Institutions share Pew science grant

Washington University and 12 other mid-country universities and colleges will share a $1.7 million grant from the Pew Charitable Trusts, Philadelphia, to enhance undergraduate science education and attract and retain students and faculty in the sciences.

The grant, a renewal of a research award granted three years ago to the institutions, is part of a national effort by Pew Charitable Trusts to improve undergraduate science and mathematics education. The mid-country universities and colleges are members of the Midstates Science and Mathematics Consortium, which includes educational institutions and universities.

Under terms of the grant, they will collaborate for three years through workshops, field-school student exchanges, undergraduate research symposia, and summer research awards for faculty and undergraduates, among other activities.

Washington University and the University of Chicago are the two research universities working with the consortium. Participating colleges (in alphabetical order) are Beloit College (Wis.), Carleton College (Minn.), College of St. Thomas (Minn.), Grinnell College (Iowa), Hope College (Mich.), Macalester College (Minn.), Knox College (Il.), MacMurray College (III.), Moravian College (Pa.), Rhodes College (Tenn.), St. Olaf College (Minn.), and Trinity University (Texas). Macalester College in St. Paul, Minn., will be the program's executive committee comprising a representative from each participating college and university.

John R. Bleeke, Ph.D., associate professor of chemistry, is chair of the St. Olaf University faculty representative.

"America's continued leadership in science depends on the steady supply of trained scientific minds flowing from the nation's undergraduate and graduate institutions," said Joan S. Girgus, Ph.D., director of the Pew Science Program.

"Clearly, improved undergraduate science programs can play a vital role in meeting this need," Bleeke said. According to Chancellor William H. Dickson, the participating institutions and consortium have a history of prior collaborations and have developed impressive records of sending their students on to advanced graduate programs in science and mathematics.

"Collaboration and cooperation between faculty, students and institutions have been a strong aspect of this partnership, and part of the reason our efforts have been successful," Bleeke said. "We are all very pleased that the Pew Charitable Trusts are providing us with another valuable cycle of exchanges and programs.

"As an example of how the consortium works, Washington hosted science and mathematics symposia under the direction of David L. Kirk, Ph.D., professor of biology, in the fall of 1989 and again in the spring of 1990 under the consortium's direction. The undergraduate students gave presentations and poster talks about the research they have undertaken as part of consortium activities. Some of the research has been published in refereed journals. Similar programs are hosted by the other consortium institutions.

"Pew Charitable Trusts' national philanthropy, support non-profit educational institutions dedicated to improving the quality of life for individuals and communities and encouraging personal growth and self-sufficiency.

Stanley Finger, Ph.D., professor of psychology, has spent the last three years researching the early roots of the neurological sciences for a two-volume book he is writing. Finger's forthcoming book includes this (copperplate by Guido Cassio (1661-1680), which depicts an early representation of the brain.

A cerebral pursuit

Tracking the neurological sciences through history

The blade is long, curved and sharp, ideal for its intended purpose of delicately removing a circle of bone at the top of the skull, permitting surgeons to expose the living brain beneath. A gleaming steel device found in a modern operating room? Not this tool. Made of bronze, this surgical implement called a tumi may be several thousand years old. It comes from ancient Peru, where in some regions an astounding 21 percent of the skulls reveal evidence of craniotomies.

In an age when radiologists embark on survey expeditions to map the twisting canyons of the brain, when computer cowboys herd synthetic neural networks into patterns that mimic the mind, and when MENSA members choose mates based on whether their genetic traits are similar to those of the right or the left, Stanley Finger, Ph.D., professor of psychology, decided it was time to pause and take a look back.

"We have very little perspective on the roots of the brain sciences," says Finger. "People have no idea that some of the same issues that scientists are discussing today about the brain and its functions were discussed in very similar terms in earlier times."

Finger, who wrote or edited five books about recovery from brain damage, has spent the last three years researching the early roots of the neurological sciences. His two-volume book, "Neurohistory: Perspectives on Brain and Behavior," will be published by the Oxford Press in 1993. He reported some of his observations at the recent Conference on Brain History, held in Fort Myers, Fla. The timing could not be more appropriate: the United States Congress has declared the 1990s the "Decade of the Brain."

The brain drain

"Brain damage is as old as man,″ says Finger. He cites a three-million-year-old Australopithche skull that is scarred by fractures, their placement suggesting that the early hominids was clubbed to death from behind.

But it is not until around 10,000 years ago that we see the appearance of many skulls in which deliberate incisions were made. Hundreds of such Stone Age skulls have been documented. "The prehistoric practice of opening the skull would imply organized societies that had definite beliefs about the brain and behavior," says Finger. Many of the skulls exhibit new bone growth around the wound, indicating that this primitive neurosurgery was not done after death or as a sacrificial rite. "The survival rate, especially in New World sites, is really quite staggering. The intent definitely was to have the person live afterward," Finger says.

"Theories about the purposes behind these early procedures abound. Some anthropologists believe they were part of religious rituals. Others say they were performed to allow evil spirits and demons to escape. 'This is how prehistoric physicians may have approached and treated headaches and mental disorders,′ says Finger."

By the time of the ancient Greeks, trepanation — the act of drilling or scraping holes in the skull — was definitely being performed for medical purposes. "They did this to let bad humors out," Finger says, "but only for closed head injuries, not ones that exposed the brain. If the skull were badly hashed, the accumulated humors that affected behavior automatically had a way to escape." Ironically, these procedures may actually have relieved the dangerous build-up of pressure caused by swelling in the brains of people with closed head injuries. The Egyptian prescription

The earliest Egyptian paintings produced the clearest known written document describing the effects of brain injuries. Known as the Edwin Smith Surgical Papyri (named for the man who bought it in 1862), the scroll appears to be a medical student's lecture notes. The document includes the 4,500-year-old descriptions of some 48 different clinical cases, giving the history, examination, diagnosis, prognosis and treatment for each.

"Considerable space was devoted to wounds of the head and spinal cord. Most of these seemed due to injuries sustained in combat," Finger says. "The doctors using this information were the MASH units for the ancient Egyptian military. They had to decide on the spot to treat, or not to treat, each case."

This often depended on many cases they had at a given time.

He adds, "ancient Egyptian physicians were aware of the fact that symptoms of central nervous system injuries could occur far away from the locus of the damage. There are written examples of head injuries causing problems in eye-hand coordination, and recognition of the fact that deficits usually occurred on the side of the body contralateral to the head injury.

But it would not be until many centuries later that scientists began to realize that the brain has two functionally distinct hemispheres and that different parts of the brain are responsible for specific motor and sensory functions. The evolution of this key discovery is one of the most intriguing subjects Finger has found in his research, and is almost as convoluted as the folds of the brain itself.

"Interestingly, his work was not circulated in his lifetimeograms."

"These premonitions of what would later be demonstrated experimentally had little or no impact on his scientific contemporaries or on the history of localization."

Around 1800, anatomist Francis Panckoucke proposed that there were "independent faculties of the mind," which might or might not flourish in a given individual. "He was the first to suggest publicly that the cerebral cortex could be divided into different units," says Finger. But Gall was better known for his contributions to the pseudoscience of phrenology — the belief that mental functions resided in the roots of the brain sciences, says Finger. But Gall was better known for his belief that mental functions resided in the lobes of the brain."

Finger's ongoing work among the first to postulate that brain function was localized. Better known for his later theological work, in 1754 Swedenborg began a series of treatises in which he predicted many later discoveries, among them the notions that the brain was a sensitive organ, that the notion of mental functions resided in the roots of the brain sciences, and that different parts of the brain were responsible for specific motor and sensory functions. The evolution of this key discovery is one of the most intriguing subjects Finger has found in his research, and is almost as convoluted as the folds of the brain itself.

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Foremost performers of classical Indian music to present concerts

The classical music of India is different in every imaginable way from classical music known to Westerners. Originating centuries before written music, the devotional offerings presented in the temple to satisfy the gods, traditional musical renditions required foreign audiences to sit for hours at a time. As the performers warmed to their task, the intimacy and the emotional intensity of the performance would increase to frenetic levels, carrying musicians and listeners alike into a state of ecstasy.

Today, neither performers nor audiences have the stamina for such extended rapport as a general thing, but interest in studying and preserving the classical forms of Indian music has increased among both the academic community and culture and Western scholars as well.

Two ensembles featuring the foremost performers of India’s traditional music will present concerts at 3 p.m. April 7 and April 14, respectively. The concerts are sponsored by the Department of Music and Dance of the George Washington University, the Society of St. Louis, and the Washington University faculty, staff and students. For more information, call 889-5581.

Food festival to help homeless

Savor St. Louis, a fund-raising food festival featuring the specialties of eight local restaurants, will be held from 11 a.m. to 4 p.m. April 9 on the Washington University law field. The event, sponsored by Chimes, a junior honorary society at the University, is open to the public.

Health Care for the Homeless, an organization that works with emergency shelters and hospitals to help provide health services for the homeless, will receive 75 percent of the festival’s proceeds. Last year Chimes raised approximately $1,000 for the organization.

Author Margaret Farley will give the final talk in the lecture series “Moral Absolutes/Moral Relativism: By What Criteria Shall We Decide?” at 7:30 p.m. April 8 in Room 110 January Hall.

The series is sponsored by the Committee on Religious Studies, the Society for Values in Higher Education, the Hastings Committee on Medical Ethics, the Council on Inter-Religious Concerns and Eating and Drinking Establishments, and the Senior Class of 1991. For more information, call 862-3882.

Feminist view to be given in ethics talk

Author Margaret Farley will give the final talk in the lecture series “Moral Absolutes/Moral Relativism: By What Criteria Shall We Decide?” at 7:30 p.m. April 8 in Room 110 January Hall.

The sponsor of the series is the Ethics Committee of the American College of Obstetricians and Gynecologists; and the Hastings Committee, Institute of Society, Ethics and Life Sciences.

Roadside America is topic of lecture

John Margolies, New York photographer and writer, will give an illustrated lecture titled “On the Road” at 8 p.m. April 8 in Barnard Hall auditorium.

The lecture is open to the public, is sponsored by the School of Architecture and Assembly Series, with additional support from Student Union, Hospital, the Ethics Committee of the American College of Obstetricians and Gynecologists; and the Hastings Committee, Institute of Society, Ethics and Life Sciences.

Margolies will discuss the roadside buildings such as gas stations, motels, and eating and drinking establishments that have come and gone in North America. Focusing on their significance and their potential to be studied as a national cultural artifact, he will illustrate his lecture with examples from throughout North America.

For information, call 889-6200.
Jung, J.P. Miller and J.V. Santiago.

William H. Danforth has announced.

extremely grateful to the Mellon
final two years of their graduate
and for general support during the
Romance Languages and Literatures
programs in the Department of
University of London.

Christopher Gilbert, Ph.D., visiting assistant professor in political science, won first place in the 1990 Western Political Science Association's best paper at the 1990 Western Conference on Religion, Neighborhood Environments, and the Political Process. His paper encompasses theology, sociology and political science, all in one work.

Lynn Stockman Ingersott, assistant athletic director, has been asked to serve as a member of the District 7 selection committee for the Administrators of the Year Award sponsored by the Council of Collegiate Women Athletic Administrators.

Udo Kultermann, Ph.D., professor of Romance Languages and Literatures, has been appointed chair of the University's French department.

Bouwen is named chair of Social
thought and analysis committee

John R. Bowen, Ph.D., assistant professor of anthropology, has been working on the scientific team that advised NASA on the rapid progress of the past year in the study of meteorites, Walker was a fellow of the American Physical Society, the American Geophysical Union and the American Association for the Advancement of Science. In his many other awards are the E.O. Lawrence Award of the Atomic Energy Commission, American Nuclear Society Award and a NASA Exceptional Achievement Medal.

Bouwen received a bachelor's degree from Stanford University in 1973, and a master's degree and doctorate in anthropology from the University of Chicago in 1977 and 1984, respectively.

Reardon Washington University faculty and staff move news around the globe. Following is a digest of media coverage they have received during recent weeks for their scholarly activities, research and general expertise.

Stomach upset, irregular heartbeat and poor weight gain are early signs that a medical problem is affecting a space traveler. Robert E. Reilly, M.D., professor of pharmacology and nutrition, and Charles A. Roth, M.D., Ph.D., assistant professor of pathology, have discovered why. They believe, according to articles in recent issues of Investigative, Philadelphia Inquirer, American Family Physician and Omaha

Robert M. Walker, director of the National Academy Press, has received the J. Lawrence Smith Medal from the National Academy of Sciences.

The award, which carries a $20,000 prize, was given in recognition of Walker's "pioneering research and numerous innovative techniques in the field of physics in the study of meteorites and interplanetary dust particles." The award is given every three years for "investigations of meteoritic bodies," according to the national academy.

Walker, McDonnell Professor of Physics, has been working on the frontiers of space research for more than three decades. In his early career he was involved with the first Apollo missions to the moon as a principal investigator and also as a member of the scientific team that advised NASA on the handling and distribution of moon rock and soil samples.

He is known for his pioneering investigations on radiation effects in metals and as co-discoverer of a technique to detect tracks left in crystals by the passage of cosmic rays.

This discovery led to the development of the emission-track detector, which Walker has been using in dating various Earth materials as well as meteorites. Etched track detectors also have been used to reveal a variety of other scientific advances, including the discovery that the Earth is not a complete sphere.

Walker oversees one of the world's largest research groups involved in the search for and study of extraterrestrial materials. Using a variety of highly specialized techniques, the laboratory is currently working on projects about the early history of the solar system and the events that preceded its formation. Walker also is working on the analysis of extraterrestrial dust particles collected in the upper atmosphere and the identification of preserved interstellar dust in primitive meteorites.

As part of his continuing research in the study of meteorites, Walker was a member of the 1984-85 and 1990-91 expeditions to collect meteorites in Antarctica. He also serves as chairman of the NSF-NASA Meteorite Working Group, which gives advice on the collection and distribution of Antarctic meteorite samples.

Walker was a co-investigator on an experiment that flew on the recently recovered IDEF satellite and is principal investigator on a project selected to fly on the proposed space station, Freedom. He was a co-founder and the first president of Volunteers for International Technical Assistance, an association of more than 7,000 scientists and engineers who use their skills to help develop.

Walker is a fellow of the American Physical Society, the American Geophysical Society, the American Academy of Arts and Sciences, and many other organizations.

Bowen is a member of the University's anthropology faculty for six years. He is an active member of Washington's Task Group on Social Thought and Analysis, which was established to ensure that social thought and analysis are covered in the University's curriculum after the sociology department is closed.

The group recommended the creation of the Committee on Social Thought and Analysis to supervise an interdisciplinary curriculum that will draw on faculty from various department.

Bowen was a participant at the University's Social Thought and Analysis, which was established to ensure that social thought and analysis are covered in the University's curriculum after the sociology department is closed.

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LECTURES

Thursday, April 4


4 p.m. Dept. of Chemistry 23rd Joseph W. Kennedy Lecture. "Gazometabolism in Invertebrates," Robert Cast, prof., queen's University, Canada. Hogan Lounge, Room 406 Lord Darlington. Refreshments 3:30 p.m., Millett Hall.

4 p.m. Dept. of Psychology Seminar. "Acute Phases: Complement Gene Expression in Pathogenic Challenge." Colleen C. Kenny, Ph.D., professor and head of the WU Dept. of Pediatrics, Third Floor Aud., Children's Hospital, 660 S. Euclid Ave. For more info., call 889-6920.


8 p.m. Dept. of English Presents Readings From the Writing Program. Hunt Lounge, 501 DeGraff Hall. For more info., call 889-5817.

Thursday, April 11


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Friday, April 5
11 a.m. Dept. of Chemistry Seminar. "Superoxide Neutralization by Active Oxygen Species. I. Steady-State Properties and Kinetics," John Springer, Lawrence Berkeley Lab. Room 307, Augustana; Principia vs. Millsaps. (At 1:30 p.m., Tuesday, April 9)

Monday, April 8
7 p.m. Theatre and Dance "Souping Up the Medical Sciences Bldg. "Field of Dreams." (Also April 6, same time, and April 14 at 9:30 p.m.) 100 Brown Hall. $3. Midnight, Filmboard Midnight Series Presents "The Seventh Seal," a Swedish film with English subtitles. Room 100 Brown Hall. $3. 11 p.m. and midnight films can be seen for a double feature price of $4; both Sun. films can be seen for 4.

Saturday, April 6
9 p.m. Women's Tennis Invitational. WU vs. Augsburg. Memorial Stadium. For more info., call 889-5220.

9 p.m. No. George Warren Brown School of Social Work Presents "Psychosocial Analysis of the Social Work Agenda," an interactive video conference with social workers and students. Participants can call in questions to the moderator, by phone or electronic mail to 728@2209@WUSMC.

CALENDAR

Thursday, April 4

April 13

April 14

April 15

April 16

April 17

April 18

April 19

April 20

April 21

April 22

April 23

April 24

April 25

April 26

April 27

April 28

April 29

April 30

MISCELLANEOUS

Thursday, April 4

Friday, April 5

Friday, April 5
3:30 p.m. Women's Tennis vs. Dr. Pats. 201 Duncker Hall.

Saturday, April 6
7 p.m. Theatre and Dance "48 HRS." (Also, April 13, same time, and April 14 at 9:30 p.m.) 100 Brown Hall. $3. Midnight, Filmboard Midnight Series Presents "The Gauntlet," a Japanese film with English subtitles. Room 100 Brown Hall. $3. 11 p.m. and midnight films can be seen for a double feature price of $4; both Sun. films can be seen for 4.

Sunday, April 7
4 p.m. Theatre and Dance "The Bitter Tears of Petra von Kant," a German film with English subtitles. Room 100 Brown Hall. $3. For info., call 889-5958.

Monday, April 8
7 and 9:30 p.m. Filmboard Foreign Series Presents "The Seven Samurai," a Japanese film with English subtitles. Room 100 Brown Hall. $3. For info., call 889-5958.

Tuesday, April 9
7 p.m. Theatre and Dance "Internal Affairs." (Also April 13, same time, and April 14 at 9:30 p.m.) 100 Brown Hall. $3. Midnight, Filmboard Midnight Series Presents "The Longest Day," a World War II film with English subtitles. Room 100 Brown Hall. $3. 11 p.m. and midnight films can be seen for a double feature price of $4; both Sun. films can be seen for 4.

Wednesday, April 10
10 a.m. Theatre and Dance "The Taming of the Shrew," an English film with English subtitles. Room 100 Brown Hall. $3. For info., call 889-5958.

Thursday, April 11
11 a.m. Society of Professors Emeriti Lecture, Philip Brown. "Psychosocial Analysis of the Social Work Agenda," an interactive video conference with social workers and students. Participants can call in questions to the moderator, by phone or electronic mail to 728@2209@WUSMC.

Monday, April 8

Friday, April 5
4 p.m. Theatre and Dance "Who's Afraid of Virginia Woolf." Room 204 Crow Hall. For more info., call 889-5220.

Wednesday, April 10
3:30 p.m. Women's Tennis vs. Southern Illinois U. Schwartz Tennis Center.

Thursday, April 11
3:30 p.m. Women's Tennis vs. Maryville College.

Friday, April 12
3:30 p.m. Women's Tennis vs. DePaul. 201 Duncker Hall.

Saturday, April 6

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