and to get hands-on experience in using Bioinformatics tools and it was conducted by Dr. Robert DeSalle, curator in the Sachler Institute for comparative Genomics at the American Museum of Natural History (AMNH) in New York City. He leads a group of researchers working on molecular systematics, molecular evolution, population and conservation genetics and evolutionary genomics across a wide range of life forms. Dr. DeSalle also serves as Adjunct Professor at Columbia University, NYU, and CUNY. He is the author of several books, numerous articles and peer reviews, editor of scientific journals and is well known in the world as an eminent scientist.

The TOL workshop was for a week (June 11-16) and we had 16 faculty members from the mainland US, Hawaii and Puerto Rico. The majority of the participants were Biologists but we also had Biochemists, Chemists and one Bioinformatics specialist; a good mix of people considering the topic we studied. Most of us who needed accommodation in the city were housed in the NYU dormitory on 12<sup>th</sup> street between

*Contributed by Dr. Moorthy*

#### LAB RENOVATIONS

The department of biological sciences is pleased to announce that the long-awaited renovation of labs 402-403-404 has become a reality!

All the labs on the 4<sup>th</sup> floor of the science building were original to the building, circa 1969. In recent years, requests to repair cabinets resulted in the disposal of the broken pieces since the wood was so rotten it could not hold a new screw! (*see photo*)



In 2008, the 3<sup>rd</sup> floor microbiology suite of labs was completed. The result was a state of the art facility that has been serving the students and faculty in both an academic and research capacity.

During the fall of 2011, spring and summer of 2012, much discussion and planning was given to the renovating of labs 402-403-404. The project, headed by Dr. Zoltan Fulop, assisted by Prof. Linda Raths, Dr. Chris Corbo and with the support of Mrs. Stephanie Rollizo, was an in-depth, step-by-step process. With the help of our graduate assistants and student workers, days were spent disposing of unusable items, squirreling away of displays, equipment, supplies, and



temporarily placing needed things in labs that were not being updated.

The consensus of the department was taken on the type of cabinets and counter tops that would be installed, what they would look like, and the kind of media required. An architectural firm was hired by the school. They drew plans for what the labs should look like. A construction company, including demolition, electricians, plumbers, HVAC, painters, carpenters, and floor specialists began arriving.

However, even with the best laid plans, the installation of the new furniture did not begin until a few days before classes began, thus prompting Prof. Rath to create an "alternate" lab schedule. Our neighbors in the science building were very generous in allowing us to use their labs during this time.

Finally, with just a few minor bumps in the road, the labs were opened to classes again on September 24, 2012. It is very important to acknowledge the benefactors of the Megerle Science Building for making this renovation possible. We will be sending them an official invitation to tour the new labs soon! (see photos)



Contributed by Stephanie Rollizo



### LEARNING COMMUNITY TRIP

On September 27, the First-Year Program learning community that Dr. Corbo and Dr. Stearns teach took a field trip to the Joint Meeting of Essex and Union Counties Edward P. Decher Secondary Wastewater Treatment Facilities, in Elizabeth, New Jersey. The learning community is titled "Bacteria, Human Health, and Survival." Francis Bonaccorso, Assistant Superintendent of the wastewater treatment facility, introduced the students to pre-treatment, primary treatment, and secondary treatment phases of processing approximately 85 million gallons of wastewater (sewage and storm drain water combined) each day. After the introduction, Francis and two other assistants took the group (Dr. Bobbitt came, too) on an outside tour to actually see these phases in action. We learned how microbes play a truly important role in the biodegradation of sewage.



Contributed by Dr. Stearns with a photograph by Francis Bonaccorso

### NEWS IN THE BIOSCIENCES

#### NOBEL AWARDS FOR PHYSIOLOGY OR MEDICINE

Press Release by the Nobel Assembly at the Karolinska Institutet:

The Nobel Prize recognizes two scientists who discovered that mature, specialised cells can be reprogrammed to become immature cells capable of developing into all tissues of the body. Their findings have revolutionised our understanding of how cells and organisms develop.

John B. Gurdon discovered in 1962 that the specialisation of cells is reversible. In a classic experiment, he replaced the immature cell nucleus in an egg cell of a frog with the nucleus from a mature intestinal cell. This modified egg cell developed into a normal tadpole. The DNA of the mature cell still had all the information needed to develop all cells in the frog.

Shinya Yamanaka discovered more than 40 years later, in 2006, how intact mature cells in mice could be reprogrammed to become immature stem cells. Surprisingly, by introducing only a few genes, he could reprogram mature cells to become pluripotent stem cells, i.e. immature cells that are able to develop into all types of cells in the body.



These groundbreaking discoveries have completely changed our view of the development and cellular specialisation. We now understand that the mature cell does not have to be confined forever to its specialised state. Textbooks have been rewritten and new research fields have been established. By reprogramming human cells, scientists have created new opportunities to study diseases and develop methods for diagnosis and therapy.

**Life – a journey towards increasing specialisation**

All of us developed from fertilized egg cells. During the first days after conception, the embryo consists of immature cells, each of which is capable of developing into all the cell types that form the adult organism. Such cells are called pluripotent stem cells. With further development of the embryo, these cells give rise to nerve cells, muscle cells, liver cells and all other cell types - each of them specialised to carry out a specific task in the adult body. This journey from immature to specialised cell was previously considered to be unidirectional. It was thought that the cell changes in such a way during maturation that it would no longer be possible for it to return to an immature, pluripotent stage.

**Frogs jump backwards in development**

John B. Gurdon challenged the dogma that the specialised cell is irreversibly committed to its fate. He hypothesised that its genome might still contain all the information needed to drive its development into all the different cell types of an organism. In 1962, he tested this hypothesis by replacing the cell nucleus of a frog's egg cell with a nucleus from a mature, specialised cell derived from the intestine of a tadpole. The egg developed into a fully functional, cloned tadpole and subsequent repeats of the experiment yielded adult frogs. The nucleus of the mature cell had not lost its capacity to drive development to a fully functional organism.

Gurdon's landmark discovery was initially met with scepticism but became accepted when it had been confirmed by other scientists. It initiated intense research and the technique was further developed, leading eventually to the cloning of mammals. Gurdon's research taught us that the nucleus of a mature, specialized cell can be returned to an immature, pluripotent state. But his experiment involved the removal of cell nuclei with pipettes followed by their introduction into other cells. Would it ever be possible to turn an intact cell back into a pluripotent stem cell?

**A roundtrip journey – mature cells return to a stem cell state**

Shinya Yamanaka was able to answer this question in a scientific breakthrough more than 40 years after Gurdon's discovery. His research concerned embryonal stem cells, i.e. pluripotent stem cells that are isolated from the embryo and cultured in the laboratory. Such stem cells were initially isolated from mice by [Martin Evans](#) (Nobel Prize 2007) and Yamanaka tried to find the genes that kept them immature. When several of these genes had been identified, he tested whether any of them could reprogram mature cells to become pluripotent stem cells.

Yamanaka and his co-workers introduced these genes, in different combinations, into mature cells from connective tissue, fibroblasts, and examined the results under the



microscope. They finally found a combination that worked, and the recipe was surprisingly simple. By introducing four genes together, they could reprogram their fibroblasts into immature stem cells!

The resulting induced pluripotent stem cells (iPS cells) could develop into mature cell types such as fibroblasts, nerve cells and gut cells. The discovery that intact, mature cells could be reprogrammed into pluripotent stem cells was published in 2006 and was immediately considered a major breakthrough.

**From surprising discovery to medical use**

The discoveries of Gurdon and Yamanaka have shown that specialised cells can turn back the developmental clock under certain circumstances. Although their genome undergoes modifications during development, these modifications are not irreversible. We have obtained a new view of the development of cells and organisms.

Research during recent years has shown that iPS cells can give rise to all the different cell types of the body. These discoveries have also provided new tools for scientists around the world and led to remarkable progress in many areas of medicine. iPS cells can also be prepared from human cells.

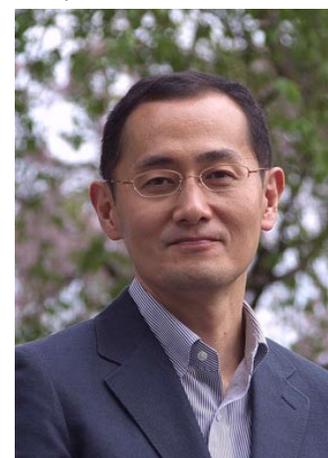
For instance, skin cells can be obtained from patients with various diseases, reprogrammed, and examined in the laboratory to determine how they differ from cells of healthy individuals. Such cells constitute invaluable tools for understanding disease mechanisms and so provide new opportunities to develop medical therapies.

**Sir John B. Gurdon** was born in 1933 in Dippenhall, UK. He



received his Doctorate from the University of Oxford in 1960 and was a postdoctoral fellow at California Institute of Technology. He joined Cambridge University, UK, in 1972 and has served as Professor of Cell Biology and Master of Magdalene College. Gurdon is currently at the Gurdon Institute in Cambridge.

**Shinya Yamanaka** was born in Osaka, Japan in 1962. He



obtained his MD in 1987 at Kobe University and trained as an orthopaedic surgeon before switching to basic research. Yamanaka received his PhD at Osaka City University in 1993, after which he worked at the Gladstone Institute in San Francisco and Nara Institute of Science and Technology in Japan. Yamanaka is currently Professor at Kyoto University and also affiliated with the Gladstone Institute.

*Contributed by Dr. Onken*



## OPPORTUNITIES

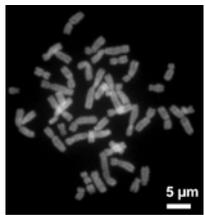
### RESEARCH WITH ANIMAL BEHAVIOR AND ECOLOGY

Dr. Palestis offers research opportunities for students in the frame of his research project with common terns (*Sterna hirundo*) in southern New Jersey. Apart of his work with terns, Dr. Palestis is interested in animal behavior and has forwarded numerous student research projects with zebrafish in the past. Please, contact Dr. Palestis for further information at [bpalesti@wagner.edu](mailto:bpalesti@wagner.edu).



Contributed by Dr. Onken

### RESEARCH IN GENETICS



Dr. Moorthy offers research opportunities for students with an interest in genetics. In the past, Dr. Moorthy has forwarded student research in genetics with plants and animals. Dr. Moorthy is an expert in using numerous techniques for genetic research. Please,

contact Dr. Moorthy for further information at [asmooth@wagner.edu](mailto:asmooth@wagner.edu).

Contributed by Dr. Onken

### RESEARCH ABOUT LIGHT PERCEPTION

Dr. Stearns offers research projects to determine the light sensitivity of animals. Currently, Dr. Stearns is interested in the characteristics of the eyes of larval mosquitoes. However, other animals like the brine shrimp (*Artemia salina*) have been investigated in the laboratory of Dr. Stearns. Please, contact Dr. Stearns for further information at [dstearns@wagner.edu](mailto:dstearns@wagner.edu).



Contributed by Dr. Onken

### WORK IN THE GARDEN

Students interested in collaborating in the greenhouse and/or garden during the spring of 2012 should contact Dr. Onken ([horst.onken@wagner.edu](mailto:horst.onken@wagner.edu)).

Contributed by Dr. Onken

### BE A LIMULUS ASISTANT EDITOR

Proficient student writers are invited to become assistant editors for the newsletter of the Department of Biological Sciences. If you are interested, please, contact Dr. Onken ([horst.onken@wagner.edu](mailto:horst.onken@wagner.edu)).

Contributed by Dr. Onken

## PUBLICATIONS

Moffett, D. F., Jagadeshwaran, U., Wang, Z., Davis, H. M., **Onken, H.** and Goss, G. G. (2012). Signaling by intracellular  $Ca^{2+}$  and  $H^+$  in larval mosquito (*Aedes aegypti*) midgut epithelium in response to serosal serotonin and lumen pH. *Journal of Insect Physiology* **58**: 506-512.



## PROFESSIONAL MEETINGS

### MACUB CONFERENCE COMING UP

Reprint of an e-mail:

October 3, 2012

Good People!

The Metropolitan Association of College and University Biologists (MACUB) will be holding their 45th annual fall conference Saturday, October 27, 2012, at Adelphi University, Garden City, NY. I've attached a couple of files that describe the conference program and keynote addresses that day. One keynote address ("Discovering our Human Origins") will be given by Donald C. Johanson, who was a member of the team that discovered Lucy (for human origins fans). The second keynote address ("Search for our Origins through Meteorites and Sample Return Missions") will be presented by Harold C. Connolly, Jr. and Michael Weisberg, professors at Kingsborough Community College and and the Earth and Environmental Sciences Program in the City University of New York Graduate Center.

If you wish to attend the conference, please email Ms. Stephanie Rollizo ([stephanie.rollizo@wagner.edu](mailto:stephanie.rollizo@wagner.edu)) by **Wednesday, October 10th**, to let her know that you wish to be included. Faculty, please consult your respective academic department regarding funding to cover your registration fee (Stephanie is that contact person for the Department of Biological Sciences). If you have any questions, please contact Stephanie (her office phone is 718-390-3103, or you can email her).

Students, if you are presenting a poster at the conference (I know that at least a couple of you are), please note that there is an October 13th deadline for online submission of poster information. Please see the attached files for more information.

The conference sounds interesting, with its theme of origins. Booksellers usually attend this annual meeting to display their latest texts and take names for complimentary copies. There are also workshops that might interest you, and an ice cream social in the afternoon.

Enjoy,

Don Stearns

Contributed by Dr. Stearns

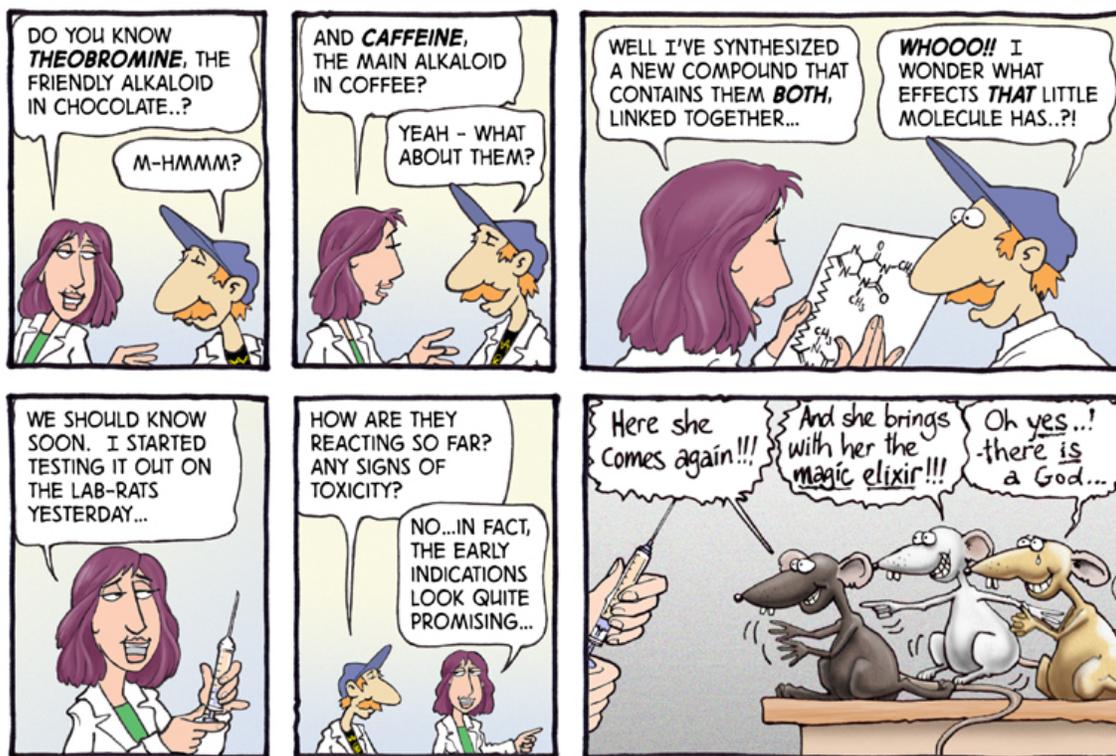
## ALUMNI

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](mailto: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!



## CARTOON



Cartoon from

[www.lab-initio.com](http://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](mailto: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 20<sup>th</sup> 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.**

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