

## PRE-MED AND PRE-HEALTH PROGRAM

**Dr. Gwynne D. Brown, Director**

**Forbes Hall 3033**

**(757) 594-7782**

**gwynne.brown@cnu.edu**

Medical schools and other professional health programs typically seek applicants with a well-rounded undergraduate education, such as that offered by CNU's liberal learning curriculum. Like most colleges and universities, CNU does not offer a *pre-med* or *pre-health* major. However, our program can help students from any academic major to prepare for admission into medical school and other health profession programs. In addition to offering all the necessary pre-requisite coursework, CNU offers a variety of resources, such as academic and career advising, mentoring, clinical internship opportunities, and workshops and seminars. Our goal is to help any highly-motivated student gain admission into the professional school of her or his choice.

### The Council for Health Professions Preparation

The Council for Health Professions Preparation (CHPP) consists of the Director of Pre-health Programs (DPP), several faculty members, administrators and local health practitioners. The Council acts as a liaison between the pre-health student and the DPP, provides advice and guidance to the DPP with respect to the Pre-med & Pre-health Program, participates in the evaluation of all pre-med/pre-health students who request a *Committee Letter* for their application to a professional school or program, and establishes the criteria for student selection and continuation in all health-career related programs at CNU, such as the Pre-med Scholars Program (PSP), the Riverside Scholars Program, the B.S.-D.O. CNU-VCOM and the B.S.-M.D. CNU-EVMS Joint Programs.

### How to Get started

We suggest that you do the following as soon as you think you might be interested in the pre-medical or pre-health program at CNU:

1. register on our pre-health database at [interweb.cnu.edu/prehealth/registration](http://interweb.cnu.edu/prehealth/registration);
2. consult our web pages ([prehealth.cnu.edu](http://prehealth.cnu.edu)) for more detailed information about the Program, professional school requirements, curriculum guidelines, etc.;
3. meet with the DPP.

### What if I can't decide which career I want?

Don't panic! You have time to determine the career that's right for you. You should talk with someone in the Center for Career Development (CNH 305) or the DPP about the various health career possibilities available to you. It is also wise to experience various health careers first-hand by volunteering at hospitals, local clinics,

doctors' offices, etc., and by shadowing practitioners in the various fields of interest to you.

Academically, a good start is CHEM 121/121L (unless you have not completed high school chemistry, or are fairly certain you will pursue physical therapy or occupational therapy and do not want a BS in biology, in which case you can take CHEM 103/103L). If you are a biology major, the first two years of your curriculum will take care of most of the pre-requisites for many health profession programs. If you are not a biology major, you will start with BIOL 211/211L, followed by BIOL 213/213L (you will need special permission to enroll in both, see the DPP).

## SPECIAL OPPORTUNITIES

### Pre-med Scholars Program (PSP) (see Pre-med Scholars section below)

The Pre-Med Scholars Program invites select students who meet specific criteria to participate in an enriched undergraduate experience that equips them to become strong candidates for the medical, physician assistant, dental or veterinary school of their choice. The Pre-Med Scholars Program offers:

- eligibility for the CNU-Eastern Virginia Medical School (EVMS) B.S.-M.D. Joint Program (early acceptance);
- eligibility for one of three opportunities with the Edward Via College of Osteopathic Medicine (VCOM) including Rocovich Scholars, early acceptance, and/or guaranteed early interview;
- opportunities for pre-med scholarships (Riverside Medical Group Leadership Scholars);
- focused, individualized advising and mentoring;
- guaranteed clinical shadowing & service learning opportunities.

### ODU School of Physical Therapy Guaranteed Admission Agreement

Old Dominion University (ODU) School of Physical Therapy and CNU have entered into an agreement whereby CNU applicants that meet certain criteria and are recommended by the DPP and CHPP will be guaranteed admission into the ODU Doctor of Physical Therapy (DPT) program. The student must complete all the requirements of admission including the academic and GRE requirements listed below, volunteer hours, three letters of recommendation, and the application provided to the DPP by ODU.

**Requirements:**

1. The student must complete all prerequisite PT courses at CNU with a minimum grade of *B* in all science courses, an overall science GPA of 3.50 or above, and graduate from CNU with a baccalaureate degree and a 3.50 cumulative GPA.
2. The science courses for this GPA will include: BIOL 211/211L, 213/213L, 314/314L - 315/315L; PHYS 151/151L-152/152L or PHYS 201/201L-202/202L; and CHEM 103/103L-104/104L or 121/121L-122/122L.
3. The student must complete the Graduate Record Examination, with scores of at least 150 each for the verbal and quantitative sections, and a writing score of at least 4.

**ENTRANCE EXAMS AND APPLICATION SERVICES**

Most medical and health profession schools use some form of the Centralized Application Service (CAS); cycles usually open in the spring or early summer preceding senior year. Deadlines for each school vary, so be sure to check each program's individual website. In addition, you should take your program's relevant entrance exam (MCAT, DAT, GRE, etc.) in a timely manner in order to complete the application packet early in the cycle.

**SUGGESTED COURSE PLANS**

Pre-requisite coursework must be completed at some minimal level determined by each particular program; grades below a *C* are generally not accepted and certain schools may require a *B-* or *higher*.

*Students are ultimately responsible for determining specific course and admission requirements for any program to which they plan to apply.*

**Pre-Medicine**

The *traditional* pre-med student will apply to medical school after his or her third year of study; it takes a minimum of three years to complete the pre-requisite coursework. Applications are submitted at least one year before intended matriculation. In addition to the pre-requisite coursework, the successful applicant will have completed a significant number of hours participating in clinical internships and shadowing in diverse medical settings. A successful candidate will have also accumulated a significant amount of volunteer work and other extracurricular activities.

Pre-requisites for applying to medical school vary among schools, however the following courses should be completed prior to taking the MCAT:

1. BIOL 211/211L, 213/213L (non-BIOL majors will need special permission to enroll in these courses; see the DPP);
2. CHEM 121/121L-122/122L (these courses should be completed as soon as possible);
3. CHEM 321/321L-322/322L;
4. PHYS 151/151L-152/152L or PHYS 201/201L-202/202L.

5. BCHM 414 and 415 for biochemistry majors, or BCHM 395 for non-biochemistry majors;
6. PSYC 201 and 202;
7. SOCL 205;
8. MATH 125.

Most medical schools require some form of English composition for two semesters; students not taking ENGL 123 and/or ENGL 223 should be aware of this. **Not all medical schools will recognize AP credit.** Additional pre-requisites, such as math or an additional science course may be required. Applicants must be sure to check the individual requirements of each medical school to which they plan to apply. Other beneficial courses include BIOL 301/301L, 307, 313, 314/314L-315/315L, 411, 412/412L, and MATH 140.

**Pre-Pharmacy**

Requirements for admission to pharmacy school vary among the different programs. It is critical for the prospective applicant to check the specific requirements for each program he/she intends to apply to. The pre-requisite coursework will take three years to complete. Applicants are expected to have acquired some experience in a pharmacy setting, and should be able to provide strong letters of recommendation from teachers, pharmacist(s), and others who can attest to the applicant's character and attributes.

Pre-requisites for applying to a typical pharmacy program:

1. BIOL 211/211L, 213/213L (non-BIOL majors will need special permission to enroll in these courses; see the DPP);
2. CHEM 121/121L-122/122L (these courses should be completed as soon as possible);
3. CHEM 321/321L-322/322L;
4. PHYS 151/151L-152/152L or PHYS 201/201L-202/202L;
5. BIOL 314/314L-315/315L, 301/301L;
6. BCHM 414 or 395;
7. MATH 125, 135 or 140 or 148;
8. COMM 201;
9. Economics is required by some schools.
10. The following courses are recommended, but not always required: BIOL 307, 313, 411 or 412.

**Pre-Dentistry**

Requirements for admission into dental school vary among the different programs. It is critical for the prospective applicant to check the specific requirements for each program he/she intends to apply to. The pre-requisite coursework will take three years to complete. Applicants are expected to have had some experience in dental settings, and should be able to provide strong letters of recommendation from teachers, dentist(s), and others who can attest to the applicant's character and attributes.

Evidence of good manual dexterity is an asset.

Pre-requisites for applying to a typical dental program

1. BIOL 211/211L, 213/213L (non-BIOL majors will need special permission to enroll in these courses; see the DPP);
2. CHEM 121/121L-122/122L (these courses should be completed as soon as possible);
3. CHEM 321/321L-322/322L;
4. PHYS 151/151L-152/152L or PHYS 201/201L-202/202L;
5. BCHM 414 or 395.
6. The following courses are strongly recommended, but not always required: BIOL 301/301L, 307, 313 and 314/314L-315/315L, 411, 412/412L.

### Pre-Physical Therapy

Most physical therapy programs require only two semesters of chemistry. This can be satisfied with CHEM 103/103L-104/104L. If you are not certain which medical field you will ultimately pursue, or to be eligible for any program, you might consider the two year chemistry sequence, CHEM 121/121L-122/122L and 321/321L-322/322L. In addition to the pre-requisite courses, applicants must have accumulated a significant number of hours of physical therapy experience, including some in acute-care settings. Some programs, such as Old Dominion University, do not interview applicants and base their decision solely on the application (including essays/personal statements) and letters of reference.

There are significant differences in the prerequisites required among different **physical therapy schools**. Students must check the prerequisites for each physical therapy program. A *typical* physical therapy program requires:

1. BIOL 211/211L, 213/213L, BIOL 314/314L-315/315L; (non-BIOL majors will need special permission to enroll in the introductory biology courses; see the DPP);
2. CHEM 121/121L-122/122L, if chemistry major or obtaining a B.S. in biology; OR
3. CHEM 103/103L-104/104L for other majors or if obtaining a B.A. in biology;
4. PHYS 151/151L-152/152L or PHYS 201/201L-202/202L (major dependent);
5. MATH 125;
6. Two psychology courses (6 hours); certain schools accept 3 of those hours from other social science courses.

### Pre-Occupational Therapy

Occupational therapy schools accept applicants from diverse academic backgrounds. Although chemistry is not typically listed as a pre-requisite for occupational therapy school, students must be enrolled in or have completed one of the introductory chemistry sequences in order to enroll in the introductory biology courses. This can be satisfied

with CHEM 103/103L - 104/104L. In addition to the pre-requisite coursework, most programs require applicants to have a certain number of hours of occupational therapy experience. Since the occupational therapy has such a broad scope of practice, it is desirable for applicants to have experiences in multiple settings.

There are significant differences in the prerequisites required among different occupational therapy schools. Students must check the prerequisites for each program. A *typical* program requires:

1. BIOL 211/211L, 213/213L, BIOL 314/314L-315/315L; (non-BIOL majors will need special permission to enroll in these courses; see the DPP);
2. ANTH 203;
3. PSYC 207 and PSYC 315 (PSYC 201 and 202 are pre-requisites for PSYC 315);
4. PHYS 151/151L-152/152L or PHYS 201/201L-202/202L (major dependent);
5. MATH 125;
6. BIOL 271;
7. Additional anthropology, sociology or psychology classes as required.

### Pre-Physician's Assistant

The typical Physician's Assistant program lasts approximately 28 - 30 months and leads to a Masters in Physician Assistant Studies. Admission to a P.A. program is similar to that for other health careers, in that it is based on overall academic performance, performance in pre-requisite courses, personal statements, and letters of recommendation, including one from practicing P.A. In addition, most programs require a significant number of patient contact hours, therefore many students volunteer as Emergency Medical Technicians (EMT-B) or become Certified Nursing Assistants (CNA).

Pre-requisites for applying to a typical physician assistant program vary, therefore the list below is a guide only:

1. BIOL 211/211L, 213/213L (non-BIOL majors will need special permission to enroll in these courses; see the DPP);
2. CHEM 121/121L-122/122L;
3. CHEM 321/321L-322/322L (many PA schools only require one semester of organic chemistry and some schools allow students to substitute Biochemistry for Organic Chemistry, however, at CNU Organic Chemistry is a pre-requisite for Biochemistry);
4. BIOL 301/301L, (BIOL 307 may serve as an alternative); BCHM 414 or 395;
5. BIOL 314/314L-315/315L;
6. PSYC 207 and PSYC 315 (PSYC 201 and 202 are pre-requisites for PSYC 315);
7. MATH 125.

8. The following courses are strongly recommended (required by some programs): BIOL 271, 313.

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### Pre-Veterinary Medicine

Because there are relatively few Veterinary Medicine Schools in the U.S., criteria for admission is very competitive, despite the looming shortage of practicing veterinarians. A strong GRE score is important in addition to a solid academic performance. Many hours of experience with animals is paramount; admissions committees look for confidence and competence in animal handling skills. Exposure to a variety of animal groups (small, large and exotic) is also important. At least one letter of recommendation from a practicing veterinarian is required.

Pre-requisites for applying to a typical veterinary medicine program:

1. BIOL 211/211L, 213/213L (non-BIOL majors will need special permission to enroll in these courses; see the DPP);
2. CHEM 121/121L-122/122L (these courses should be completed as soon as possible);
3. CHEM 321/321L- 322/322L;
4. PHYS 151/151L-152/152L or PHYS 201/201L-202/202L;
5. BCHM 414 or 395;
6. MATH (6 credits in either algebra, trigonometry, calculus and/or statistics).
7. Six credit hours in English are often required.
8. The following courses are strongly recommended, but not required: BIOL 301/301L, 307/307L, 313, 409/409L, and 420/420L.

### Health Professions not Listed

Consult with the Center for Career Development (CNH 305) or the DPP. Various websites also provide valuable information (such as Explore Health Careers: [explorehealthcareers.org](http://explorehealthcareers.org)).

## COMMITTEE EVALUATION AND LETTER

Qualified students may request an evaluation and Committee Letter from the CHPP. A Committee Letter is usually favored by admissions committees when evaluating applicants, and is a composite of the committee's evaluation of the applicant as well as those of individual referrers.

In order to receive an evaluation from CHPP, students must satisfy **all** of the following criteria by the published deadline each semester:

1. Complete a *Health Profession Intent Form* through [interweb.cnu.edu/prehealth/registration/](http://interweb.cnu.edu/prehealth/registration/);
2. Submit to the Director of Pre-health Programs (DPP), **in writing**, a request for a CHPP Letter of recommendation; a signed FERPA release form must be submitted with the request;

3. Assemble and maintain an electronic portfolio that contains the necessary materials for evaluation of the candidate. The portfolio should contain (but is not limited to):

- a. letters of recommendation from instructors, medical/health professionals, work/volunteer supervisors, and others who can speak to the candidate's qualifications. It is strongly recommended that the student have letters sent directly to the DPP; *non-confidential* letters have less impact than *confidential* ones. Letters should be on letterhead and signed.
- b. a copy of the student's academic record (an unofficial copy from the Registrar is acceptable);
- c. documentation relating to relevant activities outside the classroom (e.g., leadership roles, volunteer work, experience in medical/clinical settings, outside interests, etc.);
- d. an essay written by the student describing why the student is pursuing the career path chosen and why the student is qualified and should be selected by the admissions committee; the student should submit the essay to the Writing Center or other reviewers for evaluation and revision before submitting it to the committee as part of the portfolio.
- e. meet or have the potential to meet all necessary pre-requisites for admission to the selected program;
- f. meet at least once per semester with the DPP;
- g. maintain adequate academic progress;
- h. participate in a Committee Interview to a satisfactory level. **NOTE:** You should make an appointment for interview preparation in the Center for Career Development well in advance of the CHPP Committee interview.

The Committee will select one of the following levels of evaluation:

- Truly exceptional: in the top 5 percent
- Exceptional: 6 to 15 percent
- Outstanding: 16 to 25 percent above
- Above average: 26 to 40 percent
- Average: 41 to 60 percent
- Recommend with reservation: below 60 percent
- Not able to recommend: student doesn't meet criteria

The student will be notified of the CHPP's *level* of evaluation, and will confirm, in writing, that he/she would still like to have the letter sent. The student may request that the DPP NOT send the letter.

### PRE-MED SCHOLARS PROGRAM

The Pre-med Scholars Program (PSP) provides specially selected students with an enriched undergraduate experience that will facilitate their matriculation to the



medical, physician assistant, dental or veterinary school of their choice. Through a combination of intensive advising and mentoring, seminars and workshops, and structured clinical and service-learning experiences, the Program provides the student with all of the opportunities needed to become a strong candidate for admission to medical school.

The Pre-med Scholars Program is administered by the DPP under the guidance of the Council for Health Professions Preparation as part of the Pre-med and Pre-health Program.

### **Benefits of the Program**

In addition to a rigorous academic program that ensures meeting professional graduate school pre-requisites, PSP students are eligible for the CNU-EVMS B.S.-M.D. Joint Program, VCOM early admission agreements, opportunities for pre-med scholarships, receive focused, individualized advising from the DPP and mentoring by physicians. PSP students are also guaranteed clinical shadowing and service learning opportunities.

### **Entering the Program**

Admission to the Program is open to any entering freshman with an SAT (critical reading & math) score  $\geq 1250$  on the old SAT or a combined 1310 on the new SAT (or ACT  $\geq 28$ ) who is interested in a career in medicine, dentistry or veterinary medicine. Interested students should contact the DPP after acceptance to the University.

Continuing CNU students with between 30-60 credit hours who have completed CHEM 121/121L and 122/122L, have an overall and science GPA  $\geq 3.50$ , and have an interest in applying to medical, physician assistant, dental or veterinary school may also apply to the program by contacting the DPP.

### **Program Requirements**

In addition to completing the general academic requirements and specific degree requirements for the academic major of their choosing, all PSP students must:

- maintain an overall and science GPA of not less than 3.40;
- successfully complete the PMED Activities course each semester;
- complete the required coursework for application to medical, dental or veterinary school in a timely manner.

Students successfully completing the PSP will receive special letters of recommendation from the CHPP.

### **CNU-EVMS B.S.-M.D. Joint Program and Early Acceptance Program with VCOM**

In order to facilitate qualified CNU students' entry into medical school and enrich their undergraduate

experience, CNU had reached separate agreements between Eastern Virginia Medical School (EVMS) and the Edward Via College of Osteopathic Medicine (VCOM). Selected students may receive early acceptance in one of the aforementioned medical schools upon satisfactory completion of their undergraduate degree program and continued high academic achievement.

Students apply for early acceptance in the spring of their sophomore year by completing the appropriate application form for each school and submitting it to the DPP. The CHPP will review the applications and select students for an interview. CHPP then submits their nominees to EVMS and/or VCOM. All further selection processes (invitation for on-campus interviews and offers of provisional acceptance) are conducted by the individual medical schools. Students accepted early to VCOM do not have to take the MCAT. Students accepted early to EVMS must earn  $\geq 503$  on the MCAT to guarantee admission.

### **Academic Program Criteria for Program Applicants**

1. College Sophomore in good standing at CNU;
2. Scholastic Aptitude Test (critical reading & math)  $\geq 1250$  on the old SAT or a combined 1310 on the new SAT (ACT  $\geq 28$ );
3. an overall and science GPA from CNU of 3.40 at the time of application;
4. grades of at least a *B* in CHEM 121/121L-122/122L and in the first semester of CHEM 321/321L.

The successful applicant will also demonstrate an active interest in medicine and participate in extracurricular activities.

Students in PSP not admitted during the early admission process to VCOM are guaranteed an early interview during the spring of their junior year. Students requesting an early interview to VCOM must be in good standing in PSP.

### **Rocovich Scholars**

The Rocovich Scholars Program is for students meeting one of the following criteria: 1) reside in a rural or medically underrepresented area in Virginia or the nearby Appalachian region; 2) come from a low socioeconomic background; or 3) is a member of an under-represented minority. The applicants must also have SAT scores at or above 1100 (critical reading and math) on the old SAT or a combined 1170 on the new SAT and a high school GPA of 3.5 or higher. While at CNU, Rocovich Scholars must maintain a GPA of 3.4, continue as a Pre-med Scholar and participate in the President's Leadership Program (PLP).

### **Riverside Medical Group (RMG) Scholars**

Each year, two incoming freshmen interested in pursuing a career as a physician are selected to receive a \$2500 scholarship from the Riverside Medical Group\*. Upon successful completion of their freshman year with at least a 3.70 GPA, these students will then receive

\$5000/year if they maintain a 3.50 GPA and remain in good standing in PSP. One to three additional students will be selected from among the current PSP participants to receive a \$5000/year scholarship. Upperclassmen must maintain a 3.50 GPA and remain in good standing in the PSP to maintain their scholarships. In addition to full participation in the PSP, RMG scholars shadow at Riverside Medical Center up to four times per semester and will be offered a paid internship with Riverside Health Systems for one summer following their sophomore year.

\*To be eligible for a RMG scholarship, applicants must have a minimum SAT score of 1250 on the old critical reading and math SAT, a 1310 on the new SAT, or a 28 on the ACT.

(approximately 4 hours each) or an alternate clinical experience approved by the DPP, as well as completion of an approved service learning activity. **This course is graded pass/fail. May be repeated once.**

## THE CURRICULUM IN PRE-MED

### **PMED 010. PSP Activities I (0-0-1)**

*Restricted to freshman PSP students.*

*Fall and Spring.*

Participation in a number of requirements for the Pre-med Scholars Program, including: participation in regularly scheduled seminars, completion of monthly clinical blocks (approximately 4 hours each), as well as completion of an approved service learning activity. **This course is graded pass/fail. May be repeated once.**

### **PMED 020. PSP Activities II (0-0-1)**

*Restricted to sophomore PSP students.*

*Fall and Spring.*

Participation in a number of requirements for the Pre-med Scholars Program, including: participation in regularly scheduled seminars, completion of monthly clinical blocks (approximately 4 hours each), or an alternate clinical experience approved by the DPP as well as completion of an approved service learning activity. **This course is graded pass/fail. May be repeated once.**

### **PMED 030. PSP Activities III (0-0-1)**

*Prerequisite: PMED 020, junior standing.*

*Fall and Spring.*

Participation in a number of requirements for the Pre-med Scholars Program, including: participation in regularly scheduled seminars, completion of monthly clinical blocks (approximately 4 hours each) or an alternate clinical experience approved by the DPP, as well as completion of an approved service learning activity. **This course is graded pass/fail. May be repeated once.**

### **PMED 040. PSP Activities IV (0-0-1)**

*Prerequisite: PMED 030, senior standing.*

*Fall and Spring.*

Participation in a number of requirements for the Pre-med Scholars Program, including: participation in regularly scheduled seminars, completion of monthly clinical blocks