

# What Do Grad Students Really Do?

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I'm primarily thinking of

- Ph.D. Students in Computer Science at Research Universities

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- but you **focus** on the **subdiscipline, methods,** and **questions** that **most suit you.**

# Get Connected!

- grad students and faculty are at a research university to learn, share knowledge, and create/build/discover new knowledge.
- collaboration is central to grad school: learning, problem sets, projects, and research.
- everyone has different strengths and weaknesses, likes and dislikes
- you don't need to like or be good at all or even most parts of computer science
- **collaboration is fun**
- I'm good at one thing, my friend is good at the part of the problem that I'm lousy at, my adviser has some useful suggestions . . .

# Learn and Get Involved in Research!

- courses
- reading
- talking and working with faculty, students
- going to talks that interest you

# Choose favorite area and adviser!

- join the group whose work you are most excited about
- you may change your mind and switch groups
- choose an adviser who is compatible with you in terms of research interests and as a person
- most Ph.D. students learn to do research in collaboration with their adviser

# For a Successful Graduate Experience:

- Have fun
- Learn
  - find out about exciting new research
  - build up your background knowledge
- Build relationships
- Find an adviser
- Learn what research is about and get involved.
- Get organized.
  - work efficiently
  - take some time off for rest, relaxation, and fun
  - get enough sleep
  - eat healthily
  - get exercise

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- Discover one day soon that you have completed enough research to be awarded a Ph.D.

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- Teach and do research at a research university
- Do research in industry
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“Find your sweet spot.”

Mary Finlay  
CIO, Partners Healthcare

a job that you love, that requires you you to do tasks that you enjoy and excel at, that requires you to keep learning

“To safeguard one’s happiness is a duty, at least indirectly; for discontent with one’s condition amidst the press of worries and unsatisfied wants may easily become a great temptation to the transgression of duties.”

Immanuel Kant,  
*The Fundamental Principles of  
the Metaphysics of Ethics*

You need to be reasonably happy in order to be productive.

It’s hard to be creative if you are not having fun.

“During the school period the student has been mentally bending over his desk; at the University he should stand up and look around. For this reason it is fatal if the first year at the University be frittered away in going over the old work in the old spirit.”

A.N. Whitehead,  
*The Aims of Education*

In addition to doing well in your classes, you must find out what research is going on here and choose a research group to join.

“Whether our argument concerns public affairs or some other subject we must know some, if not all, of the facts about the subject on which we are to speak and argue. Otherwise, we can have no materials out of which to construct arguments”

Aristotle,  
*Rhetoric*

Your research won't be good if you don't understand the details of the problem and the methods on which previous major work on the problem was based.

“The institution of long apprenticeships has no tendency to form young people to industry. A journeyman who works by the piece is likely to be industrious, because he derives a benefit by every exertion of his industry. An apprentice is likely to be idle, and almost always is so, because he has no immediate interest to be otherwise.”

Adam Smith,  
*The Wealth of Nations*

As a Ph.D. student you need to move toward owning and directing your own research.

“Cowards die many times before their deaths, The valiant never taste of death but once.”

William Shakespeare,  
*Julius Caesar (II, ii, 32-37)*

It takes courage to do good research.

You must challenge the status quo.

“We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.”

President John F. Kennedy