Tech community reflects on Mars missions

With professors and alumni playing roles in space exploration, how do the recent successes impact Tech?

By Marcela Munro
Contributing Writer

The past few weeks have been a very exciting time for space exploration: two NASA rovers landed on Mars in January and have been sending back valuable images and data. Spirit, one of the rovers, landed on the Martian surface Jan. 15 and is functioning again, after some software glitches caused much concern. The second rover, Opportunity, landed Jan. 31 on the opposite side of Mars.

Meanwhile, back on Earth, President Bush tapped into the excitement of these successes by delivering a speech on future space policy at NASA headquarters in Washington, D.C. The President said he wanted to commit the U.S. to a long-term human and robotics program to explore the solar system, starting with a return to the moon that will ultimately enable future exploration of Mars and other destinations.

What may not be common knowledge, however, is the central role that members of the Tech community are playing in these events.

Edward P. Aldridge, who earned his master’s degree in Aerospace Engineering from Tech in 1962, was chosen to be head of the Commission on the Implementation of U.S. Space Exploration Policy, a new panel that will advise NASA on the long-term implementation of the president’s new vision for space exploration.

Aerospace Engineering Associate Professor Robert Braun is a former research scientist and project manager at NASA’s Langley Center. He also served as a consultant on the Mars Exploration Rover project from its inception in 2000 through the two landings this month, with a fourth landing system. Braun was actually at the Jet Propulsion Laboratory in Pasadena, California, for the Spirit landing to assist with reconstruction of the vehicle’s atmospheric flight performance.

The Technique interviewed Braun, as well as Aerospace Engineering Professor John Olds, director of the Space Systems Design Laboratory, and Chris Maston, a senior in Aerospace Engineering, to get their opinions on the recent Mars excitement from a Georgia Tech perspective.

What are your general feelings about NASA’s success with the Spirit and Opportunityrovers and Mars exploration?

Braun: This is a tremendously exciting time for all of us in the planetary exploration community. The safe landing of both the Spirit and Opportunityrovers on the Mars surface is a historic event made possible through the innovation and dedicated efforts of many of the nation’s brightest engineers and scientists. This team has done a great job and their accomplishment has inspired us all. It is unbelievable to think that we presently have five spacecraft performing scientific surveys of the planet Mars. These space systems will return a wealth of scientific knowledge about Mars’ past and present geology, climate, resources and potential for life. In turn, these discoveries will teach us...

By Joshua Cuneo
Senior Staff Writer

Students at Tech and around Georgia are taking on Hollywood this spring in what’s being called a ground-breaking, statewide filmmaking competition.

Dubbed CampusMovieFest by its creators, this competition represents the next evolutionary stage of Tech’s popular iMovieFest, an annual movie-making event where the completed products are showcased to Tech students in February.

Normally, the process ends there, but this year, the program has expanded to encompass other universities, thanks to the sponsorship of Delta Airlines and the efforts of Ideas United, a company founded by the former Emory University students who developed the original iMovieFest concept three years ago.

The premise for CampusMovieFest is the same: using state-of-the-art equipment, registered groups of ten or more students each have one week to create a short movie. Participants in the event have all the equipment provided for them, including a digital video camera, a powerful Apple iBook with Movie and GarageBand to create their own soundtracks and free training and support.

However, what makes this year’s competition special is in addition to a campus-wide competition, a university’s winners will move on to face off against competing films from other universities in a grand intercollegiate viewing downtown.

Details are still being worked out, but at least one Tech moviemaking group will square off against seven other colleges—winners from Emory, Oxford, Georgia State, Clark Atlanta, Morehouse, Spelman and the University of Georgia—at the Fox Theater on April 19 (admission is free).

The iMovieFest committee hadn’t anticipated this sudden change, but when Ideas United approached Matt Taylor, a fourth-year Material Science and Engineering major and head of the iMovieFest committee at Georgia Tech, he jumped at the opportunity.

“We wanted to take iMovieFest as far as possible,” he said. “We had already thought about extending to GSU... [Last year], I said that next year we should do it at the Fox, and everybody laughed.”

Matt Taylor
iMovieFest committee
Winner receives a free *Technique* T-shirt

**Tech Up Close**

Last week’s winner:
Danny Nguyen

Last week’s Tech Up Close:
Chi Epsilon key in Civil Engineering building

email: focus@technique.gatech.edu

By Stephen Marek / STUDENT PUBLICATIONS
Maston: Of it. I’m really excited to see the new challenge. On a personal note, it establishes a goal. I expect NASA and the national vision for NASA has been cut. However, I think a existing programs and research are for this new challenge. Some significant transformation as it prepares for this new challenge. Some existing programs and research areas will be cut. However, I think a national vision for NASA has been missing for a number of years. The President’s initiative clearly establishes a goal. I expect NASA and the country to respond favorably to this new challenge. On a personal note, I’m really excited to see the new direction and I hope to be some part of it. Maston: I am a strong supporter of both manned and unmanned space exploration. I believe that the technology that we develop to explore the stars has a profound and reaching impact on society. Unmanned space exploration is as important as manned missions. I hope that President Bush’s plan for space progress will inspire revolutionary concepts and create a boom in technology as NASA did during Apollo.

What impact has this had at Tech? Braun: This excitement is readily apparent at Georgia Tech, where the successful landing of Spirit and Opportunity has been the talk of the School of Aerospace Engineering. Since returning from the Jet Propulsion Laboratory, I have spoken on technical details of this subject in my Space Systems Design class. Olds: On the research side, our labs are developing a range of applicable technologies and analytical capabilities that might be used for the mission. Typical technologies being developed in AE and other GT departments and schools include advanced structures and materials, adaptive guidance and control algorithms, aerospace design optimization methods, high temperature thermal protection systems, combustion and propulsion technologies, scientific instruments, and technologies for in-situ resource utilization. Given our ongoing partnerships with NASA on the research side (e.g., the National Institute for Aerospace and the University Research, Engineering and Technology Institutes), I would expect Georgia Tech to play a strong supporting role in developing the new technologies and techniques to support the new exploration initiative.

What space exploration activities is the Space Systems Lab pursuing? Olds: SSDL is currently researching reusable lunar architectures, chemical and solar in-space transfer vehicles, and various types of landers that will support our generation’s human exploration to the moon. In addition to advanced concepts studies, my students and I are developing decision-support methods that will be used to formulate the best strategies for a lunar campaign. Our work is really targeted on the up-front planning phase of the mission. SSDL is considering various options and technology approaches, then supplying that information to key decision makers, who will then use our tools, models, and data to make the best decision for the country.

Do you think more students will be interested in space careers and that more employers will be hiring students in space-related fields such as aerospace engineering, and earth and atmospheric science? Braun: Many of our students are following these missions closely and are interested in pursuing careers devoted to space exploration. Due to these successes and the president’s recent speech on the importance of space exploration to our nation, I expect future students to be highly interested in a space exploration research and career path. Undergraduate applications to the School of AE are likely to increase as will competition for graduate school with a space systems design focus. In general, this is good for the aerospace industry and for Georgia Tech. Olds: Tech has had a long historical relationship with NASA and the space program. A number of our graduates are working in various positions in the agency. NASA and its contractors hire GT undergraduates as co-ops and I would expect to see those opportunities increase in the next few years. A large percentage of aerospace workers will be retiring within five years, so the engineers and scientists who will lead us back to the moon again are in our college and high school classrooms now. Given our national reputation, GT is in a good position to recruit the new students in AE and related fields.

Robert Braun
AE associate professor

“The successful landing of Spirit and Opportunity has been the talk of the School of Aerospace Engineering.”

The Technique
We’re the South’s liveliest college newspaper.

We worked hard to earn that title.
INTA class allows students to try their hand at terrorism

By Viji Sundaram
Contributing Writer

For those students who always seem to have a gripe with Tech, a 3000-level special topics class in International Affairs entitled “The Challenge of Terrorism” could allow those idle musings about getting revenge on the Department of Parking to be more than just daydreams. However, they should probably take a few pointers from Dr. William Hoehn, a visiting professor in the School of International Affairs, first.

“You should make sure your plan works so that you aren’t caught, which means you can’t just blow up a stop sign in the middle of the night,” Hoehn said, describing one of the activities his “Challenge of Terrorism” class undertakes each semester.

Hoehn joint teaches the class with Dr. Seymour Goodman, another professor in the School of International Affairs who also holds a joint appointment in the College of Computing and whose interests include information technology and national security. This terrorism class, originally offered four years ago before Sept. 11 occurred, addresses the prevalence of terrorism throughout the world.

Like most International Affairs classes, students are expected to spend much of their time outside of class reading. In addition to studying terrorism as it relates to the U.S. and the Western world, students also study the terrorist regions of Latin America, Northern and Central Africa, Sri Lanka, and many more, attempting to understand why people continue to terrorize others and the impact they have on target populations. Also, the use of technology in those tactics is discussed in great detail.

However, the class is a mix of both traditional and creative activities: multiple choice exams are also mixed in with guest speakers, including former terrorists-turned-peacekeepers.

“As part of an assignment, students address a grievance on-campus...by employing methods used by terrorists.”

Hoehn said.

“Our kids learn how difficult it is to not be a suicidal terrorist or behind bars and to work with a limited supply of money.”

Seymour Goodman
INTA professor

are the only conditions set forth. By pretending to “think like a terrorist,” the students get a unique insight on the issues and challenges that terrorism poses.

“Our kids learn how difficult it is to not be a suicidal terrorist or behind bars and to work with a limited supply of money.” Goodman said.

Not surprisingly, when given the activity of “thinking like a terrorist,” most students usually target Tech parking, food services or the basic freshman computer science courses.

For example, said the Goodman and Hoehn, one student wished to address his grievance of having to take the infamous introductory CS course by assassinating the professor.

The student tracked the professor, noting his daily schedule, and determined that the best time to do the job would be during his office hours where he sat alone outside of D.M. Smith.
Don’t call AAA: options course teaches basics of car care

By Haining Yu
Contributing Writer

If your car breaks down on the side of the road, do you know what to do? Can you change a tire, or jump-start a car? Do you know a crankshaft from a piston, or an internal combustion engine from an external combustion engine?

If you answered “no” to any of the above questions, you may be a prime candidate to attend “Pop Goes the Hood,” a new car care options class that is being offered for free. In less than three hours of a Saturday afternoon that would otherwise be spent loafing, Mechanical Engineering seniors Katie Adams and Vladi Vidakovic can furnish you with the know-how of basic car care.

The class being offered now is the result of roughly a year’s worth of collaboration between Adams and Vidakovic. It started when the two started bouncing around the idea of offering a medium to teach students about car care basics.

“When I came to Tech,” Adams said, “I noticed that there wasn’t anything offered to people who didn’t know anything about cars.”

The conversation between Adams and Vidakovic started in class about wanting to do something to help. “We aren’t in it for the money,” said Adams, “[we] just want to provide to people who didn’t know anything about cars with something.”

Last summer they held a “test run” in the MRDC parking lot to try out ideas and to see how the class would best run, as well as to see how hands-on the two and a half hour class could get.

“I was never allowed to drive until I understood how a car works...I’ve had friends call me...when they’ve gotten a flat.”

Katie Adams
ME senior

The class aims at several goals:

1. To give students a basic understanding of how a car works;
2. To teach students basic maintenance skills—“CPR for your car,” as Vidakovic called it.
3. It also aims to help students troubleshoot when something looks, smells or feels funny about their cars.

Students aren’t expected to be able to fix their cars after one class session, but Adams and Vidakovic hope that through this understanding, students can protect themselves from getting ripped off by the car repair man when something serious does happen.

“We’re teaching them so they don’t get overly charged or wrongly charged later,” Adams said.

During an actual class, a car is shown with its hood open and its parts identified. Spare parts are also used as props to help students get acquainted with their “magical box on wheels.”

Subsystems, like the cooling system and the braking system are also identified and explained. “It’s [very] informational, but there are a lot of interactive parts played by the students themselves,” Adams said. Basic car maintenance skills including checking and changing oil, rotating and changing tires, changing the headlight and jump-starting a car are among those taught through hands-on and demonstrative activities.

One of the keys parts of the class is called “Hear No, See No, Smell No Evil.” Geared towards troubleshooting, students are taught how to identify common car problems by sight, smell and sound. Students learn what it means when the engine squeals, or when there’s a clicking sound or weird humming noises.

For example, “when you see white smoke, you’ll know it’s the radiator,” Adams said, “and you’ll be more in control of the situation when you go to see a mechanic.”

Though the class is aimed at people who “possibly never opened their hood,” the two want to teach people “not to be afraid to work on their car.” Vidakovic said.

On top of all the practical knowledge and advice, some of the perks of the class include a free T-shirt, pressure gauge and a handy pamphlet that summarizes all the information covered in the class. Laminated and easy to fit into a glove box, the pamphlet is a great resource for after the class, especially when you find yourself stuck on the side of some road.

Both Adams and Vidakovic’s knowledge about cars started early on in life.

“I’ve basically always messed with cars,” Vidakovic said. “I made stuff in my garage and I’ve always liked to see how stuff works.”

For Adams, her car knowledge is rooted in her parents.

“I was never allowed to drive until I understood how a car works,” she said. “My mom taught me to change a tire.”

For Adams, her car knowledge is rooted in her parents.

“I was never allowed to drive until I understood how a car works,” she said. “My mom taught me to change a tire.”

It actually was her less fortunate friends who inspired her to start the class.

“I’ve had friends calling crying when they’ve gotten a flat,” she said.

Funding for this class comes from the Student Foundation. ASME is sponsoring their website, located at www.me.gatech.edu/asme/pop, and Firestone has helped them develop the course material. The class is located in the MRDC parking lot Saturdays at noon. Each session is a complete class, and spots are still open.

Email popgoesthehood@hotmail.com for more information.

We’d like to hear from you. Write us a letter.
opinions@technique.gatech.edu
Terrorism

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However, Goodman and Hoehn emphasize that the class is not just about planning terrorist activities; it involves analysis, as well.

For example, the student who chose to target his CS professor failed to explain accurately what the lack of one CS professor would do to the course as a whole.

By building up thinking and creativity skills, the class is intended to address the problems faced by national security today.

Another activity the class takes on each semester mocks a session of the National Security Congress or a Congressional meeting.

The class is split up into four groups. A high technology/high cost team solves a certain problem according to their conditions, a low technology/low cost team provides a solution and an advocacy team falls somewhere in the middle.

After preparing their presentations for about a week, the groups are brought in front of the decision team, whose job is to dissect the plans for errors and practicality.

According to the professors, though Tech students are often very talented in rational thinking, they are unable to communicate effectively. Activities like these provide a means to conquer this issue.

“We don’t just sit around watching CNN,” Goodman said. “This is probably the most depressing course on campus—though some students would argue that CS1321 is more so.”

A similar course, the McCarthy and Nuunn Seminar, focuses its attention on involving graduate students in foreign affairs. Students from all backgrounds, including scientists, pre-med students and engineers, are all encouraged to take this class.

“We hope to teach a new generation with experience in national security,” Hoehn said. Not only do students get loose-structured creativity and reasoning skills, this course lets them take their field trips (with free lunches included) to various places in Atlanta, including Lockheed and the Savannah River Nuclear Facilities.

The International Affairs classes on terrorism offer a slight change from the highly rigorous requirements of many majors here on campus. Not only will students enrolled in the class approach abstract thought from different angles, they will be taking a course that has practical roots laid into current issues of our modern world.

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FOCUS

iMovies

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Taylor said, explaining that the board’s continual funding difficulties often limited what they were able to do. For example, though this year’s iMovieFest boasts numerous sponsors, including Tech organizations such as SGA, the Student Center and RHA, one previous year the iMovieFest committee was not able to secure enough funding to showcase the movies at the Ferst Center.

This year, however, Tech has acquired fifty additional filmmaking kits, each of which includes digital cameras and laptops, among other things, eliminating the need for teams to share equipment. In addition, new sound equipment promises a much-improved audio output in this year’s films. And a multitude of free gifts—from pens to popcorn to Delta Sky Miles—will be available for all participating teams.

Most importantly, the first-place prize for the winner at Tech has jumped from small monetary awards to round-trip tickets anywhere within the continental United States.

Tech viewers will also have the chance to vote for their favorite film. Around 9,000 votes were cast this year. 

Taylor added that the entire concept was in the “interest of promoting, creating and preserving culture. The [films from previous years] are archived in the library, so it’s a legacy left to Georgia Tech—how Georgia Tech was, how the students expressed themselves.”

He lauded the all-time high record of 93 participating teams this year, which includes both random groups of friends and registered organizations, such as Freshman Experience groups and assorted fraternities.

The final round will also provide Tech students with the opportunity to peer into the lives of their fellow universities, including UGA, where. Taylor noted, students were especially enthusiastic about the program.

“People will enjoy it,” he said. “You can learn a lot about people by pieces of their culture.”

The program is the first of its kind and has set a precedent that Taylor, Costa, and others hope cities around the world will follow, with, of course, the assistance of Ideas United.

“There are many more cities out there with tens of thousands of stories waiting to be told in short movies... and we’re excited to help students tell them.”

Dan Costa
President, Ideas United

Further information regarding CampusMovieFest can be found at campusmoviefest.com and imoviefest.gatech.edu.

Dan Costa
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“There are many more cities out there with tens of thousands of stories waiting to be told in short movies... and we’re excited to help students tell them.”