Alternative fuel put to the test

Washington University is among 24 colleges and universities throughout the United States and Canada competing in a contest to develop a clean, efficient engine that will run on natural gas. A team of six student engineers, advised by Richard Rabbitt, Ph.D., assistant professor of mechanical engineering, has redesigned a 1991 GMC Sierra 2500 to run on natural gas, one of the most abundant fuel resources in the United States. The three four-ton rear-wheel drive pick-up trucks that the students revamped was donated by General Motors.

Natural gas has a much higher octane rating — 130 — than gasoline fuel, which tops out at about 95. This allows natural gas engines to run at a higher compression ratio — increasing power output and providing higher fuel efficiency. Today, in the United States alone, more than 30,000 vehicles use natural gas fuel, and several cities, including Los Angeles and St. Louis, are incorporating into their fleets buses that run on natural gas because of the environmental benefit of this clean-burning fuel. The sponsor and participants of the contest are counting on using the knowledge gained in the competition to contribute to the refinement of the technology and development of standardized testing and use of natural gas fuel.

The Washington University team comprises Robert Behnken, a junior in mechanical engineering; Sean Turner, both juniors in mechanical engineering; and Eric Unrath, a junior in chemical engineering. The international competition is sponsored jointly by government and industry, including contributions from the U.S. Department of Energy, Ministry of Energy, Mines and Resources of Canada; and General Motors Corp.

Alternative fiiel put to the test

The Washington University team comprises Robert Behnken, a junior in mechanical engineering; Sean Turner, both juniors in mechanical engineering; and Eric Unrath, a junior in chemical engineering. The international competition is sponsored jointly by government and industry, including contributions from the U.S. Department of Energy, Ministry of Energy, Mines and Resources of Canada; and General Motors Corp.
consumers from shoddy or dangerous products, employees from unsafe workplaces and the environment from unnecessary pollution.

In his book, Eagleton provides in-depth analyses of 12 case studies that epitomize the mutual dependencies of government and business. The topics include lobbying, political action committees, the Exxon Valdez, the Chrysler bailout, the Times Beach (Mo.) dioxin cleanup, foreign policy issues in the United States, airline deregulation, privatization, and government subsidies for the steel, tobacco and sports industries. Eagleton had direct involvement, either on the floor of the Senate or in committee, with most of the cases cited in the book and included others because they deal with controversial issues that will be central to the business-government relationship in the coming decades. In each case, he examines the uneasy compromises hammered out by competing interests.

The text sprang out of a course, Business, Government and the Public, that Eagleton teaches with his colleague and frequent sparring partner Murray Edelman. Professor Edward Mallinckrodt Distinguished University Professor of Political Science at Washington University in St. Louis' John M. Olin School of Business. The class, which students have affectionately dubbed "The Tom and Murray Show" or "Eaglebaum," pits the liberal Democrat from Missouri against the conservative Republican from Texas. It covers the business-government relationship in the United States. It includes 18 years in the U.S. Senate to give his students "some practical insight" into American politics.

The lobbyists

Ask Eagleton to name the factors that have the greatest impact on business and government, and without a moment's hesitation he'll list lobbying and political action committees (PACs). In the mid-1970s some 8,000 lobbyists routinely lugged their briefcases to Capitol Hill. Today that number is at least 25,000, with some experts putting the estimate as high as 60,000.

"Special interests are on the verge of overwhelming the legislative process," he says. "There has been too much acrimony, too much special pleading, to rely on the clout of an individual person to get his point across. This is where the clout of lobbyists comes in. They can articulate the concerns of a client and influence the outcome of legislation that could be very important in the future, could be very important in the future."

Eagleton cites several studies on the growth of PACs, which have become the largest source of campaign contributions in the United States. They raise more money by far than even the political parties. The average citizen might be startled, however, by some of the statistics. In 1989, he and his colleagues at the Washington University School of Engineering and Applied Science examined the types of contributions that PACs made to congressional campaigns. They found that PACs have become the largest source of campaign contributions in the United States. They raise more money by far than even the political parties.

The problems posed by PACs and lobbyists, by airline deregulation and bailouts, by tobacco subsidies and product liability, are all much the same: How do you ensure that private citizens and businesses maintain their right to petition the government and seek redress while also ensuring that government does not succumb to the control of a few special interests? As Eagleton's book makes clear, there are no easy or black-and-white answers. But, he says, no solution to these sticky problems is possible without an informed public.

"The purpose behind my teaching and my book is that some of the young people I reach will be in leadership positions in the future. Maybe a little bit of what we've discussed will give them some practical insight into the business-government relationship. It might get them interested in something about the realities of the American political process, I have failed." — Paul Hacker

Alternative fuel

Theodosios Korokrasitis, Ph.D., assistant professor of mechanical engineering, sponsored a similar performance project when Washington University students designed a car to run on methanol.

"I prefer working with students on larger projects such as these because the exercise gives them a taste of what working conditions are like in the real world," Rabbitt says. "They have to depend on each other's expertise to make their project work. You can see that out of the projects, several different engineering disciplines; they all contribute knowledge that is very valuable as they carry out the projects."

"Grass-roots lobbying is the most effective way to influence members of Congress," he writes. "Most senators and congressmen are not anxious to be written up posthumously as profiles in courage. The lobbyist's task, therefore, is to convince the member that the lobbyist's advice will best serve the client's interests and the member's district. They do that by bombarding the legislator with facts and figures, by sending him or her letters, and by orchestrating phone calls and visits from constituents."

Korokrasitis, one of the most successful of the "Grucci Breed", explained in the book how he gets the job done. Korokrasitis, professor of chemical engineering, sponsored a similar performance project when Washington University students designed a car to run on methanol.

"Our team members represent several different engineering disciplines; they all contribute knowledge that is very valuable as they carry out the projects."

"The increasing expense of getting elected to office is directly linked to the ever-increasing candidate reliance on contributions from PACs," he continues. "If fund-raising pressure load (or are perceived to lead) candidates to tailor their appeals to the most affluent and most narrowly defined interests, then serious questions are raised about the credibility of the candidates who win and represent the interests of sectors of American society."
Arthur Osver with a project in progress. The piece is an acrylic and oil on canvas that he has titled "Nebulon," Italian for the word foggy.

Arthur Osver receives prestigious art award

Though he retired from teaching art 16 years ago, Arthur Osver, professor emeritus in the School of Fine Arts, has hardly retired from producing art. On the contrary, four of his recent paintings have earned him one of the nation’s most prestigious art awards.

Owser, one of five U.S. recipients, was awarded $7,500 from the American Academy and Institute of Arts and Letters. The awards are given annually in recognition of significant achievements in art.

Owser, who retired in 1981 after teaching at the University for 21 years, says he is producing more art than ever since his retirement. “It’s wonderful to have the time to put my ideas and energies into my own work,” he says. “Far from relaxing, I’ve had a great surge of energy and creativity since my retirement.” As proof of his artistic productivity during a time when another in his circumstances might settle back and regard his illustrious career with satisfaction, two of the paintings that secured the award were new (“not hot off the easel,” laughs Owser.) The other two were completed within the last year or two.

Joe Deal, dean of the School of Fine Arts, is convinced that the selection committee was acquainted with Owser’s body of work. “The committee was made up of artists of national and international repute, representing a broad spectrum of contemporary art,” Deal said, “and they were obviously aware of Owser’s overall achievements, though the award is based on current work. This is a very distinguished award for Professor Owser to receive at this point in his career. It’s the greatest kind of tribute not only to his past work but to what he is doing now.”

Owser is in prestigious company. Deal says, noting that the other recipients of the Academy-Institute awards all are well known and have outstanding careers. They are Robert Arneson, Chuck Close, Shirley Smith and William T. Wiley.

Owser has exhibited his works at major museums in this country and in Rome, Tokyo, and Rio de Janeiro. His works are in the permanent collections of major museums including the St. Louis Art Museum, New York’s Metropolitan Museum, Museum of Modern Art, and Whitney Museum; the Chicago Art Institute; the Walker Art Center, Minneapolis; the Philadelphia Academy of Fine Art; and a long list of corporate clients ranging from Abbott Laboratories to IBM to Time Inc.

He was educated at Northwestern University and the Art Institute of Chicago, and has received numerous awards, including the Prix de Rome and two Guggenheim Fellowships.

Artists selected for this year’s awards, given to honor and encourage contemporary artists in their creative work, were chosen from among more than 200 candidates nominated by the Academy-Institute’s membership. The awards were presented May 15 at the Academy-Institute’s headquarters in New York, where the work of the recipients will be on display through June.

Kay Roh memorial fund established

An elegant pirouette, a warm smile, a boundless energy and enthusiasm—as these are a few ways that faculty, students and friends will remember Kay Roh, a sophomore business and political economy major who will graduate summa cum laude. “I do think that what I’m learning in my classes is providing me with the tools to change the things that I see in the world, but change requires more than just understanding. Leadership, the everyday kind of leadership like voting conscientiously or changing a person’s attitude, requires action.”

I want my peers to be aware that, coming out of an American institution of higher learning, we have tools to both make a lot of money and bring about change. I hope that people will at least give serious thought to doing the latter as well as the former.”

A native of Sioux City, Iowa, Skinner isn’t too nervous about being the youngest of four children, Skinner is getting married in June and then moving to Boston to attend Harvard Law School this fall.

In addition to his role as senior class president, Skinner, who has a 3.91 cumulative grade point average out of 4.0, has been involved in a variety of extracurricular activities. He was one of four students to serve on the University’s Committee to Prepare for the 21st Century, which recently released its recommendations in a 20-page draft report with appendices.

Skinner also was president of Lock and Chain, the sophomore social club, and his senior class president will deliver the Class president commencement address May 17.

Skinner also was president of Social Change and Political Economy, a club which he helped found during his junior year, as part of the project and the honorary, and, during his junior year, was chair of Student Life’s Perspectives Page.

Summer schedule

During the summer, the Record will be published monthly. Following May 16, the issues will be dated June 6, July 4 and Aug. 1. The Record will resume weekly publication at the start of the 1991-92 academic year.
Community spirit guides future family doctor

Susan Benfield is one of those people who get involved despite her rigor- ous schedule as a medical student, she has made time to participate in many out-of-class projects. These activities not only have kept her sane through medical school, she says, but also will help her after graduation this spring when she embarks on a career as a family practice physician.

As a first-year medical student, Benfield helped launch the Perinatal Project, which matches Washington University medical students with low-income pregnant teenagers. The medical students visit the teenagers regularly — before and after the babies are born — to provide home-based education and counseling. The project's goal is to decrease the St. Louis infant mortality rate by helping young women achieve healthy pregnancies and have healthy babies. The program is sponsored by the American Medical Student Association and coordinated with People's Health Centers Inc.

"I got most out of it was a friend," says Benfield. She still visits her patient, whose healthy baby boy is now three years old. "I learned about North St. Louis and this mother's neighbor- hood and what kind of pressure she's under from her family, friends and the whole community. It began with me giving her medical information about how to take care of herself and a baby, and has evolved to trips to the zoo or mall and time to just talk." The Perinatal Project will help her become a better physician.

"One of the reasons I'm attracted to family practice is that it takes into account family structure, social back- ground and societal pressures and how they affect health and illness," she com- ments. "It forces you to ask why the patient is not doing what you say or is not getting better. What's going on at home? Can they get the medication? Does it make them sick? Are you prescribing 100 medication they can't afford?"

For example, she says, patients in the Perinatal Project received folic acid supplements, yet often didn't take them. The reason, she learned, is that the pills are big, cause constipation and must be taken three times a day. "We were lucky if they took them once every other day. These are kids. They're not used to that kind of regimen, so they'd take them for awhile and then stop. It's not because they didn't want to do the right thing — they'd just forget. You understand that's going to be a problem and you need to talk to them about it."

Benfield says the Perinatal Project taught her to adjust her expectations to meet the patient's standards, not her own. "I learned that things of tremendous value to me — such as education — didn't hold the same value to my patient. I wanted my patient to finish high school no matter what; the reality was that there was a family at home who needed her there."

Benfield helped run the Perinatal Project for a year. That same year, she also participated in the Youth Health Education Project, a speakers bureau of Washington University medical students who talk at area schools about lung cancer and the dangers of smoking and drug abuse. The American Cancer Society helps with bookings and printed materials. Benfield, armed with specimens of lung cancer and emphy- sema from the School of Medicine's pathology department, typically spoke to three or four classrooms at each of the schools she visited.

"The kids thought it was kind of gross, but they were fascinated. We'd talk about smoking and then branch off into drug abuse. I think what we were doing was important. We weren't going to change all of them, but I hope that one or two who came from a smoking family won't start because of what we showed them."

Benfield also was one of six students from the School of Medicine to complete a four-year rotation in South Africa. For three months she participated in a student exchange program with the University of Witwatersrand School of Medicine, spending six weeks at a hospital in Soweto.

Those six weeks were invaluable for honing clinical skills, she says, because South African physicians rely so little on lab tests to make a diagnos- is. "Their system emphasizes clinical diagnosis, and you'd better know that diagnosis before you order one test or you didn't do your job," she says.

Another advantage she points to is that in South Africa she saw a variety of diseases, including malnutrition, cancer, cooking fire burns, parasites, and infec- tious diseases such as tuberculosis and AIDS. "We saw everything under the sun. We admitted patients, we drew blood, we read our own X-rays. Clinical skills were very important. It was really a good experience — very close to family practice in that it's front-line medicine."

Family practice appeals to Benfield because she likes adult medicine, pedi- atrics and obstetrics. "I want to be able to treat all members of the family. I want to see women during pregnancy. I want to deliver that child, be that child's physician, maybe go to the next generation. She also sees family prac- tice as ideal for community involve- ment because of its focus on preventive medicine and health education.

Following graduation, Benfield will head north to Minnesota, where she will serve a three-year residency at the Saint Paul Ramsey Family Practice Program. — Joni Westerhouse

Campus commuter changes time zones

Although Washington University began as a small commuter college at the end of a cable car line, the founding fathers never would have guessed that someday a student would be commuting from the campus to Massa- chusetts.

But that's just what Zafar Khan has been doing for the entire second year of his Executive M.B.A. program at the John M. Olin School of Business making the 2,000-mile-plus weekly round trip between Springfield, Mass., and St. Louis.

"It's been a real struggle, but I'm really glad that I decided to stick with the program," said Khan, a quality assurance manager at Monsanto's Indian Orchard Plant in Springfield, Mass.

Khan began the two-year execu- tive education program while working at Monsanto in St. Louis, but midway through he was offered a position that required a transfer to Springfield. If he wanted the job, he'd had to quit the Executive program or find some way to come back one day a week for classes. He opted for the weekly commute.

"The job offer was too good to refuse and I really wanted to finish the executive program," Khan said. "A lot of the credit goes to my wife, Soweto."

Khan flew into St. Louis each week on the night before class. His typical schedule involved rushing home and having his wife, Shahnaz, drive him to the airport. Then, Khan kept a second car in St. Louis to get back and forth from the airport — a necessity because he often had less than 45 minutes to catch a plane back to Springfield. His brother, who lives in St. Louis, picked up the car after Khan left and had it waiting for him the next week in an airport parking lot.

Khan and his wife have three children, ages three, six, and nine, and one of his most difficult decisions was when to move the family. He decided to get the children into their new schools as soon as possible and moved the family last fall to a home in suburban Springfield. His regular trips to St. Louis have caused him to miss out on time with his family.

Zafar Khan waits at Lambert St. Louis Interna- tional Airport for his flight home.

"The commuting has been a nightmare," Khan admits. "I've missed flights home due to bad weather and I've had my share of long layovers. There were a lot of birthday parties and other family events I missed. I've had my share of long layovers."

Although Khan's schedule may slow somewhat following graduation, travel is by no means over. The picture. He'll be looking for some way to use up the more than 175,000 miles of frequent flier travel credits he's earned in the last year. Plans call for Khan and his family to travel to Europe, South Africa, Egypt and Yemen, hopefully, no mad dashes to the airport. — Gerry Feeding
Nyhus punts his way to pro football

When Eric Nyhus lived in Maryland as a child he and his friends were die-hard Washington Redskins fans. Playing out in the yard, some would want to be Joe Theismann. Others would choose John Riggins.

Nyhus would be Jeff Haynes, or maybe Mike Bragg, Redskins punters.

"I'd watch games on the television," recalls Nyhus, "and every time the punter came on, I'd set my stop watch and check his hang time," which is the time the football stays in the air.

"Hang time" was not something Nyhus had a lot of while growing up. Nyhus' father, who worked for the State Department, moved the family to such exotic locales as Rio de Janeiro, Guatemala, Paris, Brasilia, Athens, and Madrid, in addition to several state-side tours. The family's longest stint in one place was three years.

Spending much of his childhood overseas, Nyhus developed a passion for the sport Americans refer to as soccer and others call football. Playing against top-notch competition, he became quite adept at soccer and participated for 10 years.

And while he loved watching American football, Nyhus never organized ball while growing up. Late in his junior year of high school, however, he took up the art of punting.

As a hobby.

Every other day, Nyhus would head for a field close to his house and kick a football. Then he'd kick it back in the other direction. He did this alone — for an hour and a half at a time.

"As a hobby." Nyhus explained his "hobby." "This was the only place that encouraged me to give it a try," says the senior who will receive a bachelor's degree in architecture.

"I'll never forget my first chance to play in an organized pressure situation," says the 6-foot-5 Nyhus. "We went over to Central Methodist for a scrimmage. To this day, I can't remember catching the ball. I can't remember putting it. As soon as the ball was snapped, my mind went blank. The next thing I knew, I was looking off to the right. Shank. Three times in a row. I had them ducking over on the bench."

By season's end, Nyhus had made appreciable strides — but his final average stood at a modest 29.7 yards per kick.

So ... by now you're starting to think, there's no chance for these "rags" to be followed by anything remotely resembling "riches." Think again.

This past November, Nyhus was honored as the only punter on Washington University's All-Centennial football team. In February, he caught the attention of the National Football League at its scouting combine in Indianapolis when he shattered the 20-year old hang time record of all-pro punter Ray Guy. For 10 kicks, Nyhus produced an average hang time of 4.8 seconds and netted 47.1 yards per kick. An NCAA Division III All-America selection, he recently signed a free-agent contract with the Tampa Bay Buccaneers and reports to preseason camp in July.

Not too shabby for a punter whose first-year average began with a "2."

Nyhus looks back at the humble beginnings of his freshman year with his head held high. "It was a learning experience. That's the only way I look at it. If I hadn't failed that year under my belt, none of the rest would have followed. I learned to not worry about the rush. I learned to just think and play out of my mind. I became a punter."

Through incessant work and dedication to his chosen craft, Nyhus improved his average to 36.8 yards per punt as a sophomore.

Then, four games into his junior season, came a major turning point in his development. Feeling that Nyhus' talents were ripe for further nurturing, Bear coach Jerry Kindel contacted local resident Larry Swider. A former punter, Swider spent seven seasons in the pros, agreed to take Nyhus under his wing.

"Things started to click when I started working with Larry Swider," says Nyhus, who finished the season with a 40.0 average. "He helped me on subtle technical aspects — lowering my drop, changing the angle of my arm, following through more. He also helped me learn the proper mind-set."

"By about the seventh game of the season, I got up the nerve to ask him how I compared to other punters. He said, 'I definitely think you could go pro.' That's the first time that idea entered my thoughts."

Swider confirmed his diagnosis.

"Eric is a hidden gem," says Swider, the nation's leading punter in 1976 as a senior for NCAA champion Pitt. "He's right on the verge of the next level." Through incessant work, he has a strong enough leg and solid enough mechanics to be a pro.

"Eric was a dominant player at our level — and it showed," Gaich Kindel says. "He's the premier college punter in the country. There are very few punters at any level that can have an impact on the game. I can't begin to count the number of games where Eric put us in the position to win. The punt is the biggest offensive play there is — 35 or 40 yards every time. If you can gain ground every time you execute it, you can change the course of a game."

"He's the epitome of what athletes strive for — and that's daily, weekly and yearly improvement."

Looking back at the advancements he's made in four years, Nyhus is quick to point out what he considers to be a key factor.

"I probably would never be in this position if I hadn't come to a Division III school," he says. Continued on p. 12

Juggler/rock climber stays balanced

Most college students become pretty proficient at juggling studies, sched- ules, work and relationships, but Stuart Johnson has gone further and become expert at juggling the kind of things you see only in a circus — hoops, balls and Indian clubs.

Johnson, an English major who will receive his bachelor's degree magna cum laude, has obviously managed the usual balancing act of juggling very effectively. His excellent academic record and his experience as a public relations intern at the University have landed him a position after graduation editing The Disaster Recovery Journal, a technical trade publication helping companies prevent and recover from flood, fire, earthquake and computer crashes.

He also is coordinating the 44th annual Summer Festival of the Interna- tional Juggler's Association, held on the University campus July 10-12. Johnson expects 1,000-1,500 profes- sional and amateur jugglers from all over the world to converge for the event, where they will attend classes and workshops, take part in competi- tions and performances, and bid at auction on autographed balls and other memorabilia as well as antique and valuable collectibles.

Johnson first became interested in juggling as a youngster when he observed a group that met regularly to practice and instruct each other at a park near his home in Salt Lake City, Utah. Soon he was one of the hobbyists and professional clowns who made up the Saturday afternoon sessions in the park. When he came to Washington University he joined the Juggling Club on campus and served as its president for two years.

Though he has put on public juggling shows at nursing homes and for children's groups, he says performing scares him. "The most important thing I've learned to juggling and other circus arts is its intense concentration and focus, and the sense of physical mastery. It's completely absorbing, both physically and mentally," says Johnson, who also is a competent unicy- clist, and can climb a freestanding ladder. "I really feel rewarded by working to perfect something so imaginative and so much fun as well."

In the last couple of years, Johnson has found a similar appeal in rock climbing. "It requires the same kind of skills, and it's even more intense, both physically and emotion- ally. You have to be absolutely tuned in to your body," he says. Rock climbing, which involves short, steep, technically difficult ascents, attracts people who strive to beat their own records and who, like jugglers, are attuned to individual performance.

"It's completely absorbing, both intellectually and physically," says juggler Stuart Johnson.

Besides the personal achieve- ments he finds in rock climbing, Johnson notes that the sport takes him to interesting and beautiful locations. He has climbed through the winter season break at a cliff formation called Hanco Tanks, which he describes as "gorgeous"; he has also been on climbs in Arizona, Colo- rado and California.

"It's so much fun and rewarding," says Johnson, "that I hope to be hanging on near his term in Utah and Idaho. He is enthusiastic about the geology and natural history that he learns on his climbing expeditions.

While Johnson isn't sure where his career will ultimately take him, it's clear that his juggling skills, both literal and figurative, will stand him in good stead.

— Virginia Perkins
School is vacation for busy neurologist

Each day, Sven Eliasson, M.D., Ph.D., professor and vice chair of neurology at the School of Medicine, helps patients battle disorders of the nervous system, such as Alzheimer’s or Parkinson’s diseases.

But since 1986, Eliasson has spent at least one night every week examining such topics as 1900 Vienna and an individual’s struggle for affirmation as seen through writers of the 20th century. A part-time student in University College’s Master of Liberal Arts (MLA) Program, Eliasson will receive the degree at Commencement May 17.

For the Swedes-born Eliasson, who has always loved liberal arts, particularly history, poetry and the theatre, the medicine/humanities combination is a perfect match.

Being in the MLA Program “has helped me a great deal in the everyday problems I encounter in medicine. I have developed a better way of understanding people’s problems,” says Eliasson, who admits empathy is an invaluable trait for a doctor who counsels and treats patients, teaches clinical neurology to medical students, trains residents and operates a research lab, among other tasks.

Furthermore, being in the program has been just plain fun for the doctor who once aspired to become a history teacher. “It’s a wonderful vacation from everyday life,” says Eliasson. “It’s a tremendous relief for those of us who have major responsibilities to be exposed to entirely different things. Suddenly, you’re in another world. It’s easy to go back to everyday problems. It’s a delight. I wish I had tried it earlier.”

The MLA faculty members, he adds, are exceptional teachers who genuinely listen to their students.

Eliasson believes more medical students and doctors, particularly those in residency training, should take time to pursue interests outside of medicine, such as taking a humanities class, attending a play or even visiting a soup kitchen for the homeless.

“...there’s more to life than learning all parts of the body,” says Eliasson, who has taught an MLA course titled The Aging Brain. How doctors relate to human beings — how they share information with patients — is just as important, he says.

Some doctors, caught up in the pressure to keep up-to-date in their fields, “forget to speak in simple terms” to patients, notes Eliasson. Instead, they “speak in oceans of terminology that only serve to intimidate patients who don’t dare ask his or her simple question.”

Doctors who have multifaceted interests, Eliasson argues, learn how to empathize with others and ultimately enjoy better relationships with their patients.

Eliasson admits that most medical students and residents involved in grueling training aren’t likely to upset their routine for cultural pursuits. But he hopes they will.

“I know the idea is a bit unrealistic,” he says, but some students do manage to “stay in touch with their cultural interests through medical school.” Additionally, many of them are beginning to learn the price paid for being “totally occupied” with medicine, such as failed marriages or a lack of personal relationships, he says.

Eliasson, who received a medical degree and doctorate from the University of Lund in Sweden, isn’t about to give up his quest for learning after May 17. He plans to pursue a master’s degree, and perhaps, even a doctorate, in history. “It’s an excellent way of combining history and medicine,” he says. He finds medical legal history, which examines how sick criminals have been treated in the legal system, most intriguing.

Learning never ends for Eliasson.

— Carolyn Sanford
Neck injury fails to stop ambitious business student

Washington University senior Kellie Jo Station has a motto: the key to success is planning. It is her ability to plan, coupled with steadfast determination and a supportive family, that has enabled Station to earn 120 credits in four years from the John M. Olin School of Business — despite missing a semester of classes last spring due to debilitating neck injuries suffered in a 1989 car accident.

Station, a finance major with a minor in economics, has earned enough credits to graduate in May. She will continue her studies this summer, however, to complete the required courses for the business school’s new Honors Program, which specifies that participating seniors have more than 120 credits to graduate.

Station’s injury recovers from a severe accident to a succinct job after graduation began on June 20, 1989. While traveling on Skinker Boulevard to her summer job as a loan officer at United Postal Savings, her 1981 Ford Escort was sideswiped behind, leaving little damage to her car. The extent of the accident, however, resulted in a whiplash injury. Station didn’t experience any pain until that night, “I didn’t think it was that serious at first,” says the Omaha native, who was making a long-distance phone call, that Station go to the emergency room, which she did the next day and was there for many long medical. Students were coming in to look at me. The doctors showed me my X-ray and said the bones in my neck were further apart than they should have been — a situation endangering my spinal cord. They told me I was really lucky to be alive. I was on the verge of tears.”

Station, who was the University’s first group of John B. Ervin Scholarship winners, was fitted for a neck brace and returned to her off-campus apartment. The next day her parents, Larry and Anna Station, drove her home to Omaha. They had to drive the brace all summer and returned to Washington last fall. She also has taken 18 credit hours this semester and was able to obtain extra credit last fall through an advanced placement program in history.

Even her resume-writing campaign paid off. Last summer, she worked as a summer analyst for Paine Webber Inc. in New York City. This fall after a relentless schedule of interviews, she received three job offers. After her Honors Program class ends in August, she will be available as a corporate manage-ment associate at First Wachovia Bank of Atlanta.

Station, who wore a brace from 1989 to 1991, continues to have problems with her neck, which isn’t as agile as it was before. But a neck injury isn’t about to diminish her ambition. After working awhile, she hopes to pursue a long-term goal possibly an M.B.A. through a university joint degree program. An “entre-preneur at heart,” she ultimately hopes to establish her own consulting firm. Station says she has learned an important lesson from the accident. “I learned that if you want to do some-thing you can do it, no matter how impossible it seems,” she says. “Once you have a goal in sight, you can accomplish anything.” — Carolyn Sanford

Senior brings global understanding home

Andrew Selee’s T-shirt explains it all. It reads “influencing family.” But the words don’t speak a photograph of parents and siblings, instead, it reads below a Silk-screened image of the planet Earth.

During his four years as an undergraduate at Washington University, Selee has demonstrated a deep commit-ment to promoting greater global interpersonal understanding. The Latin American studies major is active in two campus groups, Action for Peace and the Washington Organization for Changing Men. And through his involve-ment with the Campus Y, an affiliate of the YMCA and YWCA, he has managed to visit a great many of his “immediate family members’ around the globe.

As a freshman, he was chosen as a delegate to a YMCA-sponsored youth conference in Ecuador. As a sopho-more, he was one of five U.S. delegates to attend an international youth meeting held in Ankara. In his junior year he spent three weeks in China as part of a study and friendship meeting between American and Turkish YMCA members. And, as a co-chair for an upcoming international youth meeting to be held in Seoul, South Korea, Selee has twice traveled to Geneva, Switzerland, and other cities to help people who are helping organize the event.

The Washington, D.C., native seen as a key role in decision making and commit-ment to social change naturally. His mother and father are credit mem-be rs in the World Council of Churches. His late father worked in a government agency to promote self-sufficiency for Native Americans and his mother, a nurse who hopes to move to India to teach, is traveling the U.S. in an RV.

“Some people say it’s a daunting task for a student, but I have no problem with it,” adds, “I don’t think education is really about relationships, about fears. This global movement is so important because the issues are all connected.”

As co-chair of the YMCA’s World Youth Forum, to be held Aug. 21-23 in Seoul, he has spent a year planning the event with colleagues from Sri Lanka and Kenya. Some 100 participants from 70 to 90 countries will attend.

“The forum tries to help young people interpret what their responsibili-ties are in a world in which poverty and war are everyday realities,” he says. “We are promoting a cross-cultural approach that people, on that scorecard, an A+ is — André Hecker

SAY NO TO WAR THE PERSIAN GULF CALL CONGRESS NOT

With all of his travels and commu-nity involvement, Selee has been able to make friends in independent trips to Latin America and a year of volunteer work with the legal aid service in Washington, D.C., — it may seem that Selee didn’t have much time for academics.

“I probably’m not the easiest student for a professor to have,” he laughs. “I always got my work done, but sometimes it was late.” But, he adds, “I don’t think that was always measured in how successful academics are. I think we need a measure of a deeper understanding of life.”

On that scorecard, an A+ is definitely in order.
Romancing the stingray: mating rituals electrifying

Along a remote stretch of Mexican coastline is the bioluminescent circle of a quiet bay, round stingrays find romance in the waves. A keen sensory system, known as electroreception, alerts the animals to potential mates during courtship and reproduction. Timothy Tricas, a sensory neurobiologist at the School of Medicine, observes shark behavior. He is interested in their natural habitat during reproduction and describes his preliminary findings as "incredible and exciting." Though it has long been known that rays, sharks and skates — collectively called elasmobranchs because they have cartilage instead of bone possess an ability to sense electric fields, until now no one has made the connection between this electric sense and the social behavior of these fishes, says Timothy Tricas, Ph.D., a sensory neurobiologist at the School of Medicine. Tricas has spent 20 years observing sharks and rays and describes his preliminary findings as "incredible and exciting." Tricas monitored the female's electric field and found that its intensity was modulated by breathing: When the fish opened its mouth to breathe, the field expanded around the animal, and when its mouth was closed the field dropped. He recorded the wave forms, which has never been done in the wild, for use in future play-back experiments in the ocean and in the laboratory.

Like the low-level currents they produce and the fact that elasmobranchs can sense are extremely weak, the idea that these fish can detect weak electric fields has never been shown to be scientifically conclusive. "That's primarily because there has never been a finding of reproducing population of elasmobranchs," adds. "All forms of sea life put out hormonal signals that females release in the wild." Tricas monitored the female's electric field and found that its intensity was modulated by breathing: When the fish opened its mouth to breathe, the field expanded around the animal, and when its mouth was closed the field dropped. He recorded the wave forms, which has never been done in the wild, for use in future play-back experiments in the ocean and in the laboratory.

Like the low-level currents they produce and the fact that elasmobranchs can sense are extremely weak, the idea that these fish can detect weak electric fields has never been shown to be scientifically conclusive. "That's primarily because there has never been a finding of reproducing population of elasmobranchs," adds. "All forms of sea life put out hormonal signals that females release in the wild." Tricas monitored the female's electric field and found that its intensity was modulated by breathing: When the fish opened its mouth to breathe, the field expanded around the animal, and when its mouth was closed the field dropped. He recorded the wave forms, which has never been done in the wild, for use in future play-back experiments in the ocean and in the laboratory.

Like the low-level currents they produce and the fact that elasmobranchs can sense are extremely weak, the idea that these fish can detect weak electric fields has never been shown to be scientifically conclusive. "That's primarily because there has never been a finding of reproducing population of elasmobranchs," adds. "All forms of sea life put out hormonal signals that females release in the wild." Tricas monitored the female's electric field and found that its intensity was modulated by breathing: When the fish opened its mouth to breathe, the field expanded around the animal, and when its mouth was closed the field dropped. He recorded the wave forms, which has never been done in the wild, for use in future play-back experiments in the ocean and in the laboratory.

Like the low-level currents they produce and the fact that elasmobranchs can sense are extremely weak, the idea that these fish can detect weak electric fields has never been shown to be scientifically conclusive. "That's primarily because there has never been a finding of reproducing population of elasmobranchs," adds. "All forms of sea life put out hormonal signals that females release in the wild." Tricas monitored the female's electric field and found that its intensity was modulated by breathing: When the fish opened its mouth to breathe, the field expanded around the animal, and when its mouth was closed the field dropped. He recorded the wave forms, which has never been done in the wild, for use in future play-back experiments in the ocean and in the laboratory.

Like the low-level currents they produce and the fact that elasmobranchs can sense are extremely weak, the idea that these fish can detect weak electric fields has never been shown to be scientifically conclusive. "That's primarily because there has never been a finding of reproducing population of elasmobranchs," adds. "All forms of sea life put out hormonal signals that females release in the wild." Tricas monitored the female's electric field and found that its intensity was modulated by breathing: When the fish opened its mouth to breathe, the field expanded around the animal, and when its mouth was closed the field dropped. He recorded the wave forms, which has never been done in the wild, for use in future play-back experiments in the ocean and in the laboratory.

Like the low-level currents they produce and the fact that elasmobranchs can sense are extremely weak, the idea that these fish can detect weak electric fields has never been shown to be scientifically conclusive. "That's primarily because there has never been a finding of reproducing population of elasmobranchs," adds. "All forms of sea life put out hormonal signals that females release in the wild." Tricas monitored the female's electric field and found that its intensity was modulated by breathing: When the fish opened its mouth to breathe, the field expanded around the animal, and when its mouth was closed the field dropped. He recorded the wave forms, which has never been done in the wild, for use in future play-back experiments in the ocean and in the laboratory.
Detecting a tailor

New blood test for prostate cancer may become mammogram for men

A simple blood test is the most accurate single method for detecting prostate cancer, according to a study of nearly 2,000 patients reported in the April 25th issue of the New England Journal of Medicine.

The test may make it possible to diagnose prostate cancer much earlier than ever before, say physicians at the School of Medicine and Barnes Hospital. The ten-minute test measures levels in the blood of prostate-specific antigen (PSA), a protein produced only in the prostate gland. Higher-than-normal concentrations of PSA are an indication of prostate disease. PSA has been used to monitor the progress of prostate cancer treatment, but this is the first large study indicating that it is effective as a screening tool.

Results from the first two years of a five-year study show that the PSA blood test is more accurate than either rectal examination or ultrasound, and more effective when used in combination with those techniques, says principal investigator William J. Catalona, M.D., chief of the department of urologic surgery at the School of Medicine and Barnes Hospital. When used along with rectal examination — traditionally the gold standard for diagnosing prostate cancer — the PSA test showed much better results than either technique alone.

"Our results add to the evidence that PSA can detect prostate cancer in its earliest stages is potentially very significant," says Catalona. "We hope that the PSA blood test will be similar in its impact to the mammogram in women," says Catalona.

"We'd like to see all men, beginning at age 50, have their PSA levels checked at least annually as a screening test for prostate cancer. Our data show that even when a man evaluates to be a PSANegative on a routine prostate cancer screening, if he has a high PSA level, his PSA may indicate he has prostate cancer. It is not uncommon for patients who have had a prostate cancer diagnosis to find out it was missed on their PSA test."

Catalona and his colleagues measured PSA levels in 1,053 men enrolled in the study. Of those men, 10 percent had abnormal PSA levels, about a sixth had findings that would lead to a biopsy, and about half the men who had elevated PSA levels but negative biopsies could have had a PSA test based on the findings of the biopsy. In this country, prostate cancer is the most common cancer in men over 50 and affects nearly 2,000 deaths each year. According to Catalona, PSA levels are an indication of prostate cancer in the sample study would have been missed.

Prostate cancer is the most common cancer in men over 50 and affects about one in six men. PSA levels are an indication of prostate cancer in the study sample would have been missed.

"Prostate cancer is the most common cancer in men over 50 and affects about one in six men. PSA levels are an indication of prostate cancer in the study sample would have been missed.

"We hope that the PSA blood test will be similar in its impact to the mammogram in women," says Catalona. "We'd like to see all men, beginning at age 50, have their PSA levels checked at least annually as a screening test for prostate cancer. Our data show that even when a man evaluates to be a PSANegative on a routine prostate cancer screening, if he has a high PSA level, his PSA may indicate he has prostate cancer. It is not uncommon for patients who have had a prostate cancer diagnosis to find out it was missed on their PSA test."

Catalona and his colleagues measured PSA levels in 1,053 men: 85 were biopsied and 19 (22 percent) had cancer. Overall, 37 of the 112 men who had elevated PSA levels but negative biopsies could have had a PSA test based on the findings of the biopsy. In this country, prostate cancer is the most common cancer in men over 50 and affects nearly 2,000 deaths each year. According to Catalona, PSA levels are an indication of prostate cancer in the study sample would have been missed.
A regular exercise program can lower the amount of fat in the blood stream and possibly reduce the chances of developing coronary artery disease, report physicians at the School of Medicine.

Two separate studies showed that exercise can favorably influence levels of lipoproteins, fat-carrying particles that are considered crucial in the development of arteriosclerosis. The work was presented May 3 at the annual meeting of the American Federation of Clinical Research in Seattle.

"If you go through a training program, it's likely that blood lipid levels will go down but if you stop exercising your levels will go back up," says George Mankowitz, director of the University's Lipid Research Center. "So, you have to exercise and maintain that exercise on a steady basis."

In one study, Keith Mankowitz, M.D., a research fellow in the center's laboratory, recruited eight recreational runners and had them stop training for 10-22 days. The runners, whose average age was 34, were men who ran an average of 35-40 miles per week and had normal lipid levels. All received dietary counseling on how best to reduce cholesterol. They were asked to continue maintaining their normal body weight, but they were not allowed to cut back on eating their "normal" diet.

At the end of the study, the men were tested for total cholesterol and lipoprotein levels. Results showed that cessation of exercise resulted in increases in several lipoproteins in plasma, among these an 18 percent increase in mean levels of lipoprotein A, also known as Lp(a), which is atherogenic, meaning strongly associated with premature coronary artery disease and stroke. "Exercise may favorably alter the blood lipid levels of people at risk for heart disease," Mankowitz says.

"Lipoprotein A is a known coronary risk factor, and several studies have proven that it has some value in forecasting the likelihood of developing coronary disease. Our results indicate that exercise may be helpful in reducing that risk caused by high lipoprotein A levels," Mankowitz says.

A second study examined the effects of exercise on chylomicron and chylomicron remnant levels in six healthy male recreational runners. Chylomicrons are small particles of fat released into the blood stream immediately after a meal. Chylomicron remnants are partially degraded chylomicrons that circulate in plasma for several hours after the meal. Many doctors believe chylomicron remnants may be an independent risk factor for coronary artery disease, Mankowitz says, because certain people with abnormally high blood levels of chylomicrons have increased incidence of coronary disease and peripheral vascular disease.

For the study, the runners were asked to increase their training by 35 to 75 percent per-mile-per-week training regimen for 16-22 days. They ran a treadmill test to confirm the level of training.

Both before and after they stopped exercising, the volunteers were asked to drink a milkshake containing 100 grams of fat and 120,000 units of vitamin A. The vitamin A labeled the fat in the milkshake, allowing the scientists to know how much was converted to chylomicrons and chylomicron remnants.

"Previous studies of dietary-derived lipoproteins have shown that exercise affects the metabolism of chylomicrons, but those particles are not suspected of being atherogenic, he points out. This is the first study indicating that exercise reduces both chylomicrons and atherogenic chylomicron remnant particles.

Schoolfield believes these studies offer scientific proof of what many physicians have believed all along, that exercise is important in coronary prevention. "But they also show that the beneficial effects of exercise decay rapidly, so it's important to stick to the training program."

Edison foundation donates $150,000 to Medical Scientist Training Program

The Harry Edison Foundation has donated $150,000 to the Medical Scientist Training Program (MSTP) at the School of Medicine.

Chancellor William H. Danforth announced the gift, which will be used to establish a scholarship in the name of Jerome Frances, M.D., clinical professor of ophthalmology at the School of Medicine.

"We are truly grateful for the Harry Edison Foundation's vision and for its commitment to educating future physicians and scientists," says Danforth. "Especially, I am pleased at the recognition of a very distinguished physician, Dr. Jerry Fiance."

The Fiance Scholarship will support one student throughout his or her MSTP training at the School of Medicine. Students in the program receive M.D. and Ph.D. degrees after six years of study.

"Washington University's MSTP is the best program of its kind in the nation," says William A. Peck, M.D., vice chancellor for medical affairs and dean of the School of Medicine. "It is a veritable wellspring of talented individuals who are making important contributions to medical knowledge in the future. By their commitment, the Edison Foundation will assist us substantially in making a fine program even greater."

Washington University's MSTP, which began in 1968, is the largest MSTP in the United States. The National Institutes of Health has funded 29 such programs nationwide. Directed by Carl Frieden, Ph.D., the University's MSTP is considered one of the most successful training programs in the U.S., with more than 80 percent of its graduates entering independent careers in research.

Cogan award presented to Jay Pepose

Jay S. Pepose, M.D., Ph.D., associate professor of ophthalmology and visual science at the School of Medicine, recently received the Cogan Award for his outstanding contributions to ophthalmic research.

Pepose is the fourth scientist to receive the award, which is presented annually by the Association for Research in Vision and Ophthalmology (ARVO), an international society of vision scientists. Established in 1988 to honor ophthalmologist David G. Cogan, M.D., the award recognizes young researchers who have made significant contributions to understanding disorders of the human eye and visual system. Researchers are nominated by their colleagues and selected by a panel of distinguished scientists.

Pepose, who is also assistant professor of pathology, studies infections and inflammatory diseases of the eye. His pioneering studies of the ophthalmic manifestations of AIDS demonstrated that the cotton-wool spots that affect the vision of many AIDS patients are caused by microwaves, lesions not cytomegalovirus (CMV) infection of the retina. More recently, he discovered that multiple co-infections in the retinas of AIDS patients, such as HIV and CMV, may lead to retinal death and blindness because the viruses activate each other's replication.

Pepose joined the School of Medicine faculty in 1986 as an associate professor of ophthalmology and assistant professor of pathology. He has been medical director of the St. Louis Eye Bank since 1989.

Fat-lowering benefits of exercise last only as long as the workouts

School of Medicine
Three biology students receive Specter prize for outstanding achievement

Three graduating seniors in biology have been honored with the Marian Smith Specter Prize in Biology for 1991. John Lehman from Belleville, Ill., Scott Lunin from El Toro, Calif., and David Miller from El Toro, Calif., are recipients of the prize, which is given annually to graduating biology seniors who exhibit academic excellence and outstanding undergraduate achievement. The three received their awards during a reception May 14. The Specter Prize was established in 1974 in memory of Marian Specter, a 1938 graduate of the University. Specter studied zoology here under Victor Hamburger, Ph.D., who is now Edward Mallinckrodt Distinguished Professor emeritus of biology. Lehman participated in Hamburger's highly acclaimed research in embryology. Lehman worked with Richard Gross, M.D., Ph.D., associate professor of medicine, pharmacology and chemistry, in examining the effects of several metabolites that accumulate during heart attacks on the physical and chemical properties of model membrane systems. Lehman confirmed that some membrane metabolites that accumulate during heart attacks can have dramatic effects on the motional characteristics of a group of aggregated lipids in model membrane systems. He further showed that the motional alteration seen in heart disease is dependent on the chemical identities of both host and guest constituents in a way that is predictable from conformational analyses of each structure. According to Gross, Lehman's research illustrated the importance of phospholipid diversity as a key aspect that determines membrane physical properties in both normal and disease states of the heart.

Lunin's thesis addressed the functional significance of specific, specialized contacts in the nervous system through which neurons and glial cells (progeny) to another (postsynaptic). He first developed a method that allowed him to visualize synapses in their pre- and postsynaptic components. He then created novel "mixed" synapses by manipulating various combinations of pre- and postsynaptic components into contact with a tiny glass probe. By comparing functional properties of different mixed synapses, Lunin showed for the first time that certain function of synapses is mediated by the postsynaptic cell. Lunin's mentor was Robert Wilkinson, Ph.D., assistant professor of cell biology and physiology. Miller's honors project consisted of scholarly research on the general subject of animal research; the end product was a 242-page comprehensive paper, "Transformations in the Animal Research Environment." His research involved an interview with veterinarians, biologists, and university academic administrators and animal activists in St. Louis, Houston, Boston and San Francisco. Miller also covered the historical, regulatory, political, scientific, ethical, and social pressures surrounding animal research, and how the modern animal rights movement has affected biomedical research. Miller's honors project mentor was Jack R. Hessler, assistant professor of social work and adjunct professor of sociology, who also presented the Sigma Xi Honorary Lectureship at the annual meeting of the Council of Representatives of the Sigma Xi Honorary Science Society last fall. Miller has made strong contributions to Sigma Xi and has the potential of future contributions to Sigma Xi in the future.

Washington University faculty and staff make news at home and around the world. Following is a digest of media coverage they have received in recent weeks for their scholarly activities, research and general expertise.

"Illness has confined his body, but in his novels, his wild and wicked imagination runs free," says Gary L. Trick, M.D., professor of ophthalmology and visual science. Trick believes visual complaints of Alzheimer's disease are often dismissed because of the dementia associated with the disease. Using a story from Rolling Stone, Trick highlights the very common visual complaints patients may have in the early stages of Alzheimer's disease. He suggests that patients be referred to their eye doctor to assure that their vision is not being impaired by vision-threatening diseases such as cataracts or diabetic retinopathy. Trick also highlights the need for Alzheimer's disease patients to be referred to a neurologist for the evaluation of vision complaints. Trick also points out the importance of professional and personal history in evaluating Alzheimer's patients because these patients may have a known history of visual complaints.

"Though students must read 250 to 350 pages a week, they bombard Kornsbleh's office with requests for more," says the March 21 issue of Rolling Stone magazine that lists Mark Kornsbleh, Ph.D., assistant professor of history, in its "honor roll of top profs from around the country." According to Rolling Stone, Kornsbleh's "well-paced, well-tempered academic centers the student on an emotional journey with intriguing students who examine participatory democracy, social change and politics. Students interested in race-class-gender studies are especially interested in Kornsbleh's movements ... Students lucky enough to get a seat in the crowded classes leave Kornsbleh's course with a picture of modern American history."
May 16-20

Thursday, May 16
10 a.m. Department of Neuroscience Program Thesis Defense, "Calcium Currents in Retinogeniculate Neurons and Thalamocortical Neurons," by Joe Schroeder, WU graduate student. Room 620 McDonnell Medical Sciences Bldg.

Noon. Dept. of Genetics Seminar, "DNA Binding and Unwinding by the EcoRl Helicase," Tim Lehman, WU Dept. of Biochemistry and Molecular Biophysics. Ron 404 McDonnell Medical Sciences Bldg.

4 p.m. Dept. of Pathology Seminar, "Integrating Immunological Responses in Normal and Neoplastic Tissues," Mary Zuter, WU Dept. of Pathology. Third Floor Auditorium, Children's Hospital, 400 S. Kingshighway Blvd.

Friday, May 17
8 a.m. Division of Endocrinology and Bone Metabolism Magnetic Resonance Imaging, will feature invited papers by Robert S. Balaban, MD, and Frank P. Ingold, PhD. Room 417, Children's Hospital, 400 S. Kingshighway Blvd.

9:15-10:30 a.m. Pediatric Grand Rounds, "Neonatal Neuroaxial Block," William J. Keenan, prof. of pediatrics, St. Louis U. School of Medicine, and director, Division of Neonatal Perinatal Medicine, Cardinal Glennon Hospital. Clifton Auditorium, 4950 Audubon Ave.

10:30 a.m. Division of Cardiology, Surgey Professor F. Griffith Pearson, prof. of surgery, of University of Toronto. Pearson will review cardiovascular cases. West Pavilion Amphitheater, Barnes Hospital. All members of the medical profession are invited to attend.

Noon. Division of Cardiology, Surgery Professor Vitezslav Orel, director, Mendel Museum, and Essence of Gregor Mendel's Discoveries," 458 Louderman Hall. For info., call 889-6530.

The annual "Razzamajazz" class costs $15 for Washington University students and $25 for non-students. For the week extension classes each cost $22 for students and $27 for non-students. To register or for more information, call 889-5100.

May 18
9 a.m. Dept. of Medicine Seminar, "Genetic Epidemiology of the Pulmonary Hamartoma: Heterogeneity in the Kindred," by T. J. S. Colvin, prof. of medicine, St. Louis U. Medical School.

Noon. School of Medicine Transplant Seminars, "The Scientific Literature of Organ Specific Autoimmunity," Kenneth S. Trigg, MD, PhD. Third Floor Auditorium, Children's Hospital, 400 S. Kingshighway Blvd.

5 p.m. Division of Hematology-Oncology, "Mutation Analysis of Adenosine Deaminase Genes in X-Linked Severe Combined Immunodeficiency," by J. A. Moyer, visiting prof. of surgery and chair, Dept. of Surgery, St. Louis U. School of Medicine.

Saturday, May 19
8:45 a.m.-5 p.m. Dept. of Chemistry Presents the Fifth Washington University-ENI/Emeril Electric Co. Symposium on Nuclear Magnetic Resonance, which will feature invited papers by Robert S. Balaban, National Academy of Sciences; Wolf-Dieter Freyer, prof. of chemistry, Chalmers University of Technology; Brian Palmer, prof. of biochemistry, Case Western Reserve University; and Hari S. Venkatachalam, prof. of chemistry, University of California, San Francisco. Room 522 Buishel Hall.

5 p.m. Dept. of Biophysics Seminar, "Alpha bet and Gammadia T Cells in Marine Invertebrates," Vicente Soto, visiting prof., and Derek Mason, Dept. of Immunology, St. Jude's Children's Research Hospital. Fourth Floor Auditorium, Children's Hospital, 400 S. Kingshighway Blvd.

EXHIBITIONS

May 16-20

"Razzamajazz." An hour-long class, meets from 5:30 to 6:30 p.m. Mondays and Wednesdays in Karl Umbach Hall.

Campus Y offers summer classes

This summer, members of the University community can practice relaxation techniques before the hustle and bustle of the fall begins. "Meditation" is one of three summer classes offered by the Campus YMCA-WYCA.

"Razzamajazz," an hour-long class, includes stretching, cardiovascular conditioning and body toning exercises. Certified instructor Anita Thomas Vea will teach the class, which meets from 5:30 to 6:30 p.m. Mondays and Wednesdays in Karl Umbach Hall.

People can enroll for several short sessions or the entire summer, May 20-Aug. 16.

Session I, a three-week class, runs from May 20-June 7. Session II, a three-week class, runs from June 10-July 12. Session III, also a five-week class, runs from July 15-Aug. 16.

"Basic Auto Care," a five-week class, runs from 6:30 to 7 p.m. Wednesdays from June 10-July 12 in the Campus Y. Students work on their cars at the Mallichord Center, leading docks.

"Meditation" meets 7 to 9 p.m. Thursdays from June 13-July 11 at Six International House.

The annual "Razzamajazz" class costs $15 for Washington University students and $25 for non-students. For the week extension classes each cost $22 for students and $27 for non-students. To register or for more information, call 889-5100.