the MARVELOUS WORLD of the MBI
UCLA's Molecular Biology Institute

Nobel Laureate
PAUL BOYER

Minna Haapanen
Archaeology

Edwin Hill
French and Francophone Studies

Lisa Schweitzer
Urban Planning

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Dear Graduate Student,

What is tenure all about—and how do you get it? How do you turn a research paper into an article acceptable for journal publication—and when that’s done, how do you determine the most appropriate journal placement for your work? How do you negotiate the broad range of regulations, policies, and ethical principles that surround research involving human subjects? How do you apply for a grant to support your research activities?

The answers to these questions constitute a body of practical knowledge that is useful to all graduate students, whether you’re studying molecular biology or Jazz Age Paris, eating patterns in ancient China or traffic patterns in industrial areas of Los Angeles—as various students interviewed in this issue are doing.

The Graduate Division has sought to help provide information on these issues through workshops provided to graduate students working with faculty mentors as part of the Summer Research Mentorship Program. Previous participants in the program have told us the kinds of information they need which they do not necessarily acquire as part of their departmental programs. Periodic surveys of graduate students provide additional feedback on the types of workshops graduate students would be eager to attend.

The primary goal of graduate education is to transmit a body of knowledge in an area to a new generation of students and to prepare them to expand that field or discipline in new and promising directions. Practical knowledge related to grantsmanship, article preparation, and conference presenting are not always a meaningful component of training. That’s one of the reasons we’re pleased to celebrate in this issue the accomplishments of dozens of graduate students who organize conferences at UCLA each year, learning still another set of important skills.

In the everyday work of professors and researchers, however, such skills are extraordinarily important. Earning tenure, building an academic reputation, and advancing one’s research interests may well depend on seemingly mundane skills such as being able to write and speak clearly, convey ideas to nonspecialists, organize work and time, and interact with colleagues effectively.

Another task often overlooked in the course of graduate education is timely attention to career planning and finding a job. UCLA’s Career Center has been working with the Graduate Division to develop a range of programs that will help doctoral students find rewarding work in academia or the public and private sector. Career-related topics are also part of the Summer Research Mentorship workshops.

Some of you will be moving on to new positions this summer. Please keep in touch and visit us from time to time. Others will be enhancing the skills they need to attain their graduate degrees. I hope you will return to UCLA next fall reinvigorated and ready to continue your work.

Claudia Mitchell-Kernan
Vice Chancellor Graduate Studies
Dean, Graduate Division
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With a reach that extends into about 20 academic departments and a geographic location in the midst of the South Campus science complex, the Molecular Biology Institute and its interdepartmental program for graduate students are at the heart of many of UCLA’s cutting edge scientific research projects.

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enomics, proteomics, and metabolomics are the scientific arenas where researchers are transcribing the genetic code that turns DNA into living creatures, then figuring out what the proteins contained in those genes do and how they work together to control various bodily systems.
Want a metaphor? Scientists have dumped the jigsaw puzzle of life onto a table, counted the pieces, sorted them, and started to fit together large sections.

Or look at the outcomes. Researchers in these arenas are finding ways to eliminate developmental stumbling blocks that lead to infant mortality and birth defects. They’re studying the genetic triggers of cancer, hoping to find a way to turn those triggers off. They want to know why some people live with tuberculosis latent in their lungs and others develop full-blown disease and die. They hope to learn how and why people age, not necessarily to develop an immortality pill but to make the last years of our lives less debilitating and more dignified.

These are a few of the projects under way at UCLA’s Molecular Biology Institute, one of UCLA’s oldest organized research units—groups of faculty in different departments who share research interests—and its related interdepartmental program (IDP) for graduate students.

The building that houses them—Boyer Hall—is barely visible these days in a thicket of construction cranes, chain-link fences, bulldozers, and rising girders. Going up on the south is a new home for Biological Chemistry and Molecular, Cell, and Developmental Biology. On the west, the new California NanoSystems Institute will soon break ground. Among the existing neighbors are Chemistry and Biochemistry, Life Sciences, Neuroscience, and Engineering.

By geography, we are perfectly situated for our basic role as mediator in the biomedical sciences,” says Professor Steven Clarke, director of the MBI. “We’re right in the center—there couldn’t be a better spot on campus.”

Molecular biology appears to be at the center of things conceptually as well. When the MBI was founded in 1965, “molecular” appeared nowhere on the roster of the founding departments. Today, the founding Department of Zoology is part of the Department of Molecular, Cellular, and Developmental Biology; the Department of Bacteriology has been folded into the Department of Microbiology, Immunology, and Molecular Genetics; the Department of Pharmacology is renamed the Department of Molecular and Medical Pharmacology; and the Department of Chemistry—now Chemistry and Biochemistry—has a graduate program in Biochemistry and Molecular Biology.

In 1965, fewer than a dozen professors with molecular interests came together to found the MBI, and three graduate students made up the initial roster of the related IDP. Today, more than 160 faculty are members or associates of the MBI, and 75 graduate students are pursuing doctoral degrees in the IDP. More than 1,000 graduate and undergraduate students participate in research sponsored by member faculty and benefit from the intellectual energy the MBI and its IDP generate.

Like other good things, the MBI began over lunch—with discussions in the late 1950s about the extraordinary discoveries related to DNA that had marked the decade. John D. Green, a professor of anatomy, led a group of scholars from the Medical School and the College of Letters and Sciences who proposed a “Laboratory (or Institute) of Molecular and Cellular Biology” in 1960. Arriving at UCLA in 1964 as a professor of chemistry, Paul D. Boyer soon became involved with the project, and eventually, he agreed to be the MBI’s founding director—on the condition that an educational program for graduate students would be part of the project (see page eight for his reasoning).

As director for the first 17 years, Professor Boyer literally built the Institute. When he took charge, financial support for construction had fallen apart, leaving the MBI building fund with only $1 million from a private donor interested in cancer research. “I’m actually indebted to [President] Richard Nixon for the building,” Professor Boyer says. Nixon set aside $15 million for a war on cancer, and “before other people could get there,” Professor Boyer says, he had an approved application for $3 million. With additional funds from the state, the building went up, under Professor Boyer’s careful eye. Opening in 1976, it was renamed for its mastermind in 1999.

An early proposal suggested two key and interrelated goals for the molecular biology enterprise: “to facilitate research by bringing together workers with backgrounds and competencies in various crucial areas of molecular biology” and “to contribute to the broad education and training that will be needed by molecular biologists of the future.” From the beginning, the two goals have been intertwined.

The first three MBI directors—Professors Boyer, Dick Dickerson, and Arnie Berk—also served as chair of the IDP. A few years ago, the roles were separated—Professor Clarke is director of the MBI, while Sabeea Merchant chairs the IDP—but the two projects still run in tandem, with Professor Merchant as the MBI’s associate director.

“I’m actually indebted to [President] Richard Nixon for the building,” Professor Boyer says

In the latter capacity, she “can direct some of the MBI’s activities toward things that are good for the students and the PhD program,” Professor Merchant says. For example, the MBI’s annual Sigman Symposium (named after the late Professor David Stephen Sigman) this year was on the topic of gene regulation, a new area of specialization (continued on page 30)

BELOW: Sabeeha Merchant, MBI Chair
RIGHT: Bo Tendis, student affairs officer for the IDP and management services officer for the MBI welcomes students into her office.
Winners of the Nobel Prize are asked to submit an autobiography for release with other materials related to their accomplishments. When UCLA’s Paul D. Boyer won the 1997 Nobel Prize in Chemistry, he used that essay to thank some of his most valued colleagues: the graduate students and postdoctoral fellows who worked with him over the years in developing his findings on the unusual rotational catalysis of the ATP synthase.

“I believe the best research is accomplished by a faculty member with a small group of graduate students and postdocs, who freely design, competently conduct, and intensely evaluate experiments,” he said in that essay.

Recently, he elaborated: “If I were to devise a way to solve scientific problems, this is absolutely the best way,” he said during an interview at his campus office. “If you have a fixed research group, you don’t get the input of new and different views that you get from postdoctoral fellows and graduate students. It helps the research to have new people coming through who are capable and interested.”

A first-rate graduate student comes with “an educated imagination,” Professor Boyer says. In other words, the student has scientific experience as well as grand questions and the creativity to propose innovative investigative paths.

Committed to the concept of a graduate student-based research team, Professor Boyer insisted on having university approval of a doctoral program in molecular biology before he agreed to become founding director of the Molecular Biology Institute, an organized research unit attracting faculty from several quarters of the campus. “To me, the institute only made sense if it had close affiliation with and responsibility for graduate training, because research and training are so interlinked.”

Over the course of his 17 years as director, Professor Boyer raised the funds to pay for a building, supervised its construction, recruited new faculty to the program, both on and off campus, and did all the myriad administrative things required to establish a new academic program and research enterprise. He always found time, nevertheless, to return to the lab and hang out with the graduate students and postdocs who collaborated in his research.

When he turned 75, Professor Boyer decided to retire, reasoning that “I’d rather be out of it if I can’t be in the front ranks,” he says. “Right as I was deciding to drop out of it, Mr. Nobel invited me to Sweden.” Although he retired nevertheless, he still maintains a small office in the building that bears his name, and he comes and goes from campus two or three days a week—“Most of the students around here probably don’t know who that old fellow is,” he says, a hypothesis lacking experimental confirmation.

Although it’s a few years now since he’s been a working researcher, his voice picks up extra energy when he talks about “the intellectual atmosphere of creativity and evaluation” in a research team. “The thing I miss most on retiring,” he says, “is not being able to be in the conference room across the hall with a group of students and postdocs discussing their experiments.”
The first person in the world to clone the BRCA1 gene in cows and describe its actual sequence is Susie Krum, a graduate student in the molecular biology interdepartmental program at UCLA. Her findings were published last fall in Oncogene, the leading journal for research on the genetic components of cancer. She is the article’s first author.

As Susie points out, mice are usually the model system used to study human genetics because most mouse genes are about 85% identical to human genes. However, the mouse version of the BRCA1 gene is only about 50% similar to the human gene, which is linked to 5% to 10% of breast cancer cases.

As Susie looked around for something “a little bit closer,” she settled on the BRCA1 gene in cows—even though, as she says, “we don’t have a lot of cows up here in the laboratory.” Not only is the cow gene more similar to the normal human gene, it is nearly identical to the mutated human gene that seems to be related to breast cancer. Thus, by studying the bovine BRCA1, Susie thought she could learn something about the mutation in humans.

“No one knows what the BRCA1 gene does exactly or why it causes breast cancer,” she explains. So far, research suggests that BRCA1 in a normal cell either senses or fixes genetic damage to the DNA chain. A second line of research, which examines the interaction of BRCA1 with a protein called RNA polymerase II, seems to be providing more evidence regarding BRCA1’s function as a fixer/sensor. That research, which was published in the Journal of Biological Chemistry in December, will be the subject of her dissertation.

Susie brought her interest in breast cancer research to UCLA from undergraduate work at UC Berkeley, where a bit of serendipity led her to a rewarding avocation. Wanting to go to the Berkeley/Stanford basketball game, Susie and her roommate stood in line for hours, only to have tickets run out two people before them. Disheartened, they were walking away when a policeman directing traffic called out to them: “He said, ‘You guys didn’t get tickets, huh?’ and he handed us two tickets—they were front row seats—and said, ’Do something good for somebody.”

Opportunity knocked the next day when Susie picked up a flyer on campus seeking volunteers for a grade school’s reading program. It was “kind of a sign that I should do that,” she says. In Berkeley, she worked with second graders. Now she spends an hour each week at La Ballona Elementary School in Culver City, helping third graders polish their reading skills. La Ballona has one of the lowest reading scores in the state, but by last spring, all of the students in Susie’s class were up to speed.

At UCLA, Susie enjoys working with “a couple of wonderful undergraduates who are helping me in the lab.” Asked if there are any common pedagogical threads between third graders and UCLA students, Susie thinks first of “patience,” then answers more thoughtfully. “Not assuming that anybody knows a certain thing is good,” Susie says. “You have to start from the basics and find out what they know.”

Eventually, Susie hopes to find work in a setting that lets her combine research with teaching. First, however, she has a postdoctoral fellowship for work at Harvard University’s Dana Farber Cancer Institute, where she’ll explore a new area of breast cancer research.
Thanks in part to her sixth grade science teacher, Bernadette So is now a graduate student in molecular biology, doing research that may lead to help for infants born with underdeveloped lungs. That teacher dressed in a brown Hefty bag one Halloween to depict a monk named Gregor Mendel, the father of genetics. Bernadette admired the woman’s dramatic flair and other qualities. “She was always very supportive, so it got me interested in science.”

A decade or so later, Bernadette is part of a research team working to understand how living things develop at a molecular level. For years now, scientists have been figuring out what a gene or protein does by creating an organism that lacks the gene and studying what happens to it. In Bernadette’s case, the organism is a mouse missing a gene called BMP3, which is expressed in bone cells.

However, the scientists observed “something that has nothing to do with bone,” Bernadette says. “These mice seem to have a lung defect as well. When they’re born, they have trouble breathing. They can’t inflate their lungs, and I’m trying to figure out why.” What she has learned is that mice lacking BMP3 “are a developmental stage behind when they’re born.”

In the next couple of months, Bernadette says, “We’re hoping that the project will be pulled together in a nice story,” her dissertation. That story may provide interesting reading for doctors who treat newborn human babies with underdeveloped lungs. Doctors have been trying various ways “to help increase their development so they can survive outside the womb,” Bernadette says. “We’re hoping that what we’re doing might provide some insight.”

Although Bernadette acknowledges that “my mice take up a whole lot of time,” she also invests more than a few hours in the Biological Sciences Council, a Graduate Student Association body that represents more than a dozen departments. This year, she serves as co-president.

Besides distributing funds from graduate student fees to programs that benefit graduate students, the Council works on an issue each academic year. This year, it’s parking. Graduate students in biological sciences have special parking issues, she says, because “we don’t work normal hours. The experiment we’re doing determines what time we have to come in to campus.”

Bernadette’s road to UCLA led through Barnard College, where she worked with a scientist who studied molecular evolution and focused her interest on molecular biology. Although she applied to several schools, “once I interviewed at UCLA, I was convinced that I wanted to come here,” she says. A key influence was the ACCESS program, which allows graduate students to explore several research areas before deciding on a program. “When I got to this project, I found it very interesting, and the laboratory environment was very supportive,” Bernadette says. She liked the fact that “my adviser, Karen Lyons, actually still does bench work” and was available to provide “hands-on input.”

Being part of an IDP has been a definite asset, she says, linking her to faculty and graduate students in a wide range of research areas. Graduate students in the molecular biology IDP meet regularly to discuss their projects and practice presenting data. Although they work on different projects, they often use similar techniques. “If you describe a problem,” she says, “somebody will always have some way of helping you.”
Mike Strong spends most of his time analyzing the genome of the Mycobacterium tuberculosis bacterium and figuring out how its various proteins interact to produce tuberculosis in human lungs. Last year, in his spare time, he designed an Internet tutorial on bacterial genomics for a graduate course. And in his free hours, he occasionally takes up paint and brush to create precise and close-up portraits of DNA molecules.

If the theme of all this hasn’t registered, Mike spells it out: “I’m pretty much obsessed with science,” he says.

That obsession began in high school chemistry class, when he found that investigating things at the molecular level “piqued my curiosity,” Mike says. Majoring in microbiology at UC Santa Barbara was “a nice extension of that interest,” and he came to UCLA for graduate work because of its strong program in structural biology and functional genomics.

He found a home in David Eisenberg’s laboratory, where he can do a little bit of each. Professor Eisenberg has created a great environment for research, Mike says. “He has a nice style of mentoring graduate students and postdoctoral fellows. He’s always here for us if we have questions related to our research, but he also gives us the freedom to think about our research on our own and come up with new ideas.”

Mike’s new ideas have to do with the Mycobacterium tuberculosis bacterium, an organism with about 4,000 genes. Each of these genes produces a protein, a metaphorical “molecular machine” that’s responsible for the activity in cells. Trouble is, “we have no idea what half of them do,” Mike says. With a team of collaborators, Mike has developed a visualization method that uses computer programs to build a hypothetical model of protein networks—representing pathways and functionally linked proteins. “We have high confidence links for about half of the genes,” he says, “many of them previously uncharacterized.”

Then Mike takes his hypotheses to the laboratory bench to get biochemical confirmation. A particular tuberculosis gene is cloned and then expressed in Escherichia coli, a less dangerous bacterium, for testing. Mike’s dissertation will provide “a fairly complete analysis” of the Mycobacterium tuberculosis bacterium’s genome, then show how that information can be used to design experiments and present results.

His analyses may help to explain why the tuberculosis bacterium remains latent in some people’s lungs, while in other cases, it becomes active, killing 2 million to 3 million people worldwide every year. His work may also lead to new antibiotic treatments for tuberculosis strains that are resistant to existing drugs.

Along with his research project, teaching “is one of my favorite things at UCLA,” Mike says. “I like to share my enthusiasm for science with my students. They can tell how excited I am about the things that they’re working on.” Mike believes that part of his job as a teaching assistant is to show undergraduates “what it can be like to be in graduate school or working in a lab—to show the excitement you can get out of science.” Occasionally, students tell him that his class persuaded them to continue their scientific studies. “I live for those comments,” he says.

His Web-based tutorial on bacterial genomics has been used by more than 100 graduate students, and through that tutorial, he says, “It’s almost like I’ll still be teaching at UCLA, even after I graduate.”
Graduate Student CONFERENCES

ENDER RELATIONS AMONG TURKISH IMMIGRANTS in Western Europe, among migrant workers in Korea, and among Dominican women in California.

Music and urban space in Brazil, and rethinking identity in the Panama Canal Zone.

Using cognitive studies to decode myth—or why the Flood is universal but only Germanic dragons have halitosis.


These are among the intriguing topics that were up for discussion at conferences held at UCLA during the past academic year. While the disciplines and the perspectives and even the languages spoken varied widely, there is one common theme here: Graduate students. Through the conferences, they are contributing to the intellectual life of the
campus at the same time that they enhance their own professional credentials.

All of the presenters may be graduate students, or only a few. In some cases, presenters are mostly from UCLA and other Southern California universities, while other conferences draw presenters from across the nation and around the world. Sometimes, the call for papers includes a theme, while other conferences take all papers, select for quality, and then put together panel themes based on what they receive. Typically, graduate students sit on the committees that select presenters from a variety of submitted papers. And graduate students do the groundwork: applying for grants, reserving space, publicizing the event, arranging for audiovisual equipment and guest parking, and recording the outcomes, often on the department web site.

An informal survey of a handful of this year’s campus conferences shows that while their roles vary, graduate students make contributions that are often essential to a conference’s success. For example, without an inspired group of four students in the Department of Spanish and Portuguese, there may not have been a April 16 conference in that field. Iliana Alcántar, Marisol Pérez, Alessandra Santos, and Melissa Strong Carrillo decided to revive a departmental conference tradition that had been dormant for several years. “We had the freedom, as far as our academic schedule goes, to put our efforts together and really do something that would be enlightening and gratifying for all of us,” said Alessandra.

The four were also the editors of the department’s graduate student journal, Master. So they issued a call for papers on the same topic for both media: Transformations: Re-imagining Identity. Identity “was a common thread among our work, and it’s a very contemporary topic, very relevant now,” Alessandra says. The four also selected the presenters—all of them graduate students.

At the 15th annual UCLA Indo-European Conference, most of the presenters were senior scholars in the field, many of them with world-class reputations. However, graduate student Richard Denis Jones, Jr., did the administrative organizing, and graduate students who had advanced to candidacy sat on the faculty committee selecting papers for presentation and chaired panels.

As graduate students rub academic elbows with the experts who come to speak, says Department Chair Brent Vine, connections are forged that lead to ongoing conversations, e-mail exchanges, and sometimes research collaboration. Richard says his position as student chair offers unique access to the best scholars in the field and earns respect for his managerial skills, which gives him “a definite competitive edge.” He also enjoys having this practical way of sharing his passion about “our shared Indo-European roots.”

While Richard volunteered and was selected for the position by Professor Vine, graduate students in French and Francophone Studies vote for a conference chair and vice-chair. Each person serves two years, the vice-chair succeeding to the chair’s role after a year learning the ropes. This is one way to help student coordinators master the tasks involved in organizing and running such an event.

“We had the freedom, as far as our academic schedule goes, to put our efforts together and really do something that would be enlightening and gratifying for all of us,”

- Alessandra Santos

The Thinking Gender conference—one of the oldest on campus—goes a step further. A handbook based on past experience guides the new coordinator—this year, Gwen D’Arcangelis—through the multiple tasks of coordinating logistics at the site, calling for and selecting papers, providing audiovisual equipment and assistance for presenters—even having T-shirts designed and made.

“I thought it would be good to see what’s entailed in putting something like this together,” Gwen says. “I learned that it’s hard. It takes a lot of energy.” On the other hand, she says, “because I read everyone’s abstracts, I was able to learn about fields I might not have contact with otherwise.” Also, both during the conference and after, “a lot of people were really appreciative,” she says. “That was nice.”

While Gwen gets a stipend for her work, most student coordinators don’t get cash compensation, but there are many other rewards. In French and Francophone Studies, the conference chair gets to pick the year’s theme. Vera Klekovkina is doing research on cinematic adaptations of Marcel Proust, so she chose “the dialogue of the visual and the verbal,” she says. Given that theme, her fellow graduate students nominated Alain Robbe-Grillet, a ground-breaking writer, filmmaker, and theorist, as last fall’s keynote speaker. Vera set about looking to see how she could contact him, “never believing I would actually speak to him directly.”

A professor at Chapman University provided a phone number, and “I called Paris,” Vera says. “His wife picks up and says, ‘Yes, Monsieur Robbe-Grillet is here. Do you want to talk to him?’ I said, ‘Sure,’ and I’m trembling.” Her anxiety dissipated quickly: “He was so wonderful and very understanding.” Despite his age, poor health, and typical refusal to do single events, Robbe-Grillet accepted the UCLA invitation, waiving the usual speaker’s fee in return for a rather expensive airline ticket. Vera believes he “was very touched that the conference was supported by graduate students and that we wanted to have him share his wisdom.”

His keynote address, including anecdotes about his relationships with other French artists and thinkers was extraordinary. Vera tape-recorded the speech and is including a CD-ROM in the next issue of Paroles Gelées, a journal that predates the conference but now publishes only its proceedings.

“The journal and the conference are two features of our department that graduate students appreciate, because they offer opportunities to gain a lot of experience with important professional aspects of our field,”
says Department Chair Françoise Lionnet. For example, because she knows “how much coordination goes behind such an event,” Vera says, “I’m more prepared for my eventual job”—hopefully, a tenure track university position.

The time investment need not slow time to degree, Professor Lionnet says. “I think the job can be as complicated for the person doing it as the person wants it to be.” A recent chair, Alison Rice, completed her dissertation within a year after leading the conference, Professor Lionnet points out.

Professional preparation is perhaps the most important goal for graduate students involved in academic conferences. Although most speakers are experts, Professor Vine emphasizes that the Indo-European conference is open to student presenters and offers a best-paper award for young scholars, including recent PhDs. As he sees it, making “a full-fledged presentation counts for quite a bit on a young speaker’s CV,” perhaps more than a presentation at a conference featuring only graduate students.

But the latter has its advantages as well. Regina Lark, manager of the Center for the Study of Women, says “I’ve always seen this conference as a way to thicken your professional skin, to take the risk and put your work out there.” Because the competition is friendly, the Thinking Gender graduate conference is “a sublime place to do that,” she says. “It’s one of the best ways you can start cutting your professional teeth.”

As a result, Dr. Lark finds it “sad to turn papers away,” and the conference program has grown remarkably in the last year or two. For the 13th Annual Conference in 2003, she put the call for papers on the women’s studies listserv, and papers came pouring in, even though the graduate student speakers get no financial help in meeting their travel costs.

There were 71 student participants in 2003’s Thinking Gender conference and 59 in 2004. In contrast, the French and Francophone Studies conference, which likes its small size, had 18 presenters, some of them professors, and the Spanish and Portuguese conference had 13.

Whether the conferences are big or small, their graduate student coordinators seem happy with the work. Based on her experience with the Thinking Gender conference, Gwen D’Arcangelis has agreed to chair the Women in Science conference in the 2004 academic year, and Rich Jones will coordinate his fourth Indo-European conference this coming fall. Being student coordinator “gives me a little clout and authority on campus,” he says, “whatever little a graduate student can have.”
The UCLA International Conference for Graduate Literary Translators

Most academic conferences involve importing guest speakers or presenters who bring with them knowledge to share with the local audience. The UCLA International Conference for Graduate Literary Translators reversed the process, importing guest learners—graduate students from other universities. Working with UCLA graduate student mentors, they discovered a unique approach to translation studies, which they can share with academic colleagues at their home campuses.

UCLA’s Comparative Literature 285 (Workshop in Literary Translation), offered in alternate years for more than two decades, is the brainchild of Professor Michael Heim, a celebrated translator in the Department of Slavic Languages and Literatures. Professor Heim’s central insight is that the language people are translating from is basically “a technical detail”—assuming that translators have advanced skills. “We concentrate on the English text because that’s what is actually going to be read,” he says.

In Comparative Literature 285, each student brings an English translation to class for peer critique each week, and any number of original languages may be represented in any class. “It’s good if other students know the language of origin, but even if they don’t, we find over and over again that the questions participants ask hit upon the problems,” Professor Heim says. “In the end, the English texts tell us what the problems are.”

About ten years ago students asked Professor Heim if the class could continue meeting on an informal basis after the end of the quarter, and the Babel Study Group for Translation Studies, an ongoing program for workshop alumni, was born. When Ryan Kernan and Carole Viers took over as co-presidents last fall, the idea for expanding the Study Group beyond the UCLA campus was hatched.

Kernan and Viers, graduate students in Comparative Literature, learned from the Center for Student Programming that funds for a conference might be available. The topic was obviously timely: The international situation underscores the need to know more about other cultures. Moreover, the translation workshop is “a great format,” says Kernan. “We thought it would be good to export.”

The Babel Study Group decided to invite 15 students because 15 members were willing to provide guest lodging: The idea of “reaching out to people who were translating in isolation,” Ryan says, “was what excited me the most.” When they put out a call for applications on the Internet, “we wondered if we would get 15 applications,” he says. “We ended up getting 55.”

Sorting through those applications and deciding which ones to accept was the hardest part of the conference-creating process. The student jury, headed by Kelly Austin, another graduate student, had to turn down some excellent work. Ultimately, 15 invitations were issued, representing 13 languages—and all were accepted.

With $10,000 in funds they raised, the Babel group sent airline tickets to all 15 (including several from Great Britain and Canada), picked them up at the airport, and housed and fed them for the weekend. All participants—the guests and their UCLA hosts, about 40 in all—received copies of each guest’s translation in advance. The idea of “reaching out to people who were translating in isolation,” Ryan Kernan says, “was what excited me the most.”

The guests welcomed the opportunity to meet other translators, and a lively communications network has developed among those who attended. For example, two students who came from Columbia University are talking with Esther Allen about reviving a dormant translation program there.

For Professor Heim, the conference is an important step toward his ultimate aim of increasing the community of translators in the United States. “We’re not learning enough about other people in this world. Translation is not the only way, but it’s certainly one very good way to do that. We desperately need more literary translators,” he says. “This little three-day meeting may be the impetus that encourages some students to go on and publish.”
Of the 875 registered UCLA postdoctoral scholars this year, nineteen were chosen as members of the select group of nominees for the Chancellor’s Award for Postdoctoral Research. The Postdoctoral Fellows reception and awards were established in 1998 to recognize the important contributions that postdoctoral fellows make to the interrelated missions of research, teaching, and public service at UCLA. Nominees come from virtually every discipline at UCLA, from the basic and applied sciences to the professional schools, the social sciences, and the humanities. The award is accompanied by a $3,000 cash prize. An important criteria employed by the selection committee for these awards is that the individual's research accomplishments show clear potential to have meaningful and enduring implications in their field, with emphasis on work completed while a postdoctoral scholar at UCLA.

MADELEINE FITZGERALD

Madeleine Fitzgerald played a leading role in constructing an online catalog (www.cdli.ucla.edu) of 80,000 cuneiform tablets and a million lines of transliterated text—cuneiform represented in Roman letters—an outstanding contribution to cuneiform scholarship. “Cuneiform is the earliest writing system, documenting about 3,000 years of history,” Dr. Fitzgerald explains. “It’s particularly important now because the writing is from Iraq, for the most part.” Thus, the online library preserves “a vanishing legacy.”

While Dr. Fitzgerald did much of the technical work—aided by her knowledge of Assyriology—gathering the documents and doing the transliterations was a collaborative effort. “One of the nice things about the project is how international it is,” she says. “When I got the Chancellor’s Award, I got congratulatory notes by e-mail from St. Petersburg, Vienna, Jerusalem—all over.”
Additional tools, including an automatic glossary builder and an automatic translator, are in the works. The website she helped to build has been useful in her own research on old Babylonian history. She says that even before the legendary lawgiver, Hammurabi, the territory now known as Iraq was multi-ethnic and multi-cultural and beset by disputes over precious supplies of water.

**CHRISTOPHE CALOZ**

Christophe Caloz was the first to recognize the dual low-frequency left-handed and high-frequency right-handed nature of metamaterials, to develop a generalized transmission line-based theory of these materials, and to demonstrate their usefulness in practical microwave applications.

Metamaterials are “broadly defined as artificial materials that exhibit electromagnetic properties not found in nature,” he says. “Basically they’re magic materials.” In nature, when a wave travels through the interface between two media of different densities—for example, air and water—it is refracted or bent to a different angle without changing its direction parallel to the interface. In contrast, when a wave meets the interface between conventional and left-handed media, it is bent in the opposite direction, a novel phenomenon called “negative refraction.” This is just one of the exotic properties that left-handed materials display.

While, for almost a decade, physicists and other theoreticians have been studying metamaterials at a conceptual level, Dr. Caloz has developed an engineering analysis and design approach to these structures. The real-life applications he proposes may introduce a new generation of microwave and optical devices for wireless area networks and mobile communication systems, including smart reflectors that “can receive a signal from space, collect it, and redirect it to any other point in space.”

**ALEX EVILEVITCH**

Alex Evilevitch leads an international team that discovered some viruses that explosively inject their genes into their bacterial prey, exerting pressure 8 to 10 times greater than the pressure that pushes a cork out of a champagne bottle.

Viruses are very simple structures: an outer shell called a capsid surrounding genetic material. For more than 50 years, it’s been known that the viruses must be highly pressurized in order to eject their genomes into bacteria. However, Dr. Evilevitch, working with an international team of scientists, was the first to measure that pressure. In fact, he built a laboratory at UCLA to do the work, which draws from both biology and the physical sciences.

His experiments found that a virus operates something like a “jack in the box” when it invades bacteria, firing its DNA straight through the host’s cell wall. The virus then hijacks the cell’s replicating mechanism and makes more copies of itself.

Dr. Evilevitch’s research also showed that the amount of genetic material ejected from a virus can be manipulated by changing the pressure around the virus, to the extent the ejection can be completely suppressed. This insight might enable the design of ways to use viruses to deliver drugs for therapeutic uses.

**IOSIF BENA**

Iosif Bena uses string theory in an effort to understand the microscopic structure or building blocks of black holes. About 30 years ago, Stephen Hawking hypothesized that black holes have thermal properties, like temperature and entropy. He also defined the information loss paradox: When things fall into a black hole, they can’t get back out again—at least not in their original recognizable form.

Dr. Bena and his adviser, Professor Per Kraus, studied supertubes, a class of objects that can become black holes. By studying the supertubes’ properties, they have made progress in describing what might happen inside a black hole—in effect, recovering the lost information.

“It’s a little bit of a thought experiment,” said Dr. Bena, “but we believe it captures the properties of the real black holes.” Although his work doesn’t resolve the information loss paradox, it points toward a solution.

Although black holes are celestial objects, Dr. Bena doesn’t use telescopes in his work, but rather ordinary paper-and-pencil computations and hypotheses. His work in string theory has also focused on the Yang Mills theories, revealing some new aspects.

**JOVICA BADJIC**

Jovica Badjic has created a simple artificial model that will help researchers understand multivalency, which is used in nature to achieve a tight binding between biological molecules. Additional information about this process could lead to the design of multivalent therapeutic agents that would provide efficient treatment and neutralization of bacterial toxins, prevent viral and bacterial infections, and offer new treatments for cancer.

Rather than studying complex biological systems, Dr. Badjic transferred the phenomenon of multivalency to unnatural settings, examining its expression in supramolecular chemistry. One aspect of his work, developing on previous research in Fraser Stoddart’s laboratory, was a nanosized molecular elevator. This achievement shows that scientists can build increasingly sophisticated artificial machines of nanoscale dimensions. An application of the research might be a controlled, slow-release, drug delivery system.
WHEN MINNA HAAPANEN WAS DOING HER ARCHAEOLOGICAL FIELDWORK IN ANYANG, CHINA, she quickly learned that partaking in group meals was essential to doing business in China, and there was nothing fast about their food rituals.

The person who ordered typically engaged the waitress in “long discussions about the freshness of the fish and how things were prepared,” she says. “It took a long time to order.” And when the fish was served, if the tail was pointing at you, you were required to engage in other rituals involving alcoholic beverages. In the beginning, Minna was always offered the chair opposite the door—the designated position for the most important person. She quickly
learned that gracefully declining that honor was appropriate.

Like so many things in China, elaborate dining rituals have a long history. As early as the Late Shang dynasty, dated ca. 1200 to 1046 BCE, “communal eating was very important in the social life of the elite,” says Minna, a doctoral candidate in archaeology, who is affiliated with the Cotsen Institute of Archaeology.

Her dissertation will examine whether the dining rituals typical of those early elites were emulated by the bronze workers who made the vessels the wealthy used on those occasions. To do so, she’s looking at ceramic vessels from the workers’ households, studying their sizes and shapes and wear patterns to determine how and in what contexts they might have been used.

Minna hadn’t settled specifically on that topic, however, when she left to conduct fieldwork in China in the fall of 2001. Her destination was Anyang in Henan province, the last capital of the Shang Dynasty and site of an important series of excavations that were begun in the 1920s. Palace foundations, royal tombs, bone and bronze workshops, burial grounds, and trash pits—all of these are scattered over about 30 square kilometers.

“I had been reading about the place for so long that it was just amazing to be there and to get access to the materials,” Minna says. “This site is the most important archaeological site in China in terms of the history of the discipline, and being able to work there together with Chinese colleagues is a dream come true for me. It is very difficult to convey to people outside of Chinese archaeology how extremely privileged I feel.” During her stay, Minna was also given access to materials from a new site, uncovered in 2000. As she tried to synthesize what she’d seen at both the old and new sites, it became “self-evident that eating would be relevant to look at,” Minna says, and she settled on her dissertation topic.

Of particular interest to Minna are the whole or reconstructed vessels recovered in the 1960s from a bronze manufacturing site in Anyang. The size of the vessels might suggest how big a group typically ate and socialized together in those days. The type of decoration might be linked to a possible ceremonial nature of those occasions. Minna is also hoping to make some educated guesses about the social status of the bronze workers and whether this was related to their skills.

Looking at the same materials, Chinese archeologists typically list and provide detailed descriptions of objects, but they rely on historical material for information about what life was like. However, the history that survives from the Shang dynasty is mostly oracle bone inscriptions, which record communications between the king and the king’s ancestors and have little to say about ordinary people.

As a result, Minna’s work will add an important social context to the literature on ancient China. To do this, Minna is applying anthropological techniques used mostly in the New World “with great originality and creativity,” says her mentor, Professor Lothar von Falkenhausen of the Art History Department. “She’s making it clear to our Chinese colleagues that some of this research is experimental in nature and by no means intended to challenge their very important work,” he says. Minna’s interpersonal skills have made her welcome in China, and colleagues there have been quite interested in her approach.

On her trips to China, Minna usually travels via Finland, where she was born and obtained her bachelor’s and master’s degrees. When she applied to the University of Helsinki, Minna says, “I was supposed to be an Egyptologist, but I never took a single course in Egyptology.” Instead, she took a class in Chinese language and culture her first summer and eventually earned degrees in East Asian studies.

During her master’s work, she had an opportunity to spend a year at UC Berkeley, working with David Keightley, a renowned expert in oracle bone inscriptions. He steered her to UCLA to study with Professor von Falkenhausen.

Minna’s doctoral studies have been supported by a variety of grants, beginning with an ASLA-Fulbright Scholarship and awards from the Cotsen Institute here and the Koneen Säätiö (Kone Foundation) and Academy of Finland in Finland. Last summer, the Institute awarded her the Director’s Graduate Research Fellowship, which supports participation in an excavation project unrelated to dissertation research.

For Minna, this meant spending two months at the Mozan/Urkesh Project in Tell Mozan, Syria. This was her first experience helping to conduct an excavation as part of a large project. Although Syria is at a considerable distance from China, the work is relevant to her future goals, Minna says: “Once I get to the point that I can have my own excavation in China, it will help me resolve the technical and interpretative problems associated with large horizontal exposures.” She will return to the Urkesh/Tell Mozan project this summer.

She’s also participated in research in Russia and Iceland, experiences that will help her when she returns to Europe to seek an academic position. In the meantime, Minna has learned a lot about social rules, not only in China but in California as well.

“Here, you have to use a person’s first name when you address them”—for example, Hi, David. “Why do I have to tell them their name all the time?” she used to wonder. “I would think they knew it.”

A Late Shang dynasty (ca. 1200 BCE) li-tripod (li is the Chinese name of this particular shape of a vessel) used for cooking. It was excavated from Miaopu Locus North in Anyang, Henan province, China in the early 1960s. Similar shapes were very widely used in northern China before and after that time period.
Edwin Hill
French and Francophone Studies

During the World Wars of the Twentieth Century, many African American men traveled to France with the U.S. Army. The stories they brought home about their experience of equitable treatment among the French laid the foundation for a myth about a color-blind France that persists today.

Sustaining that myth and building its glamour, many notable African American creative artists—from actress Josephine Baker to writers Richard Wright and James Baldwin—made their home in Paris in the years between and after the wars.
This summer, African American graduate student Edwin Hill is “following in their tracks” to France, drawn by the myth they created. He hopes to learn more about the historical moment in France—from the 1930s through the 1960s—when Paris was a place where Africans from America, the Caribbean, and Africa—people of different social classes, different ethnicities, and different histories, all in Black skin, were trying to learn from one another.” In France, “they could meet with one another in a seemingly neutral space,” Edwin says. “It was an interesting moment of synergy between the intellectual, aesthetic, and political life.”

Edwin is interested in all three arenas: Black theorists and writers from the Caribbean—for example, Frantz Fanon, who critiqued constructions of colonial identity, and Aimé Césaire, who wrote poems and essays that inspired oppressed people worldwide; the French fascination with black diasporic musical genres and performers like Baker and Alexandre Stellio (Antillean); and what Edwin calls “the politics of sound.” In the process of exploring these issues, he hopes to gain insight into the myth of a color-blind France and the complex ways in which it compared to reality.

For example, in her films, Josephine Baker often played a performer who fell in love with a white French man. “Her characters would come to France and find success as black colonial performers in Paris. But while the audiences loved her, largely because of her exotic origins, those same origins made her an unacceptable choice for the French man she loved,” Edwin says, “so her success was always ambiguous and somewhat tragic.” One film ended, he says, with Baker performing as a bird in a cage.

While this is a rather negative depiction of Africanness, it’s hard to say whether it reflects Baker’s own experience, because she created a personal mythology about who she was, walking down the streets of Paris with cheetahs on a leash. Also, even if her life were honestly reflected in her films, there was another side to her experience: Her celebrity gave her economic clout, Edwin notes, and let her “make statements that wouldn’t have gotten heard otherwise.”

Baker’s experience of Paris was certainly different from the experiences of those Blacks who came to Paris as students, and not all Blacks who came to France felt the same about their temporary home. Edwin points out that Africans from French colonies in the Caribbean were more ambivalent about the “liberty and opportunity that might exist in France that don’t exist at home. While they might have enjoyed the open and accepting atmosphere of Paris, they also saw France as a colonial power that refused to give their island homelands independence.

One of those French colonies is Guadeloupe, which was the birthplace of a musical art form called biguine. Drawing on his experience as a percussionist—he has an undergraduate degree in musical performance—Edwin examines how the calypso-like biguine, a dance and musical genre with creole lyrics on topics ranging from love and daily relationships to current events and political commentary, became a craze in Jazz Age Paris. He also asks “why jazz was so successful, and biguine didn’t enjoy as long a run.”

Music (especially rhythm and drums) was often related to ideas about blackness, which seemed to play an important role in the French cultural imagination during the period Edwin is studying. Society was experiencing dramatic technological change—films with sound, radio, automobiles—and Blackness seemed to represent “an authentic, fundamental being that the French themselves had left behind,” he says. In effect, they were defining what it meant to be French by contrasting themselves with people of African heritage.

Edwin’s grant-supported year of travel, which begins this summer, is not his first visit to France. After graduating in music from the University of Iowa, he studied French literature—with French students—at the Université du Mans. Inspired by the full immersion program, he wrote back to Iowa to apply for the master’s degree program in French literature. During those studies, he spent another period in France—this time in Rennes, working as a teaching assistant in an English conversation course—solidifying his French-speaking skills.

It wasn’t until he arrived at UCLA to study Francophone literature with Professor Françoise Lionnet that all of his interests came together. “Edwin has developed an enviable ability to cross disciplinary boundaries between music, the humanities, and the social sciences,” says Professor Lionnet, who is his adviser. “While at UCLA, he has taken courses in French, comparative literature, anthropology, and musicology, and he is continuing to hone the exceptional skills that will serve him well in an increasingly challenging academic culture that puts a high premium on solidly grounded and theoretically strong interdisciplinary work and teaching.”

Because his work is interdisciplinary, “it takes a long time to figure out how everything will fit together,” Edwin says, but working across disciplines—especially at a major university like UCLA, also “has opened up new intellectual avenues for me.” When he completes his dissertation, Edwin will seek an academic position. “I’m hoping to find a place where I can continue to do the kind of work I’ve done here.”
Urban Planning is usually associated with the notion of model cities, turning what we’ve learned about existing cities into blueprints for better places, in what graduate student Lisa Schweitzer calls “the undeveloped universe.”

Lisa wants to fix up what’s already there. “It’s the legacy of industrial production in our cities that needs to be examined,” she says. “We need to look at what past practices have done to create the riskscape that people have to deal with every day, and then find a way to improve it.”
Rather than focusing on the undeveloped universe, Lisa’s dissertation research looks at the Southern California communities of Commerce, the City of Industry, and Boyle Heights. Residential neighborhoods there exist side by side with factories, and trucks come and go with production materials, some of them hazardous.

How does it come to pass that some people become next-door neighbors to factories and the risks those factories present? In the case of Boyle Heights, the residents came first, then the freeways and factories in close succession, leaving people little opportunity to get out of the way. The reverse was true for the City of Industry and Commerce, where the residential neighborhoods were built around existing industrial complexes.

Either way, the present situation results from racial and economic politics, Lisa says. “Nobody gets up in the morning and says I’m going to build my landfill in Pacific Palisades or Malibu,” she says. Rather, industries and governments look for “the neighborhoods that are going to resist the least,” inhabited by people with few resources and less power, often people of color, as in the case of Boyle Heights. “It’s not fair and it’s not nice,” Lisa says, “but it’s the reality of planning.”

As for the City of Industry and Commerce, people with few resources—and people of color—ended up living there because they have few choices in a tight and sometimes discriminatory housing market like the one in Southern California. Living next to a factory might be their best housing option.

Over the years, many people have tried to determine whether there is malicious intent behind the fact that poor people of color so often find themselves living in hazardous areas. “That’s not a productive line of inquiry because it’s too difficult to establish and in many cases, intent isn’t relevant,” Lisa says. “What’s relevant is that we have people living in proximity to things that are bothersome, dangerous, or both, and we need to be thinking about ways of changing that.”

Lisa’s dissertation focuses on freight traffic. Researchers looking for safe ways to transport hazardous materials tend to focus on finding the shortest possible routes with the fewest people living alongside of them. Lisa looks instead at the transfer points, often factories, where hazardous materials are picked up and delivered. People in these neighborhoods believe they are in danger, and Lisa proved empirically that their sense of risk is warranted.

Her adviser, Randall Crane, says her ground-breaking work makes a significant contribution. “The project is computationally intensive, which is one set of her skills,” he says. “She is, however, an unusually broadly trained person, with strengths in both theory and practice. Her perspective on these issues is thus both unusually nuanced and integrated.”

Lisa’s broad training began as an undergraduate at the University of Iowa, where she earned a major in social work and a minor in economics. She came to college “with a strong desire to do work that was emancipatory in nature,” she says. “I wanted my work to be centered on social justice.” Nevertheless, as she studied social work, she found herself spending less time doing people-oriented work and more time handling administrative or budgetary tasks. “I wasn’t particularly good at getting people talking,” she says. “I was good with numbers, and I recognized where my talents were.” After obtaining master’s degrees in economics and urban planning from Iowa, she worked for a few years doing program evaluations and consulting in Iowa, then decided to continue her education.

UCLA was her choice: Los Angeles “seemed like a good place to study urban inequality and transportation because it had both problems in spades.” Lisa says. In addition, the Department of Urban Planning “has a long tradition of emancipatory research,” she says, making it “a marvelous place to study environmental justice.”

While it’s been a great place to study, however, Lisa says “living here drives me crazy.” Unlike graduate students who say their life improves once they learn to drive, Lisa found the opposite: “My quality of life increased substantially when I stopped driving—and not driving also enriched my research a great deal.”

Lisa’s studies have been supported financially by a string of fellowships: the UCLA Chancellor’s Fellowship, the Federal Highway Administration’s Eisenhower Fellowship, and a Toxic Substances Research Program Graduate Fellowship. Last fall, she was selected the 2003 Transportation Student of the Year by the University of California Transportation Center, which links programs at Berkeley, Davis, Irvine, and UCLA.

Social support has been provided by the urban planning faculty and other doctoral students. “We discuss our research and help each other out,” Lisa says. “I can’t really imagine how I would have finished my dissertation research without them.”

This spring, Lisa will leave UCLA for an academic position at Virginia Tech. “I always thought my major contribution would be through research,” she says, but she realized how attached she’d become to teaching when she saw a few of her public finance students graduate. “I hadn’t cried that much since I was five.”
Graduate Student

ACCOMPLISHMENTS

ANTHROPOLOGY


APPLIED LINGUISTICS & TESL


Pamela J. Hobbs: “In their own voices: Codeswitching and code choice in the print and online versions of an African-American women’s magazine.” Published in *Women and Language*, in press.


ARCHITECTURE & URBAN DESIGN


ART HISTORY


ART HISTORY


BIOSTATISTICS


CHEMISTRY AND BIOCHEMISTRY


CLASSICS


Emma J. Scioi: “L’incubo d’ Ismene nella Tragedia di Stazio: comunicazione non-verbale e la prospettiva femminile sulla guerra.” Presented at the Classics Department, University of Rome, Tor Vergata, Italy, April, 2004.


COMPARATIVE LITERATURE


COMPUTER SCIENCE


COMMUNITY HEALTH SCIENCES


EARNTH & SPACE SCIENCES


EAST ASIAN LANGUAGES AND CULTURES

Mary S. Kim: “Evidentiality in Achieving Entitlement, Objectivity, and Detachment in Korean Conversation.” Published in Discourse Studies.


ECONOMICS


EDUCATION

ELECTRICAL ENGINEERING


ENGLISH


ENVIRONMENTAL SCIENCE & ENGINEERING

EPIDEMIOLOGY


ETHNOMUSICOLGY


FRENCH AND FRANCOPHONE STUDIES


HEALTH SERVICES


HISTORY


HUMAN GENETICS


INDO-EUROPEAN STUDIES


INFORMATION STUDIES


Elizabeth A. Spatz: (Editor) “*The House and Collections of the Marquis de Marigny*.” The Provenance Index of the Getty Research Institute, 2003.


LATIN AMERICAN STUDIES


LAW


MANAGEMENT


MEDICINE


MOLECULAR AND MEDICAL PHARMACOLOGY


MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY


MOLECULAR, CELLULAR, AND INTEGRATIVE PHYSIOLOGY


MOLECULAR BIOLOGY


**PHYSICS AND ASTRONOMY**


**PHYSIOLOGICAL SCIENCE**


**PSYCHOLOGY**


**PSYCHOLOGY**


**NEAR EASTERN LANGUAGES AND CULTURES**


**NEUROSCIENCE**


**NURSING**


**ORGANISMIC BIOLOGY, ECOLOGY & EVOLUTION**


**MUSIC**

Adam M. Barber: [Co-author] Composed/Orchestrated music for Primetime TV Show. NBC, 9PM, April 11th 2004.


**MUSICOLOGY**


**REFERENCES**

SLAVIC LANGUAGES AND LITERATURES


SOCIAL WELFARE


SPANISH AND PORTUGUESE


PATRICIA VILLEGAS-SILVA: “Heritage Language Learners and Identity.” Presented at the
THEATER


URBAN PLANNING


MBI - continued

in the IDP. More specializations may lie ahead, including proposals for structural biology or biophysics, a focus of the UCLA-DOE Center for Proteomics and Genomics, led by David Eisenberg, and developmental biology, a focus of research by Utpal Banerjee, chair of the Department of Molecular, Cell and Developmental Biology.

The molecular biology IDP draws its graduate students primarily from UCLA’s ACCESS first-year program in the life sciences. To be accepted into the molecular biology IDP for their remaining years at UCLA, student and mentor must submit an application outlining the research they plan to undertake.

“Not all of the faculty who are involved in ACCESS, nor all of the students, fit into molecular biology’s educational mission,” says Professor Merchant. Also, mentoring professors must be prepared to make a teaching commitment to the IDP. “Graduate students are a resource to some extent,” through their support for a principal investigator’s research projects, she says, “but they are also a responsibility—it’s our job to teach them.”

Once accepted, graduate students begin to work in their mentor’s lab, and they take two quarter-long seminars in molecular biology their second year—the gene regulation specialization has separate seminars. Professors who run the seminars select articles from the scientific literature and assign them to students, who must “analytically dissect the paper, describe to the others what the scientific question was, and analyze the process of and data from the research,” Professor Merchant says. By doing this, the students learn not only the logic of science and analytical thinking but...
also presentation skills. “The best way to teach students how to create a nice body of work is to make them look at other people’s work,” she says.

To earn their degree in molecular biology, students must successfully complete these courses, work two quarters as a teaching assistant, complete a dissertation, and pass an oral qualifying exam that is unrelated to their dissertation research.

Graduate students in molecular biology are often supported by their mentors’ research grants. Some are funded by a National Institutes of Health training grant (the largest at UCLA) in Cellular and Molecular Biology, which is administered by Professor Clarke. That grant encourages receiving programs to “tap the potential of all students, especially minority students,” Professor Clarke says. To increase the pool of minority students prepared to do science at the doctoral level, graduate students supported by the training grant participate in outreach and mentoring programs through, for example, CARE and BRIDGE.

Other support for graduate students comes from the College of Letters and Sciences, which contributes funds used for student travel to professional conferences. “That’s a really important part of our program, to give students the unique experience of sharing their work in front of peers at national meetings,” says Bo Tendis, who is student affairs officer for the IDP and management services officer for the MBI.

Graduate students have a range of opportunities to practice their presentation skills in journal club groups sponsored by their labs, and they can see how the experts do it at seminars, lunchtime lectures, and weekend retreats sponsored by the MBI.

Though they are separate units in theory—one supporting research, the other education—in practice, the MBI and the molecular biology IDP reinforce each other’s goals. Graduate students support faculty research and infuse it with new ideas and energy. Research, on the other hand, makes professors more effective teachers, able to take their students to the boundaries where new science is being made. “As faculty, if you don’t keep changing, you’re a goner,” says Professor Clarke. “Faculty have to stay in active research to be useful to their students.”

Because it is interdepartmental and interdisciplinary, the molecular biology program facilitates the kind of “scientific interchange that is the heart and soul of the life of a research university,” says Professor Clarke. Because it is independent of departmental structures, the MBI can respond to change, developing new scientific goals and bringing people, ideas, and resources together to achieve them.

Illustrous is another i-word that might apply. For now, Professor Boyer is the program’s only Nobel Laureate, but the MBI has more members in the National Academy of Science than any similar university organization in the country. Its alumni have important positions at universities and research institutions.

Still a regular visitor to UCLA, Professor Boyer can be proud of his contributions to the research institution he helped to build in molecular biology, but because “it penetrates into many different departments, the lasting impact may be the interdepartmental program,” he says. “If I were a student coming into the field, it’s the kind of program I’d like to land in.”

RESEARCH IN MOLECULAR BIOLOGY
The authors and titles of dissertations filed so far this academic year:

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A bookcase in the conference room of the MBI contains the dissertations of all their graduates.
Increase Your Chances of Getting a Fellowship!
Attend these Summer Workshops

FULBRIGHT FELLOWSHIP WORKSHOPS

Does your research include field work abroad? Consider applying for a Fulbright fellowship. Over the summer, the Graduate Division will host information sessions to discuss eligibility, the research proposal, and to assist students with the application process. Applications are due in the Graduate Division October 1, 2004. Registration for the information sessions will be through MyUCLA. Check MyUCLA or ask your department SAO for times and locations.

Thursday, June 3 - 11:00-12:30 in 352 Haines Hall
Tuesday, June 22 - 2:00-3:30 in 159 Boyer Hall
Wednesday, July 14 - 11:00-12:00 in 4357 Bunche Hall
Monday, August 30 - time and site to be determined

MULTI-YEAR EXTRAMURAL FELLOWSHIPS

These fellowships pay generous stipends and fees for graduate students. Check with your department SAO to sign up for helpful information sessions throughout the summer. Applications for these fellowships are due early in Fall Quarter, so start preparing now! Some major fellowships up for grabs are those from the National Science Foundation, Ford Foundation, Hertz Foundation, Department of Education (Jacob Javits), Woodrow Wilson Organization (Mellon Fellowships in Humanistic Studies), Social Science Research Council, Spencer Dissertation Fellowships, and FLAS - Foreign Language Area Studies.