Setting An Example of Science at its Best

HWI President Dr. Herbert A. Hauptman is Joined by Other HWI Scientists and Scientists from France and Japan in a Multinational, Multidisciplinary Endeavor

A career that spans the spectrum ranging from serving as a statistician for the U.S. Census Bureau, to meteorology and firefighting in the United States Navy during World War II, to a robust research career at both the U.S. Naval Research Lab and Hauptman-Woodward is more than most of us may experience in a lifetime. And then, of course, there is the fact that he won the Nobel Prize in Chemistry. But he hasn’t stopped there. At 89 years old, our very own Dr. Herbert A. Hauptman is still brimming with enthusiasm and ideas that time and time again push the boundaries of science today.

The most recent example of his ground-breaking ideas is his belief in the future of neutron diffraction. The science is so promising that Hauptman will be the principal investigator on a project that is being supported by a prestigious grant from The International Human Frontier Science Program Organization (HFSPO). This multinational, multidisciplinary grant is in fact so difficult to obtain than only a handful of scientists are even invited to apply. In 2006, only 54 scientists were asked to submit full applications. Of those applicants, only twenty were funded and Hauptman’s project was ranked number one.

“We are very excited about the possibilities for this development. It marks a complete departure from earlier expectations and beliefs. Also, early indications are that this new approach will not only work, but seems to be far more promising than the traditional methods,” Hauptman said. “In the beginning, this approach with neutrons was thought to be useless, but as it turns out this new approach is more promising because it appears to be easier to make the applications, and the applications can be made to larger and more difficult structures.”

“This is, in fact, what really makes this whole game of science so interesting. It is because of developments like this that are completely unexpected. After a million disappointments, something suddenly clicks which makes all the work worthwhile,” Hauptman said. “That, I’m sure, is the case here. This opens up a whole new field.”

Why Neutron Diffraction?

Today, no microscope has sufficient power to visualize proteins at the atomic level. However, structural information can be obtained by studying the diffraction patterns that are produced when protein crystals scatter incident radiation of an appropriate wavelength. These studies often reveal how proteins interact with drug molecules and give insight that suggests how better drugs might be designed. So far, most protein structures have been obtained through X-ray diffraction experiments. The process that is required
to determine the shape and atomic arrangement of the molecules responsible for the observed X-ray scattering requires a complex mathematical analysis that is referred to as “solving” the structure. Typically, this process involves the measurement of diffraction patterns from derivative (modified) crystals, as well as native protein crystals.

Suitable derivatives can be prepared by soaking native crystals in solutions containing atoms of heavy elements like mercury or by using genetic engineering to introduce selenium atoms into the protein molecule. Not all protein structures can be solved using existing X-ray diffraction techniques. The goal of this project is to develop new methods that use neutron radiation. An important difference between X-ray and neutron diffraction involves the scattering from hydrogen atoms. Hydrogen is normally found in nature as the isotope protium, but a small percentage of hydrogen atoms are present as the alternative isotope, deuterium. These two isotopes scatter X-rays the same way, but neutrons are scattered differently. This difference can be used as the basis for making ideal derivatives and solving protein structures.

Who will work on the project?

The project, formally titled, “New Methods of Biomolecular Crystal Structure Determination Specific to Neutron Diffraction Data” will be a collaborative effort among scientists in the United States, France and Japan.
The investigators working on this project will devise practical methods for exploiting the differential neutron scattering of the hydrogen isotopes, and they will test these methods by applying them to three protein structures. First, a French team led by Dr. Alberto Podjarny (Illkirch, France) will develop technology for deuterating selected parts of protein molecules. Next, Professor Nobuo Niimura at the Japan Atomic Energy Research Institute (Tokai, Japan) will optimize and perform neutron diffraction experiments. Finally, Hauptman, Dr. David Langs, Dr. Hongliang (Jimmy) Xu, Dr. Charles M. Weeks, Dr. Edward Snell and Dr. Robert H. Blessing – all HWI scientists - will develop and apply new mathematical methods for analyzing neutron data to solve the three test structures.

“It is a great honor to receive an HFSP grant,” Dr. Charles M. Weeks, HWI senior research scientist and chair of the HWI Scientific Governance Council. “It is noteworthy that this is the first time an HWI scientist has received a grant from an international organization.”

Educational Programs at Hauptman-Woodward

Educating future scientists is a key priority for the scientific staff at Hauptman-Woodward. Students as young as high school age have had the opportunity to study in the labs of HWI’s internationally renowned scientists. Many of the students who have participated in HWI’s educational programs have gone on to build careers in science. The two primary educational programs at HWI are the Research Intern Summer Program and the Graduate Student Program. Both programs are featured on the following pages. These programs have been made possible through financial contributions from local foundations and government grants. Featured below are photos of some of the generous donors who have contributed to our educational programs.

Prestigious Grant from The International Human Frontier Science Program Organization

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“New grant support for research on new methods for neutron diffraction analysis of biomolecular structure and function comes to HWI at an especially opportune time. For decades it has been very difficult to pursue such research in the U.S. because we have had no suitable neutron sources here,” Blessing said. “But in recent years the U.S. Department of Energy has committed to building a now nearly completed, world-class neutron facility at Oak Ridge National Laboratory in Tennessee. A significant part of the mission for the new facility is to use the special advantages of neutron diffraction to advance knowledge and understanding in basic biomedical sciences, in particular in structural molecular biology, HWI’s area of great strength.”

“An international organization has recognized the importance of neutron science for molecular biology. This is a significant milestone for HWI.”

Pictured above from left to right are, top row, Jessica and Matt Enstice, Dr. Larry Jacobs, Donald Hess, Thomas Becher, Donna Gioia, Dr. Herbert Hauptman, Dr. Charles M. Weeks, Dr. Jane F. Griffin, Anne Gioia, Peter Vogt and Cindy Mang; bottom row, Patty Jacobs, Stephanie Jacobs, Pam Vogt, Dr. Hongliang (Jimmy) Xu, Danielle Jacobs and Luke Jacobs.

Family, close friends and key HWI staff members gathered at HWI late this summer to dedicate The Jacobs-Hauptman Center for Mathematical Biology on the building’s third floor. The family of Pamela Jacobs Vogt made a generous donation in support of the center’s work. The plaque reads “The Jacobs-Hauptman Center for Mathematical Biology to support the ongoing study of mathematics, its applications to structural biology and basic biomedical research. Given in honor of Lawrence D. Jacobs, M.D. & Herbert A. Hauptman, Ph.D. by Pamela Jacobs Vogt and her family.”HWI gratefully acknowledges this gift.

Erie County provided HWI with a $50,000 dollar grant in support of the 2006 Research Intern Program. Left to Right: Namrita Mozumdar, Kristen Wunsch, Erie County Executive Joel Giambra, Dr. Herbert A. Hauptman, Alex Vecchio, Erie County Legislature Chair Lynn Marinelli, Dr. Jane F. Griffin, Jennifer Makin, Laura Grell, Steven Palmer, Elizabeth Stolko, Donald A. Hess and Suet Kamm Lam.

Verizon gave $12,000 in support of the summer program. From left to right, sitting, HWI Foundation Board President Chris Greene, Dr. Jane F. Griffin, Dr. Herbert A. Hauptman, standing, Lynn Nyyazika, Sanjay Cannare, Director of External Affairs for Verizon Maureen Rasp-Glose, Deborah Makin, Rebecca Rabolto.

The Citizens Bank Foundation supported the summer program with a $7,500 grant. Pictured in the photo to the left, from left to right, Jon Little, senior vice president & WNY retail director, Tony Rizzo, senior vice president of corporate banking, Ed Negron, district lending manager, Lynn Nyyazika, Dr. Herbert A. Hauptman, Sanjay Cannare, Rebecca Rabolto, Dr. William L. Dux, Deborah Makin and HWI Foundation Board President Chris Greene. Following the check presentation, Dr. Dux provided our friends from Citizens Bank with a tour of our building.

Hauptman-Woodward gratefully acknowledges the generosity of the John W. Danforth Foundation for their gift in support of our graduate student program.
The Hauptman-Woodward Medical Research Institute (HWI) has concluded the 2006 Research Intern Summer Program. Students from schools throughout the United States have been selected to participate in the summer program.

The summer program is designed to encourage young people to pursue science careers. HWI’s research scientists offer hands on-state-of-the-art experience in research. The experience helps the students make decisions about careers in health-related professions.

For the past 33 years, summer student apprentices have been selected from college student applicants who are permanent residents of Western New York. We are particularly interested in attracting talented students majoring in the sciences at the undergraduate, graduate or professional level, to complement their educational training with an experience in an HWI laboratory working under the supervision and guidance of a principal research scientist.

Dr. Herbert A. Hauptman also is available to meet with and share his knowledge of the sciences and career opportunities in biomedical research. Each apprentice is involved in a scientific project using state-of-the-art equipment in the fields of molecular biology, methods development, crystal growth, and x-ray diffraction to find ways to prevent and treat diseases such as cancer, breast cancer, diabete,s AIDS, thyroid disorders, SARS and Alzheimer’s disease. Students must present their work in front of their mentors, members of the scientific staff, and other peer participants at the end of the program.

“The interns help make possible the preliminary research results that are necessary to apply for peer-reviewed National Institutes of Health federal research grants – new money supporting the Western New York area,” Dr. Jane F. Griffin, principal research scientist and summer student program coordinator, said. “The students are equally enthusiastic about their intern experience here. In fact, one former intern said that he had learned more in a few days at HWI than in an entire college-level Biology course.”

**Deborah Makin** worked in Dr. William Duax’s lab. She is currently a student at Canisius College and is studying bioinformatics and computer science.

**Benjamin Rodwin** was in Gulick’s lab. Rodwin is a student at Brandeis University and is studying neuroscience and biology.

**Elizabeth Stofko** worked in Dr. Edward H. Snell’s lab. Stofko is studying biology at Case Western University.

**Kristen Wunsch** was in Snell’s lab. She is studying bioengineering at Syracuse University.

**Maureen Hanley** worked in Joseph R. Luft’s lab. She is working to complete a degree in biomedical engineering with a minor in economics at Rensselaer Polytechnic Institute.

**Steven Palmer** completed his internship in Dr. Andrew M. Gulick’s lab. Palmer is a student at Wheaton College and is studying English and pre-medicine.

**Rebecca Rabilotta** worked in Dr. Barnali Chaudhuri’s lab. She is studying bioinformatics at Canisius College.

**Jacqueline Gaddy** did her internship in Duax’s lab. She is currently a student at Spelman College.

**Adam Krol,** is studying medicinal chemistry at the University at Buffalo, and is in Malkowski’s lab.

**Jennifer Makin** worked in Dr. Vivian Cody’s lab. She is studying biology at Canisius College.

**Claire Smith** was in Duax’s lab. She is currently a student at Massachusetts Institute of Technology.

**Glenn Wallace** also was in Duax’s lab. He is currently a student at East High School.

**Sheena Degnan** interned in Dr. Wayne Schultz’s lab. She is currently a student at SUNY Fredonia and is studying molecular genetics.

**Suet Kam Lam** was in Snell’s lab. Lam is working to complete a triple degree in biochemistry, Spanish and history at Washington & Jefferson College.

**Alex Vecchio** worked in Schultz’s lab. Vecchio is currently attending the University at Buffalo and is studying pre-medicine and biochemistry.

**Namrita Mozumdar** was in Dr. Mary Rosenblum’s lab. She currently is attending Boston College and is studying English, pre-medicine and chemistry.

**Laura Grell** interned in Dr. Michael S. Malkowski’s lab. Grell is studying bioinformat-ics at the Rochester Institute of Technology.

**Rebecca Robilotto** worked in Dr. Barnali Chaudhuri’s lab. She is studying bioinformatics at Canisius College.

**Glenn Wallace** also was in Duax’s lab. He is currently a student at East High School.

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The Hauptman-Woodward Medical Research Institute (HWI) has an international reputation for its 50-year history of exceptional science and groundbreaking research. But the role that HWI scientists play in shaping the minds of tomorrow’s scientists may not be as crystal clear.

Success in the program leads to success in the field

The HWI Graduate Student Program, in affiliation with the State University of New York at Buffalo (UB) Medical School, is one of the best graduate programs in the nation, especially for students interested in specializing in crystallography. According to Dr. Robert H. Blessing, HWI senior research scientist and UB Professor of Structural Biology, the HWI graduate study program is an intellectually stimulating, challenging and interdisciplinary program that leaves graduates well equipped to either continue in postdoctoral research or to find employment in academic/commercial research sectors.

HWI is the home of the UB Medical School Department of Structural Biology. Although the HWI staff includes several postdoctoral students, the graduate study program at HWI places a strong emphasis on the doctor of philosophy (Ph.D.) degree. Students who complete this graduate study program receive a Ph.D. degree from UB, as well as wet and dry lab experiences that will increase their chances of success in their chosen field. Students also leave prepared to succeed both professionally and academically.

Dr. Blessing explains how the HWI graduate study program affects the professional success rates of students who have completed the program. “The Ph.D. degree is the highest degree program that students can complete,” Blessing said. “The students are prepared to succeed both professionally and academically.”

A career in collaboration begins here

While studying in the graduate program at HWI, students have access to first-class equipment in a state-of-the-art facility, as well as the opportunity to collaborate with accomplished scientists and fellow students working within the Buffalo Niagara Medical Campus. Local collaborators come from a variety of institutions including the Roswell Park Cancer Institute, Buffalo General Hospital, the UB Center for Excellence in Bioinformatics and Life Sciences, and HWI. In addition, the students may collaborate with scientists from around the world.

“Getting a degree in Structural Biology gives the students a competitive edge in the job market because it is unique and highly specialized,” Bill Bauer, UB structural biology Ph.D. Candidate at HWI, said. “This is one of the few places where you get such a well rounded training in crystallography and it’s a great program because it allows the students to pick the areas they would like to specialize in.”

Faculty members mentor students

According to Blessing, students in the graduate study program typically take between four and six years to complete their training. After being accepted into the program, students choose a faculty member to be their mentor throughout the program.

“The students may choose any faculty member they wish to work with,” Blessing said. “In most cases, the students work on projects in structural molecular biology that include finding and interpreting the atomic structures of biological macromolecules.”

Original research is a requisite

In order to receive a Ph.D. degree in the program, students must produce original research which can lead to new discoveries. Although there is no time-table for completion of the program, graduate work is considered a year-round full-time job which is made possible by a monetary stipend that provides students with a modest living. Tuition and fees also are financed by HWI. The money for the tuition and fees comes from highly competitive research grants earned by members of the faculty, as well as generous community donations.

The graduate study program at HWI is helping some of the country’s brightest young minds find their place in the medical community, not only intellectually, but also professionally. Working under leaders in research science such as Buffalo’s only Nobel Laureate, Dr. Herbert A. Hauptman, HWI CEO and Executive Director Dr. George DeTitta, and other internationally renowned HWI scientists, helps graduates open doors to exciting opportunities in their chosen fields.

Dr. Robert H. Blessing, HWI Senior Research Scientist, Professor of Structural Biology, University at Buffalo

Hauptman-Woodward gratefully acknowledges the generosity of the Josephine Goodyear Foundation for their $10,000 gift in support of our graduate student program.
A Workshop for Remote Data Collection at SSRL held at Hauptman-Woodward

A remote data collection workshop was conducted on August 4, 2006 at the Hauptman-Woodward Medical Research Institute (HWI) in Buffalo New York. Aina Cohen and Clyde Smith from Stanford Synchrotron Radiation Laboratory (SSRL) and Edward Snell (HWI) organized the workshop that was attended by 34 U.S. and Canadian investigators and graduate students. The goal of the workshop was to use HWI as an example for other scientists to better understand the value of using the remote access software available through SSRL. Various presentations on facilities available at SSRL, new developments, and how to use the technology were given by Cohen and Smith. In addition, Snell provided practical tips from the user’s point of view. Attendees were given the opportunity to run remote experiments — collecting X-ray data and processing in Stanford from laptops in Buffalo. According to Snell, this probably set the record for the most people controlling a beamline at any one time. There were many discussions between the representatives from different laboratories and many ideas were shared. A similar workshop may be held next year.

Blue Cross/Blue Shield Commercial Filmed at Hauptman-Woodward

Hauptman-Woodward recently was one of two production sites for an upcoming Blue Cross/Blue Shield commercial. With the studio lighting, rolling cameras on tracks and dozens of extras, it seemed like a Hollywood movie studio!

SAVE THE DATE
Third Biennial Pioneers of Science Conference and Awards Banquet
Wednesday, November 8, 2006

Hauptman-Woodward Research Institute and the Buffalo Museum of Science are collaborating on a daytime Student Symposium, that evening will feature the Research Institute’s Gala and Awards Ceremony at Kleinhans Music Hall’s Mary Seaton Room.

The 2006 Pioneers of Science award winners are:

Ellen Shulman Baker, MD
Dr. Ellen Shulman Baker has served as an astronaut on three space missions and is the lead astronaut on medical issues and education programs at NASA. She has logged more than 686 hours in space and has traveled more than 11.6 million miles in space with experience on the STS-34 Atlantis, the STS-50 Columbia and the STS-71 Atlantis.

Ernst Bobl
A naturalist and mycologist, Ernst Bobl has had a distinguished career as a scientist, educator and administrator at the Buffalo Museum of Science. An avid collector of boletes, he has built a collection of North American boletes which has benefited mycological researchers worldwide.

Stephen Cook, Ph.D.
Dr. Stephen Cook, a mathematician and computer scientist from the University of Toronto, is renowned for the work he has done on the computational infeasibility of certain problems that are fundamental to the functioning of computers. He invented the concept of NP-completeness, a method for showing the computational infeasibility of a large class of important problems.

Thomas Daugherty, Ph.D.
Dr. Thomas Daugherty of the Roswell Park Cancer Institute is perhaps best known as the inventor of photodynamic therapy (PDT) for drug delivery in the treatment of bladder, esophageal and lung cancers. PDT is a treatment that uses a drug called a photosensitizer and a particular type of light.

Robert Gundlach
An avid inventor, Robert Gundlach has made photocopying technology, also known as xerography, more practical, flexible and affordable. Over the course of three decades, Gundlach has secured more than 155 patents for his work on the development of the Xerox process.

To see more about the Pioneers of Science event, visit http://www.hwi.buffalo.edu/Public_Programs/Pioneers.html

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Michael Lackett
Michael Lackett of Praxair, Inc. is a recognized authority in the development of new distillation and heat transfer technologies. Co-inventor of the revolutionary multiple downcomer flashed distillation tray, he has developed high-capacity, low-cost structured packings, and has improved the performance consistency and safety of heat exchanger tubes.

Frederick Sachs, Ph.D.
Dr. Frederick Sachs, a professor in the department of Physiology and Biophysics at the University of Buffalo discovered mechanosensitive ion channels and the only known specific inhibitor of mechanosensitive ion channels. This important discovery may have clinical applications for brain tumors, muscular dystrophy, cardiac arrhythmias and incontinence.

Glenn H. Curtiss
An aviation pioneer and one of America’s most famous aviators of the early 20th century, Glenn H. Curtiss had a tremendous impact on aviation history in the first half of the twentieth century. His company, the Curtiss Aeroplane and Motor Company, grew into one of the world’s most successful and famous aircraft companies – the JN-4 Jenny.

Robert Guthrie, M.D.
(posthumously 1916-1995) Dr Robert Guthrie is perhaps best known for the development of the PKU test for infants. Dr. Guthrie’s simple, reliable screening test is used worldwide in all developed countries today and has saved untold numbers of children from mental retardation.

Michael Lackett
(posthumously 1878-1930) Glenn H. Curtiss had a tremendous impact on aviation history in the first half of the twentieth century and beyond. Curtiss, founder of the Curtiss Aeroplane plant, developed one of the world’s most successful and famous aircraft – the JN-4 Jenny.

Ellen Shulman Baker, MD
Dr Ellen Shulman Baker has served as an astronaut on three space missions and is the lead astronaut on medical issues and education programs at NASA. She has logged more than 686 hours in space and has traveled more than 11.6 million miles in space with experience on the STS-34 Atlantis, the STS-50 Columbia and the STS-71 Atlantis.
Dr. Herbert A. Hauptman was the 2006 recipient of the American Humanist Association’s Isaac Asimov Science Award

According to the American Humanist Association (AHA), the award is to “recognize a person or team of researchers whose scientific work has contributed significantly to the advancement of humanist values. It also is to recognize those scientists and advocates of science who have increased the public awareness, understanding and appreciation of science and the scientific approach."

“The spectacular advances of science and technology in the twentieth century and the current trends hold enormous promise for good and an equally great threat to our very survival. The promise is that the fruits of science will be used for the benefit of mankind, leading to never-ending improvement in the quality of life for everyone; the threat is that the fruits of science will be used for destructive purposes, leading to consequences ranging from devastating pollution of the environment to the destruction of human life by nuclear holocaust,” Dr. Herbert A. Hauptman said. “Thus it is more important than ever that the public be aware of current scientific progress and assume the responsibility of ensuring that this progress be used for the benefit of mankind, not its destruction. The scientist can do no less.”

“We wish to honor working scientists who have advanced human knowledge and understanding of the natural universe and therefore have advanced the naturalism inherent in the Humanist outlook,” Fred Edwards, editorial director, American Humanist Association, said.

This is the third time this award has been given since its creation in 2004. The first recipient was Dr. Eugenie C. Scott, executive director of the National Center for Science Education. The second recipient was Joe Nickell, a writer for the Skeptical Inquirer.

Hauptman-Woodward Announces Launch of New Website

The Hauptman-Woodward Medical Research Institute (HWI) has announced the launch of a new website. The site has been redesigned, and has a sophisticated new look, complete with new content, pictures, graphics and improved navigability.

“The website was redesigned with the primary goal of better presenting the work of the HWI scientists to two key audiences - our scientific peers and the general public,” Dr. Charles M. Weeks, senior research scientist and chair of the HWI Scientific Governance Council, said. “The new content and visual design were created to be more comprehensible and interesting for all visitors to the HWI site.”

The site offers behind-the-scenes looks at HWI’s science and staff members, as well as information on upcoming events and ways for community members to become involved. The HWI website can be accessed at www.hwi.buffalo.edu.

Did You Know?

Dr. William Duax

Dr. William Duax was the recipient of the Healthcare 50 Award given annually by Business First.

That our scientists have traveled the world this year sharing their knowledge with scientific peers. In addition to travel all over the United States, some of the international destinations have included Morocco, Turkey, Australia, Belgium and Slovenia.

The Silver Award for Engineering Excellence by the American Council of Engineering Companies of New York was granted to GZA Geoenvironmental of New York in recognition of the work they did on our new building.

The 2005 annual report is out. It includes a past, present and future look at HWI, including a couple “blast from the past” photos of HWI’s former professional homes, as well as some of our scientists including Dr. Bob Blessing, Dr. George DeTitta, Dr. William Duax, Dr. and Mrs. Herbert Hauptman, Steve Potter and Dr. Charles Weeks. If you haven’t seen it, check it out on the website or request a copy from Tara A. Ellis.

Recent Funding

- Additional 25% NYS Tax Credit for Donors Who Give to the Cures Begin Here Capital Campaign at Hauptman-Woodward

For additional information, please contact Laurie Krajna at (716) 898-8597. She can answer questions you may have, or send you the qualifying form which is needed to accompany your tax return.

Hauptman-Woodward Now Accept Gifts Through Discover and American Express Credit Cards

A new giving web site, www.justgive.org, now enables Hauptman-Woodward donors to give online using their Discover or American Express credit card. All you have to do is go to their web site, search for Hauptman-Woodward, click donate now, and follow the instructions. If you have any questions, please feel free to contact the Development Office at (716) 898-8597.

Structures is published three times a year for the express purpose of informing the public about some of the things that are happening at Hauptman-Woodward and the individuals that make it happen. Basic biomedical research is vital to determining the underlying causes of diseases and designing treatments to combat diseases such as cancer, heart disease, diabetes, kidney disease, hypertension, and others.

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Donations are Eligible for Additional 25% NYS Tax Credit

Donors who give to the Cures Begin Here Capital Campaign at Hauptman-Woodward are eligible for an additional New York State tax credit. In the simplest of terms, these tax credits are available to individuals and for-profit corporations, basically any entity that pays tax in NYS. These credits are worth 25% for any cash gift up to $400,000, made specifically to the capital campaign. This credit is in addition to the standard NYS and federal deductions, but limited to 50% of your total NYS tax liability.

For additional information, please contact Laurie Krajna at (716) 898-8597. She can answer questions you may have, or send you the qualifying form which is needed to accompany your tax return.

Hauptman-Woodward offers a full range of meeting facilities and conference amenities. With a variety of choices ranging from small business meetings to large international conferences, Hauptman-Woodward can accommodate any group. To find out more, please contact the Office of Development and Public Relations at (716) 898-8597.
Hauptman-Woodward to Host Second Annual “Structural Biology in the 21st Century” Lecture Series

National and International Speakers to Highlight the 2006-2007 Series

HWI will host the second annual “Structural Biology in the 21st Century” lecture series which will run from September 2006 - June 2007. Each lecture will begin at 4 p.m. in the Hauptman-Woodward Flickinger Seminar Suite with a networking reception immediately following.

Carston R. Wagner, Ph.D., is scheduled to present his lecture, “What Do Histidine Triad Nucleotide Binding Proteins (HINTs) Really Do and How Do They Do It?” on Tuesday, September 5, 2006. Wagner is a professor and director of Graduate Studies in the Department of Medicinal Chemistry at the University of Minnesota.

John Helliwell, Ph.D., is expected to present his lecture, “Softly Does It! Cracking Lobster Shell Protein Structures and Some Methodology Implications” on Thursday, October 19, 2006. Helliwell is a professor in the Chemistry Department at the University of Manchester in the United Kingdom.

Wim G.J. Hol, Ph.D., has agreed to present his lecture, “Structural Biology in the Search for new Therapeutics for Tropical Diseases” on Tuesday, November 28, 2006. Hol is a Howard Hughes Medical Institute Investigator. He is also a Professor of Biochemistry and Biological Structure, Adjunct Professor of Pharmacology, and Head of the Biomolecular Structure Program at the University of Washington School Of Medicine in Seattle, Washington.

Kara Bren, Ph.D., is slated to present her lecture on the “Impact of Dynamics of Heme Protein Redox Properties” on Thursday, December 7, 2006. Bren is an associate professor of Chemistry at the University of Rochester.

Steven R. Gill, Ph.D., is scheduled to present his lecture, “The Human Microbiome” on Thursday, January 11, 2007. Gill is an Associate Professor in Oral Biology at the University at Buffalo.

Shoshana Wodak, Ph.D., of the University of Toronto and Sick Children’s Hospital is scheduled to present her lecture in February 2007.

Paul Emsley, Ph.D., has agreed to present his lecture “Protein Model Building and Validation with ‘Coot’ ” in March 2007. Emsley is a professor in the Chemistry Department at the University of Glasgow, United Kingdom.

Todd Yeates, Ph.D., is slated to present his lecture, “The Emerging Structure of Bacterial Microcompartments; Protein Shells Serving as Primitive Organelles” on Friday, April 20, 2007. Yeates is a Professor in the Department of Chemistry and Biochemistry at the University of California in Los Angeles (UCLA).

Caroline Wilmot, Ph.D., of the University of Minnesota is scheduled to present her "Crystalline Enzymology" lecture on May 24, 2007.

Terese Bergfors, of Uppsala University in Sweden is expected to present her lecture, “Crystallization Strategy at the Uppsala University RAPID Center” on Thursday, June 21, 2007. Bergfors teaches at Uppsala University in the Department of Cell and Molecular Biology.

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