Saving endangered species

Genetic technology now at core of conservation biology

Conservation biology conjures up the timeworn image of adventurers in pith helmets combing wilderness areas as they search for endangered species to capture and bring back to zoos. While conservation biologists still are out “beating the bush,” the pith helmet set has changed drastically in the past decade, says Alan R. Templeton, Ph.D., Washington University biology professor. Templeton says advances in genetic techniques have changed the working style of the Martin Perkins of the 1990s as they preserve and monitor species.

Templeton, who has helped preserve the endangered Speke’s gazelle and the declining populations of the Mexican wolf, explains the impact of genetics on conservation biology in “Genetics and Conservation Biology,” a chapter in the recently published book, Species Conservation: A Population-Biological Approach, edited by A. Seitz and V. Looekie, Birkhauser Verlag publishing company.

“Ecology is the biological science most commonly linked in the public mind to conservation issues,” says Templeton. “But in an age of rapid species extinction, genetics is becoming the conservation biologist’s indispensable tool, and it is also changing conservation management concepts.”

Genetics is being used as a “fingerprinting” technique to track down poachers, a means of identifying species, a way to detect hybridization of species; and a tool to manage both captive and natural populations, Templeton says. Genetics has become more integral to conservation biology, he adds, thanks to the development of techniques such as polymerase chain reaction (PCR), which allows biologists in the field to collect minute samples of DNA in various conditions and examine them later, without the worry of refrigerating the samples while they travel.

“At recently in six years ago, collecting genetic samples was difficult at best and at times impossible because you needed to take large samples — either blood or fresh, intact tissue — then rush them off to a laboratory for analysis,” Templeton says. “Today, PCR lets you examine small pieces of sometimes very old, degraded DNA without the need of refrigeration, and it also gives researchers more copies of DNA much more rapidly than previous techniques.

A prime example of “genetic sleuthing” in biological conservation is the work of Templeton’s collaborators: John Patton, Ph.D., formerly a Washington University research associate; and Nicholas Georgiadis, Ph.D., research associate. Georgiadis also is a researcher with the World Wildlife Fund.

The increased reliance upon genetics in species preservation has brought the issue of genetic diversity to the forefront of conservation managers — such as zookeepers and reserve managers — as well as the general public, Templeton says.

“During Ronald Reagan’s first campaign for president he supposedly said, ‘Once you’ve seen one redwood, you’ve seen them all,’” Templeton relates. “That is an attitude we still see today. People tend to think if you save one piece of redwood forest or one part of Alaska tundra, you don’t need to preserve any more. But species thrive on genetic diversity — the raw material of evolution. Let’s say humans were going to be wiped out by some disease and some concerned aliens could only repopulate the world with two individuals. So, they pick Ronald and Nancy Reagan. Would they represent the human species?”

“The same concept is as true with elephants, the Speke’s gazelle and Missouri’s collared lizards — all threatened or endangered species. It is as with hundreds of plants worldwide that face extinction,” adds Templeton. “In 1979, faced the same situation as the hypothetical aliens repopulating the world with the Regents. At the time, Templeton and Bruce Read, St. Louis

In This Issue...

Medical Update: Researchers prove anti-depressant drugs can treat clinical depression in diabetics

Washington People: Joe Deal, School of Fine Arts dean

News Analysis: Pain management is a key factor in right-to-die issue, says Robert A. Swaum

John Atkinson named internal medicine chair

Sen. Robert Kerrey opens Assembly Series

John Atkinson, M.D., has been named chairman of the Department of Internal Medicine at the School of Medicine at Washington University. Atkinson replaces David M. Kipnis, M.D., professor of medicine, who has held the position since 1975. Kipnis has been appointed Distinguished University Professor of Medicine and will divide his activities between research in diabetes mellitus, undertaking special projects assigned by the dean and increased involvement in corporate and foundation interaction with the medical school.

“The Department of Medicine at Washington University has a long tradition of outstanding leaders, most recently David M. Kipnis,” said William A. Peck, M.D., vice chancellor for medical affairs and dean of the School of Medicine. “Hence, the department has become one of the best in the nation, recognized for the scientific, educational and clinical contributions of its superb faculty. John Atkinson is an excellent candidate to build on that tradition well into the 21st century.”

“He is a world-class investigator, a respected teacher and a superb clinician who has the respect and admiration of students, house staff, teachers and faculty,” Atkinson, a professor of medicine and molecular microbiology, will leave his post as director of the Division of Rheumatology.

Lout-Samuchswit, M.D., professor of medicine, will serve as the division’s interim director. Atkinson will continue his research commitments.

Sen. Robert Kerrey opens Assembly Series

Sen. Robert Kerrey, D-Neb., will give the convocation address at 11 a.m. Aug. 26 in Graham Chapel. His lecture, which opens the fall Assembly Series, is free and open to the public.

Kerrey campaigned for the Democratic presidential nomination earlier this year. He serves on the agriculture and appropriations committees and has been actively involved in health care issues.

Prior to his election to the U.S. Senate in 1983, Kerrey was a millionaire restauranteur and health club owner and served as governor of his state.

A graduate of the University of Nebraska and the Naval Officer Candidate School, he volunteered for the U.S. Navy SEALs (Sea, Air and Land) during the Vietnam War. In addition to receiving the Congressional Medal of Honor in 1968, he was decorated with a Bronze Star and a Purple Heart for his service. He has taught a class on Vietnam at the University of Nebraska, to law and government classes in Omaha.

For more information, call 935-4620.
Cloninger receives Isaacson Award for work on genetics and alcoholism

This year's James B. Isaacson Memorial Award went to C. Robert Cloninger, professor of psychiatry and a member of the Missouri Academy of Science. He shares the award with Michael Bliss, of the University of Missouri, and Keith Yee, of the University of California, San Francisco.

Cloninger, also a professor of genetics, has investigated the genetic epidemiology of addiction and other psychiatric illnesses, including schizophrenia and mood disorders. In researching the genetic and environmental causes of the various disorders, he has studied samples from the populations of several countries including the United States, Commonwealth of Independent States, Italy, Japan, and the Scandinavian countries.

Cloninger recently was presented with the Raymond Goodwin Award by the Alliance for the Mentally Ill of St. Louis. He was cited in particular for his commitment to service in the public sector.

Cloninger is a member of the Missouri Mental Health Commission and has worked on behalf of Malcolm Bliss Hospital in St. Louis, where he is a consulting psychiatrist. He is psychiatry-in-chief at Barnes Hospital and is a staff physician at Jewish and St. Louis Children's hospitals at the Washington University Medical Center.

Goldberg chosen for Culpeper scholarship

Daniel E. Goldberg, M.D., Ph.D., associate professor of internal medicine, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship in Medical Science for 1992. Goldberg's research deals with the use of molecular microbiology, is one of three scientists chosen to receive a Charles E. Culpeper Foundation Scholarship inMedical Update

Anti-depressants successfully treat depression in patients with diabetes

Researchers at the School of Medicine have demonstrated for the first time that anti-depressant drugs can successfully treat clinical depression in diabetic patients.

Depression is common in diabetic patients, according to Patrick J. Lustman, Ph.D., associate professor of medical psychology. He says diabetic patients are about three times as likely as non-diabetics to suffer from depression. It's often worse for diabetic patients, he says, because they don't have the symptoms to come forward and get help. "Diabetic patients get depressed and stay depressed," says Lustman.

Though their symptoms are more debilitating, Lustman says depression often goes unrecognized in diabetics. "About two-thirds of diabetics who treat diabetic patients don't recognize or treat depression," he says. "Those who go to get anti-depressant drugs usually receive the medication for treatment of depression, not diabetes." Lustman and his team of investigators studied patients with poor glucose control and major depressive disorder. They found that diabetic patients who received the anti-depressant drug nortriptyline for eight weeks were significantly less depressed than patients who received a placebo. Up to now, tricyclic anti-depressant drugs such as nortriptyline have not worked well in diabetics, but had never been studied to see if they actually work as a treatment for depression in diabetic patients.

Although the anti-depressant medication itself did not control blood glucose levels as investigators had hoped it might. However, some of Lustman's other work suggests that effective treatment for depression could result in improved long-term blood glucose management. In a separate study on depression and blood glucose management, Lustman and co-investigators found that depressed diabetic patients often have problems with glucose levels simply because they aren't as likely to comply with their prescribed treatment regimen.

"Depressed patients are less likely to monitor their blood glucose levels as they should," says Lustman. He speculates that management of depression with nortriptyline could have the added bonus of leading to better overall disease management for diabetic patients.
Washington People

Artistic dean leads school into the future

Joe Deal, dean of the School of Fine Arts, is committed to arts education and the role of art in society. Deal, the artist creates and exhibits his photographs. Deal, who oversees the operation of the fine arts school, and Deal as both academic and artist participates in the national dialogue on issues in the world of art.

Deal’s most recent solo exhibit was a 10-year retrospective of his photographs showing the southern California landscape. The exhibit was at the Los Angeles Municipal Art Gallery last spring.

In 1991, the Saint Louis Art Museum hosted an exhibit of Deal’s latest works in a solo show titled “Joe: Men and Women.” That show featured works by Deal that mark a turning point in his artistic career. Typically, Deal has looked at the impact of man on the environment by focusing on the edge of cities, particularly those in the Southwest and California. His new photographs focus more on the people who inhabit that environment.

“In some ways my new work is 130 degrees from what I did before. Previously, I made black and white photographs of the landscape, usually with no people in them,” says Deal, whose work has been exhibited extensively both nationally and internationally. “My new work is in color and uses interiors and people as subjects. Still, there is a common thread—a focus on ordinary experience, on things that occupy everyday space. I just went from the outside in.”

As a professional artist, as well as an academician, Deal is a strong advocate of the National Endowment for the Arts (NEA). Since the mid-1970s he has served on a number of peer review panels for the NEA. Peer review panels comprise professionals and artists in a particular medium who are asked to study grant applications from other artists and organizations in that area. The panels make recommendations about which work is most deserving of funding. The NEA relies on these panels to help determine how and to whom grants should be awarded. The success of the NEA, says Deal, is this peer review panel system. “It’s not that I am assimilated,” Deal observes. “I just went from the outside in.”

Deal says he feels that artistic merit always will be a moving target. “Contemporary art, by definition, is different from the past. The general population shies away from it until it is assimilated.” Deal observes. He points out that today’s most popular art movement, impressionism, was ridiculed and lambasted when it was first introduced. Deal insists that artists cannot ignore the public, must try to deal with this problem. “It’s not that I am particularly good at or like administration,” says the artist. “It just seems like the best way to make things happen that I care about.”

Joan Roehm, who serves as president of the University of California, Riverside, Deal worked with 17 departments in the College of Humanities and Social Sciences. For his part, Deal’s goal is to keep the school moving forward. “We are committed to advancing the field of art with the work of our faculty and graduate students and to provide opportunities to undergraduates to pursue advanced work,” he says.

In his third year as dean, Deal already has demonstrated his ability to keep the school moving forward. ‘The Carolene Roehm Electronic Media Center, was opened this fall, an outstanding example of Deal’s vision. The media center has nearly 20 computers capable of graphic design and illustration, video animation, drawing programs and video editing abounds. In addition, one computer is set up as a “video toaster,” which creates three-dimensional renderings of either static or dynamic objects using different perspectives and light sources.

“Decency would no longer be ‘considered in any part of the NEA review process of grant monitoring and evaluation process. All advisory panels will be informed about this,” Deal said. He feels that artistic merit always will be a moving target. “Contemporary art, by definition, is different from the past. The general population shies away from it until it is assimilated,” Deal observes. He points out that today’s most popular art movement, impressionism, was ridiculed and lambasted when it was first introduced. Deal insists that artists cannot ignore the public, must try to deal with this problem. “It’s not that I am particularly good at or like administration,” says the artist. “It just seems like the best way to make things happen that I care about.”

Debby Aronson
Nebraska. Graham Chapel. For more info., call 935-4620.

Wednesday, Aug. 26
10 a.m. Molecular Cell Biology and Biochemistry Program Thesis Defense, "Regulation of Factor IX and X by mRNA Stability," Shawn Ahern, WU graduate student, Department of Medicine. Room 8841 Clinical Sciences Research Bldg.

Tuesday, Aug. 25

Wednesday, Aug. 26
11 a.m. Assembly Series Convocation with Robert Kerrey, U.S. senator from Nebraska, Graham Chapel. For more info., call 935-4620.

Calendar guidelines
Events sponsored by the University — its departments, schools, centers, organizations and its recognized student organizations— are published in the Calendar. All events are free and open to the public, unless otherwise noted.

Calendar submissions should state time, date, place, sponsor, list of event, name of speaker(s) and affiliation, and admission cost. Quality promotional photographs with descriptions are welcome. Send items to Melissa Kohr at Box 1070 (or via fax 935-4259). Submission forms are available by calling 935-8313.

The deadline for all entries is noon Tuesday one week prior to publication. Late entries will not be printed. The Record is printed every Thursday during the school year, except Mondays, and monthly during the summer. If you are uncertain about a deadline, holiday schedule, or any other information, please call 935-8533.

Lectures
Friday, Aug. 7
9:15 a.m. Pediatric Grand Rounds, "Impact of Polymerase Chain Reaction on the Diagnosis of Infectious Diseases," Gregory Storch, asso. prof. of pediatrics and of medicine, WU School of Medicine, Graham Chapel. For more info., call 935-4539.

Wednesday, Aug. 26
10 a.m. American and European Artworks From Nasher Genetic Diagnosis," Diana Gray, asst. prof., of obstetrics and gynecology and of radiology, WU School of Medicine. Clinicent, 4950 Children's Place.

Exhibitions
"Display of 19th- and 20th-Century American and European Artworks From the Permanent Collection." Through Aug. 31. Gallery of Art, upper and lower galleries, Steinberg Hall. Hours: 10 a.m.-5 p.m. weekdays, except Mondays, 1-5 p.m. weekends. For more info., call 935-5490.

Miscellany
Monday, Aug. 10
8:30 a.m. Center for the Study of Data Processing Presents a Seminar, "DOD Application and Standards," Gary Audin, consultant, Delphi Inc. (Seminar continues through Aug. 14, same time.) Room 11 Prince Hall. Cost: $250 for WU faculty and staff. For more info., call 935-5380.

Monday, Aug. 17
8:30 a.m. Center for the Study of Data Processing Presents a Seminar, "OSI Applications and Standards," Gary Audin, consultant, Delphi Inc. (Seminar continues through Aug. 18, same time.) Room 11 Prince Hall. Cost: $100 for WU faculty and staff. For more info., call 935-5380.

Monday, Aug. 24
10 a.m. Performing Arts Dept. Presents dance division auditions for all students wishing to enter upper-level dance classes without the prerequisite courses, primarily first-year and transfer students. Room 207 Mallinckrodt Center. For info., call 935-3530.

Music
Sunday, Aug. 9
8 p.m. Dept. of Music Presents a WU Percussion Ensemble Concert with Robert Kerrey, U.S. senator from Nebraska, Graham Chapel. For more info., call 935-5581.

Wednesday, Aug. 19
8 p.m. Dept. of Music Graduate Voice Recital by Deborah Simonson, mezzo-soprano, Graham Chapel. For info., call 935-5581.

New fine arts faculty members showcase work at Bixby Hall
Works by new School of Fine Arts faculty members will be on exhibit Aug. 23 through Sept. 13 in Bixby Gallery.

The four new faculty members are printmaker Doug Dowd; graphic artist Don Overmyer; painter Michael Ananian; and ceramicist Michelle Hefele.

Dowd, who is director of the first-year and sophomore Core program, will exhibit selections from "Meet Me in Kuwait," a series of etchings. The series, accompanied by a letterpress-printed pamphlet, is based on images from the Persian Gulf War. Dowd has created several "artist's books," which include handmade images and letterpress-printed text. His work has been featured in many invitations and juried exhibitions focusing on fine art books and prints.

Overmyer will exhibit a body of work from his master's degree in fine arts in printmaking from the University of Nebraska-Lincoln. He was a Rotary Scholar at the Nova Scotia College of Art and Design in Halifax, Nova Scotia, during the 1990-91 academic year.

Ananian received his bachelor's degree in drawing, painting and illustration in 1987 from the Rhode Island School of Design. The New Hampshire native received his master's degree in 1990 from the Yale School of Art, having studied with painter William Bailey and others. In 1990 he also received Yale's Elizabeth Canfield Hicks Award for outstanding achievement in drawing and painting from nature.

Hefele's pieces are fanciful and whimsical interpretations of classical forms, such as the Greek amphora (high-necked vase) and chalice. Over the past several years she has worked on creating glasses and firing processes that create different effects on the same piece to create the illusion of gemmed vessels. Seven porcelain works will be featured in the exhibit — "Grapes," "Crown," "Creator No. 5," and five others variations on the chalice form.

The above image is from Douglas Dowd's handmade book John Rabbit's Grove, a storybook for adults. Works by Dowd and three other new fine arts faculty members will be on display in Bixby Gallery Aug. 23-Sept. 13.

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Ray Arvidson receives NASA service medal

Raymond E. Arvidson, Ph.D., professor and chair of the Department of Earth and Planetary Sciences, was honored with the NASA Public Service Medal at the University's annual awards ceremony at the Jet Propulsion Laboratory in Pasadena, Calif.

The medal is awarded to non-governmental persons for exceptional contributions to NASA's mission.

He received the medal for his "exceptional contribution to the Magellan Mission data in compact non-profit organizations operate more efficiently."

The Advanced Certificate Program in Non-Profit Management is geared toward professionals and leaders in human service, cultural, educational, religious, or community management organizations. Classes for the 15-credit program, which begins Aug. 26, will be offered in the late afternoon or evening to accommodate working adult students. The certificate program is open to graduates of all undergraduate degree programs and does not require the receipt of a certificate to advance the well-being of the athletics programs.

In addition to the luncheon ceremony, the inductees will be recognized at halftime during the Homecoming football game. For information regarding tickets to the luncheon or game, contact the athletics department at 935-5185.

New program designed for non-profit managers

Washington University has established an academic program designed to help managers of non-profit organizations operate more efficiently.

The certificate program is open to graduates of all undergraduate degree programs and does not require the receipt of a certificate to advance the well-being of the athletics programs.
T
hose attempting to rebuild riot-torn Los Angeles have stressed the im-
portance of bringing business oppor-
tunities to the minority community — an argu-
ment that the Minority Youth Entrepreneurship Program at St. Louis Priory High School has made for the past five years in its
Minority Youth Entrepreneurship Program. The program encourages minority teens to think of operating their own business as a viable career and to prepare for a future in the business world. "It’s a great opportunity to learn the ins and outs of operating your own business," says Ken Robinson, 16, a junior at Louis Priory High School. "I think it’s especially important now since we’re seeing such a small influx of growth in minority-owned businesses.

The idea of a minority youth entreprene-
urship program was inspired by three
local black business leaders — Ronald L.
Thompson, Paul L. Miller Jr. and James
Rivers. Thompson and Miller also are
Washington University alumni. The pro-
gram is sponsored the three businesses,
Olson Simmons and the Urban League of Met-
ropolitan St. Louis.

More than 20 successful minority entre-
preneurs are taking part in this year’s program through visits by students on campus or leading classes at their companies. This year’s program runs through Aug. 4.

"It’s great to see how excited the minor-
ity business people get when they come here and talk with these students," says Trina
Thompson, vice president and chief execu-
tive officer of Fleming Corp. in the Min-
neapolis area. Each year, "We participate in the program because we feel it gives this young people some idea of what’s going on in the minority business community.

"Knowledge is power," he added. "This program gives students a fresh, clear look at what’s going on in business."

Participants receive specialized instruc-
tion in accounting, marketing, finance and other management areas from leading
professors at the Olin School. Thompson
took part in a segment on entrepreneurship.

"We’ve been taught by some of the best
professors here and the entrepreneurship that have come in have been incredible. We’ve
all learned from their experiences," says
Robinson, who plans to get his MBA and
open an import and export business.

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Shields was in full force, making shipment
out of the Midland impossible. A little over
a year later, the “new blood” for the Ameri-
can Speke’s gazelle herd arrived in St. Louis
on Feb. 14, 1992, from a quarantine facility
in Warsaw, Poland.

Impact of war
Read, at the time of negotiation with Sheik
Al-Warbra, was returning from a trip to
Vietnam in another international conserva-
tion effort that, according to Templeton,
illustrates the impact of war on species. Read
had been gathering information on the
Kouprey, a breed of wild cattle native to
Vietnam, Laos and Cambodia. This region
was strafed, bombed and dosed with nap-
palm and agent orange for more than a
decade, and today is still a site of guerilla
warfare between various groups. After the
war ended in 1975, conservation biologists
became aware of this strange breed of wild
cattle that looks distinctively different from
other wild cattle in the region. And they
wondered that, no matter what it was, the
animal might go extinct. A preservation
program was started in the late 1980s with
the cooperation of the Vietnamese govern-
ment. The government was aware of the animal but had no concept of how many of
there were left after decades of warfare in
the region. Once again, Templeton and
Read were involved in the effort to deter-
mine the genetic makeup of a species, one
that conservation biologists believe might be
a “cow of a different color.”

They wanted to know if it deserves to be
called a species, and, if so, how much
genic diversity is there within it?”

Templeton notes, "We know it’s a differ-
ent, and that there are maybe only 150 of
these animals left, but face it, there weren’t
a whole lot of wildlife managers running around in that border area during the war,
and they still aren’t. So, very little is
known about the Kouprey. The point is,
you can’t get genetic samples of the
Kouprey unless you go to Vietnam, and
once there, you risk getting shot at.”

In the late 1980s, Read went to Vietnam
to get preliminary data on the Kouprey, but
since then other biological contingents have
gone to Vietnam and have drawn fire from
insurgents.

Read and Templeton’s work with the
Kouprey is a prime example of how conser-
vation biologists use genetics to determine
d whether an animal is a hybrid or a distinct
species of its own. Hybridization, a natural
phenomenon where one species inter-
breeds with another, sometimes creating
another distinct species, occurs frequently
in higher plants and often occurs in animals.
The Plains Buffalo, for instance, is a hybrid
between two species of bison, one that lived
in Alaska and Siberia, the other in Canada
and the United States. The far northern
species for centuries was blocked from
getting into the continental United States
by glaciers. When the glaciers receded, both the original species interbred, destroying the two
original species and creating a third, the Plains
Buffalo.

“The new molecular techniques can show
the extent of hybridization and its impact
on evolution,” Templeton says.

“Genetics is an ideal monitoring device. Unfortunately, hybridization was not dealt
with in the Endangered Species Act of 1973
because those who wrote the act didn’t
understand the role that hybridization plays
in the natural world. There was an informal policy that "if it’s a hybrid, don’t protect it,"" Templeton says. "That is evolutionary process and something from
which we learn."

Ecology, genetics, issues in air and
water pollution, chemistry, earth sciences,
economics, politics and sociology all are
part of the portrait of today’s conservation
biologists, and these scientists are relying
increasingly on genetics to bring the diver-
gerent areas into focus.”

Tony Fitzpatrick
Women binge eaters sought for study

The Department of Psychology is recruiting women to participate in a study on the psychological characteristics of binge eaters. Women who are binge eaters, age 18 and above, and who are of an average weight are sought for the study.

Participants will fill out several questionnaires and be interviewed. Individual participants will be paid $5. The study will be conducted by the women's psychology laboratory at the University, and takes approximately one hour to complete.

For more information, call 935-7521.
The following is a list of positions available at the Hilltop Campus. Information regarding these and other positions may be obtained in the Office of Human Resources, Administrative Building, Hall Room 126, or by calling 935-3590.

Lab Technician
920209. Biology. Requirements: Bachelor’s degree with skill in photographic and graphic arts; must have good background in chemistry, molecular biology and biochemistry; must have good organizational and time management skills. Resume and three letters of recommendation required.

Grant/Research Secretary
92030. School of Social Work. Requirements: Some college; 50 wpm typing; computer and data base design; familiarity with patent program; mainframe usage also will be required; ability to work well with research projects; must be able to quickly develop an understanding of external funding guidelines that apply for the program. Clerical testing and three letters of recommendation required.

Administrative Assistant
92031. School of Social Work. Requirements: Associate’s degree, bachelor’s degree preferred; 40 wpm typing with accuracy; good communication skills; attention to details; recordkeeping ability; ability to work well with research projects; must be able to work well and have good interpersonal skills. Resume and three letters of recommendation required.

Senior Manager of Computer Engineering
92032. School of Technology and Information Management. Requirements: Master’s degree, doctorate preferred; degrees should be in a pertinent field of engineering with advanced degree in computer science, engineering systems science or business; excellent communication skills; minimum of seven years of professional work experience with teaching experience as a component of the work experience (this requirement is subject to review based on other attributes); ability to plan, organize, and lead special project and research-oriented activities. Resume and three letters of recommendation required.

Finance and Technology Accounting Manager
92033. Patent Program. Requirements: Bachelor’s degree; excellent accounting and data base skills; must have education in university financial transactions in the area of patenting and licensing and also to manage departmental budget elements. Excellent attention to detail; strong analytical and interpersonal skills; ability to work as a team member. Resume and three letters of recommendation required.

Record/Office Assistant
92034. School of Business. Requirements: High school graduate with a minimum of one year of college; typing 35 wpm with accuracy; excellent organizational skills; excellent communication skills; ability to be flexible; strong knowledge of WordPerfect software preferred; must be a U.S. citizen and registered voter (or willing to becoming registered) for the University’s employee union. Clerical testing and three letters of recommendation required.

Secretary II
930001. Department of Athletics. Requirements: High school graduate with a minimum of two years of college; typing 75 wpm with accuracy; must be flexible with time and duties and able to get along well with others; ability to meet and exceed expectations; ability to run the office for the administrative staff. Clerical testing and three letters of recommendation required.

Assistant to Registrar/Department Secretary
930002. School of Fine Arts. Requirements: High school graduate with a minimum of one year of college; typing 50 wpm with accuracy; accurate word processing/typing, excellent language and grammar skills; knowledge of office machines, including personal computers, knowledge of online and other University systems,Internet knowledge, excellent filing and recordkeeping skills; to work well with students, faculty and staff. Dependability and flexibility a must. Willingness to work under pressure; ability to handle detailed and priorize tasks. Minimum two years prior office experience. Clerical testing and three letters of recommendation required.

Research Associate

Reference Librarian
930004. School of Business. Requirements: Master’s degree, ALA accredited MLS. Reference service to library patrons using print sources, compact disc products, and online products. Provide instruction on use of NEXIS. Responsible for preparation of “working papers list” done with use of data management software program; online searching; fall and spring semester working hours: noon to 6 p.m. Saturday; 1 to 6 p.m. Sunday; 5:15 to 7:15 p.m. one weekday. Recommend and schedule. Center in the library during the week; implements and manages the reference desk. Resume and three letters of recommendation required.

Administrative Assistant
930005. Center for the Study of American Business. Requirements: High school graduate, bachelor’s degree preferred. Typing 50 wpm with accuracy; supervised typing and verbal skills. Needs to have experience with personal computer and basic accounting skills. Clerical testing and three letters of recommendation required.

Senior Periodicals Editor
930006. Office of Public Affairs. Requirements: Bachelor’s degree required. The senior editor is available for development research, writing, editing, proofreading, and preparing materials for reproduction of the magazine pages of Washington University Magazine and Alumni News; work with appropriate public affairs staff in planning and securing necessary permissions, photography and graphics; assume budget control and production quality while meeting deadlines; ideas for appropriate content for upcoming issues of periodicals. Resume, two writing samples, and three letters of recommendation required.

Athletic Programs Assistant
930007. Department of Athletics. Requirements: Bachelor’s degree required, master’s degree preferred in physical education or related field. Coaching and administrative experience; ability to work effectively with the athletics department and within the environment of a highly selective university. Resume and three letters of recommendation required.

Student Services Coordinator
930009. School of Business. Requirements: Minimum of two years of college, associate’s degree preferred. Typing 40 wpm with accuracy; ability to interact and maintain positive relationship in dealings with students, faculty, administrative staff, and members of the general public. Demonstrated organizational and proofread accuracy. Three to five years work experience, university experience preferred. Ability to rapidly produce accurate work. Ability to handle 150 or more telephone calls per day. Ability to work with a minimum amount of supervision. Clerical testing and three letters of recommendation required.

Administrative Secretary
930010. School of Business. Requirements: High school graduate, associate’s degree preferred. Typing 50 wpm with accuracy. Excellent interpersonal skills; professional appearance; knowledge of office procedures; ability to prioritize and handle multiple tasks; demonstrated written and proofreading skills. Clerical testing and three letters of recommendation required.

Assistant Director
930011. Finance and Technology. Requirements: High school graduate, associate’s degree preferred. Typing 50 wpm with accuracy. Excellent organizational and interpersonal skills; ability to be flexible; must have good background in chemistry, molecular biology and biochemistry. Resume and three letters of recommendation required.

Marketing Assistant
930018. Biology. Requirements: Bachelor’s degree required. Typing 65 wpm with accuracy. Applicant should enjoy working with people of all ethnic backgrounds and interests. Applicant must be a "people person" with good background in the arts very helpful. Applicant should be a self-starter yet a team player. Driver’s license, car helpful. Clerical testing and three letters of recommendation required.

Assistant Director for Alumni Programs
930019. School of Social Work. Requirements: Bachelor’s degree required. Two years of experience in university advancement office; at least two years experience in alumni relations, public relations, sales, or management. Applicant must be expected to candidates who have graduated from Washington University; should have excellent writing, speaking and organizational skills, and be willing to work flexibly as well as being highly professional; Salary is competitive. Application deadline is June 21, 1992. Send resume and three letters of recommendation to: David F. Jones, Assistant Vice Chancellor and Director, Alumni and Development Programs, Washington University, Campus Box 1210, One Brookings Drive, St. Louis, MO 63130-4899.

Director
Center for Engineering Computing. Duties include: Resource planning; managing a computing center. UNIX, Macintosh, and DOS systems dedicated to instructional engineering programs; managing and supervising technical and administrative staff; staff and user training. At least 5 years experience in managing technical support staff required. Experience with Unix workstations and engineering CAD applications will be important assets for the successful candidate. Bachelor’s degree in engineering or computer science required. This position reports directly to the dean of the School of Engineering and Applied Science. Salary will be commensurate with qualifications. To apply, send resume to School of Engineering and Applied Science, Washington University, Center for Engineering Computing, One Brookings Drive, Campus Box 1207, St. Louis, MO 63130-4899.

Medical school openings
The above listing includes only those positions available on the Hilltop Campus. Plans are under way to interview candidates for these positions on each of the three campuses in the record. The medical school now posts positions available at the Offices of Human Resources, Hilltop Campus. Information regarding these and other positions may be obtained at the Office of Human Resources, Alumni Center, Clayton N. McPherson, M.D. (8 a.m. to 5 p.m. Monday through Friday). Interested people interested in applying for these jobs should contact an appointment secretariat with one of the recruiters while visiting the office.