Dr. Hans Bozler steps in as interim department chair

Professor Hans Bozler has stepped in as temporary department chair for a one-year term until the usual process of appointing a chairman is completed.

Professor Gene Bickers, now the assistant vice provost of undergraduate affairs, previously held the position. Dr. Bozler filled the vacancy in a hurried decision in early July.

"It wasn't the normal process," Dr. Bozler said. "We ended up with a small group of people who scrambled around. The natural inclination was to look at people who had already been chair before and had experience."

Dr. Bozler previously held the position of department chair from 1991-1997. Next year, the regular process of finding a new chairman will take place.

During his temporary stint as chairman, Dr. Bozler plans to make a few changes in the department.

"The area that I'm most interested in is faculty development; recruiting and locating new faculty," Dr. Bozler said. "The department hasn't been hiring experimental physicists in recent years and there is a definite plan to hire more."

He will also be dedicating time to understanding how the department fits into the plans of the new provost. In the sciences they are planning to develop "nano-bio-info," or "nanophysics, biological technology and information technology," according to Dr. Bozler, who says the department fits into all those categories.

As the department chair, Dr. Bozler will be involved in a number of specific areas, from faculty promotions to overseeing the graduate and undergraduate programs. He likened the position to being a "senior business consultant."

New provost position gives Bickers greater impact

"Professor Firewalker," as he is commonly referred to by students, is taking on another title this year. Dr. Gene Bickers, known for demonstrating heat transfer by walking across hot coals, will help oversee USC’s undergraduate education as Associate Vice Provost for Undergraduate Affairs.

He was offered the job in the provost’s office after stepping down from his position as chair of the Physics Department last spring. The potential for a wider influence attracted Dr. Bickers to the position.

“I’ve always enjoyed teaching undergraduate courses and this gives me an opportunity to try to have some broader effect on undergraduate education,” Dr. Bickers said.

In his new position, Dr. Bickers will be involved in developing the university’s curriculum and overseeing programs like the Renaissance Scholars and McNair Scholars. One of the projects he is working on is the First Contact Initiative, which aims at getting freshmen involved in the university.

“The hope is to provide new opportunities for faculty and first-year students to get together outside class,” Dr. Bickers said.

cont. on page 3: Provost Position
Graduate student recruiting process revamped

Under the guidance of Graduate Student Advisor Stephan Haas, the graduate program is developing an effective and unique approach to recruiting applicants.

The performance of the graduate school and the placement of its students after graduation reflect on the department as a whole, according to Dr. Haas.

"The graduate program really defines the department, because those are the products of your department, the output that goes into the world," Dr. Haas said.

Dr. Haas and several others involved in the recruiting process have started using several new techniques to draw the most desirable applicants.

One of those strategies is advertising effectively and gaining a reputation among colleagues.

"You have to build a network of connections, people who know you internationally who would send their students to you," Dr. Haas said.

With nearly 300 applicants each year, it is often difficult to pare the field down to fit the 12-15 positions available. At this stage in the recruiting process, Dr. Haas, along with professors Clifford Johnson and Vitaly Kremin, do something different than most traditional physics programs.

"Traditional departments will go by paper [applications]," Dr. Haas said. "Once I identify the top 20, we call them up and talk to them for half an hour." This strategy is a way for prospective students to gain a personal link to the university right away, Dr. Haas added. Most students he talks to on the phone say he is the first person to contact them from any physics program.

After phone interviews, prospective students are invited to the campus for an open house, usually during February. This gives them a chance to see how they will be living if they cont. on page 4: Grad Recruiting

Professor’s blog has impact on media, perceptions of science

Once or twice a day, Dr. Clifford Johnson takes a break from trying to understand how the universe works to let the rest of the world in on the secret lives of physicists. Since joining several colleagues as a contributor to a “science” Weblog, titled Cosmic Variance, Dr. Johnson has discovered many advantages of blogging.

“One of the things scientists complain a lot about is the fact that the journalists who write in the media about science don’t do a very good job," Dr. Johnson said. “Now they just hear it directly from the scientists.”

Posting on the blog has given Dr. Johnson the opportunity to take the issues in his field straight to the people, he said. He has also seen its impact on coverage of science in the media.

“Science journalists are now coming to our blog to see what we’re saying about stuff,” he said. His posts have received comments from various members of the media, including Annabelle Gurwitch from National Public Radio.

The blog has also had an influence on science itself, Dr. Johnson said.

“In the first two weeks we got colleagues in our own field…coming in and taking part in discussions about important physics issues…which helped shape ideas in the field itself,” Dr. Johnson said.

Blogging on Cosmic Variance also allows readers to understand the lifestyle of a physicist.

“People have a strange view about who scientists are,” Dr. Johnson said. “All the cont. on page 4: Cosmic Blog
Lab tech to retire in spring 2006 after 22 years at USC

He started out at the university as a temporary worker, helping to move the Physics Office from the Seaver Science Center to the Seeley G. Mudd building. He worked hard and rose gradually through the ranks to become a lab technician. Now, after 22 years, Bill Talbert is calling it quits.

“It’s time to leave,” Talbert said. “Time to let the young guys come in.”

Talbert has seen a lot in his time here at USC. He’s been through five Physics chairmen and four lab directors. He’s seen the bad years of the Trojan football team. He was here when the first Macintosh computers were brought to the campus.

“They didn’t even have a hard drive,” Talbert recalled. He even met his wife across the street from USC while doing community work for senior citizens. A father of three, with eight grandchildren, Talbert said his job in the lab has treated him well.

“The atmosphere keeps me young,” he said. “I get new students every four years.”

One of his favorite parts of the job is the interaction he gets with the students who work with him in the lab.

“I enjoy working with the work study students,” Talbert said. “Most of them never leave, they stay here for their four years of school.”

While most of his time in the past few years was spent setting up labs, Talbert used to repair equipment himself, but said now it has become very complex.

“When someone would think of a new experiment, we’d test it to make sure it worked,” he said.

Now that he is cont. on page 4: Retirement

Provost Position: cont. from page 1

Dr. Bickers continues to teach Physics courses in addition to his new job, spending half of his time in the classroom and half in the office.

“It’s difficult to balance the time,” Dr. Bickers said. “I’m teaching the sophomore honors class in electricity and magnetism... but I’ve taught it many times before, so it’s not such a big deal.”

His provost job is only a “50 percent position,” which allows him to continue teaching undergraduate students.

“I don’t want to stop teaching,” Dr. Bickers said. “That’s one of the things I asked to continue when I agreed to the position.”

So far, he has managed to balance his two responsibilities and has found the new work to be rewarding.

“It’s been very enjoyable, I like the people I’m working with,” he said. “[They] are very talented.”

Dr. Bickers joined the University of Southern California faculty as an assistant professor in 1988 and was promoted to professor in 1998. He chaired the Department of Physics and Astronomy from 2003-2005, and has received numerous teaching awards including USC College’s General Education Teaching Award in 2000 and the Teaching Has No Boundaries Award in 2003.

New Chair: cont. from page 1

manager,” and expects to deal with budgetary and staffing issues as well.

“Whenever you have to prioritize... to arbitrate between what the department wants and what the administration wants, that’s the hard part,” Dr. Bozler said.

As far as his personal research interests, Dr. Bozler is involved mainly in low-temperature physics, including quantum fluids and solids, and solid state properties and materials at low temperatures. He admires the work of Dr. Doug Osheroff, a Stanford professor who won the Nobel Prize in an area similar to Dr. Bozler’s research.

Dr. Bozler also spends time on his sport fishing boat, sailing and deep-sea fishing, and recently spent some time on it at Catalina Island.
Physicist cont. from page 2

Images of scientists in the media… are that scientists are the ‘other,’ scientists are not normal.”

By discussing science issues in a public forum like an Internet blog, Dr. Johnson hopes to raise the level of science awareness and bring discussions of science into people’s everyday conversation.

“We’re just doing regular, stupid stuff like everybody else,” Dr. Johnson said.

However, the blog is not just about scientific issues. Many of the posts are just observations and commentary about everyday things, from shopping in Hollywood to the political news of the day.

“I actually don’t like to call it a science blog,” Dr. Johnson said. “I think of it as a blog that happens to be written by scientists.”

Dr. Johnson is one of five writers for the blog, all of them physicists or astrophysicists. Since its creation in July 2005, traffic on the group blog has grown to about 2,000 hits daily.

Grad Recruiting cont. from page 2

Dr. Haas said.

"The best way is to integrate them, at least for a day, into our current graduate students’ lives," he said.

They visit classes, meet with faculty, look at research projects and hang out with current students. Dr. Haas tries to get first and second year graduate students as involved in the open house as he can, letting them house the prospective students during their stay.

"It's much more fun to crash on someone's couch...than to be in a Motel 6."

Inviting students to the campus and holding workshops is a strategy used by chemistry and biology programs, but usually not physics, Haas said. Without open houses about one-third of the people accepted by the department decide to go to USC.

"However, since we've done [open houses], it's been around 50 percent or higher," Dr. Haas said.

In fact, the department has been overbooked several times and he has had to make a conscious effort to send out fewer offers.

USC alum enjoying new teaching position

It was more than 10 years ago that Ty Buxman graduated from USC with a Master’s degree in Physics. Buxman now teaches physics and astronomy at Flintridge Sacred Heart Academy in La Canada Flintridge, a job he has found very rewarding.

“I don’t know that I thought explicitly about teaching at the high school level while I was in school, but now that I am here, I feel like it is a great match for my interests,” Buxman said.

Buxman currently teaches a physics course to the majority of the senior class at the private, all-girl high school in Southern California. He also teaches an elective course in astronomy. He was appointed to his position at the academy in 2002.

Time spent in the Physics Dept. at USC, both as a student and a Teaching Assistant, has given him the skills necessary to teach his own classes, Buxman said.

“Overall, my experience was excellent,” Buxman said. “I felt like the department had a good balance of providing lab curriculum and providing flexibility for TAs to teach with their own style.”

Buxman credits this flexibility with developing his own way of teaching.

“My interactions with various faculty, observing several different approaches to teaching and classroom organization gave me a good overview of teaching styles,” Buxman said. “I feel like without having gone through a formal science teaching program, I have a pretty good sense of the teaching style options and have been able to integrate these into a style of my own.”

Buxman worked on his thesis here at USC with professors Melvin Daybell and Darrell Judge. Professor Daybell was particularly helpful in mentoring him, Buxman said.

“He basically set me up with a basic experiment, let me go with it, and without micromanaging made himself available for questions and direction,” Buxman said.

Question? Comments?

Please contact us at:

Dept. of Physics and Astronomy
University of Southern California
Los Angeles, CA 90089

Email to: physdept@usc.edu

Retirement cont. from page 3

retiring after the spring semester, Talbert said he will have more time for his hobbies, like remodeling his home in Carson and building cabinets. He is also a member of the Central Baptist Church as well as a chorus member, trustee and pastor’s aide.
Women in undergraduate physics programs across Southern California have the opportunity to meet and discuss the issues that face them at the first Conference for Undergraduate Women in Physics at USC on Jan. 14-15.

Co-creators Amy Cassidy and Katie Mussack, both graduate students in the department, feel that undergraduate women will gain plenty from the experience.

“We are hoping to help them learn more about physics and careers in physics, different fields of research in physics, issues that women face in physics, and resources for women in physics,” Mussack said.

“It’s also an opportunity for them to meet other women who are also studying physics,” Cassidy added.

Topics that will be discussed at the conference range from current physics research to applying to graduate school. In addition to faculty presentations and lab tours, the attendees will also get a chance to hear from current graduate students.

“A lot of it’s just going to be time for the graduate student mentors to talk to the undergraduate students and answer their questions about what it’s like being in physics, what it’s like being in grad school,” Mussack said.

The conference will feature also a number of speakers, including a well-known author on the issue of women in science.

“Sheila Tobias is one of the speakers who is coming, and she is actually not a physicist, but has done a lot of work in issues of physics and education, and also women in physics” Cassidy said. “She’s done a lot of speaking and book writing and also has dealt a lot with issues of education and career preparation.”

The students that attend will also be given the opportunity to present their own work during the conference as well.

“About seven out of about 27 participants have done some research and will present during the poster session,” Cassidy said.

Cassidy and Mussack hope the conference will encourage more women to pursue higher education and careers in physics. At USC only 11 percent of the graduate students are female, and there are no female faculty members in the physics department, Cassidy said, compared with 33 percent in the undergraduate school.

“We were wondering why there was a drop-off from undergraduate to graduate, especially here,” she said.

“One of the main benefits that we’re hoping they’ll get out of the conference is seeing that there are other women out there in physics and they’re not alone,” Mussack added.

Members of the Physics Department are welcome to join the group for lunch at the Upstairs Cafe on Saturday, January 14 at 12:15. Please RSVP to wiphys@usc.edu.

More information on the conference, including a schedule of the conference events, can be found online at http://physics.usc.edu/~wiphys/conference.html.

Sheila Tobias, a noted author and speaker about education and women in physics, will be one of the featured speakers at the conference.
A glimpse into the life of a first-year graduate student

Toby Jacobson has always had a love for science. Even as a young child, he spent his time inventing and experimenting. "I remember I had a great idea for a junior high science experiment," he said. "It was to take the magnetron from a microwave and hook it up to a parabolic dish. I was into model airplanes at that time, so I was thinking of hooking up a dipole antenna...and actually power the model plane from the ground."

Now, as a graduate student and teaching assistant, he gets to share his passion with younger students. "If the students are interested, it’s fun to be able to explain topics to them," Jacobson said. "That also helps to solidify maybe something I haven’t thought through completely."

As a first-year student, Jacobson spends a lot of time in the classroom and with other grad students. "Most of it is a lot of class work," he said. Since the first-year students all share an office, he said, "We spend a lot of time together, hanging out a lot and working on homework and stuff. I think it’s really good, really important to have that community."

Jacobson, a California native, enjoys the diversity of the graduate school. "What’s cool is how international it is," he said. "You get people from Brazil, Bulgaria, Russia, Taiwan, Korea, Turkey. I have very few American friends, actually."

As far as his future in physics is concerned, Jacobson said, "I definitely want to do research, but I’m kind of trying to figure out what to do right now."

For now, he’s glad to be doing something he loves. "It’s cool to be able to kind of spend all your time doing something you are fascinated in," he said.

Faculty and students on the significance of Einstein Year

It’s a reminder of how beautifully the laws of nature are structure, and what a beautiful science physics is. It’s a reminder of how astonishing it is that human brains can comprehend the universe. It’s a reminder for the public that a genius doesn’t have to be a mad scientist but can be a normal good-looking 25-year-old.

-Vitaly Kresin

The Einstein year shows the timelessness of his contributions to Physics. It’s been 100 years since his path-breaking theories on photoelectric effect and special relativity entered the scene and in that time, it has shaped most of the world we see today.

-Aditya Raghavan