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SCHEDULE YOUR ASSESSMENT

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STEM ACADEMIC ADVISING & COLLEGE ADMISSIONS

Aspiring STEM students! Make sure you've received STEM pre-college academic advising to prepare for academic success as an undergraduate while guiding you to appropriate ways to set yourself apart from other STEM applicants.

TO DO NOW: 8th to 11th Grade families: With course planning taking place at many high schools, this is a great time to assess your strategic educational and college admissions plan.

- Are you taking too many AP classes or are you avoiding a challenge? I often speak with students who step-off their mathematics track and don't recognize that all STEM majors will require Calculus as undergraduates.
- Did an experience with a teacher inspire (or the opposite) an interest in a given subject area? What electives are you taking to continue to develop your interest? Have you considered a discrete mathematics class or a STEM competition?
- Is "Dual Enrollment" actually the right "fit" for you based on your educational plans and potential undergraduate major? Please don't take classes simply for the purpose of raising your GPA. Selected electives should offer authentic learning opportunities that push you to discover something new that you CANNOT accomplish at your high school.

Now is the appropriate time of year to review **extracurricular activities** for exploration and depth. **In addition to summer plans**, consider organizing an independent project or internship to continue to help you nurture and discover a connection between your strengths and potential academic interests. Please connect with me for ideas. While students should take advantage of summer vacations to recharge, it's also a time for a self-paced and structured "on-ramp" program for difficult AP classes on the horizon, preparation of standardized testing and community internships and volunteer opportunities. It takes some organizing to get going- but there are many organizations that welcome your energy and skills.

SENIORS: Over the next few months you should be engaged in research on college majors to finalize **your list of "reach", "match" and "safety" colleges.** Parents- **Think ahead to how financial and merit aid will help shape this college list in a realistic way.** Many colleges offer attractive merit-based scholarships. **JUST ASK ME!**



Please review my earlier Newsletters and YouTube videos: **Advantages of Summer Programs**, and **How To Select a Major and College - 4000**

Choices! and **Financial Aid and Scholarships!**

Dr. Rabin's STEM summer Program Recommendations: UF STTP, UF Rise, Duke-Mathematics, Carnegie Mellon Gaming Academy, Cornell University, Johns Hopkins, Rose-Hulman Catapult, Boston University, FAU H20, MIT, GeorgeW.

WHAT IS A STEM MAJOR?

Do you enjoy and excel in your science and math courses? Do you think you want to become a physician? Maybe you've learned to code and write APPs or were told you would make a great engineer? You might be the next Tony Stark or follow in the footsteps of Mark Zuckerberg (Facebook), Bill Gates (Microsoft), Sally Ride (NASA), Jeff Bezos (Amazon), Shigeru Miyamoto (Nintendo), Jeffrey Katzenberg (DreamWorks Animation), Helen Greiner (iRobot), or Antonia Novello (Surgeon General).



TRADITIONAL STEM MAJORS INCLUDE:

Science (Biology, Physics, Chemistry, Animal Science)
Technology (Computer Science, Information Systems)
Engineering (i.e. Mechanical, Chemical, Civil, Electrical, etc.)
Mathematics. (i.e. Computational Finance, Applied Math)

The complete list of STEM majors and careers contains dozens of selections and extends far beyond the courses you've explored in your high school AP, AICE or IB classes.



Given your interests and strengths, or perhaps there is an area you have yet to uncover, let me guide you to the discovery of **unique and cutting-edge STEM majors.** You'll be surprised to

know that there are **STEM majors for students who enjoy the "Liberal Arts" and for students with overlapping interests in business, social sciences and even the fine arts.**

A variety of fields have been influenced by the analytical approaches and scientific techniques taught in STEM programs. Collaboration taking place within multi-disciplinary teams is the direction of future innovation in all fields.

HOW TO PREPARE FOR A STEM EDUCATION?

The nature of STEM fields continues to evolve. Advanced preparation for an undergraduate STEM major should include the following:

- **Mathematics:** All STEM fields require a comfort and aptitude for quantitative analysis. High school coursework preparing you for Calculus & Statistics is advised.
- All **engineering** programs have math pre-requisites preparing for advanced coursework. **Pre-medical**
- Students will complete rigorous Chemistry classes requiring mathematics thru multi-variate calculus. **Business school** students, especially those in Finance & Marketing should anticipate coursework in advanced statistics, calculus and stochastic models.
- **STEM AP/AICE coursework:** STEM majors are more structured than others leaving few credits for exploration at the undergraduate level. Achieving high (threshold) scores on AP STEM exams related to your chosen major not only enhances your admissions portfolio, but better prepares you for the challenging coursework ahead and leaves room to enroll in non-STEM electives/minors. Challenge yourself to complete as many of these AP classes as possible during high school: Computer Science, Calculus BC, Biology, Chemistry, Physics C, Statistics
- **CODING:** Multi-disciplinary problem-solving is typical in the fast-paced and incredibly competitive technical sector. Students in all fields, including video-gaming/artists, filmmakers, financial gurus and even aspiring physicians are at a competitive advantage having acquired basic programming skills. **Robotics and Artificial Intelligence continue to influence all fields.** Understanding the basics of coding is essential to success in STEM and many disciplines. *Have you considered "Computational Finance" or "Computational Biology" as potential majors?*



FIRST ROBOTICS COMPETITION
Discover your passion!

STEM ADMISSIONS: INCREASING YOUR CHANCES.

First and foremost- **be yourself** because everyone else is taken! That's not cliché-it is truly the most important piece of advice I can provide.

Discover an area that you are truly passionate about and dive in! Demonstrate informed interest thru experiences. STEM admissions are different! How do you increase your chances of admissions?



Demonstrate "INFORMED INTEREST"!

More than any other major, STEM applicants must clearly demonstrate "informed interest"! Admissions officers don't want to read an essay describing your fascination with Lego since childhood. Your application must leave no shadow of a doubt that you are **prepared to succeed** in some of the most demanding academic majors. STEM curriculum are intense and challenging!

An astounding 25% of all intended engineering students exit the field after their freshman year. Only 40% of college students who declare a STEM major complete their degree. Demonstrating you understand the challenges ahead is essential.

STEM "informed interest" can be demonstrated through:

- In addition to completion of **AP STEM coursework**, engage in sustained formal or informal **STEM extracurricular**

activities and independent projects (we have plenty of ideas for an independent project)

- **STEM Research:** participation in local, regional and national competitions working with our competition educator. (see our research page)
- Thoughtful college specific **supplemental essays** showcasing maturity and self-directed exploration of a potential narrow area of interest (i.e. stochastic processes in Financial Modeling, Genomics, Artificial Intelligence applications to pharmaceutical development)

CONSIDER Applying to a cutting-edge, LESSOR KNOWN or BLENDED MAJOR:

Allow me to help you think outside the box, increasing your chances of admission. STEM majors such as Nanotechnology, Computational Finance, Oenology, Cognitive Psychology, Human Computer Interaction are just the tip of the iceberg of exciting STEM fields of study.

You've seen that bumper sticker: CO-EXIST! Many colleges have unique programs balancing a STEM field with an interest in the social science, liberal arts, business or even the Fine Arts!

With the cost of a four-year education continuing to rise, families are justified in exploring the ROI of any major. Employers are seeking STEM graduates who demonstrate an ability to communicate, manage and collaborate with others. **There unique STEM degree programs combining engineering with liberal arts, fine arts and international studies include Swarthmore and Carnegie Mellon's BXA.**

Based on your academic strengths and personal interests, we will work together to create a personalized strategic STEM ADMISSIONS plan including:

- Pre-college academic advising on coursework to not only increase your chances of admission, but ensure a seamless transition to your initial undergraduate experience. There's more to STEM than "engineering"!
- We'll work together to identify and apply for highly competitive local and national STEM summer research programs. Our team has inside-knowledge of programs and faculty.

STEM RESEARCH COMPETITION



- Develop your unique research interests
- Present an effective admissions portfolio showcasing and distinguishing your strengths as an aspiring STEM student.
- Enhance your high school STEM education while increasing your chances of Admission! By participating in a major STEM competition for high school students you are stepping out of the crowd of students having high GPAs and extensive extracurricular accomplishments.
- Admissions representatives prefer students who have already demonstrated an ability to conduct independent research essential to the problem solving you'll experience as a STEM undergraduate.