Survey of Post-Graduation Plans (Careers)
Know of Entrance Exams?

Know Deadlines for applications?

Plan B?

Resume?

Announcements:

See Senior Seminar “Updates” page frequently for current job postings, articles, and discussions about career development trends. “like” the CDO Facebook page. (https://facebook.com/CareerDevelopmentFrancisMarion)

Doctors

- **MD** (Doctor of Medicine - many specialties)
- **DMD/DDS** (Doctor Dental Medicine or Doctor Dental Surgery – many specialties)
- **DVM** (Doctor of Veterinary Medicine - many specialties)
  - All require 4 yrs of medical school, internship, and/or post-doctoral training and specialization, and possibly board certification.
  - Check out Wikipedia for specialties within each field.
- Average salary for doctors? Depends on specialty, board certification, and experience. ~$90,000 to > $350,000
  - "With great (financial) POWER comes great responsibility!"

**Physicians and Surgeons**

**Summary**

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<thead>
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<th>Quick Facts: Physicians and Surgeons</th>
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**What Physicians and Surgeons Do**
Physicians and surgeons diagnose and treat injuries or illnesses. Physicians examine patients, take medical histories, prescribe medications, and order, perform, and interpret diagnostic tests. Surgeons operate on patients to treat injuries, such as broken bones; diseases, such as cancerous tumors; and deformities, such as cleft palates.

**Work Environment**
Physicians and surgeons held about 691,400 jobs in 2012. Many physicians work in private offices or clinics, often with administrative and healthcare personnel.

**How to Become a Physician or Surgeon**
Physicians and surgeons have demanding education and training requirements. Almost all physicians complete at least 4 years of undergraduate school, 4 years of medical school, and, depending on their specialty, 3 to 8 years in internship and residency programs.

**Pay**
Wages for physicians and surgeons are among the highest of all occupations. According to the Medical Group Management Association’s Physician Compensation and Production Survey, median total compensation for physicians varied with their type of practice. In 2012, physicians practicing primary care received total median annual compensation of $229,942 and physicians practicing in medical specialties received total median annual compensation of $396,233.

**Job Outlook**
Employment of physicians and surgeons is projected to grow 10 percent from 2012 to 2022, faster than the average for all occupations. Job growth will occur because of the continued expansion of healthcare-related industries.

Physicians Pay depends on specialty, board certification, and experience.

Table 1. Characteristics of the Selected Specialties

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Lifestyle</th>
<th>Average Income, $ in Thousands</th>
<th>Average Work Hours per Week</th>
<th>Years of Graduate Medical Education Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesiology</td>
<td>Controllable</td>
<td>225</td>
<td>61.0</td>
<td>4</td>
</tr>
<tr>
<td>Dermatology</td>
<td>Controllable</td>
<td>221</td>
<td>45.5</td>
<td>4</td>
</tr>
<tr>
<td>Emergency medicine</td>
<td>Controllable</td>
<td>183</td>
<td>46.0</td>
<td>4</td>
</tr>
<tr>
<td>Family practice</td>
<td>Uncontrollable</td>
<td>132</td>
<td>52.5</td>
<td>3</td>
</tr>
<tr>
<td>Internal medicine</td>
<td>Uncontrollable</td>
<td>158</td>
<td>57.0</td>
<td>3</td>
</tr>
<tr>
<td>Neurology</td>
<td>Controllable</td>
<td>172</td>
<td>55.5</td>
<td>4</td>
</tr>
<tr>
<td>Obstetrics and gynecology</td>
<td>Uncontrollable</td>
<td>224</td>
<td>61.0</td>
<td>4</td>
</tr>
<tr>
<td>Ophthalmology</td>
<td>Controllable</td>
<td>225</td>
<td>47.0</td>
<td>4</td>
</tr>
<tr>
<td>Orthopedic surgery</td>
<td>Uncontrollable</td>
<td>323</td>
<td>58.0</td>
<td>5</td>
</tr>
<tr>
<td>Otolaryngology</td>
<td>Controllable</td>
<td>242</td>
<td>53.5</td>
<td>5</td>
</tr>
<tr>
<td>Pathology</td>
<td>Controllable</td>
<td>202</td>
<td>45.5</td>
<td>4</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>Uncontrollable</td>
<td>138</td>
<td>54.0</td>
<td>3</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>Controllable</td>
<td>134</td>
<td>48.0</td>
<td>4</td>
</tr>
<tr>
<td>Radiology (diagnostic)</td>
<td>Controllable</td>
<td>263</td>
<td>56.0</td>
<td>4</td>
</tr>
<tr>
<td>Surgery (general)</td>
<td>Uncontrollable</td>
<td>238</td>
<td>60.0</td>
<td>5</td>
</tr>
<tr>
<td>Urology</td>
<td>Uncontrollable</td>
<td>245</td>
<td>60.5</td>
<td>5</td>
</tr>
<tr>
<td>Average for the above specialties</td>
<td>Not applicable</td>
<td>208</td>
<td>53.9</td>
<td>4</td>
</tr>
</tbody>
</table>


Veterinarians

Summary

Quick Facts: Veterinarians

2012 Median Pay: $34,460 per year, $41.61 per hour
Entry-Level Education: Doctorate or professional degree
Work Experience in a Related Occupation: None
On-the-job Training: None
Number of Jobs, 2012: 70,390
Job Outlook, 2012-22: 12% (as fast as average)
Employment Change, 2012-22: 8,400

What Veterinarians Do
Veterinarians care for the health of animals and work to improve public health. They diagnose, treat, and research medical conditions and diseases of pets, livestock, and other animals.

Work Environment
Although most veterinarians work in private clinics and hospitals, others travel to farms, work in laboratories or classrooms, or work for the government.

How to Become a Veterinarian
Veterinarians must earn a Doctor of Veterinary Medicine degree from an accredited veterinary college and a state license.

Pay
The median annual wage for veterinarians was $84,460 in May 2012.

Job Outlook
Employment of veterinarians is projected to grow 12 percent from 2012 to 2022, about as fast as the average for all occupations. Candidates can expect very

Source: http://www.bls.gov/ooh/healthcare/veterinarians.htm
Non-private practice jobs:
> USDA
> FDA – food inspector
> CDC – track disease
> Research
> Teaching

**Private practice**

Source: [http://www.aavmc.org/Funding-Education/Veterinarian-Incomes.aspx](http://www.aavmc.org/Funding-Education/Veterinarian-Incomes.aspx)

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**Nurses**

- Certified Nursing Assistant, Licensed Practical nurse (LPN), Registered nurse (RN), Bachelor of Science in Nursing, Master of Science in Nursing, Doctorate in Nursing
- Many specialities!!
- Increased demand for nurses:
  - +39% - Offices of physicians
  - +39% - Home health care services
  - +34% - Outpatient care centers
  - +22% - Hospitals, public and private
  - +20% - Nursing care facilities
Nursing pay scales vary by experience:
(Source: http://www.nursingcalling.com/top-10-highest-paying-nursing-jobs/)

#1 Certified Registered Nurse Anesthetist - $105K & $130K annually

#2 Orthopedics - $120 K

#3 Clinical Nurse Specialist (requires Masters) - $104 K

#4 Nurse Researcher - $75 and $95 K

#5 Mental Health Nurse Practitioner -$70 & $90 K

#6 Certified Nurse Midwife - $75K

#7 Nurse Practitioner - $78 K

#8 Geriatrics - $75 K

#9 Neonatal Nurse - $75 K

#10 Pediatric Nurse - $67 K

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Nursing

You started as FMU Biology BS major & want to switch to nursing? ... You can do that! You might only need few extra courses. .... Speak to nursing student coordinator: Devin Cribb (dcribb@fmarion.edu)

Source: http://www.fmarion.edu/academics/bsnprogram

General Education and Nursing Prerequisites for students without previous bachelors:

- English 112
- English 200**
- Speech Communication 101
- Political Science 101 or 103
- Psychology 334 - Life Span Development
- Social Science Elective
- Literature
- History
- Art 101, Music 101, or Theater 101
- Humancy Elective
- Mathematics 111
- Mathematics 134 - Probability and Statistics
- Biology 100
- Chemistry 101
- Chemistry 102
- Biology 205 - Human Anatomy
- Biology 311 - Microbiology
- Biology 230 - Human Physiology

** Class must be taken at FMU. This class is specific to Francis Marion and there are no English classes that will transfer as English 200.

Science GPA of 2.6 or higher
Physician Assistant

- PA's earn an MS degree from accredited PA program.
- Then become nationally certified, and receive a state license to practice. Then practice medicine on a team under the supervision of physicians and surgeons.
- They are formally educated to examine patients, diagnose injuries and illnesses, provide treatment, and prescribe medication. A physician directly supervises PA’s.

Source: American Association of Physician Assistants

Physician Assistant (from Occupational Outlook Handbook)

Quick Facts: Physician Assistants
- 2012 Median Pay: $90,930 per year
- Entry-Level Education: Master’s degree
- Work Experience in a Related Occupation: None
- On-the-Job Training: None
- Number of Jobs, 2012: 86,700
- Job Outlook, 2012-22: 38% (Much faster than average)
- Employment Change, 2012-22: 15,300

What Physician Assistants Do
Physician assistants, also known as PAs, practice medicine on a team under the supervision of physicians and surgeons. They are formally educated to examine patients, diagnose injuries and illnesses, and provide treatment.

Work Environment
Physician assistants work in physicians' offices, hospitals, and other healthcare settings. Most work full time.

How to Become a Physician Assistant
Physician assistants must complete an accredited educational program. These programs usually lead to a master’s degree. All states require physician assistants to be licensed.

Pay
The median annual wage for physician assistants was $90,930 in May 2012.

Job Outlook
Employment of physician assistants is projected to grow 38 percent from 2012 to 2022, much faster than the average for all occupations. Increased demand for healthcare services from the growing and aging population and widespread chronic disease, combined with a shortage of physicians, will result in increased demand for healthcare providers, such as physician assistants.

Source: http://www.bls.gov/ooh/healthcare/physician-assistants.htm
Medical Technology

Medical Technology

Medical Technology (MT), also called Clinical Laboratory Science, is a paraprofessional field for which the student prepares in chemistry, microbiology, hematology and related disciplines. Well trained and certified Medical Technologists, or Clinical Laboratory Technicians, can enter careers in clinical laboratory work, academic research, public health, teaching and the pharmaceutical industry. The medical technologist not only contributes to the study, diagnosis and treatment of diseases but is of increasing importance in the evaluation of established technical procedures and in the use of new, increasingly complex instruments. At this time, job availability to qualified candidates is relatively good.

Requires a Bachelor’s degree in Medical Technology, and some states require licensing to practice.
Medical and Clinical Laboratory Technologists and Technicians

Summary
Quick Facts: Medical and Clinical Laboratory Technologists and Technicians

- 2012 Median Pay: $47,820 per year; $22.99 per hour
- Entry-Level Education: See How to Become One
- Work Experience in a Related Occupation: None
- On-the-job Training: None
- Number of Jobs, 2012: 325,000
- Job Outlook, 2012-22: 22% (Much faster than average)
- Employment Change, 2012-22: 75,600

What Medical and Clinical Laboratory Technologists and Technicians Do
Medical laboratory technologists (commonly known as medical laboratory scientists) and medical laboratory technicians collect and perform tests to analyze body fluids, tissues, and other substances.

Work Environment
About half of all medical laboratory technologists and technicians were employed in hospitals in 2012. Others worked in doctors’ offices or diagnostic laboratories.

How to Become a Medical and Clinical Laboratory Technologist or Technician
Medical laboratory technologists typically need a bachelor’s degree. Technicians usually need an associate’s degree or a postsecondary certificate. Some states require technologists and technicians to be licensed.

Pay
The median annual wage for medical laboratory technologists was $57,980 in May 2012. The median annual wage for medical laboratory technicians was $37,240 in May 2012.

Job Outlook
Employment of medical laboratory technologists and technicians is projected to grow 22 percent from 2012 to 2022, much faster than the average for all occupations.


Medical Technology

- FMU Medical Technology Program
  http://departments.fmarion.edu/biology/Biology_Department/Degree_Medical_Technology.html

- 3+1 versus 4+1 options

- MT coordinator – Dr. Pryor
**Other Health Careers**

- Not the same requirements as a medical degree or a graduate degree.
- Check out Wikipedia for specialties within allied health careers OR your course webpage (see above)

- Physician’s Assistant (MS degree – FMU will have an PA program in 2016!
- Chiropractic/massage/occupational therapy
- Dental assistants/hygienists
- EMT/Paramedic
- Physical Therapist / Physical Trainer/Athletic Trainer
- Medical transcription
- Dietetics/nutritionist
- Medical Sonographer
- Occupational Therapy
- Speech Pathologist

**Graduate School**

- **M.S. (Master of Science - 2 or more yrs)**
  - Research (thesis degree)
  - Teaching (non-thesis degree) – for teaching at high school
  - **Wide range** of job opportunities

AND / OR

- **Ph.D. (3-5 yrs)**
  - Post-Doctoral Employment
    - Research
    - Teaching (professor) – post secondary schools (colleges, universities)
  - Administraion
**Professors** - requires PhD, post-doc experience good, teaching experience great


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**High School Teacher** - BS degree & public schools need certificate/license

**With a Ph.D. / MS**

**Field and/or Laboratory Research**

Zoology, Botany, Forestry, Ecology, Wildlife Management, Agriculture, etc ... 

**Ph.D.s / MS**

**Marine Biology**

- Some colleges offer BS in marine biology
- scientist/researcher
- conservation
- consultant
- parks / zoos / aquariums
- wildlife management
- fisheries !!!
- etc

Animal Science
- Some colleges offer BS in animal science
- farmer
- industry / commercial
- inspector
- researcher
- consultant

Ph.D.s / MS / or BSc in Animal Science

Zoos/Aquariums
- Animal curator, animal training, husbandry, nutrition, etc...

- Ph.D. or MS
- or BSc in Biology, Zoology, Wildlife Biology, often require internships
- Often can work with Associate’s degree in Veterinary Technology.

See http://www.aza.org/joblistings/
Many different “entry levels”
- Associate’s degree (2 yr)
- BS degree (4 yr)
- MS degree (2-3 yrs)
- MD degree (MUCH LONGER)

**Associates degree in forensic technology** (2 yr technical school)
- Forensic technology, Crime scene investigation, Evidence technology, & Homicide investigation

**Bachelor’s degrees:**
- BS in forensics or BS in chemistry w/forensics specialty
- private, state or federal forensic laboratories, insurance companies or in the judicial system

**MS in Forensics:**
- 2-3 yrs graduate school
- Requires internship
- jobs in crime scene analysis, forensic science, criminal justice laboratories, medical examiners’ offices, hospitals, universities, police departments and government agencies

**Forensics Pathologist:**
- 4 yrs medical school (MD)
- Residency in forensics (4-5 yrs)
- 1 yr fellowship
- Certification (pass The American Board of Pathology)
### Forensic Science Technicians

**Summary**

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**What Forensic Science Technicians Do**

Forensic science technicians help investigate crimes by collecting and analyzing physical evidence. Many technicians specialize in either crime scene investigation or laboratory analysis. Most forensic science technicians spend some time writing reports.

**Work Environment**

Most laboratory forensic science technicians work full time during normal business hours. Crime scene investigators may work long hours, and travel to crime scenes within their jurisdiction.

**How to Become a Forensic Science Technician**

Forensic science technicians typically need at least a bachelor’s degree in the natural sciences, such as chemistry or biology. On-the-job training is usually required for both those who investigate crime scenes and those who work in labs.

**Pay**

The median annual wage for forensic science technicians was $52,840 in May 2012.

**Job Outlook**

Employment of forensic science technicians is projected to grow 6 percent from 2012 to 2022, slower than the average for all occupations. Competition for jobs will be strong because of substantial interest in forensic science.


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### Botany, Botanical Research
Animal Trainer, Animal Behaviorist (domestics)

http://www.animalbehaviorcollege.com/

Animal Trainer, Animal Behaviorist (exotics)

- may require BS, MS, Technical School, & on-the-job apprenticeship. (http://www.animalbehaviorcollege.com/)

http://www.seaworld.org/career-resources/info-books/zoo-careers/career-opportunities.htm
**Museum Curator** – most require MS degree in art, history, or archeology. BS degree sometimes for smaller museums.


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**Do Your Own Searching!**