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FOCUS

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Steinberg outlasts generations of students

English and rhetoric professor Erwin Steinberg likes to keep in touch with his former students. He says he enjoys hearing from graduates with updates about their lives and careers.

Unlike most professors, however, Steinberg has more than 56 years' worth of students to contend with.

"I had a visit this last homecoming from a student who was here for his 50th anniversary," said Steinberg, who turned 82 in November.

"It's nice to hear from people," he said.

Steinberg came to the university in 1946 after serving in the Army Air Force Technical Training Command during World War II. During the war, he corresponded with his academic advisor from the State Teachers College of Albany (now SUNY Albany) where he received an M.S. in education in 1942. The advisor recommended that with his background in technical communications, Steinberg should apply to engineering colleges as a writing professor.

While visiting an "army buddy" near Pittsburgh, he interviewed for a position in the English department at what was then Carnegie Tech. A day later, he was offered the job.

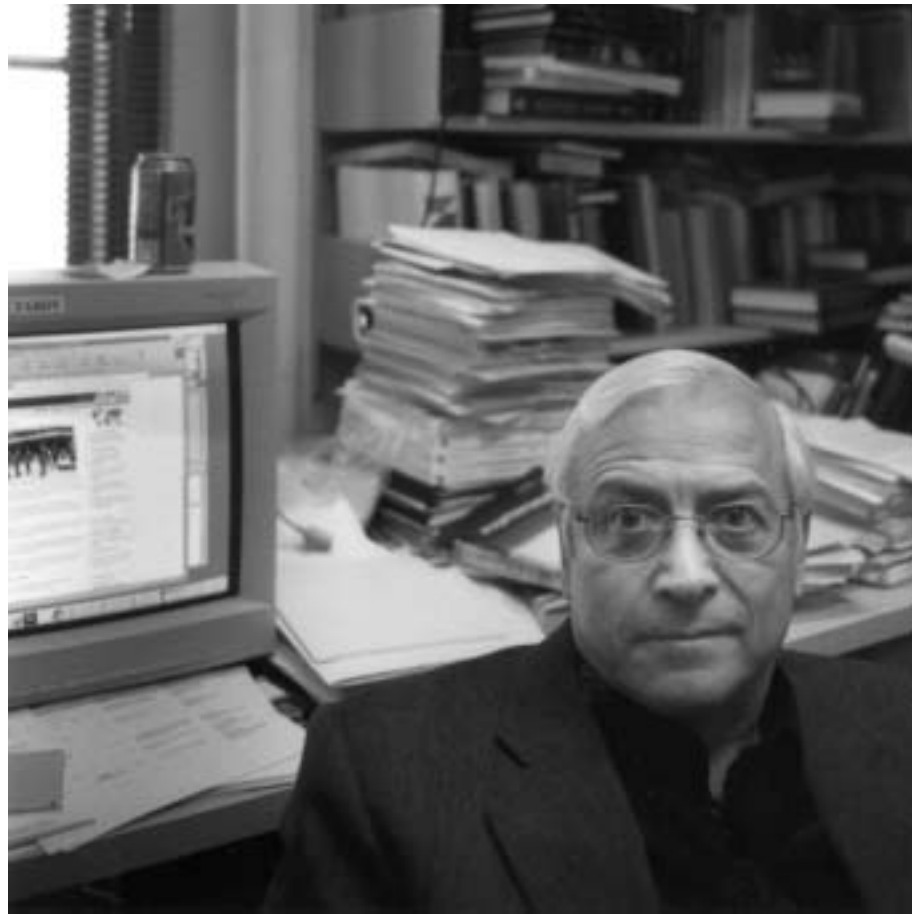
At that time, new professors in the English department were required to teach four classes of composition each semester — an arduous task that included grading more than 100 essays per week. Only after several years of this schedule were professors permitted to teach the more desirable junior-level literature courses.

"I was a schemer," said Steinberg. "I persuaded the department very early on that the university really needed a public speaking class. So after the first year, I was teaching three [composition classes] and a public speaking course. Shortly after that, I got a literature course."

Steinberg earned his doctorate in English education from New York University in 1956 and went on to serve here as the dean of the former Margaret Morrison Carnegie College from 1960 to 1973 and the dean of the College of Humanities and Social Sciences (H&SS) from 1965 to 1975.

In addition to his leadership roles, he has

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Stephen Fienberg in his Baker Hall office

Photo: Brian Connelly

New report questions polygraph testing

In January 2002, school officials in Dunlap, IL, asked 10 football players if they'd violated the school's honor code by drinking alcohol at a party. Seven of the players denied participating in the incident.

Why, then, were they suspended from the state playoffs? Because they flunked a polygraph test.

Behind the school district's unprecedented use of the polygraph, or lie detector, was the common belief that such testing yields highly accurate results. But this assumption itself has been called into question by a report released in October by the National Academy of Sciences (NAS). The committee that wrote the report was chaired by Stephen Fienberg, professor of statistics and computer science at Carnegie Mellon.

The implications of polygraph testing may be critical when applied to more severe

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Lessons from the rubble of the World Trade Center

In search of robots that move, see, feel, listen

The screen at the front of the auditorium goes dark. Robin Murphy turns to the audience and runs a hand through her short auburn hair. "How many of you noticed the three sets of remains?"

The audience of more than 70 Carnegie Mellon robotics students and researchers in Wean Hall 7500 stare at the screen as Murphy walks them again through footage shot by mobile robots searching the wreckage of the World Trade Center. They watch images of a hazy claustrophobic world where a sign of a human life may come from a glint of light on a watch. "This red up here is a torso," Murphy points out. The outline of fingers, the shape of a head and a nose slowly emerge like three bodies found in the ash of Pompeii. One search team member, Murphy tells them, was sure that the nose shape belonged to a woman.

Murphy is a robotics professor at the University of South Florida and director of the Center for Robot Assisted Search and Rescue (CRASAR). Her presentation was a School of Computer Science distinguished lecture in late October. Murphy, an expert

on artificial intelligence in robotics, has worked on search-and-rescue robots since the bombing of the Murrah Federal Building in Oklahoma City in 1995. For six years she helped to design, build and demonstrate robots. Then came the attack on the World Trade Center.

Less than six hours after the towers collapsed, four CRASAR teams, one headed by Murphy, arrived at Ground Zero with their robots.

"9/11 was the first time that robots actually got into the rubble," Murphy explains. During weeks of searching at the site, the teams found 10 sets of human remains. There were no survivors to find.

Murphy describes an experience in the rubble that taught the researchers about their robots, themselves and the importance of their mission, all of which may change the popular view of robots as devaluing and potentially replacing humans. Far from replacing humans, the development of search-and-rescue robots is driven by the value of human lives: the life of a survivor trapped in the wreckage is too valuable to abandon and



Photo: Justin Reuter

the life of a rescuer is too valuable to risk in a blind search for survivors.

Murphy makes that point with a slide of a fireman at the World Trade Center climbing into one of the hollow 1-by-2 1/2-foot crawl boxes that the CRASAR robots used as the only passages into cavities in the wreckage. The fireman, Murphy says, didn't know if anyone was even alive at the end of that passage when he climbed in, not long after the collapse of the towers. "For them to throw their lives away, when the technology can help, seems criminal."

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Concussion study evaluates athletes' recovery of brain activity

When Steelers quarterback Tommy Maddox suffered a brain concussion and spinal concussion during the game against the Tennessee Titans on Nov. 17, commentators immediately flashed back to quarterbacks Troy Aikman and Steve Young. Both were premier NFL quarterbacks in the 1990s, and both retired prematurely, in part because of the multiple concussions they sustained during their careers.

NFL players are not the only athletes at risk for concussions. Each year in the United

States, high school varsity athletes sustain an estimated 63,000 concussions in 10 different sports, according to a study published in the Journal of the American Medical Association. Football accounts for 63 percent of such injuries.

Now a research study under way at Pitt and Carnegie Mellon is focusing on the effects of single and multiple concussions on the brains of young athletes. The study, funded by a \$3 million grant from the National Institutes of Health, is examining the

effects of concussion on brain activity in high school and college athletes. One objective is to develop guidelines about allowing an athlete to return to play.

A concussion occurs when the head sustains a hard blow and the impact jars the brain inside the skull. Symptoms of a concussion may include memory impairment, confusion, dizziness, blurred vision and sometimes a brief loss of consciousness. To determine whether or not an athlete has sustained a concussion, trainers and physi-

cians often do some type of neurocognitive testing on the sidelines.

"If a player got his bell rung and his eyes are glazed over, you know he's not going back in," said Dennis Sarchet, a football coach at Keystone Oaks Middle School. "If he has a concussion, he usually won't play for about a week and a half. The medical trainer decides."

But how do trainers and physicians decide how long a player must sit out? In other

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Concussion study evaluates athletes' brain activity

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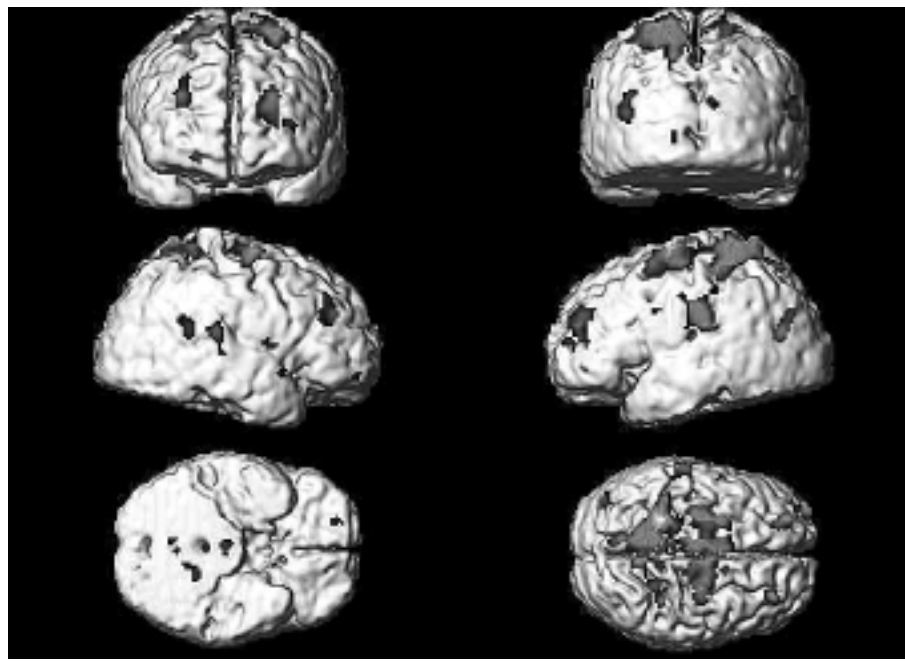
words, how do they know when the brain has recovered? According to the UPMC Center for Sports Medicine Concussion Program, the effects of repeated concussions are cumulative, so it is crucial to allow enough recovery and healing time to prevent any further damage.

The current study aims to answer the question of how long is long enough.

"To my knowledge, this is the first time anyone has performed a prospective study on the effects of concussions on young people," says William Eddy, professor of Statistics at CMU. Eddy is providing statistical support for the study.

Many local high school and college athletes undergo a preseason neurocognitive assessment called ImPACT (Immediate Post-concussion Assessment and Cognitive Testing) to gather baseline scores. These pre-injury scores can then be compared to post-injury scores so that researchers can "evaluate in a quantitative way whether things were different," explains Eddy. The post-injury data will reveal any neurocognitive deficits.

ImPACT is a 20-minute computerized test that measures an athlete's attention, memory, processing speed and reaction time. The test was co-developed by Mark Lovell, assistant professor of orthopedic surgery at Pitt, director of the UPMC Center for Sports Medicine Concussion Program and co-investigator of the study led by Donald Marion



A brain scan. The dark areas show possible damage.

of UPMC. The Pittsburgh Steelers began using ImPACT two seasons ago.

The current research study is designed to evaluate athletes who have had a possible head injury and members of a control group who do not have a history of concussion. Local athletic trainers can refer student athletes with possible head injuries to the UPMC Center for Sports Medicine on the South Side. In order to be eligible for the study, the athlete must have a pre-season ImPACT

score. He or she will then be retested with ImPACT. If the results indicate a concussion and if the athlete meets the study criteria, he or she is eligible to join the study and will move into the next phase. Researchers aim to recruit 250 high school and college athletes over the next five years.

"This study is looking at the change in brain activity as an athlete heals after a concussion," explains Eddy. Brain activity is being studied using functional magnetic

resonance imaging (fMRI). Traditional MRI testing provides a detailed picture of the structure of the brain, while fMRI testing allows the study of brain function by providing pictures of the brain while the participant is performing a set of mental tasks.

Eddy emphasizes that the study is not medical treatment. Athletes who are injured beyond needing Tylenol, he says, are not eligible for the study. A concussion itself, Eddy explains, is an extremely mild brain injury, but the risk of damage from a second injury is huge.

For this study, participants who have sustained a concussion undergo fMRI testing shortly after the injury occurs. The fMRI portion of the study requires that participants perform mental tasks while their heads are positioned inside the MRI instrument. The images captured by fMRI identify regions of the brain that become active during these specific tasks. Study participants undergo one fMRI at the time of the injury and another when they have healed, as determined by ImPACT.

"At the time of injury, the images indicate more brain activity for harder tasks. After healing, there is less activity," explained Eddy, who has been analyzing fMRI data for 10 years.

By analyzing fMRI data and correlating it with ImPACT data, researchers hope to gain a better understanding of the neurocognitive deficits that occur with concussion to develop guidelines in anticipating recovery.

AMY PAVLAK

Talkers

Iraq war debate draws big crowd

It started in mid-October when a small group of Carnegie Mellon students met to talk about their views on a potential war with Iraq. Tanya Tarr, a December graduate of the H. John Heinz III School of Public Policy and Management, organized the meeting on a whim to coincide with a trip to Washington, D.C., for an anti-war march.

Fifteen students attended the informal discussion and Tarr was impressed with the diversity and knowledge of the group. Describing the meeting as "energizing," she said it was clear that a larger, more structured forum was needed on campus to debate the issues surrounding a U.S. attack on Iraq.

Within three weeks, Tarr and several students from inside and outside the group had organized the Nov. 21 debate, entitled, "War: What Is It Good For?" Funded by the office of the vice provost for education, the debate was held in McConomy Auditorium before an audience of about 250.

History professor Scott Sandage, who served as moderator, opened by noting that the U.S. engages in war approximately every 22 years — or once a generation.

"Whether you are inclined to be in favor of a war with Iraq, or against a war with Iraq or you're still trying to decide, it seems fairly important that you make the decision from an informed point of view," said Sandage. "This is your opportunity to decide, as a generation, if you want to spend your war chip on this particular one, or hold out for the possibility of something better."

The debate featured Jack Kelly, the national security writer for the Pittsburgh Post-Gazette who served both in the Marines and the Army Green Berets, and was a deputy assistant secretary of the Air Force under the Reagan administration; Davis Bobrow, a professor in the Graduate School of Public and International Affairs at the University of Pittsburgh and a former member of the National Defense Science Board; and Edith Bell, a member of the Women's International League for Peace and Freedom and a board member of the Thomas Merton Center, a Pittsburgh-based peace organization.

The three panelists presented differing views about the U.S. invading Iraq.

Kelly favors a sharp attack on Iraq and a short occupation. "Get a functioning government up, and get out," he advised.



Photo: Brian Connelly

A reader dozed over his book this month in the CFA building's medieval niche.

Bell disagreed, arguing that U.S. oil interests play an overly important role in the national policy on Iraq, and that "Saddam Hussein is no Hitler." She fears that what she sees as an unjustified attack by the U.S. will create an extended war. "Other Arab nations will get involved," she said.

Kelly dismissed her prediction, claiming that Middle Eastern nations respond to power and will follow the U.S. if it invades Iraq. "Arab capitals see what way the wind is blowing and go in that direction," said Kelly.

Bobrow believes the best policy for Iraq is containment, at least in the immediate future. He said that an attempted occupation by the U.S. could be difficult, especially if the alleged "inner unrest" among the Iraqi people does not play out in favor of the U.S. He also questioned the U.S. focus on Iraq versus other nations known to have weapons of mass destruction.

"Iranian [weapons] programs are probably just as developed as Iraq's," said Brobow.

"There are indeed a lot of countries that have defied Security Council resolutions," agreed Bell, adding that it is not the job of the U.S. to enforce U.N. policies. "It's up to the Security Council to take care of that."

Saroj Tharisayi, a junior in computer science and international relations who attended the debate, said the panelists did not present

any arguments for or against a war with Iraq that she had not heard before. However, she believes that the debate helped spark dialogue on campus.

"For students especially, these kinds of debates are incredibly important," said Tharisayi. "We are here to learn academically, but also to learn about the world around us. I believe that in order to be considered truly educated, the minimum criteria is knowing what is going on in the world."

Tarr said afterward that she plans to keep organizing future debates and discussion groups on campus, although she will soon move out of state.

Tarr discards the idea that students at Carnegie Mellon are uninterested in current events. During her time as both an undergraduate and graduate student, she saw an ever-increasing amount of active participation by well-informed students. "Calling us non-activist or apathetic is just garbage."

SARA HENNEBERGER

Digital filmmaker visits for Adamson series

Traditionally, the Adamson Visiting Writers series boasts up-and-coming or accomplished writers of fiction and poetry. Recent guests have included fiction writer Mark Brazaitis and poet Major Jackson, along with Carnegie Mellon's own poets Jim Daniels and Terrance Hayes.

Dec. 2 marked a departure from the norm, as the Adamson Series welcomed film writer, director and producer Scott Saunders for the last reading of the semester. Held, of course, in the Adamson Wing of Baker Hall, the visit was the first of its kind as Saunders screened several clips of his work and discussed the presence of digital filmmaking in today's market.

Attended by roughly 50 students, faculty, and staff, the reading boasted one of the more energetic crowds of the year, with several audience members shooting questions at Saunders in an informal, friendly climate. The bulk of Saunders' presentation was focused on the evolution of digital filmmaking in the independent market.

"Some believe that the introduction of the digital format to film is as big a change at the addition of sound," said Saunders, who spoke extensively of the independent film world

and its difference from most of the Hollywood films to which students are predominantly exposed.

Saunders has earned credits for directing, writing or producing more than 20 short films and two feature-length films over the past 15 years. He is currently working on his third feature film, "The Technical Writer," which is scheduled to premiere at the Sundance Film Festival this month.

Saunders' work has been screened consistently since 1987 at the Los Angeles Independent Film Festival, the Hamptons International Film Festival, the Chicago Underground Film Festival and the Sao Paulo Short Film Festival, just to name a few.

"His aversion to the studio mainstream and common attitudes toward filmmaking gave me several new ideas as to where my own career might end up. I found his ideas refreshing," said Sebastian Habr, fourth-year creative writing major and aspiring screenwriter.

"I thought he gave us a perspective that we don't get much," said Jane Bernstein, the creative writing professor responsible for bringing Saunders into the series. "Mostly, we teach and talk about films generated by big studios. But we don't talk exclusively about best-seller fiction. Scott told us something about independent filmmaking. What a great vantage point."

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Ex-astronaut lands at Carnegie Mellon

Scientist. Businessman. Pilot. Astronaut. Space walker. Entrepreneur. Innovator. Award-winning photographer. Educator. Author. If Jay Apt had a hat rack, it would stretch all the way across his office wall. One Tuesday afternoon this fall, however, he was wearing the hat of policy analyst as he spoke on "Current Issues in Space Policy" at the Heinz School's weekly student seminar.

Apt spent 90 minutes talking about the many issues that will affect both the manned and unmanned space programs in the near future. These issues ran the gamut from military and commercial use policies to the possible privatization of the Space Shuttle fleet to planetary exploration to space-based environmental science.

Apt is a distinguished service professor in the Engineering and Public Policy program. The position is unpaid, but it allows him to give guest lectures, occupy an office and participate in research programs at the university. Currently, he is on the advisory committee for the Center for Integrated Study of the Human Dimensions of Global Change, a multi-institution international research program based in EPP. He is also involved in research work on global climate change, robotics for exploration and space policy. And space policy is something Jay Apt would know quite well.

Anyone who has followed the U.S. manned spaceflight program is probably aware that Apt has flown on the shuttle four times between 1991 and 1996. All astronauts go through extensive training, both general training to qualify for spaceflight and specific training once missions are assigned. Images from "The Right Stuff" to the contrary, the most difficult part of astronaut training is not the physical requirements, says Apt, but the "integration of so many people from different backgrounds into a crew that could rely on one another." There are enormous differences in the backgrounds of new astronauts, who come from all branches of the armed forces and from civilian life. Training takes a group of highly eclectic individuals and molds them into a group that is capable, Apt says, of "working problems using the best of everybody's skills. It's very good training for the broad range of things throughout your career. [And it's] very much like CMU's strong emphasis on interdisciplinary work." Not everything was so useful: Apt remembers "a few awful lectures," including an interminable presentation on the chemistry of the Shuttle's battery systems.

Apt was a member of the 1985 class of



Apt in the study of his Squirrel Hill home

astronauts, and one of his early assignments was on a team that examined Space Shuttle processing after the 1986 Challenger accident. "We had to find out where we were being unsafe, inefficient," says Apt. While Shuttle and ISS missions have been getting more aggressive, he feels the "safety work done in the last 3-4 years has been excellent and is getting better."

Before Apt flew in space, he worked in Mission Control in Houston for more than two years. Mission Control is the central nervous system at Johnson Space Center (JSC) that coordinates all aspects of every manned spaceflight mission. He calls working there the "best training you can possibly get for flying yourself. [There's] always something that needs your attention."

The two main objectives of Apt's first flight, in 1991, were to launch the Shuttle's Gamma Ray Observatory and to test equipment for what would become the International Space Station. Apt and crewmate Jerry Ross performed two extra-vehicular activities (EVAs), or spacewalks, during the mission. One of the EVAs was an unscheduled walk to repair the observatory's antenna that had failed to deploy automatically. Drawing on their extensive training before the mission, Apt and Ross were able to complete the repair in space and thereby avoid a costly delay of returning the craft to earth. The EVAs were the first in the space program since the Challenger accident more than five years earlier. The two spacewalkers made the decision to "keep all the chatter on the air-

ground light," says Apt. "It was a good reentry into EVAs."

EVAs are at once amazing and, Apt says, tedious. Even though the astronauts are floating over 200 miles above the planet and able to witness a panoramic view, their tasks, such as connecting hoses and cables, loosening and tightening bolts and flipping switches, are more mundane. But the conditions in space make even the simplest task difficult. Imagine connecting cables to your computer while wearing thick ski gloves, a motorcycle helmet and a snow suit. Now, imagine doing it underwater. You "have to put yourself in a mode where you are completely concentrating," says Apt.

Apt went on to fly three more Shuttle missions, the last one of which took him in 1996 to the Russian Mir space station. The six-person crew returned Shannon Lucid to the earth after her six-month stay on Mir. One of Apt's crewmates on that mission was Carl Walz, who recently spent an American-record-breaking 196 days aboard the International Space Station (ISS) as part of the fourth Expedition crew. Expedition crews are three person crews who have been spending between four and six months on ISS since November 2000. Apt knows "virtually all" of the 18 Expedition members so far. Indeed, he was given the opportunity to be part of an Expedition crew, but declined because of the high price the training would have exacted on his family. Expedition crew members spend about five years training, and much of it takes place in Russia.

His most memorable moments as an astronaut were unexpected. He recalls "Looking at a meteor burn up in the atmosphere [he pauses to set up the punchline] below you, or floating shoulder to shoulder with crewmates, some of whom were from other countries."

All of Apt's Shuttle missions had international crews or ground personnel and he is a strong believer in the benefits of international cooperation in space that has been happening for the last decade or so. That cooperation is one of the greatest differences between the recent manned program and the classic Mercury/Apollo era, which was very much driven by the Cold War.

The importance of photography is one aspect of manned space flight that has not changed since John Glenn first orbited the earth. Astronauts spend much of their "free" time snapping images of the earth. Some shots are pre-planned and geared to a scientific investigation. Many, however, are taken simply for the beauty of the shot.

The result of such prolific shutterbugging is a huge collection of images of the earth from space. Apt, along with geographers Michael Helfert and Justin Wilkinson, created a beautiful book, "Orbit," to share some of those images with the public. Apt spent about five years working on the project in his spare time. Every Saturday for a year was spent surveying NASA's vast photo collection — about 1,100 images — to pick the best ones (about 300) for the book. National Geographic editors then chose 150 images for the book, which was published by the National Geographic Society in 1996.

The authors wanted the best photographic clarity possible, which meant using the original film. But NASA wouldn't let the film off the premises of Johnson Space Center, where it is stored in a temperature-controlled, nitrogen-filled vault. To solve the dilemma, Corbis Corporation, a digital imaging company, built a \$100,000 scanner at the space center that enabled technicians to scan the images without touching the film.

In addition to choosing images, Apt wrote many and edited all the book's captions and text. He says he wanted to write the book to share the experience of flying around the planet with others — to show its beauty, to show the natural and human influences on it. While NASA has planetary images taken across the whole spectrum, the authors chose to use conventional (visible) images "to get people to appreciate it at an emotional level."

Upon leaving NASA, Apt, who grew up in

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New report questions validity of polygraph testing

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violations, such as security breaches at the nation's nuclear facilities. For this reason, Congress charged the U.S. Department of Energy (DOE) in October 1999 with funding a review by the NAS of the validity of the polygraph for screening.

"Our blockbuster finding was that using the polygraph for national security screening presents a choice between two unpalatable alternatives — either label too many truthful examinees deceptive or too many deceptive examinees truthful," says Fienberg.

The DOE has come under fire for the way it handled the case of Wen Ho Lee, a physicist at Los Alamos who was falsely accused of passing along nuclear secrets to China. Serious doubts surfaced over how polygraph testing was administered in Lee's case.

In contrast, Aldrich Ames, former CIA employee convicted as a double agent for the Soviet Union, passed polygraph testing.

Attitudes toward polygraph testing diverge sharply. Although counterintelligence officials have long relied on the instrument to detect deception, scientists and engineers at the nation's energy facilities have criticized the test and its scientific basis.

Alan Zelicoff, a senior scientist at Sandia National Laboratories, was quoted by the Washington Post that, "The polygraph is not worthless, it is less than worthless."

Fienberg says it was tricky to assemble a committee because the issue is so highly charged. The NAS purposely sought researchers who had scientific expertise, but were demonstrably neutral on the issue.

The committee began its work in January 2001 and met on six occasions. Among its 17 members were researchers from statistics, psychology, human interaction, systems engineering, radiology, mathematics and law.

To review the existing evidence, the committee established basic scientific standards. They selected studies where the outcome of polygraph testing was already known, which turned out to be primarily mock crimes. Fienberg explains that case studies were more difficult to assess because the researchers could not rely solely on a conviction of criminal activity to indicate the truth.

"First, there is almost no evidence assessing accuracy in realistic security-screening situations. Second, we found no studies on testing alleged terrorists and spies. And third, there is very limited evidence on whether efforts to beat the tests, known as countermeasures, can deceive experienced examiners," said Fienberg in a prepared statement.

Of the more than 1,000 published studies available, only 57 met the basic standards established by the committee. The bulk of these studies involved inexperienced subjects, such as college students or military

recruits, who hadn't been trained in countermeasures. Just two of the studies involved screening.

The NAS report recommended further research into both polygraph testing and alternative methods of detecting lies. The committee reviewed several alternative methods still in development, such as brain fingerprinting, thermal imaging and voice stress analysis. While they did not find enough scientific support to recommend any specific alternative, they believe further research could prove beneficial. The American Polygraph Association (APA) agrees.

In an official statement, the APA responded to the report by saying, "Polygraph testing, admittedly not perfect, has been and continues to be an extremely valuable tool. We firmly believe that continued scientific research will support our position."

Committee subgroups also visited the polygraph training institute at the Department of Defense, as well as testing facilities at what Fienberg refers to as "the three-letter agencies" — the FBI, CIA, and NSA. According to Fienberg, committee members used these visits to observe how the agencies use the instrument in their overall screening processes. They concluded that the agencies rely too heavily on polygraph results.

"Overconfidence in polygraph screening presents a danger to national security objec-

tives," says Fienberg. "The belief in its accuracy goes beyond what the evidence supports, and this over confidence can create a false sense of security among policy makers, employees in sensitive positions, and the general public."

The polygraph was invented in 1921 by John Larson while he was a medical student at the University of California. It has been used in police interrogations since 1924.

The polygraph is based on the idea that certain physiological signs of stress or anxiety may be associated with lying. During a polygraph test, four sensors attached to the examinee record breathing rate, pulse, blood pressure and perspiration. The instrument measures these responses as the examinee answers first a series of control questions and then the actual questions.

"There is no such thing as a standard polygraph test. The testing depends on the examiner, the examinee, their interaction, and their individual characteristics," says Fienberg.

Polygraph results are already inadmissible in many courts, including all federal courts. Testing was banned in screening for private industry when the government released a review of the polygraph in 1983 that drew some of the same conclusions as the new NAS report.

DENISE CULVER

Steinberg outlasts generations of students

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done research on early 20th century writers and has published numerous articles and books.

Much of Steinberg's work focuses on Irish writer James Joyce. Steinberg is currently writing a book about Leopold Bloom, the main character of Joyce's "Ulysses."

"The standard reading of Leopold Bloom is that he is a 'modern hero.' He's supposed to be equated with Ulysses," said Steinberg. "I've got a completely different take on that — I see him as a loser, and not in any sense a hero."

In addition to his other duties, Steinberg also served for 40 years as a communications consultant for industrial firms. An early advocate of the "plain language" movement, Steinberg worked with managers and engineers from such corporations as Alcoa, Westinghouse and IBM to help improve organizational writing.

"The whole problem of writing and communication has been an important part of my career," noted Steinberg.

In 1958 he spearheaded the university's technical writing program — one of the oldest in the country — and also helped develop the overall curriculum of the English department. Steinberg was also involved in creating the master of arts in professional writing (MAPW), the doctorate in rhetoric and all of the department's other graduate writing programs.

"We grew in bits and pieces, like branches on a tree," he said.

Current English department head David Kaufer applauded Steinberg's role as a department historian. "His longevity makes him an invaluable resource for understanding how we have changed as a department from decade to decade. Erwin commands respect across the faculty."

Peggy Knapp, an English professor, first knew Steinberg as her superior when she joined the department in 1970. She has since come to see him as a true colleague. "I admire a career that is sustained," said Knapp. "I don't always agree with him about what he decides to do, but I admire that he sticks with it, even when the mainstream is turning another way."

Knapp said she is especially impressed with Steinberg's ability to keep up to date. "Erwin has a distinctive way of presenting literary study, but he is open to new ideas."

"His intellectual diversity is quite remarkable," said Kaufer. "When someone writes Erwin's biography, they will need to explain how one and the same human being can be both a career scholar in James Joyce and an advocate of plain language in real world documents."

Even with his successes, Steinberg's time at the university has not always been easy.

"Our first class in the college of H&SS was a handful," he said, recalling the era of



Erwin Steinberg on his walk to Hunt Library

Photo: Brian Connelly

"It's very common for our alumni to tell me that they live out the rest of their careers with Professor Steinberg encouraging them in their inner ear as they write and revise English prose," said David Kaufer.

Vietnam War protests. "That was the time of student unrest. On the one hand, we had to make sure that the students felt free to express themselves. On the other hand, we had to make sure that no one was going to go around blowing up buildings."

He recalled that during the spring of 1970, his office in Margaret Morrison was directly above the ROTC office.

One day, a crowd gathered outside and began smashing windows. Steinberg was working on a book at the time and had the manuscript in his office. He took it outside and put it in his car. "I was afraid they were going to firebomb the place," he said.

He later accompanied a group of students to a protest march in downtown Pittsburgh. "Three of us who were deans at the time were afraid that they were going to get into trouble, so we marched with them."

As the last dean of Margaret Morrison Carnegie College, Steinberg was criticized in 1971 for his role in closing the school.

"The number of students in home economics and business studies had dropped off woefully," Steinberg said. By the late '60s, many of the college's students were already in what are now H&SS programs.

The decision to close the college and allow female students to enroll throughout the university was not popular.

"People said 'No, the girls won't be able to handle it,'" said Steinberg. "But we had bright, eager, young women and they could keep up with anyone. These days, they're ahead of anyone."

Even with numerous job offers from other universities for positions ranging from professor to provost, Steinberg remained loyal to Carnegie Mellon over the years. "This place has been so exciting and so rewarding that it never seemed worthwhile to pick my family up and move to go someplace that might be more headache," he said.

Steinberg, who knew almost every faculty member when he first began teaching, marvels at the growth of the university.

"After I got out of the Air Force, I went back to New York City, where all my friends were, and they had never heard of Carnegie Tech. Now here we are, a world-class university. The change has been dramatic, even in one lifetime, or one and a half lifetimes."

These days, Steinberg teaches mostly literature courses, including a spring semester class on Joyce that he has taught for 25 years. He has the look of a true professor — black rim glasses, white beard, bright eyes — and he commands the attention of his students with crisp, calculated prose. He has a reputation as a tough professor who expects the best from his students and gives his best in return.

"Erwin is the professor that students hate when they are taking him because he is so meticulous and demanding about student writing," said Kaufer.

But Steinberg's strict methods pay off: "It's very common for our alumni to tell me that they live out the rest of their careers with Professor Steinberg encouraging them in their inner ear as they write and revise English prose."

"You might take a little bit of a beating, but you're better off in the end," agreed Erin Friess, a recent MAPW graduate, who took Steinberg's required course on style last year.

In 1990, Steinberg nearly retired. Then-President Robert Mehrabian convinced him to stay on as vice provost for education, a position he filled for five years.

A few years later, Steinberg suffered a spinal cord injury, a setback that ultimately kept him at Carnegie Mellon.

"If I had been in good health, I would have retired and there would have been lots of things that I could do. But, given that I enjoyed teaching and was still doing my research, and the department kept asking me to stay — it helped structure my life."

He does not plan to retire soon.

"It's in Erwin's job contract that he can't retire," joked Kaufer. "Erwin remains vital for us, and I suspect we remain somewhat vital to him, too."

SARA HENNEBERGER

Green practices make New House dorm environmental, practical

Seven years after planning began, New House, the new dormitory between Morewood Gardens and Mudge House, is in a race with several buildings across the country to become the first LEED-certified residence hall in the United States.

No matter which building is finished first, New House will still receive a silver award.

Designers have planned the construction and features of New House to qualify for silver Leadership in Energy and Environmental Design (LEED) certification. Developed by the U.S. Green Building Council, LEED certification is awarded on four levels, certified, silver, gold and platinum, to buildings that meet requirements for sustainable sites; water efficiency; energy and atmosphere; materials and resources; and indoor environmental quality.

"It's environmental, but it's also practical," said Tim Michael, director of housing services.

The practicality stems from requirements for LEED-certification, including the use of local materials, carpets made from recycled



Grading the front of New House

materials and wood from certified forests.

New House will also feature a white En-

ergy Star roof, sensor-controlled lights and water-conserving automatic flush devices in all urinals and toilets. During construction, waste was collected, trucked to East Liverpool, OH, and sorted by hand to allow recycling of 95 percent of the used material.

While raising the bar on state-of-the-art environmental features, the designers of New House resisted current trends in apartment-style campus living.

New House "flies in the face of that," said Michael. "We already have a balance [of housing styles] here, so we felt like we could build another double-loaded corridor and still have that be an attractive space."

Residence floors will be all double rooms with community bathrooms. The building will have TV and study spaces, a fitness room, kitchen and dining area and laundry.

"We believe [this design] helps with the transition to college for first-year students and the connection to other students and our community," Michael said. "Our goal is to make it as residential as possible."

First-year students, who are slated to oc-

cupy the building in the fall, will also have year-round heating and cooling with individual thermostat controls in each room. The ventilation system, Michael said, addresses the needs of the increasing number of students entering college with medical issues such as asthma or allergies.

Students, however, will not be the first to spend the night in New House. This May, parents of graduating students will be able to rent rooms during commencement. Several conference groups will also take advantage of the vacant building during the summer.

Meanwhile, rebuilding of the Cyert Center playground, displaced by the new building, will begin when the weather breaks this spring. Construction of the new playground is scheduled to take no more than 12 weeks.

The dedication of New House is scheduled for noon, May 2. President Jared Cohon will speak at the ceremony, which will include building tours and food. The entire campus community is invited to attend.

KATIE BAILEY

Cell phones and people : hi-tech, low comedy

The sociology of making calls during class or at 3.a.m. from the bar

To some people, a cell phone is necessary for safety reasons. To others, it is a status symbol. Cell phones make life easier, but can you become a bit too attached?

Ask Carnegie Mellon students, faculty and staff whether cell phones are accessories or necessities and above the din of tinny "Fur Elise" ringers, the complex sociology of cell phones rears its frustrating, loud and sometimes amusing head.

The players

Cell phones are not really a necessity for everyday survival.

But convictions on the owners' and non-owners' sides run deep, and the loyalties are strong. It's like our era's Civil War, except the owners don't fight with bayonets, but with downloaded ringer versions of Michael Jackson's "Beat It."

Reasons for buying cell phones range from the practical—in order to avoid having to buy (and lose) phone cards—to the extravagant.

Hajime Tamachi immediately noticed the difference in cell phone habits between the America and Japan when he arrived here last summer to begin studies at GSIA.

Tokyo businessmen, he says, routinely use cell phones to send e-mail with photos attached. "Everyone enjoys using cell phones and kids as well. If we want to invite someone to join our party, I usually take my picture and send [it] to my prospective party to say, 'Come here now.'"

Some cell phone owners just don't know how they functioned without their little ear warmers.

Emily Steck, a senior business major, is an owner. She stumbled upon her "need" for a cell phone the way some women stumble upon stiletto heels. There seems to be no need for either item until you try it out.

For her, the effect was irreversible, the addiction undeniable.

"Before I got one, it seemed like it was an accessory, but now it seems like a necessity. Because the more and more people I know that have them, it seems like I need [it] more and more."

Rules of the game

Cell phone etiquette is a hotly debated topic: Where is it OK to talk in public on your cell phone? Is it acceptable to pick it up in the computer clusters to call a friend and chat? What about in restaurants?

For the most part, people agreed that it is simply *not* OK to be babbling on your cell phone while in the presence of others who are hard at work—as we know all of you are at Carnegie Mellon.

The debate over cell phone use has spilled over to the classroom.

"So many people leave their phones on during class," Steck observed. "It goes off and people have to go digging for it and everyone just gets like disrupted and the teacher gets pissed off and doesn't know what's going on."

Karen Stump, director of undergraduate studies and principal lecturer in the Mellon College of Science, uses her syllabus to announce a policy for acceptable "cell phone etiquette" in the classroom. For her, it's simply a matter of respect.

"Be respectful of others in class and turn off any cell phones or audible pagers before class begins."

Catherine Moore, assistant professor of movement in the School of Drama, has a particular loathing for cell phones that ring during class. They destroy the students' focus in a class that depends on a connection between the physical and mental.



Modern and primitive cell phones

Photo: Brian Connelly

The syllabus for her movement classes announces the policy: "Students are expected to turn off any cell phones for the duration of class."

Moore tells the story behind the policy.

"There was a student whose cell phone, on quite a number of occasions, would go off, where I'd find her hiding in the back of the room using the cell phone. And after a while, it got to be a little aggravating, and finally one day, she got a cell phone call and I sort of jumped on her about that and was sort of disturbed.

"It turned out to be a call from her relative, that her aunt was dying or very sick or something, and had I known that ahead of time, that she really needed to be available for the call, we could've avoided some really uncomfortable moments there in the classroom. That's essentially where the policy came from—to try and avoid those kinds of moments."

Gloria Henning works in periodicals on the third floor of Hunt Library, the supposed "quiet" floor. She has regular run-ins with offenders of the quiet policy, but surprisingly enough, doesn't hold it against them.

"I am often surprised at how sincere and apologetic some cell phone users are when I remind them to be quiet. They are truly unaware that they are talking so loud. They honestly don't realize that they are distracting others who are reading or studying."

Henning, who herself is a non-owner, estimated that at least 50 percent of the students studying on the third floor use cell phones. If someone complains, students readily acquiesce to moving to a more remote area like the stairwell to continue their conversations, she says.

Calling the private line is OK, "as long as they don't call me in a stalker-type fashion, like 24/7, 'Where are you? What are you doing?'"

"I wonder if some students consider a cell phone to be some sort of a fashion accessory. It looks like a piece of jewelry—attached to their ear. You wonder if they could exist or function without it."

Smith also works in Hunt Library, on the first floor. Although he's a cell phone owner himself, his opinion about chatting on cell phones in the library is resolute "No."

"There's a lot of people that come in here with their cell phones on full blast, and when I can hear your cell phone all the way across the library when somebody's calling you, that's ridiculous. You could at least put it on vibrate, or silence or something. Or when you're talking, you could at least talk in a quieter voice."

Strangely enough, Smith himself was "targeted" for the interview because he himself was chatting on his cell phone at the counter on the first floor of the library.

The post-game

Not only do cell phones enable you to talk with family or friends while walking to class, but they also allow that "special someone" to get in touch with you whenever they darn well please. This adds a new—and unneeded—dimension to the dating game.

Anne Rittman, a Georgetown University senior, called cell phones a blessing in disguise. Cell phones with caller ID allow her to pick and choose her conversations, especially when it comes to annoying ex-boyfriends or questionable potentials.

"If I am not ready to talk to a guy, or [if I'm] hurried or in a bad mood, I just won't pick up when they call." This, of course, is made possible by her caller ID.

Another interesting phenomenon noted by Rittman was "drunk dialing." This involves calling an ex-significant other in the hope—usually induced by alcohol—that the person will be thrilled to hear from you at 3 a.m. This call is facilitated by the portability of the cell phone, which allows the perpetrator to dial from a bar or other location where comparably drunken friends can lend their support.

Ruth Keating, a History major, also believes that cell phones change the dating game. For her, it's all about deciding which number is the appropriate number to dish out. Cell or home?

Keating starts by giving out only her home phone number. Later she determines whether or not the person is worthy of the private line.

"You kinda wanna have a little bit of a mystery of where you are," she explains.

Phillip Colby Smith, a Psychology major, put the issue most clearly. It's OK for that person to call you on your private line, he says, "as long as they don't call me in a stalker-type fashion, like 24/7, 'Where are you? What are you doing?'"

The final score

The double standard rules in today's cell phone etiquette

Studies showed, for example, that it is not permissible to use a cell phone on the bus when you're sitting next to someone or when the bus is extremely crowded. It is acceptable, however, to talk when there is at least three feet between you and the nearest person. As long as they can't make out every word.

Next, it's OK to talk on your cell phone in the computer clusters as long as you're discussing an assignment and not dishing on Bob's nice ass or Sally's disastrous new haircut.

But movie theaters just aren't an acceptable place to chat, no matter what the circumstances. And no, no one even wants to hear you even pick up for a moment to utter, "I can't talk. I'm in the movies."

Finally, don't you even *dare* bring that cell phone inside a place of worship. Although it's not scripture just yet, we're sure God's working on a policy for that, too.

SONNI ABATTA

Technology expands possibilities for phone users

Each year, the Wow factor of cellular phones becomes higher as handsets are no longer just tools for communication, but status symbols.

It's no longer about getting a phone, it's about getting *the* phone with instant messaging, voice activated dialing, the works. As the technology advances, yesterday's new perks become obsolete, replaced by fancier and cooler functions.

GSM, TDMA or CDMA?

In Europe and most of Asia, the dominant wireless service technology is Global System for Mobile Communications (GSM). GSM utilizes a device called a subscriber identity module (SIM) card, a piece of plastic one-third the size of a piece of gum. The card stores phone numbers and personal preferences on the card instead of on the phone. SIM cards attach to the back of the phone and are easy to use. When you switch to a different service, you no longer have to reenter your list of 100 phone numbers or buy a new phone. Simply purchase an SIM card from your new service, attach it to your old phone and your cell is ready to go.

Another advantage of GSM is the freedom to choose different phones. If your cell phone has become a fashion accessory, with GSM you can stop stressing over which service carries what model because every phone is compatible with all the services.

Although GSM has not caught on in the U.S., there are companies that offer GSM. GSM handsets here operate on the 1900 frequency, whereas in Europe and Asia they work on the 1800 and 900. You cannot use your GSM phone in other countries, unless your handset happens to be a tri-band that supports all three frequencies.

TDMA and CDMA are the standard interfaces in United States, although they are considered antiquated in Europe and Asia. The most noticeable difference between TDMA and CDMA is that you have to choose a phone according to the service it offers. For example, the 8000 series Nokia or Panasonic handsets require services that function on TDMA, such as AT&T or Cingular Wireless. Models made by Samsung or LG run only through a CDMA network such as Sprint or Verizon. Every time you change your wireless provider, you must buy a new handset.

U.S. welcomed 3G in 2001, and it is slowly expanding. 3G is the technology that enables web access via cell phone at a speed rivaling a dial-up modem on a vibrant, color-filled web browser. In Japan, the dominant web service is I-Mode, offered by Japanese communications giant NTT DoCoMo. In the states, I-Mode is known as the M-Mode in the new GSM service provided by AT&T.

M-Mode is billed as the future of cellular phones. It acts like a miniature version of your laptop. Handsets for the M-Mode have color screens that range from approximately three inches to a large 240 pixel by 320 pixel color screen on the Siemens SX56, a pocket PC-cellular phone hybrid. You can check the latest stock quotes, flight times and movie showtimes on your handsets. A fascinating and creepy new feature is the Find Friends. By adding people to your list, you can pinpoint their locations any time their cell phone is on. AT&T promises all this with smooth Internet surfing and user-friendly interfaces.

Multimedia Messaging Service (MMS) is an improvement built into the newer phones that allows users to send and receive text messages with color pictures and sound. With MMS, you can get your report with diagrams and e-mails with graphic images, and edit it, if you like.

KAI WU

Cohon addresses issues from parking to child care

On Nov. 6, approximately 100 staff gathered in McConomy Hall for President Jared Cohon's annual address to staff. Cohon began by thanking Ed McAfoose, Staff Council chair, and members of Staff Council for the hard work they are doing. He then made some general remarks in support of his assertion that Carnegie Mellon is doing well.

Cohon cited the recent undergrad ranking in US News and World Report of 21 overall. More important, he said, is a recent report by the Higher Education Research Institute (HERI) that has followed 120 colleges and universities for the past 20 years.

HERI focused on four universities that saw the greatest improvement through the '80s and '90s, and Carnegie Mellon was one of the four. HERI noted our commitment to change, commitment to excellence and our ability to work together. Cohon underscored our teamwork as one of our strengths — students, faculty and staff working together to accomplish goals.

Cohon also noted that our sponsored research has increased 28 percent in the past year, growing from \$185 million to \$240 million. These pockets of sponsored research represent staff and faculty working together in small groups.

Cohon said that our comparatively small endowment has pros and cons. While layoffs of staff and faculty are occurring at universities with large endowments, including Stanford and Duke, Carnegie Mellon has not needed to. But it might happen in the future, he said. Carnegie Mellon is less dependent on its endowment; however, its size does place constraints on the university in terms of growth and spending.

To provide background before addressing compensation issues, Cohon said Carnegie Mellon's philosophy in terms of compensation and benefits is to look at the total package and to ensure that it is competitive in comparable markets. Carnegie Mellon also strives to be fair — what one individual receives as a raise should be comparable to what another individual receives. Cohon said that in order to ensure fairness, it is a priority that all departments conduct performance assessments. There must be a standard system for evaluation. The goal is that every department use performance evaluations in determining raises.

Having laid this groundwork, he moved on to submitted questions. Some of the highlights included:

- Compensation and benefits: In response to the observation that staff in a variety of positions are compensated at a lower rate than comparable positions in the private sector and at peer institutions, Cohon said that the university does not seek to pay the highest salaries, but rather the median, to be competitive. "We're not seeking to pay the highest salaries," Cohon said. "There are



On the Job

some salaries we simply do not pay."

- Faculty salaries ranked near the highest in the country, with staff raises low and variable across departments. Cohon said that consideration of staff and faculty salaries must be relative. Faculty salaries need to be competitive on a national level, he said, while staff salaries are competitive locally. Carnegie Mellon needs to compete with other top universities, but Cohon described faculty salaries here are actually below the national average. Faculty salaries, Cohon said, are guided by the same philosophy as staff salaries — to be competitive in a relative market.

- Part-time employee insurance and Paid Time Off (PTO). Part-time staff who work 1000-plus hours receive health, life, retirement and tuition benefits, but the university has no plans to change their PTO.

- Health insurance premiums will go up this year. Cohon said that average increases among peer institutions are between 20 and 30 percent, while Carnegie Mellon is experiencing a 10 percent increase in premiums, with a cost sharing breakdown of 75 percent university and 25 percent employee.

- The university's pension contribution for employees. Last year it went from \$13.3 to \$15.2 million. Cohon explained that those figures represent growth based upon increases in salary, raises and additional staff.

- Tuition benefits for spouses. Cohon said it is not feasible due to cost and the limited resources. As an aside, Cohon shared that the university used to recover tuition benefits for employees' children from government contracts, but in January 2000, the government disallowed the practice.

- Taxing tuition benefits. Asked why Carnegie Mellon does not follow the IRS code excluding tuition benefits from taxable wages for job related degrees, Cohon said that the university does follow the IRS codes, taking the most conservative route in terms of compliance. The graduate tax-exempt benefit is capped at \$5,250 annually.

- No plans to implement a university-wide four-day workweek or half-days. Flextime, Cohon said, is department-specific. Insofar as it makes sense, departments are able to devise flexible work hours.

- Asked if PTO encouraged sick people to come to work, rather than lose a PTO day,

Cohon pointed out that, on average, a first year Carnegie Mellon employee receives 17 days of PTO each year, compared to 10 days at most organizations, and that 12 paid holidays per year is competitive.

- Child care. Asked if getting into the Cyert Center was political, Cohon said, "I know it's very frustrating," but that the university has no current plans to expand its child care. He pointed out that the master plan does call for expansion and that growth could perhaps occur at the Cyert Center when the Morewood development occurs.

- Career Development. Asked what motivation employees have to stay committed to Carnegie Mellon as a workplace, Cohon mentioned recent improvements in Human Resources training, but he also said that it is unreasonable to expect that every employee would achieve his or her career goals at the university. He cited a recent staff morale survey in which 75 percent of respondents expected to stay at Carnegie Mellon for at least three years, and an analysis of 158 hires between January and September 2002, (60 percent of total hires), showing that 35 percent of the 158 were internal hires.

Asked if getting into the Cyert Center was political, Cohon said, "I know it's very frustrating," but that the university has no current plans to expand its childcare.

- Respect for staff. Cohon was asked what the president's office can do to enforce an inviting environment for staff members. He said that disrespect from faculty is not appropriate and not acceptable and that university management will act upon such situations if they are made aware of them. Cohon said that disrespect for staff reinforces a second-class feeling that is corrosive and bad for the institution. Cohon implored staff to come forward, and that confidentiality will be maintained, and staff can feel protected.

- Dissemination of information. Cohon emphasized that because we are decentralized, when centers or departments close, it is not always possible to disseminate the news inside the "family" before the news gets to the outside world.

- The endowment. Explaining the growth of the endowment, Cohon said the university's annual operating budget is \$550 million, a small portion of which comes from our endowment. Comparable institutions rely more heavily on their larger endowments to offer higher salaries, build

faster, etc.

Cohon said the university's goal for the endowment is \$2 billion. It is currently \$700 million. Comparable universities have \$4 to \$8 billion endowments.

Cohon compared the endowment to a savings account, a discretionary fund to be used as needed, while other monies — such as tuition and sponsored research — are not discretionary.

- Buildings and classrooms. Cohon said the university is improving buildings selectively over time, with Doherty Hall being refreshed by its addition, along with two new classrooms. Cohon described classroom space as an issue of flexibility and scheduling, where colleges or departments control many classrooms and Warner Hall does not have the authority to assign them. The desired teaching time for faculty is between 10:30 a.m. and 2 p.m.

- Parking. Cohon explained pecking order to the parking system: senior administration and tenured faculty first, then employees with access issues, non-tenured faculty and staff, graduate students and finally undergraduates. Nearly all parking applicants receive their first choice, he said, and the average 3.37 percent increases in parking fees still leave average daily parking fees more than a dollar lower than at the University of Pittsburgh.

- Environmental studies. Cohon said that a proposal is pending to begin seminars in environmental issues for students.

- Anti-sweatshop code. Cohon said the university has adopted a code requiring licensees to follow labor standards showing concern for the environment and human rights issues.

- New chief financial officer. Cohon announced that Stefano Falconi from MIT is scheduled to start on Jan. 1. Cohon also thanked acting CFO Bill Laird.

- Emergency plans. In the event of emergencies like Sept. 11, Cohon asked families to establish a plan of who will pick up children and receive family phone calls. Cohon thanked Sherri Hayes for her work coordinating the university's plans.

Cohon's next office hour is from 2:30 to 3:30 p.m. Jan. 28. Contact Allison Gale at agale@andrew.cmu.edu or 412-268-5345 to schedule an appointment.

LAUREN BLAIR, JASON BUGG & KAY VINAY
www.cmu.edu/staff-council/

FOCUS welcomes letters. Please write to davidson+ or bc1z@andrew.cmu.edu

Winter, spring travel bargains still available at the right sites

The devastating combination of post-Sept. 11 travel fears and the spiraling economy has left airlines and travel agencies begging for tourism dollars. While this means bankruptcy for United and USAirways, it means fantastic prices on winter vacations for those of us lucky enough to have downtime between semesters or during that cure to cabin fever, Spring Break.

To get the best deals, one option for bargain hunters is to bypass the most popular travel websites like Expedia.com, Travelocity.com, Trip.com, Orbitz.com, Hotwire.com, and Priceline.com and head toward smaller travel companies and major airlines. The larger, most popular travel sites are still best for single purchases, such as airfare or car rentals without package combinations. They also allow more flexibility, because you can choose exactly which flight or hotel you want according to the schedule you want.

Most of us don't own vacation homes at every destination, so package vacations are a smart choice. Many travel companies offer packages at prices less than average airfare. For your part, you'll probably have

to depart mid-week and stay at least the stipulated number of nights at your destination. Leaving from Pittsburgh can also tack on an additional charge, but the prices make the conditions more than worth it.

Early last month I scoured the Internet for the best packages going. If something looks good, reserve the trip fast. Each of these deals has a deadline (most this month) that you must book before in order to get the price. And each has a specified time window during which the trip must take place. Check the stipulations and your calendar before booking.

Some of the warmest winter breaks don't require a passport. Break out your hula skirt and head over to BlueSkyTours.com for discount Hawaiian vacations. You'll have to call your travel agent to book through Blue Sky, but if you depart from Los Angeles, \$427 per person can get you airfare, five nights in Oahu, breakfasts and a luau. Or, pack up the kids and click to Eleisure.com for all-inclusive Orlando vacations. From New York, \$343 per person is enough for airfare, five nights at a hotel, five days of Thrifty car rental and shuttle service to the

Disney parks.

If you're eager to go abroad, you can still have your pick of discount destinations. For sun and sand, visit AtlasVacations.com to see Antigua for \$599 per person. The price includes airfare and oceanfront accommodations at the Royal Antiguan, and you won't have to bring an electronic translator. Antigua is a former British colony, so Antiguans speak English.

If you can't wait for summer to hit the northern hemisphere, fly south to Buenos Aires with AnalieTours.com. For \$599 per person, you can get airfare, six nights at a hotel, breakfasts and a city tour. Once there, you'll find the falling Argentine peso keeping your expenses low.

This winter you can also head down under with SPTravel.com. Fly and stay 12 nights in Australia, plus get six days with a rental car, for \$1,599.

You won't find the best winter weather in Europe, but you can find some of the best vacation deals. Go-today.com, one of the lowest priced travel companies, has dozens of packages to European destinations, including a six-night combo vacation to Lon-

don and Paris for \$649. A competitor, OffPeakTraveler.com, fights back with six-night London vacations for \$379.

If you'd rather be on safari than on a beach, head to 2Afrika.com. The \$1,890 package includes airfare to Kenya, accommodation, several game tours, almost all meals and even a stop at the equator for a "water demonstration."

You can also find adventure at ChinaFocusTravel.com, where \$999 buys you a six-city tour with airfare and 10 nights at a hotel. Stops include Beijing, Jinan, Taian, Qufu, Suzhou and Shanghai.

For complete flexibility, most major airlines will let you design your own vacation package by choosing a departure city, destinations and accommodations. Start comparison shopping at Continental (Continental.coolvacations.com), USAirways (USAirwaysVacations.com) or United (UnitedVacations.com).

The end of winter also means the end of most of these deals, so dig out your suitcase and act fast.

KATIE BAILEY

Bearing arms with the Carnegie Mellon gun club

Pulling into the dirt and gravel parking lot of the Greater Pittsburgh Gun Club, you see nothing but Dodges, Fords and Chevrolets. They are mostly trucks – big, powerful, and American-made. Men come here for sport with their pals, women come here to learn self-defense, and sons come here to receive life lessons from their fathers.

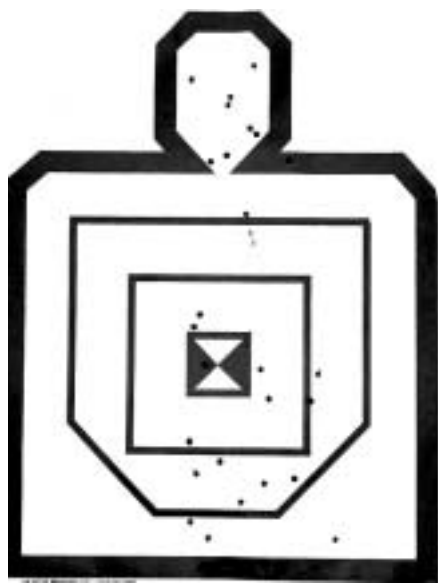
It is the area's largest outdoor range — 18 miles west from Downtown in a vast clearing in the woods where people from three states regularly shoot. Among them are members of the Carnegie Mellon Gun Club.

The right to bear arms is very much a part of the American mentality, but few people on the CMU campus know the club even exists. It was started in 1994 by a group of student gun enthusiasts who informally gathered for weekend trips to local shooting ranges. To be officially recognized as a student organization, the students needed a faculty advisor. They approached Preston Covey, professor of Philosophy.

As an expert in the field of gun control policy and a fully sworn county deputy, Covey was a well-qualified choice.

"Shooting is not just a hobby for me. It is a profession and research field," said Covey.

Covey is also a licensed law enforcement instructor and firearms instructor, and has sponsored courses for law enforcement of-



ficials. The bulk of his academic research is focused in the area of criminal justice and violence in American society.

"I was extraordinarily impressed with the students involved in the club," Covey said. "Their willingness to give up their time to teach others how to use guns safely—I thought this was very selfless of them. They are very dedicated and highly responsible."

The club has since experienced several

ups and downs in its level of activity.

In 1996, the club became defunct as the club leaders graduated. It was reinstated two years ago when Kevin Gaughen, currently a fifth-year technical writing major, joined forces with student Dan DeRight, who now serves as the club's president. That same year, guns and all deadly weapons were officially banned on campus as the outcome of an initiative by Human Resources and the late chief of police, James LaPaglia, that was endorsed by the Faculty Senate.

The club is now experiencing another lull, with Gaughen organizing his own trips with interested students.

"Our top priority as a club was to get people to the range and show them how to use guns safely," said Gaughen, who until recently served as the club's vice president.

Covey agrees, "Safety training and handling is of paramount importance."

At the club's peak, members included faculty, undergraduates and grad students as well as students from the University of Pittsburgh. Club meetings would yield 20 to 25 students who would talk about the next trip to the range and watch instructional videos supplied by Covey.

In fall 2000, the Gun Club participated in the activities fair, uncertain of the response students would have toward them. Much to

their surprise, they walked away with a list of 150 interested students. Many were females interested in learning how to use a gun as protection, rather than in shooting as a hobby.

"The club consisted mainly of guys, but also women, in technical disciplines like engineering and computer science, but there are interested people sprinkled throughout all fields," explained Covey.

Gaughen said, "Most students join the club to learn how to use a gun for protection, but they come back because it is fun."

He has also seen an increased interest in the club since Sept. 11.

"Before 9/11, people would argue with us over gun rights, but after, people were crawling over each other to participate, especially Middle Eastern students," said Gaughen.

Julia Chiu, a fifth year information systems major, remains open-minded about about the club. "If they teach other students how to defend themselves with a gun, then I think the organization sounds pretty interesting. I'm not for guns, but I'm not against them, either. If some students want to learn how to protect themselves and learn how to shoot properly, then I think they have every right to."

LEAH MESSINA



Project explores impact of sniper

These images are part of a series of collages created by senior Melissa Clark as part of the course Revealing Place, taught by Charlee Brodsky, professor of Design, and Jane McCafferty, associate professor of English.

Clark, who is from the Washington, D. C. area, collected images and newspaper headlines to tell the story of the Beltway sniper case. The images here include one of the shooting victims and a car sought by police.

Clark finished the project just a few days after the sniper suspects were arrested, but she began working on it while the shootings were still happening in an uncertain and fearful atmosphere.

The final photograph in the project is a close shot of the suspect's face, with cross-hairs superimposed and the words "capital punishment" written inside the circle.

That photograph and her entire project is set up in a way where the final statement is ambiguous. She hopes that viewers will be left to wonder whether the statement being made is for or against capital punishment.

"It sort of leads the audience to come to their own conclusions," says Clark.

BIANCA CHANG

Talkers, continued

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Saunders is a founding member of the Film Crash group. Created in 1985 by directors Matthew Harrison and Karl Nussbaum along with Saunders, the New York-based organization immerses itself in film and television culture on an international level, having screened work by more than 100 filmmakers from the U.S. and Europe.

Additional information on Saunders or the Film Crash group can be found at <http://www.filmcrash.com>. The next Adamson reading will feature poet Susan Stewart at 8 p.m. Monday, Jan. 27.

SEAN MINTUS

CEO Schmidt agog for Google

At noon on Nov. 4, McConomy Auditorium was filled to capacity for a lecture by Eric Schmidt, Google chairman and CEO. The lecture was sponsored by the Institute for the Study of Information Technology and Society (InSITEs) as part of the Verizon Lecture Series.

Schmidt spoke about "Sustaining Success in a Challenging Economy" to a captive audience that responded to his every technical joke, whether about hardware, software or Google's search engine, which today is the most widely used with an average of 150 million hits per day. Schmidt began with a timeline of surprising technological innovations that are taken for granted today, such as instant messaging, optical computing and, above all, laser eye surgery. He predicted the widespread use of broadband Internet,

currently used by 20 percent of Americans. With each innovation, Schmidt pointed out, the prices drop and usage increases.

Schmidt compared the information technology boom to the rise of the railroads, electricity and radio. In each of these industries, he pointed out, early stages allowed many companies to enter the market. After reaching a plateau in which prices dropped and transactions became cheaper, only a few large companies were left.

Schmidt went on to say the advertising industry is on the decline — not because because the Internet is able to provide more effective advertisements, he argued, but because marketing is the only sector of American industry that has not made technology an integral part of its operation. The future is not about visual flashiness, Schmidt said, but rather, *speed*.

Google, like any other search engine, is funded by advertisements. Unlike its competition, however, Google allows only text ads while rejecting bandwidth-consuming banners and pop-up windows. This offers users a huge advantage when choosing Google over other search engines; after all, cliché or no cliché, *time is money*. Schmidt said the key to Google, and to information technology in general, is to "put people in touch with information — but only when they want to be." This is where the text-only advertisements come into play.

Google began as a research project at Stanford University in 1995. Today, it is housed in six data centers. Five are essentially bankrupt but the sixth has emerged as a larger company, perhaps one of the few that will be left as the information technology age plateaus and becomes mainstream.

Google's innovative web spidering algorithm, page rank algorithm, and its spelling correction — the last a feature that uses the same device for each of the 86 interface languages of Google — make it stand apart from other search engines. Schmidt said using the cheapest, most far-reaching ideas creates longevity for a company as its industry spreads through society. Before being recruited by Google, Schmidt was CEO of Novell, a developer of the programming language Java, and an executive at Sun Microsystems. His affiliations with pioneers in computer science led to his becoming a member of CMU's board of trustees.

Peter Shane, InSITEs director, introduced Schmidt's lecture. "I'm feeling lucky," Shane said. The sentiment echoed through the audience as Schmidt spoke.

AIMEE PI

Panthers redefined black womanhood

Whenever Robyn Spencer talks about her research on gender politics in the Black Panther Party during the 1960s and '70s, people listen. When asked what she thought about the more than 40 students and faculty members crowding into a packed conference room for her Nov. 22 talk, Spencer replied, "It's usually like this when I talk about the Panthers." The talk was sponsored by the Center for African American Urban Studies and the Economy (CAUSE) at Carnegie Mellon.

Spencer, assistant professor of African American Studies at Penn State University, disputed the traditional belief that patriar-

chy defined the role of women in the Black Panthers. Involvement in the Panthers, said Spencer, "redefined black womanhood in ways that continue to be relevant."

Spencer believes that the organization worked to create a space where black men and women could challenge stereotypes and traditional gender roles. The Panthers took an official stand against male chauvinism and a division of labor based on gender. But the party sometimes struggled to connect theory with everyday practice.

"The Black Panthers spoke to women in diverse and contradictory ways," said Spencer. During her lecture, she displayed a promotional poster that featured several drawings of black women brandishing guns. The same piece included a request for a woman party member to do clerical work.

The Black Panther Party was founded in 1966 in Oakland, CA, by Huey Newton and Bobby Seale. Party leaders argued for political and economic equality and the right of blacks to use violence for self-defense.

"The call of the Black Panthers resonated with many black women," said Spencer. At key points during the party's history, the majority of the members were women. After several leaders were imprisoned or killed in the late 1960s and early '70s, women rose in the ranks of leadership, Spencer explained. They voiced many of the issues relevant to them, such as childrearing, birth control and community empowerment. During this time, the party supported community programs such as food banks and health clinics. By the end of the 1970s the party succumbed to legal attacks and internal division and ceased to be a political force.

DENISE CULVER

Search-and-rescue robots must move, see, feel

continued from page one

"It's not about the robots," Murphy emphasizes. "It's about the information they give us."

During the search at the World Trade Center, there were no deaths and relatively few serious injuries among rescuers. But Murphy points out that 135 rescuers died searching for survivors of the Mexico City earthquake in 1985.

The most basic information that robots can give in a search and rescue is whether people are alive and where rescuers can find them. At the Sept. 11 crash site at the Pentagon on Murphy says, rescuers had to guess which side of the building was nearest the survivors. Because they started digging from the wrong side, they might have missed people who could have been saved.

From this baptism by fire, Murphy identifies problem areas both with the human operators of the robots — primarily high emotions and fatigue — and with the robots themselves. Search-and-rescue robots need to see, smell, feel and hear victims, she says. They must also communicate with victims and be ready to deliver medication.

Murphy stresses the importance of robots' abilities of perception. The most obvious feature of remote controlled or autonomous mobile robots — that they move — may not always be their most important feature for search and rescue operations.

"On the average run, the robot was stopped 49 percent of the time. Ninety percent of the research money has focused on navigation — but there might be more bang for the buck in enhancing perception."

Stephanie Brelsford talks while looking at the TV monitor. "Go on an angle. Turn a little bit more. Did we flip?"

Two weeks after Murphy's presentation, in a cordoned-off corridor next to the Singleton Room in Roberts Hall, Brelsford, an undergraduate in Mechanical Engineering, is watching a live video feed from a camera mounted on her team's robot, Thighmaster. Andy Young, her team partner, sits with his laptop, controlling the robot as it travels through a maze set up on the floor of the Singleton Room.

The maze is a model "world" of damaged buildings where robots built by students in associate professor Howie Choset's introductory class in General Robotics are competing to find "survivors." Chunks of styrofoam stand in for collapsed concrete walls and ceilings. The "survivors" are wrestler action figures with cutout photocopies for faces. One is Jared Cohon.

Peter Zhang, a member of Brelsford's and Young's team, is watching with other students and visitors. The students are seeing this model world for the first time. In a timed trial, the teams get credit for maneuvering



Photo: Brian Connelly

Lego League robots generate excitement in Lawrenceville

"Look at all these roboticists who are going to be at CMU in 10 years," enthused Norm Kerman, educational coordinator at the National Robotics Engineering Consortium's Robotics Academy. The consortium hosted its First Lego League competition Dec. 7 at their Lawrenceville facility. Hundreds of middle schoolers and parents from the Pittsburgh region and as far away as Charleston, WV, and Corning, NY, cheered the robots that their teams built.

Above: Salt 'n Light, a club of Beaver County homeschoolers, react as their robot lifts a load onto a raised platform.

their remote controlled robots around obstacles, and get more credit for finding survivors — half credit if they "see" someone, full credit if they get close enough for a good picture to identify him. If they run over a survivor, they lose points.

"Oh my God," Young says. "There's someone like right here. Is that Mark?"

"Do you want to do a little dance with him?" says Brelsford. "Just keep going back and forth. Something's catching. Are we on our side?" Cheers and moans from spectators in the next room are sometimes the best indication of what shape the robot's in.

The Thighmaster team does very well, winning the competition with 135 points. The robot has two advantages: one is a retracting push bar that gives the robot its name, which can keep it from getting stuck. The other is vision: in a game in which you win points for seeing people, Thighmaster carries the same type of camera as the other robots, but the team has mounted it on a rotating platform. Thighmaster's camera can sweep a room without the robot moving.

A week later in class, Choset, who is the director of research for CRASAR, asks his students to evaluate the performance of their teams. "How many of you guys got lost?"

Nearly every hand goes up. Choset asks

how many people redesigned robots, and how many times. In a competition at MIT, Choset says, one out of three winners found themselves rebuilding the design the night before the competition.

Brelsford agrees on the value of redesign. "We rebuilt a lot. We fixed problems by rebuilding it."

Small, simple robots, one student concludes, were best in the end. "The team with the best vision clearly got the most points."

Chuck Thorpe, director of the Robotics Institute at Carnegie Mellon, says the complex problems of modeling human perception have been worked on as long as there have been robots. Autonomous robots are now good at navigating by seeing shapes and estimating distance, but at the levels of interpretation and inference, he says, "There is a long way to go."

Thorpe illustrates this with his own project, the Navlab autonomous driving vehicles now in their 11th generation in the lab.

"It's one thing to look out and say this is an object in front of me," Thorpe says. "It is another to say the object is a bouncing ball, and yet another to say that if it is a bouncing ball, there may be a child following it."

In strictly visual terms, Thorpe says, the best digital video available for remote control robots is now approaching the resolution of a human eye. The robots still come up short, however, in peripheral vision, smell, and tactile human senses.

Much of the funding for mobile robots to date has come from the Defense Advanced Research Projects Agency (DARPA), an agency of the Department of Defense. Future research on search-and-rescue robots may need a new source of funding. Thorpe says DARPA is interested in basic mobility in robots to explore booby-trapped caves in Afghanistan, much like the Groundhog robot that CMU professor Red Whittaker recently unveiled for mapping mines. Soldiers are now clearing booby traps in those caves by dragging a grappling hook along the cave floor.

DARPA funds research with potential military applications, and a system for domestic search-and-rescue operations is not necessarily a military mission. Thorpe believes that the new Homeland Security Department may be interested in funding research in search-and-rescue robots, perhaps putting together systems based on research that has been funded by other agencies.

BRIAN CONNELLY

Ex-astronaut Jay Apt lands at Carnegie Mellon

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Pittsburgh, returned to the city in 1997 to be the director of the Carnegie Museum of Natural History. While there, he initiated major operational changes. He calls the museum "one of a half-dozen museums in the world with a large research component," and it had been relying primarily on its endowment for support. Apt established incentive programs to encourage staff members to apply for funding grants to support their research.

While at the Carnegie, Apt also modernized the programming and renovated the exhibits, which had been displayed in more or less the same way for 50 years. Improvements that Apt oversaw included the addition of a digital wrap-around theater (the Earth Theater), a renovation of Dinosaur Hall, the creation of a lecture series on global climate change featuring internationally known researchers, and the construction of the Paleolab, where visitors can watch researchers prepare fossils.

Apt says one of the most startling views from space was "Looking at a meteor burn up in the atmosphere below you."

"A good museum will provide several ways for people to access information," says Apt, "including reading, hands-on, and multimedia. [You want to] submerge people in the experience."

Since leaving the museum in 2000, Apt has been serving as the chief technology officer for iNetworks, a venture capital firm located in downtown Pittsburgh that specializes in high technology applications. As CTO, he evaluates the technology and applications in the marketplace of those com-

panies that request funding. He reviews the basic science, the development of the technology, alternative solutions to the same problem, market demand and the quality of the team that will be developing the product. Says Apt of the process: "We don't take anything for granted."

Entrepreneurship isn't a new activity for Apt. He started his first business in high school, a small manufacturing business that raised money to build model rockets. As an undergraduate at Harvard, he started "Model

Rocketry Magazine," and he has also had a photography business. While at the Carnegie, working with Red Whittaker and Illah Nourbakhsh of the Robotics Institute, he developed and marketed a robotic tour guide for museums and similar organizations.

Apt's professorship is in EPP, his office is in Robotics, and he lectures at the Heinz School. He has extensive interaction with faculty from GSIA, ECE, and Computer Science as well. "Having seen MIT, Harvard, and Cal Tech at close range...Carnegie Mellon does a much better job in interdisciplinary work...It's something CMU ought to be very proud of." He feels Pittsburgh's greatest strength is "its universities, without a doubt. In the grand scheme of things, that is the competitive advantage Pittsburgh has" compared to similar cities. "CMU is an incredible place and I'm very lucky to be associated with it."

MEG PAPA