From climate change near the North Pole to GPS satellite clocks in Denver, research endeavors stretch the imagination

Whitman students scatter around the globe for internships and research opportunities every summer. A few students share their stories here.

Ben Schupack '07

Ben Schupack, Sammamish Wash., studied climate change in Svalbard through a research program funded by the National Science Foundation. Svalbard is about 500 miles north of continental Norway, near the North Pole. To get to the study site, Schupack rode in six airplanes and three boats.

The research team, made up of eight students and two professors from the United States, studied modern Quaternary geologic processes within the Linné glacier system. “More than 60 percent of Svalbard is covered in glaciers, making this location somewhat of a mecca for geologists and climate change researchers,” Schupack said. “For six weeks, we hiked up to 25 miles a day, and the sun never dropped below the mountains.”

His project focused on Lake Linné (Linnévatnet), a proglacial melt-water lake. He studied the recent thermal evolution of the lake, modern sediment transport and deposition processes. The geology and environmental science major will use the data in his senior thesis.

Random fact: Schupack joined the Polar Bear Club (jumped into the ocean).

Alex Masarie '09

Alex Masarie, Longmont, Colo., studied the performance of clocks on Global Position System satellites at the National Institute for Standards and Technology laboratory in Boulder, Colo.

“My project involved the characterization of the really precise clocks that orbit the earth on GPS satellites,” Masarie said. “Most of my work involved computer programming and pretty basic statistics, and I also got a good understanding of the physics of making the state-of-the-art clocks.”

Masarie’s work at the lab was through a Summer Undergraduate Research Fellowship. He plans to present his research at Whitman’s Undergraduate Conference in April.

Random fact: “Time is a human fabrication ... Major labs throughout the world send their data to a lab in France and they produce a time scale and tell us what time it was a month ago.”

Ray Andrell ’07

Ray Andrell, Vancouver, Wash., spent part of his summer with Biology Professor Paul Yancey aboard the Atlantis, a research vessel working off the coasts of California and Oregon.

Yancey was invited by a Washington State University researcher to participate in the deep sea expedition, and Yancey invited Andrell to use the opportunity to gather research for his senior thesis.

Random fact: “My experiments were based on keeping clams in containers with different levels of salinity and pressure. I will analyze the clam tissue at Whitman to see if changes in osmolyte levels coincide with the different conditions, and this may contribute to my senior thesis.”

Ray Andrell ’07 had the rare undergraduate opportunity to dive in the Abisin submarine during his second round of research work on the Atlantis.

While I was on the Atlantis, I experimented on clams to investigate how osmolytes may be used to protect against toxic sulfide found at deep-sea methane seeps,” Andrell said.

Random Fact: His dive on the Atlantis in December 2006 was the first student dive on the Atlantis this calendar year.

“While I was on the Atlantis, I experimented on clams to investigate how osmolytes may be used to protect against toxic sulfide found at deep-sea methane seeps,” Andrell said.

Random Fact: “His dive on the Abisin was the first student dive on the Abisin this calendar year.”

Ben Schupack ’07 holds a Whitman banner and the rifle and flare gun he used for defense from polar bears during his research near the North Pole. “Polar bears attack with no warning and can run over 30 miles per hour,” he explained.

Academic pursuits and timely issues converge in American West

As this is being written, 21 Whitman students and Politics Professor Phil Brick are nearing the end of 100 days in the field exploring political, ecological and social dimensions of the American West. Semester in the West is an interdisciplinary, environmental studies program about public lands; how they are managed, their ecological wonders and their meaning to the people who care for them. The course has been offered every two years since it debuted in 2002.

“Camping out each night, Westies do a full semester’s worth of academic work in politics, biology, rhetoric and writing, and environmental studies,” Brick said. This year’s program focused heavily on water issues in the West.

After exploring the history and the ecological consequences of the taking of Owens Valley, Calif., water for the city of Los Angeles in the early 20th century, the group visited Las Vegas to hear Patricia Mulroy of the Southern Nevada Water Authority explain its plans to pump water from northern Nevada to Las Vegas in a new $12 billion pipeline.

The 2006 Westies learn about efforts to restore Owens Lake from Mike Prather of the Owens Valley Committee.

“This issue was of particular interest to Westies, because just a few weeks earlier, we met with local activists in Baker, Nev., who vehemently oppose any transfer of their water to southern Nevada,” Brick said.


“Ann met us on Comb Ridge near Bluff, Utah, to create what she called a ‘deep map of place’ and to learn how to write from such a map,” Brick said.

“Sharman met us near her Silver City, N.M., home to help us with our final writing projects, and Josh joined his mother, Mary O’Brien, to team-teach a fabulous ecology course in Hells Canyon, Ore., and in the Fishlake National Forest in southern Utah,” Brick said.

He and faculty members Paul Hoornbek and Paul Arbetan were assisted by field staffers Molly Smith ’06, a 2004 Westie, and Ben Deumling ’05, a 2002 Westie.

See www.semesterinthewest.org for more information and links to student writing and research.
How do you spend your summer vacations? In 2005 a contingent led by Joseph Bornstein ‘08 spent theirs building a house in Nicaragua. That was just the beginning. Aware that fuel prices had gone ballistic in Central America, Bornstein and company learned how to produce biodiesel, an alternative to gas that’s made from vegetable oil and is suitable for diesel engines. This past summer they took the fuel and the technology to Guatemala, Honduras and Nicaragua.

The core group of Whitman participants included Bornstein of Ashland, Ore., Curt Bowen ‘08 of Boise, Idaho, Annelle Mendez ‘08 from Tegucigalpa, Honduras, Hugo Vargas ‘07, San Francisco, Calif., and Johanna Allen ‘08, of Tacoma, Wash.

“I was skeptical of the project at first,” said Mendez. “I wanted to do something that was more than a token gesture. The biodiesel project inspired me because it was a project that could impact an entire community.”

The group spent the Spring 2006 term learning the simplest, cheapest way to produce biodiesel. They drew up cost analyses and wrote grants for funds. They visited Washington farmers who produce biodiesel and established ties to three groups with work in Central America: Sustainable Harvest International, XelaTeco and Jubilee House Community. All had solid track records of projects with local communities.

Most important, the student group successfully built a biodiesel processor in a garage and started producing the alternative fuel. “Biodiesel runs clean, about 60-90 percent less greenhouse gas emissions,” Bornstein noted.

Come summer, they were in Central America — first stop Guatemala — delivering biodiesel and building a second processor to make more. “We had to be creative to come up with simple ways to test what we’d made,” said Mendez. “This turned out to be a benefit because the communities we targeted don’t have access to the latest equipment.”

Somehow, the group also found time to write a 110-page technical manual about biodiesel production, which Vargas and Mendez translated into Spanish. And they organized a three-day biodiesel conference in Santa Barbara, Honduras — second leg of the trip — that drew students, professors, local farmers, nongovernmental organization leaders and an engineering group from Costa Rica that helped the Whitman group design a methanol recovery tank.

“People were very appreciative and, honestly, quite surprised,” said Mendez. “Seeing how young we are gave them confidence that they could do what we did. They never imagined the process could be so simple.”

The group is unanimous in its assessment that the biodiesel initiative tested their inner fiber. The project spanned two and a half months. Their means were modest. Work hours were long. Sit-down dinners were savored.

“I don’t think we would have put in 10-hour days if we weren’t excited by what we were doing,” said Mendez. “There was a wonderful sense of community within the group and with the people we met and worked with. The experience taught me how much the atmosphere of simple respect facilitates the ability to accomplish things together.”

— Keith Raether
Students explore immigration
issues in Whitman’s back yard

Since he came to Whitman three years ago, Assistant Professor of Politics Aaron Bobrow-Strain has taken his students every year to the U.S.-Mexico border near Nogales, Ariz. There they see and hear firsthand the daily reality of immigra-
tion. They talk to migrant workers, border patrol officials, even “coyotes” who smuggle workers into the country.

In October Bobrow-Strain expanded his itinerary. He and a group of 20 students went on a road trip from Walla Walla to Yakima, Wash., and back, with stops in Granger, Wash., Bremerton, and Boardman, Ore.

“I wanted to get the students who’d been to the border to understand that their immigration issue in their own neighbor-
hood,” said Bobrow-Strain. “And I wanted to open up the discussion to students who haven’t traveled to the border.”

Whitman students Laura Fletcher ’07, Laura Hanson ’07 and Sophia Kittler ’07 helped Bobrow-Strain coordi-
nate the trip. “It was an extraordinary, successful leadership opportunity for them,” he said.

The field project, dubbed “The Borders in Our Backyard: Immigration Debates in Eastern Washington,” was
funded by a Mellon Foundation grant. Meetings were set up with Immigration and Customs Enforcement officials, United Farm Workers organizers and town representatives.

On the road, the Whitman group discussed immigration issues in meeting halls, education centers and immigrants’ homes. They witnessed a street protest by members of Grassroots on Fire, a much-publicized group that opposes illegal immigration. They heard from people protesting against Grassroots on Fire. “It put a face on the issue,” said Eric Cates ’07.

“Our time with the Grassroots group showed us that dialogue has to happen for any learning to occur,” said Fletcher. “There’s a cycle of learning that occurs for everyone,” said Bobrow-Strain. “For the students, three- to six-week assumptions are challenged. They struggle to resolve the various perspectives. They’re thrown into confusion, which is how learning occurs. Then they synthesize what they learn.”

For Fletcher, the most important outcome of the trip was the group’s desire “to take what we learned in our
back yard further.” Under discussion were a week-long symposium on immigration, a collaborative art project and stronger connections with the United Farm Workers.

Bobrow-Strain knows firsthand the power of learning experiences that occur outside the classroom. For four years, he worked with BorderLinks, a nonprofit group based in Arizona, developing educational programs on immigration, economic development and the environ-
ment.

“Experience alone is never enough, just as the classroom doesn’t hold all the answers,” said Bobrow-Strain. “The key is to combine the learning in the classroom and in the world, and then test it through advocacy.”

ACLU president delivers lessons in civil liberties during campus visit

Will Canine ’10 spoke for many in the audience that filled Maxey Hall in October for Nadine Strossen’s lecture when he said, “To be around her is a rush. The time … could not have been better.”

Strossen, president of the American Civil Liberties Union delivered the William O. Douglas Lecture to a capacity crowd. For Canine and fellow first-year students Carol Schaeffer, Lisa Curtis and Melissa Yochelson, Strossen’s visit capped a week-long learning immersion in civil liberties that started when the students attended the ACLU’s member-
ship conference in Washington, D.C.

The Whitman group witnessed an historic event when Strossen debated Supreme Court Justice Antonin Scalia at the conference. It was the first time a justice from the highest court in the land debated in such a forum. At Whitman, Strossen kept a school legacy alive. Speaking on “Abuse of Power: The Assault on Civil Liberties after 9/11,” the first person Strossen cited in making her case was William O. Douglas, a Whitman honors graduate and U.S. Supreme Court justice for 36 years.

Summing up what she sees as the current administration’s sweeping disre-
gard for constitutional limits and laws, Strossen said, “William O. Douglas would have been appalled.”

National columnist shares views on world events

James Fallows, national correspondent for The Atlantic Monthly, visited campus to talk about “The U.S. and the Islamic
World: Victory, Defeat or Coexistence?”

There is “a vivid daily sense” of the Islamic world, Fallows noted, “of the (historical) tables having been turned,” and that “those consequences should be revered.” What will a constructive coexis-
tence require? “The first step is some kind of successful resolution in Iraq,” he said.

Fallows’ visit was made possible by the Ashton J. and Virginia O’Donnell Visiting Professorship in Global Studies Endowment to support visiting interna-
tional affairs professionals who bring “greater awareness of global events” to the campus community. The O’Donnells graduated from Whitman in 1943.

More students seek prestigious awards

Shelby Blessing ’07 intends to pursue a career in architecture, “a perfect combination of my disparate interests in art, history and mathematics.”

Bridget Kustin ’05, who recently completed a year of study in Bangladesh through a Fulbright fellowship, sees her future in international development, teaching and research.

Blessing was a Marshall Scholar finalist; Kustin is in the running to be a Rhodes Scholar. Both are examples of a growing interest on the Whitman campus in pursuing prestigious fellowships to study around the world.

Four Whitman students won Fulbrights for 2006-07 earning the college a top spot in the Chronicle of Higher Education’s Fulbright rankings.

Twenty-one students applied for Fulbrights this year, up from six appli-
cations last year, said Julia Davis, director of the Grants and Fellowships Office. Three students applied for the Rhodes; one, Kustin, earned an inter-
view. The scholarship funds two years at the University of Oxford in England. Marshall Scholarships pay for two years of study in the United Kingdom.

Davis and others “help students build their applications early on with activities that work toward their goals, but in constructive ways that don’t burn them out,” Davis said. Professors work with students through the process.

Lynn Sharp, associate professor of history and Fulbright advisor, said whether students win or not, the prepa-
ration is “a fantastic opportunity to learn about grant-writing, self-presentation and about who you are.”

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Winter 2007
Senior wins singles Northwest Regional Championship

Phalkun Mam ’07, Salem, Ore., made Whitman athletic history in October, becoming the first Missionary tennis player to qualify for the Intercollegiate Tennis Association’s National Small College Championships. He qualified by winning the singles title at the ITA Northwest Regional Championships, which Whitman hosted, and by winning a play-in match at the site of the national tournament in Fort Myers, Fla.

Mam played three matches in the national tournament, losing in three sets in the opening round before winning his next two. He placed fifth, earning ITA All-America honors and climbing into the top eight in the NCAA Division III national rankings.

Mam’s performance at nationals shows that Whitman is home to two of the most talented Division III players in the nation, Whitman coach Jeff Northam said. “After watching the level of competition in this tournament, I think we have two players, Phalkun and Steven Ly ’07, Fairview, Ore., who are competitive with any of the top players in the country.”

Ly lost to Mam in the finals of the Northwest Regional. Last spring, Ly was the only Northwest Conference player invited to the NCAA Division III National Singles Championships.

Two Whitman freshmen, Matt Solomon ’10, Los Gatos, Calif. and Nadeem Kassam ’10, Vancouver, B.C., won the doubles titles at the Northwest Regional. They also traveled to the national tournament, although they lost their play-in match in two close sets to a pair of seniors from the University of Mary Hardin-Baylor.

The Whitman men’s tennis team, which begins its dual match season in February, will be one of the favorites for the NCAA championship. Whitman lost the conference title in the spring of 2004, when Mam and Ly were freshmen.

— Dave Holden

Phalkun Mam ’07 is on par with the nation’s best small college tennis players.

New athletics director takes the helm

Dean Snider, associate professor of sports studies, has been named athletics director, having served as interim athletics director for the past year.

Snider also serves as chair of the Department of Sports Studies, Recreation and Athletics. “Dean’s knowledge of Whitman and NCAA Division III athletics, his understanding of varsity sports, his commitment to strengthening his department, and his patient, gracious demeanor are attributes that suit him well for his position,” President George Bridges said.

Snider noted that the department’s “primary directive, one given to us by the college itself, is to better integrate athletics — our varsity sports and physical education classes as well as our intramural and club sports — in the overall academic mission.”

Rankings reinforce Whitman’s core purpose: liberal arts education

Recent surveys by five sources, including The New York Times, rank Whitman College in the top tier of more than 2,500 colleges and universities in the nation.

The Times cited Whitman as one of 20 lesser-known academic treasures in America. Washington Monthly magazine ranked the school No. 9 among all liberal arts colleges.

In U.S. News & World Report’s annual rankings, Whitman improved on last year’s showing in several categories. “The recognition of Whitman’s place in higher education is very gratifying,” said President George Bridges. “We hope it makes parents and prospective students more aware of the extraordinary learning experience that our college offers.”

Whitman excelled again in quantitative categories such as selectivity, retention rates and faculty resources, as well as in qualitative measures such as race/class interaction, library facilities and resources, efficiency of operations and the general happiness of its students with the school.

Whitman excelled on the outdoor front when it landed on top of the mountain of 16 Northwest colleges ranked by the Tacoma News Tribune for outdoor activities.

Rankings also underscore the school’s internal achievements, including an 88 percent graduation rate and greater than 50 percent rate of gift giving by alumni.

“They reinforce our core purpose: educating the future leaders of the world,” said Bridges.

For more details, see campus news at www.whitman.edu.
Campus News

Pair of longtime professors prepare to begin new lives

“l know John will miss the mountains more, but I am a Southern California girl. I look forward to living outdoors with the ocean and the flowers and the sun,” says Winter.

Professor of Psychology Deborah DuNann Winter and her husband, Professor of Geology John Winter, are set to retire to the Big Island of Hawaii this month. It is a place Deborah already loves dearly, which “makes it less painful to leave Whitman and Walla Walla,” she says. “It was just luck, coming to Whitman.”

Born and raised in Los Angeles, Winter attended Grinnell College in Iowa. In 1974, six weeks after finishing her Ph.D. in experimental psychology at University of New Hampshire, she was teaching at Whitman.

“I’ve been blessed to spend my career at Whitman,” says Winter, who in her final semester received an award for her community service (see story below). “It’s a remarkably high functioning institution. Students take their academic lives seriously, while faculty, staff and administration deeply care about the college while staying remarkably collegial. I can’t imagine ever having such a strong sense of community again.”

Winter has seen a lot of change at Whitman. “In the past 32 years every single thing about Whitman has gotten better. The student profile, the diversity, the quality of the faculty, the beauty of the campus, the curriculum — even the food has improved!”

Her own scholarship has focused on peace psychology and “our disturbed relationship with our environment,” topics she deeply cares about. In Hawaii, she will learn the language, Hawaiian culture and hula. She hopes to contribute her skills to reduce violence and the use of unsustainable resources.

Meanwhile, life outside the academy beckons her. “The mind is a wonderful asset,” she says. “But I also want to learn more about how to live in my heart, body and spirit.”

When summer comes around, geology Professor John DuNann Winter will say goodbye to “rolling Palouse hills, wheat farms, and lots and lots of basalt.” He will head west, over an ocean, “trying to figure out how to live without working.”

Winter arrived at Whitman in the fall of 1981. Born in the Illinois town of Winnetka, in the suburbs of Chicago, he was teaching at Middlebury College, Vt., when Whitman and the West won him over with its “good geography that you could actually see.”

In retirement, he looks forward to a change, “a little less exhausting work. I will miss Whitman — students and the faculty and the academic atmosphere — but I won’t miss grading a bit.”

Winter has seen the college change for the better over his tenure. “Everybody is working at a higher and more intense level,” he says.

“The good thing about retiring is that you don’t have to start with uncertainty. You’ve already acquired skills and experience. Now you can move on to new things, doing what you enjoy and what matters,” says Winter.

For him that includes working on energy issues. Between geo-thermal, wind and solar power generation, Hawaii has greater potential than the rest of the states, but not much is being done, he says. “I’m sure there are already a number of people working on those issues,” he says. “I’d like to join them.”

— Pravin Adhikari ‘06

Professor honored for community service

Deborah DuNann Winter, a professor at Whitman since 1974, was awarded the annual Town-Gown Award for her work beyond the campus to improve life in the Walla Walla Valley. Winter has worked to bring bike lanes to the community and promoted Xeriscape landscaping, tree plantings and the use of recyclable bags in local grocery stores. She is a founding member of Walla Walla 2020 and served on its Architectural Awards Committee. She has been active in the Walla Walla Choral Society, the Walla Walla Downtown Foundation and Hospice.

She has volunteered with Blue Mountain Heart to Heart, a private nonprofit organization providing support and assistance to people with HIV/AIDS and their families, and Blue Mountain Land Trust, a nonprofit group working to preserve land in the region.

Glen Brewer, who commissioned the piece for her annual St. Elizabeth School Band’s Shades of Blue benefit concert. Although a veteran composer, Glenn had never written for such a green group of musicians.

He recalls thinking, when his sister asked him to write the piece, “Yeah, this will be fairly easy to dash off, and it’ll be fun and a little extra money — and, no, it was actually quite difficult. There are so many limitations when you’re writing for people who’ve played the instrument for only one to three years.”

Glenn decided he needed to scale down his original vision of “a five-move piece of vignette pairs about Kansas City” after sitting in on a student rehearsal. He eventually winnowed his subject matter to one Kansas City legend: baseball great O’Neil. Not only did the kids in the band love baseball as much as the composer does, but Glenn had heard O’Neil speak at Whitman in 1988, so he had a feel for O’Neil’s personality.

“When I met Buck O’Neil, he was actually quite difficult. There are so many limitations when you’re writing for people who’ve played the instrument for only one to three years.”

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“He talked about how, when he played in the Negro Leagues, the ballplayers traveled a lot of times with big bands, and they were friends with the jazz musicians. They were kind of in the same boat.

“I knew there was a connection with jazz, but I didn’t want to make it a jazz piece because it was being written for a junior high school band, and they’re not going to be able to pull it off, so I used the blues form for the piece, and I used kind of a funky bass line.” Add to that O’Neil’s personality — “he was such a joyful kind of character and had such great spirit” — and “Blues for Buck O’Neil” was born. “Instead of being a sad blues, I used suspended chords instead of dominant chords and it’s a much brighter sound — kind of a hopeful, joyful sound, yet strong and dignified.”

In Kansas City for the premiere of his piece, Glenn discovered the local newspaper and the Negro League Baseball Museum had been notified about the piece honoring O’Neil, and on the night of the concert O’Neil was sitting in the audience. Glenn presented him with a copy of the score, and O’Neil autographed a score for Glenn.

“I was about as nervous as I’ve ever been,” Glenn said. “I’ve done a lot of different things and played with famous people and been on the road with famous people — but in some ways I was more in awe of him. Not just because of his baseball career, but the way he ran his life and conducted his business.”

“My brother-in-law asked him if he had any advice for us, and this 94-year-old, said ‘Every morning when I get up I look forward to the day and I’m eager to get the day started and explore it and see what can be done in this particular day. Each day is a gem to be lived to the fullest.’”

— Len Nash Parish

Whitman Music Professor David Glenn, left, presents former baseball player Buck O’Neil

Among the high notes of David Glenn’s career as renowned jazz musician, composer and college professor, he counts a recent junior high school band recital. It was one of the most enjoyable evenings of his life.

Last March when the St. Elizabeth School Band premiered his piece “Blues for Buck O’Neil,” the legendary baseball player himself was in the audience — dancing in the aisle with Jean Hender, former librarian at the public library where Glenn worked during high school. Less than a year after that memorable evening, O’Neil, 94, died of congestive heart failure in a Kansas City hospital. According to Glenn, he lived his life well:

“He was one of the most inspiring people I’ve ever met.”

“Blues for Buck O’Neil” received its Walla Walla premiere in September on the Whitman campus as a selection of the Fridays@Four concert series. Performed by Glenn and friends, this version of the “Blues” was a bit jazzier and the composer was a lot more relaxed.

Glenn originally wrote the piece for a junior high school band in Kansas City under the direction of his sister, Carolyn

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Campus News

Professor, film crew create buzz at film festivals nationwide

Associate Professor of Rhetoric and Film Studies Robert Sickels came to Whitman and Walla Walla about seven years ago, just as entrepreneurs and wine enthusiasts began to pour into the valley to invest in land deemed fertile for wine grape growing. There were less than 10 wineries then, more than 70 now. This is Walla Walla time of transformation, Sickels observed.

“New wineries open every day, expensive restaurants are finding their niche by offering high culture in the valley,” he said. At the same time, he has witnessed the arrival of Home Depot, Wal-Mart and three Starbuck.

A filmmaker at heart, Sickels decided to capture the Walla Walla Valley’s transformation on film in “The Beehive,” a 35-minute documentary crafted from 50 hours of footage.

“The Beehive” was featured on a documentary crafted from 50 interviews and 0 hours of footage.

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In “The Beehive,” the Waetje family, wheat ranchers who straddle the old and new cultures of the Walla Walla Valley, created the transition to Walla Walla Springs, Colo. It has played in four film festivals, from Tennessee to Los Angeles, and is already slated to appear in four more.

“This documentary enticing people to observe and draw their own conclusions,” Sprunger said. “If we help people think about what (growth and change) means about their understanding of growth and how it affects them,” he said.

“The feedback Sickels has received on the film itself has been “less about people’s perception of the film and more about their understanding of growth and how it affects them,” he said.

“People in more rural areas, generally, have liked it better. “In some sense I could keep using the same components and lab experiments for undergraduates, and with the help of a grant from the National Science Foundation as well as support from Whitman College, he’s been doing just that.

“A physicist at Trinity College, physics professor, has been collaborating on this component, and have developed a workable replacement — the circuit box. They hope to have the design perfected to the point that they can post a version of it on the Web this summer, so anyone can create one for about $100.

“Others have done the same thing; I’m just trying to make it easier and more accessible. Once we’ve posted the design on the Web, people won’t have to reinvent the wheel every time.”

—— Lewis Parish

For an overview of the laboratory components and lab manual for Physics 385 at Whitman, go to http://people.whitman.edu/~beck/mw/.

David Sprunger ’96 attended “The Beehive’s” opening at Grauman’s Chinese Theatre in Hollywood this fall.

Robert Sickels

Mark Beck, associate professor of physics, holds the $1000 circuit box while the $10,000 instrument sits on the table next to him.

Invention makes quantum mechanics labs accessible

The unassuming little silver circuit box sitting in Mark Beck’s lab represents a savings of about $9,000 over the much larger traditional instrument sitting next to it. Beck believes making the design of this less expensive version available to everyone will help revolutionize how undergraduates nationwide learn about quantum mechanics.

A physics professor at Whitman since 1996, Beck’s main fields of study are quantum optics and laser physics. He’s an “experimentalist,” he said, who likes conducting research with the undergraduates he teaches. He has taken these interests and applied his skills to teaching, among other subjects, quantum mechanics, which encompasses the “underlying theory of everything” in physics. The traditional way to teach quantum mechanics was purely mathematically- and lecture-based, said Beck, and a little dry, with no labs. In addition, this method of instruction wasn’t addressing new issues in quantum mechanics such as quantum cryptography, a field that makes encrypted information on the Internet more secure, and that will become more and more important in the future.

He wanted to create modern quantum mechanics laboratory experiments for undergraduates, and with the help of a grant from the National Science Foundation as well as support from Whitman College, he’s been doing just that.

“Quantum cryptography uses the same kind of photon manipulations that we learn in the lab and so students who do the experiments as undergraduates will have a better base in their graduate studies and careers,” Beck said.

The labs he envisioned, and now conducts at Whitman, only became possible within the last four or five years, when the technology caught up and the cost went down. Beck said the big technology break was the invention of the blue laser diode, which caused the cost of blue lasers to drop from $50,000 to $5,000 (the evolution of Blu-ray DVDs and HD-DVDs as consumer products should eventually drop the price to about $500.

Once the blue lasers were affordable, the next most expensive part to tackle was the electronics component. Beck and his colleagues Dave Brann- ning, Trinity College physics professor, and Dave Ahlgren, an electrical engineer at Trinity, have been collaborating on this component, and have developed a workable replacement — the circuit box. They hope to have the design perfected to the point that they can post a version of it on the Web this summer, so anyone can create one for about $100.

The circuit box, although not a dupli cate of the traditional $10,000 instrument that was originally designed for nuclear physics applications, will be adequate for the quantum mechanics experiments appropriate at the undergraduate level. Of course, Beck’s Whitman laboratory is still equipped with traditional compo nents.

 ― In some sense I could keep using the same stuff, but I want other people to be able to do it, so we needed to bring the cost down.

Beck is quick to point out that he is not the first person to come up with a circuit box suitable for these experi ments.

― Others have done the same thing; I’m just trying to make it easier and more accessible. Once we’ve posted the design on the Web, people won’t have to reinvent the wheel every time.”

Mark Beck, associate professor of physics, holds the $100 circuit box while the $10,000 instrument sits on the table next to him.

David Sprunger ’96, Rebecca Loeber ‘06, Sickels’ film explored the new cultures of the Walla Walla Valley’s transformation on film in “The Beehive,” a 35-minute documentary crafted from 50 interviews and 0 hours of footage.

Robert Sickels

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― In some sense I could keep using the same stuff, but I want other people to be able to do it, so we needed to bring the cost down.
Anthropology offers keys to help immigrants avoid, get care for TB

By Jason Pribilsky
Assistant professor of anthropology

Tuberculosis, or Tb, is a contagious respiratory disease that has plagued humanity for centuries. It is caused by bacteria of the Mycobacterium tuberculosis group and can result in widespread infection of the body, especially the lungs. If left untreated, Tb can be fatal. An estimated 9 million new cases of Tb are reported each year globally, and 1.5 million people die from the disease. In the United States, the majority of cases are among low-income racial and ethnic minority groups. With the growing number of immigrants, TB cases among immigrants in the United States are increasing.\n
In Ecuador, the disease is known as tuberculosis and the treatment, while long and complicated, is widely considered highly effective. Since the late 1990s, migrants from Ecuador, many of whom are indigenous, have had one of the highest rates of foreign-born tuberculosis in the United States, in the New York City metropolitan region, where Ecuadorian communities tend to cluster, currently estimated to be as high as 10 times the rate of the United States.\n
When I was an anthropology graduate student, I was the only person I knew working with Ecuadorian immigrants, and most people I spoke with about my work could not believe that there were upward of 50,000 Ecuadorians in the United States, the majority of them undocumented.\n
What was surprising was how much the project would come to dominate my research agenda for the next four years, proving to be both personally and professionally rewarding.\n
For the most part, my work has taken the form of a detailed ethnography of the daily living of undocumented migrants with special emphasis placed on health problems and people’s management of them. As labor migrants, indigenous Ecuadorians find their lives hemmed in by the necessity of work. Most arrive in the United States saddled with debts of between $10,000 and $20,000 to the smugglers who facilitated their surreptitious entry into the country, as well as pressure to send money — remittances — to families back home. Going even a couple of days without pay due to sickness can put a family in the Andes in jeopardy.\n
Some of the most rewarding and stimulating work to come out of my long collaboration with health officials and migrants has been the documentation of the health-care strategies of migrants that keep them in constant contact with family members back home. To my public health colleagues, I have tried to show how cultural concerns often outweigh the pragmatic reasons why someone would or would not seek care. For migrants thousands of miles from family members, seeking health care first from community back home keeps people in touch with one another.\n
What is often misconstrued “self-medication” is frequently an intimately social affair. Over the years, I have found that each time I leave my field site in Ecuador, I do so with packages of herbal remedies, food, and encouraging letters to deliver to relatives in the United States to help keep them safe and healthy. During my recent sabbatical leave, I investigated — with the help of a Fulbright grant — this pattern of what I term “transnational health care.”\n
While migrants call home for medical providers because they are often seen as more pharmacologically efficacious than Western medicine, as an anthropologist I have been equally interested in the forms of social efficacy embodied in these medical care transfers. Through new fieldwork in Ecuador, I have been thinking about how medicines and other remedies are powerful mediums by which families in the Andes can engage in reciprocity and exchange with loved ones. Families in Ecuador work hard to locate herbal remedies to send abroad and often consult with local healers who diagnose ailments from afar with the help of photographs and migrants’ personal affects. In both cases, such acts are a powerful language to communicate the anxieties family members have about their loved one’s migration as well as to help migrants themselves displace feelings of inadequacy when sickness keeps them from working and generating remittances. It is a human face to the global processes of migration.\n
The results of implementing a culturally sensitive approach to immigrant TB are difficult to gauge. Realistically, overall rates of the disease will only fall significantly when endemic tuberculosis in Ecuador is better controlled and Ecuadorians no longer have to put themselves in the peril of human smuggling and undocumented immigration.\n
Until then, new developments are promising. In May, I participated in an Ecuadorian TB task force at Bellevue Hospital in New York City that brought together state and national health officials. The result was a commitment to the Centers for Disease Control and Prevention to devote more resources to cultural competency in the fight against TB.\n
Jason Pribilsky is an assistant professor of anthropology and director of the Latin American Studies Program. He is currently working on a book under contract with Allyn and Bacon about his tuberculosis work tentatively titled “Undocumented Lives, Unhealthy Bodies.”\n
An indigenous woman imbues the clothing of a migrant relative in the United States with good energy, or energia.