

MEMO

TO: Students intending to work with me
FROM: Richard Hughes, Ph.D.
DATE: 12/16/03
RE: Expectations

We are privileged to be invited to be part of two great organizations, the Orthopaedic Research Lab (ORL) and MedSport orthopaedic clinic. With this privilege comes responsibilities. I lay out my expectations to you clearly at the beginning to eliminate misunderstandings (keep this memo for your entire time working with me):

1. Absolute scientific integrity. Misrepresentation of data will not be tolerated.
2. Know and follow the engineering Honor Code (http://www.engin.umich.edu/dept/aero/acad_resources/honor_code.pdf) if you are an engineering student. I expect you to write a critical review of each stating your understanding of the material (no more than one page for each). I expect to receive this *signed* statement within one month of your start date in the ORL.
3. Don't just go by University rules when deciding what is ethical behavior. **Think!** Consider how your actions affect others and how they reflect on your own character.
4. Follow ORL and MedSport policies and procedures. Wear your ID badge when at MedSport, and please adhere to the MedSport dress code.
5. Pay attention to lab safety. Never use the machine shop without eye protection. Protect yourself from bloodborne pathogens.
6. Care about your fellow students and staff members. They are your lab family and you should treat them with respect.
7. **Have fun.** Research is a blast! Enjoy your time in the ORL learning, doing research, and making friendships that will last for years.
8. Attend ORL seminars unless there is a direct conflict.
9. Attend ORL and MedSport journal clubs unless there is a direct conflict.
10. Attend weekly research group meetings unless there is a direct conflict.

The diagram on the other side of this sheet illustrates my opinions on the characteristics of mediocre and outstanding students. I strongly believe that these qualities are key to predicting post-graduation success as a biomechanics researcher. I believe students meeting the mediocre characterization will have difficulty, and students meeting or exceeding the outstanding characterization will have productive scientific careers. It is provided for you to use as a yardstick to evaluate yourself from time to time throughout the course of your education.

Richard E. Hughes, Ph.D.
Assistant Professor of Orthopaedic Surgery and Biomedical Engineering

Mediocre student

Outstanding student

Characteristic



Journal reading

Reads only what is provided by mentor and at journal club.

Seeks out papers independently. Uses Medline and references listed in papers. Routinely reads papers that were found independently. Critically reads papers provided by mentor and obtains relevant references cited in those papers.

Work habits

“9 to 5” mentality. Doesn’t come in on weekends, evenings, and leaves early on Friday afternoons.

Consistently works beyond usual business hours and uses time efficiently. Works on weekends, but can find a balance between work and family/personal time.

Hypothesis testing/
study design skills

Content to work with hypotheses developed by mentor or others.

Routinely formulates hypotheses about phenomena, even for things not directly related to ones own projects.

Lab notebooks

Keeps a general notebook that gives a general description of activities every day. More of a “diary.”

Details work done in lab notebook, including each step of an experiment. Generates both internal and external documentation for computer code.

Writing

Only writes when forced to by mentor.

Continually writes (project documentation, manuscripts, reports, etc.). Note this means writing something - maybe a paragraph or page - every day.

Project management

Relies on others to do annual report and other project paperwork. Views time spent doing this as wasted.

Estimates time and resources required. Checks with staff to make sure resources, freezer space, and staff time will be available. Identifies activities that can be done in parallel or in series. Prioritizes tasks according to “critical path.” Willing to complete annual report and other project management paperwork on time without nagging.

Teamwork

Focuses solely on own progress towards degree.

Understands that in addition to the importance of his or her own thesis work, the collective output of the lab will determine his or her own professional success years after graduation. Therefore, student will happily assist other students and staff with projects and lab chores.