Science & Healthcare Careers

CAREER TRACKS
The sciences, whether researcher, practitioner, or educator, lead to hands-on careers. The best thing to do to prepare for a future career or more school is to seek multiple experiential learning and research opportunities outside the classroom. Career opportunities, categorized broadly, exist in these areas:


- **Education & Academia:** Professors and teachers are needed in higher, primary, and secondary education. A doctorate is usually required to teach in colleges and universities, with a bachelor’s or Master’s degree being used for primary and secondary education.

- **Federal, State, or Local Government:** Individuals with a science background are employed in a variety of fields, in numerous locations, and as part of many different agencies across the government, including: Food & Drug Administration, National Science Foundation, Public Health Service, U.S. Environmental Protection Agency, Center for Disease Control, OSHA, Air Pollution Control, National Institutes of Health.

- **Research:** There are many career opportunities available as a scientific researcher in both the physical and life sciences. While a bachelor’s degree is typically the minimum requirement necessary for scientific research jobs, more senior positions require either a Master’s degree or Ph.D. This type of work usually involves the research and development of new techniques and products in fields as diverse as medicine and economics.

- **Healthcare:** Most careers in the healthcare require specialized education but a science or math undergraduate degree can provide a solid pre-requisite foundation for future study.

RESEARCH EXPERIENCE FOR UNDERGRADUATES (REU)
The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. (from the NSF website)

Opportunities for lab experience and research exist in hundreds of locations across the country. These programs can be highly competitive so it is critical to apply early. Each site has its own independent research project with its own guidelines for applicants. Because the programs are funded, student researchers are typically paid a stipend for the summer and often offered affordable housing on University campuses (depends on site location).

Learn more about the REU program and search for research opportunities online at the National Science Foundation: [http://www.nsf.gov/crssprgm/reu/list_result.cfm?unitid=5047](http://www.nsf.gov/crssprgm/reu/list_result.cfm?unitid=5047).
SCIENCE CAREER & INTERNSHIP SEARCH

It’s important to partner with faculty and conduct research or internships in the field during your undergraduate career in science. A few local possibilities exist at places such as Naples Community Hospital, Lee Memorial Health, Hope Health Care, Moorings Park, Immokalee Pregnancy Center, David Lawrence Center, Interpreting & Application Services, Arthrex, Algenol and the Naples Zoo (among many others within Florida). Use the following websites to expand your search further.

- Pathways to Science: [http://www.pathwaystoscience.org/programs.asp](http://www.pathwaystoscience.org/programs.asp) - summer research opportunities (like the REU site). Great place to look for programs for diverse candidates.
- [www.ScienceCareers.org](http://www.ScienceCareers.org)
- [www.InternMatch.com](http://www.InternMatch.com) – can limit search to geographic location, internships or jobs
- [www.Internships.com](http://www.Internships.com) – can limit search to geographic location, internships or jobs
- Federal Government: [www.USAGov.gov](http://www.USAGov.gov) – search “Pathways” for student and recent graduate opportunities with all government agencies
- American Institute of Biological Sciences: [www.aibs.org/careers](http://www.aibs.org/careers)
- American Chemical Society: [www.acs.org](http://www.acs.org)
- American Institute of Physics: [www.aip.org](http://www.aip.org)

HEALTHCARE

A multitude of internships in medicine and health are available every summer sponsored by medical schools, hospitals, companies, research institutes, government agencies, non-profit organizations, public health agencies, and health care providers. Because most medically related internship programs are small and competitive, students will need to be proactive in their search and not assume that opportunities will be posted. Students should expect to apply to multiple summer opportunities and not necessarily hear from every place they apply. Choosing a geographical location to conduct your search can be useful since many internship positions can be found at physicians’ offices, clinics and hospitals.

Observations, shadowing, informational interviewing and volunteering in hospitals, clinics, and nursing homes are all great ways to supplement your resume in preparation for future studies. Nothing takes the place of internship experience but students should endeavor to complete as many hours of observation and volunteering in a clinical setting as possible with or without internship experience.

To explore how an Ave education fits into an overall pre-professional plan, view the following information provided by the Biology Department: [http://mysite.avemaria.edu/biology/guidelines.pdf](http://mysite.avemaria.edu/biology/guidelines.pdf).

Healthcare Careers

Healthcare is an extremely diverse field. Below are some brief definitions and links to additional information for many of the allied health professions. You may also wish to explore on your own at [http://explorehealthcareers.org/en/careers/careers](http://explorehealthcareers.org/en/careers/careers).

**Athletic Training** – Requires a Master’s from an accredited professional athletic training program. These skilled health practitioners specialize in sports medicine and often work for schools/Universities, the military or with professional sports organizations.

Audiology – this field employs professionals who aid individuals with hearing or speech impediments and those who do research in this field. Typical job titles include Audiologist, Speech-Language Pathologist, and Speech-Hearing Scientist.

- American Speech-Language-Hearing Association (ASHA), http://www.asha.org/

Chiropractic Medicine - this field deals with the skeleton, muscles and nerves. Patients are often treated by chiropractors for back and neck pain and joint problems.


Dentistry – Dentists are both clinicians (and sometimes surgeons) and scientists. The process for qualifying for and being accepted into dental school is extremely rigorous and as structured as applying for MD/DO programs. If interested in any field of dentistry begin by researching the information provided by the American Dental Education Association (ADEA).

- Associated American Dental Schools Application Service www.adea.org/dental_education_pathways/aadsas/Pages/default.aspx
- American Dental Education Association (ADEA) – www.adea.org
- American Dental Association – www.ada.org/
- Dental Admissions Test (DAT) - www.ada.org/prof/ed/testing/dat/

Healthcare Administration – Healthcare administrators are highly skilled professionals who typically hold one of the following degrees:

- Master of Business Administration
- Master of Public Health
- Master of Science in Public Health
- Master of Public Administration
- Master of Health Administration

Physician – MD/DO or MD/Ph.D. – If interested in pursuing a career as a physician, consult the Career Services Guide Preparing for Medical School.

- Association of American Medical Colleges, www.aamc.org

Mental Health Professions – Psychiatrists are physicians focused on mental health and mental illness. Psychologists, on the other hand, earn doctoral degrees in Psychology are work in a myriad of career settings.

**Nursing** – Nursing represents the largest healthcare occupation with opportunities as Registered Nurses, Nurse Practitioners, Clinical Nurse Specialists, Certified Nursing Midwife, and Certified Registered Nurse Anesthetist with specializations in all areas of healthcare. If interested in pursuing a nursing career after Ave, identify an intended program and make sure you complete as many pre-requisite classes in the sciences as possible. Because of the demand for nurses there has been an explosion of nursing education opportunities. Be careful, therefore, to thoroughly vet all programs for accreditation, placement and exam statistics, and clinical/experiential learning opportunities for students.

- Best Nursing Degree, [http://www.bestnursingdegree.com/](http://www.bestnursingdegree.com/)

**Occupational Therapy** – Occupational Therapists are professionals who help individuals achieve independence in work and living environments. OTs may work in pediatrics, geriatrics, neurology, industrial rehabilitation, electronic assistive technology or vocational rehabilitation. Both Master’s and Doctoral degrees are appropriate in this field.


**Optometry** – This field is for those who want to practice vision care. Optometrists and Doctors of Optometry are practitioners that monitor patients’ eye care and vision health. An ophthalmologist is a physician who has graduated from medical school. In order to enter a school for Optometry, students must take the Optometry Admission Test (OAT).

- Association of Schools and Colleges of Optometry (ASCO), [http://www.opted.org](http://www.opted.org)
- Optometry Centralized Application Service (OptomCAS), [www.optomcas.org](http://www.optomcas.org)
- Optometry Admission Test (OAT), [https://www.ada.org/oat/](https://www.ada.org/oat/)

**Pharmacy** – Typically students enter six year pharmacy programs directly from high school. If you wish to pursue a career as a pharmacist, investigate transferring into programs in the third year.

- American Association of Colleges of Pharmacy, [http://www.aacp.org/Pages/Default.aspx](http://www.aacp.org/Pages/Default.aspx)
- Pharmacy College Application Service (PharmCAS), [http://www.pharmcas.org/](http://www.pharmcas.org/)

**Physical Therapy** – Physical Therapists are doctors that treat problems with movement. Areas of specialty include orthopedics, geriatrics, neurology, pediatrics, sports physical therapy, and cardiopulmonary. Students should pursue a DPT after completing an undergraduate degree with a heavy emphasis on science, math and statistics.

- Physical Therapy Degree Zone, [http://physicaltherapydegreezone.com/](http://physicaltherapydegreezone.com/)

**Physician Assistant** – PAs practice medicine under the supervision of a physician. Admissions standards for Physician Assistant programs generally require previous healthcare experience.
Podiatry – Podiatric medicine pertains to the foot, ankle and related structures of the leg and often deals with patients with chronic illnesses such as diabetes, arthritis, obesity, heart disease and peripheral arterial disease. Becoming a podiatrist is a long educational process not unlike pursuing an MD, including the pre-requisite MCAT.

- American Podiatric Medical Association, [www.apma.org/careers](http://www.apma.org/careers)
- American Association of Colleges of Podiatric Medicine (AACPM), [www.aacpm.org](http://www.aacpm.org)

Public Health – Public Health deals with entire communities instead of focusing on individual patient care. Often this includes work with infectious diseases, environmental hazards, violence and substance abuse prevention. There are a variety of careers and degree programs one can pursue in this area.


Veterinary Medicine – Veterinary medicine is a highly competitive field. Students wishing to pursue an education in vet school should plan on an undergraduate course of study that would mirror those planning to pursue MDs. The GRE is required for admission to vet school.


**INTERNSHIPS IN MEDICINE & PUBLIC HEALTH:**
The following are direct links to summer experiences throughout the country. This list is by no means exhaustive but is meant to provide a starting point for searches. Program deadlines often occur in the fall, so research early.

California

- Harvey Mudd College Summer Research in Chemistry
  [www.chem.hmc.edu/www_common/chemistry/research/summer/index.htm](http://www.chem.hmc.edu/www_common/chemistry/research/summer/index.htm)
- Loma Linda University School of Medicine Biomedical Undergraduate Research Program
  [http://www.llu.edu/llu/medicine/basicsciences/research/summerresearch.html](http://www.llu.edu/llu/medicine/basicsciences/research/summerresearch.html)
- Pepperdine University Summer Undergraduate Research in Biology
  [http://seaver.pepperdine.edu/surb](http://seaver.pepperdine.edu/surb)
- University of California San Diego Medical Scientist Training Program
  [http://meded.ucsd.edu/asa/mstp/](http://meded.ucsd.edu/asa/mstp/)
## Delaware
- Delaware State University Undergraduate Research in Molecular Genetics & Genomics
  [Link](http://cars.desu.edu/reu/)

## Florida
- National High Magnetic Field Laboratory Research Experience for Undergraduates
  [Link](http://www.magnet.fsu.edu/education/reu/index.html)

## Georgia
- Emory University: Summer Undergraduate Research Program at Emory (SURE)
  [Link](http://www.cse.emory.edu/sciencenet/undergrad/SURE/SURE.html)

## Illinois
- Argonne National Laboratory Science Undergraduate Laboratory Internships and Student Research Participation Programs [Link](http://www.dep.anl.gov/p_undergrad/summer.htm)
- Illinois Institute of Technology Research Experience for Undergraduates-Engineering Center for Diabetes Research [Link](http://www.grad.iit.edu/reu/)

## Indiana
- Clarian Health Summer Student Research Program [Link](http://www.clarian.org/portal/patients/research?clarianContentID=research/mri_summer.xml)
- Indiana University Simon Cancer Center Summer Research Program (SRP) [Link](http://cancer.iu.edu/education/training/srp/index.php)

## Iowa
- Iowa State University Research Experience in Molecular Biotechnology & Genomics [Link](http://www.reu.iastate.edu/)

## Kentucky
- American Heart Association Ohio Valley Affiliate Program Descriptions [Link](http://www.americanheart.org/presenter.jhtml?identifier=2457)

## Maine
- The Jackson Laboratory Summer Student Program [Link](http://www.jax.org/education/ssp.html)

## Maryland
- Computer Integrated Surgical Systems and Technology with the Engineering Research Institute [Link](http://www.cisst.org/undergraduate-programs)
- National Heart, Lung, and Blood Center Summer Program in Biomedical Research [Link](http://dir.nhlbi.nih.gov/oe/summerprogs.asp)
- National Human Genome Research Institute Summer Internship Program in Biomedical Research [Link](http://www.genome.gov/page.cfm?pageID=10000218)
- National Institute of Biomedical Engineering Summer Internship Program [Link](http://www.nibib.nih.gov/Training/UndergradGrad/besip/home)
- National Institute of Neurological Disorders and Stroke’s Summer Program [Link](http://www.ninds.nih.gov/jobs%5Fand%5Ftraining/summer/#about)
• US Food & Drug Administration Center for Veterinary Medicine Student Summer Intern Program
  http://www.fda.gov/cvm/student_intern.htm

Massachusetts
• Joslin Diabetes Center Summer Research Student Program
  http://www.joslinresearch.org/homedir/summer_research_program.asp

Minnesota
• Hennepin County Medical Center Emergency Department http://www.hcmced.org/

Mississippi
• University of Mississippi Medical Center Neuroscience Scholars Summer Program
  http://cpn.umc.edu/education/nssp/nssp.html

Missouri
• Avila University Research Experience for Undergraduates
  www.avila.edu/bobpowell/7powreu.htm
• Washington University Mallinckrodt Institute of Radiology Summer Research Program
  http://www.mir.wustl.edu/education/internal.asp?NavID=95

Nevada
• American Heart Association Undergraduate Research Program
  http://www.americanheart.org/presenter.jhtml?identifier=3013196

New Jersey
• Coriell Institute for Medical Research Summer Internship Program
  http://www.coriell.org/education/summer-experience-for-students
• University of Medicine & Dentistry of New Jersey Summer Undergraduate Research Experience
  http://www3.umdnj.edu/gsbstrat/summer-research.htm

New York
• Albert Einstein College of Medicine Student Undergraduate Research Program
  http://www.aecom.yu.edu/phd/summer.htm
• Columbia University Amgen Scholars Summer Research Program
• Cornell University Plant Genome Research Project Undergraduate Internships in the Plant Sciences
  http://bti.cornell.edu/pgrp/pgrp.php?id=201
• Gerstner Sloan-Kettering Graduate School of Biomedical Science
  http://www.sloankettering.edu/gerstner/html/54516.cfm
• Mount Sinai Biological Sciences Summer Undergraduate Research Program
  www.mssm.edu/gradschool/surp/index.shtml
• New York University Sackler Institute Summer Undergraduate Research Program
  http://www.med.nyu.edu/sackler/programs/summer.html
North Carolina

- Duke University Research Program in Mechanisms of Behavior
  http://unp.aas.duke.edu/research/mob.php

Ohio

- American Heart Association Ohio Valley Affiliate Program Descriptions
  www.americanheart.org/presenter.jhtml?identifier=2457
- Cleveland Clinic & Lerner Research Outreach Program
  www.lerner.ccf.org/education/undergrad/
- MetroHealth Chester Summer Scholars Program-Ohio residents only
  http://www.metrohealth.org/body.cfm?id=290&oTopID=C
- Ohio College of Podiatric Medicine Pre-Professional Internship Program
  http://www.ocpm.edu/departments/student_affairs/admissions/internship.asp
- University of Cincinnati Summer Premedical Enrichment Program and Summer Research Scholars Program
  www.med.uc.edu/admissions/summerenrich.cfm

Pennsylvania

- Hepatitis B Foundation Summer Internships
  http://www.hepb.org/researchers/summer_internship_program.htm
- Penn State University Summer Research Opportunity in Biomaterials and Bionanotechnology
  http://www.bbsi.psu.edu
- Penn State College of Medicine Summer Undergraduate Research Internship Program
  http://www.hmc.psu.edu/summerresearch/program/index.htm
- Monell Chemical Senses Center-Science Apprenticeship Program
  http://www.monell.org/studentprogram/index.htm
- Pittsburgh Tissue Engineering Initiative Undergraduate Research Summer Internship Program
  http://people.rit.edu/gtfsbi/Symp/premed.htm

South Carolina

- Medical University of South Carolina- Summer Undergraduate Research Program
  http://www.musc.edu/grad/summer/surp/

Tennessee

- Oak Ridge National Laboratory Student Teams Program
  http://see.orau.org/ProgramDescription.aspx?Program=10181
- St. Jude Children's Research Hospital Pediatric Oncology Education Program
  www.stjude.org/poe

Texas

- Baylor College of Medicine Summer Medical and Research Training Program
  http://www.bcm.edu/smart/?PMID=2987
- Cardiopulmonary Research Science and Technology Institute
  http://www.crsti.org/employment.html#summerintern
- Rice University Institute of Biosciences and Bioengineering
  http://nsfreu.rice.edu
Utah

- American Heart Association Undergraduate Research Program
  http://www.americanheart.org/presenter.jhtml?identifier=3013196

Virginia

- Eastern Virginia Medical School Research Activities www.evms.edu/research/index.html

Washington

- Fred Hutchinson Cancer Research Center Summer Intern Program
  http://www.fhcrc.org/science/education/undergraduates/

DC

- American Red Cross Intern Program http://www.redcross.org/support/get-involved/summer-internship-program

West Virginia

- American Heart Association Ohio Valley Affiliate Program Descriptions
  www.americanheart.org/presenter.jhtml?identifier=2457

Nationwide

- National Science Foundation Research Experiences for Undergraduates http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&from=fund
- OSI Pharmaceuticals Undergraduate Internships http://www.candidatecare.com/srccsh/RTI.home?d=astellas.candidatecare.com
- US Army Center for Health Promotion and Preventive Medicine Research Participation Program http://see.orau.org/ProgramDescription.aspx?Program=10058
- National Institute of Health: https://www.training.nih.gov/programs/sip
- Pre-Med Research links compiled by RIT: http://people.rit.edu/gtfsbi/Symp/premed.htm

International

- Pasteur Foundation Zuccaire Summer Internship Program in Paris
  http://www.pasteurfoundation.org/zuccaire.html
- International Summer Service Learning Program http://www.nd.edu/~socconcn/

CAREER SERVICES

Career Services can assist in connecting you with mentors in your chosen field, prep for interviews, and with preparing cover letters, resumes and other job search related documents. View the Science resume example in the Resume Guide and schedule an appointment: https://AveMariaCareerServices/AcquityScheduling.com

Ave Maria Career Services on Social Media: FACEBOOK | LINKEDIN | TWITTER