

## Becoming a TA in the Genomics Education Partnership

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## Outline

- Effective-teacher characteristics
- How to manage a classroom or laboratory
- What to do on the first day
- Preparing for lab session
- The pre-lab talk

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## Effective Teacher Characteristics

- Knows foundations of the subject
- Is organized and prepared
- Communicates clearly
- Challenges students (sets high standards)
- Interacts with students
- Is understanding and fair
- Is enthusiastic and energetic
- Has a sense of humor (not sarcastic)
- Is interested in students
- Wants to teach well
- Is passionate about the subject

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## Unusual Features of a Research-based Lab

- Aside from training exercises, the answers are unknown
- Questions and answers are shared among faculty, TAs, students
- The class becomes a research team
- Students are graded on reasoning from evidence to support their conclusions

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## How to Manage a Laboratory/Classroom

- Start class on time (end class on time).
- Know the policies and expectations set by the instructor at the beginning of the course.
- Learn your students' names.
- Announce office hours and keep them. Share contact information as appropriate.
- Circulate among students during lab.
- Be consistent in your interactions with students. (Do not date your students!)
- Deal with problem students individually.
- Know safety procedures, nearest help phone.

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## The First Class Meeting

- Show enthusiasm
- Introduce yourself
  - Name on board
  - Tell about yourself: student, interests
- Be prepared and well organized
- Get there early
- Talk to students informally before class starts
- Have students introduce themselves
- Communicate policies, expectations
- Provide opportunities for students to ask questions – remember wait time

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## Preparing for the Lab Session

- Know what the students are to learn and do.
  - Know how the lab session goals relate to the course goals and objectives, and GEP goals and objectives.
- Be in control of all of the material necessary to complete the work.
  - Know the hardware, where it is, how to operate.
  - Know the software, where it is, how to operate.
- Plan any pre-lab discussion (adapt GEP web materials as applicable).
- Think about potential problem points, discussion questions to ask while you are walking around.

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## General Lab Strategies

- Do not rush to answer a question; let the student explain their problem thoroughly.
- Be able to rephrase the question.
- Do not do a student's work; show them how to correct errors, or suggest a strategy.
- Do not bluff. Be able to say "I'm not sure."
- Have students feel comfortable asking questions. Never ridicule!
- Encourage students to answer each others' questions.

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## Pre-lab Talk

- Prepare talk in advance and **practice** it out loud.
- Presentation
  - Have a presence. You need to hold the students' attention
  - Use the space given you. Move around
  - Show passion and enthusiasm for your field. Reflect the awesome power of genomics!
  - Make eye contact
  - Speak loudly
  - Be interactive

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## Pre-lab Talk

- The pre-lab talk should be brief
  - Time your talk before you give it.
  - Provide any critical information in hand-outs or on a web site.
- Use group walk-throughs to introduce new software. Point out the strengths and limitations of a given approach.

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## Pre-lab Talk

- Board work
  - Write legibly and big
  - Think about the organization of the material on the board
  - Fill one board at a time. Start at the top and move down
  - Underline or mark major assumptions, conclusions, etc.
  - Erase only when you have run out of room
- Power Point presentations
  - Use mix of text and illustration
  - Choose only those slides that work for you
  - Do not read your slides- talk to your audience, not to your slides!
  - Do not move too quickly

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## Pre-lab Talk

- Give the big-picture concept.
  - Why are the students performing this learning exercise? Why are they seeking this information?
  - What should the students be thinking about while performing the work? What sort of data should they be capturing for their report?
  - How does this work relate to the overall analytical goals?

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