

# REW AND EMERGUNG OCCUPATIONS



hat's the next hot career field? Are fuel cell technicians and chief privacy officers here to stay? Which unusual jobs are ready for a growth spurt?

People ask questions like these hoping to learn about an entirely new occupation or some small, overlooked career that is poised for a breakthrough. And it's no wonder they ask.

In the not too distant past, many of the jobs we now take for granted didn't exist. But as technology developed, so did the need for workers who could build and use it-and sometimes, the tasks those workers performed were so different that they became part of new occupations.

Technology is only one cause of new occupations. Demographic trends-such as increased immigration, aging, and higher levels of education-also cause new types of jobs to emerge, as do business trends and shifts in consumer needs and tastes.

Workers who join an occupation at its start often are rewarded with exciting work, high earnings, and the chance to shape a profession.

But recognizing the difference between a passing fad and a stable career can be tricky, and the Bureau of Labor Statistics (BLS) makes no projections in that regard. Read on to learn how new and emerging occupations develop, why they are hard to identify, what risks and rewards vanguard workers face, and how to find a cutting-edge job. A box starting on page by Olivia Crosby

Something old, something new, something better... perhaps something for you. Here's how new occupations develop.

19 describes some of the strategies researchers use to uncover new and emerging careers, along with some of their results. Scattered throughout are descriptions of fledgling occupations and specialties.

#### Seeds of change: How occupations emerge

New occupations develop when employers need workers to do tasks that have never been done before-managing Web sites in the early 1990s, for example. Usually, workers in existing occupations add these new tasks to their jobs, sometimes creating a specialty. But if the needed task is sufficiently different and becomes the primary job of enough workers, the specialty grows to be an occupation in its own right.

Computer security is one emerging specialty. In most companies, the same workers who set up and administer computer networks also keep them secure. But as security tasks become more numerous and complex, computer workers have begun to specialize, even earning specific credentials and degrees.

Similarly, when scientists began decoding the human genome in 1990, they collected staggering amounts of biochemical data. To organize these data, employers turned to computer experts or to biologists who had some computer knowledge. But as demand increased, the field of bioinformatics grew from a small sideline to an established career. Bioinformatics specialist is now a common job title, and several schools offer specific training for these jobs.

Some of the factors that cause new specialties and occupations to emerge include changing technology, laws, demographics, and business practices. The more dramatic the changes, the more likely they are to cause occupational change.

When videoconferencing became widespread, for example, a few organizations needed workers who could set up, troubleshoot, and track the new technology full time. The resulting occupation was called videoconferencing technician.

Some other technological changes driving new specialties and occupations include:

- Improved computer graphics that have brought forth new multimedia and animation specialties;
- Increasingly sophisticated manufacturing automation and robotics that have led to new types of silicon and biological chipmaking technicians;
- New medical imaging techniques that have given rise to radiological specialties such as dosimeters, who measure bone density; and
- Improvements in data management and networking capabilities that have led to geographic information systems (GIS) technicians and

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programmers, who manage data from global positioning satellites; data security engineers and analysts, who develop policies and computer programs to keep data confidential; and usability specialists, who make Web sites, software, and databases easier to navigate.

Occupations and specialties also emerge because of changes in the law. Welfare-to-work legislation, for example, prompted the need for new types of job coaches and human services workers. Telecommunications laws that require closed captioning of television programs have spurred growth of closed captioners, or stenocaptioners—workers who type captions for television programs. And changes in criminal laws

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have led to occupations such as restitution specialists and victim's, witness, and children's advocates.

Likewise, changes in Medicaid regulations created a demand for new types of record keepers and record makers—including assessment specialists, who test the mental and physical functioning of residents in assistedliving institutions and report their findings to government agencies.

Demographic shifts and social developments are another source of new occupations and specialties. To serve an aging population, organizations began employing workers with expertise in geriatrics, including geriatric nurses, human services workers, and social workers. An increase in the demand for plastic surgery has resulted in the need for medical aestheticians, who combine skin-care proficiency with medical knowledge to care for patients' skin after surgery.

And increases in the number of two-

income households have spurred new service occupations, such as personal chef and corporate concierge. (To learn more about the latter occupation, see "You're a *what*? Corporate concierge" in the Spring 2002 *OOQ*, available online at **www.bls.gov/opub/ooq/2002/spring/ yawhat.htm**.)

New occupations and specialties also result from changes in business practices. The increase in the use of health management organizations, for example, drove demand for utilization review coordinators and restorative therapy coordinators, both of whom examine patient records to ensure that treatment was in line with an organization's standards. Also, as more people send personal information over the Internet, a few companies are hiring privacy officers to set and enforce policies about customer and employee confidentiality.

Most new types of work result from a combination of factors. Distance learning occupations fall into this category. Improved computer networking, social trends toward lifelong education, and competition between



learning institutions combined to give rise to distance learning and its occupations. These occupations include information architects, who make sure that course organization is conducive to learning and that the Web site is simple to navigate, and course editors, who modify traditional classes for the Internet; editors reformat course content by organizing it into understandable pieces and adding multimedia and other data sources.

#### Fuzzy measurements: Smudges on the crystal ball

Possible causes for new occupations are easy to identify. But predicting and measuring new occupations is more difficult. For starters, it is hard to determine if technological, demographic, or other changes will lead to new occupations. Recently, experts have touted new discoveries that allow materials to be constructed one atom at a time. Some say this "nano-manufacturing" could revolutionize how products are developed. But whether this will lead to a new type of production or occupation is unknown. Even if this technology becomes widely used-which, as is the case for nearly any innovation, is uncertain-it might not create new types of work. It might simply add a few new tasks to old occupations.

In many instances, a successful technological breakthrough does not affect the working world. For example, one of the latest medical imaging techniques, the virtual colonoscopy, may have a dramatically positive effect for patients—but its adoption in the marketplace will not add to the number of occupations. The procedure is almost identical to a CAT scan, so the radiologists who perform it need little additional training.

And earlier this decade, wireless technicians were predicted to evolve into a distinct occupation of workers who would install wireless base towers and repair wireless equipment. But wireless tower installation is similar to the installation of other types of communication towers, such as those

## WHAT THE RESEARCHERS SAY

Researchers for the Federal Government, State governments, educational organizations, and trade associations have studied new and emerging occupations. The methods they used for identifying these occupations include reading trade journals and job ads, interviewing employers, and conducting surveys.

Every researcher must decide whether an occupation is new enough and different enough for inclusion in a study. Following are examples of some new, emerging, and evolving occupations identified by researchers in the Federal Government, the States of Texas and Minnesota, and the National Council for Workforce Education. The researchers' methods are also described.

#### **Federal Government studies**

Two nationwide surveys by the Federal Government—the Bureau of Labor Statistics' (BLS) Occupational Employment Statistics survey and the Census Bureau's decennial census offer some information about new occupations.

**BLS survey.** The Occupational Employment Statistics survey provides employers with a list of occupations common in their industry and asks employers how many of their workers are in those occupations. On a supplemental sheet, employers are asked to list and describe any other occupations in their establishments, giving particular attention to occupations that are numerically important or emerging due to technology. BLS analysts study these forms to identify recurring responses.

Some occupational titles selected by Occupational Employment Survey analysts from the 1993, 1996, and 1999 survey supplements include:

- ◆ Bereavement counselor
- Quality assurance director
- Utilization review coordinator
- ◆ Volunteer coordinator
- Webmaster.
- Census. The Census Bureau's

decennial census is another source of new occupational titles, although it does not include job descriptions as the BLS survey does.

Between censuses, new alternative titles are gathered for census occupations. Titles are added to the census database at the request of experts or because coders reading and recording census forms bring titles to their managers' attention. Only a few of the many new titles that occur are added. Still, looking at the titles added offers clues about occupations not currently classified. Some of the titles added between 1990 and 2000 include:

- ◆ Artificial intelligence specialist
- Employee wellness coordinator
- ♦ Ethics officer
- ◆ Human factors engineer
- Information technology (IT) specialist.

Only two titles were added to the list for the "all other computer specialists" occupational group between the 1990 and 2000 censuses: IT specialist and artificial intelligence specialist. This suggests that coders from the Census Bureau try to fit responses into existing occupations whenever possible.

#### Texas study

The Texas Career Development Resources office studies emerging and evolving occupations in that State. It concentrates on information technology, biotechnology, health care, and education and training. The office chose these areas because of their high wages and fast employment growth and their high level of computer and equipment use.

For each industry, analysts read trade publications, job postings, and job titles from the State's database of graduates from local schools. Analysts also interview major employers.

*Emerging occupations.* The study defines emerging occupations as those not identified in the 1980 Standard

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used for satellite and cable television. This example illustrates that although the title of an occupation may change, the basic tasks often remain much the same.

*New, emerging, or evolving?* Rather than trying to predict whether changes in technology and other factors will create new occupations, most labor market researchers attempt to identify occupations that already exist and are only relatively new. Even this is

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difficult, however, in part because of unclear definitions.

For these researchers, a new occupation is one that has materialized recently—but how "recently" is defined depends on the study. A new occupation usually is identified as one that is not included in the most current occupational classification system.

An emerging occupation is one that has small employment numbers but is expected to get larger in the future. Emerging occupations are easier to identify than are new occupations because researchers usually do not notice an occupation until it has grown to a certain size. That can take years. Massage therapists, for example, created a professional association in the 1940s. Decades later, massage therapist was identified as an emerging occupation. And in 2000, it received an explicit title in the revised Standard Occupational Classification system (SOC), the Federal Government's primary catalog of occupations.

An evolving occupation is an existing occupation with tasks that are changing significantly. To some extent, all occupations are changing. But evolving occupations are changing dramatically. Examples of evolving occupations include animators shifting from twodimensional pen-and-paper work to



three-dimensional computer modeling, software engineers learning to program artificial intelligence routines, and warehouse managers using real-time inventory practices and electronic tracking.

**Specialty or occupation?** Before they can decide whether an occupation is new, emerging, or evolving, researchers must decide on the meaning of the term "occupation." In general, an occupation is a set of jobs that include similar tasks and require similar skills. But how similar do the tasks of an occupation have to be? When is a job in an occupation of its own and when is it a specialty in an old one?

The work of geriatric social workers illustrates the difficulty of deciding whether tasks are unique enough to make a new occupation. Within the broad occupational group of social worker are a few well-established detailed occupations, including mental health social worker and medical and public health social worker. Geriatric social workers combine some of the tasks of both of these occupations, providing counseling, referral services, case management, and help to older patients with chronic medical problems. Does that mean geriatric social workers' tasks are unique enough to make it a separate occupation? Or are these workers part of an existing occupation? The answer depends on the researcher.

Researchers classifying occupations must decide not only how distinct job duties must be, but also which duties are important. If core tasks are the same for a group of jobs, the jobs are in the same occupation-even if less important tasks are different. Trying to classify geographic information systems (GIS) specialists, for example, brings this issue to the fore. GIS specialist is a common title in job postings and often appears in lists of new and emerging occupations. But job descriptions suggest that these positions may be part of a number of existing occupations. Many GIS specialists maintain or program databases of geographic information, so they might be computer programmers or database administrators. Other specialists concentrate on creating maps and charts, acting as mapping technicians. Still others use GIS while planning cities, designing marketing campaigns, or conducting geographic research, possibly making them urban planners, market researchers, or geographers. However, if workers perform several of these tasks in one job, or if working with GIS is their most important task, then perhaps GIS specialist is its own occupation.

Differences in education and earnings sometimes indicate that what appears to be one occupation is actually more than one. The previously mentioned bioinformatics specialists, for example, design ways to collect and analyze biological data, usually for biotechnology firms that are seeking new treatments, genes, and proteins. Their data management tasks might make bioinformatic specialists a type of database programmer, but bioinformatic specialists' education suggests they might be a unique occupation. According to industry sources, most have advanced degrees in chemistry, biology, or a health profession, and they use that education in their work. Bioinformatic specialists' earnings, too, tend to be

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Occupational Classification System (SOC). Examples include:

- Direct broadcast satellite services technician
- Internet development specialist
- ◆ Multimedia specialist
- Videoserver technician
- Wireless communications technician.
  Evolving occupations. As defined in

the Texas study, evolving occupations were in the SOC, but their duties had changed significantly. Among the more than 45 evolving occupations were:

- Automation or robotics technician
- Biomedical engineering technician
- Computer security technician
- Fiber optics technician
- ♦ Warehouse manager.

#### Minnesota study

The Minnesota Workforce Center surveyed new and emerging occupations in 1998. The Center mailed surveys to employers. Then, analysts checked and compiled responses. As with researchers in the Texas study, researchers in the Minnesota study used the 1980 SOC to determine whether occupations were new.

*New occupations.* New occupations were defined as occupations with "work activities, skills, and knowledge that are so new that they cannot be classified under the existing system." Some of the occupations were:

- Curriculum integration specialist
- Geographic information system specialist
- ◆ Interactive specialist
- Resident assessment specialist
- Restorative justice specialist.
  Evolving occupations. Defined as
  "established occupations with a rapid

change in skill set requiring new knowledge," evolving occupations identified include:

- ♦ Data security engineer
- ♦ Grants specialist
- ◆ Quality assurance manager, health
- ◆ Safety director
- Utilization manager.

#### Other studies

Education planners try to identify new occupations to establish new vocational training programs. They seek well-established occupations that are relatively new. In particular, educators usually look for occupations that have materialized in the last 10 years, require specialized training, and show a growing demand.

National Council for Workforce **Education study.** The latest study to identify these types of new occupations was published in 1999 by the National Council for Occupational Education, now known as the National Council for Workforce Education. To conduct the study, researchers first surveyed community colleges about vocational programs they had added in the past 2 years and programs they planned to add in the next 2 years. The researchers then studied changes in classification systems and lists of new and emerging occupations developed by a variety of sources. Next, they scanned national and local job postings.

Using this information, researchers developed their own inventory of possible training programs. The survey of new vocational programs completed for this study could help identify new occupations. A few of the reported programs include:

- Bereavement counseling
- Computer information systems
- ♦ Geriatrics
- ♦ Teleconferencing
- Web design and multimedia.

**Other studies.** Other education planner studies have used projections developed by BLS. One definition for an emerging occupation is a small occupation that is expected to become large. Using BLS projections, researchers can find occupations that meet this definition. Those interested in identifying emerging occupations could select occupations that in 2000 had fewer than 50,000 workers and are also expected to grow twice as fast as the average for all occupations over

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higher than those of typical database programmers, according to industry sources, suggesting that their work is different.

Usability specialists are another example. These workers design and test Web sites to make them easy for visitors to navigate. Many have studied cognitive science, psychology, or human factors engineering—specialized training signaling that their work is different from that of Web designers and programmers. (For more information about this occupation, see "You're a *what*? Usability engineer" in the Winter 2000 *OOQ*, available online at **www.bls.gov/opub/ooq/2000/winter/ yawhat.pdf**.)

New types of work are sometimes more accurately considered specialties of existing occupations rather than new occupations. Consider fiber optics engineers, who develop telecommunications cable and equipment, and radio frequency engineers, who plan cellphone networks and design related equipment. These workers share most of their tasks with electrical engineers, and



the most common training is an electrical engineering degree. Both fiber optics engineers and radio frequency engineers are, therefore, usually considered electrical engineering specialties rather than distinct occupations.

How many jobs? Even if composing a clearly defined list of new occupations were possible, researchers could not predict how fast each occupation would grow. One reason is that historical data on employment are not available for these occupations, so trends cannot be identified. Also, the changes that are creating a new occupation are new; little is known about them and their effects. For these and other reasons, BLS and most other researchers make no predictions about a new occupation's job growth.

Because accurate measurements are impossible, it is important not to rely

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too heavily on predictions about new occupations or particular job titles. Instead, jobseekers should use research about new occupations to find general trends or as a starting point for their own, more concrete investigations into the job market.

#### Risks and rewards of trailblazing

Building a career in a new career field can be perilous because the stability of a new occupation is hard to predict. But for workers who don't mind uncertainty, a new occupation offers unique advantages.

By their nature, new and emerging occupations are small, so they offer few opportunities for jobseekers. And most new occupations never grow large. Horticulture therapy aid, for example, was identified in 1976 as emerging. More than 25 years later, it was still small enough to be listed again as new and emerging in popular literature.

Furthermore, new and emerging

occupations are concentrated in industries that are not well established, ones in which jobs and companies can disappear quickly. "In a new industry," says Alexa Graf, a public relations worker at a cellular communications company, "you have to be ready for uncertainty. Business can fluctuate with demand and restructuring, and you have to ride it out."

The specialized nature of some new occupations also makes them less secure than others. If occupations center on a new technology, they can become obsolete as other workers learn to use that technology and integrate it into their existing occupations. Internet research technicians, for example, cited as a new occupation in a 1998 Minnesota study, face shrinking opportunities as more workers become adept at conducting their own online searches.

New occupations can be fleeting for other reasons, too. If organizations have functioned without an occupation for many years, they may decide they can do without it when budgets tighten. Examples of occupations that are often considered expendable include employee morale officers, directors of fun, and employee wellness coordinators. To reduce the risks, experts suggest learning skills that are useful in many different occupations.

Despite the difficulties, several benefits await those who find work in new and emerging occupations. Workers in new fields often are able to take advantage of labor shortages before other workers get training. Chuck Becker, a recruiting director at a geographic data company, knows about these shortages first hand. Describing the need for chief geographic information officers and project managers. Becker says, "We really need someone with many years of experience working with complex projects. That's hard to find because the field is so new." Shortages like these can lead to high earnings and good advancement opportunities for those working in the occupation before it becomes well known.

And the occupations are often

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the 2000-10 projections decade. About 21 occupations meet these criteria. Although some are relatively novel, most are not new. Examples are:

- Biomedical engineer
- Computer and information scientist, research
- Desktop publisher
- Massage therapist
- Occupational therapy aide.

#### Conclusions

Several occupations were identified by multiple studies, although their status as new, emerging, or evolving varied according to the criteria used. Occupations that deal with geographic information were uncovered by the BLS, Texas, and Minnesota studies. Each cited geographic information systems specialists, who program and use information databases. The Texas study also identified geographic positioning system specialists, who install and maintain the equipment that gathers the data from satellites.

Internet occupations, too, were common among the studies. The BLS, Texas, and Minnesota studies each identified Web masters and various types of Internet specialists. The Texas study cited separate occupations, including those who create sales Web sites, those who program the "back end" of the sites, and those who conduct research over the Internet.

exciting, offering opportunities to do what few people have done before. "Working in a field that is not established is exhilarating," says Helen Par, an editor of distance learning classes at Columbia University in New York. "I'm learning something new every day as new technology and capabilities come."

Also satisfying is the chance to direct the occupation's development. That opportunity is part of what drew Raymond Luce to his job as a fuel cell technician at an automaker's test track in San Francisco, California. "I'd never heard of this occupation before I read about it in the newspaper," he says. The Minnesota study identified interactive specialists, who make sites and software easier to navigate.

Business occupations were also frequently among the results. The BLS and Minnesota studies each mention quality assurance managers; International Standards Organization compliance managers, who make sure parts and products comply with established guidelines; and utilization review coordinators, who ensure that healthcare practices conform with hospital and health management organization standards.

Both the BLS and Minnesota studies identified occupations exclusive to nonprofits, such as director of development. This might reflect an increase in the use of these occupational titles, but it might also be because the SOC did not explicitly list those titles.

There is some evidence that vocational training keeps pace with new occupations. The National Council for Workforce Education survey showed that instructional courses exist for nearly every occupation cited.

To read the complete results of these studies and a more detailed explanation of their methods, see the "Explore further" section at the end of this article.

"And now I am at the forefront of the industry, helping to make the future."

#### Finding work on the new frontier

When looking for a new occupation, don't be afraid to stray from careers already identified. At best, lists of potentially new and emerging occupations provide fresh ideas and spark the imagination. You may be the first to discover a certain type of job, or you might create a unique blend of tasks for yourself. As in any job search, the key to finding a satisfying new or emerging occupation is to choose a field that interests you. The entry requirements for new occupations and specialties usually are flexible. But there are ways to prepare. Most workers in new and emerging occupations pair basic skills with knowledge or experience in a subject related to the occupation.

Formal education increases the chances of breaking into a new field. Several studies suggest that employers are more likely to offer on-the-job training, including training for new specialties, to workers with diplomas, degrees, and certificates.

Following are a few common methods for finding and preparing for a new or emerging occupation.

Get a fresh specialty. Most new occupations grow out of old ones. To get his job as a fuel cell technician, Luce combined his 20 years of experience as a mechanic with an associate degree in electronics. "The work I do is different from car mechanic work," says Luce. "But many parts of it are the same." His experience as a mechanic showed his employers that he understood cars and had mechanical ability, and his electronics background convinced them that he could learn the fundamentals of fuel cell technology.

For a new specialty, employers are more likely to train people who have transferable skills. Tom Hasman, an information assurance analyst for an information technology services company, had a master's degree in political science and strong writing skills to help propel him into his current position. Like all information assurance analysts, Hasman develops strategies and polices to keep data secure and private. He also makes sure that all the procedures he develops conform to the latest Government regulations.

Hasman learned about computers and security policy primarily on the job. But he also wrote his master's thesis on information warfare. That showed employers that he understood the field. "You never know what is going to help you later on," he says. "If you study what interests you, it will probably end up relating to something you want to do."

Workers also can move into an emerging specialty by gradually adding new tasks to those of their current job. A human resources manager, for example, could take on more employee wellness tasks until most of his or her day was spent in that specialty. Working in large organizations makes it easier to transfer

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to an emerging specialty because there are more opportunities to concentrate on one type of work.

Some workers in emerging fields have taken their previously acquired skills to a different industry. Environmental engineers did this when applying engineering expertise to environmental problems, creating another specialty.

Working in some occupations also increases the likelihood of finding an innovative offshoot. These occupations include scientists, engineers, technicians, and those related to computers, healthcare, and the manufacturing of high-tech products. Because of their technological focus, these occupations change quickly.

**Build your own occupation.** Can't find a new or emerging occupation you like? Consider making your own. Some occupations start with the idea of one or two workers who either act as entrepreneurs, starting their own business, or convince employers to hire them for a new position they have designed for themselves. Whether these self-made careers qualify as occupations is debatable, however. Some say that a new occupation must include more than one or two jobs; others disagree.

Candy Wallace may have helped to

develop her own occupation when she began cooking meals for her neighbors. Wallace loved to cook but did not want the stress and repetition of working in a restaurant kitchen. She cooked and delivered a week's worth of food to her clients after working with them to choose each day's menu. What made her work different from that of other types of chefs and caterers was the variety of her meals, the storage tasks she performed, and the personalized menu assessment she gave each client.

Not content to simply run a business, Wallace eventually founded a professional personal chef association, complete with training programs and market research. A few other chefs had had a similar idea and started another association. Now, these pioneers have thousands of fellow personal chefs and two professional associations.

Self-employment is not the only way to build an occupation or specialty. A recent graduate of the University of California parlayed his interests in recreation science, skiing, and geography into a salaried job. He asked a local ski resort if he could map ski routes and was hired as a permanent employee. The mixture of mapping and skiing tasks was a combination the company had never considered before. By convincing an employer of a new business need, this ski buff found a way to explore unfamiliar territory—both in the world of work and on the slopes.

#### **Explore** further

To learn more about novel occupations, see the Occupational Outlook Handbook, 2002-03 Edition. The Handbook includes descriptions for hundreds of occupations; several occupations, such as mediator and instructional coordinator, are relatively new and have appeared in the Handbook for the first time in this edition. The Handbook is available in many libraries and career centers and online at **www.bls.gov/oco**.

In addition, this issue of the *OOQ* includes articles on biotechnology and



information technology, two rapidly changing career fields.

Vocational training schools and community colleges are another source of information. Employers often ask schools to develop training programs for new specialties.

Some institutions focus entirely on rapidly changing career fields. The National Science Foundation supports 11 such training centers to prepare workers for new or technologically advanced occupations. Find out more by contacting: Advanced Technological Education (ATE) Program Division of Undergraduate Education National Science Foundation 4201 Wilson Blvd., Suite 835 Arlington, VA 22230 (703) 292-8668 www.ehr.nsf.gov/ehr/due/awards/ ate\_centers.asp

Several organizations study new and emerging occupations. A few offer career guides and descriptions. The Texas Career Development office has published one general study and one study on occupations in biotechnology and continues to update its findings. To see the latest results, contact:

Texas Career Development Resources Office 9001 IH35 North, Suite 103B Northview Business Center Austin, TX 78753-5233 (512) 837-7484 www.cdr.state.tx.us/emerging/ index.htm

In 1999, the Minnesota Department of Economic Security published a report on new and evolving occupations. For a copy of this report, contact:

Minnesota Department of Economic Security 390 N. Robert St. Saint Paul, MN 55101 1 (888) 234-1114 (toll free) www.mnwfc.org/lmi/neo

The State of California publishes career guides for many occupations, including several identified as new and emerging. California also conducted a focus group on new information technology occupations. To learn more about the career guides and the study, contact:

Employment Development Department 800 Capitol Mall, MIC 83 Sacramento, CA 95814 (916) 262-2162 www.calmis.cahwnet.gov/htmlfile/ subject/guide.htm

The National Council for Workforce Education conducted a survey of new associate degree subjects. These might relate to new or emerging careers. For a copy of the results, request a copy of "A Model for Identifying New Occupational Markets for Community and Technical Colleges" from:

National Council for Workforce Education 1161 Francisco Rd. Columbus, OH 43220-2654 (614) 451-3577 www.ncwe.org