

He has been a leader in the Council on Undergraduate Research, serving as President of the Physics & Astronomy Division during 1985-88. He co-edited a directory of "Research in Physics and Astronomy at Private Undergraduate Institutions", published by the Research Corporation. He has served as a lecturer/visitor for the AIP Visiting Scientist Program since 1987.

Jim's research has heavily involved St. Olaf undergraduate students. Most of his many publications include one or more student co-author. He chaired the St. Olaf Physics Department for more than 10 years, and is presently chairing the Science Division. During his 28 years on the faculty, St. Olaf had graduated 390 physics majors; at least 74 of them have earned Ph.D. degrees, and many more are presently in graduate school. A large number of St. Olaf graduates are now teaching physics in colleges and universities throughout the world.

For his teaching and research accomplishments and for his leadership in promoting undergraduate research in physics, AAPT is proud to award James Cederberg its Distinguished Service Citation.

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## SOUTHERN CALIFORNIA CONFERENCE ON UNDERGRADUATE RESEARCH

The first Southern California Conference on Undergraduate Research will be held at Caltech on Saturday, November 6, 1993. The purpose of SCCUR is to promote awareness of undergraduate research, scholarship, and creative opportunities as they exist in various disciplines and types of institutions, to foster appreciation of the valuable role they play in complementing other aspects of undergraduate education and in encouraging the pursuit of advanced study and collaborations; and to foster a multi-disciplinary and multi-cultural community of researchers, scholars, and artists linked by a common enthusiasm for learning. The SCCUR organizing committee is committed to encouraging participation in the conference by underrepresented minority students from Southern California colleges and universities.

Leroy E. Hood, William Gates III Professor of Biotechnology, University of Washington, will present a keynote address on "Jurassic Park: What is Fact? What is Fiction?" A second plenary lecture will be given by Mr. Dean Cundy, Director of Photography for the forthcoming film, Jurassic Park. Students will have the chance for

(continued on page 40)

## JOB INTERVIEWS AT UNDERGRADUATE INSTITUTIONS: WHAT CAN YOU DO ABOUT THEM?

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### Introduction

I am beginning to look for a tenure track position in the biology department of an undergraduate institution. I have been fortunate to receive a Pew Teacher-Scholar Postdoctoral Fellowship which has given me a rare opportunity to visit eight colleges in the Midwest in order to find the best site for the second year of my two year fellowship. Since I was not being considered for a tenure track position, I was able to get a feel for the interview process without all the pressures of a real job interview. At the end of my visits, it was suggested to me that I should share what I learned during my time on these campuses. Therefore, I have compiled two lists of suggestions; a short one for search committees and a more substantial one for people like myself who normally have to learn the rules of the game while playing. There have been similar publications written for candidates interviewing at research institutions (1, 2), but none for perspective CUR members. Unfortunately, most Ph.D. candidates and postdocs are chastised for any interest in teaching (sometimes referred to as the "T-word") and get little support for their career choice.

### For Search Committees:

The following is meant to assist search committees and is based on ways I was treated at some colleges.

- Give them a nicely written schedule right away (though last minute changes are understandable). This allows the candidate to gauge how the day will progress. Verbal schedules that change frequently, or are constructed as the day progresses, are unnerving.

- Make sure that all faculty members know when they will meet with candidates so the candidate won't feel abandoned by waiting in the hall.

- Make sure all the audio-visual equipment is available (e.g. VCR and pointer) and the candidate has water available during the seminar, if desired. Seeing the room in which the candidate will speak is also helpful.
- Schedule at least a couple of breaks during the day (one in the morning and one in the afternoon) for bathroom breaks, going to the library to browse, and when meetings run over allotted times.
- Allow candidates to have a meal with three to ten students without any faculty present.
- At some point, make sure they get a campus map and a tour.
- In order to avoid asking illegal questions about marital status and children, mention points of concern like the school system, and possibilities for spouse's employment. If the candidate wants to, he or she may discuss this, but don't make it uncomfortable for the candidate to just listen.

#### For Candidates Who Want to Teach and Conduct Student-Based Research:

**Things To Do Before Applying.** There are a number of things any candidate should do before applying for a position. Contact local colleges or your *alma mater* and offer to present a seminar of your work - then make the time to do it. There is never a good time to do this, but the practice is invaluable. While there, show them your CV and ask for constructive criticism. Once you have seen an ad that is tempting, do a little homework and soul searching. Ask yourself how far you really want to stretch yourself. For example, if the ad is for a geneticist and you are a biochemist who happens to use *Drosophila* tissue .... Consult *Science Citations'* year end report which has a state by state listing of that year's publications from each department of every institution in the country. Compare the school in question with others with which you are familiar. This will give you an idea of the level of research at the school in question. Consult a college guide to get an overall feel for the school and its students. Finally, request a catalog so you can learn more about the school and the department.

**The Phone Call.** If you get a call from a school requesting an interview, ask about the seminar audience, length, format (2x2 slides etc.) and preference of completed story (thesis) versus ongoing and future work. Ask to meet with students, privately if possible. Some

schools do not schedule this, and it might indicate what they think about their students. Meeting biology majors is very important since they will be your source of researchers and the people with whom you will work the most.

From this point on, remember that you are not competing against two or three others so much as looking for the best fit. You want to find your niche in the broad spectrum of approaches to answering the question, "How do we teach biology?" Some places have created "research colleges" where most of the faculty receive extramural funding and have large labs but do not stress curriculum innovations. Others send their students away for summer research experiences but put their resources into the curriculum and student contact. These dichotomous models, and all those in between, can be successful only with the right combination of faculty members.

Now it is time to get more serious about your homework. Familiarize yourself with the department members and the courses offered. Look in the most recent March issue of *Academe* which lists the average salaries for assistant, associate and full professor for almost every school in the country. This will tell you what to expect as a reasonable salary offer. Read the recent papers published by department members as listed in *Science Citations*. Prepare your five year research plan with an explanation of how it involves students.

**The Interview.** The average interview has the following basic format: You'll meet students, faculty, the dean (and maybe the president), give a job talk, go out to eat (and drink, but watch yourself), and generally be kept very busy. This process can be exhausting so don't let down your guard; mind what you say to everyone. If you are hired, you initially will get a phone call offer so the interview is your best chance to ask all your questions.

During your time on campus, there are a few things you should try to do. Go to the department and library after hours to see who and how many are working. While in the library, look for the journals you will need. Ask to look at some housing and get a feel for the cost of living. Make sure you get a good tour of all the facilities and equipment in the department as well as the rest of the campus. Other points to keep in mind during your stay: note any differences between responses of tenured and non-tenured faculty; try to detect if this is an embattled department (e.g. animal *vs.* plant, molecular/cell *vs.* organismal/field, research active *vs.* non-active); make sure you meet everyone in the department and that there are no hidden skeletons; take notes during meetings with everyone - faculty and administra-

tion; and if the occasion presents itself, casually mention the other schools considering you because this makes you appear more attractive. If no one in the department conducts research, beware of the potential for unrealistic expectations from both the department and the administration. Ask about the possibility of a reduced teaching load in exchange for student based research. Be prepared to be asked illegal questions concerning age, sexual preference, marital status, and children. (Questions concerning religion are legal at church related schools which advertise as such.) You have three options in response to illegal questions: (1) refuse to answer, (2) note impropriety (either overtly or subtly) of the questions but answer them anyway, (3) anticipate the questions by inquiring about the schools or job opportunities for significant others.

**The Dean.** Some questions are best asked of the dean. Ask him or her the salary offered for this position (this may not be their final offer but those negotiations come after they have offered you the job), the benefits package including annuity, health insurance, moving expenses, occasional free classes for family members, tuition remission, and set up funds. Ask the dean to define "scholarly activity" in regards to tenure. Sometimes you will be asked open-ended questions concerning set up money. Dean: "How much were you thinking?" Candidate: "That depends on the institution's commitment to research." This is where your ability to bargain will be useful. Remind the dean that 1X funding gets 1X results and 10X funding gets 10X results. However, this kind of hardballing puts reasonable expectations on you to perform. It is a good idea to have available a list of equipment which should be prioritized as equipment needed versus wanted, with potential funding sources for the latter. Again, the final negotiations will come later, after the offer is made.

**The Chair.** The Chair has information and/or control over certain aspects of the department. Ask the chair how long has he or she has held this position and whether this is a rotating position or an open ended one. Have "scholarly activity" defined in the chair's own words and compare this with the dean's response. Does the definition include: national meetings (with or without posters and students), publications (is there any weight given to one article in *Nature* vs. three in obscure journals), textbooks and lab manuals, national society committee participation, grants applied for versus funded, research with students (with or without resulting publications)? Find out who has gotten grants lately and from which agencies. Ask to see your potential research lab space in addition to the teaching labs. Beware of vague responses and promises that seem too good to be true.

**Questions for Anyone.** Here are some general questions you can ask any department member. Is there access to MEDline or other online sources for journal articles? Is there a policy concerning sabbaticals for both tenured and non-tenured faculty? Does the department use TA's and work study students? If so, how are they funded and how are they assigned? Who is responsible for setting up equipment and washing glassware used for teaching labs? Does the college have a license to work with radioactive isotopes? Are majors required to do research? Lab or library? Do they have to submit a thesis? Are there any curriculum changes in the works? Are there any collaborations currently underway within the department? With other departments or other schools? Are the sciences coordinated and unified, or split and possibly hostile? Who pays for xeroxing, phone calls, interlibrary loans, faxes? How can subscriptions to vital journals be requested through the library or department? Do you have access to the nearest large university research library? Is there a formal speakers series, and who is responsible for inviting the speakers?

**Questions for Every Faculty Member.** It might prove informative to ask these questions of each member in the department. You might uncover some factions within the department which you had not noticed. What percent time does he or she spend on teaching, research and service? Compare their responses to what you know about their publications and when they were hired, since expectations at most schools have changed in recent years. What is the average size of classes, labs and overall work load? How does each member see the new position? The new physiologist position for example, is it for a plant physiologist, human physiologist/anatomist, or someone who does patch clamping?

**Questions for Students.** Oftentimes, students will tell you the way they see their school and department without politically correct filters. Ask them: What courses they like and hate, do they use the journals much if at all, what are the strengths and weaknesses of the department and school, do all the faculty get along, with hindsight would they choose the same school again, do they control any aspect of department (speakers, clubs), have any alumni returned to talk with them about life after graduation, do they have any future plans.

**The Job Offer.** If you have asked all these questions and they still want to hire you, don't jump at the offer right away. Ask to come visit again in order to finalize details and let your significant other see the area, though you may have to pay for this trip yourself. Once you have signed the contract, you will never have the ability to

directly affect your salary. From then on, your annual wage increases will be percentages of your starting salary. It is worth reminding yourself that you have been selected with much pain and expenses and that the first offer may not be as high as they are willing to go. It's like buying a car; some places offer set prices while others try to haggle. You will have to deduce this distinction on a case by case basis.

After you have the final offer, write down what you understand to be the complete package (e.g. setup money, lab space, salary, and benefits) and send two copies to the dean with one to be signed and returned to you. This unwieldy procedure is designed so that neither you nor the college will be surprised later and no one will feel misled.

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## HOW TO HIRE FOR DIVERSITY

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In November, a colleague of mine here at NMSU sent a message to the CUR-L bulletin board asking for strategies to "aggressively recruit women and minorities" for an open Physics position. Although this topic is certainly not new, a lively discussion then developed with suggestions and perspectives from many interested people. This article is an attempt to summarize that discussion and to stimulate more! Perhaps these discussions can help our science faculty "look more like America".

A female chemist quickly responded to make it clear that you are looking for the best person for the job! We all want to feel that our work is valued and appreciated, and no one wants to be a token member of an under-represented group. Of course, many people can have qualifications for a position -- how do you choose the one that can do the job and offer some diversity of background or perspective? That is a more complicated problem!

First, you must advertise in such a way as to make sure that all qualified people, including women and minorities, who might be interested do apply for the job. Some, but certainly not all, of these advertising options are listed in the accompanying table. When you write your ad, make it clear that women and minorities are encouraged to apply. Talk to friends and colleagues about your opening. Send copies of your ad to department chairs of colleges and universities. Post it on the CUR-L and other appropriate electronic mail bulletin boards. Network at local and national meetings. Brainstorm for all of the possible ways to get out the news of your opening. The perfect candidates cannot be found if they don't know your job exists.

Science	Advertisement Options to Reach Women & Minorities
All	The Association for Women in Science (AWIS) Newsletter (Suite 820; 1522 K St NW; Washington, DC 20005)
All	<i>The Chronicle of Higher Education</i>