

ASSIGNMENT

SPECTROSCOPY & ROSALIND FRANKLIN

Course: Materials Characterization for Soft and Polymeric Materials

Institution: University of Notre Dame

Faculty: Gabriel Burks

Details about the audience and course context

- How many students are in the class? *21*
- What is the teaching modality (in person, virtual, hybrid)? *In person*
- What grade level/year are the majority of students? *Upper-level undergraduate and graduate students*
- Where does this course fall in the curriculum? (Is it in the core or organized within a particular course of study?) *It is currently an elective and is under review to be added to the MSE Ph.D. program curriculum.*
- What virtues are integrated into the course? *Moral courage, intellectual wonder, and intellectual attentiveness*

Assignment: Spectroscopy & Rosalind Franklin

The course is divided into three blocks. For each block, students write responses to the “thought-provoking questions” in the associated online class discussion board and provide a thoughtful response to two of their peers.

Block 1: Moral Courage

It’s the early 1950s in post-war London. You’re one of the few women in a prestigious research lab. You’ve just produced the most detailed X-ray diffraction image of DNA the world has ever seen. But the lab environment is icy. Your closest collaborators often talk past you or down to you. Your data is borrowed without consent. Your insights are not publicly credited.

And yet . . . you keep working.

You refine methods others barely understand.

You take fewer shortcuts.

You document more rigorously than your peers.

You don't sensationalize. You report what's real.

Thought-provoking Questions

- When is it better to be right than to be first?
- What does it mean to be courageous in a scientific setting where recognition isn't guaranteed?
- How do you handle situations when others benefit from your work without acknowledgment?
- When analyzing scattering data or structural models, how do we honor the integrity of what we see versus what we want to see?

Note to Instructor

As the instructor, the prep is pretty fun for the exemplar portion. I add a bit more historical context and include news clippings and nontraditional media to demonstrate not only the story but also the personality of the exemplar.