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Family, friends gather as some 2,580 students graduate

Washington University will bowser degrees on some 2,580 students during the 130th Commencement ceremony on Friday, May 17. The academic procession will start at 8:30 a.m. in Brookings Quadrangle. In case of rain, the ceremony will begin at 11 a.m. at the St. Louis Arena, 5700 Oakland Ave.

Of the candidates, 1,306 are undergraduate students and 1,213 are graduate students. Candidates for the doctoral level number 45 for the doctor of philosophy degree in the Graduate School of Arts and Sciences; 18 for the doctor of science degree in engineering; 199 for the doctor of law degree; 90 for the doctor of dental medicine degree; and 113 for the doctor of medicine degree.

The 304 graduates who received degrees in August 1990 and the 455 graduates who received degrees in December 1990 have been invited to participate in the Commencement exercises. Alumni of the class of 1941, who will be celebrating their 50th-year reunion May 17-19, also have been invited to march in the procession.

The 130th Commencement will feature Ronald H. Coase, renowned economist, as the commencement address. The economics and political economy major will discuss "Critical Thought and Critical Action.

It's a gas!

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 Rabbit, Ph.D., assistant professor of mechanical engineering, has redesign ed a 1991 GMC Sierra 2500 to run on natural gas, one of the most abundant fuel re sources in the United States. The three-fourths ton rear-wheel drive pick-up truck 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 a commercially viable fuel for use in mass-produced vehicles.

The marriage of business and government intervention in private business decision-making is that, when asked, any businessman is dead set against it—dead set against it, that is, except in times of emergency, when the public is asked to do his bidding—men to identify who most epitomized American get-up-and-go, American ingenuity, and American guts in the 1980s, and odds are the answer would be Lee Iacocca. Yet, it was Iacocca, who masterminded Chrysler's effort to receive a federal government bailout. Iacocca, perhaps more than any other businessman, understands that the public will support the government intervention in the world of congressional decision-making. The Washington University team submitted a proposal last summer to the U.S. Department of Energy; Ministry of Energy and Mines of Canada, and General Motors Corp. Argonne National Laboratory and the Society of Automotive Engineers (SAE) have organized the event.

Laclede Gas Co., St. Louis, has assisted the Washington University School of Engineering by providing compressed natural gas and technical advice on the fuel characteristics.

The competition began May 17 with an emission test at the National Institute for Petroleum Energy Research in Bartensville, Okla. The rest of the competition will be held at the University of Oklahoma, Norman, the host university. Between June 7 and June 11, the student team will compete in oral presentations, design, acceleration, emissions control, exhaust noise, hot and cold starts, load pulling, endurance, fuel economy and durability tests. Although the competition is not a race to see how much this competition will be held at the University of Oklahoma, Norman, the host university. Between June 7 and June 11, the student team will compete in oral presentations, design, acceleration, emissions control, exhaust noise, hot and cold starts, load pulling, endurance, fuel economy and durability tests. Although the competition is not a race to see how much faster each engine can go, the sponsors are counting on using the competition to help improve the engines. The competition is open to both gasoline and diesel engines.

The Washington University team comprises Robert Behreken, a junior in mechanical engineering, Jamal Hamedee, a senior in electrical engineering; Julie Santon, a senior in engineering and policy, Mark Schmidt and Sean Turner, both juniors in mechanical engineering; and Eric Unrau, a junior in chemical engineering.

The Mighty Mississippi Concert Band of St. Louis will perform under the direction of Dan Presgrove, director of instrumental music. The 80-member band will sing "America the Beautiful" and "The Alma Mater."

Following the Commencement exercises, the deans of various divisions will hold receptions where diplomas will be distributed. Brunch will be available for members of the graduating class, their families and friends. For reception locations, see the Commencement calendar on page 12.

Heading home:

Ark., help their daughter, Jennifer, a sophomore, move back home for the summer.
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 Jackal Raid, the Chryslar bailout, the Times Beach (Mo.) cleanup, foreign oil imports to 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 springs out of a course, Business, Government and the Public, that Eagleton teaches with his colleague and frequent verbal sparring partner Murray Weidenbaum, Ph.D., Edward Mallinckrodt Distinguished University Professor of Economics at Washington University in St. Louis, and John M. Olin School of Business. The class, which students have affectionately dubbed "The Tom and Murray Show" or "Eagblawg," pits the liberal Democrat from Missouri against the conservative Republican from the South, who was the chief architect of Reaganomics.

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 is a certain elitism by which these clients can dispatch a lobbyist out of Washington who will be able to keep growing. After all, "lobbying is one of the most protected institutions in the United States," Eagleton points out. "The right politicians to petition the government are right there in the Constitution. What's more, lobbyists provide useful, even necessary, services to harried members of Congress and their staffs. They sift through the barge loads of paper produced daily in Washington, and members are aware of the information that will affect the citizens back home. They help draft legislation. They raise campaign funds. And, when legislation is proposed that would affect a client's interest, or diminish their scope, lobbyists are quick to muster their considerable power to put a stop to it." No wonder that Eagleton says that an experienced lobbyist can accurately predict the position of 90 percent of the Senate on a given floor vote. All it takes to win one for a client is to influence that undecided 10 percent.

"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 is correct and that these are the members' district. They do that by bombarding the legislator with facts and figures, by showing up in his office, by delivering letters, and by orchestrating phone calls and visits from constituents."

Tom Korologos, one of the most successful of the "Gucci Guild" breed, explained in the book how he gets the job done. Korologos, president of Timmons and Company, is often referred to as the "11th senator." When the Senate was due to vote on dismantling a weapons system made by one of his clients, he compiled data on where every single component — from wiring to radios to tires — was made. When he learned that a particular senator hadn't decided how to vote, Korologos buttonholed him, notebook in hand, and presented figures on how many jobs and dollars were at stake in the senator's state, which happened to be where the tires were manufactured. The senator voted to keep the system. A few weeks later, he introduced Korologos to his wife as the man "who saved me from voting against our constituents."

"Most of our successes are negative successes in blocking something," says Korologos, who exclusively lobbies the Senate. "Congress does two things best — nothing and overreact. When Congress overreacts, client, you've got a problem. When they do nothing, client, you're winning. Negative successes means stopping tax increases, stopping over-regulation, delaying what a regulatory bureau crat who's never been in business is trying to perpetrate on you." The big PAC attack

And then there are political action committees. The number of PACs, which raise money to influence the outcome of elections, has skyrocketed. In 1974, Eagleton points out, there were just 689 registered PACs. By 1988, that number had jumped to 4,268. There are PACs that promote the political interests of labor unions, PACs that raise money to elect legislators friendly to particular business interests, and PACs whose sole purpose is to promote ideologies, such as abortion rights or animal welfare. Individual politicians even organize their own PACs to promote their careers.

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 average citizen might be startled, however, by some of the statistics Eagleton cites. For example, Democrats have been able to attract much more PAC money than Republicans. In 1988, 62 percent of all PAC money raised went to Democrats, PAC money also heavily favors incumbents, especially in the House. Almost 77 percent of PAC money goes to incumbents.

Alternative fuel

engineers and designing the complexed natural gas engine and fuel system. They made many distinct changes to the truck, among them the addition of turbo chargers to pump more air into the engine and inter-cool en to increase the density of air going into the engine, necessities for efficient use of natural gas fuel. They raised the compression ratio, redesigned the ex- haust and muffler systems, replaced the carburetor with a customized fuel mixture system; and completely changed the fuel system. The engineers added four special tanks beneath the truck to hold enough natural gas for the truck to travel in excess of 350 miles per fill-up. They linked a laptop personal computer to the engine's computer system, creating an "engine map" that gives a quick appraisal of their redesign's performance.

Rabbit has advised several national and international student competitions in recent years. In 1990, he had...
Robert A. Skinner has a message for his fellow graduates about the future, and spends change.

"We learn in college the best ways to understand the world, but action is required to effectively change it," says Skinner, who as senior class president will deliver the student remarks during Commencement May 17.

The title of his talk, titled "Critical Thought and Critical Action," is based on "the disparities between what I learn in classes and what I see going on in the world," says the native of Sioux City, Iowa.

"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 a lot of change. I hope people will at least give serious thought to doing the latter as well as the former."

A native of Sioux City, Iowa, Skinner is too nervous to be talking about anything resembling a formal address before an audience of some 11,000 at Commencement.

"I did quite a bit of speaking and debate in high school and I come from a long line of Presbyterian ministers."

"I think that public speaking has never been a big problem for me," he says. In the audience will be his father, Rev. William Skinner, his mother, Jane. Also attending the Commencement ceremony will be his fiancée and childhood sweetheart Jody Collins, a sophomore in the University's College of Arts and Sciences, who will transfer to Lesley College in Cambridge, Mass., next fall; her parents; and one of Skinner's two sisters, Cathy Sladek, a teacher in Cambridge, Mass.; her parents; and one of Skinner's two sisters, Cathy Sladek, a teacher in Cambridge, Mass., next fall; her parents; and one of Skinner's two sisters, Cathy Sladek, a teacher in Cambridge, Mass.; her parents; and one of Skinner's two sisters, Cathy Sladek.

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Community spirit guides family doctor

Susan Benfield is one of those people who gets involved, despite her rigorous 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.

"What 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 that mother’s neighborhood 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."

She hopes the experience 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 background and societal pressures and how they affect health and illness," she comments. "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 their medicine? Does it make them sick? Are you prescribing 100 medication they can’t afford?"

For example, she says, patients in the Perinatal Project received iron supplements, yet often didn’t take them. The reason, she learned, is that the pills are big, cause constipation and often 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 epidemi- 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 participate in a three-month student exchange program in South Africa, where she spent six weeks working in a hospital in Soweto.

"I learned that there was something else. There are 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, pediatrics 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. I also see family practice as ideal for community involvement 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 Winterhouse
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 punter.

"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, Brazil, Albania, 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 others call football. Playing against top-notch competition, he became quite adept at soccer and others call football.

Nyhus would be Jeff Hayes, or Eric Johnson, an English major who will receive his 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 punting it. As soon as the ball was 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 dicking over on the bench."

By season's end, Nyhus had made impressive strides — but his final average stood at a modest 20.7 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," right again.

This past November, Nyhus was honored as the only punter on Washington University's All-Centennial football team. In February, he cashed in the attention of the National Football League at its scouting combine in Indianapolis where he shattered the 20-year old hang time record of all-pro punter Ray Guy. For 10 punts, 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 had that year under my belt, none of the rest would have followed. I learned to worry about the rush. I learned to worry about my mind, my technique."

And so far this year, things have clicked. When I went to work with Larry Swider," says Nyhus, who finished the season with a 40.0 average, "he helped me on subtle technical aspects — lowering my drop, putting my arm, following through. Also he 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. He said, 'I don't think you could go pro. That's the first time that idea entered my thoughts.'"

Eric has a hidden gem," says Swider, the national's leading punter in 1976 as a senior for NCAA champion Pittsburgh. "He's right on the verge of the NFL."

"Swider is a dominant player at our level — and it showed," Gaick Klaus, former punter who was the premier college punter in the country. There are very few punters at any level who can have an impact on the game. I can't begin to count the number of games where Eric's punt put us in the position to win. The punt is the biggest offensive play there is — 30 or 40 yards every time. If you can gain ground every time you execute it, you can change the course of a game.

"It'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 wouldn't be in this position if I hadn't come to a Division III school," he says.

Juggler/rock climber stays balanced

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

Johnson, an English major who will receive his bachelor's degree in history, has been juggling very effectively. His excellent academic record and his experience as a public relations intern at the University campus called him to juggling and other circus arts is revolutionizing. His excellent academic record and his experience as a public relations intern at the University campus called him to juggling and other circus arts is revolutionizing.
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 his degree at Commencement May 17.

For the Swede-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 a 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 remains hopeful.

“I know the idea is a bit unrealistically optimistic, but I have always hoped that something positive would emerge from the engine. As a working engineer, I have always felt that there are deep, burning questions that need proper training before I’ll feel comfortable in a working environment. It would be interesting to track it. I don’t want to be chained around. I want something more analytical.”

Eliasson has written extensively on the business world and is the author of the text, “The Art of Business.”

This summer, Eliasson is thinking about writing a book on the business world, such as failed marriages or the price paid by patients — is just as important, he says.

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Neck injury fails to stop ambitious business student

Washington University senior Kelli Jo Station has a motto: the key to success is planning. "It is her ability to plan, coupled with solid determination and support from her 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 requirements for the business school's new Honors Program, which specifies that participating seniors have more than 120 credits to graduate.

Station's journey of recovery from a severe accident to securing a 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 father's car was struck behind, leaving little damage to her car. The cause of the accident, however, resulted in a whiplash injury. Station didn't experience any pain until that night. "I didn't think it was serious at first," says the Omaha native. Over the next few months, Station was on a long-distance phone call, that Station go to the emergency room, which she did right away. She did not get the medical care she needed. As the weeks went by, however, she lost the use of her X-ray and said the bones in my neck were further apart than they should have been — a situation endangering my spinal cord. She told me I was really lucky to be alive. I was on the verge of tears.

Station, who was among the University's first group of John B. Ervin Scholarship winners, was fitted with a brace to wear to class and to visit a great many of his "immediate relatives" in his family. My parents always taught me to prevent that. Perseverance runs in my family. His late father worked in a government agency, to meet with others who are members in the World Council of Churches. Selee notes. "Men always have to assert their masculinity to each other. I find it impossible, she says. "Once you have a goal in sight, you can accomplish anything."

Senior brings global understanding home

Andrew Selee's T-shirt explains it all. It reads "International Family." But the words don't adorn a photograph of parents and siblings; instead, it reads below a silkscreen image of the planet Earth.

During his four years as an under-graduate at Washington University, Selee has demonstrated a deep commitment 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 involvement with the Campus Y, an affiliate of the YMCA, Selee says he has learned an important lesson from the accident. "I learned that if you want to do something, you can do it, no matter how impossible it seems," she says. "Once you have a goal in sight, you can accomplish anything.

Station, whose thesis at the Washington Ralph Bunche academic center in St. Louis, will be held in Seoul, South Korea, Selee notes. "We are promoting a cross-cultural understanding of life." Selee has responded to some major educational issues and to the way we are. "We come together to communicate, to understand, to foster community. Whatever," he said. "It's the Christian roots that tries to promote positive change in how we relate as human beings and within society."

"Members can be Muslim, Jewish, Christian, whatever," he said. "It's the spirituality at the core of a person that matters. When you've stripped away everything else, you start from that point, asking what's your responsibility to society and to yourself."

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 responsibilities are in a world in which poverty and war are everyday realities," he says. "We are promoting a cross-cultural approach that people, the world's concerns and their connection to work in their own countries. Our goal is to bring back a global understanding of Air Force YMCA's, to foster communication and deeper understanding. This is particularly relevant in the United States, because the United States has such an impact on other countries. We come together to communicate, to understand, to foster community. We hope that the meeting will be the start of some long-term relationships between people from different countries.

Organizing a world event may seem like a daunting task for a student, but he has practiced in such matters.

After he attended the last youth forum three years ago in Aruba, Selee and his American colleagues sought a way to bring back home. They sponsored a national meeting in 1991, which focused on three key themes: poverty, discrimination and the environment. Atlanta is planning.

Selee has devoted the greatest amount of time to the YMCA. He describes the YMCA as "a spiritual organization with Christian roots that tries to promote positive change in how we relate as human beings and within society."

"Men always have to assert their masculinity to each other. I find it impossible, she says. "Once you have a goal in sight, you can accomplish anything."

— Carolyn Sanford

SAY NO TO WAR

Andrew Selee at the Campus Y.

With all of his travels and community involvement, Selee has been able to take independent trips to Latin America and a summer spent studying abroad. His legal aid service in Washington, D.C. — it may seem that Selee didn't have much time for academics. "I'm probably 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 this was a travesty measured in how successful academics are. I think the real education is a deeper understanding of life."

"On that scorecard, An is definitely in order."

Andrew Selee at the Campus Y.
Romancing the stingray: mating rituals electrifying

Along a remote stretch of Mexican coastline, the biological dynamics 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 mating season when they produce weak electric fields they produce.

This radar system enables providing information electrically into themselves by burrying in the sand, females, too, are attracted to this sensitive to announce their availability and congregate in conspicuous ples on the ocean floor, and to locate other females so they may shield themselves from prospective suitors.

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 the electroreception and the social behavior of these fishes, says Timothy Tricas, Ph.D., a research associate in urology. “That’s primarily because we do not think of reproduction involving elasmobranchs. The critical aspect of this whole field is that there are no where have we been able to watch a population of animals reproduce like this.”

The rays mating season begins in late February or early March and lasts only a few weeks. During that time, females swim into the bay, releasing a large number of sperm and eggs into the water. Males, who graze the females by biting their pectoral fins. At the sun rises, males cruise in and around the females, trying to pull them away from the ray breeding site he observes in Sonora, Mexico. Tricas' research will be featured in a new television series on the ATN network.

In over 100 experiments, males swimming by the dummy detected the model’s electric signal and many attempted to embrace it. Tricas repeated the experiment this year and confirmed the preliminary findings.

“The purpose of this trip was to obtain a larger scale size on the play-back experiments of last year and to test some ideas of what type of signal a Chihuahua would be attracted to the males,” Tricas explains. “We also wanted to actually measure the wave forms that females release in the wild.”

Tricas monitored the female’s electric field in order to understand why 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 frill-like structures elasmobranchs can be extremely high risk. In the specific case of the stingray, rays could detect electric field intensities as low as 0.1 microvolt per meter.

Tricas says he now suspects their sensitivity is much greater and that they can produce each year, the more his reproductive success and individual fitness are enhanced.

“It’s a very important area and has great application across sensory systems in all animals. If we can show that these receptors are enhanced by the production of certain hormones, perhaps it has some relevance to other — maybe even human-based — receptor systems.”

Until now, all studies on electroreceptors in fishes have been done in the laboratory, using an unnatural stimulus on an anesthetized animal to obtain a response. While valuable information can be obtained from such experiments, Tricas says it’s critical to look at how the system functions in the behaving animal, and that can only be accomplished using biologically meaningful stimuli.

“We have gone into the field and measured these wave forms that we know the males use to locate females. These wave forms, these stimuli, have not been used in bench experiments before because nobody knew what the natural stimuli in the animal was,” Tricas says. “Now that we do, we can take this information back to the bench experiments and map out the natural history of a system that might have a realistic stimuli as opposed to something unnatural.”

Not all of the experiments will be in the laboratory, however, as Tricas also expects to test his hypothesis by studying populations of the stingray in the fish’s natural habitat. Using a chronic recording electrode, Tricas plans to attach a silicon cable to the fish’s skull, he can record neural activity of the stingray in the wild and study the system’s response to stimuli such as light, noise and touch.

He hopes to return to Mexico next year and surgically implant the recording device in a free swimming stingray during a reproductive period. He will also attach a telemetry device so he can measure the ray’s neural activity from a distance.

Kleila Carlson

Slatopolsky named

Friedman professor of renal diseases

Eduardo Slatopolsky, M.D., has been named the Joseph Friedman Professor of Renal Diseases in Medicine at the School of Medicine.

Slatopolsky is professor of medicine and director of the Division of Nephrology at the American Kidney Center at the School of Medicine. In his appointment as Friedman Professor, he succeeds Saulo Klahr, M.D., now chairman of the Department of Medicine at Jewish Hospital, a sponsoring institution of the Washington University Medical Center. The Friedman professorship was established in 1965.

A native of Argentina, Slatopolsky has been affiliated with the University since 1963. He has been chairman of the Chronical American Kidney Center since 1966 and author of the renal division since 1972 and professor of medicine since 1975. His contributions to the fields of parathyroid hormone metabolism as well as bone and mineral metabolism have brought him national and international recognition.

The Friedman professorship has been endowed by the American Society for Nephrology, the American Society for Clinical Investigation and the American Association of Physicians.

Mendel’s discoveries

topic of Orel lecture

Vitezlav Orel, Ph.D., director of the Mendel Museum in Brno, Czechoslo-
vaksia, will speak Monday, May 20, at a seminar sponsored by the Depart-
ment of Genetics.

The talk, “Origin and Essence of Gregor Mendel’s Discoveries,” will begin at 3 p.m. in room 816 of the McDonnell Science Building at the St. Louis campus. Orel will establish the Mendel Museum in Brno in 1965. He has written extensively on Mendel and genetics and has described the laws of inheritance of single-gene traits, forming the basis of the science of genetics.

Orel’s visit to St. Louis is one of 12 planned for his three-month tour of the United States. He also will visit the School of Medicine July 5-9, before returning to Czechoslovakia.

Orel’s host in St. Louis will be Daniel L. Hart, Ph.D., professor of genetics.
Detecting a killer

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 2,500 men 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 the usual method, says principal investigator William J. Catalona, M.D., head of urologic surgery 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 by the prostate gland. Higher-than-normal concentrations of PSA are an indicator 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 rectal examination or ultrasound, and more effective when used in combination with those techniques, says principal investigator William J. Catalona, M.D., head 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 had the lowest error rate.

Sample data shows that although rectal examination is the most common cancer in men over 50 and nearly one million deaths each year, the PSA test will be similar in its impact to mammography in women.

"We hope that the PSA blood test in men will be similar in its impact to the mammogram in women," says Catalona. "We'd like to see all men, beginning around the age of 50, have PSA levels checked at least annually as a screening test for prostate cancer.

Our data show that if you evaluate a man's prostate is to do a PSA blood test and a digital rectal examination.

If there are abnormalities on either one of these, then further diagnostic techniques can be used.

The New England Journal of Medicine study involved 1,953 men aged 50 and older who were screened for prostate cancer by PSA testing in 1,953 men aged 50 and older. Ten percent of the participants had abnormal PSA measurements. Of those with mildly elevated levels, about a fourth had cancer that was usually localized, meaning it was confined to the prostate and therefore curable.

In contrast, nearly two-thirds of those with higher PSA levels had prostate cancer, often advanced cases. According to Catalona, the results hold true for an additional 7,000 men who have participated in the study since the New England Journal of Medicine article was submitted.

"These are all men out walking on the street who had no idea that they had prostate cancer, so it's clear, in these patients at least, that prostate cancer may be detected at an earlier stage if it were to be detected elsewhere," Catalona says.

Treatment is more effective and survival is longer when the cancer is detected early, he notes. "We need to improve detection and sexual function can be best preserved when the disease is caught in its early stages."

Catalona and his colleagues measured PSA levels in 1,653 healthy volunteers, performing rectal examination and prostate ultrasound on those who had levels greater than four nanograms per milliliter. Patients with abnormal findings on either of those examinations were biopsied. Results were compared to those of 500 controls, men aged 50 or older who were biopsied because of symptoms or abnormal rectal examination.

Ninety-two percent of the 1,653 men enrolled in the study had normal PSA levels. Mildly elevated levels — 4.0 to 10 nanograms per milliliter — were detected in 18 (six percent) and markedly increased levels — above 10 nanograms — in 30 (two percent). Of the men with mildly elevated PSA, 95 were biopsied and 19 (22 percent) were found to have prostate cancer. Of the men with markedly elevated PSA levels, 27 were biopsied and 16 (60 percent) had cancer. Overall, 37 of the 312 men who had biopsies (12 percent) had prostate cancer. Of those who had PSA levels higher than 4.0 nanograms per milliliter, 20 (80 percent) were found to have benign enlargement or inflammation of the prostate. In the control group, 72 men (4.2 percent) had cancer.

Although rectal examination and ultrasound can predict cancer, PSA levels provide the greatest predictive value, Catalona says. "Men who resisted prostate biopsy because they were not convinced that a prostate exam would be helpful in detecting cancer were shown to have a simple blood test, so the impact of the PSA test on the number of men who have their cancer caught in its earliest stages is potentially very significant.

Among the 57 men in the study who had cancer, 70.3 percent of the men who had PSA levels alone would have missed the cancers in 12 (22 percent). A mildly elevated PSA level was the only suspicious finding in those who had a PSA of four or less, while seven others (19 percent) with elevated PSA levels had normal rectal examinations, not usually suspects are prostate cancer.

When the three tests were considered together, the PSA measurement had the lowest error rate, pairing the tests, PSA combined with rectal examination had an error rate of just 6.7 percent.

"Our results add to the evidence suggesting that rectal examination can no longer be considered the sole or the even the most useful means of detecting prostate cancer," Catalona says. "Although PSA measurement is also an imperfect screening test, it identifies patients who are at high risk and need further evaluation.

Most men don't get checked for prostate cancer unless they experience warning symptoms, which usually involve difficulties with urination, he explains. The risk begins at age 50 in the general population, increases dramatically with age, and is greatest in men who have a family history of the disease. In this country, prostate cancer is twice as common in black males as it is in whites.

Unfortunately, using the tradition techniques for diagnosing prostate cancer, almost 7 out of 10 men have cancer that has spread beyond the prostate gland when it is detected, which may explain the high death rate from prostate cancer. It's crucially important if the PSA blood test were used on a routine basis, the statistics on prostate cancer could be dramatically changed, so that the vast majority of patients would have their cancer picked up early, rather than late."

Physicians at the School of Medicine have developed a surgical technique that removes all abnormal tissue, a dangerous abnormal heart rhythm. The operation, called the Maze procedure, takes its name from the maze-like pattern of incisions the operation makes across the surface of the atria, the chambers composing the top half of the patient's heart. These incisions block the chaotic electrical impulses that characterize this most common form of arrhythmia.

"Bazically, atrial fibrillation is chaos in the atria," says James L Cox, M.D., chief of the division of cardiothoracic surgery and director of the team that developed the Maze procedure. "It's not complete chaos because we've been able to decelerate it, but its disorganized activity in the entire atrium due to large circuits of electrical activity sustained just above the atrium like eddies in a stream."

The operation, which Cox and his colleagues designed blocks abnormal electrical activity, yet provides safe passage for the regular electrical impulses that the heart needs to sustain its pumping.

"We place incisions on the atrium in such a manner that those eddies cannot develop. If the Maze procedure is properly developed, then the atrium can't fibrillate," Cox explains.

During the past 40 months, the team has operated on 22 patients and has had a cure rate of between 90 percent, Cox says. A patient is considered cured of atrial fibrillation when he or she has a normal heart beat, normal blood flow through the heart, and cannot be stimulated into atrial fibrillation. Experts generally agree that atrial fibrillation is the most common arrhythmic condition. It affects nearly one million Americans and causes nearly 150,000 strokes per year.

The prevalence of atrial fibrillation in the general population and its adverse effect on mortality suggest that this seemingly innocuous arrhythmia is among the most important of all cardiac arrhythmias," says Cox.

It is not uncommon for patients with atrial fibrillation to experience ventricular heart failures as high as 150-200 beats per minute, compared to 70-78 beats per minute in healthy adults. In addition to the challenges of such a high heart rate, doctors say atrial fibrillation puts patients at greater risk for developing life-threatening strokes or permanent brain damage as a result of irregular blood flow that causes the heart's inability to pump blood normally.

Cox says 75 percent of blood clotting episodes associated with atrial fibrillation involve the brain, affecting about 257,000 U.S. citizens. Sixty percent of these episodes involving the brain will result in either permanent neurologic deficit or death, translating to 142,560 major strokes, he adds.

Despite the surgical and electrical therapies tried to date, the management of this dangerous arrhythmia has been a challenge to surgeons and cardiologists alike.

Historically, the disorder has resisted even pharmacologic treatment, the most important line of anti-arrhythmia therapy. Cox's patients had been through an average of five different medications, all of which failed to control the arrhythmia. Drug therapy is intended to restore normal heart rhythm, Cox explains, but what most often happens is that the medication is given to control heart rate.

"Ultimately, drug therapy is employed for the treatment of patients who cannot tolerate the side effects of drugs or who are not candidates for surgery," Cox explains.

Cox hopes the operation will be employed throughout the world as a means of managing the potentially lethal condition.

The sophisticated electrophysiologic mapping is now unnecessary for the performance of this surgical procedure, Cox says. Cox's team has successfully performed the Maze procedure for almost 100 patients with atrial fibrillation. Each year, he teaches two courses for surgeons interested in learning how to perform the operation. The last course, given in March, was attended by nearly 60 surgeons from throughout the United States and abroad.

Despite the high cure rate, Cox is far from ready to recommend the surgery to everyone with atrial fibrillations. In fact, he says, it's still unclear who might benefit from the operation.

"We don't know exactly what the indications should be," he said. "If this could be done with a catheter, we would probably do it on all the patients with atrial fibrillation patients. But this is an open-heart operation and you don't subject someone to this that lightly."

"What do the indications for surgery are," Cox says, "will change 10 years from now, will depend on two things: how good the operation is and how safe it is," Cox says.
Fat-lowering benefits of exercise last only as long as the workouts

A regular exercise program can lower the amount of fat in the blood stream and possibly reduce the chances of developing coronary 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 atherosclerosis. 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 fall, but if you stop exercising, your lipid levels will go back up," says Gustav Schonfeld, M.D., 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 Schonfeld's laboratory, recruited eight recreational runners and had them stop training for 10-22 days. The subjects, whose average age was 34, were men who ran an average of 3 miles per week and had normal lipid levels.

All received dietary counseling on how best to reduce total and low-density lipoprotein cholesterol. 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 said.

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

A second study examined the effects of exercise on chylomicron and chylomicron remnant levels in six healthy male recreational runners.

Chylomicrons are small packets 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 run 3 to 4 miles per-mile-per-week training regimen for 16-22 days. They took 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.

In the following ingestion of the milkshake, blood samples were drawn and tested at regular intervals. In the testing done upon cessation of exercise, Mankowitz found "dramatic" 50.8 and 43 percent increases in the area under the curve measurements for both chylomicrons and chylomicron remnants, respectively.

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.

Schonfeld 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."

Celebrating a century: Physical therapists Janet Tevask (center) and Shiek Skourprea wear centennial T-shirts marking professional work at a patient during Continental T-shirt Day at the School of Medicine's Irene Walter Johnson Institute of Rehabilitation. Two weeks ago, the T-shirts were given to medical school faculty, staff and students in recognition of the School of Medicine's 100th birthday.

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

The Harry Edward 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 J. Jerome Fiance, M.D., clinical professor of ophthalmology at the School of Medicine.

"We are truly grateful for the Harry Edward 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 Flanz."

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 wellbeing of talented individuals who have contributed substantial findings and contributions to modern science in the future. By their outstanding efforts, 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.

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., a world-renowned young researcher who has made significant contributions in the understanding of diseases of the human eye and visual system. Researchers are nominated by their colleagues.

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 microvascular lesions not cytomegalovirus (CMV) infection of the retina. More recently, he demonstrated 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 act synergistically.

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.
Torstrick, graduate students in the Rebecca Carol Maxwell elected president of the Society for the six other members of the jury in Krakow, Poland, Oct. 10-12, 1991.

David F. Gillespie, Ph.D., professor of medicine, will receive an honorary degree in medicine and surgery from Italy’s University of Bologna in May. He will also receive the Medicine and the Italian Ministry of Medical Scientific Research and Technology. The awards were presented during the University of Siena’s graduation ceremonies in June.

Douglas E. Berg, Ph.D., alumni Professor of molecular biology and professor of genetics at the School of Medicine, has been named to a committee or elected an noteworthy? Wu will be a key aspect that determines membrane importance of phospholipid diversity as a key aspect that determines membrane...
Thursday, May 16
10 a.m. National Science Program Thesis Defense, "Calcium Currents in Rat Sensory Neurons and Their Modulation by Muscarinic Receptors," by Jean Schoeder, WU graduate student. Room 502 McDonnell Medical Sciences Bldg.

 Noon. Dept. of Genetics Seminar, "DNA Binding and Cis-Regulation of the Early Fetal Liver," by Tim Lehmann, WU Dept. of Biochemistry and Molecular Biology. Room 916 McDonnell Medical Sciences Bldg.

 4 p.m. Dept. of Pathology Seminar Series, "Epidemiology of Several Protein-related Diseases in Normal and Neoplastic Tissues," by Mary Zutter, WU Dept. of Pathology. Third Floor Aud., Children's Hospital, 400 S. Kingshighway Blvd.

 Friday, May 17
 8 a.m. Division of Endocrinology and Bone Metabolism Magnetic Resonance Conference will feature invited papers by Robert S. Balaban, National Institutes of Health, Bethesda; David Premen, U. of Cambridge; John C. Friesen, UCLA; and Janis W. Speiser, Yale. Free. Tickets are required. Room 406 South Pavilion. 8 a.m.-noon. Room 504 South Pavilion. Noon-1 p.m. 

 Noon. Dept. of Pathology Seminar, "Malignant Melanoma," by Michael J. Ellis, M.D., WU Dept. of Pathology. Third Floor Aud. 400 S. Kingshighway Blvd.

 Noon. School of Medicine Transplant Seminar, "Immunologic Aspects of Organ Specific Autoreactivity," by Kenneth S. Tan, M.D., WU Dept. of Surgery. 11 a.m.-12 p.m. Third Floor Aud., Children's Hospital, 400 S. Kingshighway Blvd.

 4 p.m. Division of Hematology-Oncology Seminar, "Regulation of HIV Replication," by Lee Ranney, M.D., Dept. of Pathology. 4 p.m.-5 p.m. 542 Ebsworth Bldg. 400 S. Kingshighway Blvd.

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