Jacob Schaefer, Ph.D., professor of chemistry, and Allyson Christensen, a graduate student in chemistry, examine the spinning control panel of the solid state NMR spectrometer in Schaefer's National Facility for Nuclear Magnetic Resonance of Biological Solids at Washington University. Schaefer and a team of collaborators are using NMR to study the outer shell of insects in hopes of developing an environmentally safe insecticide.

**Outwitting Mother Nature**

**Chemist's discovery could regulate insect growth**

Household 'Rambos' armed with insecticides to wipe out cockroaches soon may be able to bid a "farewell to arms."

Jacob Schaefer, Ph.D., professor of chemistry, and Albyn Christopherson, a graduate student in chemistry, examine the spinning control panel of the solid state NMR spectrometer in Schaefer's National Facility for Nuclear Magnetic Resonance of Biological Solids at Washington University. Schaefer and a team of collaborators are using NMR to study the outer shell of insects in hopes of developing an environmentally safe insecticide.

In a scientific "first," Schaefer has found a site in the exterior of insects — nature's oldest, most common and adaptable of all life forms — where insect pests could be controlled by preventing their reaching a stage in their lives where they are a nemesis or nuisance.

According to Karl J. Kramer, Ph.D., research chemist at the U.S. Grain Marketing Research Laboratory, cross-linking is the first in a series of important discoveries in an important area of biology that developed in the mid- to late-1940s in both Europe and the United States. "This painting is an important addendum to our collection of modern art."

"The Menaced House" is part of an exhibit featuring American Abstract Expressionism, a post-World War II painting movement with American art from the same period. The exhibit, which is on display until Nov. 1, includes American artists Jackson Pollock, Philip Guston and Willem de Kooning and European artists Joan Miró and Lucio Fontana.

Lerner, a member of the Cebra group, founded in 1948 in the Netherlands by artists Karel Appel and Frans Jome, assisted by Cellens. Works by both Appel and Jome also are included in the exhibit. The Cebra group, founded in 1948, is comprised of 12 artists, including Hubert Huyghe, Arp, Pollock, de Kooning and Willem de Kooning.

"We can now envision a time when cockroaches and other insect pests could be controlled by preventing their reaching a stage in their lives where they are a nemesis or nuisance."

Jacob Schaefer

"Once formed, these bonds are permanent and very hard to break," Schaefer continues. "My collaborators and I are now isolating the essential enzymes and metabolites that help make the structure. Hopefully, they may be able to develop an inhibitor molecule that would thwart the enzyme's mode of action. Then an immature insect could conceivably be killed by the burden of its own exoskeleton. We can now envision a time when insect pests could be controlled by preventing their reaching a stage in their lives where they are a nemesis or nuisance."

Jacob Schaefer

**Peace activist Coffin to question defense spending in lecture**

The Rev. William Sloane Coffin Jr., president of SANE/FEARZE Campaign for Global Security, will speak at 11 a.m. Wednesday, Sept. 27, in Graham Chapel. SANE/FEARZE is the largest peace organization in the United States.

Coffin's speech, part of the University's Amnesty Series, is titled "A Peace Economy: Spend for Defense or Social Needs?" The lecture is free and open to the public.

For the past 25 years, Coffin has been a strong presence in the peace and civil rights movements. He was senior minister of Riverside Church in New York City and founded its Disarmament Program.

Coffin is perhaps best known as a member of the group of anti-war activists known as the "Committee of 176" to inspect the U.S. destruction of non-military targets and accept the release of three prisoners of war, one of whom was a member of the clergy who led Christmas services in the besieged U.S. Embassy hostages there.

Coffin was chaplain of Yale University's alumni association for 15 years and has worked abroad for the CIA.

"For more information on the lecture, call 899-4620.
German song recital will feature fortepiano

Washington University will present its annual Liederabend (German song recital) at 4 p.m. Sunday, Sept. 24, in Steinberg Hall auditorium.

Mary Henderson, artist-in-residence in music, and Seth Carlin, professor of music, will perform during the annual Liederabend (German song recital) at 4 p.m. Sunday, Sept. 24, in Steinberg Hall auditorium.

This year's performance will debut an authentic reproduction of the fortepiano, a late 18th-century forerunner to the modern piano.

Seth Carlin, professor of music at Washington University and a keyboard expert, will play the fortepiano in the Liederabend, and mezzo-soprano Mary Henderson, artist-in-residence in music, will sing. The instrument, built by Maine-based craftsman R. J. Regier, was commissioned by the University's music department.

Children’s dance classes are offered on Saturdays

Washington University will offer dance classes for children beginning Saturday, Sept. 23.

The classes are taught by Christine Graham Alberts, artist-in-residence in dance at the University. Alberts, who is an experienced dance instructor, has a bachelor's in ballet and a master's in modern dance from Indiana University.

The classes are divided by age: children ages 2-5 will meet from 9 to 9:45 a.m.; children ages 4-5 will meet from 10-10:45 a.m.; and children ages 6-7 will meet from 11-11:45 a.m. All classes will be held in Room 205, Mallinckrodt Center's Dance Studio. The 10-session program will cost $70.

Alberts will focus on teaching the children basic dance steps and coordination. "We do a lot of hopping and leaping in these classes," says Alberts.

A new program for children ages 8-10, called "From 8 to 10: Let's Offered at a time to be announced. That class will teach dance techniques and creative movement.

"In this class the children are old enough to learn body positioning and basic dance principles," says Alberts.

"By the time they are eight or 10, kids can learn more discipline and take more instruction." Classes for the 8-10-year-olds will cost $80.

An open house for parents who would like to meet Alberts, see the studio or learn more about the classes will be held from 6:30-8 p.m. Wednesdays, Sept. 20, in Room 205 of Mallinckrodt Center.

For more information, call 889-5858 or 367-1321.

Support group for women is ongoing

The Psychological Service Center at Washington University is accepting new members for an ongoing support and therapy group called "Women In Unfulfilling Relationships." The group has been meeting since last February.

"The women in this group are successful in their careers and other areas of their lives, but find themselves trapped in unfulfilling relationships," says Amy Bertenshaw, Ph.D., the center's director. "The group helps women explore their patterns of relating to others."

Other issues addressed in the weekly meetings include identity, dependence and independence; separation and closeness; and the socialization of women from a feminist perspective," says Bertenshaw.

Meetings are held from 7 to 9:30 p.m. on Tuesdays in Eade Hall. Group leaders are Elizabeth Sondhaus and Carol Oyer, doctoral candidates in the psychology department. The graduate students are supervised by faculty members, who are licensed clinical psychologists.

The fee for the weekly group is $40 per month. For more information, call 889-6555.

Chemist's discovery could help control insects 

The World Health Organization estimates 500,000 poisonings and 20,000 deaths worldwide from insecticides each year. In the United States alone, according to Environmental Protective Agency reports, insecticides account for 40,000 poisonings and 200 deaths per year.

"Insecticide that may be spawned by Schaefer's work is typical of a decade-long trend to explore novel means of controlling insects through hormonal or enzymatic adjustments called "insect growth regulators."

"We are interested in research that will further delineate the structures of solids. In many cases, NMR is the only approach to them." Scientists are increasingly concerned over the ability of insects to become genetically resistant to chemical and even biological controls, and are constantly looking for more selective, safe ways of controlling insect pests.

"The short-sighted and irresponsible use of pesticides and antibiotics is producing strains of monster-bugs that are resistant to our chemical weapons," says Metcalf, Ph.D., professor emeritus of biology at the University of Maryland tool to help us understand how the exoskeleton is formed in arthropods, which are three-quarters of the world's denizens. It's a unique approach and an exciting contribution to our understanding of how insects work," says Metcalf.

"I doubt if we will ever be able to eradicate insect pests entirely," says Metcalf, who discovered the carbamate family of insecticides. "Insects in every case become resistant to chemicals after a period of continued exposure, and they become resistant to the biological controls. But we can improve our methods of less-toxic controls. It is clear we don't want to keep relying on chemicals that are poisonous to both insects and man.

"Schaefer's use of NMR is a marvelous tool to help us understand how the exoskeleton is formed in arthropods, which are three-quarters of the world's denizens. It's a unique approach and an exciting contribution to our understanding of how insects work," says Metcalf.
Anthropologist Patty Jo Watson awarded speleological society's highest honor

Patty Jo Watson, Ph.D., professor of anthropology, has been awarded a Honorary Life Membership in the National Speleological Society (NSS). Watson received a bachelor's degree in Anthropology from the University of Tennessee in 1969. She later earned a master's degree in Anthropology from the University of Kentucky in 1971 and a doctorate in Anthropology from the University of Kansas in 1974. Watson has served as a professor of Anthropology at the University of Kentucky since 1974 and has taught courses in physical, biological, and cultural anthropology.

Watson's research focuses on the evolution of human behavior and the role of social and cultural factors in shaping human behavior. She has conducted extensive fieldwork in the study of human survival strategies and has contributed to our understanding of human adaptation to environmental change. Watson's research has been published in numerous academic journals and has been widely cited in the field of anthropology.

Watson has been a member of the NSS since 1974 and has served in various capacities within the society, including as a member of the NSS Board of Directors and as chair of the NSS Committee on Education. She has also been a member of the National Geographic Society's Committee for Research and Exploration since 1990.

Watson's contributions to the field of anthropology have been recognized with numerous awards and honors. She was elected to the American Academy of Arts and Sciences in 1992 and was awarded the prestigious MacArthur Fellowship in 1995. Watson has also been a fellow of the American Philosophical Society and has served as a fellow of the American Association for the Advancement of Science.

Watson has been a leader in the field of applied anthropology and has worked to promote the use of anthropological knowledge to address social and environmental issues. She has collaborated with communities around the world to develop sustainable solutions to local problems, and her work has been instrumental in shaping public policy and international development initiatives.

Watson's dedication to her field and her commitment to advancing anthropological knowledge have earned her the highest honor bestowed by the NSS, and her work continues to inspire and influence scholars and practitioners around the world.
CALENDAR

THURSDAY, SEPT. 21
8 p.m. Dept. of Music Presents "Recital of 20th-Century Music for Voice and Organ," featuring: Tenor Peter Scaramozzino; faculty ofbilt State U.; and Gary Miller; organ. Faculty ofbilt State U. Memorial Chapel. For more info., call 889-5810.

WEDNESDAY, SEPT. 20

TUESDAY, SEPT. 19
8 p.m. Department of Chemistry Seminar, "The Rhythm of Chaos," Stuart Ratafia; Prof. of Medicne, M.D, 790 W. McKinney. Call 889-5810.

SATURDAY, SEPT. 23
7:30 p.m. Women's Soccer. WU vs. Principia College. Francis Field. For more info., call 889-5810.

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BASIC DH LIGHTING

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