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The *Occupational Outlook Quarterly* (USPS 492–690) (ISSN 0199–4786) is published four times a year by the Office of Occupational Statistics and Employment Projections, U.S. Bureau of Labor Statistics, U.S. Department of Labor. The Secretary of Labor has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department.

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U.S. Bureau of Labor Statistics
Room 2135
2 Massachusetts Ave. NE.
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Occupational Outlook Quarterly

Summer 2010 • Volume 54, Number 2

Museum work: Put your skills on exhibit

Elka Maria Torpey

When Pam Hatchfield goes to work, she's helping to preserve a little piece of history for generations to come. Hatchfield uses a background in chemistry, art history, and studio art to care for objects ranging from the pre-Egyptian to the contemporary.

"It's very interesting and a lot of fun," she says of her work at the Museum of Fine Arts in Boston.

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Hatchfield, a conservator, is one of many who make a living in the museum industry. More than 200,000 people worked in the industry in May 2008, according to the U.S. Bureau of Labor Statistics (BLS). A museum hires workers in a variety of occupations to help share its treasures with the public.

BLS data also show that workers in the museum industry had a median annual wage of $27,456 in May 2008, less than the annual median of $32,390 for all U.S. workers. Still, competition for jobs remains fierce because of the attraction many have to the work. "There's an understanding that museums are nonprofits, and we're not going to get rich working in them," says Jim Hakala, senior educator at the University of Colorado Museum of Natural History in Boulder. "There's a lot of dedication, a real love of the field."

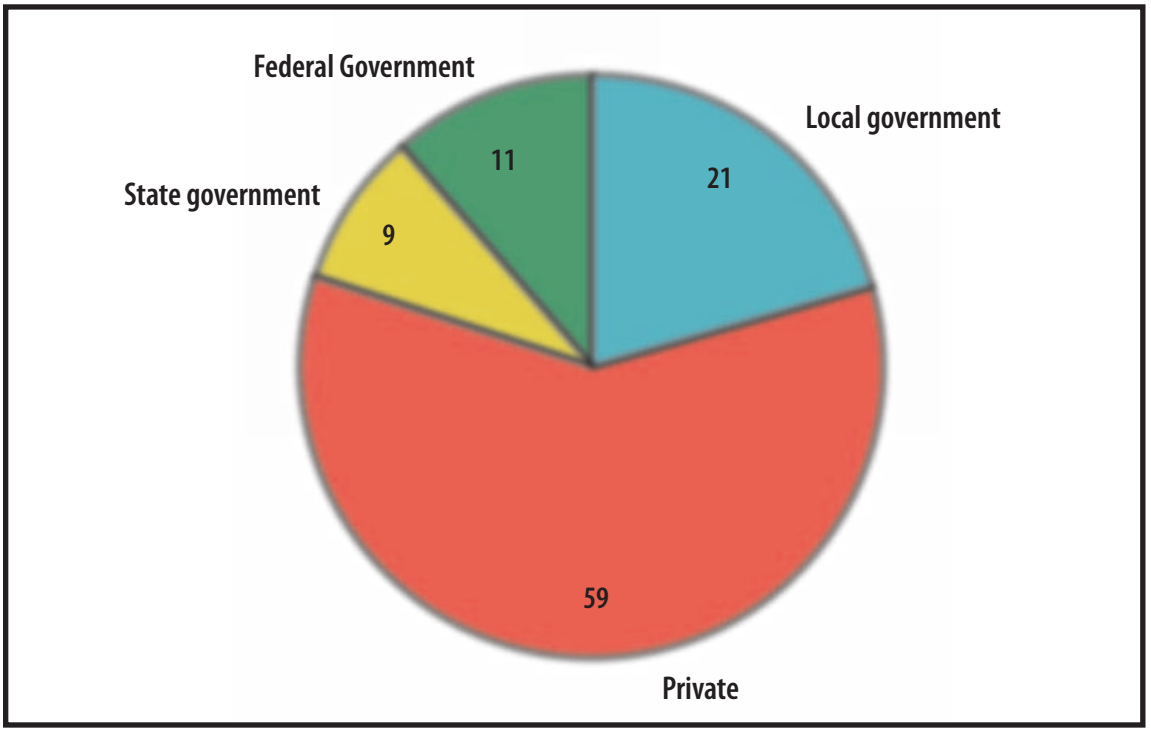
This article explores that dedication, revealing why people enjoy working in museums and what their career options are. The first section describes the museum industry. The second section talks about three categories of museum work: collections management and care, exhibit design, and education. Other sections describe museum occupations and the skills, training, and experience workers need to do their jobs. A final section suggests sources for finding more information.

Museum size and other matters

Museums organize, collect, and present to the public objects or information of historical, cultural, or educational value. Through their collections, museums also aim to preserve each item in an exhibit. And all museums share a mission to educate visitors.

Museums, historical sites, and similar institutions employed 219,700 workers in 2008, according to data from the BLS Quarterly Census of Employment and Wages. Privately owned museums accounted for 130,700 of those workers. Another 64,300 workers were employed in museums operated by local and State governments. And 24,700 worked in the Federal Government's museums. (See chart.)

Percent distribution of employment in museums, historical sites, zoos, and parks, 2008



But not all museum-related workers are employed directly by museums. Some work for firms that museums hire to perform tasks such as conservation, packing and shipping objects, and designing exhibits. Others are self-employed.

There are many types of museums. Some exhibit objects, such as paintings and historical artifacts; others focus on providing an experience. Museum types include art, natural history, and children's museums; science and technology centers; botanical gardens; nature centers; and zoos and aquariums. (Jobs in zoos or aquariums, although included in the total number of workers shown in the chart, are not discussed specifically in this article.)

Museums range in size from large, internationally renowned institutions employing thousands of workers to small, regional museums operated entirely by volunteers. In fact, small museums play a significant role in this industry. According to the American Association of Museums, half of all museums polled in a recent survey employed fewer than seven full-time and five part-time people.

Securing funding for museums is sometimes difficult, in part because museums are usually nonprofit organizations. Most depend heavily on charitable contributions and on money collected from admissions fees, food and museum store sales, building rentals, and other revenue sources. Smaller proportions of museums' operating budgets typically come from grants and other Federal, State, or local government funding and investment income, such as that from endowments. And some museums have a parent organization, such as a college or university, which provides services such as building maintenance or security.

Categories of work

Many positions in museums, such as maintenance and repair workers or administrative assistants, are common to other types of facilities. Other jobs are unique to museums. (For a list of some of the most common occupations in private industry museums—ones that also pay the best—see the table above, at right.)

Median annual wages of selected museum occupations in private industry, May 2008

Occupation	Median wage, May 2008
General and operations managers	$78,020
Accountants and auditors	55,390
Curators	42,850
Public relations specialists	42,120
Set and exhibit designers	39,770
Archivists	37,330
Executive secretaries and administrative assistants	37,180
First-line supervisors/managers of retail sales workers	35,930
Instructional coordinators	35,220
Museum technicians and conservators	34,620
Self-enrichment education teachers	32,050
Bookkeeping, accounting, and auditing clerks	31,280
Maintenance and repair workers, general	30,000
Landscaping and groundskeeping workers	24,100
Security guards	23,550

No matter what their jobs are, all these workers contribute to a museum's mission. In some museums, especially smaller ones, this may mean that one person does the tasks associated with several jobs: "The curator might be the director, collections manager, education coordinator, gift shop manager, and janitor," says Greg Stevens, a museum educator and director for professional development at the American Association of Museums. Teamwork is also an important part of many museum jobs.

Museum work can be grouped into three broad categories: collections management and care, exhibit design, and education. Occasionally, the three overlap. For example, an exhibit's design often takes into account its educational goals. And proper care of objects must be maintained when designing an exhibit. Similarly, occupations sometimes fall into more than one category. In this article, occupations that span categories are included

in each. Also mentioned are alternative places of employment if museum-related work is available outside a museum.

Collections management and care

Essential to most museums are the objects in it. Museums commonly have thousands—if not millions—of objects in their collections, either on display, in storage, or on loan to other institutions. Objects might be documents, artwork, historic artifacts, or almost any other item of value or interest.

Technology helps workers keep track of objects in a museum's collection. For example, detailed information about the history, condition, and location of an object is often stored in computer databases. Additionally, some collections are in the process of being put online to make them more accessible to both museum staff and the public.

Workers who manage and care for a museum's collections are experts on handling items to minimize damage, and they understand how temperature, light, humidity and other factors can harm these objects. These workers ensure that their museum's collections are preserved and shared with the public in a meaningful way. Some of these workers include archivists, collections managers and registrars, conservators, curators, and preparators.

In May 2008, median wages of collections management and care occupations varied in the museum industry, according to BLS. Some examples are $42,850 for curators, $37, 336 for archivists, and $34,620 for museum technicians and conservators—an occupation that includes both low-skilled and highly skilled workers whose wages are likely to represent a broad range.

Archivists. Archivists manage permanent records and other documents of value, such as letters, photographs, and electronic files, and make decisions about which records to archive. Then, they categorize, file, and ensure the preservation of those records. Archivists also may perform research related to the records they keep and help make the records available to others.

Collections managers and registrars. To keep track of both the objects in a museum's collection and the information related to those objects, collections managers and registrars ensure accountability and access to those items. These workers also maintain inventories, files, and databases and manage the paperwork and related duties associated with a museum's objects. Tasks might include handling arrangements and documentation associated with gifts to the museum or with loans of objects, as well as making certain that objects are insured.

Museums sometimes distinguish between collections managers and registrars, with collections managers responsible for the physical care of objects and registrars for the documents and data associated with them.

Conservators. Conservators assess, preserve, and restore the condition of objects. They study objects' chemical and physical composition to authenticate the objects and to better understand how to care for them. These workers usually specialize in a particular type of object or medium—such as furniture, paintings, or textiles—and often work in museums' conservation departments or in conservation centers that provide services to museums and private collectors.

Curators. As the caretakers of part or all of a museum's collection, curators research, write about, and explain collections. Curators also help to acquire new items for a museum and recommend which items to remove from a collection. The head curator in a museum is sometimes also the museum director. (For other curatorial tasks, see the section on exhibit design.)

Preparators. These workers pack and prepare objects for shipment or storage and help get objects ready for display, such as by framing artwork or by creating mounts to support objects. They also might transfer objects within a museum—from storage to the conservation laboratory, for example—or bring objects to and from locations outside the museum. Other tasks can include photographing objects in a collection and helping to maintain inventory records. Some preparators

Registrars maintain the paperwork associated with museum objects.

work directly for museums; others work for outside companies that museums hire to transport objects and exhibits. (For more about preparators, see the section on exhibit design.)

Exhibit design

All types of museums rely on workers to help create or update their exhibits. Natural history museums, science centers, and children's museums have some of the largest exhibit design needs.

Creating a museum exhibit is complex and usually involves a team of workers. Exhibits today frequently incorporate interactive media and other technologies, such as touch-screen kiosks or audio tours, to help visitors have a more dynamic experience. Among the workers who create these interactive media are computer software engineers, scriptwriters, and audiovisual staff. Other workers perform tasks such as determining the desired contents of an exhibit or writing text about an exhibit's displays.

Some museums have in-house design departments. Others rely on workers who have duties in addition to exhibit design. Still others hire exhibit design firms to help them create their exhibits. Curators, exhibit designers, exhibition managers, fabricators, museum educators, and preparators are among the occupations involved in creating museum exhibits.

According to BLS, in May 2008, median wages for exhibit design occupations in the museum industry varied by specialty. Examples include $19,430 for craft artists, $36,410 for audio and video equipment technicians, $39,770 for set and exhibit designers, and $44,090 for writers and authors.

Curators. These workers, caretakers of museum collections, often oversee an exhibit's creation and design. Based on their subject matter expertise, curators provide input about an exhibit's overall theme and prospective objects. The degree of a curator's involvement varies; some are closely involved in every

In directing the creation of museum exhibits, exhibition managers work with curators and exhibit designers, among others.

aspect of an exhibit's design, and others have more of a consulting role. (See also the section on collections management and care.)

Exhibit designers. Exhibit designers take concepts, ideas, and objectives about exhibits and turn them into designs that can be implemented. The process often involves using computer software to develop and refine drawings, models, and prototypes of the different parts of an exhibit. These designers might, for example, help design and create wall hangings, historical reproductions, or interactive media. Exhibit designers also determine where to put exhibit items and which path visitors should follow when viewing. They communicate these ideas to other workers on the exhibit design team and to workers who build the exhibit. Designers frequently are employed by exhibit design firms, although some work for museums.

Exhibition managers. Exhibition managers oversee and direct the creation of museum exhibits. This oversight includes planning and developing budgets and timelines; communicating with curators, exhibit designers, and others involved in developing the exhibit; and coordinating all work required for the finished display. These workers, who might also be called project managers, may help to promote the exhibit. They may be employed either by a museum or by an exhibit design firm. Their jobs require exhibition managers to stay current on the latest trends in exhibit design.

Fabricators. These workers build an exhibit's parts, such as the climbing gym in a children's museum or a life-sized replica of a space shuttle for a science museum. Fabricators often specialize in a particular trade or aspect of fabrication and may have other job titles, such as carpenter or welder. They commonly are employed by exhibit design firms or work for museums on a contract basis.

Museum educators. Using their understanding of how people learn, museum educators suggest ways to structure an exhibit to optimize visitors' experiences. These workers also help decide which information to share in the exhibits. Additionally, they assist in developing supplemental materials, such as handouts or exhibit brochures that further convey an exhibit's message. Educators may have other duties that support the mission of the museum that are not specifically related to exhibits. (For more information on a variety of museum educators, refer to the section on education.)

Preparators. As the job title suggests, preparators prepare objects for display and help to install them in exhibits. They also might prepare the exhibit space by doing simple construction, building exhibit cases or display units, painting, and hanging text labels or other informative materials. Other tasks sometimes include performing routine maintenance, making mounts, or helping to take down old exhibits. (See also the section on collections management and care.)

Education

All museum workers who help visitors learn about history, culture, and the world around them are involved—to some extent—in edu-

cation. Some, however, focus specifically on this task.

Education-related museum jobs have become increasingly prominent in recent decades, as museums place greater emphasis on informal or experiential learning. Today, most museums employ at least one person who is responsible for its educational programs and objectives; some museums dedicate an entire department to education.

Workers involved in museum education are usually experts on methods of teaching and presenting information. But they also must understand the history and significance of their museum's mission. Workers might consult with curators and other subject matter experts or perform their own research.

A general title used for many of the occupations performing this work is museum educator. Museum educators' tasks might range from developing instructional materials to coordinating public outreach programs. More specific titles include education directors, educational technology specialists, evaluators, public programs coordinators, school programs coordinators, tour guides, and volunteer coordinators.

Examples of median wages in May 2008 for education-related occupations in the museum industry, according to BLS, were $19,390 for tour guides and escorts, $32,050 for self-enrichment teachers, and $35,220 for instructional coordinators.

Education directors. Sometimes called curators of education, these workers oversee a museum's educational efforts and are often in charge of its education department. They take care of hiring and budgeting for this department and ensure consistency across its educational programs. These directors also might help to create and promote a museum's educational offerings.

Educational technology specialists. These specialists develop, maintain, or improve various forms of technology-based learning. For example, they might design audience-specific Web sites, such as those for teachers, young children, or teens. Or they might coordinate distance learning programs that use videoconferencing or other technologies that allow users—such as students in a classroom—to view museum collections remotely.

Evaluators. Evaluators study the effectiveness and appeal of a museum's programs and exhibits. They conduct interviews and administer surveys to determine what a museum's audience likes, what it is learning, and which methods of presenting information work best. They analyze this information, often summarizing the results in written reports that offer suggestions for designing or changing educational programs and exhibits. Evaluators work either directly for museums or as consultants.

Public programs coordinators. Public programs coordinators develop lectures, symposiums, and other events related to a museum's collections or exhibits. Tasks associated

Workers involved in museum education are experts on methods for teaching and presenting information.

with these efforts might include researching topics of interest to the public, arranging for speakers, and working with a museum's events coordinator to ensure that programs run smoothly.

School programs coordinators. These workers develop educational materials for teachers and students. They might create teachers' guides to highlight parts of an exhibit, for example, or design worksheets for students visiting the museum. These coordinators also help to schedule museum tours for schoolchildren and either lead the tours or train guides, known as docents, to lead them. And they often perform outreach in schools to increase awareness about the museum.

Tour guides or docents. Tour guides or docents take groups or individual visitors through the museum, explaining the significance of exhibits and answering questions. Their efforts help to stimulate interest in the collections. These positions are frequently filled by volunteers and are often part-time.

Museum workers must be precise, detail-oriented, and have strong organizational and writing skills.

Volunteer coordinators. These coordinators help to manage a museum's volunteer program. Many museums have hundreds of volunteers who give tours or perform other tasks. Volunteer coordinators select and train these unpaid assistants and oversee their scheduling. And in some museums, especially smaller ones, they may be volunteers themselves.

Working in a museum

The museum industry is competitive, especially for popular museum occupations such as curators, conservators, and museum technicians—occupations for which BLS projects that employment will grow much faster than the average. (BLS does not have outlook information for every museum occupation discussed in this article.)

In highly competitive fields, workers who are willing to relocate for a job often increase their marketability. And for the best entry-level opportunities in museums, think small. "It's often easier to get a job at a small institution than at a large one," says the University of Colorado's Jim Hakala, "because there are so many historical societies and other small museums."

But many museum workers face the same challenges when funding is low. Budgetary constraints may mean that jobs are cut or that workers must continue to do their jobs despite limited resources. Museum work sometimes involves fundraising efforts to make up for these financial shortfalls. "We're constantly having events to raise money or trying to convince donors that we're worthy of funds," says Mike DiPaolo, executive director of the Lewes Historical Society in Lewes, Delaware.

The work hours of museum staff vary by position. Many workers have a standard weekday, daytime schedule, but some regularly work evenings or weekends to cover extended museum hours or special events.

Some positions involve travel. For some workers, like Jeanne Benas, a registrar at the

National Museum of American History, this travel includes transporting or acquiring new objects for the museum.

As a workplace, museums provide variety, both in tasks that need to be performed and in exhibits that change periodically. And that variety, say workers, encourages learning. "The best part about my job is that I get to be a perpetual learner," says Christine Reich, manager of research and evaluation at the Museum of Science in Boston. "Museums themselves are learning institutions, so you learn just by being in them." Conservator Pam Hatchfield agrees. "One of the reasons that I love my job so much," she says, "is that I'm always learning."

Getting there

Planning is beneficial when considering museum work, particularly for competitive occupations. This section describes the general skills, work experience, and education required for many museum careers.

Skills and training

Workers who handle museum items must be precise, detail-oriented, and comfortable being responsible for objects that are often valuable, delicate, or fragile. Written and oral communication skills are also important for many positions. And interpersonal skills are critical, because museum workers frequently interact with the public as well as colleagues.

Considering the possible overlap in job duties, people entering these careers should be flexible and willing to take on a variety of tasks. This overlap also means that organizational skills are important, because museum workers may have to coordinate everything from managing objects to scheduling tours. Other skill requirements are specific to the occupations. Artistic ability is helpful for exhibit designers, for example, and public programs coordinators must have a knack for finding ways to spark interest in a museum's collection.

Educational backgrounds sometimes vary widely within an occupation, depending on factors such as specific position description and museum needs. As a result, a curator at one museum might have a Ph.D.; at another, the curator might hold a master's degree. In another example, some preparators have a college degree, but others might have a high school diploma, plus experience.

Category of work and type of museum often shape the kind of education that workers need. Workers involved in museum education may be required to have an undergraduate or graduate degree in education, for example. Workers in an art museum usually need at least a bachelor's degree in art history or fine arts, and workers in a science museum might be required to have a degree in science.

Instead of or in addition to getting an advanced degree in a specialized subject, workers in some occupations—such as registrars, museum educators, and curators—earn a more generally focused master's degree or certificate in museum studies. Whether a general degree can or should replace a specialized one is a matter of debate, as is the question about what kind of education is important for museum work.

Many museum workers have academic training in subjects not directly related to museums. For example, Sonal Bhatt, director of interpretation and exhibitions at the Brooklyn Botanical Gardens in New York, has an undergraduate degree in marine biology.

Experience

Having prior museum experience is an important part of landing a permanent job, say experts. "I recommend that people get as much experience as they can because it gives them a broader base," says Hakala. "And, as the job market becomes more competitive, it's necessary."

But how do people get this important experience before they're even hired? Paid or unpaid internships and volunteer positions are common ways to gain museum experience. More than just a resume builder, these experiences provide valuable insights into the work. "Internships and volunteering help you find out what you want to do—or what you

don't want to do—in a museum," says curator Keni Sturgeon of the Mission Mill Museum in Salem, Oregon.

Internships and volunteering also help establish industry contacts. And networking is often a key to getting a museum job, in part because of the competitiveness of the industry. "You often hear, 'It's not what you know, it's who you know,'" says Sturgeon, "and that's especially true in museums." She, like many others in museum careers, learned of her current position through contacts that she'd made in the past.

Whichever path museum workers take, they must at least have enthusiasm for the museum's mission. "A big part of my job," says Bhatt, "is figuring out how to get people excited about the things that I'm excited about." Having the opportunity to convey to others her passion for science and nature is one of the things that Bhatt loves about her work.

Others appreciate the broader goals associated with working in a museum. "Museums really think about the social good and how to best serve their communities," says the Boston Museum of Science's Reich. "That's a great thing to be a part of."

For more information

In addition to the occupations described in this article, museums need many other workers: security guards, ticket takers, and cashiers, to name a few. Learn about these and other occupations in the Occupational Outlook Handbook, available online at **www.bls.gov/ooh** or in print at many career centers and public libraries.

Public libraries also may offer a variety of career resources for learning about work in museums. Look for the Official Museum Directory, a compilation of contact information for more than 8,300 museums nationwide.

The museum directory is published by the American Association of Museums, another source of career information. The association is accessible online at **www.aam-us.org** or by writing 1575 Eye Street NW., Suite 400, Washington, DC 20005; calling (202) 289-1818; or emailing *membership@aam-us.org*.

Some organizations are specific to occupations, including the following for archivists and for conservators:

Society of American Archivists
17 N. State St.
Suite 1425
Chicago, IL 60602
(312) 606-0722
servicecenter@archivists.org
www.archivists.org

American Institute for Conservation of Historic and Artistic Works
1156 15th St. NW.
Suite 320
Washington, DC 20005
(202) 452-9545
info@conservation-us.org
www.conservation-us.org

Many experts agree that the best way to learn about working in a museum is to volunteer or to get an internship in one. Call or visit a local museum to find out about opportunities, and research training programs by using college guidebooks or by talking to workers in the museum occupations that interest you.

Online resources that can help you locate training programs include:

- **museumstudies.si.edu/TrainDirect.htm**, for museum studies, historic preservation, public history, and nonprofit management programs, listed by State
- **www.acumg.org/studies.html**, for selected museum studies, education, exhibition and design, collections management, curatorial, and other programs, listed by type of training
- **www.globalmuseum.org** (Click on the tab for "Museum Studies," then click on "North America" for a list of museum studies programs throughout the United States and Canada.)

The 2010 SOC: A classification system gets an update

Alissa Emmel
and
Theresa Cosca

Making sense of occupational data isn't always easy. But the task is less daunting when the data are well organized. For Federal occupational statistics, the Standard Occupational Classification (SOC) system establishes that organization. And a recent revision to the SOC means that the data will be current, in addition to being well organized.

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The SOC assists Federal statistical agencies in organizing the occupational data they collect, tabulate, and analyze. Agencies that use the SOC include the U.S. Department of Labor, National Center for Education Statistics, U.S. Department of Defense, National Science Foundation, and U.S. Census Bureau. By classifying jobs into occupational categories, the SOC provides a standardized way for agencies to share their data.

This article explains the origins of occupational classification, the process for revising the latest SOC, and the results of that revision. It describes the kinds of changes the new SOC incorporates and how the updated system compares with its most recent predecessor. A final section discusses plans for future revisions and where to find more information.

Origins of classification

The Nation's first system for classifying occupations was the 1850 Census of Population, which listed about 320 occupations (such as carpenters, dentists, and lawyers—but also ice dealers, muleteers, and philosophical instrument makers). As data collection continued into the 20th century, the complexity of the statistics increased. This complexity was due, in part, to a growing number of occupations identified, which created an even greater need for a standard, comparable system of classifying them.

The Federal Government published the first SOC in 1977 in an attempt to unify agencies' independent collection of occupational data. But after a 1980 revision, the original SOC system was not universally adopted. Many agencies collected occupational data using classification systems that differed from the SOC.

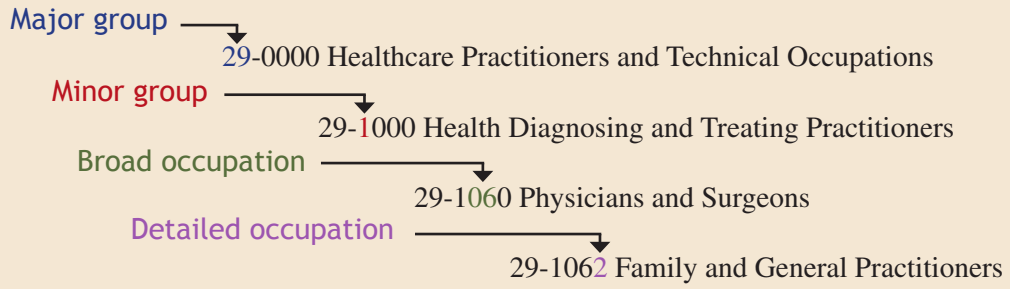
In 1993, the U.S. Bureau of Labor Statistics (BLS) hosted an international conference to create a new process for revising the SOC. The Office of Management and Budget, part of the Executive Office of the President, later asked Federal agencies with occupational classification systems different from the SOC to work together on SOC revisions. A SOC Committee was established with representatives from BLS, the Census Bureau, the Employment and Training Administration, and several other agencies.

Understanding the Standard Occupational Classification (SOC) structure

The recently released 2010 SOC follows the same basic structure as the 2000 SOC. Occupations performed for pay or profit are organized by numeric code. These 6-digit codes designate their placement by major group, minor group, broad occupation, and detailed occupation. Detailed occupations group together workers with similar skills performing similar tasks.

The hyphen between each code's second and third digits is for presentation clarity only. The first two digits of the SOC code represent the major group, the third digit represents the minor group, the fourth and fifth digits represent the broad occupation, and the sixth digit represents the detailed occupation.

Example:



Over several years, a 1998 SOC was developed and included improvements to the original SOC classification system. The SOC Committee published this revision as the 2000 SOC, and that system has been the primary Federal occupational classification—until now.

Revision process

Although the 2010 SOC retains the 2000 SOC structure (see box, above), its revisions increase clarity, correct errors, and account for changes in technology and in the nature or organization of work in our economy.

The SOC Committee, now called the SOC Policy Committee and comprising representatives from nine Federal agencies, coordinated the revision of the 2000 SOC. Beginning in 2006, the Office of Management and Budget and the SOC Policy Committee published notices in the *Federal Register* to solicit public comment, questions, and suggestions for the 2010 SOC.

The notices resulted in hundreds of comments. Based on these comments, the SOC Policy Committee proposed changes to codes, titles, and underlying classification principles for the 2010 SOC. The committee made a final recommendation to the Office of Management and Budget and completed the revision process in time for statistical agencies to start using the new system in 2010.

Revision results

The 2010 SOC revision process resulted in both major and minor changes to the 2000 SOC. The 821 detailed occupations in the 2000 SOC expanded to 840 in 2010—an increase that combines some occupations with others and adds new ones as well. Meanwhile, almost half of the detailed occupations in the 2010 SOC remain the same as in 2000. However, there were significant updates to information technology, healthcare, and human resource occupations.

Overall, the four kinds of revisions in the 2010 SOC are changes in editing, content, titles, and codes.

Editing changes. Most revisions in the 2010 SOC involve editing changes. Editing

changes include revisions to correct errors in the 2000 SOC, such as minor grammatical edits, but also involve improvements to definitions. Although even small changes can affect which workers are included in a particular occupation, most of the edits simply clarify definitions and incorporate advancements in technology and changes in work that occur over time.

In the 2000 SOC, for example, definitions for both the Motorboat Mechanics and the Bus and Truck Mechanics and Diesel Engine Specialists occupations mentioned diesel engines. Coders—the analysts responsible for assigning the numeric codes to individual workers—wondered where to put marine diesel engine specialists in the SOC. Mechanics for both diesel and nondiesel engines are included with Motorboat Mechanics. But a definitional edit to Bus and Truck Mechanics and Diesel Engine Specialists in the 2010 SOC specifies that this occupation includes mechanics working primarily with both automobile and marine diesel engines.

Other editing changes improve descriptions of the work performed. For example, the brief definition for Nuclear Power Reactor Operators expanded between the 2000 SOC and the 2010 SOC, from 2000's "Control nuclear reactors" to 2010's "Operate or control nuclear reactors. Move control rods, start and stop equipment, monitor and adjust controls, and record data in logs. Implement emergency procedures when needed. May respond to abnormalities, determine cause, and recommend corrective action." The additional detail more accurately and completely describes the tasks performed by workers in the occupation.

Content changes. Content changes are revisions to the 2000 SOC that involve the addition or deletion of occupational titles. These changes divide one occupation in the 2000 SOC into two or more new occupations in the 2010 SOC, or they merge two or more occupations in the 2000 SOC into a single one in the 2010 SOC. Of the 60 content changes, most occurred in the Healthcare Practitioners and Technical Occupations group. (See table 1.)

It is not surprising that most content changes are in the Healthcare Practitioners

and Technical Occupations group, considering that one-third of the new occupations in the 2010 SOC are in this major group. The new occupations in this group are Exercise Physiologists, Genetic Counselors, Hearing Aid Specialists, Magnetic Resonance Imaging Technologists, Nurse Anesthetists, Nurse Midwives, Nurse Practitioners, and Ophthalmic Medical Technicians.

Title changes. More than 100 occupations had a title change from the 2000 SOC to the 2010 SOC. Often, title changes help to clarify which workers are in an occupation. In other cases, titles change to keep up with developments in technology or with shifting terminology.

An example of a title change to clarify workers in an occupation is the revision to the 2000 SOC title of First-Line Supervisors/Managers, which covered all kinds of direct supervisors and managers. In the 2010 SOC, those titles are shortened to First-Line Supervisors to clarify that most managers belong in different occupations in the managerial group. Thus, the shorter titles in the 2010 SOC better clarify the difference between occupations such as First-Line Supervisors of Retail Sales Workers (a supervisory occupation) and Sales Managers (a managerial occupation).

A title change reflecting technological developments is Radio Mechanics from the 2000 SOC, which became Radio, Cellular, and Tower Equipment Installers and Repairers in the 2010 SOC. The expansion of this title acknowledges advances in technology systems, such as cellular communications and

Table 1
Content changes to the 2010 Standard Occupational Classification (SOC) system, by content changes to occupational group

Intermediate group title and major groups included	Number of content changes
Healthcare Practitioners and Technical Occupations (29)	13
Education, Legal, Community Service, Arts, and Media Occupations (21-27)	10
Management, Business, and Financial Occupations (11-13)	9
Service Occupations (31-39)	8
Computer, Engineering, and Science Occupations (15-19)	6
Production Occupations (51)	5
Construction and Extraction Occupations (47)	4
Installation, Maintenance, and Repair Occupations (49)	3
Office and Administrative Support Occupations (43)	2
Sales and Related Occupations (41)	1
Farming, Fishing, and Forestry Occupations (45)	0
Transportation and Material Moving Occupations (53)	0
Military Specific Occupations (55)	0

mobile broadband, that have emerged in the past decade.

An example of a title change to keep up with shifting terminology is Career/Technical Education Teachers. This 2010 SOC title replaces the dated title of Vocational Education Teachers from the 2000 SOC.

Code changes. As mentioned previously, each occupation in the SOC has a 6-digit code that designates its placement within the SOC structure. Comparing the 2010 SOC with the 2000 SOC, 60 detailed occupations changed codes—including 9 that moved into a different major group of closely related occupations. (See table 2.) These code changes demonstrate the SOC Policy Committee's analysis of the types of skills needed to perform the work.

For example, Flight Attendants were classified in the 2000 SOC with Personal Care and Service Occupations. But their code change in the 2010 SOC, to Transportation

Table 2
Occupations shifting major groups between the 2000 and 2010 Standard Occupational Classification (SOC) systems

2000 SOC occupation and code	2010 SOC occupation and code
Emergency Management Specialists (13-1061)	Emergency Management Directors (11-9161)
Farm Labor Contractors (45-1012)	Farm Labor Contractors (13-1074)
Sales and Related Workers, All Other (41-9099)	Fundraisers (13-1131)
Business Operations Specialists all other (13-1199)	Market Research Analysts and Marketing Specialists (13-1161)
Market Research Analysts (19-3021)	
Public Relations Specialists (27-3031)	
Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation (13-1041)	Transportation Security Screeners (33-9093)
Security Guards (33-9032)	
Protective Service Workers, All Other (33-9099)	
Funeral Directors (11-9061)	Morticians, Undertakers, and Funeral Directors (39-4031)
Construction and Related Workers, All Other (47-4099)	Solar Photovoltaic Installers (47-2231)
Roofers (47-2181)	
Electricians (47-2111)	
Heating, Air Conditioning, and Refrigeration Mechanics and Installers (49-9021)	
Installation, Maintenance, and Repair Workers, All Other (49-9099)	
Flight Attendants (39-6031)	Flight Attendants (53-2031)
Transportation Attendants, Except Flight Attendants and Baggage Porters (39-6032)	Transportation Attendants, Except Flight Attendants (53-6061)

and Material Moving Occupations, reflects that their work aligns more closely with that performed by other air transportation workers.

Codes also changed for detailed occupations that were pulled out from a broad occupational grouping. For example, in the 2000 SOC, Training and Development Specialists were included in the broad occupational grouping of Human Resources, Training, and Labor Relations Specialists. But in the 2010 SOC, Training and Development Specialists have their own broad occupation of Training and Development Specialists. This code change addresses coders' confusion about how to classify a Training and Development Specialist who may not work directly in the human resources department—such as an instructor for a company that provides computer software training. In the 2010 SOC, these workers more clearly fall under Training and Development Specialists.

Next steps and more information

The SOC, like other statistical classification systems, must be updated periodically to increase accuracy in collecting and reporting data. If classification systems are revised too often, quality might suffer because the data lose comparability. But, especially with occupational data, the need for revision is crucial for keeping pace with the rapidly changing workforce.

Balancing the need for continuity against the importance of staying current, the Office of Management and Budget and the SOC Policy Committee expect that the next revision of the SOC will begin in 2013 for publication in 2018. BLS will share details as they become available on how to submit suggestions for changes to the 2010 SOC.

All SOC definitions are available online from the SOC section of the BLS Web site, **www.bls.gov/soc/soc_2010_definitions.pdf.**

For a complete list of the types of changes made to the 840 occupations in the 2010 SOC, see **www.bls.gov/soc/home.htm#materials.**

For more information about the 2010 SOC, comparisons between the 2000 and 2010 systems, and plans for switching to the 2010 system, visit **www.bls.gov/soc**, call (202) 691-6500, or email *soc@bls.gov*.

YouthRules! for youth employment

Summer is the hottest season for teen workers, with many young people diving into the Nation's labor pool each June and July. Whatever the season, the U.S. Department of Labor can help you navigate the waters of youth employment.

The department's YouthRules! Web site helps increase public awareness of Federal and State rules concerning young workers. The site—available in both English and Spanish—provides teens, parents, educators, and employers with information about which jobs young workers are allowed to hold and what hours they are allowed to work. There is also information on preventing workplace injuries.

The Web site includes summaries of Federal rules for different workers in various age groups. An interactive map links to the sites for individual States, which may impose additional rules. Awareness of laws can help you narrow and focus a job search; for example, workers under age 18 are allowed to hold most jobs in a shopping mall, but none in a coal mine.

The Web site also contains a compliance-assistance section for employers, which includes links to information regarding young workers. And a variety of educational materials, such as posters, bookmarks, and stickers, may be ordered or printed directly from the site.

Visit **www.youthrules.dol.gov** or write to the U.S. Department of Labor Wage and Hour Division, Frances Perkins Building, 200 Constitution Avenue NW., Washington DC 20210; call toll-free, 1 (866) 4–USWAGE (487–9243); or send an email via **www.dol.gov/whd/contactform.asp**.

Learn more, work more

Education is a great career investment, data from the U.S. Bureau of Labor Statistics (BLS) confirm. Among 22-year-olds surveyed for the BLS National Longitudinal Survey of Youth 1997, those with more education were most likely to be employed. (The National Longitudinal Survey data measure labor market and other activities of a group of people over time. The group has been surveyed 12 times since 1997.)

Data from the survey show that 88 percent of college graduates were employed at age 22, compared with 58 percent of high school dropouts. For women, the disparity is even more pronounced: 90 percent of female college graduates were employed at age 22, versus 49 percent of high school dropouts.

For a detailed discussion of the National Longitudinal Survey data, see **www.bls.gov/news.release/pdf/nlsyth.pdf**. Or, write to the BLS National Longitudinal Survey Program, 2 Massachusetts Avenue NE., Suite 4945, Washington, DC 20212; call (202) 691–7410; or email *NLS_info@bls.gov*.

Most of these respondents were surveyed before December 2007, when the Nation entered a recession. Data from other sources, however, also show the benefits of educational attainment. See, for example, the OOChart in this issue of the *Quarterly*.

Arboreal occupations: 50 careers in trees

If you want to combine your passion for trees with your occupation, knock on wood: The Tree Foundation of Kern County, California, has career information for you.

The Foundation, a nonprofit that promotes urban and community forestry, has compiled a list of 50 occupations related to trees. Some of the occupations listed, such as accountant, are defined loosely in their relation to trees. But others, such as arborist, are more tree-centric.

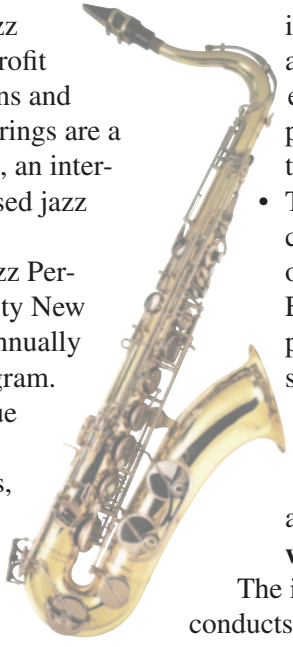
Clicking on an occupation links to its description, each of which includes a broad discussion of the occupation, and, in some cases, workers' insights and observations. All entries discuss the tree-specific aspects of the occupation. The information for writers, for example, mentions career options of writing magazine articles about trees and tree care or composing press releases for tree-planting organizations.

To see the foundation's list, go to **www.urbanforest.org/treecareers**. And for more detailed occupational information—including job duties, employment outlook, training requirements, earnings, and more—about the tree careers you see there, visit the BLS *Occupational Outlook Handbook*, online at **www.bls.gov/ooh**.

Jazzy tuition, competition, and instruction

Do you dream of a career with syncopation? A vocation in improvisation? If so, the Thelonious Monk Institute of Jazz wants to help nurture that dream.

The institute, named for the American jazz pianist and composer (1917–1982), is a nonprofit organization that focuses on training musicians and promoting instruction in jazz. Among its offerings are a scholarship-award jazz performance program, an international jazz competition, and an Internet-based jazz curriculum for grades 5, 8, and 11.



- The Thelonious Monk Institute of Jazz Performance, hosted by Loyola University New Orleans, accepts 10 jazz musicians annually for a 2-year master's or diploma program. Applicants must be planning to pursue a career as a performing or recording jazz musician in acoustic bass, drums, guitar, piano, saxophone, trombone, trumpet, vibraphone, violin, or vocals. Selected students receive full-tuition scholarships and monthly stipends toward living expenses or accommodations in university housing facilities. (See **www.monkinstitute.org**; click the "college program" tab.)
- The Thelonious Monk International Jazz Competition focuses on a different musical instrument each year; the 2010 competition is for jazz vocalists. Following two rounds of live performances, three musicians win prizes ranging from $5,000 to $10,000. Half of each prize is to be used for the winner's musical studies, and the remaining half may be used for other expenses related either to education or to career promotion. (See **www.monkinstitute.org**; click the "competition" tab.)
- The National Jazz Curriculum is available at no cost online for use in social studies, U.S. history, or music classes in 5th, 8th, and 11th grades. Each curriculum features eight 50-minute lesson plans that provide an overview of jazz history, styles, performers, and composers, as well as the various contexts through which jazz evolved. In addition, the institute leads workshops to help familiarize teachers and administrators with available curriculums and Web site. (See **www.jazzinamerica.org**.)

The institute also produces television specials and conducts a jazz sports program, international presentations, and other education initiatives.

For detailed information about any of these programs or resources, email *info@monkinstitute.org*, visit online at **www.monkinstitute.org**, or click the "contact" tab on the Web site for the addresses and phone numbers of its three offices (Washington, D.C.; Los Angeles; and New Orleans).

Informational interviewing: Get the inside scoop on careers

Olivia Crosby (updated by Tamara Dillon)

Want to know what a career is really like? Ask someone with first-hand experience.

Many people wonder anxiously about which type of job they'll like or how they can break into the career of their dreams. Surprisingly, very few people ever take advantage of one of the best ways to answer their questions about careers: asking the workers already in them.

Talking to people about their jobs and asking them for advice is called informational interviewing, a term coined by career counselor and author Richard Bolles. And the technique usually works very well for people exploring careers. Stories abound of students who used informational interviewing to decide among occupations or to find a way to convert their interests to a paying job.

Some people who conduct informational interviews discover their dream job isn't so dreamy after all. By learning the truth in time, they can change course and find a career that suits them. Others have their career goals confirmed.

Informational interviewing can be as simple as striking up conversations with friends or others about their occupations. But taking full advantage of this career exploration tool requires a more methodical approach.

Read on to learn the purpose of informational interviewing; whom to interview; how to set up, prepare for, and conduct an interview; and what to do afterward.

The what and why of informational interviews

An informational interview is a brief meeting between a person who wants to investigate a career and a person working in that career. The interviews usually last 20 to 30 minutes.

The purpose of an informational interview is not to get a job. Instead, the goal is to find out about jobs you might like—to see if they fit your interests, skills, and personality.

Specifically, interviews can help you:

- Learn more about the realities of working in a particular occupation
- Decide among different occupations or choose an occupational specialty
- Focus career goals
- Discover careers you never knew existed
- Uncover your professional strengths and weakness

Olivia Crosby wrote this article for the Summer 2002 OOQ *while working in the Office of Occupational Statistics and Employment Projections, BLS. Tamara Dillon is an economist in that office and can be reached at (202) 691-5719 or* dillon.tamara@bls.gov.

- Find different ways to prepare for a particular career
- Gather ideas for volunteer, seasonal, part-time, and internship opportunities related to a specific field

Informational interviews also provide an inside look at an organization you may want to work for in the future. And these interviews aid in polishing communication skills, helping jobseekers gain confidence and poise before the high-pressure situation of a job interview.

Deciding whom to interview

Before selecting someone to interview, you'll need to decide which occupations you want to learn more about.

You may already have some ideas about the kinds of work you want to do. But, if you are stymied, consider visiting a career or guidance counselor. He or she can help you to clarify your interests and favorite skills and goals for earnings, work setting, and future education. Career guidance tests also can produce lists of careers that match one's temperament. Browsing occupational descriptions online, including those in the U.S. Department of Labor's *Occupational Outlook Handbook* and O*NET occupational database, is another good way to identify careers—as is reading books written by career experts.

Additional detailed information is available from professional associations and trade magazines. The more you research possible occupations, the better your questions will be when conducting informational interviews.

After identifying a few possible occupations, it is time to choose people to interview. Look for people actually working in the occupations you are considering. These people probably know more about what the work is like than human resources specialists or hiring managers do. It's also important to choose people with the same level of responsibility you would have if you entered the occupation. If you would be working in an entry-level job, interview workers who are at or close to entry level rather than interviewing supervisors.

How can you find these people? The easiest way to start is to ask people you already know. Family members, friends, teachers, or past coworkers may work in the occupation you want to explore, or they may know people who do.

Career centers and alumni offices of high schools or colleges are another good source of contacts. These offices usually keep track of graduates and their occupations. Many schools maintain lists of graduates who have agreed to give informational interviews. Schools also may have the names of other community members who have offered to provide career assistance.

In addition, professional associations maintain membership directories and often publish them. Many also produce trade magazines and newsletters describing the activities of specific members. These members might be potential interview subjects. Speaking to association administrators can be useful, as well. They often know a few members who are especially willing to talk with students and career changers.

Interviewees also can be found by contacting businesses and organizations that hire the types of workers you hope to consult. To find a person to interview, call an organization and ask to speak with the human resources department or another appropriate office. If a caller wanted to interview a graphic designer,

for instance, he or she could ask for the design department.

Making contact

After finding people to consult, you are ready to arrange interviews. Contact the people you hope to meet, and ask to speak with them briefly about their careers, making it clear that you want information—not a job.

For most people, this is the most difficult part of informational interviewing. Asking strangers for career help can be daunting, and some people wonder why anyone would agree to be interviewed.

But, in fact, many people are willing to help students and career changers explore occupations. People often like talking about themselves and their careers. Some are happy to advance their profession by encouraging others to enter it. And a few found their own careers as a result of informational interviews and are eager to pass on their good fortune. Even if some people are not willing or able to talk with you, chances are that others will be. Also, as standard practice, many employers recommend that their managers conduct a certain number of informational interviews every month.

There are three main ways to arrange for an informational interview: through an introduction from a mutual acquaintance, by letter or email, and by telephone.

Mutual acquaintance introduction. Friends and family can be very helpful in setting up an informational interview. If someone you know knows someone you would like to interview, that person might be willing to make the initial request for you. After he or she makes the first request, you can call to arrange a date and time for the interview. Friends, family, and acquaintances also can become referrals—people whose names you can mention when writing or calling contacts yourself. People are usually more willing to talk to those with whom they have a connection. A mutual acquaintance can be that connection.

Letter or email. A more common way to ask for an interview is to send a letter or email. Some employers prefer to receive

From: Megan Brown [mbrown@emailaddress.com]
To: Kenneth Smith [Kenneth.smith@abc.org]
Subject: University of North Carolina student seeking career advice

Dear Mr. Smith:

As someone with experience in finance, you have insight into finance occupations. I am hoping you can share some of that insight with me as I research financial management careers.

Currently, I am a full-time student at the University of North Carolina. I am not seeking an employment interview; rather, I am interested in gathering information about finance careers.

I will call next week to request an appointment. I would appreciate if we could meet for about 20 minutes.

Thank you for your time as I explore potential careers.

Sincerely,

Megan Brown
mbrown@emailaddress.com
(555) 123-4546

written correspondence before you call to set up interviews. In part, this is because letters give them time to check their schedules before responding. When writing, explain who you are, why you want to meet, and how long you expect the meeting to take.

You also might mention how you found the person's name. Did someone suggest that you write? Did you find the name through your school? Did you read about him or her in a newsletter or industry publication? This kind of information adds credibility to your request.

In the last part of the letter or email, state that you will telephone for a response on a particular day. Be sure to make this followup call. (See the sample letter below and the sample email on the facing page.)

Jane Ryan
15 Spring Road
Hamlet, LS 41112
(555) 302-8585
jryan@emailaddress.com

August 25, 2010

Ms. Susan Carson
Director
Hamlet Child Development Center
Hamlet, LS 4112

Dear Ms. Carson:

I am a student at Hamlet Community College. Currently, I am investigating careers to learn which would be best for me. I am very interested in the childcare profession and would appreciate the opportunity to talk to you about your work.

I found your article in the *Hamlet Gazette* about teaching phonics to preschoolers. After reading the article and learning about the Child Development Center, I am confident that your insight could help me.

I will call on Friday to request an appointment. Ideally, we can meet for about 20 minutes.

Thank you for considering my request.

Sincerely,

Jane Ryan

Jane Ryan

Telephone. Calling people directly is a faster—but often more stressful—way to arrange an interview. Callers give the same type of information they would give in a letter. They say hello, ask if it is a good time to talk, mention who they are and how they got the person's name, and explain that they would like to meet to learn more about the person's career. To help this introduction go smoothly, experts advise practicing once or twice before making calls.

Be prepared to meet resistance. Some people might think you are calling for a job. You should reassure them that you are only exploring careers. Other people might say they have no time to talk. Being careful not to be too forceful, you might ask if there is a better time to call. Suggesting a telephone interview instead of an in-person meeting is another option. With a phone interview, you lose the chance to see the work environment but gain speed and convenience.

If people still cannot speak with you, some career counselors suggest asking them if they know of anyone else who might be able to help. Also, a good rule of thumb is three attempts at making contact with someone you are interested in interviewing. After a failed third attempt, it's best to move to the next name on your list.

Preparing to interview

With appointments in place, the next step is to get ready for the interviews by researching the occupation and the organization, creating a resume, and developing questions.

Research. Learning about the organization where the interview will take place is an important part of interview preparation. Although you probably do not need as much research for an informational interview as you would for a job interview, knowing something about the organization will make your questions better—and will demonstrate enthusiasm and create good will. Company literature and Web sites are good sources of background information, as are a company's annual reports and an industry's trade magazines.

Creating a resume. You also may want to write a resume to bring to the interview. A well-written resume demonstrates seriousness and professionalism. The people you interview might ask to review this resume to learn about your experience and education. This allows them to provide more relevant advice. Some interviewees might be willing to review the resume and suggest improvements. (For guidelines on writing a resume, see "Resumes, applications, and cover letters" in the summer 2009 issue of the *OOQ*, available online at **www.bls.gov/ooq/2009/Summer/art03.pdf**.)

A few counselors recommend against bringing a resume, saying that informational interviewers should use the results of the interview to decide what type of resume to write. If you do bring a resume to the interview, these counselors suggest sending those you interview a final "replacement" resume after deciding which career to pursue.

Developing questions. The most critical part of preparing for an informational interview is to compose—and perhaps jot down—the questions you want to ask. Although informational interviews are relaxed, with opportunities for spontaneous discussion, they also need to be focused and organized so that interviewers gather the information they need.

Before preparing a set of questions, think about what you want in a job. The questions should help you learn if the interviewee's occupation has those characteristics. In addition, think about any preconceived ideas you have about the occupation. You might believe that all teachers have the summer off, for instance, or that most scientists spend nearly every day in a laboratory. Asking about these assumptions helps determine whether your ideas are accurate.

Remember that the purpose of the interview is to get a feeling for what a particular type of job is actually like. You want to be able to imagine yourself in the job and to see whether you would enjoy it. You also need specific information about job tasks, working conditions, and career preparation.

Try to choose open-ended questions instead of questions that can be answered with a "yes" or "no." Informational interviewers learn the most if they can make the interview conversational.

The following are examples of possible questions. There would not be time to ask all of these in a single meeting. A good guideline is to choose about 10 questions that most interest you.

Questions about the job

- What kinds of tasks do you do on a typical day or in a typical week?
- What types of tasks do you spend most of your time doing?
- What do you like best about this job?
- What excites you most about this job?
- What are some of the more difficult or frustrating parts of this career?
- I really like doing _____. Do you have an opportunity to do that type of work in this career?
- What characteristics does a person in this job need to have?
- Do you usually work independently or as part of a team?
- What types of decisions do you make?
- How does your work fit into the mission of the organization?
- What types of advancement opportunities are available for an entry-level worker in this career?
- I read that_____ is an issue in this occupation. Have you found that to be true?
- Is this career changing? How?

Questions about working conditions

- What kind of hours do you work?
- Is your schedule flexible or set?
- Are those hours typical for most jobs in this occupation, or do some types of jobs have different hours?
- Does this career include or require travel?
- Do you have any health concerns associated with your career? How does this career affect your lifestyle?

Questions about training

- How did you prepare for this career?
- How did you find this job?
- Do you have any advice on how people interested in this career should prepare?
- What type of entry-level job offers the most learning opportunities?
- Do you know anyone in this career who has my level of education or my type of experience? How did he or she get the job? (These questions are useful for people trying to enter a career when they don't have the typical credentials.)

Questions about other careers and contacts

- Do you know of any similar careers that also use _____ or involve _____?
- I know that people in this career specialize in _____and _____. Do you know of any other specialties?
- I think I really like this career. But do you know of similar jobs that do not have this_____ characteristic?
- Can you suggest anyone else I could ask for information? May I tell them that you have referred me?

Interview day: What to wear, what to do

An informational interview is more casual than a job interview. This casualness is part of its charm. Informational interviews should still be professional, however. Making a positive first impression shows you care about your career. What's more, if you decide you like the occupation you are investigating, you could end up interviewing for a job with some of the people you meet. And they might remember you and the impression you made.

Dress well. On the day of the interview, dress neatly. A good guideline is to dress how the person you are interviewing would dress on an important workday. Wearing a suit of a conservative pattern and color is the safest choice. For women, skirts should be no more than an inch above the knee, say counselors, and shoes should be polished and have a closed toe. Hair should be pulled back or cut short, and jewelry should be unobtrusive. Be sure to bring a notepad and a pen or pencil, and consider bringing a resume and a few business cards.

Be professional. As in all business meetings, arrive on time, but no more than 15 minutes early. When greeting receptionists, other employees, and the person you will interview, be friendly. Smiling and shaking hands will set everyone at ease.

Standard politeness is essential when meeting for the first time. Don't use first names unless invited to do so. Don't sit before your host does. And avoid slang, smoking, and chewing gum. The goal, say the experts, is to be comfortable without being sloppy.

You are leading this interview, so start by thanking your host for his or her time and briefly recounting why you have come. You might mention your goals and interests. Then, ask questions and listen carefully to the answers.

Listening is the foundation of a successful informational interview. If possible, the person you are interviewing should do most of the talking because you are trying to gather opinions and insights. As he or she talks, take notes to remind yourself of important facts and impressions. And be certain your interest shows.

Allow for casual conversation during the interview, but try to stay on track so that the most important questions are answered. You may need to guide your host gently back to the questions occasionally.

Because you are the interviewer, it is up to you to monitor time and end the interview when you said you would. As the ending point draws near, let your host know. Of course, it is fine to spend more time if your host wants to continue.

Always end the interview by thanking your host and asking two important final questions: Can you suggest other people I could speak to? And may I mention your name when I speak to them? The answers could be the starting point for your next informational interviews.

Say thank you. After the interview, show gratitude for your host's generosity by writing and sending a thank-you note within a few days. Counselors agree, the sooner, the better. This note can be quite brief, a paragraph or two expressing appreciation for the time spent and advice given and perhaps recalling a particularly helpful piece of information.

Drawing conclusions

Hopefully, you'll leave every informational interview with new insights about the career you want. By taking a moment to record your thoughts and feelings about the occupation and workplace of the person you interviewed,

you will be able to refer back to the interview when making career decisions. Try to answer questions like the following: What did you learn in the interview? What did you like? What didn't you like? Did you uncover any new concerns about or advantages to the occupation? What advice did you receive? Did you discover another occupation you might want to pursue? How was the work environment at this particular organization? And, finally, do you think you would be happy in this type of job or in this type of organization?

When evaluating an informational interview, counselors warn interviewers not to let impressions of a particular person or company cloud their judgment of an occupation. It is important not to base decisions on the opinions of one individual. Informational interviewers should conduct at least a few interviews in an occupation and try to confirm the information they find with other sources. Information about earnings or education, for example, can be supplemented with data from Bureau of Labor Statistics surveys or from professional associations.

If you decide you like an occupation, the investigation of it doesn't have to end with interviews. You can test it further with additional applied exploration, such as job shadowing or other hands-on opportunities. Early career exploration usually means a better-fitting career for you later.

You're a *what*?

Chimney sweep

Kathleen Green

Don't know your damper from your flue? Chimney sweep Dawn McDermott will be happy to explain the difference. She can also inspect a fireplace's working parts, clean your chimney, and provide other repairs and maintenance related to chimney upkeep.

With 26 years in the chimney-sweep business, Dawn knows chimneys inside and out. She's happy to clarify for customers who might confuse the duct that vents gases to the outside (the flue) with the adjustable plate that regulates airflow (the damper). "They may not know the terminology," she says, "but I still have to explain what they need to know."

Dawn considers customer education part of her job. Increased understanding encourages chimney safety, which in turn helps to prevent fires and other hazards associated with fireplaces, woodstoves, and heating systems.

For example, chimney fires often occur when residue from wood-burning smoke accumulates inside the flue. Buildup of this smoke residue, called creosote, can become so thick and solid that it reduces airflow in the flue, creating even more smoke and leading to more creosote deposits. Eventually, these deposits harden into a highly flammable glaze.

A chimney sweep—also called a "sweep"—inspects chimneys as well as cleans them. Some inspections are for a specific purpose, such as home appraisal, but most precede cleaning. "Inspection tells me a lot," says Dawn. "If you've got a 13- by 13-inch chimney opening, but it's got so much buildup that the only opening left is a pinhole, I can see right away there's a problem." A sweep might also discover that a chimney has structural flaws or shows signs of deterioration.

Inspections often start on the rooftop, but cleaning usually begins inside the home. And for conscientious sweeps like Dawn, that means preparing the work area first. "It's a dirty job," she says, "but we never touch anything with dirty hands. And we leave no dirt behind." Placing tarps over flooring and, if necessary, moving furniture out of the way helps minimize the mess.

After the tarps are down, chimney sweeps bring in their equipment: rods, wire brushes, attachments of various lengths and sizes, a high-powered vacuum, and special lighting. Sweeps also wear protective gear, including goggles and a respirator, to prevent soot from getting into their eyes and lungs.

The cleaning equipment is designed to give sweeps access along walls, into corners, onto ledges, or into other hard-to-reach areas inside chimneys. With the help of bright lights, chimney sweeps use their brushes and vacuum attachments to scrape and suction soot from inside the flue. Ideally, cleaning is done regularly enough that a worker can easily sweep the chimney—hence the occupation's title—before the soot becomes glossy and combustible.

But when creosote hardens, it bonds like glue to surfaces and can't be scraped off; in fact, attempting to chip away the solid buildup could cause structural damage to the chimney. In those cases, sweeps apply a chemical to the glaze to break it down over several days, after which they return to vacuum out these deposits. A third appointment is required to apply a chemical neutralizer and do a final sweep. For especially thick buildup, chimney sweeps may need to schedule additional appointments.

Dawn and her associate try to limit traveling time by scheduling each day's appointments within a single ZIP code. From September through January, their busiest season, they usually work 10-hour days 5 days a week. But that doesn't mean they're idle the rest of the year. "Spring and summer are actually the best time to sweep," says Dawn. "Removing all the surface soot gives relief to people who are allergic to it, especially when it's worse in the hot, humid summer months." It's also easier to

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get an appointment when they're not booked for months in advance.

Chimney cleaning requires a certain level of dexterity, because the job includes a lot of climbing, squatting, kneeling, and stretching. Some of the work involves risk, too, such as of falls from walking on roofs or health problems from inhaling soot. But, Dawn says, "If you're doing everything the way you're supposed to, then you'll be OK."

Although it can be dangerous, most routine sweeping usually isn't too time consuming. A typical inspection and cleaning takes from 20 minutes to an hour, says Dawn, but additional time depends on "whether the job is really bad or really simple, whether getting to the chimney requires one ladder or two, and whether it's cleaned annually or hasn't been cleaned in 5 or 10 years." Inspection helps determine how long the job will take.

Most time estimates also include a cost estimate. The National Chimney Sweep Guild says that homeowners should expect to pay up to $300 for routine inspection and sweeping, depending on geographical, structural, and other factors. Many sweeps, including Dawn, charge less than that for most services. And sweeps may charge more for complicated jobs that require extra appointments, repairs, or equipment.

The U.S. Bureau of Labor Statistics (BLS) does not have wage or employment data specifically for chimney sweeps. (Chimney sweeps are included in BLS estimates for the all other building cleaning workers occupation.) According to the guild's most recent membership survey, annual revenue of a typical chimney sweep company is between $100,000 to $250,000. Of an estimated 5,000 chimney-sweep companies nationwide, the guild has about 1,100 member companies, most of which have been in business more than 20 years and have 2 to 3 full-time employees.

Chimney services are largely unregulated. And few States license sweeps, although most require them to carry liability insurance. Furthermore, sweeping requires little training or money for startup, so entering the occupation is easy. Joining the guild and getting certified through the Chimney Safety Institute of America and the National Fireplace Institute are ways for sweeps to establish themselves as qualified professionals.

Other than the institutes' seminars and workshops, there are no formal credentialing programs specific to chimney sweeping. Still, says Dawn, most sweeps are self-employed and need to know more than how to clean chimneys. "There's a lot of paperwork," she says. "You need to be able to keep good books." Basic math skills are important for accounting, doing taxes, and pricing products to stay competitive. Communications skills are essential for advertising and customer relations.

Dawn has an associate degree in business management. She took over Mr. Joe's Chimney Sweep Services, her father's business in Allentown, Pennsylvania, when he decided to retire after the business was well established. It was then that her business training came in handy.

It was in becoming a business owner-operator that Dawn understood the importance of maintaining the solid reputation that her father had built. A new customer once told Dawn that, when she was with six friends and asked if any of them knew of a reliable chimney sweep, all six replied in unison, "Mr. Joe's!"

"Unfortunately, the lack of requirements means anyone can buy a few tools and claim to be a chimney sweep," says Dawn. "It's nice to know that ethics, honesty, and reliability really do matter."

OOChart

Education pays: More education leads to higher earnings, lower unemployment

Learn more, earn more—and avoid unemployment. Data from the U.S. Bureau of Labor Statistics (BLS) consistently show that with increased education, median earnings rise and average rates of unemployment fall.

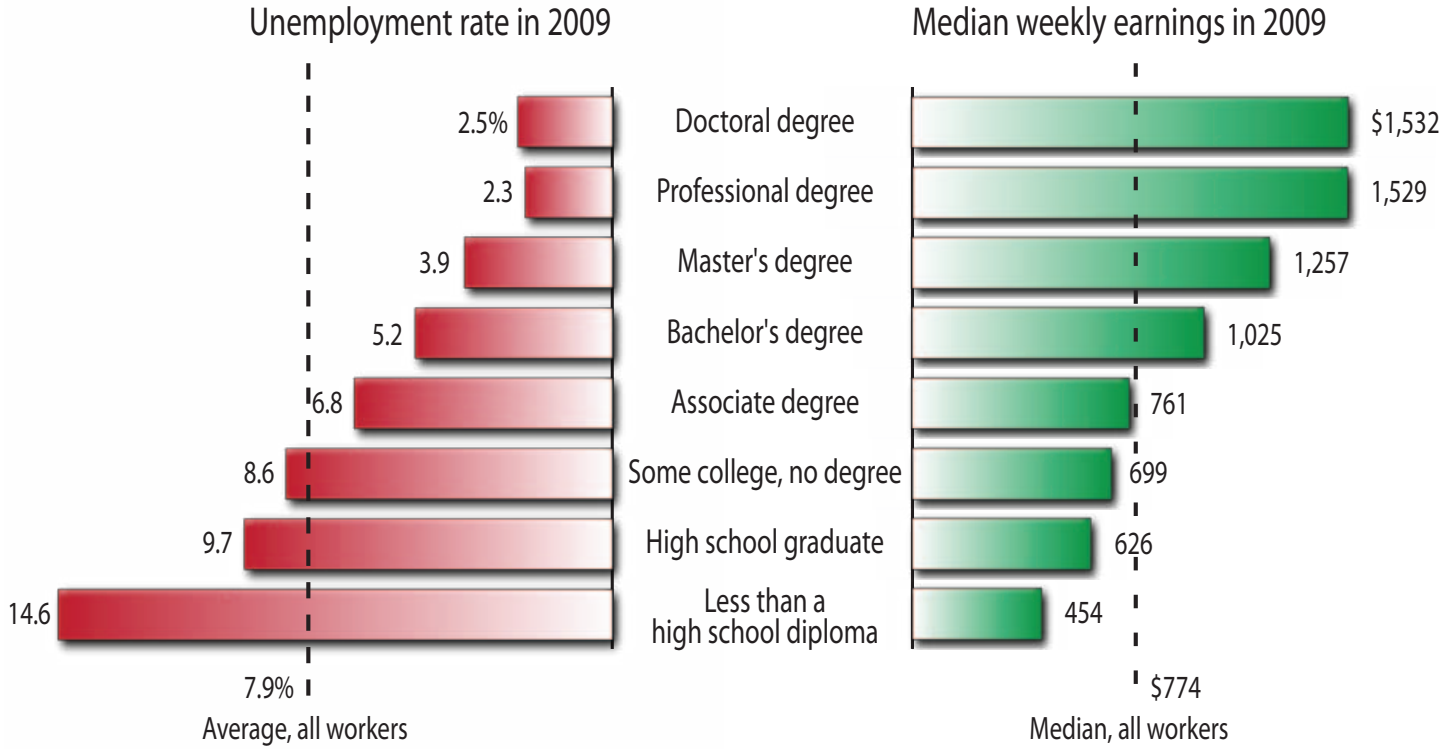
Above all, these data show the benefits of finishing high school. The chart shows that in 2009, high school dropouts earned about 40 percent less and had an unemployment rate almost double the average rate for all workers. In contrast, high school graduates had weekly earnings and an unemployment rate closer to those for all workers.

Completing an educational program demonstrates qualities—such as initiative, willingness to learn, and organizational ability—that employers value. In addition, high-earning workers usually must be highly skilled, and these skills often are acquired through formal education.

Keep in mind that these data are averages. Wages and employment vary among occupations within each level of educational attainment, and other factors, such as geographic location, determine success in the job market. Furthermore, not everyone is interested in extended academic study. But pursuing the highest level of education consistent with your interests, abilities, and career goals is likely to pay off.

For more information about these data, write to the BLS Division of Labor Force Statistics, 2 Massachusetts Avenue NE., Suite 4675, Washington, DC 20212; call (202) 691-6378; or visit online, **www.bls.gov/CPS**.

Unemployment rates and earnings for full-time wage and salary workers aged 25 and over, by educational attainment, 2009



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page 30