RESEARCH FACILITIES

UCSF on the Move to New Mission Bay Campus

The faculty look to bright new labs at Mission Bay but worry that they will lose the cohesiveness that has made UCSF so successful

The University of California, San Francisco (UCSF), is legendary for turning its liabilities into strengths. In 1976, USCF promised its neighbors that it would cap the growth of its campus in Parnassus Heights, near Golden Gate Park, west of downtown San Francisco. But the number of new faculty members didn't stop growing. As a result, researchers are packed tightly into existing buildings, their labs sometimes cobbled together from former bathrooms and closets. One might think faculty members would view this as a big disadvantage, but on campus the rallying cry is that the crowded conditions serve as a crucible for interaction and creative collaboration, which in turn have helped UCSF maintain its position near the pinnacle of medical research universities.

Soon, however, the UCSF faculty will have to find a new rallying cry. On 25 October, UCSF broke ground for a new campus at Mission Bay, a 20-minute drive across town from Parnassus Heights. There, on 17.4 hectares of old railroad yards on the city's eastern waterfront with a view of the downtown skyline, UCSF plans to build 12 research buildings, a recreation and community center, student housing, and parking garages—a complete second campus that will double UCSF's research space and house 500 labs when it is completed in 10 to 20 years.

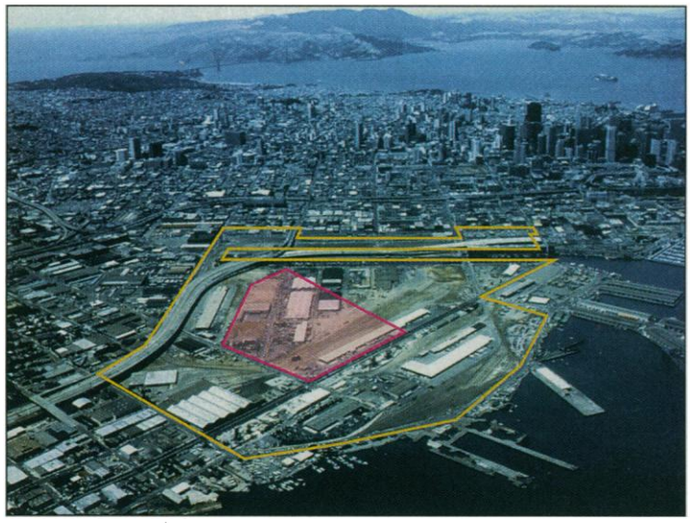
"We are the first major medical school that I know of to undergo binary fission during adulthood," quips UCSF virologist Donald Ganem. Robert McGhee, architect for the Howard Hughes Medical Institute, who has advised UCSF on the project, agrees. The building of a geographically separate campus on this scale, he notes, is unprecedented for a major American medical university.

Despite all the talk about the benefits of cozy quarters, no one at UCSF disputes the need for expansion. The lack of space at Parnassus has prevented UCSF from riding some new waves in research, such as genomics and brain imaging, and the new campus will provide unprecedented opportunities for restructuring and adding programs. But the project is also fraught with hazards. Can the university raise the necessary funds—more than $1 billion over 10 to 15 years? And how can a research community as tightly interwoven as that at UCSF be split? "We're all nervous," says one faculty member who requested anonymity. "People ask whether UCSF is going to lose that thing that is so special about it."

Fissioning the university without tearing things apart will be a big challenge for UCSF's leaders. Nervous researchers are taking some comfort from the fact that the top duo are both longtime members of the UCSF research community, who understand what makes it work so well. The chancellor, oncogene researcher and Nobel laureate J. Michael Bishop, has been on the faculty since 1968, and neuroscientist Zach Hall, Bishop's vice chancellor for research, has been at UCSF since 1976. "The good thing is the leaders are people we have confidence in," says Ganem.

Bishop and Hall are proceeding in characteristic UCSF style, encouraging faculty involvement in shaping the plans and programs for both new and old campuses. That input began in 1996 when medical school dean Haile Debas asked biologist Keith Yamamoto to chair a 16-member faculty committee to come up with a plan for how to populate the first research building at Mission Bay. Yamamoto says the committee strongly felt that no one should move to Mission Bay until a critical mass for a research community could be achieved, and the panel quickly realized that the one building originally proposed for phase I of the new campus wouldn't do it.

So Yamamoto reconvened an expanded committee of 44 faculty, which planned a much larger first phase that includes two research buildings, with a total of 30,150 square meters of space, a community center with a gym and pool, student services and meeting rooms, and 500 units of housing for students and postdocs, at a projected cost of $400 million. The project is expected to be completed by early 2003, and then "within a 6-month to a year period, we will move down 65 to 70 principal investigators [and their labs]," says Hall.



New home. This aerial view shows the Mission Bay site (yellow boundaries), with the UCSF campus area outlined in red.

CREDIT: UCSF

The area ringing the campus will be a hotbed of new construction in coming years as well. The California-based Catellus Development Corp., which donated the Mission Bay site to UCSF, owns an additional 105.2 hectares surrounding the new campus on which it plans to build sites for biotech and pharmaceutical companies, as well as housing, shopping areas, a hotel, and a waterfront park. Catellus has just begun marketing the first wave of planned biotech space, and CEO Nelson Rising says there is considerable interest but no deals signed yet. Bishop expects that having biotech next door will "further enliven the intellectual climate" of the new campus and provide new potential for industry-academic collaborations.

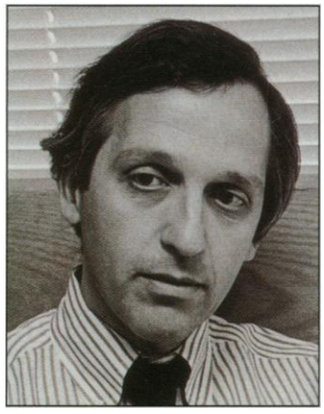
Indeed, the prospect of a whole new campus with a new set of potential interactions affords "a tremendous opportunity to configure a research facility from the ground up," says Yamamoto. So, rather than just recommending "picking up Parnassus and putting it down at Mission Bay," his committee created a general plan in which basic research will be concentrated at the new campus while Parnassus Heights will emphasize disease-related and clinical research.

Under that plan, Mission Bay will be the seat of the Program in Biological Sciences, the more basic research–oriented of the school's two graduate programs. It will include areas such as cell and molecular biol-

ogy and structural biology that are already well represented at UCSF, and some new programs, such as human genetics. There are also plans for a center for biological systems analysis, which would be peopled by a type of faculty member rare at medical schools—physicists and mathematicians—whose research focuses on the analysis of complex biological systems such as the numerous and interlocking signaling pathways that together control the cell division cycle. "A lot of people at UCSF are hungry for this sort of thing," says UCSF cell biologist David Morgan, who will co-direct the new center.

But those new opportunities come with a trade-off: Researchers who move to Mission Bay will be distanced from the clinical research at Parnassus Heights. That can be a drawback, notes cholesterol researcher and Nobel laureate Joseph Goldstein of the University of Texas (UT) Southwestern Medical Center in Dallas, because these days basic researchers can never tell when their work may take an unexpected turn toward clinical applicability. Yamamoto agrees that "this would be about the worst time imaginable for UCSF to make a decision to separate its basic scientists from its clinical scientists."

For that reason, he says, the long-term plan is to have some clinical presence at both campuses. Two independent disease-related institutes associated with UCSF, the Ernest Gallo Clinic and Research Center, which focuses on the biology of alcoholism and other addictions, and the Gladstone Institutes, which conduct research in Alzheimer's disease, AIDS, and cardiovascular disease, will be moving to their own buildings at Mission Bay in the first wave, bringing some human-disease emphasis. The second phase will include a human brain-imaging center and some related clinical neuroscience research. And San Francisco General Hospital, a part of the UCSF system, is only 5 minutes from Mission Bay, so new alliances are likely to grow there.



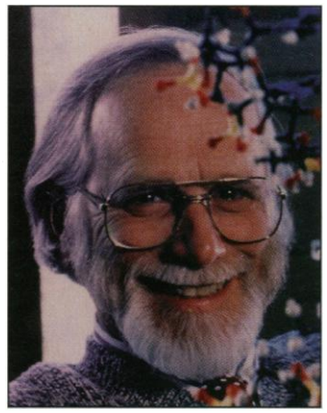
Steering the way. A committee headed by virologist Donald Ganem is helping to integrate basic and clinical research at the old campus.

Still, the Parnassus Heights campus will remain the seat of most of UCSF's clinical research and home to the Biomedical Science program, the more human disease–oriented of the school's two graduate programs. But the old campus will not be exclusively devoted to clinical research. The faculty of the immunology department has voted to stay permanently at Parnassus Heights, for example, and researchers in virology, vertebrate development, and other areas with links to disease-related research are electing to stay as well. In addition, a committee headed by Ganem has made several recommendations to integrate disease-related basic research more closely with clinical research at Parnassus.

Recommendations include launching new programs in areas such as infection and immunity that span clinical and basic research departments; forming tissue and DNA storage banks, coordinated with patient data collected at the clinical research facilities, to aid geneticists, cancer biologists, and others who want to look at factors that affect disease prevalence; and in general making clinical research centers available to basic researchers. Those ventures may be aided by the self-selection that is occurring as researchers decide whether to go or stay, Ganem says: "The people who are choosing to stay are the people who really, really want to have a close integration with patient-based researchers."

How soon the big plans for both campuses can be fully implemented depends on how quickly the necessary funds can be raised. Bishop says that although $190 million of the estimated $400 million needed to build and outfit the first phase of Mission Bay will come from sources such as state funds and borrowing by the campus, gifts must provide the remaining $210 million. UCSF is nearly halfway to that mark: In its first 6 months, the campaign raised $50 million, which was doubled when the biotech firm Genentech of South San Francisco donated $50 million toward the first building at Mission Bay as part of its settlement of UC's lawsuit over the patent on human growth hormone (*Science*, 26 November, p. 1655).

Despite this promising start, some observers have wondered whether a public university without a large undergraduate alumni base to draw on can pull off the kind of sustained fund raising necessary to complete such a massive project. But David Glen, associate vice president and director of principal gifts at Stanford University, gives UCSF a good chance of success. "Medical fund raising is generally much less alumni driven," he says, than other types of university projects.



Mike Bishop. UCSF chancellor wins plaudits for involving faculty in the planning for the new campus.

A big uncertainty is timing. "We are at the beginning of a huge project," says Hall, "and what we are unable to judge is the pace." If the fund raising is "terrifically successful," he says, "we could begin planning the first building of phase II in a year or two, and have [the transition between phases] be seamless." But he admits that is optimistic.

The potential for a funding-forced hiatus between phases weighs heavily on some faculty members. For example, the neuroscientists will see their community split by phase I, with those with close ties to cell and molecular biology going to Mission Bay while the majority remain behind until the first building of phase II is completed. "I don't think any of the neuroscientists want the group to be split even for a year," says UCSF neurophysiologist Steve Lisberger.

Even when Mission Bay is complete, UCSF will be a community divided by a 20- to 30-minute drive through city traffic. "No matter what we say about having fast shuttle buses," says cell biologist Morgan, "that distance is going to really cut us apart." Yamamoto suggests that separation pangs may be vital to success: "We want to maintain in everyone's mind the real drive to be communicating with their friends across town. We don't want to develop a two-institution mentality."

To help reach that goal, he says, "both campuses are being wired to the teeth" in preparation for telecommunications equipment that in some cases isn't even developed yet. "I want to be sure that students at Parnassus can ask faculty members at Mission Bay to be on their thesis committee without a second thought, knowing that if they can't slip across town for a half-hour meeting, they can call them up on video conference."

But will such assurances be enough to maintain UCSF's appeal to top faculty and students? UT Southwestern's Goldstein is unconcerned. "Their draw will outweigh the negatives," he predicts, adding that the excitement of being part of such a large endeavor is sure to add to the attraction for some. Ganem's response to the challenge supports Goldstein's prediction. "There are no models for how to do this," he says, "But that to me is the coolest part."

–MARCIA BARINAGA

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