

**SPECIAL ISSUE**

# Career Options

*YOU HAVE MORE CHOICES THAN YOU THINK.*



**BCM**  
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College of  
Medicine

**WHAT DO YOU WANT TO DO?**



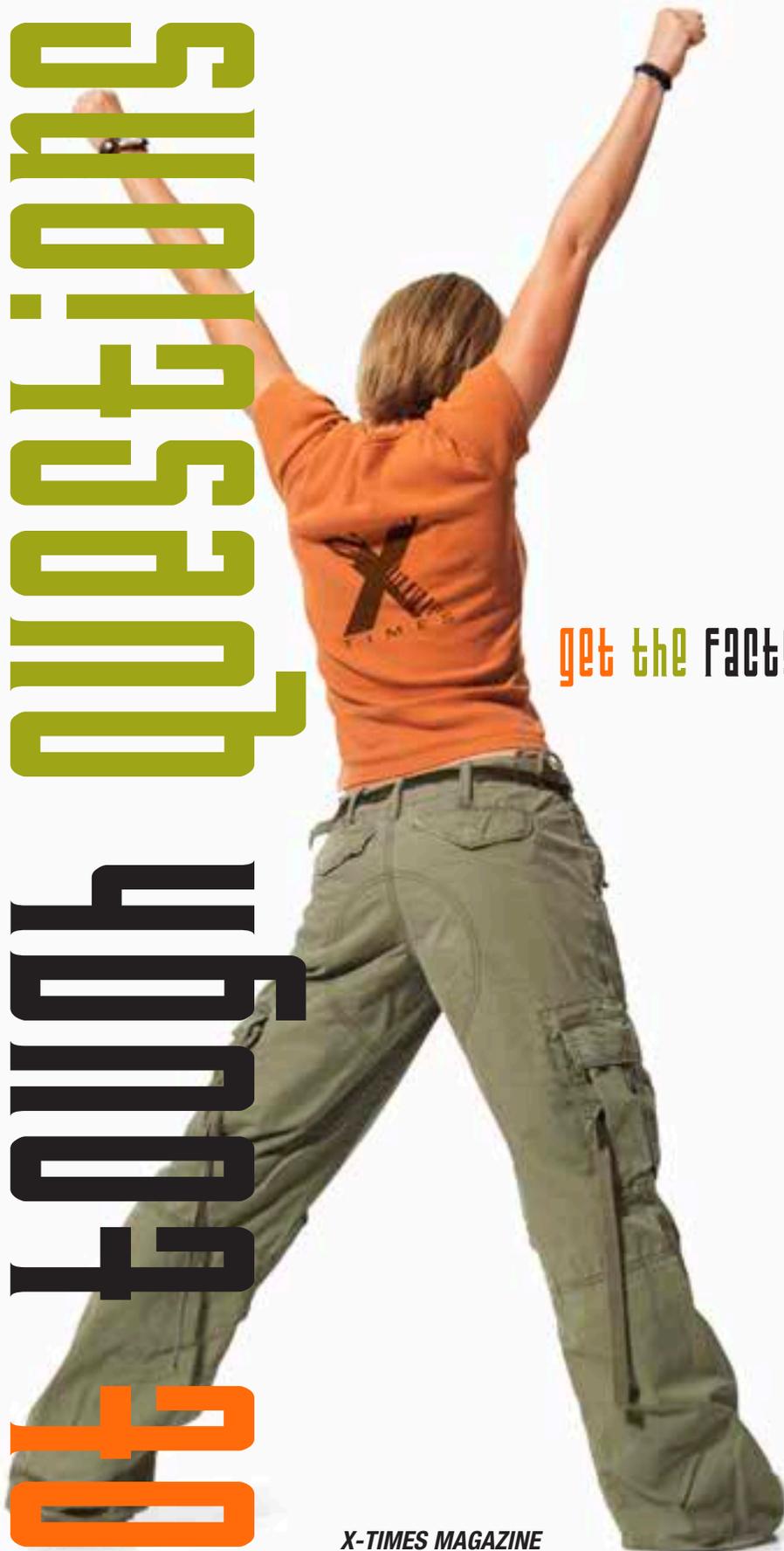
**WHAT THE  
PROS DO  
FOR FUN!**



**DO YOU HAVE  
THE RIGHT STUFF?**

**TECHNICAL SCHOOLS:  
ARE THEY YOUR ANSWER?**

# What's So Important?



get the facts

**X-TIMES MAGAZINE**  
Center for Educational Outreach  
**BAYLOR COLLEGE OF MEDICINE**  
[www.bcm.edu/edoutreach](http://www.bcm.edu/edoutreach)

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# X•Pectations



**Mary E. Carson, B.S., C.T.R.S.**  
**Recreational Therapist**  
Average Salary  
\$25,000 - \$62,000 per year

*Guess how many different kinds of jobs you can find in science and medicine...*

**I**t might surprise you to learn there are hundreds of different kinds of jobs in science and health. Your choices include careers such as doctor, dentist, nurse or research scientist—all of which contain specialities in cancer, genetics, infectious diseases, microbiology, pediatrics and psychiatry, to name but a few.

But check this out. You could be an artist or communication specialist, computer programmer or counselor, dental hygienist, dietician, engineer, epidemiologist, home health care aide, laboratory specialist, librarian, medical records specialist, medical secretary, microscopist, patent lawyer, pharmacist, paramedic, personal fitness trainer, radiologist, salesperson, speech pathologist, teacher or professor, transcriptionist, social worker, safety specialist, ophthalmologist, photographer, web developer, science writer, veterinarian—or a medical assistant or technician in almost every specialty.

In the pages that follow, we present the stories of several working professionals. If you would like to explore others, visit LifeWorks® at [science.education.nih.gov/Lifeworks](http://science.education.nih.gov/Lifeworks).

***So, go ahead. Invent yourself!***



# Emergency

medical technician



**Sarah Brown**

## ➔ Growing Up

My family lived on an eight-acre farm. I liked taking care of sick animals when they wound up on our doorstep. I also liked math and science. I played with chemistry sets and, I hate to admit it but, I played with my Fisher Price doctor kit until second grade.

## ➔ High School

I volunteered at a pre-natal clinic and decided I wanted to have a career in medicine. My job let me have hands-on opportunities I wouldn't ordinarily have had as a teenager. Taking high school chemistry and science courses makes it easier to become a doctor or nurse.

## ➔ Certification

I took a one-semester class called "EMT-Basic" and passed an exam that certified me as an Emergency Medical Technician. EMTs also are called paramedics. As an EMT, I earned enough money to put myself through college. Many EMTs become doctors, nurses, and pharmaceutical salespeople. Becoming an EMT is a great way to see if working in medicine is right for you.

## ➔ College

I just graduated from Rice University in Houston, Texas, with a degree in English.

## ➔ What I Do

I work in an ambulance, helping to save people's lives. Sometimes I work 48 hours in a row!

## ➔ Average Salary

\$32,000 per year—and higher if you pass EMT-2 and EMT-3 training.

# Fitness

trainer



**Birgitt Haderlein, AGSM, AGEMT**

➔ **Growing Up**

As a child, I enjoyed sports because it gave me a sense of belonging and fun. It made me feel good about me.

➔ **High School**

I competed in basketball and volleyball, and ran track. Recess, Phys Ed and lunch were my three favorite subjects!

➔ **College**

Though college isn't required to be a trainer, I got my Bachelor of Science degree in Kinesiology from the University of Houston.

➔ **Training & Certification**

Following a two-month course, I was certified

as a health and fitness instructor through the American College of Sports Medicine. The training isn't required, but I felt it gave me more credibility. I also became certified as a personal trainer by the American Council on Exercise.

➔ **What I Do**

I give people exercise instruction one-on-one. I teach each client how to balance his or her life through nutrition and lifestyle changes, and how to manage stress. I like being my own business owner and working for myself.

➔ **Average Salary**

\$35,000 to \$45,000 per year

➔ **Favorite Gear**

My stability ball—which looks like a gigantic beach ball—because it's something my dog Tess and I can play with together!



# Surgical oncologist



**Derrick Gox, MD**

## ➔ Growing Up

I was interested in anatomy and science and thought surgery was a unique way to combine the two.

## ➔ Influences

My father, who is an orthopedic hand surgeon, encouraged me. My mom's family had a history of cancer, so I leaned toward becoming a cancer specialist. *Warning!* Becoming a cancer surgeon takes a lot of hard work!

## ➔ High School

Science, science, science. I went to B.T. Washington High School for Engineering Professions in Houston, Texas.

## ➔ College

I received my Bachelor of Science in Microbiology from Texas A&M University.

## ➔ Medical School

I became a doctor after four years of study at The University of Texas Health Science Center at Houston medical school.

## ➔ Residency

After medical school, a new doctor works in a hospital as an intern and then as a resident. Surgeons also do other special studies. I did my work at King/Drew Medical Center in Los Angeles, and at the National Cancer Institute in Maryland.

## ➔ What I Do

I operate on patients. If the surgery is done early, it can often achieve a cure. It's especially important to me to get out information on preventing, diagnosing and treating breast and colorectal cancer to fellow African Americans, who are especially at risk. What I like least about my job are the long hours. I usually arrive at the hospital at 5:30 a.m.

## ➔ Average Salary

\$146,600 to \$350,000 per year

## ➔ Favorite Gear

Running shoes. The Tidal Basin, in Washington, D.C., is one of my favorite places to run or exercise after I get off work—especially when the cherry blossoms bloom in spring.



# Medical illustrator



**Don Bliss, MA**

## ➔ Growing Up

Like every other kid, I drew all the time. But I didn't stop as I grew older!

## ➔ High School

My biology teacher made learning the structure and mechanisms of life fun. He gave bonus points for the drawings I included in my lab reports, and encouraged me to do better ones.

## ➔ College

I enrolled in a pre-med curriculum at Missouri State University, but snuck an art class in every semester just for fun. One day I saw a poster that asked, "What can you do with a biology degree?" A medical illustrator was on the poster list. I'd never heard of that job before, but it was the perfect union of two seemingly unrelated areas I loved.

## ➔ Higher Education

It's not required, but after earning my Bachelor of Science degree in Biology, I got a Masters degree in Medical and Biological Illustration at The Johns Hopkins University School of Medicine.

## ➔ What I Do

I learn about new science from the brilliant doctors I work with. I get a kick out of helping explain things through drawing, like a treatment to destroy tumors or a possible vaccine for AIDS.

## ➔ Average Salary

\$35,260 to \$120,000 per year

## ➔ Favorite Gear

My Palm Pilot. I always have something to read (I keep books on my PDA) and a game to play—I love "Spaceward Ho!"

# Patent

lawyer



**Malka Scher, JD, PhD**

## ➔ Growing Up

At the time I was growing up, it was unusual to be a girl interested in science. I liked playing with my chemistry set and toy microscope, and doing pretend experiments—sometimes on my sister!

## ➔ Influences

My dad owned auto parts stores and my mom went back to college after raising three children. My parents gave me a strong work ethic through their examples and their expectation that I do well in school.

## ➔ High School

I liked asking questions and the challenge of finding answers in the laboratory. Science was the one class where I could actually do something instead of just listening to a teacher.

## ➔ College & Higher Education

I earned my Bachelor of Science degree in Chemistry

at Goucher College in Maryland, and then got a Ph.D. in Biochemistry at The Johns Hopkins University School of Medicine. I worked for many years as a biochemist doing laboratory research.

## ➔ Career Switch

I was looking for a new challenge and found it in law school. Taking classes this time was unusual because I was a lot older than my classmates. Many of them were the ages of my children!

## ➔ What I Do

In science, doing things that have never been done before can be worth money. People with new ideas or inventions usually need a lawyer to help them. These attorneys are called patent lawyers.

## ➔ Average Salary

Patent Lawyer: \$90,000 to \$200,000 per year.  
Biochemist: \$60,000 to \$70,000 per year.

## ➔ At Home

I love playing with my one-year-old grandson.



# Animal technician



**Maurice B.**

## ➔ Growing Up

I've always liked interacting with animals—especially cats, since I grew up with them. Now, I take care of rhesus monkeys.

## ➔ Training & Certification

After high school, I started as a facility support technician and was trained on the job to properly care for animals. Four months later, I was promoted to an animal technician. I'm currently certified as an assistant laboratory animal technician, and plan to study for my second and third level certifications through the American Association for Laboratory Animal Science. Each higher level of certification means more responsibilities and increased pay.

## ➔ What I Do

I give each animal the proper amount of biscuits and treats, make sure they always have fresh water, and I keep careful records of what I do. I also clean and disinfect their cages. They love to play

with gnawing toys, and get treats of fresh fruits and vegetables. They especially love foraging for treats hidden in toys and playing with mirrors. Each animal has a different personality—just like people do.

➔ **Average Salary**  
\$17,800 to \$30,000 per year

➔ **Favorite Gear**  
Coveralls, goggles, gloves, a face shield and steel-toed boots. I look like the guys who came for E.T.!



# Research

social worker



Linda Doty, MSW, RN

## ➔ Growing Up

I wanted a profession where I could help other people.

## ➔ Influences

My father was laid off from work during an economic recession. My family was profoundly affected. I definitely wanted a career with job security.

## ➔ High School

One of the priests in my church took our youth group to volunteer in a New York City soup kitchen. I saw alcoholics and drug addicts on nearby street corners, and began to think about how I might make a difference in their lives.

## ➔ College

After finishing community college, I began nursing school at the University of Miami, but I

soon realized I wanted to be a social worker, too!

## ➔ Higher Education

Five years after completing my Bachelors degrees in Sociology, and Politics and Public Affairs, I began working on getting my Masters degree in Social Work. I worked part-time for two years while going to school at night. The final year, I lived on savings and government loans. I worked four more years as a medical secretary before returning to complete my nursing degree at an accelerated, one-year community college program.

## ➔ What I Do

I administer patient interviews that can take as long as six hours. I like to think of it as professional detective work! I also provide patients with information that will help them understand their drug or alcohol dependency.

## ➔ Average Salary

Social Worker: \$33,150 to \$85,000 per year.  
Registered Nurse: \$48,090 to \$65,000 per year.





# Environmental

safety specialist



**James Powell, BS**

➔ **Growing Up**

My childhood interests were football, baseball and track.

➔ **Influences**

My father was a Loss Prevention Engineer—also called a Safety Engineer. This encouraged my interest in the safety field. I also was a Life/Health Insurance Underwriter for 15 years, which pointed me toward Occupational Health.

➔ **High School**

I took chemistry, physics, biology and physiology classes, and was focusing on a career in veterinary medicine. I had an ongoing interest in health and safety, but not as a career path at that time.

➔ **College**

When I first entered college, I wanted to

become a veterinarian. So, I took classes in zoology, botany, embryology, genetics, parasitology, anatomy, etc., and earned my Bachelor of Science degree in Zoology. Later, I returned to college and earned another Bachelors degree—this time in Management and Industrial Hygiene and Safety.

➔ **What I Do**

My job is to anticipate and identify hazards—physical, chemical, biological—in the workplace. I assess the risk that these hazards pose and prevent or try to limit the risk using various methods. These methods include air sampling to determine air quality. I also evaluate workstation design and activities, and material and laboratory work practices, like proper disposal of chemicals. An important issue coming up is how to manage the use of nano-technology safely. My job is always rewarding because I am helping people.

➔ **Average Salary**

\$47,600 to \$80,000 per year

# Pharmacy

technician



**Xochitl Lopez**

## ➔ Growing Up

My life was very simple. Until I was six years old, I lived with my grandparents on a little ranch south of the Texas border. I loved riding my bike in the many fields that surrounded the ranch.

## ➔ Grade School

When I was about seven years old, my mother brought me to the United States of America. I didn't know any English. Luckily, once I started grade school, I quickly learned the English language.

## ➔ High School

In school I was always a shy person, and I dreamed of being a teacher. My interest was not really in science. I was more interested in general education.

I enjoyed history more than science.

## ➔ Training & Certification

I have several certifications in different areas, such as Data Entry Clerk. To become a Certified Pharmacy Technician, I had to pass a test with the Texas State Board of Pharmacy.

## ➔ What I Do

A pharmacy technician assists pharmacists with filling prescriptions. But a compounding pharmacy technician is a specialist. We help prepare custom medications. Often, we have to weigh and measure ingredients, and calculate amounts to fill prescriptions. We even use a mortar and pestle to grind and prepare these unique formulas.

## ➔ Great Job

The best part of working here is that I continue to learn something new every time a medication is made. The place where I work has a very comfortable work environment. I have great co-workers—we work as a team.

## ➔ Average Salary

\$21,700 to \$29,000 per year

## ➔ At Home

Being a mom with three boys and a husband really consumes a lot of my time. I spend most of my spare time with my children and husband.

# Science

writer



**Alisa Machalek, MS**

## ➔ Growing Up

Since I was a young girl, I've kept journals, and written poetry and short stories. But I never dreamed I'd become a professional writer! My mother is a physician who started medical school when I was in second grade. I had a first-hand look at the training and the life of a doctor, and I could tell that career wasn't for me.

## ➔ High School

I took math and science courses, thinking I wanted to go into some area of scientific research.

## ➔ College

I went to Michigan State and got a Bachelor of Science degree in Biochemistry. When I entered college, I decided to be a medical researcher and discover the unknown. But the laboratory work sometimes seemed monotonous. So I explored other options and realized science writing was the "best fit" job for me.

## ➔ Higher Education

I earned a Masters degree in Biochemistry at the University of Wisconsin, Madison. Some science writers have advanced degrees, but it's not necessary.

## ➔ What I Do

I write about medical discoveries in a way that people can understand them. One of my favorite things to do is call Nobel Prize winners and ask them to explain their work. *How cool is that?*

## ➔ Average Salary

\$42,790 to \$85,000 per year

## ➔ Favorite Toy

My oboe. I enjoy playing in chamber music groups and orchestras.

# Neurobiologist



**Byron D. Ford, Ph.D.**

## → Influences

I chose to become a neuroscience researcher because I've always liked science. After earning my Bachelor's degree, I took a year off and worked in a research lab. Until then, I thought I wanted to be a medical doctor, but I really liked the lab work. I decided to pursue a career in science research and entered graduate school instead of medical school.

## → Education

I earned a B.S. degree, majoring in biology, from Grambling State University, Louisiana; a Ph.D. in Physiology at Meharry Medical College, Tennessee; and did a postdoctoral fellowship at Harvard Medical School.

## → What I Do

Currently, I am a professor and research scientist at Morehouse School of Medicine (MSM), in

Atlanta. About 90% of my day is spent conducting research and analyzing data about the brain. When I am not lecturing at the College, I also write research results for publication and read scientific literature to keep up-to-date on advances in my field. Fortunately, I've been to many places to speak and attend meetings, including China, Japan, Holland, South Africa, Germany, Puerto Rico and across the U.S.

## → Great Job

I get to choose what, when and how I want to study something. I also appreciate that at MSM, a historically black college, we train a large number of minority students. Further, we focus on research involving diseases that disproportionately affect minorities, specifically stroke and cardiovascular disease.

## → Career Goals

My career goals are to develop treatments and diagnostic tools for stroke and other acute brain injuries.

## → Average Salary

\$41,000 - \$139,000 per year



# Epidemiologist



**Waimar Tun, Ph.D., M.H.S.**

## ➔ Influences

After graduating from college, I spent a year as a volunteer in India teaching English to Tibetan refugees. This experience influenced my decision to focus on public health problems in developing countries. I was also drawn to the field because of the growing HIV/AIDS epidemic in Southeast Asia, particularly in Burma, where I was born and still have strong ties. I chose epidemiology because it allows me to combine my strength in math and analysis with my interest in addressing social problems.

## ➔ Higher Education

After getting my Bachelor's degree, I earned a Masters of Health Sciences and a Ph.D. in Epidemiology at the Johns Hopkins School of Public Health in Baltimore, Maryland.

## ➔ What I Do

A few years ago, I worked at the Centers for Disease Control and Prevention in Atlanta, where I conducted research on the causes and distribution of sexually transmitted diseases. I also assisted with surveillance activities during public health crises, such as the SARS and West Nile Virus outbreaks.

As part of my job, I write research protocols or evaluations, which are detailed procedures for conducting a research study and collecting data. I also develop research instruments (such as surveys, etc.), collect and analyze data, write reports of program evaluations, and publish and present the results at conferences.

Currently, I'm a researcher with the Population Council's HIV and AIDS program. Most of my research involves improving HIV prevention programs for people in developing countries like India, South Africa, Kenya and Nigeria.

## ➔ Great Job

I love thinking about how we can make programs and services work better for different populations and different cultures, especially where there are so few resources. I feel like I'm helping others and I'm also satisfying my curious mind by doing research.

## ➔ Average Salary

\$41,000 - \$93,000 per year

# Public Relations

specialist



**Kelli Garrington, M.A.**

## ➔ Influences

My grandmother inspired my interest in health. I was very close to her. When I was 14 years old, she had a series of heart attacks and passed away. I wondered what I could have done to help prevent the heart attacks. In the following years, I thought about how important it is for people to know more about health and the signs of disease. As a teenager, I volunteered as a candy striper at the Washington DC Veterans Affairs Medical Center. Then I volunteered as a cardiopulmonary resuscitation (CPR) instructor with the American Heart Association and the American Red Cross. These experiences sealed my interest in the health field.

## ➔ Higher Education

After getting my Bachelor's degree, I earned a Master of Arts degree in Community Health Education and Promotion at Trinity college in Washington, D.C.

## ➔ What I Do

One of the great things about my job is that I don't have a typical workday. Much of my work involves interacting with members of the Director's Council of Public Representatives (COPR) at the National Institutes of Health (NIH).

My key activities on one day may include a teleconference to discuss project plans, a review of material to be posted on our website or completion of research for a report. On another day, I may meet with colleagues to learn about emerging scientific issues or meet with the NIH public liaison officers to talk about public engagement activities.

## ➔ Great Job

What I like best about my work is that I am able to help people make informed decisions about their health. In my job, I get to work with many people who are dedicated to improving the health of people throughout the country and abroad.

## ➔ When I'm Not Working

I love spending time with my family. I also enjoy reading about leadership, and personal and spiritual development.

## ➔ Average Salary

\$50,000 - \$97,910 per year



# Research Nurse

specialist



**Kelly Richards, M.S., R.N.**

## ➔ Influences

I chose to become a nurse because I was inspired by a nurse who worked with premature babies. At the time, we were both serving in the Washington Air National Guard. I was a medic and she was a nurse in the neonatal intensive care unit who flew with a specialized transport team. Over the next several years, she mentored me and I became interested in this nursing subspecialty.

## ➔ Education

After high school, I started my career by joining the United States Marines. After completing my service in the Corps, I entered into a nursing program at Eastern Washington University. During my college years, I also served with the Washington Air National Guard, which is similar to the Air Force Reserve.

## ➔ What I Do

After earning my nursing degree, I returned to active duty in the military. My first job as a nurse in the Air Force was taking care of healthy newborn babies and mothers. Next, I learned how to care for critically ill babies.

Currently, I'm a research nurse specialist with the National Cancer Center. I am responsible for developing and monitoring clinical research trials which focus on leukemias. I work with children, teens and some adults, their families, government agencies and drug companies.

In order to maintain my clinical skills, I also work in a pediatric emergency room at a local community hospital several times a month.

## ➔ Great Job

I like being able to help other people, especially the children who come in for treatment. For me, nursing is a way of life.

## ➔ Average Salary

\$44,000 - \$94,000 per year