BEEC Share and Learn Report: November 2025

Presenters: Grace Ford, Department of Biomedical Engineering, University of Virginia

Topic: Mad Libs for Mad Scientists: A Low-Stakes Activity for Contacting Research Labs: ASEE Education Showcase Deep Dive

Resources:

- Consensus and Scite AI tools:
  - https://scite.ai/assistant?utm_source=google&utm_medium=cpc&utm_campaign=brand&utm_term=cite%20ai&gad_source=1&gad_campaignid=19870517034&gbraid=0AAAAACSa0LL1crU5esdNKaN6uyTywZKe_&gclid=CjwKCAiA8vXIBhAtEiwAf3B-g6IhhDvQatUIpNsyfJyZ7F7fy71pVJ4CuO3XWSPPeTIGmIZi0H_5GRoCS_AQAvD_BwE
  - https://consensus.app/?utm_source=google&utm_medium=paid&utm_campaign=search_branded&gad_source=1&gad_campaignid=20789663884&gbraid=0AAAAAqgO5PItMnbiPA0NAhlS0fNXjxd3R&gclid=CjwKCAiA8vXIBhAtEiwAf3B-g8eNXY1u5UEuy_nJrlEzCKhFQBgk6aw2vAoxM4-FNTEaHikwvDoa9BoC3GEQAvD_BwE
  - Summarizes research papers
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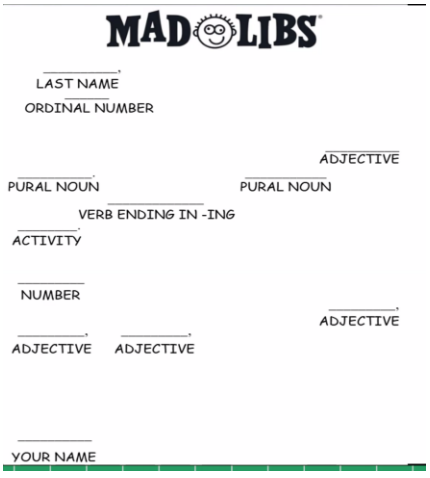
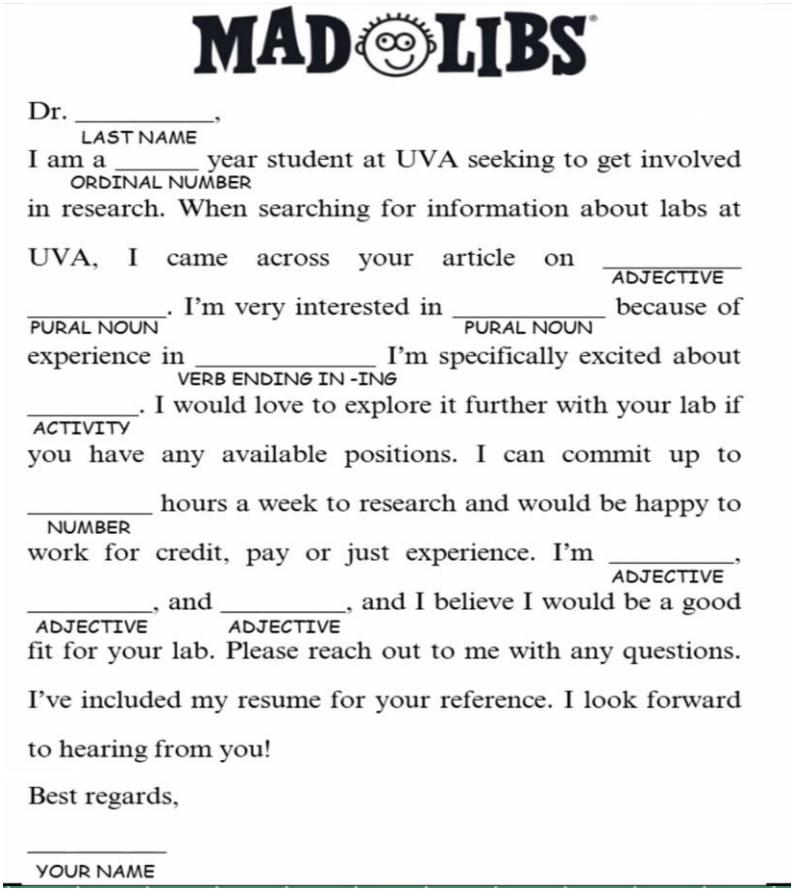
Discussion and Lecture Notes:

Lecture Notes:

- Undergraduate barriers to entry in research – create SURE: Starting and Undergraduate Research Experience – provides peer teaching (mentored by faculty), course design (active learning opportunities, lab tours, panels, mock interviews, mock journal club, contact emails), and specifications grading based – pass/fail (bundles assessments to meet complex objectives based on skills needed to successfully join a research lab)
  - 1 credit peer-taught course
  - Provides skills on how to successfully join a research lab
- Cohort: 40 first-year engineering students
  - Students have learned about what an undergrad does in a lab, went on lab tours, and have already identified labs of interest
  - Objective – introduce process of writing a contact email to a lab PI in a welcoming and supportive way
- Mad Libs: on paper:



- Do it in pairs with the students
- Provides structure for students, but helps lower the barrier by making it silly at first.
- Get back of page after activity:



MAD LIBS

Dr. _____ (LAST NAME),
I am a _____ (ORDINAL NUMBER) year student at UVA seeking to get involved in research. When searching for information about labs at UVA, I came across your article on _____ (ADJECTIVE) _____ (PURAL NOUN). I'm very interested in _____ (PURAL NOUN) because of experience in _____ (VERB ENDING IN -ING) I'm specifically excited about _____ (ACTIVITY). I would love to explore it further with your lab if you have any available positions. I can commit up to _____ (NUMBER) hours a week to research and would be happy to work for credit, pay or just experience. I'm _____ (ADJECTIVE), _____ (ADJECTIVE), and _____ (ADJECTIVE), and I believe I would be a good fit for your lab. Please reach out to me with any questions.

I've included my resume for your reference. I look forward to hearing from you!

Best regards,

_____
YOUR NAME

- Breaks the ice, reduces fear of "messing up", familiarizes students to structure and tone
- Helps model science communication and writing as a low stakes way to learn the skills

Discussion:

- Have you seen anything different from the format that has been effective?
    - Give examples of extremes – two sentences vs. several paragraphs (contact letter), and show how you need a balance between detail and terse way
    - Nonconventional ways – office hours and personal conversations are ideal forms of communication with professors
- What are departments goals in terms of number of students doing undergraduate research?
    - Open lab Fridays – one Friday per month a lab will have an open house or an open lab meeting
    - Want to maximize number of students doing it, but not enough seats given class size and desire for research
- We have similar expectations to have at least one research experience prior to graduation, but not enough labs to do this, so they encourage them to look at outside departments and schools (medicine, physics, chemistry, etc.), but even due to lack of response to emails, they came up with research club with research conferences and they focus on literature review as the research. Has over 600 students in the club, and it has been effective. They now have a journal limited to state and universities within that state to create a peer reviewed journal.
    - Literature review papers has research in itself and has its own methodology in itself.
- Use of AI to create new and different mad libs?
    - Encourage to use AI to help refine it but need to make sure it's in their own voice
- What do you advise students to do if they send the email and don't hear back?
    - Encourage students to follow up at least once since it's presented ¾ through the semester.
    - Encourage students to find graduate student within lab that is more responsive and will likely be the one working with them.
    - Find office hours and find professor in person

    - Send 3-7 (5 is sweet spot) emails to other professors
- Do mock interviews for how to do interviews with professors. They do a peer to peer interview and then they practice how to give and receive good feedback
    - How to talk about their experiences in positive way
    - If invited to chat, pitch self and bring up prior experiences, and it may not be a formal sit down so try to model this type of interview/experience
- Suggested training on thank you emails or thanks after a mock interview to train on how to follow up after interview, a thing professor can do, e.g. do you have availability? Can we meet in person as next steps?
- Develop a mentorship training for undergraduate research. Will publish for graduate students, postdoctoral students, and faculty a training on how to prepare to have undergraduate students in labs
- 1000 students across all engineering in a year, it's an elective course open to all engineering students, capped at 40 due to space limitations, but can go over enrollment number but usually stops at around 50
- Use of spreadsheets to help students learn about each topic and which profs are seeking undergraduates
    - Uses a lot of word of mouth instead since no one updates the spreadsheets
    - Try to help students identify their interests and then go through lab websites to narrow down which professors
    - Walk through how to go through search processes to show them how to find things they're interested in
- How do you know what professors are really working on currently and not from years ago?
    - Coach them and give them walk throughs by showing them
    - Coach them on how to read research papers to understand the topic without needing to know everything which is overwhelming given depth of knowledge in a paper
    - Assignment in using AI for research papers – take a title, and then ask it to summarize paper to an 8 year old
- AI tools are good at bullet point summaries and not logic and need
    - Consensus or Cite AI tools
    - https://scite.ai/assistant?utm_source=google&utm_medium=cpc&utm_campaign=brand&utm_term=cite%20ai&gad_source=1&gad_campaignid=19870517034&gbraid=0AAAAACSa0LL1crU5esdNKaN6uyTywZKe_&gclid=CjwKCAiA8vXIBhAtEiwAf3B-g6IhhDvQatUIpNsyfJyZ7F7fy71pVJ4CuO3XWSPPeTIGmIZi0H_5GRoCS_AQAvD_BwE
    - https://consensus.app/?utm_source=google&utm_medium=paid&utm_campaign=search_branded&gad_source=1&gad_campaignid=20789663884&gbraid=0AAAAAqgO5PItMnbiPA0NAhlS0fNXjxd3R&gclid=CjwKCAiA8vXIBhAtEiwAf3B-g8eNXY1u5UEuy_nJrlEzCKhFQBgk6aw2vAoxM4-FNTEaHikwvDoa9BoC3GEQAvD_BwE
    - Better at summarizing research papers