

Teaching high school in Texas

I would like to bring to the attention of those physicists who are considering careers in secondary education the availability of an accelerated program for obtaining certification to teach in the State of Texas.

Under the provisions of the Texas House Bill, HB 664, commonly known as the "Jamison Bill," the Texas State Board of Education has been directed to develop and publicize a program to facilitate the entry into public-school teaching of certain intelligent, mature, concerned individuals who have possessed a bachelor's degree for a period of three years or longer.

The key feature of this mode of certification is the university president's appointment of faculty evaluation teams, which have the authority to set the certification requirements for an individual based on a review of his credentials, experience and a personal interview.

The evaluation team at The University of Texas at Austin for certification to teach physics will include David Gavenda and Robert N. Little from the physics department. Both men are well known for their contributions in physics, and Little has recently served as president of the American Association of Physics Teachers.

This mode of certification is limited to those who have not had secondary teaching experience, so that applications for certification by this method must have been completed prior to the beginning of a candidate's teaching career. It is therefore suggested that those physicists who are considering teaching in Texas public schools next fall submit applications for certification this spring.

For certification application materials and instructions, individuals should write to:

Dean Lorrin Kennamer,
College of Education,
Re: Jamison Bill Certification in Physics,
The University of Texas at Austin,
Austin, Texas 78712

It is hoped that similar programs will soon be available at other Texas colleges and in other states.

It may also be of interest to those who have not yet heard the announce-



ment that the University of Wyoming will be offering an NSF-supported summer institute for PhD scientists interested in precollege science teaching careers. Information can be obtained by writing to the Physics Department, University of Wyoming, Laramie, Wyoming 82070.

Robert Beck Clark
The University of Texas at Austin

The "universal" scientist

Your March editorial (page 88) asked, "How can we spread the word to the youth culture . . ." The answer: Scientists can become humanists and use their creativity to "make things better."

The sad truth is that a vast number of scientists and technologists behave like machines and apply their abilities to any problem they are asked to solve. Who asks the scientists to solve problems? That part of society which has money and power: the so-called "military-industrial complex." What has science and technology accomplished for humanity?

► Beautiful hospitals where one can be cured of deadly diseases.

► Modern schools and comfortable

dormitories where sometimes the creative inquiry is dulled beyond salvation.

► An ever increasing number of appliances: TV sets that spew forth inane programs; useful washing machines, driers, garbage disposals, and so on.

► Cars for everyone, polluting the atmosphere; more and more highways, always cutting into the greenness of nature.

► Faster and noisier airplanes, ever more disruptive of the ecology.

And industry. Ah, Industry! Chemical plants that kill all the surrounding trees and fill the towns with fumes; hydroelectric plants that require dams which destroy forever the wild beauty of fast-running waters.

And the military. Ah, the Military! What has science done for the children of Vietnam?

Yes—you have heard it all before, you know the endless list better than I do. And I have heard the self-righteous answers to each question. We all know that "the other side" is unscrupulous, and their scientists are building bigger bombs and rockets, therefore "we have no choice . . ." Goodbye humanity!

Youth is beginning to realize the truth of "The Universal Soldier." Each man is responsible for his actions. I will be proud to be called a scientist only when scientists and technicians are human enough to realize that same truth and assume responsibility for their "creative work in the real world."

Daniel E. Harris
*Harvard College Observatory
Cambridge, Mass.*

Wigner defended

The unfavorable review by Marc Ross of *Survival and the Bomb: Methods of Civil Defense*, the collection of essays edited by Eugene Wigner (November, page 51), presents a better picture of the views of those, like Ross, who seem to be against any defense, civil or otherwise, than of the ideas presented by Wigner and his co-authors.

Is civil defense necessary? Ross dismisses Wigner's concern with Russian aggression as "cold war rhetoric," a comment that will seem strange to

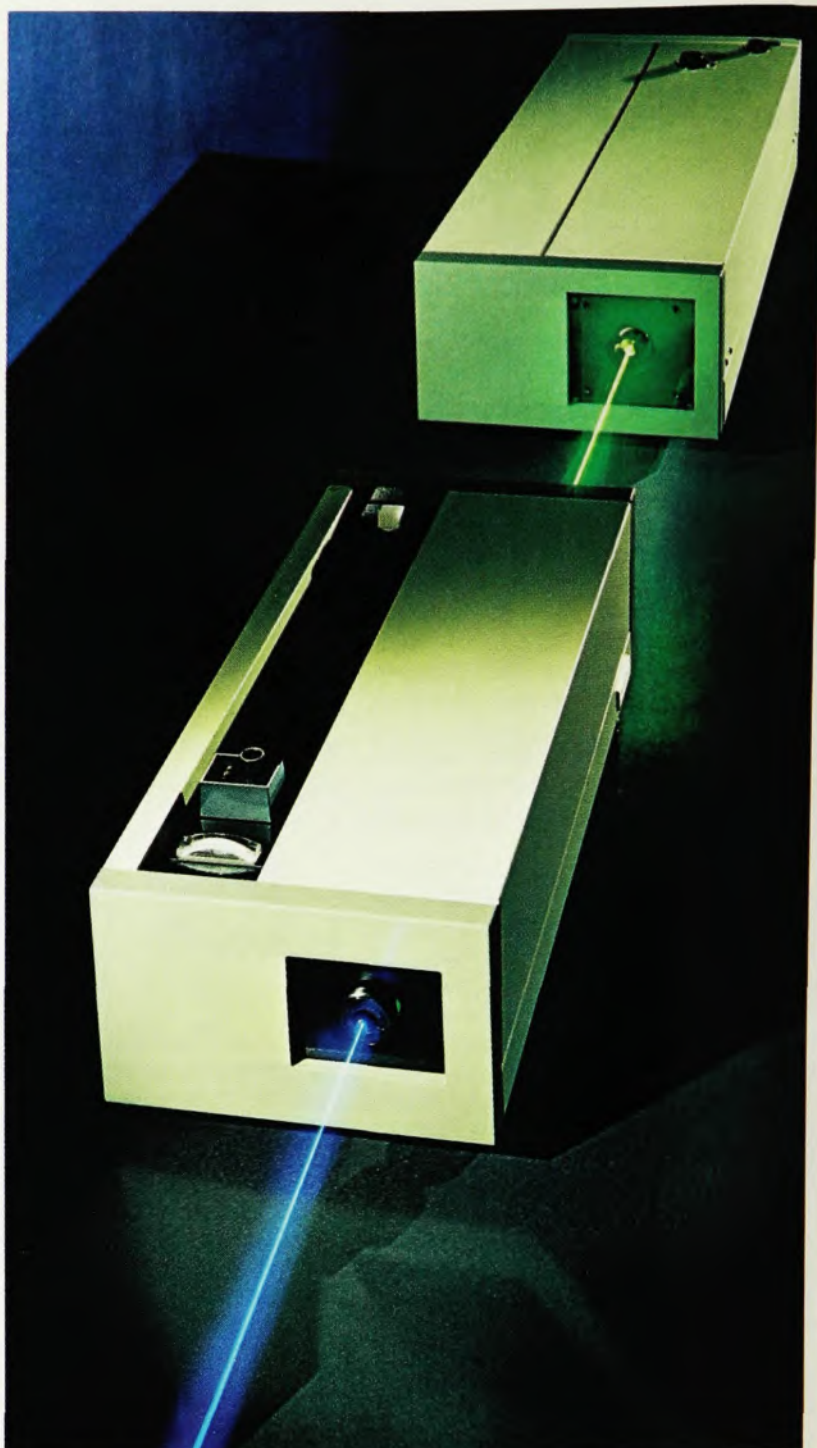
Chromatix model 1030

A new UV radiation source

Shown at right is the Model 1030 Fixed Frequency UV Doubler, a new accessory for the Chromatix Nd:YAG Laser System. The Model 1030 provides average power of greater than 50 milliwatts ($>7 \times 10^{16}$ photons/sec) at 266 nm in a bandwidth of approximately 0.01 nm. Since the output of the system is diffraction limited it may readily be focused to yield high power densities. For example, an average power density of 5×10^7 ergs/mm²/sec is readily obtained in a five centimeter long sample. If an experiment requires high peak power, the Model 1030 has available a minimum of one kilowatt in a pulse width of 80 nanoseconds with a repetition rate of 75 pulses per second. In addition, the system provides a trigger signal for synchronizing gated detector circuits with the pulsed output.

Figure 1 illustrates the versatility of the Chromatix System. The basic laser may be employed to pump either the tunable oscillator or the UV doubler to provide photons in various regions of the spectrum. This versatility makes the Chromatix System applicable to a wide range of research problems. It will be useful not only in your initial experiment, but also for future research programs in the years to come.

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For photographic purposes, the spatial position of the UV output beam was established by passing a fluorescing material along the beam while the camera shutter remained open.

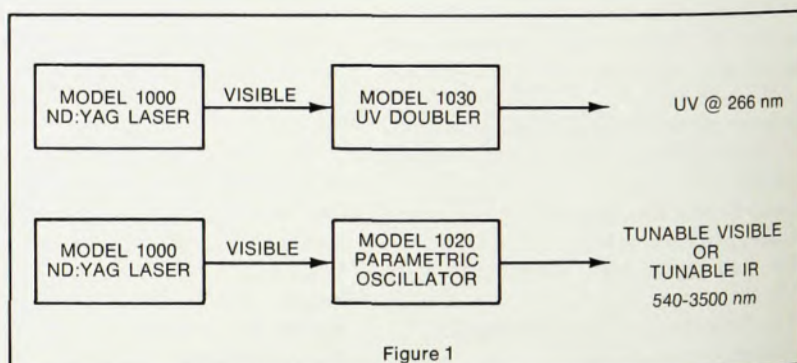


Figure 1

chromatix

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letters

Hungarians, Czechs, and too many others.

Will a civil-defense effort impair democratic institutions? Ross, "concern(ed) that the US may be gradually developing into a military state," suggests that "civil-defense preparations could be an essential ingredient in this process." His accusation, that "Wigner does not consider the concern," ignores Wigner's discussion on page 13 of the book and takes no account of the essay by Curtis Harvey, which shows that it is Sweden and Switzerland—hardly military dictatorships—which have made the most complete civil-defense preparations.

Will civil-defense preparations increase or decrease the probability of war? Here Ross is concerned that a stronger defense may add to the "possibility that US could itself... start a nuclear war." This deep distrust of American institutions together with an equation of the US and the USSR are consistent themes in Ross' essay, exemplified by his comparison of the "secret police in the USSR and the defense department of its closely associated industries in the US." The curious disclaimer of comparison in his next sentence is a bit disingenuous for my taste.

If the character of nations, like the character of men, is seldom completely good or evil, it is foolish and dangerous to presume that there are no very important differences in the morality of governments: There is a difference between the US and the USSR.

Ross closes his review by stating that the essays are out of date, "a message from another time." I would not agree, though the review itself does give me a strange feeling of *deja vu*: I see the 1930's, the Joad resolution at Oxford that the house will not "fight for King or Country," a similar resolution by a Princeton graduating class, a strong "peace" movement—and opposition to defense.

Robert K. Adair
Yale University

Re physics freaks

Your March editorial, "Drugs versus Science," raises a good point. Drugs and science do have much in common.

I myself have taken trips of many types. One of my major trips, graduate school, culminated in a physics PhD. It was really a magnificent trip, no question about it. True, there were times when things were difficult, but overall I loved it. Exploring the relationships within our physical universe is incredibly beautiful.

I expected some benefit from this trip, mainly the opportunity to continue this

exploration. In this sense the trip turned out to be a bummer. It really hurt. I am addicted to physics. My withdrawal symptoms have been somewhat lessened by my finding a job that is enjoyable and satisfying, though not related to physics.

The shock of this withdrawal, along with some sour-grape reaction, has led me to question whether promoting or supporting addiction to physics is really helpful to our society at large. Like heroin addicts, physics addicts require large amounts of money to support their habit. It is not clear to me that the overall effect of research done by physics addicts is positive. I know that basic research is neutral, but its application is not. As long as our society is governed for and by money, rather than people, most of the fruits of research will be applied to wealthy elites, rather than the man on the street.

Physics is beautiful. Our universe provides a magnificent trip. I do not deny this, but neither do I claim that by doing basic physics we have a real chance to make things better. For a bunch of physics freaks to be giving a lecture to the drug freaks seems to be the kettle calling the pot black.

Joseph Davidson
Madison, Wisconsin

Isolated professors

After attending the APS-AAPT meeting in New York this February, seeing the placement service (having some 700 applicants and only approximately 60 job interviewers), and listening to the various sessions concerning physics manpower oversupply and future trends in graduate education, I am convinced that there is a very serious communication gap between established physicists and those unfortunate ones like myself who have been struggling to obtain a job. I feel that the lack of communication is due to the isolation of many tenured professors who foresee no personal loss to themselves in the present oversupply problem; unfortunately many of these professors still advocate recruiting ever-increasing numbers of physics graduate students on the premise that physics should be marketed to society as a whole for its general appreciation.

Being more realistic I would say wait until society demands to know more physics and not jump to the conclusion that society will relish physics if enough field workers (i.e. PhD physicists) are produced to do the missionary work. As a matter of policy, every professor who recruits a graduate student with such speculation (or any speculation concerning "good opportunities" in physics) should be willing to bet a portion of his salary (say 30%) that he

will successfully place this student in a decent physics job. If the professor loses the bet, he pays his new PhD this portion of his salary until he has successfully placed him (if ever). This may sound like a power play; however, it is more just than the present system in which the professor loses nothing (in spite of his error in advising the student to get a PhD) but the graduate student loses everything (after taking the professor's advice in good faith).

In sum, if the professor has to put his money where his mouth is, he'll be sure to do his homework before "mouthing off." By the way, any professors (which will most likely include the majority) who think the above idea is bad have automatically admitted that the job situation is serious. Any takers?

Willard G. Winn
University of Rochester

Fair-weather physicists

At the recent APS-AAPT annual meeting a lot of graduate students and new PhD's were complaining that the government owes them a living, because it had fooled them into becoming physicists by the promise of good jobs.

Physics is not a trade. It is a branch of natural philosophy. Some of us, who can't earn a living by research any more, are still very pleased that the US Government gave us the opportunity to learn physics (and free, at that). How can a person possibly object to being trained free in something he likes doing?

Perhaps the young men at the meeting weren't ever potential scientists. But why should the government be blamed for the motives of people who go into science for money?

Let these fair-weather physicists go out and earn an honest living. Any true natural philosophers among them will survive, and be welcomed as such by their colleagues. The rest will doubtless disappear from the fringes of physics.

John H. Connell
Springfield Technical Community College
Springfield, Mass.

Challenge for headhunters

How sad it was to see such a pessimistic letter as that from a member of the once mighty band of head-hunters (Stuart Silverman, March 1971, page 9).

If the professional employment agencies were to regard their mission as finding jobs for physicists, then this would be a time of challenge and opportunity for them. The challenge would be all the greater since we appear to be in a class with paroled convicts, rehabilitated drug addicts, and others who encounter enormous prejudice in job hunting. Instead, the professional agencies are going out of business just