16 (or more) professionals to reach out to

Brendan

1. ~~Dr. Martinez-Miranda~~
   1. ~~UMD Materials Science Engineering professor, deals with polymers~~
   2. [~~ljmm@umd.edu~~](mailto:ljmm@umd.edu)
   3. ~~materials science~~
2. **Dr. Lloyd**
   1. UMD Materials Science Engineering professor, deals with polymers
   2. [iloyd@umd.edu](mailto:iloyd@umd.edu)
   3. composites and material science
3. Could ask David if he has any contacts we could reach out to

Elizabeth

1. **~~Dr. Sochol~~**
   1. ~~UMD Mechanical Engineering assistant professor, 3D prints robotics/nanotech, director of Bioinspired Advanced Manufacturing (BAM) lab~~
   2. [~~rsochol@umd.edu~~](mailto:rsochol@umd.edu)
   3. ~~Additive manufacturing for a variety of applications~~
   4. Recommended his postdoc: Dr. Sunandita Sarker
2. ~~Dr. Fisher~~
   1. ~~UMD Bioengineering and Materials Science Engineering, polymers and biomaterials~~
   2. [~~jpfisher@umd.edu~~](mailto:jpfisher@umd.edu)
   3. ~~Materials science~~
   4. Recommended his grad student

Aidan

1. ~~Dr. Foecke~~
   1. ~~Materials Science and Engineering with interests in mechanical properties~~
   2. [~~foecke@umd.edu~~](mailto:foecke@umd.edu)
   3. ~~mechanical properties of different materials~~
2. ~~Dr. Kofinas~~
   1. ~~Chemical and Biomolecular Engineering, Fischell Department of Bioengineering, Materials Science and Engineering, deals with polymers~~
   2. [~~kofinas@umd.edu~~](mailto:kofinas@umd.edu)
   3. ~~material science~~

Cynthia

1. **Dr. Becnel**
   1. Aerospace Engineering senior lecturer with interest in additive manufacturing
   2. [abecnel@umd.edu](mailto:abecnel@umd.edu)
2. Dr. Zhao
   1. Materials Science and Engineering, Department Chair, Minta Martin Professor, Fellow (MRS), Fellow (ASM), Board of Trustees (ASM)
   2. [jczhao@umd.edu](mailto:jczhao@umd.edu)
   3. Recommended:
      1. Dr. Fourkas
      2. Dr. Fuge

Nathan

1. **Ho Yeung**
   1. Lecturer for ENME489G. Researches additive manufacturing at NIST.
   2. [ho.yeung@nist.gov](mailto:ho.yeung@nist.gov)
   3. Additive manufacturing

Email Draft

Dear Dr. \_\_\_\_\_\_,

My name is \_\_\_\_\_\_\_\_ and I am a member of team PRINT, a Gemstone Honors Program research team here at the University of Maryland College Park. I am writing on behalf of my team to inquire about possible interest in serving as one of my team’s discussants for the Gemstone Thesis Conference occurring virtually during a two-hour time slot on Friday, April 8th, 2022. Your particular expertise in \_\_\_\_ would give valuable insight into our project.

The Gemstone Program is a four-year, multidisciplinary, undergraduate research program for honors students. Our team’s research is focused on additive manufacturing, exploring primarily the efficacy of targeted 3D printing repair for FDM printed plastics. You can find the abstract of our paper below.

Accepting this role as a panel discussant would help us conclude our four years of hard work, and we believe your background is well suited for our project. If you were to agree to being a discussant, here is a list of things that would entail:

* Reading a draft of our thesis prior to the defense on April 8th (which will be sent several weeks in advance)
* Preparing a brief written critique of the thesis
* Attending our presentation and Q&A session (virtually, approx. one hour)
* Meeting with the team (and other discussants) privately for an additional hour after the presentation for more detailed feedback

The Gemstone Program office will follow up with additional information that you will need for the day upon acceptance of the role. I look forward to hearing from you!

Sincerely,

\_\_\_\_\_\_\_

Abstract: Additive manufacturing is an emerging technology whose users seek to benefit from repair methods to reduce time and material costs. We explore an application of the technology to targeted repairs, such as mending holes or cracks, on 3D printed parts by using conformal tool-pathing, combining the precision of additive manufacturing with the strength and homogeneity of material adhesion. To characterize the efficacy of targeted 3D printing repair for FFF plastics, repair configurations varying in shape, size, material, infill and loading type are tested in 3-point bending for structural strength and strain. We provide and summarize the collected data in addition to a structural analysis and optimization of parameters relevant to reparative 3D printing.

Here is a list of what is expected of discussants:

• Read the draft of the team’s thesis, which will be mailed to them approximately two weeks before the thesis

conference

• Prepare a brief written critique of the draft thesis to give to the team at the thesis conference

• Attend the team’s presentation and public question and answer session at the thesis conference (1 hour)

• After the presentation, ask the team pertinent questions about their research

• Meet with the team privately (along with the other discussants) for an additional hour after the thesis conference to

provide the team additional feedback on their presentation and draft thesis