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Students

Athletics

International

Community Colleges

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From the issue dated July 10, 2009

## Hot Academic Jobs of the Future: Try These Fields

By LEE ROBERTS

At a time when the academic job market is looking bleak, we asked career experts and economic forecasters to predict where faculty job growth could come in the next decade. Many agreed that job prospects will be dim because of budget cuts and diminishing faculty pension funds that have made professors less likely to retire. In addition, the growing use of graduate students and adjuncts to teach classes means fewer jobs are available that are secure or financially rewarding.

If the past is any indication, it is difficult to make predictions about the faculty job market. Predictions in the late 1980s of a huge faculty shortage caused by retirements failed to come true. Still, the data suggest that large numbers of academic teaching jobs will open up in the future. Some are expected to be created by enrollment growth; others by the need to replace faculty members hired in the late 1960s and 70s to teach baby boomers.

The Bureau of Labor Statistics has projected that 662,000 faculty jobs will become available from 2006 to 2016 — 382,000 new slots, and 280,000 current jobs expected to open up. Community colleges and other institutions that offer career and technical education are expected to offer many of the new job opportunities.

The following list is not a bible, and it's certainly not scientific. But here are some of the academic fields our experts believe will be "hot" over the coming decade:

### Green chemistry

Green chemistry focuses on eliminating the use of toxic chemicals in chemistry without stifling scientific progress. Paul T. Anastas, a Yale University chemist, founded the field in 1991. As it grows in importance, more institutions are expected to offer master's degrees and doctorates. Among the universities with green-chemistry programs are Carnegie Mellon and Yale Universities and the Universities of Oregon, Scranton, and Massachusetts at Lowell.

Terry Collins, a chemistry professor at Carnegie Mellon who heads the university's Institute for Green Science, thinks the intellectual rationale for the field is strong. "It hasn't gotten a lot of federal support, but I think that's going to change," he says. One reason: Mr. Anastas has been nominated by President Obama to head the Environmental Protection Agency's Office of Research and Development.

### Energy

Threats to human society by the consumption of limited resources have sparked a race to find alternative energy sources that are sustainable, efficient, and safe for the environment. Among the leaders in this research mission is the Energy and Resources Group at the University of California at Berkeley. The interdisciplinary group has been devising technical and policy alternatives to unsustainable energy and resource use for the past 30 years.

The Energy Efficiency Center at the University of California at Davis identifies promising energy-efficient technologies and develops viable business ventures around them. Established in 2006 with a challenge grant from the state, the center focuses on transferring technology from academe to the marketplace.

Boston University's Center for Energy and Environmental Studies, meanwhile, specializes in the fields of energy and environmental analysis.

### Gerontology

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Not only are professors aging — everybody else is, too. The aging process will take on a more prominent role in society as the baby-boom generation ages, making studies like gerontology a growth area, says Arthur Levine, president of the Woodrow Wilson National Fellowship Foundation.

The oldest and largest school of gerontology in the world is the Davis School of Gerontology at the University of Southern California. It has conducted research in molecular biology, neuroscience, demography, psychology, sociology, and public policy on aging since 1975.

The Universities of Kansas, Kentucky, Maryland at Baltimore, and Massachusetts at Boston are among those offering doctoral programs in the field.

### **Education**

The Bureau of Labor Statistics projects that the number of postsecondary educational administrators will increase by 14 percent from 2006 to 2016.

"The leadership turnover in education is going to be tremendous in the coming years," said Mark David Milliron, president and chief executive of Catalyze Learning International, an education consulting group in Newland, N.C. "Folks are scrambling to fill the C-level pipeline; as a result, Ph.D.'s and Ed.D.'s are in high demand, and will be for some time."

### **Nanotechnology**

A nanometer, one billionth of a meter, is about 10,000 times narrower than a human hair. Nanotechnology is the study of the control of matter on an atomic and molecular scale. It has the potential to create materials and devices in fields as diverse as electronics, energy production, and medicine.

Among institutions that offer programs in the growing field are the Universities of Washington and North Carolina at Charlotte; the State University of New York at Albany; and Arizona State, Louisiana Tech, Pennsylvania State, and Rice Universities.

### **Health policy**

Just as gerontology will become more important as the population ages, health-related fields and health-care policy will remain vital in coming years. Some of the influential universities for health policy and management are Harvard, Johns Hopkins, and New York Universities.

### **Information technology**

Harry Lewis, a Harvard professor of computer science and one of the authors of *Blown to Bits: Your Life, Liberty and Happiness After the Digital Explosion* (Addison-Wesley, 2008), believes information technology will remain a growth area in the coming years. The Bureau of Labor Statistics agrees, projecting that among selected occupations requiring a doctoral degree, computer and information science will have one of the largest growth rates — 22 percent — from 2006 to 2016.

Some of the better-known programs in information technology are those offered by the University of California at Berkeley, the Georgia Institute of Technology, the Massachusetts Institute of Technology, and Stanford University.

### **Engineering**

There always seems to be a high demand for engineers of one kind or another, and the next decade should be no exception. Engineering comprises such a broad array of studies and competencies that it can lead to vastly different careers. In especially promising fields, the Bureau of Labor Statistics sees environmental engineering experiencing 25-percent growth between 2006 and 2016, and industrial and biomedical engineering each experiencing about 20-percent growth in that time.

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Section: The Academic Workplace

Volume 55, Issue 41, Page B22

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