

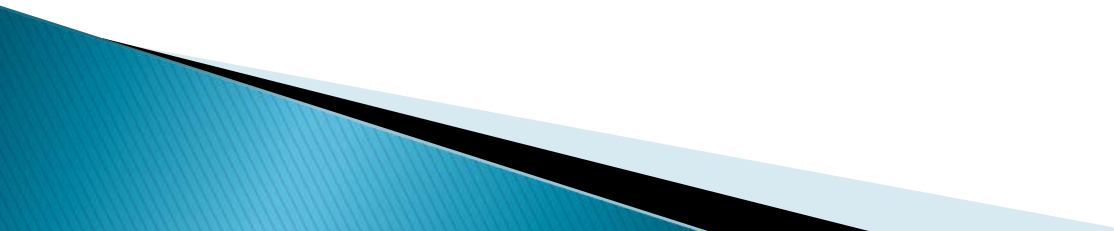
Starting Life in the Lab



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References

- ▶ At the Bench: A Laboratory Navigator. Kathy Barker. Cold Spring Harbor Laboratory Press 1998.
 - ▶ Personal Experience
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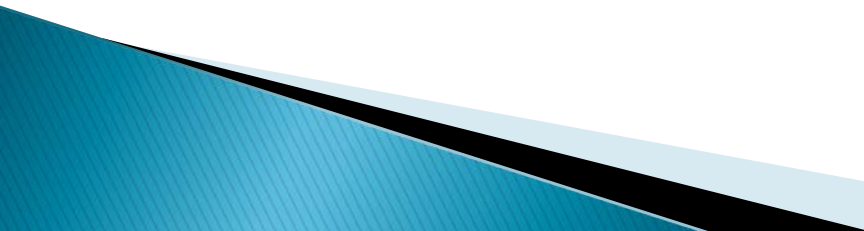
On the Job Training

- ▶ Common to feel like fish out of water
- ▶ DO NOT FREAK OUT!
- ▶ Important to know...
 - Lab Safety/Animal Use
 - Responsible Conduct
 - Ethical behavior
 - Who is in the lab
 - What to wear
 - Who will teach you
 - What to ask
 - How do you “fit in”
 - How you will be evaluated....

Online UTSA Lab Safety

- ▶ <http://www.utsa.edu/Safety/#/laboratory/training>
- ▶ Courses required depend on lab.
- ▶ Will need to take some or all of the following:
 - Hazard Communications & Laboratory Safety (SA 443)
 - Biological Safety and Bloodborne Pathogens for Researchers (SA 467)
 - Hazardous Waste Generator Training (SA 401)
 - Laser Safety Training (SA 465) (Labs with lasers)
 - UTSA Radiation Safety Training (SA 433) (Labs with radiation)

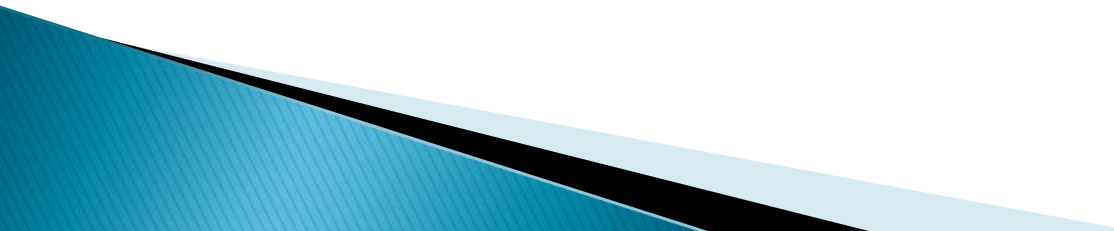
General Safety

- ▶ No eating, drinking, smoking in lab
 - ▶ Wear
 - Long pants/sleeves and closed shoes
 - Natural fibers (if near fire)
 - Lab coats as needed
 - In lab – remove when leave lab
 - Gloves when handling chemicals
 - ▶ Note Biohazard or Radioactive signs
 - ▶ No food in research refrigerators
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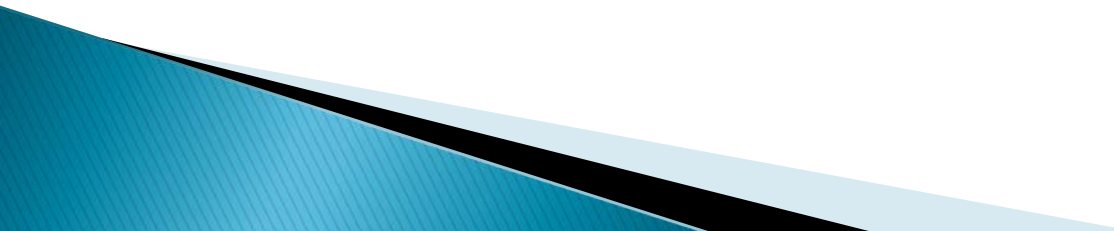
Animal Care and Use

- ▶ Required for work with higher vertebrates
- ▶ Online and “Hands On”
- ▶ Multi-step
- ▶ Complete as soon as possible
- ▶ <http://research.utsa.edu/oric/iacuc/training.php>
- ▶ Can enter lab before finishing, but animal use will be restricted

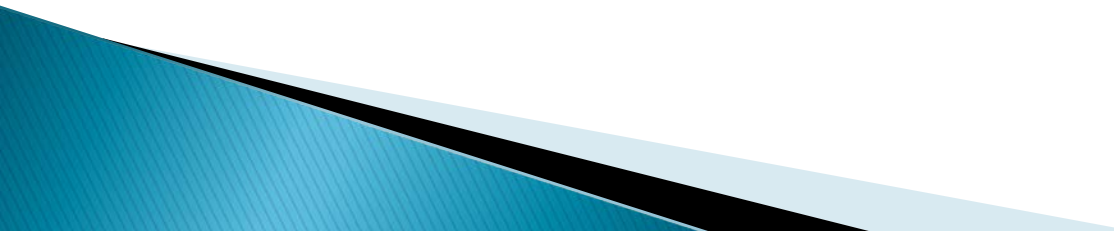
Responsible Conduct at UTSA

- ▶ Training depends on what grants your PI has
 - ▶ <http://research.utsa.edu/oric/rcr/>
 - ▶ <http://research.utsa.edu/oric/rcr/training.php>
 - ▶ Ask what you must take
 - ▶ Complete it as soon as possible
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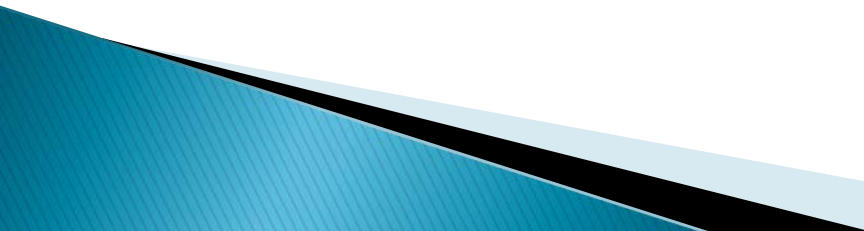
General Laboratory Ethics

- ▶ Never make up or “fudge” data
 - Even if you make mistake
 - Even if mentor is annoyed
 - Even if you feel pressured
 - ▶ Always record ALL data and experiments
 - ▶ No Plagiarism - Let your work be your own
 - ▶ Never mislead mentor
 - ▶ Keep well-maintained lab notebook
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Who is in the Lab?

- ▶ The Principal Investigator (P.I.)
 - ▶ Research Scientists (PhDs who work for PI)
 - ▶ Postdocs (“Internship” for PhDs)
 - ▶ Lab Manager (PhD or not)
 - ▶ Technicians
 - Know what you need to know
 - Respect them
 - ▶ Graduate students
 - M.S.
 - Ph.D.
 - ▶ Undergraduates
 - ▶ Other visiting people
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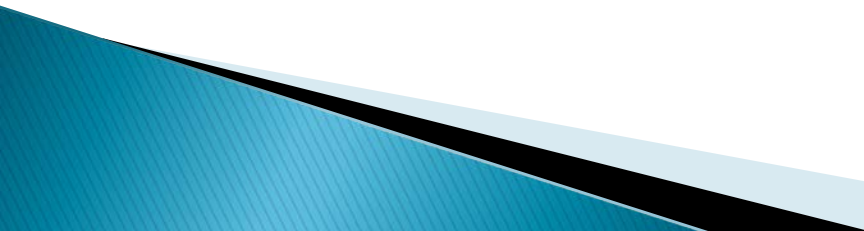
Things to ask about

- ▶ Dress practices for that lab
 - ▶ Time others are in the lab
 - ▶ Eating areas and food storage
 - ▶ Computer use policies
 - ▶ Chemicals: location, who makes stock solutions, pH measurement, weighing conventions, ordering
 - ▶ Trash disposal: sharps, biohazard, recyclables, glass
 - ▶ Glassware policies: where found, washing, autoclaving
 - ▶ Laboratory coats: required, provided, cleaning
 - ▶ Lab notebook: provided, format, copies, non-removal
 - ▶ Photocopying and printing
- 


Laboratory Instruction

- ▶ Some done by observation
- ▶ Generally a laboratory member will instruct
- ▶ Take detailed notes!!!!
 - Names
 - Equipment settings
 - Incubation times and temps
 - Locations of chemicals and reagents
 - Instructions
- ▶ Ask questions during instruction times
- ▶ Be polite about subsequently interrupting
- ▶ Do NOT mess up by not asking question

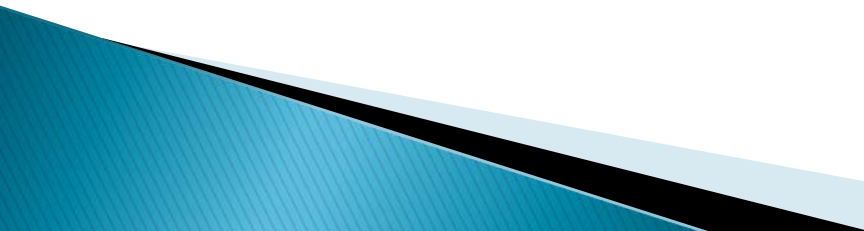
Things to Do Early On

- ▶ Read papers that you are given
 - ▶ Cooperate with university requirements
 - Laboratory/radiation safety courses
 - Animal Care and Use
 - Responsible Conduct
 - ▶ Learn what is expected of you
 - ▶ Learn techniques
 - ▶ Do an experiment
 - ▶ Learn How to Fit in.....
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How to Fit in Well

- ▶ Work the hours you say you will
 - ▶ Attend laboratory meetings
 - ▶ Show up (on time!) for training appointments
 - ▶ Don't keep comparing this lab to another lab
 - ▶ Finish your experiments before leaving lab
 - ▶ Clean up before you leave
 - ▶ Ask permission before you use someone's personal pipettors, buffers, reagents/chemicals
 - ▶ Return common-use chemicals/equipment to their correct location
 - ▶ Re-make or notify someone if you use up a solution or chemical
 - ▶ Admit it when you make a mistake or break something
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Fitting In II

- ▶ Be polite with your phone (talk in office, quiet notifications)
 - ▶ Minimize social media use
 - ▶ Don't be loud or engage in horseplay
 - ▶ Don't read others' lab notebooks without permission
 - ▶ Sign up when you need to use common equipment
 - ▶ Don't use lab copiers for homework
 - ▶ Read scientific papers in the lab (not novels/newspaper)
 - ▶ Don't play computer games in the lab
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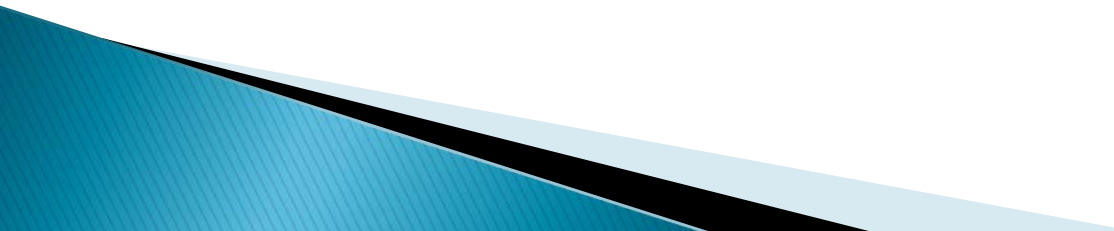
Fitting In III

- ▶ You are a part of laboratory family
- ▶ Participate in laboratory socialization
 - Tea
 - Coffee
 - Sports
- ▶ Maturely handle lab interpersonal interactions
- ▶ Participate in lab meetings
- ▶ Complete laboratory responsibilities
 - You may have a job to do in lab

Lab as a Mini-Society

- ▶ Variable levels of maturity
 - ▶ Variable strengths
 - ▶ Variable social skills
 - ▶ Variable insecurities

 - ▶ Your goal:
 - To be mature, hardworking, and effective

 - ▶ Key: Communication!
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Benefits of UG Research

- **Academic:**
 - Enhances Science Education/Validates coursework
 - Intro to balancing school and research
 - Deeper Faculty contact/mentoring
- **Personal:**
 - Self-confidence
 - Maturity
 - Knowledge that you can have an impact
 - Generally, an increase in motivation
- **Professional**
 - Observe a “high level” career
 - Learn to speak like a professional
 - CV/Resume that stands out
 - Letters of recommendation
 - Friends/network of scientists
 - Publications
- **Doors open into Grad School or Jobs!**