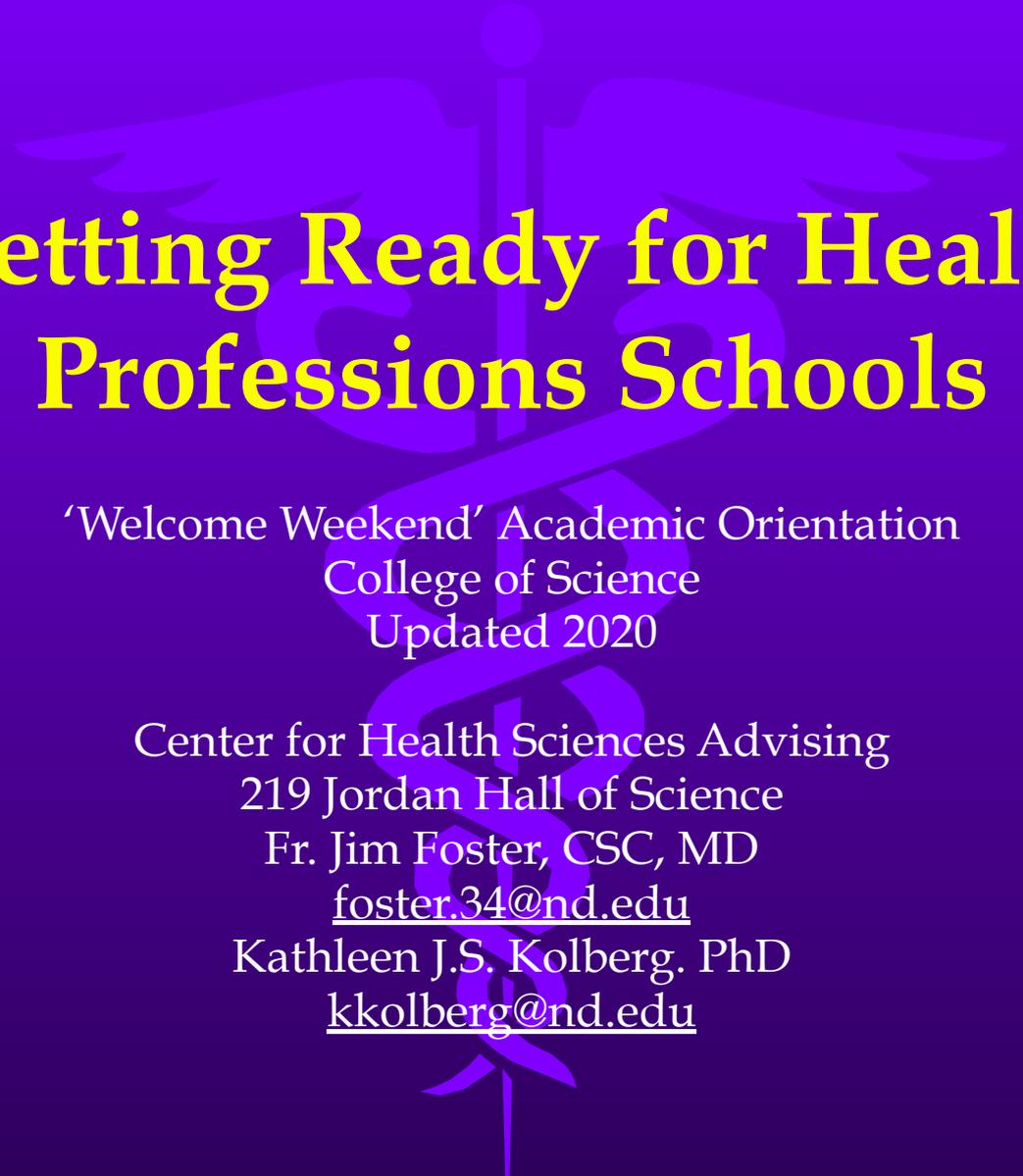






**This is a recommended
reading for First Year
Students**



Getting Ready for Health Professions Schools

'Welcome Weekend' Academic Orientation
College of Science
Updated 2020

Center for Health Sciences Advising
219 Jordan Hall of Science
Fr. Jim Foster, CSC, MD
foster.34@nd.edu
Kathleen J.S. Kolberg, PhD
kkolberg@nd.edu

Notre Dame Vision for Pre-Health Students

Education of Mind and Heart B. Moreau, CSC

- Professionalism
- Formation for Vocation
- Holistic development
- Zeal for Service
- Ethics
- Academic excellence

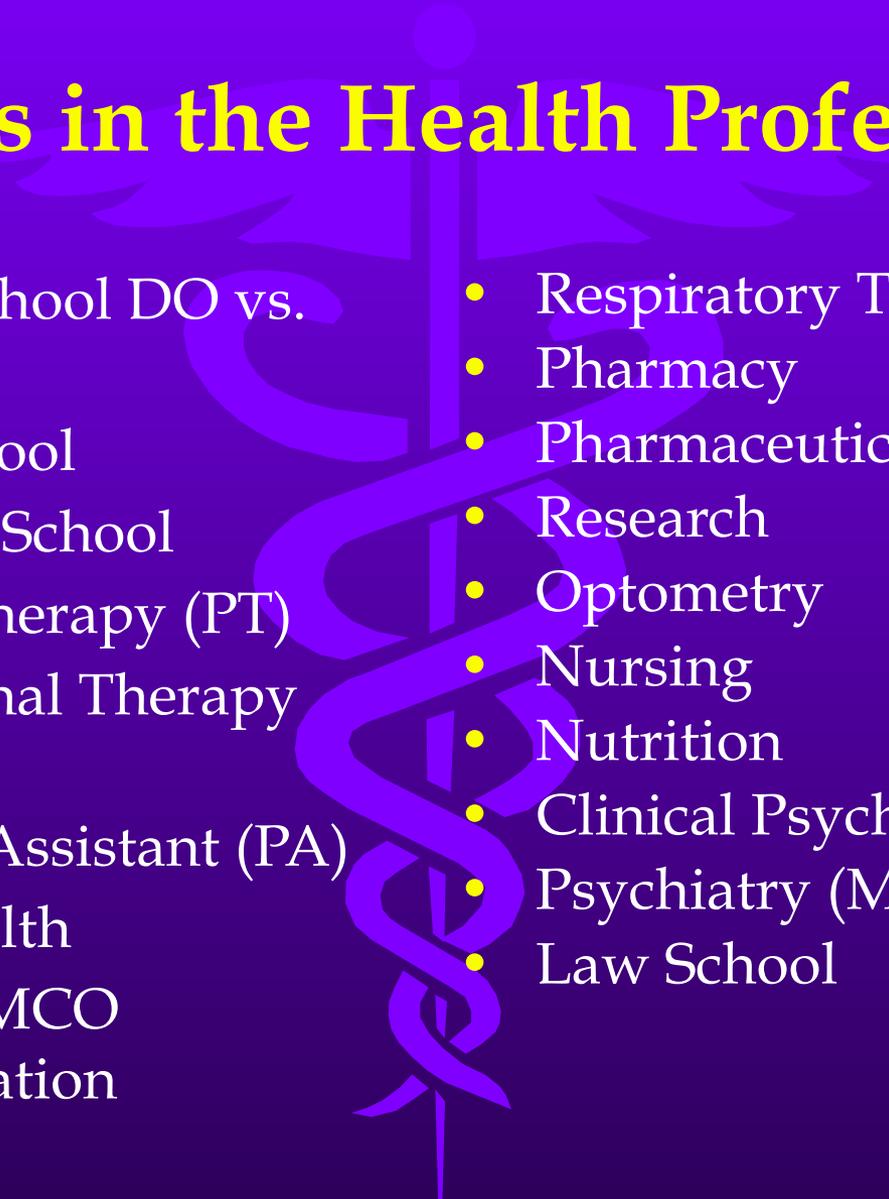
Professionalism courses of interest – Hillebrand Center for Compassionate Care in Medicine

- Introduction to Clinical Ethics
- Introduction to the American Healthcare System
- Medical Counseling Skills
- Compassionate Care and the Medical Professions
- Spirituality and Caring in the Helping Professions
- Introduction to Personalism in Medicine: the Pathos Project
- Introduction to Hospice and Palliative Care
- Film and the Physician
- Catholic Social Teaching and Medicine

Preparing for a Health Professions School

- Requires careful planning
 - Coursework, experience, activities
- For Medical and Dental
 - If you plan to start medical school immediately after graduating, prepare to apply in the early summer between your junior and senior year; however, more are taking gap year(s)
 - Typically, plan to take the MCAT ~May/June, end of Junior year
- For Pharmacy, Physician Assistant, Optometry, PT, etc
 - Apply fall senior year, taking PCAT, OAT or GRE that summer or fall (For PA, may need clinical gap year)

Careers in the Health Professions



- Medical School DO vs. MD
- Dental School
- Veterinary School
- Physical Therapy (PT)
- Occupational Therapy (OT)
- Physician Assistant (PA)
- Public Health
- Hospital/MCO Administration
- Respiratory Therapy
- Pharmacy
- Pharmaceutical Industry
- Research
- Optometry
- Nursing
- Nutrition
- Clinical Psychology
- Psychiatry (MD or DO)
- Law School

A Successful Applicant

- Complete an academically rigorous program at a respected institution
- Solid, consistent GPA, with equally strong **science GPA**
- Good MCAT/DAT/GRE scores
- Solid recommendations
- Clear and concise personal essay
- Volunteer experience or work experience in health care arena
- Research
- Psychological maturity
- Integrity, discipline, compassion
- Intellectual enthusiasm
- Cross-cultural sensitivity
- Leadership skills
- Resilience
- Extra year or two of experience (gap years) after graduation?

The average ND Applicant - 2019

- GPA 3.63 (matches national average of 3.60)
 - Our average Science GPA is 3.54; national – 3.49
- MCAT 512.4 ~ 89th%
 - (above national average of 506.7 [~ 70th %] for applicants)
- Majors – SCPP, NeuroSc, Biology, Science-Business (SCBU), APH2, Chem/Biochem, Engineering, Physics, Math and a few Business
- Service demonstrated during school year and summers in cross-cultural settings
- Clinical experience more than occasional shadowing
- Some research - may be bench science or other fields
- Hobbies and activities
- Leadership in dorm, club, or service activities
- > 50% are taking an enhancement year

What do med schools want?

- Courses
 - Science and AL prerequisites
 - Spanish becoming more important
 - You can major in anything
- CLINICAL Experience
- SERVICE, leadership
- Research
 - Especially if a top research medical school
 - Holistic - sciences, clinical, humanities

Demonstration of Competencies

- Certain competencies are developed long before medical school and residency.
 - Professionalism and Ethical Deportment
 - Honesty
 - Integrity
 - Respect
 - Compassion and Empathy
 - Kindness
 - Dependability
 - Interpersonal and Communication Skills
 - Cross-Cultural Sensitivity
 - Commitment to:
 - Personal Reflection and Self Awareness
 - Resiliency
 - Life Long Learning for Learning Sake (not just for grades)
 - Inquisitiveness
 - Desire to Reach “Personal Excellence”
 - Service/ Altruism
 - Dr. Thomas Nasca - ACGME

THE BIG FIVE

historically

CALCULUS

GENERAL CHEMISTRY

GENERAL BIOLOGY

ORGANIC CHEMISTRY

PHYSICS

+

2 semesters of English

(composition and literature)

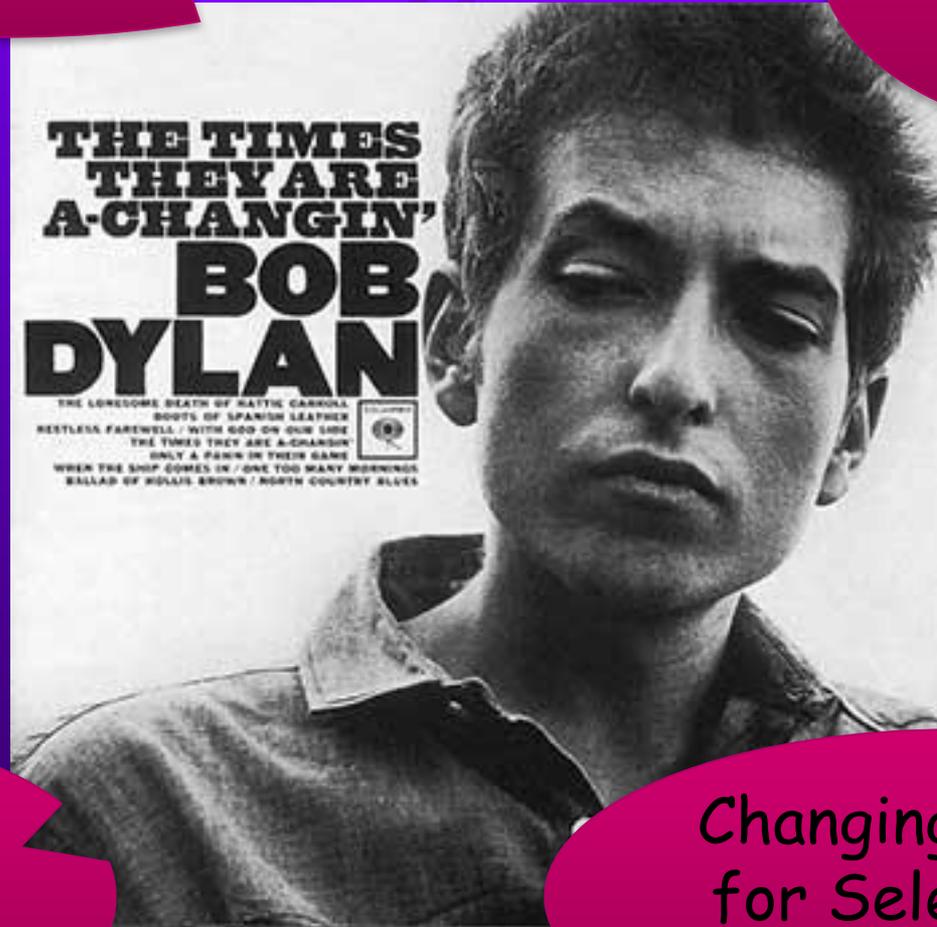
Coursework trends



- Biochemistry
- Cell biology
- Statistics
- Ethics
- Social Sciences – Behavioral Sciences
 - Health Professions other than MD/DO usually have a longer list of prerequisites, such as anatomy, physiology, and microbiology

Changing Health
Care Systems

Changing
Medical
School
Curricula



Changing
Identity of
Health Care
Professional

Changing Process
for Selection of
Medical Students

MCAT 2015 Exam: Format

Biological &
Biochemical
Foundations
of Living
Systems

Grade: 0-15

Psychological,
Social and
Biological
Foundations
of Behavior

Grade: 0-15

- 6.25 hr exam
- Computer
- 60-65 questions per section
- Stress on foundational concepts ("big ideas), content categories (topics/"facts") and scientific inquiry & reasoning skills

Chemical &
Physical
Foundations
of Biological
Systems

Grade: 0-15

Critical
Analysis and
Reasoning
Skills

Grade: 0-15

MCAT 2015 Exam: "Add-ons" Beyond Present Course Recommendations

- Biochemistry
- Psychology
- Sociology/Anthropology
- Statistics
- "Practice reading" complex literature in humanities & social sciences
- Consider Research opportunities
- Free Kahn Academy MCAT prep materials

<https://www.khanacademy.org/test-prep/mcat>

Note: Of listed courses, Biochemistry is a medical school admission requirement for ~25 schools at present (and will increase); statistics, psychology and sociology only required by a few at present, but is changing

What major is best for medical school?

Medical schools encourage students to major in the discipline that most interests them. It doesn't matter if they major in science or humanities.

The Medical School Admissions Requirements Guidebook published by the AAMC makes the following recommendation:

“A science major is not a prerequisite for medical school, and students should not major in science simply because they believe this will increase their chances for acceptance. For most physicians, the undergraduate years are the last available opportunity to pursue in depth a non-science subject of interest, and all who hope to practice medicine should bear this in mind when selecting an undergraduate major.”

MSAR Quotes:

- “Medical schools recognize the importance of a strong foundation in the natural sciences....”
- “Many premedical students choose to major in science. Ideally, they do so because they are fascinated by science and perceive that such a major can be a foundation for a variety of career options. Choosing science primarily to enhance one’s chances for admission to medical school is not in the student’s long-term best interest.”
- “Medical School admissions committees seek students whose intellectual curiosity leads them to a variety of disciplines and whose intellectual maturity assures that their efforts are persistent and disciplined.”

National AMCAS Data

Majors	Applicants	Percentage of total applicants	Matriculants	Percentage of total Matric	Percentage of matric for those majors
Biological Sciences	21630	51.2%	9141	49.7%	42.3%
Other (SCPP, SCBU, EG)	7185	17.0%	2993	16.3%	41.7%
Social Science	5110	12.1%	2282	12.4%	44.7%
Physical sciences	4676	11.1%	2329	12.7%	49.8%
Humanities	2041	4.8%	1020	5.5%	50.0%
Math and Stats	389	0.9%	177	1.0%	45.5%

Traditional Timeline

First Year: Read, start extracurriculars, study, search for clinical experiences

Summer: Read, clinical, service, work or research (even part time)

Sophomore: Read, continue extracurricular, study, clinical and/or research, plan for study abroad

Summer: Read, clinical, service or research (even part time)

Junior: Read, may study abroad in FALL, accumulate recommendations, MCATS in April/May, continue clinical/service/research

Summer: Read, consider applying to matriculate immediately after ND (if ready), continue clinical/research/volunteer

Senior: Read, interview fall/winter

Gap/Enhancement year ? – **Keep Reading**



Long Term Commitment: True for Service, Research & Clinical Experience

Show Up

Show Up Often

Contribute

Take Leadership Role

Teach Others to Take Over

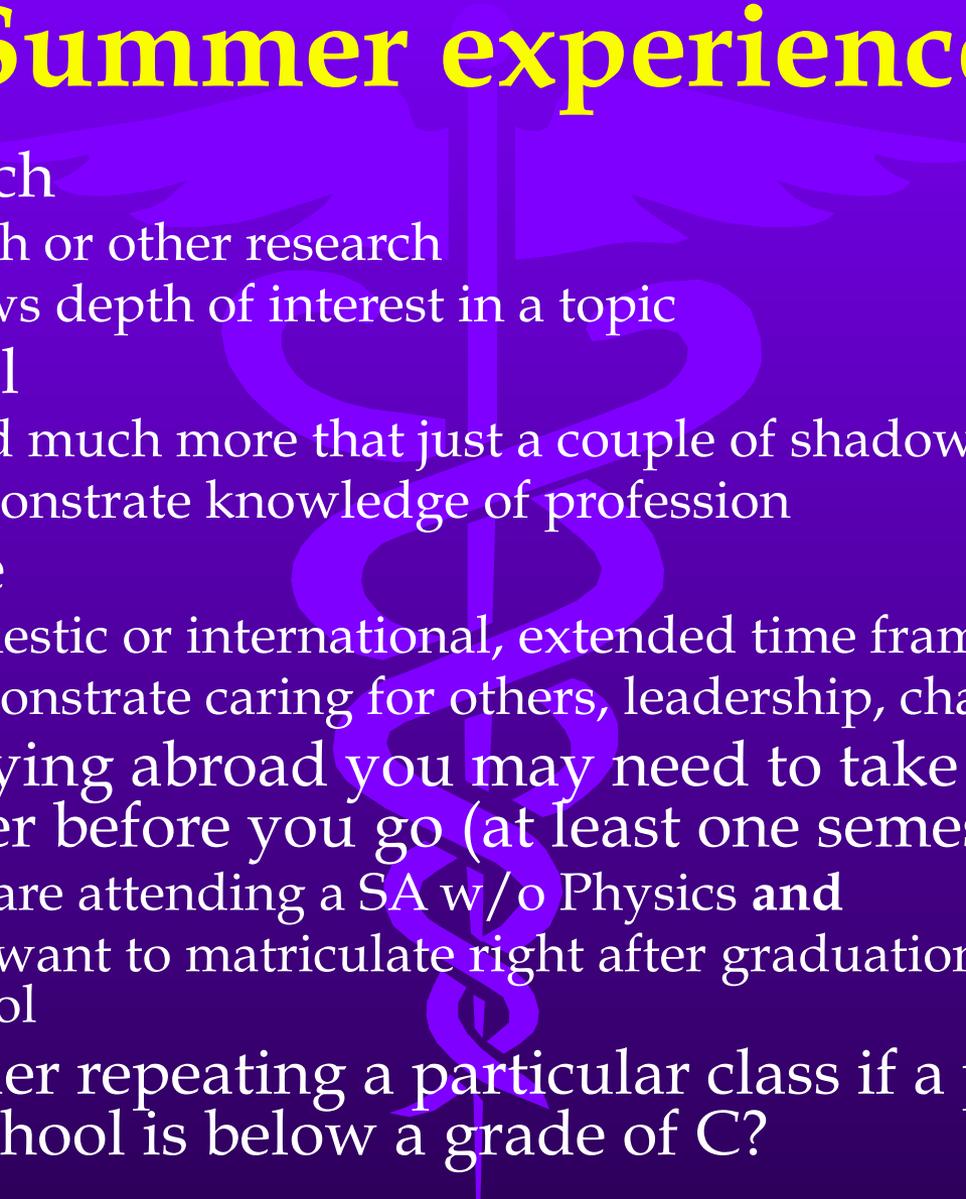
Freshman Year

- What Classes?
 - At least Calculus and Chemistry
 - Try not to drop Gen Chem, first of a four semester sequence, only offered in fall
 - Other Science if your major requires it
 - Physics, Biological Sciences, etc...
 - Social Sciences or literature requirement
- Study and keep your grades high
 - Go to all review sessions
 - **Get to know professors**
- Service
 - Dorm, Clubs, Center for Social Concerns (insert in Observer) - <http://socialconcerns.nd.edu/>
 - Activities Fair: August 20-23rd on the Library Quad
- Life balance – but stay focused and out of trouble

Activities Fair Breakdown:

- Thursday, August 20, 8pm - 10pm - Kick-Off Event: Campus Offices & Student Organizations
- Friday, August 21, 5pm - 7pm - Graduate Groups & Athletic Clubs
- Saturday, August 22, 1pm - 3pm - Academic Clubs
- Saturday, August 22, 5pm - 7pm - Cultural Clubs & Performing Arts Clubs
- Sunday, August 23, 1pm - 3pm - Social Service Clubs
- Sunday, August 23, 5pm - 7pm - Special Interest Clubs

Summer experience



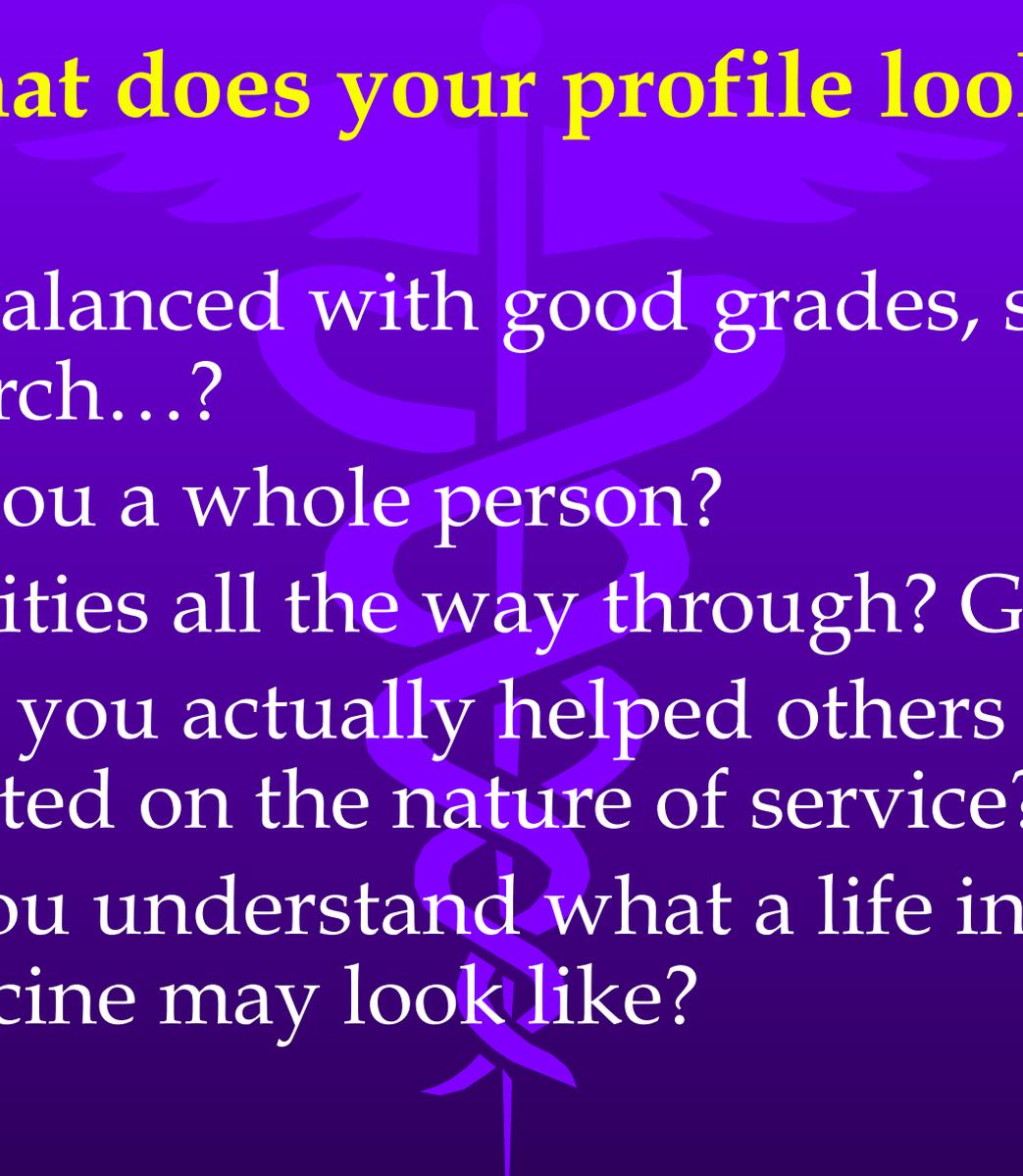
- Research
 - Bench or other research
 - Shows depth of interest in a topic
- Clinical
 - Need much more than just a couple of shadowing days
 - Demonstrate knowledge of profession
- Service
 - Domestic or international, extended time frame
 - Demonstrate caring for others, leadership, character
- If studying abroad you may need to take Physics the summer before you go (at least one semester) if
 - You are attending a SA w/o Physics **and**
 - You want to matriculate right after graduation into medical school
- Consider repeating a particular class if a prerequisite to med school is below a grade of C?

Study Abroad



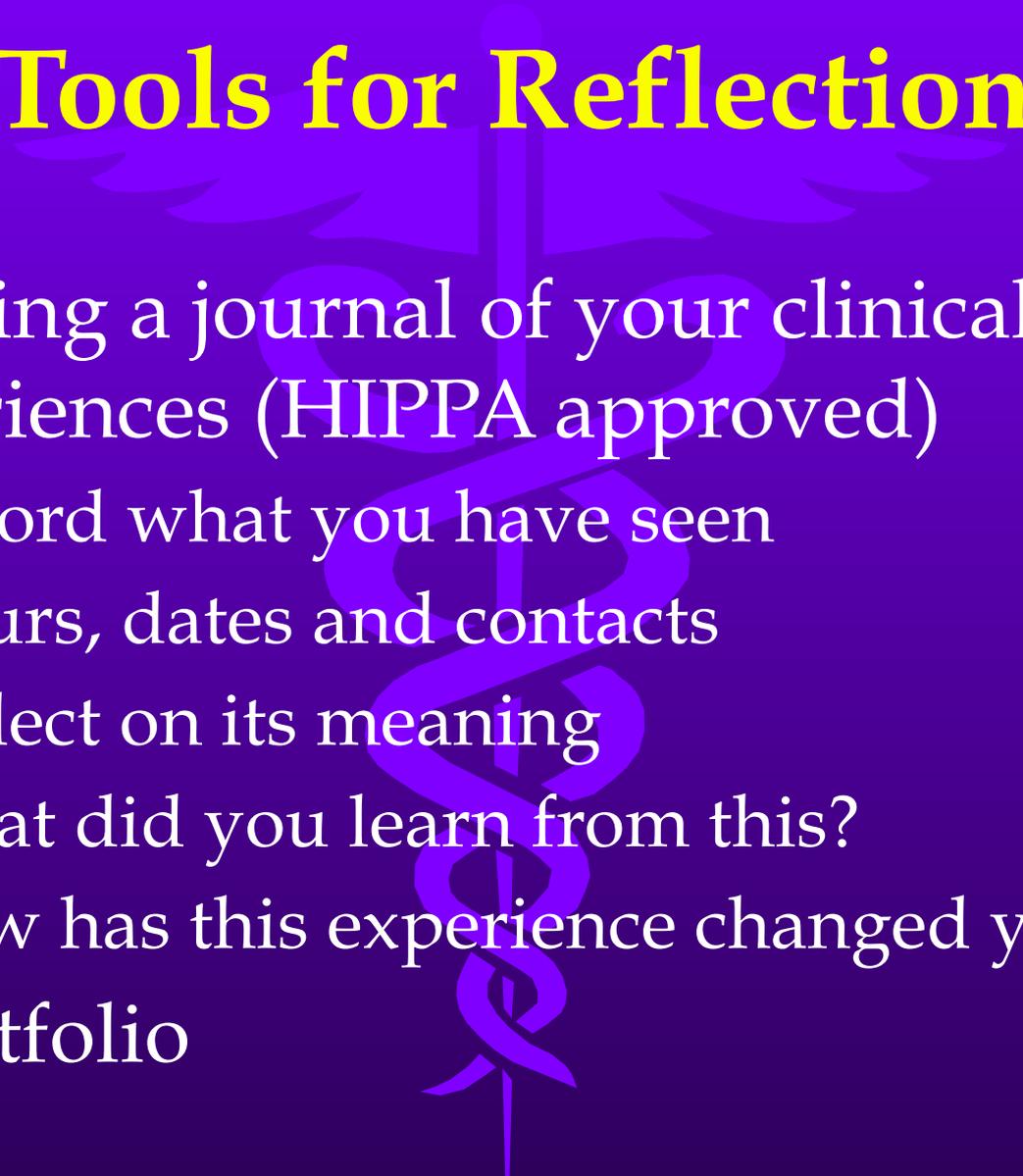
- Timing
 - The window for study abroad is the FALL of junior year
 - especially if you wish to matriculate to health professions school right after graduation;
 - if planning gap year, either semester or summer abroad is fine
- Locations
 - Some programs offer Physics (London and Puebla)
 - Some program offer upper level sciences (Dublin, Ireland and Perth, Australia)
 - You can go to others, but it usually requires taking one of your science courses in a summer and careful planning with your advisor

What does your profile look like?



- Is it balanced with good grades, service, research...?
- Are you a whole person?
- Activities all the way through? Gaps?
- Have you actually helped others and reflected on the nature of service?
- Do you understand what a life in medicine may look like?

Tools for Reflection



- Keeping a journal of your clinical experiences (HIPPA approved)
 - Record what you have seen
 - Hours, dates and contacts
 - Reflect on its meaning
 - What did you learn from this?
 - How has this experience changed you?
- e-Portfolio

Undergraduate Timeline

name: Paul Johnson college: Notre Dame Chem gpa: 3.6 mcat: 9/12/11/R

fresh

summ

soph

summ

junior

summ

senior

Marching Band 15hrs/wk fall only

(VP)

(Pres)

Vol tutor

Grade school

3hrs/wk

Res.VU

Dr. Smith

40hrs/wk

Res.VU

Dr. Smith

40hrs/wk

Vol ER

4hrs/wk

Vol homeless shelter

12 hrs/month

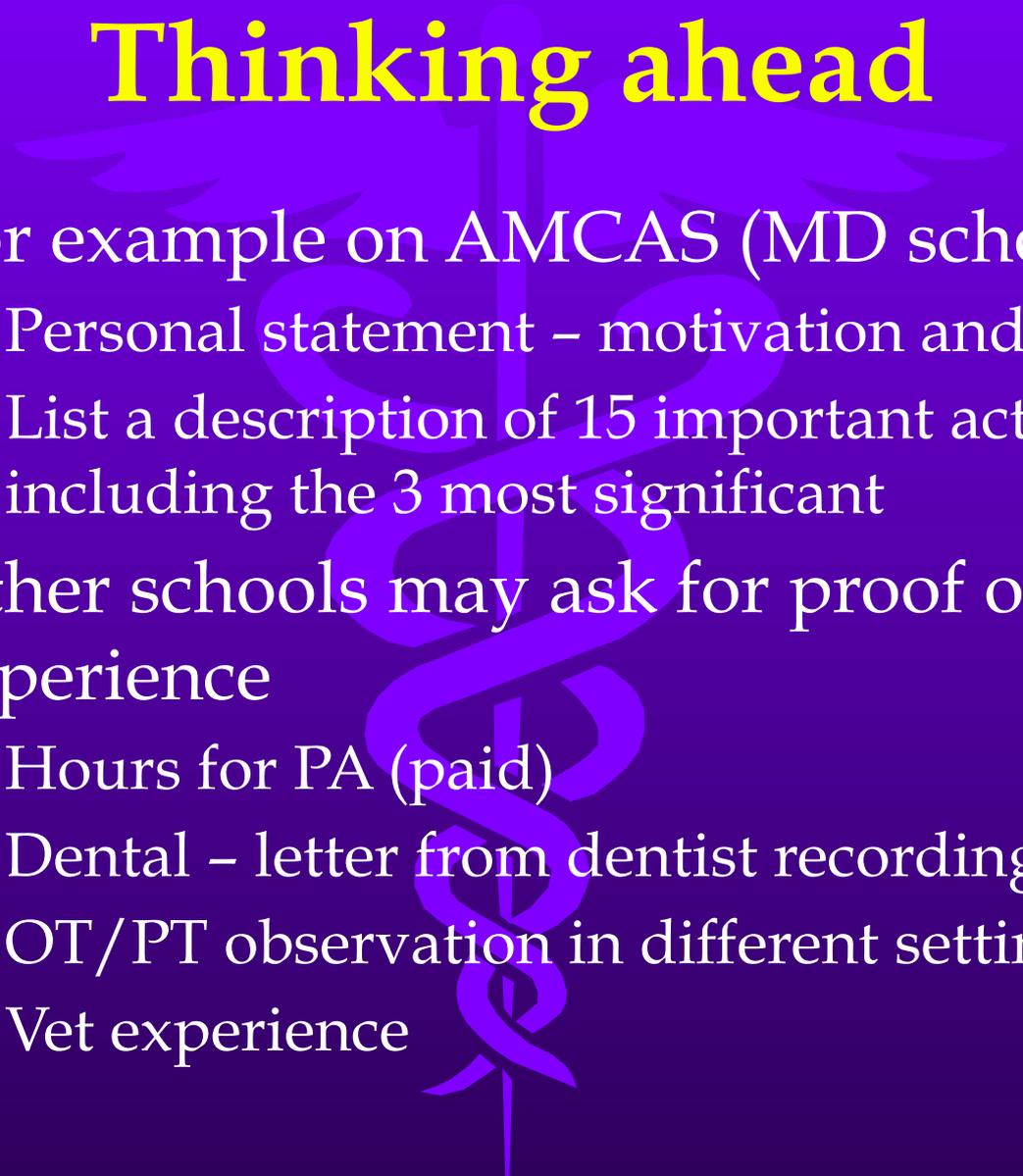
Student

Coordinator

Things to keep in mind to prepare for application essays and interviews

- How do you know you want to pursue medicine?
- How have you shown that you care about others?
- How do you show your capability in sciences?
- Analytical thinking?
- Service and Leadership?
- How well do you work with diverse groups of people?

Thinking ahead



- For example on AMCAS (MD schools)
 - Personal statement – motivation and experience
 - List a description of 15 important activities, including the 3 most significant
- Other schools may ask for proof of experience
 - Hours for PA (paid)
 - Dental – letter from dentist recording hours
 - OT/PT observation in different settings
 - Vet experience

Be mindful of behavior

- Institutional Actions
 - Community Standard or Honor Code Violations
 - Avoid them
 - Getting an 'institutional action' later in your career is more worrisome to schools than a "youthful indiscretion"
 - How have you learned from this and become a better person?
- Criminal background checks
 - Driven by a case where a med student with previous violent convictions murdered a patient (as a med student)
 - Looking for things more serious than traffic tickets – will also account for time lapsed and any thing done to address a problem or issue

Social media, e-mail, voice mail Personal Web sites

- Clean them up and keep them clean
 - Only post things you would want a potential employer or med school to see.
- Professional communication
 - E-mail/Facebook/Twitter etiquette

Lots of advisors

- Freshman Year - your Freshman Advisor
- Other advisors in your college (Science, A&L, etc.)
 - Major advisor
 - Pre-health advisor
 - Research advisor?
- Some major advisors – Biology (David Veselik), APH2 (Maureen Dawson), SCBU (Sr. Kathleen Cannon), SCPP (Fr. Foster, Kathleen Kolberg, Susan Gursky), BCHM/CHEM (Dee Anne Goodenough), Physics (Philippe Colon), Neuroscience (Nancy Michael/Rachel Branco)

Frequently Asked Questions:

- If I get a C in Math or Chemistry, what are my chances of being accepted into medical school?
- I have a cumulative average of 3.6, but it's made up of a 3.9 in my AL courses and only 2.8 in the sciences. Do the medical schools care?
- What science electives do medical schools prefer?
 - Think of Statistics, Vertebrate Physiology, Cell Biology, Fundamentals of Genetics, and Biochemistry as 'first line' science electives.