MARC U-STAR Scientific Seminar

2020 Fall Semester: Session I (in-person) - Tuesday 4:30-6:00 pm; Session II (Virtual) - TBD

Instructor Information
Instructor: Jim Skeath  
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Goals: The program and seminar have three key goals:
1) Develop each individual’s scientific presentation and critical thinking skills through giving multiple talks each semester on research related topics and giving and receiving critical feedback.
2) Provide students a forum to learn about the structure of, expectations of, and keys to success in graduate school, medical school, and the MD/PhD, while also hosting student panels that discuss race/ethnicity in science.
3) Build a positive, personal, supportive, and critical scientific community for MARC students.

Expectations
1) Attend and actively participate in every class through presentations, asking questions, and critiquing fellow students’ talks. (If you need to miss a class due to an exam or illness, please email Jim to let him know before class).
2) When required hand in (or email/upload) writing assignments before start of class.

Course Materials
• When reading is required, scientific articles will be handed out one week before the relevant class.

Course Schedule
<table>
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<tr>
<th>Week</th>
<th>Topic/Activity</th>
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<tr>
<td>Sept. 14</td>
<td>Program Introduction and Introduction to video project (choose groups and pick tentative ideas)</td>
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<tr>
<td>Sept. 21</td>
<td>How to craft a narrative and introduction to storytelling (Anna Guzon YourWordsSTL)</td>
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<td>Sept. 28</td>
<td>Journal clubs: each group will give a 25-30 minute journal club on their chosen topic (ideally synthesize information from 2-3 papers)</td>
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<td>Oct. 5</td>
<td>Journal clubs: each group will give a 25-30 minute journal club on their chosen topic (ideally synthesize information from 2-3 papers)</td>
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<tr>
<td>Oct. 12</td>
<td>Individual groups meet to start to develop their narrative and visuals for their Video</td>
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Oct. 19  Video storylines/scripts - Each group will present initial narrative and visuals to the class for critique
Oct. 26  Journal clubs (or other format) where each group presents on their video topic
Nov. 2   Journal clubs (or other format) where each group presents on their video topic
Nov. 9   Video storylines/scripts - pitch completed ideas to experts for initial feedback
Nov. 16  Student Panel (TBD - MARC/WU Alums - PhD, MD/PhD, MD: topic - TBD with class input)
Nov. 23  Video Production - start to create/practice/film
Nov. 30  Video Production - start to create/practice/film (We may not need three video production in a row, so we may swap something in this week based on feedback.)
Dec. 7   Production - finalize videos
Dec 14   Video viewing party and celebration - invite program alumni (or we can move the viewing and celebration to “finals” week in January and allow more time to sculpt a video). We can play this by ear and decide around Thanksgiving what we’ll do.

Additional Information and Resources

1) Informal advising: during the school year, I hope to meet with each student in the program for a ~30-minute chat session to get a better idea of your goals/concerns about the program, research, your next career step, etc. (Optional, but recommended)

Students’ critiquing students: Please note that this year we would like to continue to emphasize getting students to be more active participants in critiquing each other’s talks. It’s not easy to critique a talk or to receive a critique of your talk, but both are important skills to develop. This semester we are going to try a few activities to help students critique each other’s talk. First, for the “What I did over the summer?” talks, we will have a feedback form for each student to fill out for each talk to provide feedback for the speaker. During this time, you can see how the TA/I critique talks and think about how you would do it (everyone does these things differently). Second, for the “Walk in the shoes of another” talks, we will designate two students to provide feedback for each talk. Kate/Maple and I will then fill in with additional feedback once the students are done. As I said, critiquing talks is difficult, so here are some guidelines, tips, and websites to read to help you out.

1) Use the sandwich model: “People hear constructive feedback SO much better after they’ve gotten a little bit of love. When you give feedback on a talk, have the first piece of bread be something that worked, then share something that could work better, then top off the sandwich with another piece of compliment bread!” Taken from How to give effective feedback on a talk. Ashley Kolaya. TED-Ed Blog. https://blog.ed.ted.com/2017/11/09/how-to-give-effective-feedback-on-a-talk/

2) Be specific, realistic, and meaningful in your feedback.
The more specific and precise you are in your language when critiquing (and writing and speaking) the more effective you will be. The next section is also taken from the above referenced article. It’s another analogy, one I don’t think is as good as the sandwich one, but the points are good.

“When giving feedback, try the Playing Card Method©.

Hearts: Heart feedback is positive but unspecific (ex. “Sam’s intro is great!”)
Diamonds: Diamond feedback is positive and valuable, because it is specific (ex. “Sam’s opening story about pizza caught my attention right away and built suspense that got me excited for the rest of his talk.”)
Clubs: Negative and unspecific, this kind of feedback clubs someone over the head and just hurts (ex. “I didn’t like the part about Widget World because it didn’t make sense.”)

Spades: Just like the little shovels they’re named after, spades can help people dig themselves out of a hole. This feedback may be negative, but it’s specific, which makes it helpful (ex. “I was a little confused by the part about Widget World and wonder if Sam could explain a bit more about the snack incident, especially since his talk is about how WW made him afraid of popcorn forever.”)

When you’re offering feedback, try to give diamonds and spades, rather than hearts and clubs. Specific, precise feedback will make it easier for people to enhance both the stuff that’s working and that which needs help.”

3) Three keys to effective feedback:
   a. Discuss what was memorable
   b. Discuss the key message
   c. Share when you started to tune out or when you struggled to understand points

Taken from “3 Helpful ways to give feedback on a presentation” by Anett Grant (https://www.fastcompany.com/90333748/3-helpful-ways-to-give-feedback-on-a-presentation).

4) Be kind to yourself: As the speaker and the person critiquing the talk - be kind to yourself. In general, undergraduates don’t get a lot of experience giving talks and even less critiquing talks. Don’t be over critical of yourself with your talks or your critiques - notice what you did well, notice where you can improve with your talks and critiques. If you do this and really think about it, you will improve. And, remember what John Wooden said, “You can’t let praise or criticism get to you. It’s a weakness to get caught up in either one.”

Dear All,

I hope everyone is doing well and staying safe and sane.

I wanted to write, as we’re going to try to mix things up a bit this semester and wanted to give everyone a heads up, so you could think about ideas. We thought we’d have students work in groups of three to four to create a short science video on a defined science concept or topic easily accessible to a lay audience. Groups will work on this project throughout the semester, which will also include journal club presentations on literature relevant to each topic, presentations on and critiques of the narrative and visuals of the video, and practice sessions, etc., with the goal of having a video complete by the end of the semester. We will provide possible topics, but each group has license to select their specific topic(s) as long as they are relevant to science/scientific research. The target audience for the videos will be 9th-12th grade students at Jennings Senior High School and in The Sophia Project, a girls’ club in STL. The goal is to make videos of high quality to share them with groups that partner with us. We do have a small technology budget for this, so if you need access to specific software, equipment, or reagents, please let us know we may be able to get it (we will have access to two video cameras and will get microphones). Please note that I’ve attached the tentative syllabus for the Fall Semester to this email (we are open to suggestions for the student panel and also the second proposed set of journal clubs, which can be a different format).

We look at this as an experiment: if it works well and students like it a lot, we can do something similar in the spring. If it bombs, we won’t. It’ll be something different, and hopefully fun and creative, that we can do during a semester that will likely be difficult for all of us due to the pandemic. No matter
how the videos turn out, I think we’ll all learn something about how to communicate science to the general public as well as how to use videos to convey important scientific concepts and points, something that will grow in importance in teaching and in general in the future. Plus the format is amenable to both virtual and in-person classes and can be switched to fully remote if needed, so I think it can be pretty flexible if needed.

In this project, as it’s a bit outside our area of expertise, we’ve enlisted some outside help. This year, we’ll be joined in some classes by Anna Guzon, MD MFA, will join us to teach storytelling and science communication. Anna helps run YourWordsSTL, https://www.yourwordsstl.org/about-us/, an organization she co-founded that is committed to bridging racial, cultural, and economic divides, by honing the ability of people to tell their stories, while providing opportunities for the community to listen. In addition, Thi Nguyen, PhD and formerly Associate Dean of Graduate Careers at WashU, will join us to support the video projects and reading and presenting papers for journal clubs.

Possible topics, including some from MARC students:

- SARS-CoV2 related topics (viral infection, Spike protein/ACE2, neutralizing antibodies)
- Vaccine history and development (Smallpox, Ebola, different types of vaccines, etc).
- Science biography(ies) of famous scientist(s) from an under-represented backgrounds
- Hands-on Science demo with description of principles highlighted by the demo (if short, can do a few of them).

Length of video: Depends on format of video, but 2-5 minutes is a guess, but up to ten is okay.

Format of the video - any format that you believe is effective is fine. Below, we list some possibilities and examples:

ASAP science videos (white board/animation videos)

Examples: https://www.youtube.com/watch?v=yWUHQaeTf9U
https://www.youtube.com/watch?v=SSuxVwMkcpA

Example of short videos of science biographies:

Biography channel on YouTube - https://www.youtube.com/watch?v=HaLstb_t8yc

Examples of simple science demos:

https://www.youtube.com/watch?v=L03LHMXrda4
https://www.youtube.com/watch?v=Eql_UF1LbTo
https://www.youtube.com/watch?v=WTerqBU_W6Q

The plan is for students to identify their working group and general topic(s) during the first class and then have the group work in and out of class over the course of the semester to develop their narrative, story board/visuals, and video over the entire semester, with completion of the video serving as the capstone for the semester. Class time, itself, will be split between the following activities:
• Journal clubs given by each group on literature relevant to their topic (here, I’m thinking each group students will get ~30 minutes to cover 2-3 papers on their chosen topic; ie: not an exhaustive analysis of each paper, but rather one that synthesizes the key points in the papers)
• Small group discussion in which each group develops their narrative and visuals
• Presentations by each group on their narrative and expected visuals to the class, and if possible a separate session where you present to experts in the field
• Sessions where each group practices and starts to create their videos
• Final session - viewing of videos and celebration with MARC alums invited via Twitter.

So, if you have time, think about what you might like to do, check out some of the on-line examples, and maybe look into what you might need to make a video.

Send me any questions, comments, or concerns.

Thanks, take care, and stay safe,

Jim