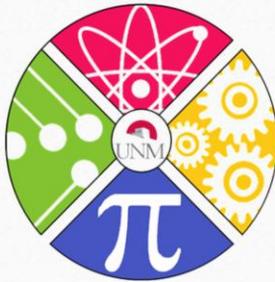


Hi. I'm Yadéeh Sawyer with the STEM Gateway program. I'm not going to get into what my program does right now because I'll get into the details of our program in a bit.

I'm going to give you a bit of information about STEM at UNM the resources available to you to make sure you succeed.

What is STEM?

- Science, Technology, Engineering, and Math



STEM stands for Science, Technology, Engineering, and Math.

If you are not going into a “STEM” field, does that mean STEM is not applicable to you? (discuss)

Absolutely not. You may just enjoy it, or know somebody who does. Or, maybe it’s only the “cool facts” or results of other people doing STEM that you like. But, a lot of what is encountered within STEM, can be applied to expanded to any field.

Why STEM?

- Because it's cool!
- Makes you more marketable
- Wide range of possible careers



Why should you stick with STEM, even if it is “hard”? (Discuss.)

(*) The obvious answer is also “because it’s cool”!

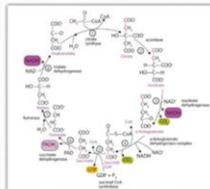
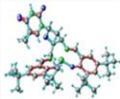
(*) Another is that it makes you more marketable, you stand out of the crowd.

(*) And the last that I’ll list is that it exposes you to a wide range of possible careers. Even if you end up in a non-STEM field, you are able to make more because of your STEM degree.

Challenges with STEM

- Feelings of not belonging
- Difficult subject matter

$$(x + a)^n = \sum_{k=0}^n \binom{n}{k} x^k a^{n-k}$$



A Computerized and On-line Super Twisting Speed Control of Alternating Current Asynchronous Machine Using Omron V3000[®] Drive

Emasad Sulakshar, Abhishek Singhar Nivi, Mihad Mahrkandeh
Department of Electrical and Computer Engineering, Babol University of Technology, Babol, Iran

Temporal acuity and the rate and dynamics of mass extinctions

Douglas H. Erwin¹
Department of Paleobiology, National Museum of Natural History, Washington, DC 20560-8122

many envisioned a general theory of mass extinctions driven by impacts (2). Others favored an endogenous process, identifying or-

Site-Specific Fluorescence Dynamics of α -Synuclein Fibrils Using Time-Resolved Fluorescence Studies: Effect of Familial Parkinson's Disease-Associated Mutations

Srinath Subbay¹, A. Aravog¹, G. Krishnamoorthy^{1,2,3} and Sanjay K. Mishra¹
¹Department of Bioscience and Biotechnology, IIT Bombay, Powai, Mumbai 400756, India
²Department of Chemical Science, Tata Institute of Fundamental Research, Mumbai 400005, India



There are many challenges within STEM. One of the biggest is (*) The feeling of not belonging. This is often referred to as the Impostor Syndrome. The main thing to remember about this is that YOU ARE NOT ALONE. We all feel like this at one point or another. (*) the other challenge is the STEM fields are hard. Take these titles for example (read). Underlying each of these are complex mathematical equations or concepts. But, don't let that scare you away, use it as a challenge to really understand the subject matter.

Status of STEM at UNM

- **1503** First time full-time freshman from the fall of 2005, 2006, and 2007 were tracked in this study.
- Students initially stated that they were interested in STEM degrees



29.6%



42.5%



22.2%

5.7% Still enrolled

Within UNM, the STEM Gateway program did a study where they looked at 1503 first time, full-time freshmen between the fall of 2005 and 2007. Of the students whom initially expressed an interest in obtaining a STEM Degree, what are the possible outcomes? (discuss).

(*) Right, they can Stop college all together, switch majors, or stick with it until they earn their degree. Which of these do you think had the highest percentage? And which the lowest?

(*) 43% of students changed majors, 30% dropped out, and only 22% earned their degrees. And, these extremes were emphasized within underrepresented groups.

We are here to help!

- STEM Gateway
- STEM UP
- STEM Collaborative Center
- Other STEM resources



Regardless of your degree, even if you are not STEM, remember there are resources here at UNM to help you succeed. I'm going to go over the various STEM focused programs and a few other resources.



STEM Gateway
<http://stemgateway.unm.edu/>

- Peer Learning Facilitators (PLFs)
 - Undergrads who assist instructors in implementing active learning
 - Work with small groups to complete in-class assignments



The STEM Gateway program is aimed at increasing success in STEM students, specifically underrepresented groups. One of our initiatives are the Peer Learning Facilitators. These are undergraduate students who work within the classroom to assist the instructor in implementing active learning strategies. They have previously take the course, so they are familiar with the material. They also hold office hours and study sessions outside of class time.

For the Fall, the courses they are in are: (read), and there may be a few more as the semester approaches. Students who enroll in sections with PLFs do 15% better than their peers in non-PLF courses. So, if you can, if the course you are taking has PLF serviced sections, enroll in those.

STEM Gateway

<http://stemgateway.unm.edu/>



- Essential Academic Skills Enhancement

Workshop Series



Workshop
Basic Excel
Advanced Excel
Library research strategies
Advanced Library & Scientific Reading
Critical Thinking
Scientific Writing
Study Skills
Metric Conversions & Scientific Notation

Another initiative that we started last Spring is the Essential Academic Skills Enhancement, or EASE, workshop series. The idea behind these is that there are many skills that students are expected to have, but are rarely actually taught, unless you have taken it upon yourself to take a specialized course. We don't want these skills being the reason you don't succeed in a content course. If you struggle, it should be a result of the difficult concepts and specific content, not these basic skills.

Right now these workshops are required as part of specific courses, but we can always hold a special session if the interest is there. The topics we cover are (read).

Are there any questions about the STEM Gateway program?

STEM-UP

<http://stemup.unm.edu/index.html>



- Student Education Leaders (SELs)
 - Undergraduate CNM Transfer students in STEM fields
 - Work with CNM transfer students to serve as guides, mentors, and role models.
 - Host weekly study groups for certain courses



The STEM-UP program is focused on assisting CNM to UNM transfer students. They have Student Education Leaders, or SELs, who are similar to PLFs in the sense that they hold study groups. They are familiar with the challenges transfer students face, and act as guides, mentors, and role models.

STEM Collaborative Center

<http://stem.unm.edu/>



- List-serve: go to UNM listserv management (<http://it.unm.edu/email/listsSignup.html>) and type “UNM_STEM-L” under “list name.”
- STEM University



The STEM Collaborative Center runs a listserv that will keep you in the loop with STEM events occurring on campus. They send out a weekly STEM Bulletin, so you don't have to worry about your email being flooded by spam.

The STEM Collaborative is in the early phases of their program, but plan on launching their STEM University this fall. The Listserv announce when this is out. STEM University will have many free events ranging in the level of commitment, from 1 hour to full semester. For example, this summer, they took students to various locations around NM, where students participated in data collection in caves, Bosque del Apache, and the Valles Caldera.

UNM STEM Research Opportunities

- Undergraduate Pipeline Network
- McNair/ROP
- Initiative for Maximizing Student Development (IMSD)
- Maximizing Access to Research Careers (MARC)
- Research Match Database at UNM



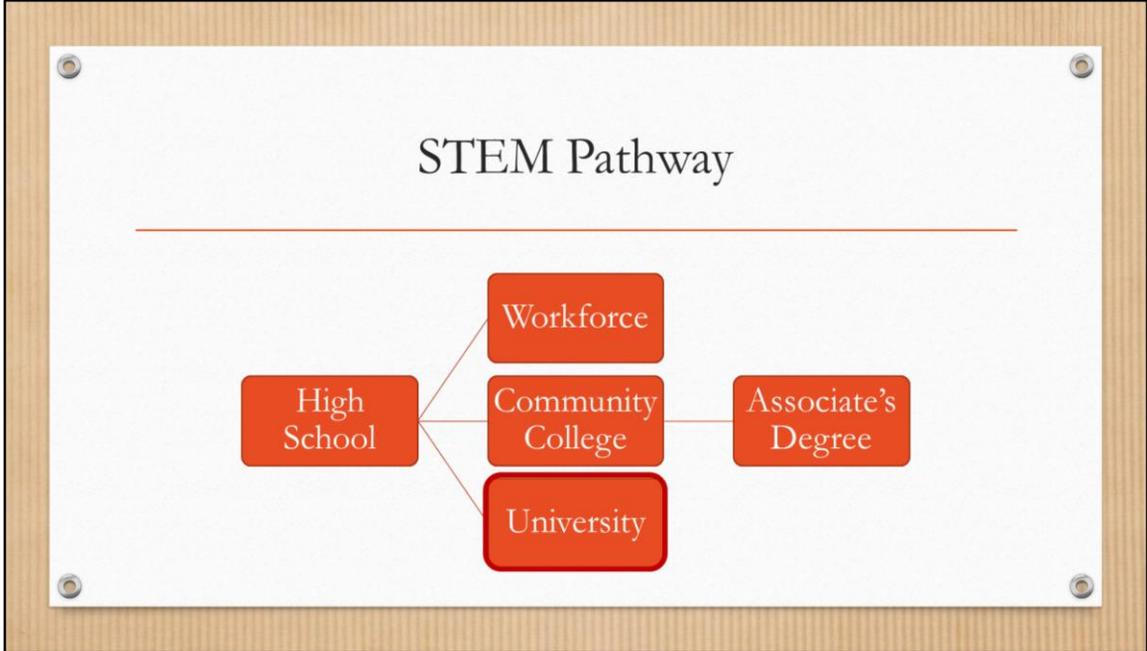
There are also ample opportunities for students to get involved with research on campus. Programs that pay students to do research are the Undergraduate Pipeline Network here on North Campus, the McNair/ROP program, which has positions for STEM and non-STEM fields, and the IMSD and MARC programs are housed out of the biology department, but have students involved in a broad range of research fields. The Research Match Database allows students to search for faculty who are interested in having undergraduate researchers, and positions may or may not be paid, but will get you invaluable experience either way.

Help with STEM

- CAPS
- Network and get connected



Lastly, if you need help, there are plenty of resources available to you! In addition to your professors and TA's, as well as the PLFs and SELs, you can utilize the Center for Academic Programming Support who have tutors and various workshops. And, make sure you start building your personal and professional networks now. That will be your best resource for all aspects of your success. So, make sure you get connected! As you are here in your bridge program with (AISS or AASS), or any of the other great ethnic centers or student groups here on campus.



Now let's spend a bit of time going over how to get from point A to point B. In other words, you've decided to go to college, but now what can you do and when should you do it?

(*) From HS there are 3 main choices. You can join the workforce, go to a 4 year university, or a community college, where you can earn up to an associates degree, a 2 year degree.

If you choose to go to a 4 year university though, it opens up a wide range of options, but also more 'steps' to getting there.

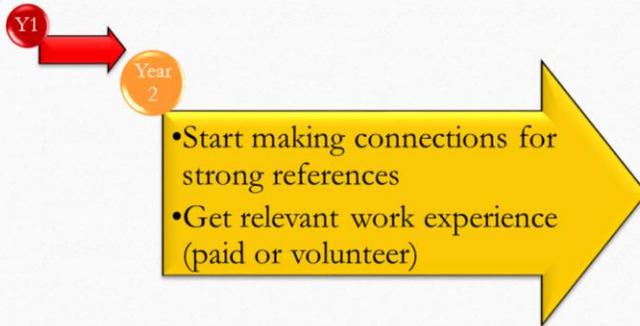
Academic Timeline

Year
1

- Get used to college
- Start exploring major field of study options

Making the transition from HS to UG is not always easy, so make sure you give yourself ample time to adjust. It's different socially, academically, and financially, and even physically, or at least it was for me, with the 'freshmen 15' because I no longer had my track team to keep me motivated and I had all you can eat dining halls. You also want to spend time exploring possible majors. Just because you go in with something in mind, doesn't mean you can't change it as you take other courses that interest you. For those of you already in school, did any of you experience this?

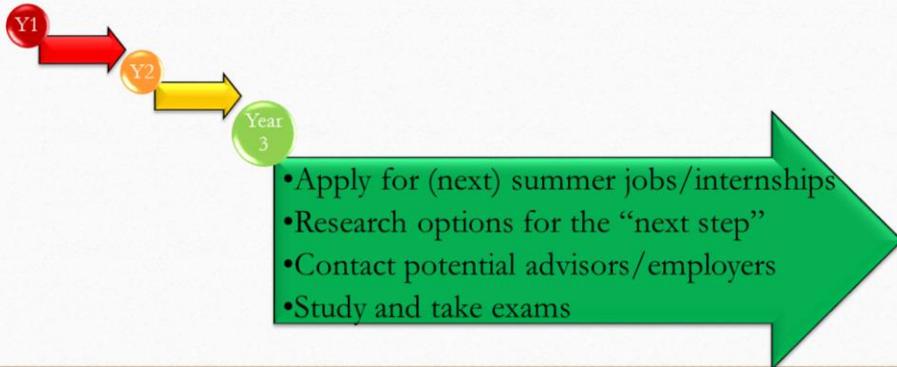
Academic Timeline



The next year is all about networking! This is both with professors who can act as references, as well as employers or supervisors through work experience, that will help you be a strong candidate for whatever path you ultimately end up taking. Even if the volunteer work is only a few hours a week, you can still gain some great skills that will help you market yourself.

Something I want to add here is that, even if you are in year 3, if you haven't done this, it's never too late to start! This is an 'optimal' timeline, but it's completely fluid and can be modified for each of you as you need it to be.

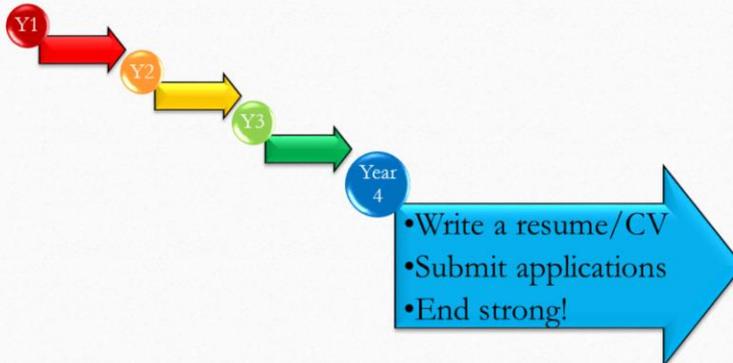
Academic Timeline



I know applying for the next year seems a bit soon, but a lot of grants run 1 year at a time, so make sure to look in to application deadlines and start thinking well ahead. You also want to look at which path you think you’ll take, since the next year you have to act on it.

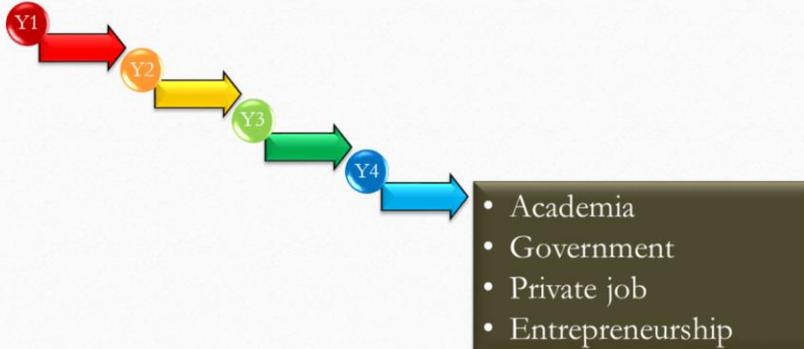
The more time you invest in to building relationships, and studying for exams, the better you’ll be in the long run.

Academic Timeline

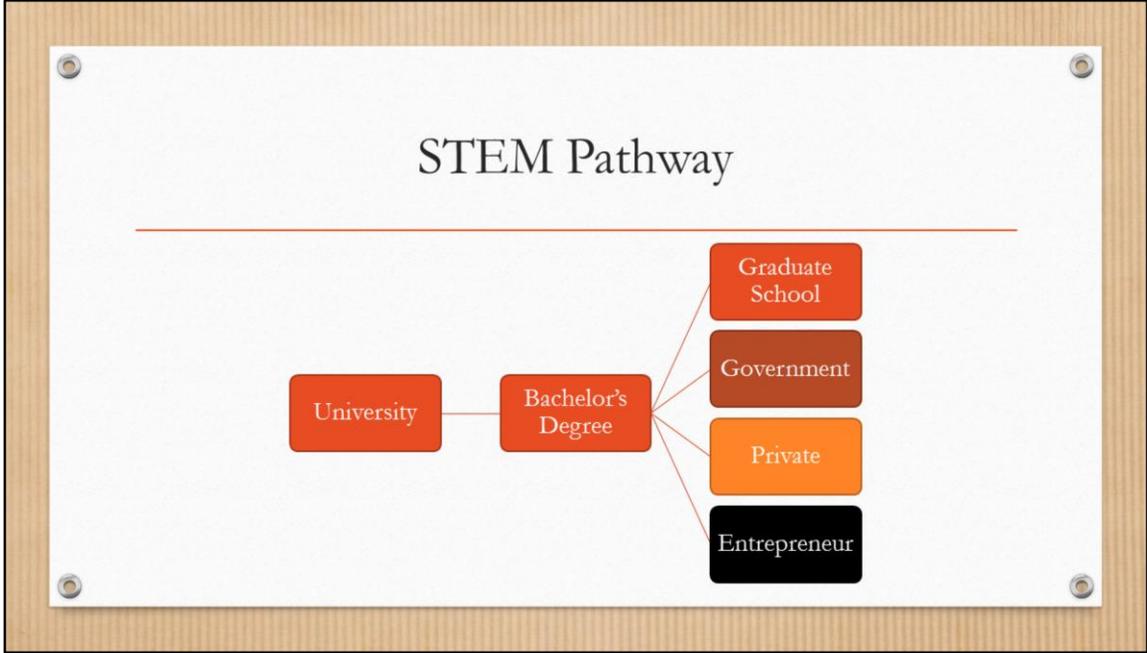


Now is the time to stay focused. Just like in high school, it's hard to not let senioritis get to you, but keep that target in sight and end strong with that final push. Also, get those applications in, whether it's for a job or for grad school. Make sure you look in to the deadlines for these, because some are early fall for the following year.

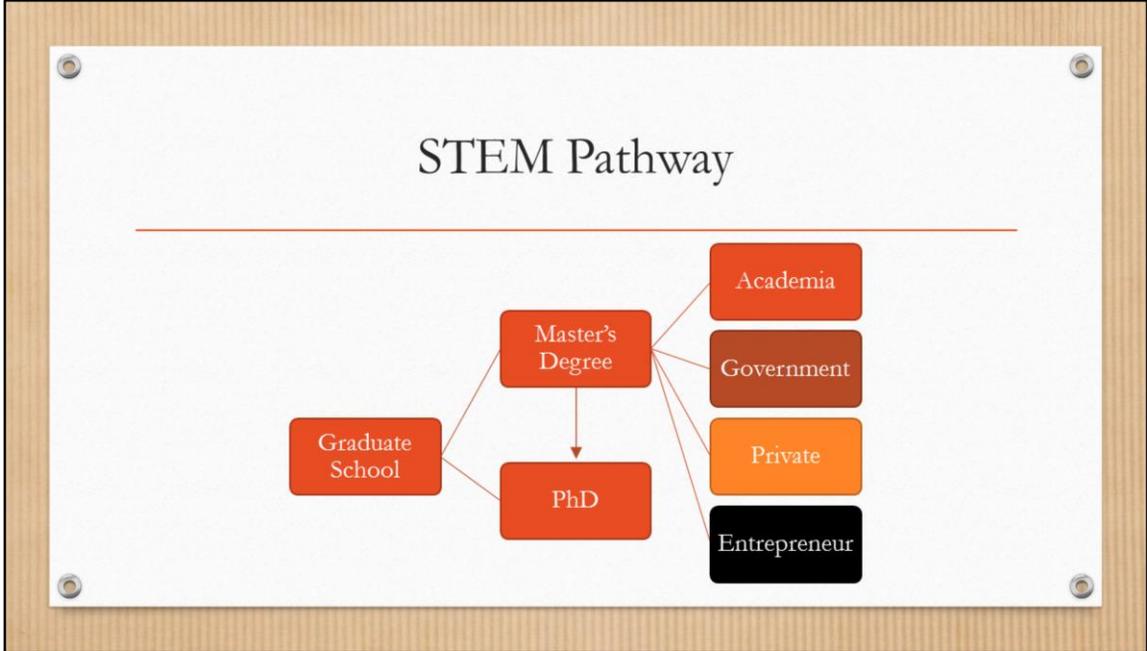
Academic Timeline



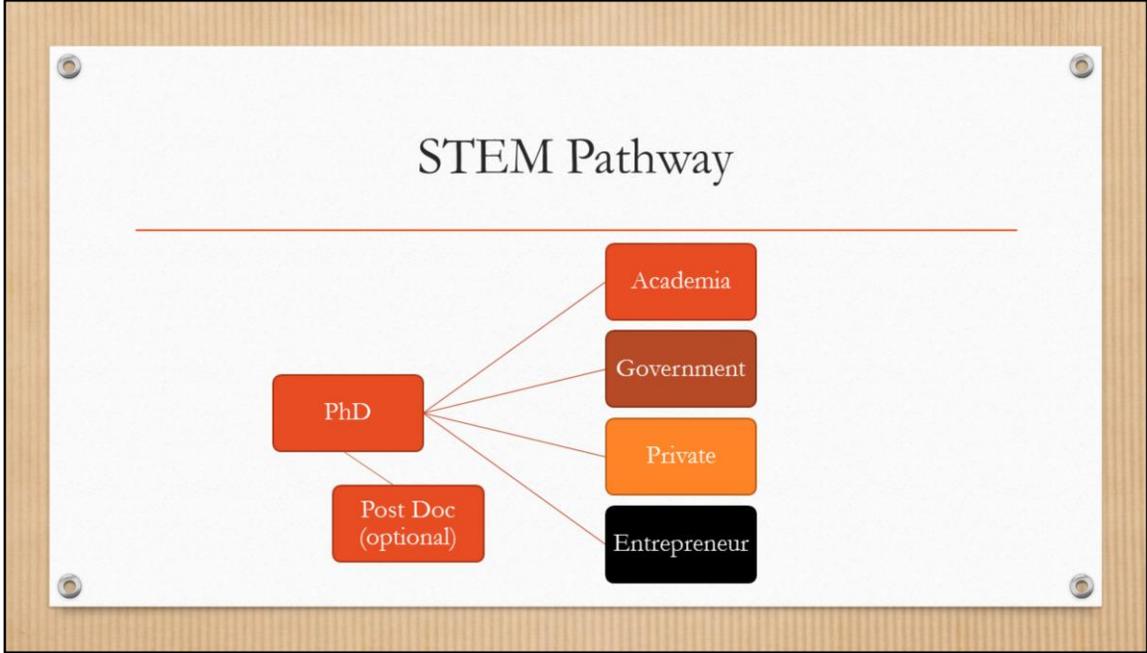
There are 4 main pathways you can take once you are done with your undergrad: Academia, Government, Private Job, and Entrepreneurship. We'll go over the next step in a bit more detail, but do you have any questions at this time?



So, from high school, you've gone to a university and earned your Bachelor's degree. From there, you can go to graduate school (academia), or in to the working world. Within the working world, you can go into government work, either at the federal or state level, you can go in to private industry, or become an entrepreneur – start your own company.



Graduate school doesn't mean professional school, but that is also an option. Professional school includes med, law, PT, those that have set curriculums and definite time lines. Grad school on the other hand is a bit more flexible in the approach and has some course work, but is more focused on research. Depending on your field, you may only need a Masters, or have to get a masters to go in to a PhD program, while other programs let you go directly in to a PhD program, which is what I did. There are benefits and drawbacks to each of these approaches. Again, once you earn your Masters degree, if you decide that is the end of the line as far as your formal education, you then have options of teaching up through a community collage, or entering the other fields as before.



If you go for a PhD, either directly after your Bachelors or after earning a Masters degree, you can get a Post-Doc position or move directly in to the working world. Again there are many options out there, so make sure you talk to as many people as you can about their experience and make an educated decision on what is best for you.

STEM Career Profiles

- <http://stemgateway.unm.edu/about-us/other-activities/blog/index.html>



We have a blog series that helps highlight how you can use STEM degrees in ways that you wouldn't initially think of. For example, Adam Frus, owner of Frus Glass uses his love and education of geology to incorporate it in to his glass art work. So check out this series. It was a lot of fun interviewing the people for it, so I hope you enjoy reading about each of them. They cover a broad range of STEM degrees and current professions.



And that does it. Do you have any questions for me?