

## **Alternative Profession: Secondary Education**

by: Dan Bonnet, [bondate@wt.net](mailto:bondate@wt.net)

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As a preface, this article is written for the benefit of those who are considering teaching science in the secondary as a new career. Its intent is to answer basic questions and to serve as a guide in getting started. The following is the result of online research and personal experience. Although not a teacher, the author received a teaching certificate in composite science nine years ago and has also taught as a substitute teacher for several years. Such being the case, some comments or information described here may be dated or biased.

Effective teaching is definitely hard work, requiring long hours in preparing for labs, grading papers, designing and implementing tests, preparing lesson plans, staying abreast of new science and teaching methods, handling administrative paperwork, dealing with parents, handling problem students, and so on. Especially during the first few years, it will not be a job where the work is left at the office once the final bell rings. Because of the lab work involved and since it is constantly evolving, science is one of the more demanding subjects to teach. Considering the time and effort involved, the rewards for such an unappreciative job are intrinsic to each individual because the financial rewards are poor. Starting salaries range from \$19,000 to the upper 20s, with the higher salaries going to teachers with master's degrees at school districts with a strong tax base. More can be earned by teaching summer school. Raises are normally tied in with years of service and independent of job performance. Keep in mind, employment at the more "desirable" districts, be it for location or pay scale, is very competitive. Having professional industry experience with a teaching certificate in science does not guarantee you a job at the school district of your choice. These districts are also desirable to experienced teachers trying to improve their lot in life.

The good news is that science teachers are currently in demand. During the mid to late 1980s, the job market was somewhat tighter because of the number of candidates entering the teaching profession because the economy at the time. Few earth science positions were available, with most of the openings occurring in the other branches of science. If layoffs continue, then it is possible the cycle will repeat itself.

There are several options available for the geologist or geophysicist who would like to pursue the teaching venue. To teach full time in Texas, certification is necessary. Course and test requirements can be obtained at many colleges and universities in the Houston area. Another option is the alternative certification program provided by Region IV Education Service Center. Substitute teaching is another alternative, and it does not require a teaching certificate nor does one necessarily need a college degree.

## **Certification**

The Texas Education Agency is the state agency responsible for certification standards and approval. Certification requires a bachelor's degree with course work in three areas: 1) broad general background, 2) academic specialization, and 3) teaching knowledge and abilities. As a degreed geologist/geophysicist, fulfilling the requirements for teaching knowledge and abilities is usually all that is required for getting certified. Some may have to take a few more hours of science.

Several colleges in the Houston area offer programs for certification, including University of Houston (UH), Rice, University of St. Thomas, Houston Baptist, Texas Southern, and the University Center through Montgomery Community College. The latter is an alliance of six universities (Sam Houston, Texas A&M, UH, UH-Downtown, Prairie View A&M, and Texas Southern) allowing one to take all the necessary course work at Montgomery College in The Woodlands. This article will be directed toward UH because the author is more familiar with its program. Plus, most of the course work there can be taken in the evenings.

Strong consideration should be made toward achieving a certificate in composite science. The added course work necessary is minimal. Even though the desire may be to teach geology only, the flexibility of being able to teach any branch of science will make you more marketable. Personally, I would prefer to teach high school because the students there are more emotionally and intellectually mature than their middle school counterparts. In Texas, earth science is typically taught in eighth grade. UH Central Campus does not offer a specific earth science certificate. It is combined as life/earth science. UH-Clear Lake, however, does offer the earth science certification. One would have to check the catalogs of other individual institutions to determine which offer the earth science certificate.

For one with a geology background, the requirements for a composite certificate are eight hours of freshman biology, eight hours of chemistry, eight hours of physics, 16 hours of geology, and 24 hours of teacher education courses, including a semester of student teaching. The first step is to complete a deficiency plan application. The College of Education at UH will analyze your transcripts for \$50 and draw up a plan that spells out what course work is necessary to complete certification. Even though a degree was earned years ago, most courses will still transfer and be applied toward satisfying the certification requirements. Additional information can be obtained at the Web sites listed at the end of this article. This process takes about a month. The next step is to apply for admission to the university itself. Before being admitted into the education department, the prospective student needs to complete the Texas Academic Skills Program (TASP), a test of reading, writing and mathematics skills at a cost of \$29. Specific information about this test is available at the UH Counseling & Testing Service (713-743-5454). Completion of this test is a state requirement for certification. After all course work is taken, the state also requires passing an exit exam, ExCET (Examination for the Certification of Educators in Texas). This is a two-part test with one being in the area of specialization and the other being education related.

As previously stated, most of the course work at UH can be taken at night while one has

other employment during the day. One exception, however, is the semester spent student teaching. This can take place only during normal school hours.

### **Alternative Certification Program (ACP)**

ACP is a program designed to recruit personnel in districts badly in need of teachers in certain subjects which includes composite science. This program provides employment at a school while getting certified outside the traditional university setting. The candidate goes through a one-year internship, where he or she must complete 12 hours of education courses, attend ACP training sessions, and pass the ExCET exam. At the end of the internship, the candidate becomes certified in composite science. Minimum requirements for consideration of this program are a bachelor's degree; a 2.5 grade point average; 24 hours of science courses with 12 hours upper-level; and passing the TASP.

The school districts do not need to go this route because they can usually draw upon a pool of qualified candidates. The most publicized district administering the ACP program is Houston (HISD). For other districts in the Houston area that might offer this program, contact the Region IV Education Service Center (Web site listed at end). The deadline for consideration for the 1999-2000 school year at HISD has already passed. Processing for the 2000-01 school year will begin in September. Last year, HISD had 500 applicants for this program to fill 250 vacancies. Of course, all these were not for science because other areas of need include bilingual education, math, elementary education, secondary English, and special education. Because science educators are currently in demand at HISD, a possibility might exist for openings in the upcoming year although the application deadline was January 29. Contact [cshannon@houston.isd.tenet.edu](mailto:cshannon@houston.isd.tenet.edu) with specific questions regarding ACP at HISD. There is a \$75 fee involved with the application process.

### **Substitute Teaching**

Substituting does not require certification or a degree. It is a relatively easy job, requiring little preparation with no work to take home once the school day is over. It is a means of supplementing income while going to school at night or during dry times as a consulting geoscientist. You have the option to work when needed or turn down any assignments when not needed. It is also an excellent way of gaining both experience in the school environment and an understanding of the duties of a full-time teacher. It provides a good litmus test to see if education is the right career path to undertake.

The main disadvantage to substituting is the low pay scale involved. Salary range is anywhere from \$50 to \$150/day, depending on whether the assignment is long-term or if the substitute is certified. Uncertified teachers can typically expect to earn around \$60/day, plus or minus \$10. Each school district has its own pay scale. Another disadvantage is that the schools are mostly looking for bodies to take up space and "baby-sit" in the classroom while the appointed teacher is away. Rarely is the substitute called upon to actually teach a lesson to the students. Also, because good substitutes are in demand, expect to be assigned to any and all subject matters. The definition of a good substitute, as far as the schools are concerned, seems to be classroom management skill. The odds of substituting for a science class will be the same as for any other subject.

As a substitute, try to get to know the faculty and, if possible, the principal. He or she is

usually the person that does the actual full-time hiring, and it does not hurt to have inside ? help when the time comes to seek full-time employment. Although applying for a permanent position is at the district level, it is the principal who is responsible for filling any vacancies from a pool of candidates the district supplies. The head science teacher of the school is also usually involved with the hiring process.

If the goal is to occasionally substitute, then having your name on file at two different districts should suffice. However, if quantity of assignments is a goal, then one should apply to several different districts. Contact the personnel directors at the districts of choice for applying as a substitute. A list of public school districts in the Houston area can be obtained at the Region IV Education Service Center Web site listed below.

### **Informative Web Sites**

<http://www.tea.state.tx.us> (Texas Education Agency)-Information on certification, test information, and links to public school districts throughout the State.

<http://www.uh.edu> (University of Houston)-Information on admission procedures, links to other departments, and an online undergraduate catalog.

<http://www.uh.edu> (College of Education at UH)-Information on applying for a deficiency plan, certification requirements, admission procedures, and other departmental information.

<http://www.esc4.net> (Region IV Education Service Center)-Information on ACP, links to and listing of school districts within the Houston area, and a listing of job openings within the region.

<http://www.troops.org> Posting of state and national job openings.

<http://www.houston.isd.tenet.edu> (Houston ISD)-Information on ACP.

<http://www.nhccd.cc.tx.us> (North Harris Montgomery County Community College District)-Information on the University Center program and its alliance with area universities.