- What does the MCAC do?
- Do I need the MCAC?
- How do I get to medical (dental, optometry, etc.) school?
- How do I become pre-med?
- Where do I get reliable information?
- What do I need to apply?
- Am I a good candidate for medical school?
- What courses do I need?
- Do I have to be a biology major?
- Do minors help?
- Do I need to shadow more than one doctor?
- Do I need research?
- When should I get started?
- What are my chances of getting in?
- How important is the MCAT?
- Is the GPA more important than the MCAT?
- Does my major matter at all?
- Is my C in Orgo going to keep me out of medical school?
- What is the minimum GPA to apply? Is there a minimum MCAT to apply?
- MD vs DO?

- **Can you talk to my parents?***
- How long should I study for the MCAT?
- Should I take an MCAT prep course?
- When should I take the MCAT?
- I want to stay (or leave) NJ?
- Which schools? How many?
- Does it help to be in state?
- When should I apply? Early decision?
- Is it better to apply early?
- How many letters of recommendation?
- Who gets a composite letter?
- What happens if I don't get a composite letter?
- What are my chances of getting in?
- Should I take the MCAT again?
- Should I apply to MD, MD and DO, or DO only?
- What happens if I apply later in the cycle?
- When should I think about a gap year(s)?
- When will I know if I get in?
- If I'm on the waitlist does it mean I'll get in?
- What happens if I don't get in?
- Are post-bac programs worth it?

Medical School - Advising for Parents

Supporting students interested in medical careers

Who am I?

- Sudhir Nayak, Ph.D. (nayak@tcnj.edu)
  - Professor of Biology
  - TCNJ ≅20 years
- Roles
  - Research
  - Teaching
  - Administration

Who am I?

- Research
  - Genetics, genomics, bioinformatics
- Teaching
  - Frequently
    - Genetics
    - Genomics and Bioinformatics
    - Genetics of Human Disease
    - First year Seminar
  - Less frequently
    - Mathematical and Computational Biology
    - Capstone - Genome-wide Approaches to Medicine

Who am I?

- Administrative roles
  - Chair, Medical Careers Advisory Committee
  - Director, 7-Year Medical Programs
- I do presentations like this one
  - General information, data-driven advising, and myth busting
  - TCNJ students, parents, alumni, high school students

Where can I get this presentation?

- PDF available on the MCAC website
  - **https://mcac.tcnj.edu/**
  - Google “TCNJ MCAC”
- MCAC home
  - Events and Workshops (right side)
  - Scroll down to link for PDF of Parent Advising Session Presentation
  - All links active

What do you want your parents to know?

- Real resources
  - “Pre med is not a major”
- MD -vs- DO
  - Other medical careers
  - MCAT and GPA parameters
- MCAT prep and time required
- The volume and difficulty of courses required
  - Getting all the courses in
- Things that actually improve chances for medical school admission
- Gap year
- Research
- Real-life example

Resources for students and parents

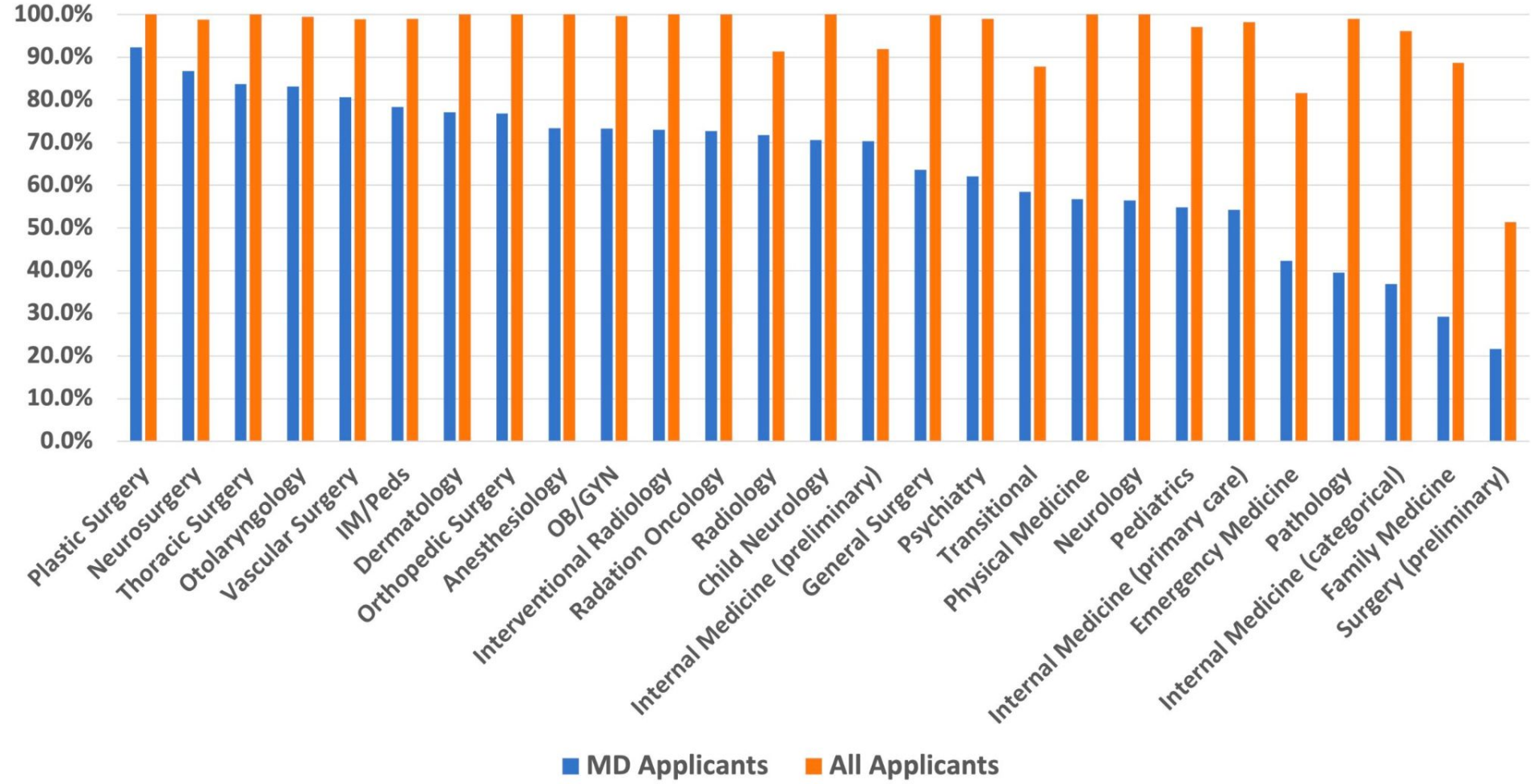
- Medical Careers Advisory Committee (MCAC)
  - Presentations, data driven advising, mentoring
- American Association of Medical Colleges (AAMC)
- Student associations at TCNJ
  - TCNJ American Medical Student Association (AMSA)
  - Delta Epsilon Mu
  - Minority Association of Pre-Health Students (MAPS)

MD (Allopathic) -vs- DO (Osteopathic) Medicine

- MD is a Doctor of Medicine
  - 75% of medical degrees
  - 12–24 months in the classroom + remainder in clinical training
  - 93.5% (92-95%) residency match rate (>99% at top schools)*
- DO is a Doctor of Osteopathic Medicine
  - 25% of medical degrees
  - 12–24 months in the classroom + remainder in clinical training
  - 91.6% (89-92%) residency match rate (>99% at top schools)
  - Enrollment rose by 68% between 2011–2022
- **As of 2020 they apply to the same residency programs**

MD (Allopathic) -vs- DO (Osteopathic) Medicine

- **Both programs = physician**
- Apply to the same residency programs
  - Accepting either exam (USMLE or COMLEX)
- Differences
  - Philosophy
    - >60% of DO graduates are in primary care
    - <30% of MD graduates are in primary care
  - Criteria for acceptance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Neurosurgery
Thoracic Surgery
Otolaryngology
Vascular Surgery
IM/Peds
Dermatology
Orthopedic Surgery
Anesthesiology
OB/GYN
Interventional Radiology
Radation Oncology
Radiology
Child Neurology
Internal Medicine (preliminary)
General Surgery
Psychiatry
Transitional
Physical Medicine
Neurology
Pediatrics
Internal Medicine (primary care)
Emergency Medicine
Pathology
Internal Medicine (categorical)
Family Medicine
Surgery (preliminary)
MD Applicants
All Applicants

GPA and MCAT for MD programs

- **GPA: 3.7** average
- MCAT is the single best predictor of who gets in
  - High: 528 (100th percentile)
  - Excellent score: 515 (>90%)
  - **Competitive score: 512 (≅85%)**
  - Good score: 510 (≅80%)
  - Borderline score: 508 (≅75%)

GPA and MCAT for DO programs

- **GPA: 3.6** average
- MCAT is the single best predictor of who gets in
  - High: 528 100th percentile
  - Excellent score: 510 (≅80%)
  - **Competitive score: 507 (≅75%)**
  - Good score: 505 (≅65%)
  - Borderline score: 503 (≅60%)
- Assumes letter of support from DO

Other medical careers

- **Optometry**
  - GPA: ≅3.5
  - OAT (Optometry Admission Test) score: ≅330 (≅75%)
- **Dentistry**
  - GPA: ≅3.5
  - DAT (Dental Admission Test) score: ≅20 (≅75%)
- **Podiatry**
  - GPA: ≅3.3
  - MCAT score: ≅500 (≅50%)
- Physicians Assistant, Physical Therapist, Pharmacy (PharmD), Occupational Therapist, Accelerated Nursing, etc.

Is pre med a major?

- All Biology (BS) and Chemistry majors are “pre med” for their first 2 years by default
- Any student that takes a series of courses required by all medical schools*
  - Philosophy, Math, Spanish, English, Computer Science, Engineering, Psychology, Public Health, Kinesiology, etc.
- **Pre med is not a major**

Medical School required courses

- 2 semesters of biology with lab
  - BIO 201, BIO 211
- 2 semesters of inorganic chemistry with lab
  - CHE 201, CHE 202
- 2 semesters of organic chemistry with lab
  - CHE 331, CHE 332
- 2 semesters of physics with lab
  - PHY 201*, **PHY 202***

Medical school required courses (cont.)

- 2 semesters of English (or equivalent)
  - All majors at TCNJ have this automatically
- 2 semesters of math
  - MAT 127, STA 215 or MAT 128*
- Other (psychology and sociology)
  - PSY 101 and SOC 101

Medical school recommended courses

- Microbiology
- Genetics
- Physiology
- Immunology
- Statistics / biostatistics
- Second course in biochemistry or advanced cell biology
- Computer science*

How do I get all the medical school requirements in?

- Academic advising
  - Work out a plan, backups, alternatives
  - **Pathway examples**
- Summer coursework at TCNJ
  - +: Rigorous coursework, counts toward your TCNJ GPA
  - -: Costs money
- Summer coursework at community college
  - +: Significantly cheaper, lots of courses, count if you go through NJtransfer
  - -: Course rigor, performance on MCAT, may “look bad”, does not count toward TCNJ GPA

How do I get all the medical school requirements in?

- Winter course work
  - Great for meeting Liberal Learning requirements
- Gap year(s)
  - **Addressed later in the presentation**
- 5th year at TCNJ to complete medical school requirements
  - +: Spread out requirements, allows for double major/minor
  - -: Costs money
- Post-bac program (E.g. Rutgers)
  - +: Allows completion of requirements over 1-2 years
  - -: Costs money, may or may not help, repeating courses

Common mistakes

- Complete the medical school requirements in as fast as possible
  - Example: CHE 331, BIO 231, PHY 201
    - **Usually results in disaster**
- Not sequencing the courses properly
  - Example: Taking CHE 201 before math skills are addressed
- Taking courses before you are ready
  - Example: Taking CHE 331 because everyone else is
- Not developing time management and study skills for STEM courses

Basic components of a medical school applicant

1) MCAT - Medical College Admission Test
2) GPA - Grade Point Average (courses matter)
3) Letters of recommendation (composite letter)
4) Clinical experience (direct patient contact > shadowing)
5) Volunteering (sustained experiences)
6) Other experiences (lived experience)*

- **You get in medical school by doing these obvious things well.**

Chances of getting in - primary factors

- **MCAT - Medical College Admission Test**
  - Most important factor
- **GPA - Grade Point Average**
  - Less important than the MCAT
    - Science GPA (more important)
    - Non-science GPA (less important)
  - Preparatory courses / advanced courses

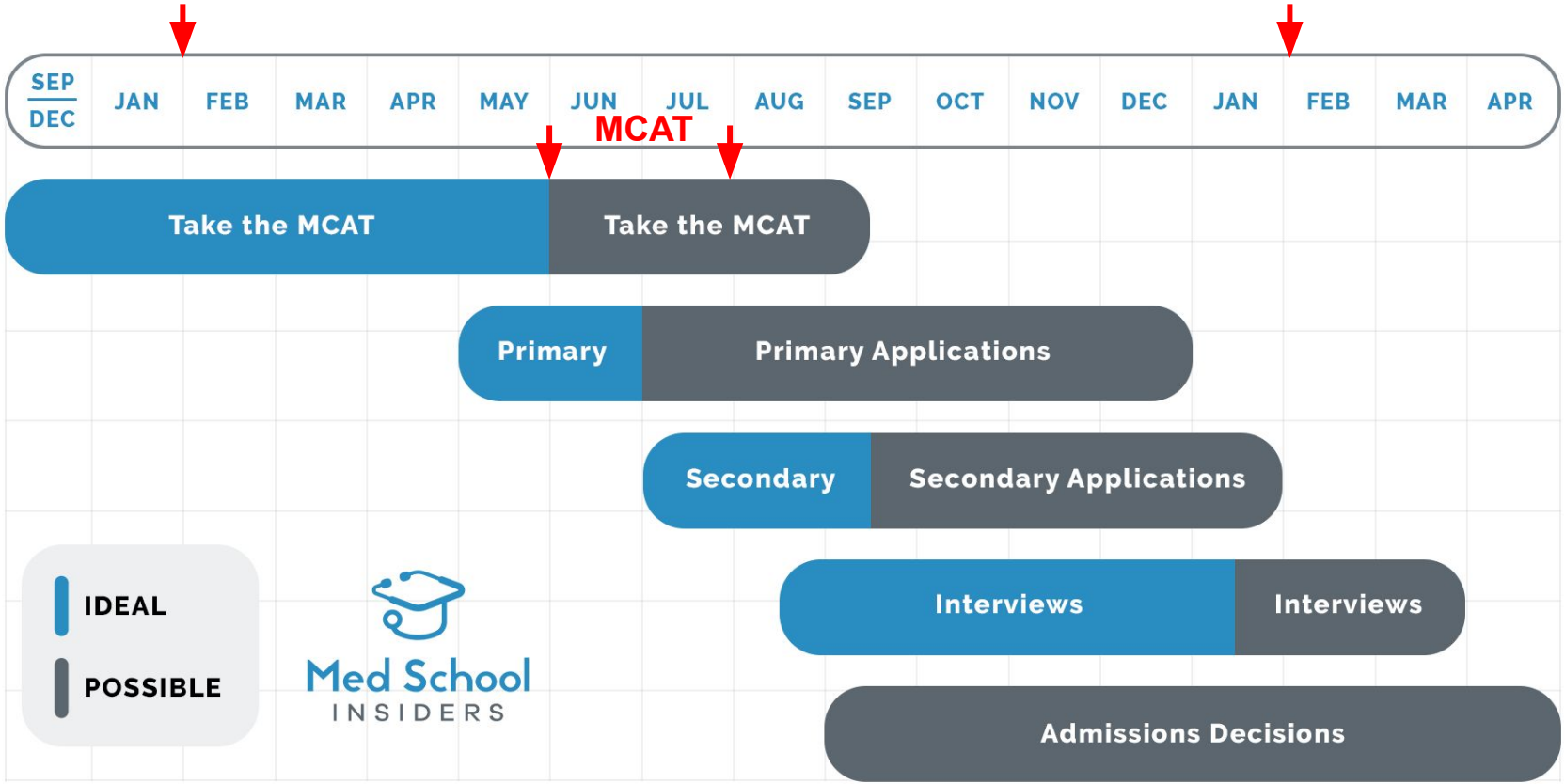
MCAT - Medical College Admission Test

- Time: 7 hours and 30 minutes exam
- Sections
  - Biological and Biochemical Foundations of Living Systems
  - Chemical and Physical Foundations of Biological Systems
  - Psychological, Social, and Biological Foundations of Behavior
  - Critical Analysis and Reasoning Skills
- Medical schools want well rounded students so the **MCAT is more than just science classes**

MCAT prep

- Changed dramatically in 2015
  - Content, scoring, focus, types of questions, etc.
- Preparation
  - Pre-medical course work
  - **Requires 500-1000 hours of study outside of class, lab, job, other duties**
- This is the single biggest source of stress
  - It is the most important factor in admission

Medical School Admissions Timeline



Timeline - In cycle (no gap year)

- MCAT
  - **Ideal:** Taken by the end of **May junior year**
  - **Latest:** Taken by the end of **July junior year**
- Open a file with the MCAC
  - Spring of junior year
    - **≅18 months prior to intended start of med school**
- Applications
  - American Medical College Application Service (AMCAS)
  - American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS)
    - **Ideal:** Fully complete by **August 1st Junior** year and ready for composite letter

MCAT prep - A real example

- **Diagnostic test (full length): 490 (≅20%)**
  - Month 1: 503 (≅65 hours)
  - Month 2: 507 (≅50 hours)
  - Month 3: 510 (≅38 hours)
  - Month 4: 512 (≅40 hours)
  - Month 5: 518 (≅60 hours)
  - Month 6: 516 (≅60 hours)
- **MCAT score: 515 (≅94%) taken in month 6**
  - 506 hours logged *not including some basic content review*
    - Approximately 50-100 hours

GPA vs Transcript - courses matter

- **GPA - Grade Point Average**
  - Science GPA (more important)
  - Non-science GPA (less important)
  - A high GPA cannot make up for a low MCAT score
- **Transcript**
  - What courses did the student take?
  - Lots of intro/easy courses? Advanced courses?
  - **Performance in required math/science courses**
    - Advanced courses in the discipline or STEM courses
- Higher is better but the transcript matters

Chances of getting in - other factors

- **Composite letter from MCAC***
  - Letters of recommendation are critical
    - Choose wisely
  - Required at some, recommended at others
- **Patient care experience**
  - Direct patient contact (EMT, CNA, MA, etc.) more important
  - Shadowing - less important but valid

Chances of getting in - other factors

- **Volunteering toward the greater good**
  - Sustained experiences - more important
  - Multiple short term experiences - less important
- **Involvement (clubs, sports, etc.) / engagement**
  - Leader and contributor
- **Lived experience (military medic, nurse, PhD, etc.)**
  - First generation college, PELL eligible

- Major: Biology
  - Minor: Anthropology
- MCAT: Competitive
  - 508*, 513
- GPA: Good
  - Science: 3.5, non-science: 3.5
- Transcript: Good/Excellent
  - Multiple 400-levels courses in major and minor
  - Lowest grade: C in CHE 331
- Letters: Excellent
  - Science x2, non-science x1, physician x1, clergy x1
- Experience: Excellent
  - 100+ hours EMT, shadowing GP >100 hours
- Volunteering: Excellent
  - 200+ hours, Girl Scouts (10?), senior center (7), Teen Crisis Hotline (3)
- Involvement: Excellent
  - AMSA, Club Fencing, Anthropology Society

Accepted!

Do / Do not

- **DO**
  - Make sure that your student has enough time to study
  - Make sure that they are taking full-length practice tests
  - Understand they may have to take it more than once
  - Help them set realistic goals
- **DO NOT**
  - Encourage them to take it on a schedule
  - Have them take it to see how they do
  - Have them take it because other students are doing it

Gap year(s)

- The majority of medical students have taken a gap year(s)
  - Nationally: **>60% take gap year(s)**
  - Med school start age: 24-26
  - Overwhelming majority go this route
- Primary reasons
  - Improve experience
  - Improve letter of recommendation
  - Complete / repeat coursework
  - Study for the MCAT / improve MCAT

Gap year(s)

- Improve patient contact and/or shadowing
- Get a job in the medical field
  - Medical scribe, EMT, CNA, etc.
- Improve letters of recommendation
  - Masters faculty, medical professionals
- Complete / repeat / improve coursework
- **Present a more compelling case for admission**

Types of clinical experience

- **Hands-on experience (more important)**
  - EMT - Emergency Medical Technician
  - CNA - Certified Nurse Assistant
  - CMA (AAMA) Certified Medical Assistant
  - PTA - Physical Therapist Assistant
  - OTA - Occupational Therapist Assistant
- **Hospital / medical environment (important)**
  - Medical scribe, ER, clinic, underserved communities, medical translation
- **Shadowing (less important)**
  - Passive, limited in scope
    - Primary care, specialist, private, hospital, etc.

Volunteering and other activities

- Volunteering
  - Physicians serve the public
  - Long-term commitment to the greater good
  - **Emphasis varies by medical school**
- “Other”
  - NCAA athlete, national competitor in robotics, orchestra, student government, Spanish minor, etc.
  - Job*
  - **Involvement in some activity to make the applicant three dimensional**

Do I need research?

- **No.**
  - There is no difference between the admission **rates**
- Positive
  - Strong letter **if you do a good job**
  - Problem solving skills
- Negative
  - Takes time away from medically relevant opportunities
    - EMT, volunteering, shadowing, MCAT prep
- Exceptions
  - MD / PhD

Do I need research?

- American Medical Association (AMA) Position
  - Research isn't required to secure a residency position
  - Research isn't required for admission to medical school
  - Survey of program directors conducted by the National Resident Matching Program
    - **12 other factors were seen as more important** over "involvement and interest in research"
- Really, the answer is **NO**

Do I need research?

- American Medical Association (AMA) Position
  - Research isn't required to secure a residency position
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  - Survey of program directors conducted by the National Resident Matching Program
    - **12 other factors were seen as more important** over "involvement and interest in research"
- Really, the answer is **NO**

Should I do a minor?

- Possibly
  - +: More preparation in an important field (e.g. Chemistry)
  - -: Takes time (MCAT), scheduling, risk poor grades
- Some minors can help
  - Math, Applied Math, Statistics, Physics, Computer Science, Spanish (to fluency)
  - Chemistry can help with MCAT preparation
  - Psychology for students interested in Neuroscience
  - Public Health for students interested in serving underserved communities

My official recommendation

- **In general - NO**
  - Unless the student was going to take the classes anyway
    - Interest in chemistry, public health, psychology
    - Just wants a challenge
  - Wants additional preparation
    - E.g. Chemistry

When to apply to medical school?

- **When the student is ready**
- What is the MCAT score?
- GPA in range? Coursework?
- Medical Careers Advisory Committee (MCAC) meeting
- Letters of recommendation have been secured
  - Is a composite letter required?*
- Shadowing / patient contact hours
- Volunteering

Questions?

- 5 min break