Emerging Leaders Institute (ELI) Project

Mentoring Action Plan

A Guide to Effective, Trainee-Centered Mentoring at Duke

Eduardo Coronado, Kevin Erning,
Asiya Gusa, Wilderson Medina

Spring 2020

Table of Contents

The Challenge: Improving Mentoring at Duke

Duke offers 54 doctoral programs for graduate students and postdoctoral fellows. Faculty mentoring and advising is a key component of a quality training experience. However, few graduate programs have clearly defined expectations and guidelines to establish and maintain effective communication between faculty and trainees (graduate students and post-doctoral fellows).

According to the Provost's 2018 RiDE (Reimagining Doctoral Education) report[1], "there was a general consensus that a successful doctoral experience rests heavily on a healthy, productive relationship between a student and the faculty supervisor. Thus, it comes as no surprise that many voices – faculty, graduate students, and alumni – highlighted the lack of accountability for poor or abusive advising as one of the main weaknesses of doctoral education at Duke."

In the 2018 RiDE survey assessing mentoring and advising in the graduate school, only 20% of Duke students and graduates reported receiving comprehensive mentoring and advising. An alarming 25% reported receiving NO mentoring and advising. Additionally, in interviews conducted by ELI 2020 fellows, stakeholders in the graduate schools (including students, postdocs, faculty and administrators), identified poor communication and misaligned expectations between faculty and trainees as a key point of concern. Thus, there is a clear need to support students, faculty and graduate departments in their efforts to improve the mentor/advisee relationship for more productive and mutually beneficial outcomes.[2]

Specific goals to improve faculty mentoring and advising in the graduate school were outlined in the RiDE report. Among these were:

- Accountability for effective, student-centered advising and mentoring
- Requirement of annual Individualized Development Plans (IDPs) for each doctoral student
- Annual progress review of all students in a program

Furthering this work, the 2019 RiDE Implementation Committee recently offered graduate departments/units more detailed suggestions to improve the consistency of faculty advising and mentoring at Duke (Appendix A). These suggested best practices are organized into five categories: channels of communication, statements of expectation, intellectual development planning, onboarding and training of Directors of Graduate Studies (DGSs) and Director of Graduate Studies Assistants (DGSAs), and climate issues.

---

[1] Balleisen, E., & Lozier, S. (2018). Final Report of the Provost's Committee on Reimagining Doctoral Education-RIDE. Duke University.

[2] For facts and figures on the current state of mentor-mentee relationships at Duke, see Appendix B.

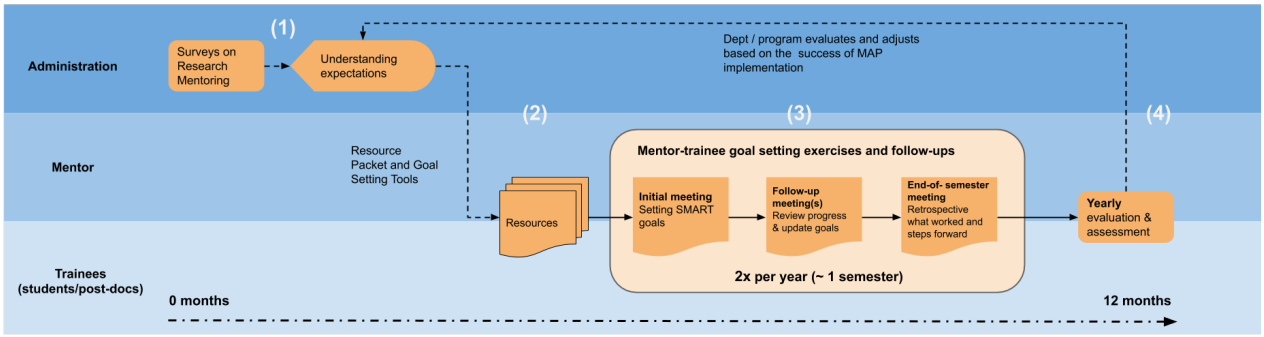
In order to assist graduate programs in turning suggestions into *action*, our ELI team has developed the *Mentoring Action Plan* (MAP): A Guide to Effective, Student-Centered Mentoring at Duke. Given our backgrounds, our framework was developed with a focus on STEM (Science, Technology, Engineering and Mathematics), specifically, the biosciences.

The Approach: Mentoring Action Plan (MAP)

The challenge is to improve research mentoring and advising for graduate students and post-doctoral scholars. Our '*Mentoring Action Plan'* (MAP) offers departments a customizable framework to improve faculty and trainee (graduate students and post-doctoral scholars) mentoring and communication. Our framework will aim to provide faculty mentors and trainee mentees the opportunity to identify their communication and management preferences, create space to communicate said preferences and support faculty and trainees in aligning expectations and setting goals.

This framework can be broken into 4 main parts:

1. Initial Assessment
2. Duke Resources and Workshops
3. Mentor-Mentee Meetings
4. Evaluation and Accountability



1. Initial Assessment

The goal of the initial assessment is for the department, Director of Graduate Studies (DGS) and DGS Assistant (DGSA) to gather data from both faculty and trainees to identify mentoring expectations, how mentoring relationships have excelled and areas that need improvement. This information can be used to inform a variety of initiatives, including efforts to:

- Determine departmental core values in the context of mentoring
- Establish minimum mentoring expectations
- Mandate minimum expectations with real consequences

- Generate best mentoring practices guide
- Guide creation/editing of annual progress review documents (i.e. IDP)
- Guide changes/additions to faculty and trainee orientation, onboarding and seminar/workshop offerings

Depending on the needs of individual departments, the relevant assessment questions may vary. However, we have included an example form for your convenience that combines several different resources from different higher education institutions (i.e. University of Pennsylvania, UT Sydney, University of Adelaide, UC Davis, Stanford).

Mentor Initial Assessment Survey
(https://duke.qualtrics.com/jfe/form/SV_1LJU2cGaGhWD8gt)

Trainee Initial Assessment Survey
(https://duke.qualtrics.com/jfe/form/SV_3gYiA2Qa10W4LyJ)

2. Duke Resources and Workshops

We believe that both faculty and trainees will benefit from tailored mentoring resources when they are tasked to complete our *Mentoring Action Plan*. As mentioned, the initial assessment results can be used to direct the types of resources that are most relevant for each department. Below, we highlight a number of mentoring resources that different organizations in Duke have curated or organized.

The Graduate School has compiled relevant mentoring resources for both the faculty mentor and trainee mentee. This resource includes guides on how to be a great mentor/mentee, best practices, specific advice as mentors and mentees in graduate school, and diversity and inclusion in mentoring.

In addition, Duke University School of Medicine's Office of Research Mentoring has carefully curated readings on effective mentoring while providing exercises that can springboard mentor-mentee discussions. The Office of Research Mentoring also offers a comprehensive Mentor Training Program where the contents can be adapted to the needs of individual departments for a fee.

Finally, Duke offers mentoring and communication seminars and workshop series that discuss topics ranging from identifying your mentoring style, handling difficult conversations to improving communications by understanding preferences.

Duke Graduate School Mentoring Resources (https://gradschool.duke.edu/professional-development/mentoring/mentoring-resources)

Duke School of Medicine: Office of Research Mentoring (https://medschool.duke.edu/about-us/faculty-resources/research-mentoring/mentor-resources)

Mentoring and Communication Series (https://sites.duke.edu/mentoringandcommunication/)

3. Mentor-Mentee Meetings

The core of our framework is to equip faculty and trainees with pointed questions to self-reflect and guide ongoing mentor-mentee meetings. To do so, our MAP outlines the need for mentors and mentees to schedule (1) an initial meeting to align expectations and set goals, (2) ongoing check-ins to review progress and update expectations and goals, and (3) intentional retrospective reviews prior to annual progress reviews. The primary vehicle of our *Mentoring Action Plan* is the Individual Development Plan (IDP) that departments can tailor to their specific needs. IDPs help trainees self-assess, prepare and lead mentor-mentee meetings in order to collaborate on the action plan and follow-up. We have included an adapted IDP from the Federation of American Societies for Experimental Biology (FASEB), including an example of a filled-out form. Another fantastic resource is Stanford's BioSciences IDP where they have created specialized IDPs for different stages of training for graduate students and post-docs.

Adapted FASEB IDP Form (https://qrgo.page.link/Jsnre)

Filled-out Adapted FASEB IDP Form (https://qrgo.page.link/Fn6W2)

Stanford BioSciences: IDP Forms and Documentations (https://biosciences.stanford.edu/current-students/idp/forms/)

Before moving forward, we would like to highlight some core expectations that the Duke Graduate School has for faculty and trainees. To summarize, Duke Graduate School expects faculty to be committed to the trainee's research, training, and professional development, both within and outside academia. The Graduate School expects trainees to take ownership and responsibility of their research, training and professional development, and proactively seek mentors and their feedback.

Duke Graduate School: Best Practices and Core Expectations (https://gradschool.duke.edu/academics/academic-policies-and-forms/standards-conduct/best-practices-and-core-expectations)

3.1. Aligning Expectations & Setting Goals

The initial meeting is critical because it can set a precedent for both faculty and trainee. The two desired outcomes of this initial meeting are aligned expectations and a concrete action plan based on self-assessments and open communication. Different departments may land on different core expectations and responsibilities for faculty and trainee. Regardless, these values should be explicitly included in the IDP that will be used for trainee self-assessment and initial discussion with faculty. One example of how to prepare and conduct the initial mentor-mentee meeting is outlined in the table below:

Faculty	Trainee
Pre-meeting	
1. Complete questionnaire about faculty-trainee mentoring expectations prepared by University of Pennsylvania (Appendix C) or Stanford (Appendix D)	
2. Create lab orientation slides/document that outline your core expectations and lab policies regarding hours, vacation, communication, authorship, progress updates, etc	Self-reflect on guiding IDP questions that focus on research, courses, training/mentoring, and professional development (i.e. FASEB or Stanford BioSciences IDP forms)
3. Use a lab meeting early in the semester/year for lab orientation to establish your general expectations surrounding lab policies	Schedule meeting with advisor and share completed IDP form. Prepare to the lead discussion during your meeting with your advisor

	Meeting
4.	Briefly acknowledge agreements while discussing discrepancies in mentoring expectations survey prepared by UPenn (Appendix C) or Stanford (Appendix D)
5.	Discuss trainee's IDP and jointly develop an action plan to include SMART goals
6.	Schedule next follow-up meeting and discuss frequency of these check-ins. If incorporated into one-on-one research progress meetings, clarify how much time should be allocated to discuss mentoring relationship and trainee's skills and professional development

An important aspect of preparing an IDP is goal setting and we have to remember to form **S**pecific, **M**easurable, **A**chievable, **R**ealistic and **T**ime-bound (**SMART**) goals. This allows trainees to distill their overarching and nebulous-seeming goals into concrete steps that can be tracked overtime.

3.2. Check-ins/following up

In addition to SMART goals, an MIT Sloan Management Review asserts the importance of **F**requently discussed, **A**mbitious, **S**pecific and **T**ransparent (**FAST**) goals as it provides built-in agility in today's fast-paced environment. This is especially applicable for the constantly changing and uncertain nature of research[3]. Therefore, it is important to maintain open and ongoing communication between mentor and mentee to address the ever-evolving goals in the trainee's research, courses, training, and professional development. One method for these ongoing check-ins is to review progress and update the completed IDP and action plan when necessary.

[3] https://sloanreview.mit.edu/article/with-goals-fast-beats-smart/

	Definition	*Benefits*
Frequently discussed 	Goals should be embedded in ongoing discussions to review progress, allocate resources, prioritize initiatives, and provide feedback.	• Provides guidance for key decisions. • Keeps employees focused on what matters most. • Links performance feedback to concrete goals. • Evaluates progress and course corrects.
Ambitious 	Objectives should be difficult but not impossible to achieve.	• Boosts performance of individuals and teams. • Minimizes the risk of sandbagging. • Forces broader search for innovative ways to achieve goals.
Specific 	Goals are translated into concrete metrics and milestones that force clarity on how to achieve each goal and measure progress.	• Clarifies what employees are expected to deliver. • Helps identify what is not working and quickly course corrects. • Boosts performance of individuals and teams.
Transparent 	Goals and current performance should be made public for all employees to see.	• Makes use of peer pressure to perform on goals. • Shows employees how their activities support company goals. • Understands other teams' agendas. • Surfaces activities that are redundant or unaligned with strategy.

In addition, Duke Graduate School has developed an online professional development planning tool called Duke OPTIONS. This can be used in conjunction with the IDP and action plan to tackle the six important competencies outlined in Duke OPTIONS: self-awareness, communication, teaching and mentoring, professional adaptability, professionalism and scholarly integrity, and leadership.

Duke Graduate School: Duke OPTIONS
(https://gradschool.duke.edu/professional-development/duke-options)

3.3. Retrospective Review

Lastly, mentor-mentee meetings can greatly benefit from allocated time for an end-of-semester review to assess goal progress and areas of improvement for the trainee as well as the quality of faculty-trainee mentoring and advising. A skills assessment like those found in the Stanford BioSciences IDP or progress on Duke OPTIONS can easily identify skills that need further development. As for the quality of mentoring, University of Wisconsin-Madison has designed a Mentoring Competency Assessment (MCA) for both mentors and mentees. We have adapted their survey to better fit our Duke Graduate School's best practices and core expectations. Notably, these mentoring competency

assessments are highly dependent on the minimum mentoring expectations and best practices that individual departments have agreed upon. Therefore, the surveys we highlight below can serve as a reference or template for customization.

UW-Madison: Mentor MCA for Self-Reflection (https://uwmadison.co1.qualtrics.com/jfe/form/SV_5jMT4fhemifK01n?Q_JFE=qdg)

UW-Madison: Mentee MCA for Self-Reflection (https://uwmadison.co1.qualtrics.com/jfe/form/SV_cZ5jT2DdKYxE66V?Q_JFE=qdg)

Adapted UW-Madison Mentee MCA Qualtrics Survey (https://duke.qualtrics.com/jfe/form/SV_bx5kBSpQ1BSUa21)

4. Evaluation and Accountability

To reiterate, the Provost's 2018 RiDE report noted the need for

- Accountability for effective, student-centered advising and mentoring
- Requirement of annual Individualized Development Plans (IDPs) for each doctoral student
- Annual progress review of all students in a program

The *Mentoring Action Plan* thus far has focused on improving effective, student-centered advising and mentoring, using IDPs and annual progress reviews to support mentor-trainee communication. We have yet to address evaluation and accountability from the departmental level, primarily the DGS and DGSA. A trainee's IDP can serve as an annual progress report for departments to evaluate each trainee's research progress, courses, training/mentoring, and professional development. As for accountability for high quality mentoring, departments can develop and mandate surveys in the same vein as UW-Madison's Mentoring Competency Assessment. A more relevant tool for departments to track changes in mentoring quality over time is by implementing pre and post (annual) mentoring surveys. UW-Madison has extended and further developed their Mentoring Competency Assessment based on a national mentor training randomized controlled

trial.[4] Finally, longitudinal mentoring quality data can be used to improve explicit department mentoring expectations and better prepare resources for both faculty and trainees. Surveys like the one designed by UW-Madison can also help DGS and DGSA identify problematic mentor-mentee relationships, and more importantly, identify specific communication breakdowns or misaligned expectations to better address these issues before a situation escalates.

UW-Madison: Pre and Post Mentoring Surveys (https://ictr.wisc.edu/mentoring/pre-and-post-mentoring-surveys/)

Conclusions

Our ELI 2020 cohort has developed the Mentoring Action Plan to assist administrators, faculty and trainees in developing an individualized approach to improving mentoring and advising within their programs. We recognize that implementation of a one-size-fits all approach without input from students, faculty and administrators in the department would not be successful. By providing a clear guide to existing strategies, resources, and templates, MAP can serve as a catalyst to break down implementation barriers. The Mentoring Action Plan was developed by current graduate and post-doctoral trainees in STEM fields at Duke seeking quality mentoring and advising for themselves and their peers. Therefore, we invite graduate programs to "follow our MAP" to mentoring success!

[4] Pfund, C., House, S. C., Asquith, P., Fleming, M. F., Buhr, K. A., Burnham, E. L., ... & Shapiro, E. D. (2014). Training mentors of clinical and translational research scholars: a randomized controlled trial. *Academic medicine: journal of the Association of American Medical Colleges*, *89*(5), 774.

Appendix

A. RiDE Constructive practices for PhD programs around advising/mentoring and climate

Duke University
Reimagining Doctoral Education Implementation Committee

Suggested Constructive Practices for PhD Programs around Advising/Mentoring and Climate

December 2019

This menu of possible best practices is designed to support doctoral program reappraisals. Departments may choose to adopt and implement some or all of these best practices in addition to others they devise and approve. Some of these best practices will likely prove more easily implemented in particular units than others; all dovetail with the Reimaging Doctoral Education Committee (RiDE) Report's emphasis on improving the consistency of our faculty advising and mentoring. The suggested best practices are organized under five broad categories: channels of communication, statements of expectation, intellectual development planning, onboarding and training of Directors of Graduate Studies (DGSs) and Director of Graduate Studies Assistants (DGSAs), and climate issues.

Channels of communication – departments/units might:

- Explicitly request formal feedback on advising/mentoring from current students – intentionally moving beyond the hypothetical open-door policy of the DGS/DGSA. Programs could request feedback:
    - after rotations, for programs that have them;
    - as part of a yearly committee meeting with adviser absent;
    - and/or through exit surveys of students, including those who leave pre-PhD, conducted within a reasonable time after defense or departure from the program.

- Explicitly connect with and request feedback from alumni annually, whether through alumni outreach events or an annual newsletter.

- Diversify the mechanisms of obtaining feedback by
    - establishing a workplace liaison for the department/program besides the DGS/chair/director to whom concerns may be addressed; and
    - offering a means of confidential feedback. Possibly accomplished via a reporting website, which might include multiple tracks for submittal, such as the DGS, chair, or HR representative/liaison. This channel may be housed centrally through a school rather than replicated within each unit.

- Diversification of mentors. Possible approaches include:
    - selecting chairs of committees distinct from advisers; and
    - connecting students to a different sort of mentor who does not serve on a student's committee.

This broader recommendation presupposes more clearly articulated roles for the committee chair, adviser, and other committee members. Graduate faculty should understand that agreement to serve on a student's committee constitutes a commitment to meet with that individual outside of committee meetings to provide mentoring and feedback on research outputs as needed.

- Improve means by which adviser, committee, and administrative track progress of individual doctoral students for various milestones, possibly through the use of a dedicated software platform.

- Provide standardized information about faculty advisers to students in advance of application, interview, or arrival at Duke University. Such data could provide transparency regarding the faculty member's advising style, time to degree for past advisees, career outcomes for advisees (perhaps only for faculty who are post-tenure). With the permission of current students, individual faculty might also provide contact information of those students so as to give prospective students an avenue to learn about mentoring experiences.

- Improve awareness of and access to key program data by posting doctoral program statistics from The Graduate School (TGS) on the department/program website. Programs may also wish to contextualize the data in a format accessible to faculty and current/prospective students.

- Provide admitted students on campus visits with a standard set of questions, to guide interviews with the department and faculty advisers.

Statements of expectations – departments/units might:

- Create, maintain, and distribute unit-wide, explicit statements of minimum/general expectations for faculty advising, which might include
    - expectations of faculty around recruiting, advising/mentoring, and other services provided by graduate faculty (these might include norms around responsiveness, provision of letters of recommendation, frequency of meeting with students, timing of manuscript/chapter feedback, and provision of feedback on dissertation drafts, etc.);
    - explicit plans for promoting/ awarding good advising/mentoring; and
    - clearly articulated consequences for **serially** negligent/abusive mentoring. (Instances of minor performance shortcomings should be met with communication/education/remediation.)

- Create, maintain, and distribute unit-wide a "student handbook" that clearly articulates expectations regarding advising and around programmatic rules.
    - Engage current students in the above process so it provides information/advice that students will need throughout their academic career.

- Offer workshops/classes on expectations for advising which are, ideally, designed uniquely for faculty and/ or students.
    - Example offerings may be via The Graduate School (TGS), the Office of the Vice Provost for Faculty Advancement (Arts & Sciences faculty), or the Office for Research Mentoring (School of Medicine faculty), the latter of which offers the National Research Mentoring Network (NRMN) mentor training curriculum.

    Units may want to explore and/or collaborate with other such offerings available across the campus.

- Implement a departmental requirement of written "compacts" or other adviser-specific statements regarding expectations of their students.

- The School of Medicine can provide examples of biomedical-field-related "compacts" that might be modified/adapted for other disciplines if alternatives are not readily available.
- For those departments/units choosing to require compacts, completion and provision to students can be monitored as a check/tick-box at the first committee meeting with each doctoral student and her/his/their committee, or at the first meeting of a student with her/his/their DGS.

Individual development planning (e.g., IDP) – departments/units might:

- Formalize intellectual development planning for each doctoral student using tools such as myIDP; and implement mandatory student IDP discussions with a faculty member besides the adviser.

- Offer career workshops/classes, possibly in collaboration with other units or with TGS and the Career Center (CC) (e.g., "Learn at lunch" small group experiences); remain cognizant of regular TGS and CC professional development offerings and inform graduate students about the same.

- Encourage students to take advantage of specific relevant opportunities outside their degree programs (noting that the range of relevant opportunities will vary with individual students)

Onboarding/training/community-building for DGSs/DGSAs – school deans might:

- Ask DGSs/DGSAs to review and report on program data at one faculty meeting each year. TGS provides and updates extensive data on: admissions selectivity; admissions yield; diversity in pool, admits, and matriculants; attrition and time to degree; and career outcomes.

- Convene group meetings for DGSs/ DGSAs with the purpose of sharing best-practices, cross-fertilization, and standardization where appropriate, as well as providing other professional development opportunities and the chance to discuss difficult situations.

Climate issues – departments/units might:

- Create and maintain a departmental statement on conduct/climate.

- Convene a committee or appoint a liaison (beyond DGS/chair/director) to whom students can report minor issues, with a plan for accountability (Note: the committee/ liaison should make explicit the range of issues that can be reported to them, what must instead be reported to other units such as the Office of Institutional Equity (OIE), and what types of issues they would not be permitted to keep confidential).

- Establish a practice of including doctoral students in unit governance (e.g. inclusion in steering committees, representation on search committees, etc.)

- Collaborate with the Office of the Vice Provost for Faculty Advancement (OVPFA) to regularly offer bystander training to faculty and students.

- Collaborate with the OVPFA for guidelines on hiring/seminars, taking into consideration
  - the fraction of seminar speakers matches a percent representation; and
  - other priorities recommended through diversity/ inclusion committee (possibly shared among units, when appropriate).

B. Figures and Facts on the Current State of Mentor-Mentee Relationship at Duke

"In 2009, the US Council of Graduate Schools in Washington DC reported survey results showing that 65% of the 1,856 doctoral students who responded identified mentoring or advising as a main factor in PhD completion. Our own research at Flinders University in Adelaide, Australia, and our experience at graduate-student workshops across the world suggest that the adviser–student relationship has a big impact on completion time." (Kearns and Gardiner 2011).

To obtain information on doctoral education at Duke **the RIDE committee "Surveyed doctoral students, PhD alumni, and faculty to assess… the quality of advising and mentoring."**

Regarding the needs being met during the mentor-mentee experience, their results show that "faculty underestimate the degree of variation in mentoring and advising relationships. Compared with students and graduates, faculty slightly over-report relationships where mentoring and advising needs are met adequately or to some extent. Compared with students and graduates, faculty under-report cases where mentoring and advising needs are completely or not at all met." (fig. 1)

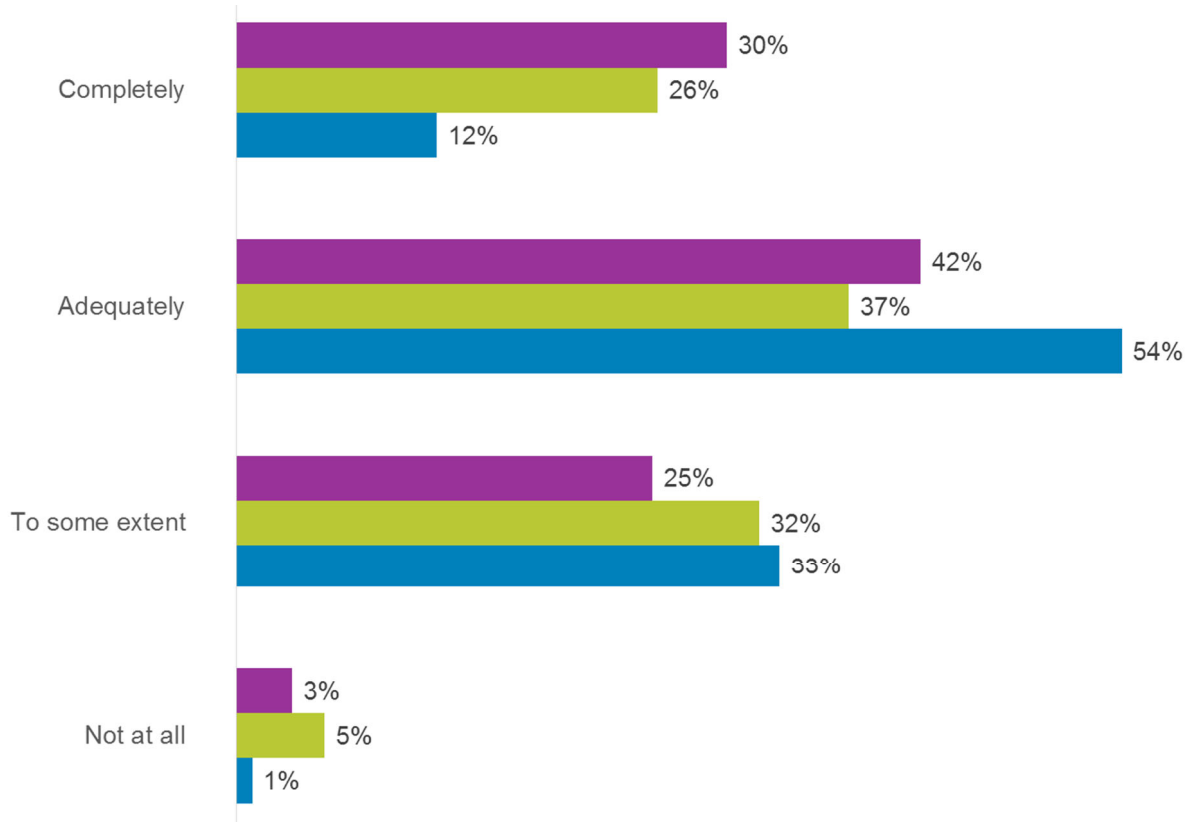


Figure 1.

Other results show that “while 68% selected graduate advisor among their top three most valuable advising and mentoring sources,” the remaining 32% consider other type of sources, in which peer at Duke are the most frequent choice (fig. 2).

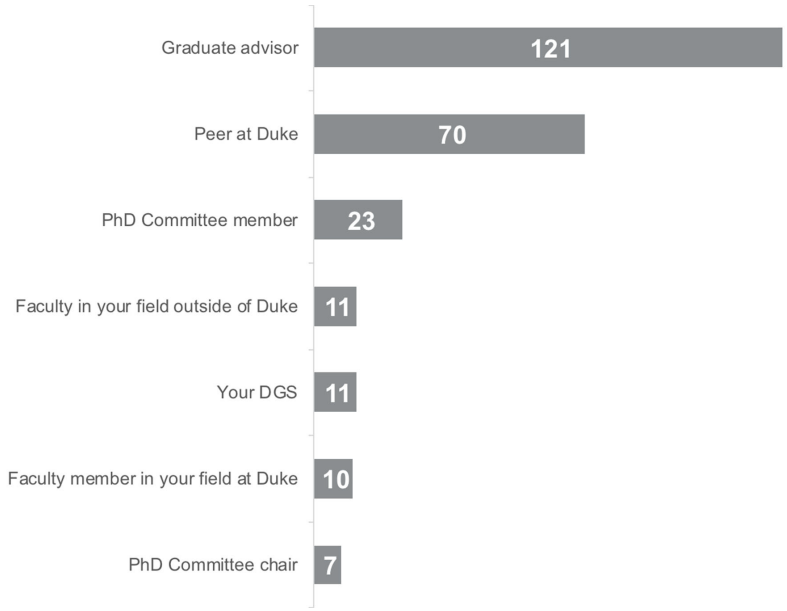


Figure 2

Lastly, “faculty report that 31% of students in their departments receive comprehensive mentoring and advising, whereas students and graduates report 20% and 18% respectively. Faculty underestimate the student and graduate satisfaction at the bottom end of the range. Faculty report that only 4% of students receive no mentoring and advising, whereas students and graduates report 26% and 25%, respectively.” (fig. 3)

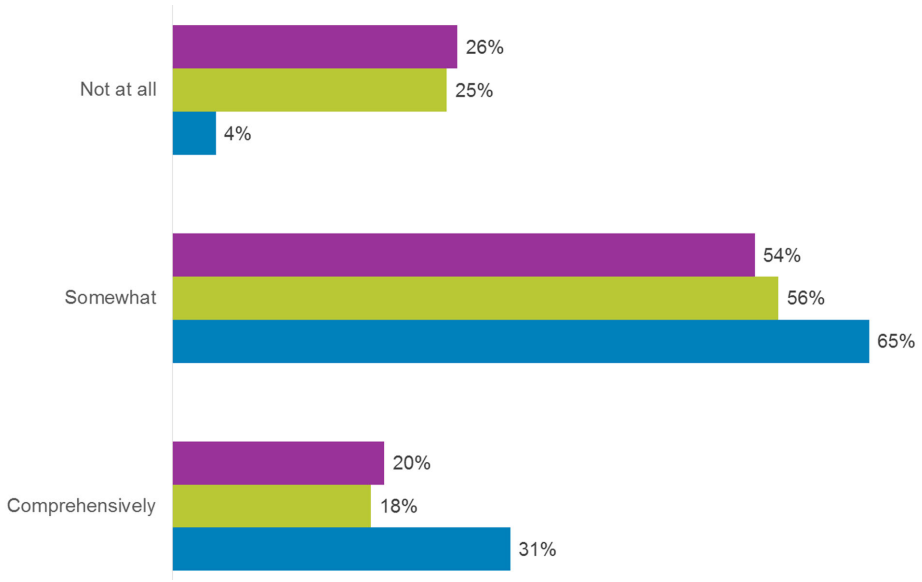


Figure 3.

Information retrieved from **"Get to Know Your Mentor and Agreement"** project, developed by ELI 2018 cohort.

"In a survey conducted in March 2017 amongst Duke graduate students and postdocs, 48% of respondents listed issues with communication as the main source of conflict with their mentors-advisors."

"One of the biggest concerns of students and postdocs surveyed at Duke University is communication with mentors and unclear expectations. The best way to avoid conflicts with mentors is to clearly lay out what is expected of you and the mentor. Meeting regularly can help students/postdocs make regular progress and keeps the advisor aware of the research work. Mentees should be proactive about initiating meetings and be prepared for each meeting."

Duke university School of Medicine surveyed mentees perceptions of mentorship quality. Five main characteristics were evaluated: 1. Intellectual growth; 2. Professional career development; 3. Academic guidance; 4. Personal communication; and 5. Role model.

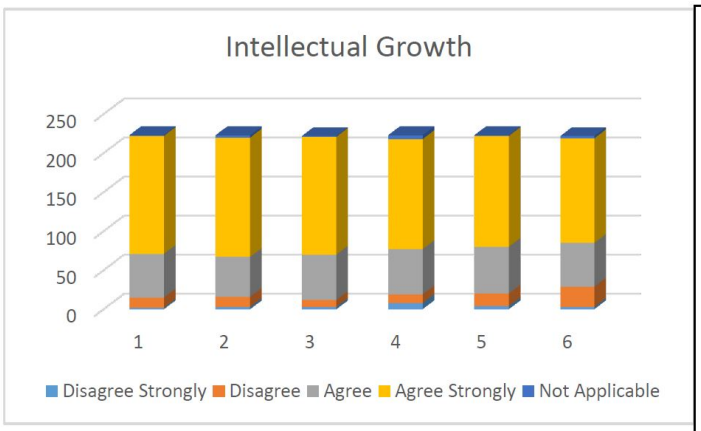
Regarding intellectual growth, the most common answer (60-68%) was "Agree Strongly" for each of six questions. The most "Disagree" answer was when mentee felt the mentor did not work to 'Help the mentee set the benchmarks, monitor progress and problem solve.' (fig. 4).

Over a third of respondents disagreed or strongly disagreed in that the mentor helps to develop a detailed individual career plan and that the mentor sets clear expectation for roles and responsibilities. (fig. 5).

Areas to improve in the academic guidance component include mentoring on negotiation skills and working effectively with others. (fig. 6).

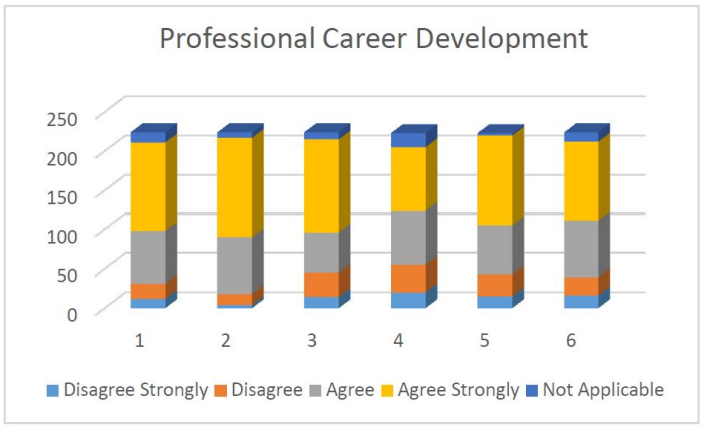
Results also show that in some cases there is no consideration of the gender, ethnic, and cultural identities when interacting with the mentee as well as there is an advantage of using the time and abilities of the mentees by the mentor (fig. 7).

Finally, an increased amount of mentee disagree in that the mentor illustrates good work/life balance, reflecting low role model score (fig. 8).



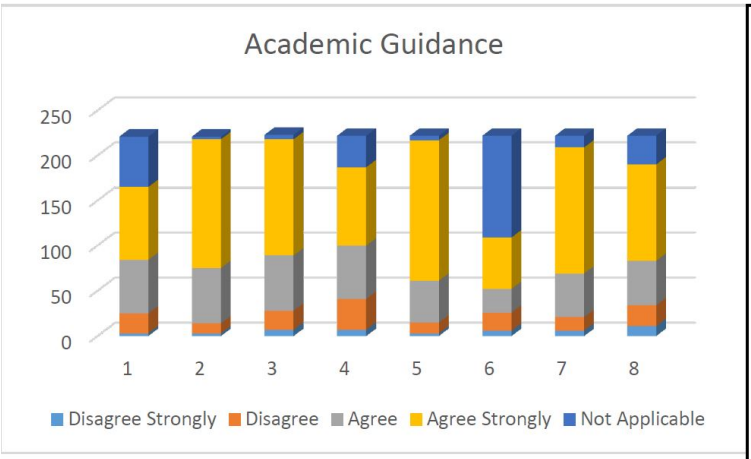
1) Encourages inventiveness including identification of new research topics and discovery of new methodologies
2) Helps me develop my capacity for theoretical reasoning and data interpretation
3) Helps me to be critical and objective concerning my own results and ideas
4) Helps me become increasingly independent in identifying research questions, conducting and publishing my research
5) Provides constructive feedback on my study designs
6) Helps me set benchmarks, monitor progress, and problem solve

Figure 4.



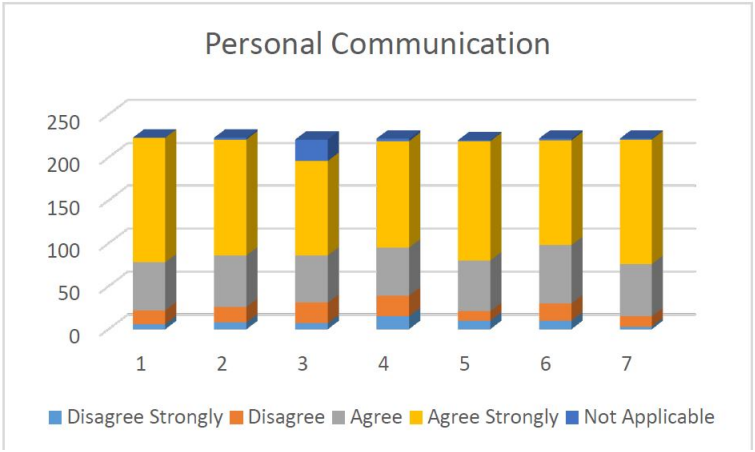
1) Provides counsel for important professional decisions and navigating barriers to success
2) Provides opportunities for me to meet with visiting scientists, faculty and peers
3) Maintains balance between supporting his/her own research and developing my own career
4) Helps me to develop a detailed individual career plan
5) Sets clear expectations for each of our roles and responsibilities
6) Provides training in the skills needed to mentor others

Figure 5.



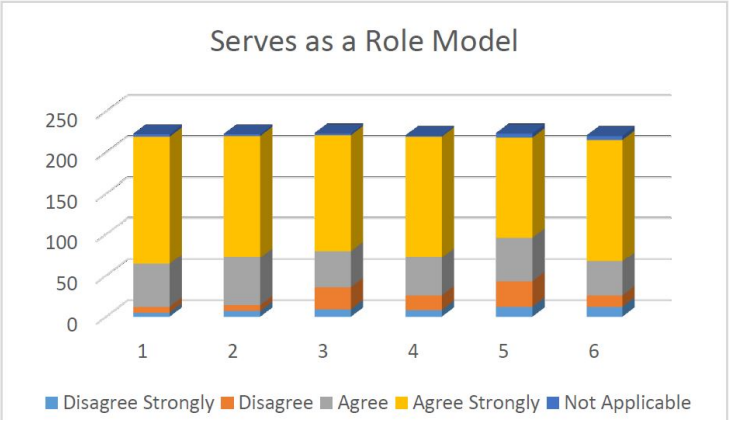
1) Provides advice on my coursework and academic goals
2) Ensures that I am firmly grounded in rules regarding ethical behavior and responsible conduct of research
3) Helps me to work effectively with other individuals
4) Helps me to develop good negotiating skills
5) Provides constructive feedback on my presentation and writing skills
6) Provides constructive feedback on my teaching skills
7) Encourages me to present my work at scientific meetings
8) Involves me in peer review of abstracts and manuscripts

Figure 6.



1) Listens carefully to my ideas, suggestions and feedback
2) Routinely monitors my progress and reviews proposed timelines and milestones with me
3) Takes into account gender, ethnic, and cultural identities in interacting with me and others
4) Does not take advantage of my time and abilities
5) Provides timely feedback
6) Encourages effective teamwork and frequent self-assessment
7) Is appropriately accessible to me

Figure 7.



1) Conveys high ethical standards and concern for research integrity
2) Illustrates active teamwork and collaboration
3) Illustrates good mentoring skills
4) Illustrates good work habits
5) Illustrates good work/life balance
6) Would recommend this mentor to future trainees

Figure 8.

Cited References

Balleisen, E., & Lozier, S. (2018). Final Report of the Provost's Committee on Reimagining Doctoral Education-RIDE. Duke University.

ELI (2018). Get to Know Your Mentor and Agreement. Final project.

Kearns, H., & Gardiner, M. (2011). The care and maintenance of your adviser. Nature, 469(7331), 570-570.

School of Medicine (2020). Duke University School of Medicine Mentee Perceptions of Mentorship Quality Survey. Report Final 2.24.2020

C. Stanford: Student-Advisor Expectation Scales

Student-Advisor Expectations Scales

Read each of pair of statements describing end points on a continuum. Estimate your position and mark it on the scale. For example, if you believe very strongly that it is the advisor's responsibility to select a research topic for the student, on scale #1 you should circle '1'. If you think that both the advisor and student should be equally involved, circle '3'.

The other side of this document describes ways to use this worksheet.

Course of Study & Dissertation Planning			
1.	The advisor should suggest and approve which courses the student takes.	**1 2 3 4 5**	Students should solely determine which courses they take.
2.	It is the advisor's responsibility to select a promising dissertation research topic.	**1 2 3 4 5**	The student is solely responsible for selecting the dissertation topic.
3.	The advisor should select the other members of the dissertation reading committee.	**1 2 3 4 5**	The student should select the members of the dissertation reading committee.
Contact & Involvement			
4.	The advisor should determine how often and when to meet with the student.	**1 2 3 4 5**	The student should decide how often and when to meet with the advisor.
5.	Faculty-student relationships are purely professional and personal matters are not appropriate.	**1 2 3 4 5**	Close personal relationships are essential for successful advising.
6.	The advisor should check regularly that the student is working consistently and on task.	**1 2 3 4 5**	Students should work independently without having to account for how they spend their time.
7.	The advisor should be the first place to turn when the student has problems with the research project.	**1 2 3 4 5**	Students should try to resolve problems on their own, including seeking input from others, before bringing a research problem to the advisor.
8.	The advisor is responsible for providing emotional support and encouragement to the student.	**1 2 3 4 5**	Emotional support and encouragement are not the responsibility of the advisor – students should look elsewhere.
The Dissertation			
9.	The advisor should insist on seeing all drafts of work to ensure that the student is on the right track.	**1 2 3 4 5**	Students should submit drafts of work only when they want input and feedback from the advisor.
10.	The advisor should assist in the writing of the dissertation if necessary.	**1 2 3 4 5**	The writing of the dissertation should only ever be the student's own work.
11.	The advisor should determine when and where to present or publish the research.	**1 2 3 4 5**	The student should decide when and where to present or publish the research.
12.	The advisor should decide when the dissertation is ready to be defended and submitted.	**1 2 3 4 5**	The student should decide when the dissertation is ready to be defended and submitted.
13.	The advisor has direct responsibility for the quality of the dissertation.	**1 2 3 4 5**	The student bears sole responsibility for the quality of the dissertation.
Support			
14.	The advisor is responsible for finding funding for the student until the student graduates.	**1 2 3 4 5**	Students are responsible for finding their own sources of funding.

15.	The advisor is responsible for introducing the student to others in the field, especially at conferences.	**1**	**2**	**3**	**4**	**5**	Students are responsible for building their networks in the field.
16.	The advisor is responsible for providing career advice and preparation to the student.	**1**	**2**	**3**	**4**	**5**	Career advice and preparation are not the responsibility of the advisor – students should look elsewhere.

The Student-Advisor Expectation Scales worksheet lists 16 pairs of statements describing end points on a continuum. Individuals differ as to the position they take on each scale. These differences reflect variation in educational philosophy, personality, and the norms of the home discipline. Each item is an issue about which most students and advisors need to reach agreement. Often, however, students and faculty members do not directly discuss their perspectives about how this matter should be resolved and why. In fact, in many cases, the situation may change over the student's time in doctoral studies.

Making expectations explicit, and having regular conversations about expectations, helps to minimize misunderstandings. It is important to recognize that most students do not feel comfortable asking their advisor to complete the worksheet. Faculty members may need to be the ones to initiate conversations about expectations. This document can provide a basis for conversations between students and advisors to align their expectations. The Expectation Scales worksheet can be used in several ways.

Faculty Advisors
Faculty advisors can complete the worksheet and use it as the basis for a discussion with individual students, among a group of advisees, or with a team in the lab. Students prefer faculty members to initiate discussions.

- For each item, why does the advisor think that this is the best way to proceed?
- Which items are non-negotiable? Which can be discussed and determined together?
- In which ways does the advisor tailor her/his *modus operandi* to the individual student? Why does the faculty member change his/her MO? Does the advisor take into account the student's personality, background experiences, stage in graduate studies, or other factors?
- What other expectations does the advisor have of students? When and how should students ask for clarification of expectations?

Students
Students can complete the worksheet to explore:

- The student's own needs and desires. What does the student think is the best way to proceed for the student's own development?
- What does the student believe and understand to be the advisor's preferences and *modus operandi*?
- Complete the worksheet identifying both what the student desires and the perception of the faculty advisor's position. If the difference is 2 points or more, this is an item that should probably be discussed directly.
- Do all of the faculty member's advisees share similar understandings of the advisor's preferences and *modus operandi*?
- Develop a personal advising philosophy. How would the student plan to advise graduate students in the future? How does the student mentor and advise undergraduates or newer graduate students?

Directors of Graduate Studies
The worksheet can be used with a group of faculty members to initiate discussion about:

- What positions do individual faculty members hold? Why do they think that this is the best way to proceed?
- Does the department have some expectations that are shared?
- Do faculty members share the same reasons or rationale for shared positions on scales?
- When and how do faculty members discuss expectations with student advisees?

Original from Ingrid Moses, 1985, Higher Education Research and Development Society of Australasia. Adapted by Margaret Kiley and Kate Cadman, 1997, Centre for Learning & Teaching, Univ. of Technology, Sydney. Further adapted by Chris M. Golde, 2010, Stanford University.

D. University of Pennsylvania: Questionnaire for Aligning Expectations in Research Mentoring Relationships

Questionnaire for Aligning Expectations in Research Mentoring Relationships

Mentor / Supervisor:		Mentee / Student:	
Time Period:		Dept / Program:	

Read each pair of statements and estimate your position on each. For example with statement 1, if you believe the ideal mentoring relationship focuses on the research interests, circle "1" or "2". Or if you think the ideal relationship focuses on the working and communication styles, circle "3" or"4". Avoid filling in "2.5" for your responses.

Early Stages of the Mentoring Relationship and Choosing Mentors/Mentees			
1	For an ideal mentoring relationship, it's important for both mentor and mentee to have similar research interests	1 2 3 4	For an ideal mentoring relationships, it's important for both to have similar working and communication styles
2	Mentors should only accept mentees when they have specific & deep knowledge of the mentee's research topic	1 2 3 4	Mentors should feel free to accept mentees from a broad range of disciplines, to provide overall guidance
3	A personal and friendly relationship between mentor and mentee is important for a successful relationship	1 2 3 4	A professional relationship is advisable to maintain objectivity for both mentee and mentor during their work
4	The mentor is responsible for providing emotional support & encouragement to the mentee	1 2 3 4	Personal counselling and support are not the responsibility of the mentor
5	It is the mentor's responsibility to select a research topic for the mentee	1 2 3 4	The mentee is responsible for selecting her/his own research topic
6	When choosing research topics, I prefer to work on projects with potential for high payoffs, even if it involves high risk	1 2 3 4	When choosing research topics, I prefer to work on projects that have a strong & safe chance of success, even if the payoff is low
7	The mentor should decide how frequently to meet with the mentee	1 2 3 4	The mentee should decide when she/he wants to meet with the mentor
8	The mentor should provide the rules and guidelines for the program or dept to the mentee	1 2 3 4	It is the mentee's responsibility to gather and learn the rules and guidelines of the program or dept
9	The mentor is responsible for finding funding until the mentee graduates or completes the program	1 2 3 4	Mentees are responsible for finding their own sources of funding
Middle Stages of the Mentoring Relationship			
10	The mentor should be the primary guide for the mentee in their academic and professional goals	1 2 3 4	The mentee should gather multiple mentors as they work toward their academic and professional goals
11	The mentor should be the first place to turn when the mentee has problems with the research project	1 2 3 4	Mentees should try to resolve problems on their own, including seeking input from others, before bringing a research problem to the mentor
12	The mentor should check regularly that the mentee is working consistently and on task	1 2 3 4	The mentee should work independently and productively, and not have to account for where time is spent
13	The mentor should develop an appropriate plan and timetable of research and study for the mentee	1 2 3 4	The mentee should develop their own plan and timetable of research and study, and seek input from the mentor as needed
Advanced Stages of the Mentoring Relationship			
14	The mentor should initiate in the preparation of presentations, thesis, papers, and reports	1 2 3 4	Presentations, thesis, papers, and reports should be initiated by the mentee
15	The mentor should insist on seeing all drafts of work (presentations, thesis, papers, etc) to ensure that the mentee is on the right track	1 2 3 4	Mentees should submit drafts of work (presentations, thesis, papers, etc) only when they want constructive criticism from the mentor
16	The mentor is responsible for providing career advice and professional connections to the mentee	1 2 3 4	Because professional options these days are numerous, mentees should seek career advice and connections from other sources

Using the "Questionnaire for Aligning Expectations in Research Mentoring Relationships"

The Role of Expectations

Managing expectations between mentors and mentees can be challenging and is a common source of conflict in mentoring relationships. Often the conflict relates to unspoken expectations that are not explicitly addressed, because they are assumed or even unaware to the mentor or mentee. To help bring some of these expectations into the open for discussion, using this questionnaire can help. This tool has been designed as a discussion starter for use by research mentors and student mentees. Our experience suggests that the tool is especially effective when users of this form recognize that:

- there are no "right" answers to the items on the questionnaire
- responses are likely to be different at different stages of academic or professional progress, i.e. for undergraduate students, graduate students, postdocs, junior faculty, senior faculty, etc
- even identical numerical responses can correspond to different rationales and expectations

Although the mis-alignment of expectations can often lead to conflict, the expectations do not need to be identical (and would be unrealistic) to develop a productive working relationship. However, a thorough discussion of expectations can greatly increase the likelihood of a productive collaboration and minimize conflicts. Relevant expectations in the context of research mentoring and supervision can relate to:

- understandings of what research is and is not
- appropriate roles and responsibilities of mentors and mentees, supervisors and employees, etc
- the benefits and advantages of working together as mentor and mentee
- what is considered to be professional and ethical behavior in your discipline
- how respect is expressed to the mentor and mentee
- how *both* the mentor and mentee can be pro-active and actively listen to each other

The goal of using this questionnaire is to provide a framework for a fruitful discussion about each person's expectations, and how to decide on appropriate ongoing actions as the relationship develops. Participants are free to pick and choose which pairs of statements are relevant for their situation, and to even add statements or topics for discussion. Furthermore, this form was created primarily created for mentoring relationships between research faculty mentors and student mentees. However, we recognize that different disciplines and contexts may use other terms, e.g.

- PI (principle investigator), research or academic advisor, employer, supervisor
- student, trainee, employee, protégé

Suggestions for Use: We suggest the following process for using this questionnaire.

- make sure both parties have a blank copy of the questionnaire
- both parties fill out the questionnaire separately
- set up a meeting that will be focused on this questionnaire
- at the meeting, start by comparing the responses given for each statement by each person
- discuss thoroughly the significance of each response (i.e. answer what each response means for each person)
- provide suggestions on how you'll address different responses and expectations
- consider repeating the process at various points (e.g. once per year, during critical transitions of the mentee's timeline, etc)

This document originated from Ingrid Moses (Centre for Learning & Teaching, University of Technology, Sydney); was adapted by Margaret Kiley & Kate Cadman (Advisory Centre for University Education at the University of Adelaide); and further adapted by Steve Lee (Graduate Diversity Officer for the STEM Disciplines at UC Davis), with input by Chris Golde (Stanford University).