General Questions for REU Interviews

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1. Tell us a little bit about yourself.

    - Went to John Bapst high school
    - Parents live in Holden, Maine
    - Came to the University of Maine, currently majoring in Biology…..looking to get into dentistry after college
    - Took medical physiology, came into college with 14 credits of AP.
    - Took chemistry and calculus his first year….tested out of biology
    - Took Organic Chemistry during summer
    - Wants to go to Dalhousie College in Halifax, Nova Scotia to pursue dental degree

2. How did you get interested in Science/Technology?

    - Mother is a chemistry teacher at John Bapst High School in Bangor
    - While at Holbrook middle school in Holden, Maine his science teacher, Mrs. Doyle got him excited about science…..biology class in 7th grade he dissected a dog fish. This experience sparked an interest in "medical/dissection". When he witnessed a lab at John Bapst where cats were being dissected, he knew he wanted to pursue science to learn how organisms "work".
    - He really enjoys anatomy and physiology, organic chemistry, microbiology

3. Explain your project in simple terms.

    - He is using soil block jars to look at the fungal decay of white pine.
    - Cup of soil in jar, two feeder strips (fungi grows on stripes in the soil jar), Mix the soil with water, autoclave it to sterilize and then inoculate the jars with the desired fungi species.
    - After a set amount of time the blocks are removed, autoclaved, "baked" to remove moisture and massed.
    - Next the blocks are ground into wood powder, "baked", autoclaved again and pressed into thin wafers for x-ray diffractions. This procedure measures the crystals within the wood wafer.
    - Stewart is also looking at the productivity of different types of soils for fungus growth. He is looking for a soil mixture better that maybe better than the lab standard.
    - He is comparing the water holding capacity of soil and pH to determine which is best for maximum fungi growth (increased decay of wood).

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- Soils are composed of mixtures of fermiculite, potting soil, and phagnum (peat moss).
- Testing how well "cheap common" loams work in the mixtures.
- One type of loam is more "rocky" and therefore had less water holding capacity then the other loam.
- Soil A: Fungi liked manure/hummus mixture.
- Soil B: 1/3 rocky loam, 1/3 fermiculite, 1/3 manure/hummus
- Soil C: loam and fermiculite

4. What are some setbacks and successes you've had during this research experience?

    - Setback: Was not able to put blocks in soon enough, should of done them end of second week. Reason: first week was immerse in research, had to design an experiment and then finding the soils locally was difficult, TIME IS ISSUE
    - Success: developing success, learned a lot from graduate students, techniques, methods, etc

5. How would you envision your research being used in a middle school science classroom?

    - Testing water holding capacity is too difficult
    - Testing pH of soils could be an opportunity… (experiment - change the pH of potters soil with lemon juice to see which pumpkin seed grows the best)
    - Inoculate agar plates would be a cool and easy experiment for middle schools. Swab school areas and see what grows, drinking fountain, door knobs, etc

6. What are your goals in regard to this research experience?

    - Future goals in general: go to dental school
    - Goals in this experience: Continue the work of other researchers through the summer and personally acquire the skills require in conducting unbiased research experiments.
    - His research fits in with the FBRI goals because Dr. Jellison needs to know if the standard soil is truly the best medium to grow fungus or weather a different soil mixture might enhance fungal growth and therefore increase wood decay.

7. What do you see yourself doing after graduation?

    - Wants to go to dental school at Dalhousie in Halifax, Nova Scotia.