

PASTEUR PERSPECTIVES

THE NEWSLETTER OF THE PASTEUR FOUNDATION DEVOTED TO THE WORLD OF THE INSTITUT PASTEUR

UN ETÉ PARISIEN: NEWS FROM OUR 2006 SUMMER INTERNS

by Caitlin M. Hawke

Chosen from a large and highly qualified applicant pool, our Paul W. Zuccaire Summer 2006 interns all aspire to a career as scientists. We invite readers and future applicants to discover more about the program through the eyes and experiences of these accomplished American undergraduates.

DAVID BERG

A recent graduate of Stanford University with an exceptional academic record, David majored in human biology with a concentration in infectious disease. His original focus was on clinical medicine; however, after some basic science courses, his perspective began to evolve. He explains: "The future of medicine will rely heavily on molecular biology, and I would like to play an active role as a physician-scientist." With two U.S. lab jobs under his belt, he was not a novice at the bench when he arrived at the Institut Pasteur this summer to work with Chantal Le Bouguénec in the Pathogenesis of Mucosal Bacteria Unit.

The Le Bouguénec lab tries to better understand the pathogenic bacterial strains of *Escherichia coli*. As the recent spinach story illustrates, *E. coli* can wreak havoc on our intestinal tracts. It also causes most urinary tract infections as well as neonatal meningitis. David worked to understand a previously undescribed metabolic operon (set of genes) in *E. coli*.

Now home and preparing his applications to medical schools, David offers some advice to future Zuccaire interns: "Don't be afraid to ask questions and take advantage of your colleagues' knowledge and experience. The Zuccaire intern-

ship is an amazing learning opportunity that allows you to explore a new area of research without having to worry about whether you are publishing fast enough to launch your career. Everyone knows you are there to learn and is happy to help."

RITA CZAKÓ

One of the best students in her state, Rita came to the Institut Pasteur after finishing her junior year as a biology major at the University of South



Courtesy: D. Berg

Adrian Hughes and David Berg got out of the lab and visited the French countryside.

Carolina. She worked in Philippe Sansonetti's Molecular Microbial Pathogenesis Unit conducting research on the signaling cross-talk between bacteria and cells in the epithelial lining of the gut that leads to severe inflammation of the small and large intestine.

Rita hopes that her keen interest in infectious disease epidemiology will lead to a career in public health research. The opportunity to work at an internationally recognized center for infectious disease research appealed to her immediately, although she does not speak French. This did not stop her from adapting seamlessly: the greatest personal highlight of her Pasteur summer "was



making lasting friendships with people who are, literally, from all over the world.” Says Rita: “Learning to live in a foreign country was an exciting and satisfying experience. Meeting and becoming part of the diverse community of people that constitutes the Institut Pasteur was at once

Courtesy D. Berg



Rita Czakó at the Château de Villandry with its magnificent gardens below

humbling and rewarding, and provided the opportunity for communication and international collaboration that are integral to the advancement of science and the improvement of global health.”

ADRIAN HUGHES

Adrian arrived this summer after her senior year at the University of Washington, where she pursued a dual major in English and molecular, cellular and developmental biology. Her academic plan is to pursue a graduate degree and obtain a position in a biotechnology research lab. At the Institut Pasteur, she worked in Isabelle Saint Giron’s *Spirochetes* lab characterizing the Fur proteins of *Leptospira* bacteria. She came armed with some high-school French but quickly realized that speaking with and understanding Parisians would be her greatest challenge outside the lab. When she was not at the bench, she found time to visit every major museum in Paris. She also made her way to Champagne and the Loire Valley.

Adrian’s impression: “The Zuccaire program is one of the most educational international experiences in study-abroad programs today. Not only does one spend forty hours in the lab experiencing hands-on biology in a world-class laboratory, one also works alongside French people...being almost entirely independent and experiencing France for what it is.”

Will you help us continue to create opportunities for American scientists to work at the Institut Pasteur in Paris?

Please contact us for more information on how you can make a bequest or a tax-deductible contribution to the Pasteur Foundation.



THE PASTEUR FOUNDATION PROGRAMS FOR AMERICANS



THE PAUL W. ZUCCAIRE

SUMMER INTERNSHIP PROGRAM

is open to undergraduates who are independent, have a developed interest in the biological sciences and contemplate graduate studies in the field. Applications are due in two parts beginning on December 15.

Next deadline: December 15, 2006

THE POSTDOCTORAL FELLOWSHIP PROGRAM

was launched in 2002 and, to date, has been funded with nearly \$4 million, thanks to the generosity of our U.S.-based donors. The fellowship positions award \$60,000 for three years to outstanding American postdocs. An annual call for applicants is held, and applications are due in early February.

Next deadline: February 2, 2007

THE GRAND MARNIER FOUNDATION AMERICAN SCHOLARS AND SCIENTISTS-IN-RESIDENCE PROGRAM OF THE PASTEUR FOUNDATION

seeks to nurture exchanges of expertise between Pasteur and American researchers. It is by invitation only.

Dr. Gordon Murray Shepherd of Yale University School of Medicine is the first to be awarded this 15-day scientific residency at the Institut Pasteur.

The Pasteur Foundation gratefully acknowledges all of its donors and in particular the Florence Gould Foundation, the Paul W. Zuccaire Foundation and the Grand Marnier Foundation for their generous encouragement of French–American exchange in the domain of scientific research.

Please consult our website for specific dates and eligibility requirements. For all information, please visit: www.pasteurfoundation.org.



EDEN MUSÉE TRADE CARD, NEW YORK



Bert Hansen Collection, New York City

In a prior issue, this column featured a centerfold from the satirical review *Judge* entitled “*Judge’s Wax Works – The Political Eden Musée*” (see *Pasteur Perspectives* No. 17, Fall 2005). The cartoon showed President Cleveland as Louis Pasteur inoculating the democracy against the spoils system. That caricature was based on an incident in late 1885, when four young New Jersey boys were bitten by a rabid dog and rushed by steamship to Paris to be treated by Pasteur. Their expenses were paid by a public fundraising campaign, and Americans monitored their recovery daily in the national and local press. There was such enormous public interest in Pasteur’s new rabies shots that New York’s Eden Wax Museum on 23rd Street between Fifth and Sixth Avenues chose to commemorate it with the figures in the trade card above. It is safe to assume that attendance at the museum grew considerably as a result of the display.



Louis Pasteur’s first American patient William Lane shown here in 1938 with his grandson Richard Krentz

Courtesy R. Krentz

Some 110 years later, in 1995 for “The Year of Louis Pasteur,” many of the descendants of the four boys – Austin Fitzgerald, William Lane, Patrick Reynolds and Eddie Ryan – were reunited in Philadelphia. At that time only one son, Warren Lane, was still living and had direct knowledge of the event from his father. He told us that little William Lane, the first American to be treated by Louis Pasteur, lived into his eighties. We have since learned with sadness of Warren’s passing, but the story is still alive among Lane’s descendents. Richard Krentz, a grandson, tells us that his own 10-year old daughter Kaitlyn recently had an epiphany: “If it weren’t for Louis Pasteur, I wouldn’t be here today.” We hope that Kaitlyn will visit the Pasteur Museum in Paris someday. See more about this story by clicking on “*Pasteur and the United States: A History*” at www.pasteurfoundation.org.

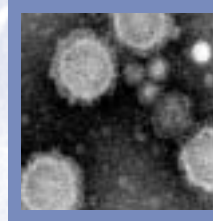
Many thanks to Dr. Bert Hansen for his help and kind permission to reproduce this rare image from his collection.



MORE TO THE POINT: NEWS IN BRIEF FROM PASTEUR

CHICKEN WHAT?

From Swahili meaning “stooped walk,” chikungunya fever is caused by a mosquito-borne virus. First identified in 1953 in Tanzania, during the last 18 months the virus has caused a serious epidemic afflicting over a quarter of a million people in the Indian Ocean islands. At the forefront of work on this virus, researchers at the Institut Pasteur have managed to retrace its origin and evolution in the Indian Ocean through a complete sequencing of the genome of six viral strains isolated from patients in Reunion Island and the Seychelles. The Pasteur study, published in *Public Library of Science Medicine* (May 23, 2006), opens up new paths that should help to explain the magnitude of the latest epidemic and the occurrence of severe forms of the disease.



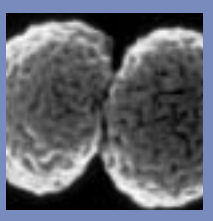
Chikungunya virus isolated from a patient on Reunion Island

© Institut Pasteur
Plumarius-Haas
Molecular Interactions Unit, MC Pasteur

SPINAL MENINGITIS, EN GARDE!

New rapid diagnostics for meningococcal meningitis have been developed and tested by the Institut Pasteur in Paris and CERMES in Niamey, Niger, an institute associated with the International Network of the Institut Pasteur. Such diagnostic tests can be used at the patient’s bedside and consist of two dipsticks that can diagnose four serogroups of *Meningococcus*. This new tool should contribute to improved reporting of outbreaks to medical authorities and will lead to better, more immediate care since early diagnosis and treatment are crucial. For the full article, see *Public Library of Science*, September 2006.

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Neisseria meningitidis, the causative agent of meningitis

BIOFILMS: NOW SHOWING AT YOUR LOCAL HOSPITAL

When bacteria populations bond together and grow on a surface, they form a biofilm, a structure that enables them to resist attack from antibiotics and our immune systems. When biofilms adhere to surgical or therapeutic equipment such as scalpels and prostheses, they become an infectious reservoir and can cause many nosocomial (hospital-contracted) infections. An Institut Pasteur team in association with the French National Center for Scientific Research (CNRS) has just identified a molecule that can inhibit the formation of biofilms. In work published in the *Proceedings of the National Academy of Sciences* (August 2006), this molecule is shown to be a complex sugar; when applied in a solution to materials used to make medical devices, it prevents the biofilms from adhering to their surfaces. Many applications may be developed, including the treatment of surgical catheters as well as industrial surfaces such as sewage systems or pipes in air-cooled towers.

The borders and background of this box depict two scanning electron microscope images of biofilms formed by *Escherichia coli*. (© JM Ghigo-Institut Pasteur/B. Arbeille LBUME-UFR Médecine, U. F. Rabelais)



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PASTEUR PERSPECTIVES

A 501(c)(3) organization, the Pasteur Foundation is the U.S. nonprofit affiliate of the Institut Pasteur. Located in New York City, the foundation works to introduce the research conducted at the Institut Pasteur to the American public, to develop exchanges between Pasteurian and U.S. scientists, and to raise funds for Pasteurian research. For more information, please contact the Pasteur Foundation.

A copy of the latest annual report may be obtained, upon written request, from the Office of the Attorney General, Charities Bureau, 120 Broadway, New York, New York 10271.

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SPRING'S SONGBOOK SUCCESS



French Ambassador Jean-David Levitte greets Naomi Wolffer.



Catherine Grimes Polsky, Marina Bozilenko and Marie Warburg

On June 7, the Pasteur Foundation annual gala raised over \$730,000 to help fund its programs for U.S. scientists at the Institut Pasteur. The financial success of the evening is a great tribute to the recipient of the 2006 Pasteur Foundation Award, Elizabeth Fondaras, whose friends' generous participation is a testament to "Liz – the Force of Nature!" Just back from Paris and under the weather – a late spring deluge – Mrs. Fondaras was unable to attend the event. However, when asked why she devoted herself so totally to the Institut Pasteur and its New York foundation, she responded succinctly and without hesitation: "Pasteur is historic, Pasteur is global, Pasteur is humanitarian, Pasteur is public health. And Pasteur is our future!" Once again, the Pasteur Foundation proudly salutes its Founding Chairman Elizabeth Fondaras, an exceptional person whose vitality, passion and appreciation for life are obvious in all she does.



Gala Chairman Luc de Clapiers and Nina Miness



Frank Wyman and Gala Chairman Agnès Hibon



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Un grand merci

We send our heartfelt gratitude to each and every donor as well as to our many corporate sponsors. In particular, we thank the following old and new corporate benefactors:

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Dear Friends,

Fall 2006

It is time to take stock of the past year, in many ways an outstanding one thanks to our generous donors.

- As you will read in our lead story, our American undergraduates enthusiastically recount their Zuccaire experiences this summer.
- After three years in Paris, two of our postdoctoral fellows returned home to excellent positions – one academic and one in the pharmaceutical industry. This fall three new U.S. researchers join our postdoc program. And we are delighted to announce that seven new fellowships funded with \$1.4 million will be offered in 2007.
- And finally, we have been awarded a three-year, multimillion-dollar grant from the U.S. Department of Health and Human Services to fund the Institut Pasteur in a tricontinental training and epidemiological surveillance project to combat avian influenza.

At this year-end, please become a donor or renew your past support to ensure the continuation of our programs in 2007 and beyond.

With our thanks and best wishes for a healthy new year —

Sincerely,

Caitlin M. Hawke
Executive Director

P.S.: To help, please return the enclosed envelope with your donation. All contributions are fully tax deductible. A matching gift from your employer will make your donation go even further.

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