

# HEALTHCARE SCIENCES

Physical & Occupational Therapy, Cytotechnology, Dental Hygiene,  
Health Information Management, Clinical Laboratory Science, Nuclear Medicine Technology

What can I do with these majors?

## AREAS

## EMPLOYERS

## STRATEGIES/INFORMATION

### PHYSICAL THERAPY

**Physical therapy involves treatment through physical means for people disabled by illness, accident, or congenital handicap. Physical therapy seeks to improve mobility, relieve pain, or minimize permanent physical disabilities.**

Clinical Practice:

- Acute care
- Rehab/Sub Acute Care
- Extended Care
- Wellness and Prevention
- Sport and Fitness

Management

Education

Research

Consultation

Specialties Include:

- Pediatrics
- Geriatrics
- Sports Medicine
- Orthopedics
- Neurology
- Cardio Vascular and Pulmonary
- Women's Health
- Clinical Electrophysiology

Hospitals  
Outpatient clinics/private practice  
Home healthcare agencies  
Nursing and residential care facilities  
Sports and fitness facilities  
Rehabilitation centers  
Physician offices, particularly orthopedic  
Hospices  
Schools  
Universities and colleges  
Federal and state government:  
    Department of Defense  
    Public Health Service  
    Veterans Health Administration  
    Indian Health Services

Earn a doctorate in physical therapy (DPT) from a program accredited by the American Physical Therapy Association.  
Programs include supervised clinical experiences.  
All states require licensure which includes passing the National Physical Therapy Examination.  
Approximately one third of physical therapists work in hospitals and another third in physical therapy offices.  
Obtain knowledge of several basic sciences including anatomy, physiology, biology, chemistry, and physics.  
Attain superior grades in pre-physical therapy course work due to intense competition for admittance to physical therapy programs.  
Volunteer for a physical therapist in a hospital or clinic to gain experience and improve chances of acceptance into a program. Many programs require volunteer experiences and a good understanding of the field for admission.  
Develop strong interpersonal and communication skills, patience, and a desire to help individuals of all ages with disabilities. A positive attitude is important when working with patients.  
Manual dexterity and physical stamina are important in succeeding in physical therapy work.  
Some physical therapists complete a clinical residency after PT school to gain training and experience in a specialty. Fellowships in advanced clinical areas after residency are also available.

## AREAS

### OCCUPATIONAL THERAPY

**Occupational therapy is the treatment of people who are unable to perform some everyday functions due to injury, illness, or disability. Occupational therapists utilize activities with specific goals to enhance the quality of life and increase the independence of individuals who have a mentally, emotionally, or physically disabling condition.**

Screening

Evaluation

Treatment:

Physical

Psychosocial

Social

Vocational

Follow-up

Administration

Teaching

Research

Specialities Include:

Geriatrics

Pediatrics

Mental Health

Work and Industry

Health and Wellness

Low Vision

Hand Therapy

Driver Rehabilitation

## EMPLOYERS

Hospitals (including psychiatric and rehabilitative)

Out-patient rehabilitation facilities

Schools

Group or private practice

Nursing and residential care facilities

Community mental health centers

Adult daycare programs

Job training centers

Home healthcare agencies

Universities and colleges

Federal and state government:

Department of Defense

Public Health Service

Veterans Health Administration

## STRATEGIES/INFORMATION

Earn a master's (MOT, MA, MS) or doctoral (OTD, less common) degree in occupational therapy to gain entry in the field.

Programs include supervised clinical fieldwork.

All states regulate licensure which requires passing an exam given by the National Board for Certification in Occupational Therapy.

Those who have passed the exam become Occupational Therapists Registered (OTR).

Build a solid foundation in physical, biological, and behavioral sciences.

Volunteer in an occupational therapy or related healthcare setting to experience the field first-hand and improve chances of program admittance.

Develop excellent communication skills which are important when interacting with patients and their families.

Individuals working in occupational therapy should possess patience and a true interest in helping people with disabilities reach their full potential.

Learn to work well within a team. OT's work with many other professionals, including physicians, physical therapists, and social workers in the rehabilitation of patients.

Occupational therapists may choose to specialize in a particular age group or type of disability.

Doctoral degree is often preferred for university teaching and administration positions.

## AREAS

### CYTOTECHNOLOGY

**Cytotechnologists are highly skilled laboratory professionals who study the patterns of disease progression found in human cells. They detect subtle changes and clues within cells. With expert eyes, the cytotechnologist looks for the smallest abnormalities in color, shape, and size that may indicate clinically significant conditions. This profession provides the potential to help save lives by discovering disease early and uncovering information that informs effective treatment.**

Screening and Diagnosis:

- Cancer
- Pre-cancerous abnormalities
- Benign tumors or growths
- Infectious organisms and inflammatory conditions

Evaluation of Tissue:

- Bladder
- Body cavities
- Bone and soft tissue
- Breast
- Central nervous system
- Female reproductive tract
- Gastrointestinal tract
- Liver
- Lung
- Lymph nodes
- Pancreas
- Salivary glands
- Thyroid

Technological Equipment Operation:

- Light microscopes
- Biomedical instrumentation
- Laboratory information systems

Molecular Diagnostic Testing

## EMPLOYERS

Hospital and private laboratories  
Federal and state government laboratories  
Public health facilities  
Research and biotechnology industry  
Healthcare administrative departments  
Educational institutions

## STRATEGIES/INFORMATION

Earn a Bachelor or Master of Science in Cytotechnology from a program accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Prepare for and pass the certification examination given by the American Society for Clinical Pathology's Board of Certification.

Supplement curriculum with courses in biology that emphasize body structure, development, tissue organization, and function. Recommended courses include histology, cellular biology, and genetics. Additional recommendations may include other biological sciences such as zoology or ecology.

Become comfortable with applied learning techniques. Most programs utilize a combination of training activities such as microscopic evaluation, laboratory skills development, case presentations, research, community health projects, and supervised clinical laboratory site experiences.

Develop problem solving as well as effective written and verbal communication skills.

Display personal characteristics such as accuracy, responsibility, and motivation. Become comfortable making important decisions.

Plan to learn new technology and techniques to stay abreast of developments in the field.

Specialty certifications exist for those who want supervisory or other advanced positions.

## AREAS

## EMPLOYERS

## STRATEGIES/INFORMATION

### DENTAL HYGIENE

**Dental hygienists help people of all ages maintain optimal oral health by working with dentists to prevent and treat tooth decay, periodontal disease, oral cancer, and other conditions that affect oral function.**

Specific areas of activity for dental hygienists include:

- Gathering data for a dental diagnosis
- Recording medical and dental histories
- Screening and charting oral structures and conditions
- Exposing and processing oral radiographs
- Dietary analysis
- Providing oral disease prevention information and instruction
- Monitoring oral health status of individuals
- Providing therapeutic services
- Removing calculus and plaque from the teeth
- Applying fluoride and dental sealants to the teeth

- Private dental offices and dental clinics
- Federal, state, and local health departments or associated institutions
- Hospitals and nursing homes
- School districts or departments of education
- Private business/industry
- Correctional facilities
- Private and public centers for pediatric, geriatric, and other individuals or groups with special needs
- Managed care organizations

- An associate's or bachelor's degree is required to enter the field in nearly all states.
- A passing score on the Dental Hygiene National Board Examination and state or regional clinical examination is also required for licensure as a Registered Dental Hygienist (RDH).
- The scope of practice for dental hygienists is determined by individual states.
- Opportunities for practice are available throughout the world, particularly with the military, the US government, and US owned corporations.
- A master's degree in dental hygiene is available at some institutions.
- Dental hygienists with bachelor's or master's degrees may work in teaching, research, or administrative positions.
- Develop strong interpersonal and communication skills and an attention to detail.

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### HEALTH INFORMATION MANAGEMENT AND HEALTH INFORMATICS

**HIM and informatics professionals play critical roles in maintaining, collecting, and analyzing the data that doctors, nurses, and other health-care providers rely on in the delivery of quality healthcare.**

- Patient Health Information Management
- Operations/ Medical Records Administration
- Health Information Technology/Infrastructure
- Computer Information Systems Management
- Revenue Cycle Management/Billing and Coding
- Personnel and Budget Administration
- Quality Management and Improvement
- Risk Management and Compliance
- Privacy and Security
- Utilization Review

- Hospitals
- Physician offices and clinics
- Long-term care facilities
- Rehabilitation centers
- Insurance companies
- Government agencies
- Home care providers
- Behavioral health facilities
- Information systems vendors
- Pharmaceutical companies
- Research facilities
- Consulting firms
- Educational institutions

- Earn a bachelor's or master's degree in Health Information Management or Health Informatics from a program accredited by the Commission on Accreditation of Health Informatics and Information Management Education (CAHIIM).
- A passing score on a national examination is required for certification as a Registered Health Information Administrator (RHIA).
- Visit a health information management department in a hospital to better understand the role of health information managers.
- Research career opportunities through The American Health Information Management Association and The American College of Medical Informatics.

## AREAS

### HEALTH INFORMATICS CONTINUED

Health Informatics Specialties Include: Clinical, Clinical Research, Consumer Health, Dental Mental Health, Nursing, Pharmacy, Primary Care, Public Health, Telemedicine and Mobile Computing, Translational Bioinformatics, and Veterinary Management Research

### CLINICAL LABORATORY SCIENCE

**Clinical laboratory scientists, also known as medical technologists, work together with other members of the healthcare team to perform and supervise laboratory analyses on blood, body fluids, and tissue. They also provide data to detect, diagnose, and monitor disease. Medical technologists use medical equipment such as microscopes, computers, and other highly technical instruments to assist them in their work.**

Hematology  
Immunohematology (Blood Banking)  
Microbiology  
Clinical Chemistry  
Immunology  
Urinalysis  
Mycology  
Parasitology  
Histocompatibility  
Molecular Diagnostics  
Laboratory product development and sales

## EMPLOYERS

Hospital and private laboratories  
Public health laboratories  
Biotechnology industry  
Pharmaceutical and chemical companies  
Research and forensic laboratories  
Veterinary clinics  
Transplant and blood donor centers  
Fertility clinics  
Universities and colleges

## STRATEGIES/INFORMATION

Develop strong oral and written communication skills, interpersonal skills, orientation to detail, flexibility, and advanced technology skills. Federal legislation regarding Electronic Health Records (EHRs) has transformed this field in recent years.

Earn a bachelor's degree in clinical lab science or medical technology from a program accredited by the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).  
Be prepared to participate in supervised clinical experiences.  
Many states require a license to practice. Obtain licensure by passing a certification exam given by the American Society for Clinical Pathology Board of Certification.  
Attain good grades in pre-medical technology course work, including biology, anatomy, physiology, and general and organic chemistry.  
Develop manual dexterity, fine motor skills, and an attention to detail. Be willing to work in a fast-paced environment.  
Visit a clinical laboratory. Talk with practitioners to gain critical knowledge of the profession.

## AREAS

### **NUCLEAR MEDICINE TECHNOLOGY**

**Nuclear medicine is a highly specialized field that involves preparing and administering radioactive chemical compounds (radiopharmaceuticals) and performing imaging procedures using radiation-detecting equipment. Nuclear Medicine Technologists process data and provide images, analysis, and patient information to physicians who make diagnoses.**

Diagnosis and Treatment (some applications):

- Neurology
- Oncology
- Orthopedic
- Renal
- Cardiac
- Pulmonary

Specialties:

- Nuclear cardiology
- Positron emission tomography (PET)

Clinical Research

Education

Administration

Training

Sales

## EMPLOYERS

- Community hospitals
- Teaching hospitals
- Medical centers
- Public health institutions
- Research institutes
- Outpatient imaging facilities
- Medical and diagnostic laboratories
- Physician offices
- Private clinics
- Commercial radiopharmaceutical suppliers
- Nuclear imaging equipment manufacturers

## STRATEGIES/INFORMATION

Secure a strong foundation in science and mathematics, along with interests in computer technology and medicine.

Develop strong interpersonal skills, as nuclear medicine technologists work directly with patients interviewing and providing instruction.

Conduct informational interviews or shadowing experiences with professionals, and plan to tour nuclear medicine facilities to confirm interest in the field.

Seek volunteer experience in a clinical setting, nuclear medicine if possible.

Earn a degree from a program accredited by the Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT).

Seek certification through one of two national accrediting agencies: Nuclear Medicine Technology Certification Board (NMTCB) or The American Registry of Radiologic Technologists (ARRT); certification requirements vary by state and employer.

Consider specializing further in nuclear cardiology or positron emission tomography (PET).

Approximately two-thirds of Nuclear Medicine Technologists work in hospitals. Professionals may be on call in some hospital settings.

Part-time or shift work may be available.