



Formalized Co-Mentoring During Research Training: Impacts on Development of Professional Skills Essential to Research Teams

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What skills are needed for team science and how do young scientists learn them?

- Communications skills – direct and nuanced
- Interpreting/understanding broader scientific vocabulary and knowledge
- More complex negotiations of priorities, credit, styles of doing research
- Seeing same question from different perspectives, approaches, methods
- Writing that involves more people
- Expanded network of professional colleagues
- Context of our study – NIH Graduate Partnerships Program (GPP)
 - PhD students from the U.S. and other countries doing all or part of their research on one of the NIH campuses
 - Mary DeLong initiated the GPP in 2000, grew rapidly to ~400 students by fall of 2006
 - I was Director of Student Affairs from 2003-2007
 - Several formal partnerships required research with at least 1 NIH scientist and 1 university professor
 - Spent equal or near equal time on each campus
 - Several trans-Atlantic (Oxford, Cambridge, Karolinska Institute)
 - Many others develop co-mentored research on their own

2005-2006 Self-Study Revealed big influences of co-mentoring

- Self-Study to determine what GPP had become in 5 years
 - Surveys and semi-structured interviews (>100 students) to broadly understand student experience at NIH
 - Impacts of co-mentoring appeared unexpectedly in early interviews so systematically studied using qualitative research methods
- Co-Mentoring enabled/promoted:
 - Independence – students given more freedom
 - Learning more than one discipline if mentors complementary – able to pick and choose from expertise/perspectives of various mentors
 - Rapid professional development
 - Multiple groups of professional colleagues/networks
 - BIG increase in communication and negotiation skills
 - Self-Confidence
- Critical to start with written starting research plan
- Might happen without structure but much better with it
- Principles likely apply to research training in general

One student summed it up...

“Again, and perhaps I cannot stress this point enough, the advantage of the NIH program is that it affords students who are strongly self-motivated and sure of their interests in research to grow up quickly. That is, they are exposed to situations/experience during their PhD that other students may not be exposed to until they are even the head of their own lab. The largest of these experiences is the integral involvement of a collaboration to one’s PhD. The skills needed not only to complete but to thrive in these PhD programs are priceless skills in a world of research that is requiring more and more collaboration between groups, not only within the US but overseas as well.”