Note: This memo is about a week old.

8 January 2000

TO: Clyde Barlow
Marty Beagle
Andy Brabban
Betty Kutter
Stu Matz
Jim Neitzel
Jenna Nelson
Cailin Orr
Shane Peterson
Peter Robinson
Kelly Smith

FROM: Burt Guttman

SUBJECT: A looming crisis in microbiology/molecular biology at Evergreen

I'm sending you this note on paper, rather than electronically, because I want you to hold it in your hands, to think about it, and to take it very seriously.

Let me recount a few events of the past week:

•Needing the DNA model for my class, I looked in Betty's office, since she and I generally share it. It wasn't there. Just as I was leaving, Peter came around the corner and I asked him about it. He said it was in the nearby office that some of the SITs share, and in bad condition. I went in and found it. I almost cried. I took it to my office and started to take it apart, to repair the damage that had been done by ignorant, careless people making a hash of it. I'm still working on it, hoping to restore it to decent shape.

•Needing a few petri plates for my Friday lab, I looked in the usual place I begin, a drawer in the autoclave/washroom. There were only a few "sterile" plates left. So I went into 2042. There, in the drawer for "sterile plates" was a pile of what I thought were the most godawful plates I've ever seen; they had been carelessly washed and then had been baked with all the shit still on them, so they were full of brown junk burned on. But, in fact, I hadn't yet seen the most godawful plates in the world; I found them next, on a nearby counter. They looked like plates out of hell, but at least they apparently hadn't been baked. I later found some plates in the oven in 2042 that weren't quite so terrible, but many of them also had baked-on brown crap. I alerted Cailin to the situation, and she got one of the aides to acid-wash all these plates. (We now have a lot of good, clean, sterile plates in 2052.)

•Needing pipettes (mostly 5 and 10 ml) for my Friday lab, I looked around in the usual places in the phage lab. There were few in the drawer in 2050. I scrounged a few more serological pipettes of the right kind from Lab Stores and various other labs I barely

found enough for my lab. Then I looked around in some corners of the T4 lab and found some of the most godawful pipettes I've ever seen. Some had apparently been sitting in the pipette soaker for ages and were full of slime. Others were dry and filthy, getting to the stage of impossible-to-clean-without-acid. I got as many as possible into the wash. (Meanwhile, I noted huge numbers of pipettes in 2052 badly needing acid-washing.)

•Just a few minutes ago, I was in 2052, sorting pipettes and getting them all into the oven for sterilizing. In came a student I didn't know; he opened the autoclave and removed a metal basket full of filthy, stinking petri plates--exactly like the most godawful plates I had found in 2042 a couple of days before. I wanted to kill him, but I restrained myself. I asked him who he was; he said he was working with/for M2O. I asked him what he was doing; he was confused, but said he was cleaning (hah! get that! cleaning!!) these plates. I told him I understood it wasn't his fault, but he was doing something terrible, and to rectify it as much as possible he must immediately put a standpipe into a sink, run in the hottest water he could get out of the tap, and get all those plates soaking. (When I came down to the lab a few minutes later, he was trying to do it, but he didn't know what a standpipe was.)

•After seeing what this student was doing, I immediately understood why the inside of our relatively new autoclave looks like the Prussian cavalry, with all its horses, had been camping there for a few weeks.

In the longer term,

•Over a longer period, I have, at times, had Lab Stores purchase good microbiological loops for use by students in my programs. But they all seem to have disappeared. All I can find are loops that are barely useable. Is someone taking them for a home lab, or raising bacteria that thrive on nichrome?

•Just to add a positive note to this list, let me give my praise and thanks to Shane and the rest of the SIT crew for starting to have the aides run all of the glassware through acid and get it into the kind of tip-top condition worthy of the kind of college Evergreen ought to be.

Now, my friends, what is the important message I need to convey to all of you? Just this:

We are experiencing severe difficulties in the teaching of microbiology and molecular biology at Evergreen, difficulties approaching a crisis of major proportions. These problems have been brought on by a shared failure to take responsibility for the materials and equipment we all need and use, by a failure to properly instruct and supervise students working with and for us, by some ignorance on the part of many people about proper methods for handling and cleaning various items, by a shared failure on the part of many people to give a damn, and by a shared failure to recognize our common needs and to devise a long-range plan in which everyone takes appropriate responsibility for caring for the material and equipment we all need. This crisis is of our own making, and most of us, particularly the faculty members, share in it. And yet if we take action soon, we can correct the situation and develop a workable system that will allow us all to support our mutual teaching and research efforts.

Let me outline my view of what has gone wrong and what we all need to do.

1. The principal problem is that we do not have a department structure, with a chairman and with procedures that create and enforce responsibilities. I therefore put it to you that if we are going to have any kind of decent, continuing teaching and research in microbiology and molecular biology, we will have to develop our own structure; that everyone currently on staff/faculty with any interest in this area is going to have to share in responsibilities; and that all new faculty and staff members with any interest in this area will have to be brought into the system. In our peculiar Evergreen system, the only one with any authority approaching that of a department chairman is Kelly Smith, and I suggest it is going to be up to Kelly, with the assistance of the SITs, to help develop and enforce a workable system. At the same time, faculty members are going to have to give up some of our precious autonomy and pitch in with a glad hand, since we are primary loci of authority with students and ought to be primary centers of instruction.

2. I suggest we form a standing committee and that we draw up an agreement, something like a program covenant, which we all sign. In this covenant, we will each agree to take primary responsibility for some particular area, out of a list we will draw up. We should also draw up a list of methods and procedures we can all abide by to ensure that materials are being handled in the right way and will be available, in good condition, when needed by our individual programs and research efforts.

3. Much of the problem obviously resides with students who work for us as aides and who work with us, especially in advanced programs where they have a certain degree of autonomy. These students generally are not being trained and supervised properly. In general, they do not know the right methods for handling many materials, an ignorance compounded by the irresponsibility and devil-may-care attitudes of the young. They often appear to be supervised badly, though it is my impression that those working in Lab Stores or with SITs are being supervised well and that the primary problem lies with those working directly with faculty members. Now, in the T4 lab we have worked out a number of procedures--for instance, methods for washing each type of glassware and methods for properly handling contaminated materials. (However, I know from unhappy experiences that when a lot of students are working in the lab, they pass on misinformation to one another and it is hard for staff and faculty members to supervise them adequately and find out if they are doing everything correctly.) These methods may not be known to other people, but we must make them known. I propose to update some of our lab manual, our dishwashing procedures, and other related information; we need a manual of rules and procedures comparable to the Laboratory Safety Manual. I then propose that every year, early in the fall quarter, we have a series of instructional workshops for everyone, to ensure that proper information is passed along. And when I say "everyone," I include staff and faculty members.

4. In the early days of the College, we all seemed to share a feeling that it was okay for just about anyone to attempt just about anything, with little or no instruction or supervision. I think we rather quickly got our feet on the ground in certain scientific matters. Someone instituted the procedure in which students get a driver's license to operate expensive equipment.

However, this system hasn't gone far enough. Certainly the autoclave(s) now ought to be included, and we need a system of locks to keep people from using them improperly. Parenthetically, I would like to see if we can find a way to give the newer autoclave a thorough internal cleaning (sandblasting seems to be called for), and then we need some clear rules, and effective instruction, to be sure it is kept in the best condition.

5. We need an excellent system for maintaining our stocks of bacteria and phage, especially at this time when the T4 lab does not have a major grant. Many faculty and staff members may not appreciate the value of these stocks, but we have a lot of irreplaceable stocks of enormous historical and practical value.

6. Although I have focused on the rather mundane, routine materials needed for microbiology work, I obviously know that molecular biology now requires the sophisticated equipment needed for extracting and manipulating DNA, RNA, and protein; for running gels; for doing various blots; and for 1-D and 2-D electrophoresis. We must develop a system for keeping all of our available equipment in the best condition, with all parts available in some central lab. It will also be important for those who are most familiar with this equipment to take charge of it and to provide workshops for others who may need to use it. This becomes especially important as we try to have students at all levels do more and more sophisticated experiments.

7. This proposal has some financial implications. For instance, we might have to hire an additional student aide every year to ensure that everything is kept in good condition. A responsible, well-trained aide could help to keep stocks healthy and supervise the use of materials such as petri plates; the aide might be asked to pour most of the plates, to ensure that they are uniform and of high quality. We might have to pay all aides a little extra to attend training workshops. We might also have to spend more on some glassware and other materials, but here I hope we will save in the long run by ensuring that everything is taken care of better.