

# **Choosing doctoral advisors/advisees: Empirical model from an American University**

by

**Xian Fen Liang, Simy Joy, Diana Bllimoria and Susan Perry**

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Copyright  
Department of Organizational Behavior  
Weatherhead School of Management  
Case Western Reserve University  
Cleveland OH 44106-7235  
e-mail: [ler6@case.edu](mailto:ler6@case.edu)

**Choosing doctoral advisors/advisees: Empirical model from an American University**

**Xiang Fen Liang**

4 Howe CT  
Pennington  
NJ 08534, USA  
e-mail: xiangfen.liang@gmail.com

**Simy Joy**

University of East Anglia  
Norwich Business School  
Norwich, NR4 7TJ, UK  
e-mail: simy.joy@uea.ac.uk

**Diana Bilimoria**

Case Western Reserve University  
Weatherhead School of Management  
Department of Organizational Behaviour  
10900 Euclid Avenue  
Cleveland, OH 44106, USA  
e-mail: diana.bilimoria@case.edu

**Susan Perry**

Baldwin-Wallace College  
Director of Academic Institutional Research and Assessment  
275 Eastland Road  
Berea, Ohio 44017, USA  
e-mail: srperry@bw.edu

## **Abstract**

Although the supervisor-supervisee (advisor-advisee) relationship is central to doctoral training, little is known about how this relationship is initiated. Based on focus groups and interviews of doctoral students and faculty from an American university, we present an empirical model for initiation of supervisor-supervisee relationships. It was found to be a mutual selection process where the students assess the faculty on available funding, area of research, personality, graduation track records and career prospects for students, and faculty assess the students based on qualification/credentials and perceived ability to contribute to research. This mutual assessment was affected by schemas associated with gender and career stage of the faculty member and the nationality of the student. In addition the time of selection as well as departmental factors influenced the final pairing of a supervisor with a supervisee. Based on the findings, we recommend ways to support both students and faculty in this process.

**Key words:** Doctoral education, supervisor/supervisee selection, gender, nationality, career stage

## **Introduction**

Doctoral programmes around the world vary in their structure and level of formality (Martinsuo and Turkulainen 2011); however central to all of them is the supervisor-supervisee relationship. It is mostly through the relationship and interaction with the supervisor that the students 'learn about the academic field, the university setting, research, ethics and many other aspects related to being an academic professional' (Wrench and Punyanunt 2004, 225). The dominant model in countries such as UK and Australia is that university/departments assign supervisors to the students based on a matching process; whereas in countries like America and Norway it is a process of mutual selection by the student and the faculty member. However, gaining in popularity is the suggestion that students must be more involved in the selection of supervisors (Phillips and Pugh 2000) as it enhances satisfaction with supervision and student retention rates (Ives and Rowley 2005).

Currently, the doctoral programmes in a number of universities across the globe are being redesigned after the American graduate education model (Martinsuo and Turkulainen 2011). In America, the doctoral students go through structured classroom based learning before embarking on dissertation research. They will have a dissertation committee usually composed of 3-7 faculty members from within and outside their department/university; however the chair of the committee will be the primary supervisor for the students' research and is normally called the 'advisor'. In general, formal initiation of advisor-advisee relation is the result of a mutual selection process – it takes place when the student identifies the potential future advisor and approaches them, and they in turn accept the student. In spite of it being the most consequential decision during graduate life, this decision -making process is often taken for granted and has attracted very little research focus. It is necessary that we understand the dynamics involved in

this mutual selection process, to be able to create appropriate structures and processes or to improve existing processes. In order to address this need, in this paper we present an empirical model for the initiation of the graduate advisor-advisee relationship based on findings from focus groups and interviews of graduate students and faculty members in an American university.

### **Initiation of graduate advisor-advisee relationships**

The academic life has been described as “an apprenticeship model of socialization in which the graduate student/apprentice will be socialized into the profession by a mentor in graduate school” (Bieber and Worley 2006, 1010). Competence, trustworthiness, and goodwill of the advisor have been found positively related to the student’s perceived learning and perceptions of the effectiveness of the advisory relationship (Wrench and Punyanunt, 2004). Extant research also indicates that the students’ relationships with their advisors are critical in their degree progress, and often a main reason for student attrition in addition to factors such as the features of students themselves, institutions of study, and academic disciplines (Herzig 2002). The success of the relationship is equally important for the faculty. Good advisees often contribute to advancing the research of the faculty and enhance his/her productivity, thus help the faculty’s career progression. A life-long collaborative relationship may result from a great supervisory relationship.

A prerequisite to building a successful relationship is ensuring that the supervisor-supervisee pair is the right match. While the current studies on advisor-advisee relations focus on assessing the advisor behaviour (Zhao, Golde and McKormick, 2007; Schlosser and Kahn, 2007), finding out the impact of those behaviours on the outcomes of such relationships (e.g. Herzig, 2002) or suggesting ways to improve the relationship (Bargar and Mayo-Chamberlain,

1983, Brown and Kragar 1985, Kramer, 2003), it is scant on the dynamics involved in the advisor/advisee selection. In programs where supervisors are assigned to students, it is treated as an administrative process where pairing is done on the basis of match in research interests and availability of faculty (Donald, Saroyan and Denison 1995). It is more complex when the students and faculty are involved in the process. Zhao, Golde and McKormick (2007) have examined to what extent students take into account the faculty's reputation, intellectual compatibility and pragmatic benefits while choosing an advisor, but they also reiterate that the criteria used by students for advisor selection are not fully known. The criteria employed by faculty members are yet to be explored. Hence, the primary purpose of our study was to gain perspectives from both graduate students and faculty members as to how they select advisors and advisees and what the common criteria used in selection process are.

### **Schemas in advisor-advisee relationship**

The research in the past has shown that demographic characteristics of advisors and advisees have an impact on their relationships. Studies have established the impact of minority status, gender and student nationality in advising relationships (Fries-Britt and Turner 2005; Yeh 1995). It is often found that such factors result in development of schemas or stereotypes. Schemas are 'symbolic representations that serve to encode our generic knowledge concerning objects, scenes and actions sequences' and "abstractions of an individual's lived experiences" (Wilkins 1997, quoted in Bieber and Worley 2006, 1012). Once they are formed, they are reinforced by events that validate them and are rarely changed by events that disconfirm them.

Schemas about women faculty are widely acknowledged in literature. For instance, an ideal advisor has often been described as nurturing, personal, and engaged by students (Bieber

and Worley, 2006). The 'ideal' advisor provides guidance, feedback, and encouragement within an atmosphere of respect for each student's competencies, and the ideal advisor treats each student as an individual and tailors his/her mentoring approach to each student's needs (Ferreira 2006). If women faculty violate the gender schema and script in the classroom (e.g. dressing unlike a woman, not nurturing), they are not seen as fitting the role of the ideal advisors. Reactions from students appear shortly (e.g. lower student rating; Superson, 1999). This not only results in conflicted relationships, but also adds to the difficulties that the women faculty face in academic career advancement as they may not obtain the same levels of professional recognition for their scholarly work as their male colleagues do.

Relatively less acknowledged but widely held are the schemas about faculty seniority. Junior faculty are considered inexperienced in many academic functions and in need of mentoring themselves (Sands, Parson and Duane 1991, Feldman et al 2010). Advising is one of the functions for which they probably have no previous training. The senior faculty members admit that they learned the task by doing it (Halse 2011). In addition, junior faculty are perceived to be under tremendous pressure. This is especially the case in America, where they are on a tenure track for the first 6 years of their career and have to prove their credentials in research, teaching and service to earn tenure. The senior faculty, on the other hand, are conceived to have a proven track record and are expected to assume more leadership and service roles than teaching and research roles (Macfarlane 2011). These conceptions may affect the anticipated advisory experience.

Another factor that gives rise to schemas is the nationality of the student. With the internationalization of education, there is a huge influx of foreign students in Western and Anglophone universities (Altbach, Reisburg and Rumbley 2009). America ranks highest among

the most popular student destinations. The difference between the culture and education systems in the US and their home countries require the academics to re-evaluate many aspects of their own, and their institutions' practices. The schemas that the international students may have for an ideal advisor-advisee interaction may be different from that of an American student. According to Eland (2001), international students reported that the relationships they experienced between faculty and students are different compared to their home countries. The relationship has been perceived to be less personal in the US and that most US faculty do not offer assistance or go out of their way to help a student. The faculty members in turn feel that the language and cultural barriers demand more supervision efforts from them.

The second purpose of our study was to explore if and how these factors affect the selection of an advisor or advisee. Specifically, we examined the influence of gender, faculty career stage and nationality.

## **Methods**

### ***Sample and Data Collection***

This study was conducted in the Science, Engineering, Technology and Mathematics (STEM) departments of a private research intensive university in the US. The doctoral students and full-time faculty members of 31 STEM departments were invited to participate in the study by email. Snowball sampling also was used when the members of a special population, e.g., international students, proved difficult to locate.

An interdisciplinary team of trained faculty and staff conducted focus groups and individual interviews. Six focus groups were held, one each for domestic graduate students, international graduate students, pre-tenure/junior female faculty, pre-tenure/junior male faculty,



tenured/senior female faculty, and tenured/senior male faculty. Individual interviews were carried out with international students and the tenured female faculty since the number of participants in their focus groups was relatively small compared with other focus groups. Prior to the beginning of the focus groups or individual interviews, participants were requested to complete a brief questionnaire of demographic background information. In the focus groups and interviews, participants were asked to describe the process used in the pairing of students and advisors, and to discuss the impact, if any, that factors such as student national origin, gender, and faculty career stage might have on this decision. The focus groups and interviews were audio-recorded and then transcribed into electronic documents.

### ***Participants***

A total of 17 graduate students (7 males and 10 females) and 35 faculty members (19 males and 16 females) participated in this study. Participants in the domestic student focus group (4 males and 6 females) had an average of 4-year experience in their graduate program. The international student participants (3 males and 4 females) had an average of 3-year experiences in the US and 2.4-year experience in their graduate program. The faculty participants included 9 pre-tenure/junior females, 6 pre-tenure/junior males, 10 tenured/senior females and 13 tenured/senior males. Taken together, 33 faculty members had an average of 11 years of teaching experience at this university (demographic information from 2 faculty members was unavailable).

### ***Data Analysis***

NVivo 7.0 was used for coding and grouping the themes. The researchers individually analyzed the transcripts to identify the common patterns and themes. The differences were then

discussed until a consensus was reached. As themes evolved, transcripts were analyzed again in an effort to challenge, expand, and refine the thematic categories. Researchers also examined the codes to see if there was sufficient differentiation between themes, and combined the codes that were similar. The process was iterated several times until the list of categories appeared to be both parsimonious and complete. The final coding structure, which consisted of both broad themes and dimensions of those themes, was then applied to the entire set of transcripts. Quotations from the participants also were identified, including key words or phrases that captured the essence, or served as metaphors, for a theme.

## **Findings**

The data revealed that the establishment of an advisor-advisee relationship involves a complex decision process in which the students as well as the faculty consider many factors, resort to various processes to gather information on those factors and weigh them before making a decision. Figure 1 is a diagrammatic representation of the elements involved in the process.

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Insert Figure 1 about here

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As described in Figure 1, students assess certain features of the faculty (Faculty Selection Factors) viz. funding situation, research areas, personality, track record with prior students and ability to advance the career of the student and weigh these factors according to their own priorities to decide on the advisors they prefer. Likewise, faculty members also assess certain features of their potential advisees (Student Selection Factors) including the student's qualifications and the perceived ability to contribute to research to decide on the advisees that

they would accept. We found that schemas/stereotypes around the gender and the tenure status of the faculty member and the nationality of the students biased how they were evaluated on the above mentioned factors. We discovered that the assessment of the above factors vary depending on when the selection takes place (Time of Selection). In addition, the features of the graduate program (Departmental Factors) also influenced if the advisors/advisees actually got the ones they preferred.

### ***Faculty Selection Factors***

In the selection of a potential advisor, several features of the faculty have been identified by both faculty and student participants as critical.

### ***Available funding***

Funding had been perceived by participants as perhaps the most important factor in attracting graduate students. The majority student participants believed that *“most graduate students chose their advisor because of funding.”* Both domestic and international students mentioned that some students had changed their research interests to work with advisors who could fund them.

“Sometimes there might not be a match between what student is interested in and the funding that’s available. And that’s where students find themselves working on something they ‘have to’ - to get funding - and working without passion.” [A domestic student]

Both student and faculty participants were aware that eligibility requirements limited funding opportunities for international students.

“In the XX sciences, there are a lot of fellowships and grants that are not available to international students, which can restrict your choice of advisor/lab.” [An international student]

### *Areas of research*

A faculty member's research area has been recognized as important as funding in identifying an advisor.

"I picked my advisor solely because of the research interest" [A domestic student]

"I think that certainly the primary or the first thing that the students think about is the research topic." [A tenured male faculty]

Furthermore, students and faculty participants also noted that graduate students tended to be attracted towards the latest topics in the field.

"There are always fads in any field, and there are these 'in' areas. And if a faculty member happens to do work in area that is 'in' at the moment, he or she attracts students." [A tenured female faculty]

### *Personality*

Students are sensitive to the personalities of the faculty they chose to work with. "Nice," "open," "easy going," "not aggressive," "confidence", "trustworthy" and "comfort level" were the words used by participants to describe the personality of a potential advisor.

"In a smaller department, when a student gets to know several faculty, they'll go a little bit with: Do I mesh with that person? Can I get along with them? Do I feel intimidated by them? Am I comfortable with that person? I have had students tell me that they think that way." [A pre-tenure female faculty]

### *Graduation track records*

Past performance of an advisor in getting students graduated was perceived by both student and faculty participants as critical in the choice of an advisor. For example, the average number of years that the advisees of a certain faculty take graduate was an important criterion

when choosing an advisor.

“I chose the particular advisor because they are known to get students out the door, and I didn’t want to hang around much longer than I had to.” [A domestic student]

“I have overheard in discussions that some students choose their advisors’ labs according to where it is easier to get projects done.” [A pre-tenure male faculty]

### *Career prospects for advisees*

Participants from both student and faculty groups noted that graduate students chose their advisor based on a faculty member’s perceived ability to advance the student’s career. The students looked at where their predecessors obtained jobs and were interested in finding out if the reputation, credibility and the network of the advisors would be helpful for them.

“Being with a faculty member who has tenure and prestige that’s really where you want to be. Partly because of the next step, the bigger the name the easier it is.” [An international student]

The students were concerned about the repercussions of having associations with faculty that have negative reputations.

“The irony in all that was when it came down to these students in the job market, because of their interest in these professors and having their reputation rub off on them - some of those professors were not respected outside the department. It could have some impact on the search for jobs. Credibility and reputation are also important to me.” [A domestic student]

### *Schemas associated with Women Faculty*

Women faculty are either proportionally rare in some fields (e.g. Engineering, Mathematics) or predominant in some other fields (e.g., social science). Does gender of the faculty member matter in the choice of an advisor? Some felt that gender had no impact when there was a match in the research interests or when the faculty member had a name in the field,

whereas some faculty and student participants observed female faculty having lesser number of advisees but could not find any reasons for that.

“From my own experience, I’ve had, until this year, more money than I’ve been able to get students for and I have not been able to just get them to even come to the door.” [A pre-tenure female faculty].

Comments by the participants alluded to the existence of schemas associated with gender.

### *Visibility*

According to a few, female faculty are less visible in the department in comparison to their male counterparts that was instrumental in making them less attractive as potential advisors.

“In my department, there are two senior female faculty and they have the least number of students. I haven’t really spoken much to the couple of females [faculty] and I don’t know what the relationship [between them being females and having the least number of advisees] is. But it is telling that the younger male faculty probably aren’t in the category of people, who could do a better job of really pushing you along in your career, but they do seem to be doing a better job of getting students into their labs and that would be beneficial to your career because they have higher visibility.” [An international student]

### *Credibility as a scientist*

Some participants speculated that the female faculty (especially at the junior level) did not fit the students’ conception of an ‘ideal scientist’

“I believe that the students are more willing to trust their [male faculty] scientific judgments or, you know, go to them [male faculty] for scientific advice than they would for a female” [A pre-tenure female faculty]

“I think, for female faculty, I don’t mean the general, but for my advisor [specifically, who is a junior faculty], she believes her idea very firmly and it’s very hard to persuade her that we go

another way. Sometimes, she is right. But sometimes, I am not sure". [An international student]

### *Commitment to research program*

Both faculty and student participants pointed out that female faculty were perceived to be less focused in their research because of their family roles.

"... my male colleague was saying to the student 'why are you asking me if I can come up with a project that suits your interest when we have someone in the department who does what suits your interests' and the student said 'Women don't work as hard, they don't care as much about their science, they care about their families first and they don't put in as much time'." [A pre - tenure female faculty]

There was the impression that this mindset was stronger among some international student groups.

"This past year one of the international students told one of my male colleagues that the international students didn't want to work with women because they were going to have babies and weren't going to pay as much attention to the lab." [A pre-tenure female faculty]

### *Working style and interpersonal interactions*

Female faculty were aware that they may disappoint students in not being feminine, maternal and nurturing in interpersonal interactions.

"I got a whole group of people who thought I was going to be very nurturing, which unfortunately I'm really not. I mean, I don't do that very well. So I had experiences, mostly with female students, where I had one in particular that I ended up having to get rid of her out of my lab, because she wanted to talk about earrings and laundry and oh my God and I was like, 'do some science'." [A pre-tenure female faculty]

### *Schemas associated with Faculty Tenure Status or Career Stage*

The tenure status/career stage of the faculty member was discovered to be pivotal when students made judgments about several of the faculty features.

#### *Area of research*

It was felt that the junior faculty carried out their research in the new and cutting edge topics whereas the senior faculty dealt with the established research topics. This added a '*hotness factor*' to the junior faculty which was appealing to the students.

“Some senior faculty members whose research was in the 1960s, they basically teach unpopular required courses that someone has to teach, and they are kind of seen as only doing that, not for research” [An international student].

#### *Pressure to perform*

Pre-tenure or junior faculty had been perceived by student participants as facing more pressure than tenured faculty in meeting the performance criteria as a result of their tenure track status. This in turn might reflect on how demanding they would be as an advisor.

“For the tenured advisor, they do not work very hard. Based on my personal idea, some tenured faculty do not work hard. I don't mean that they don't care [for] the students. But they don't [put] pressure on the students. So the progress of the project totally depends on the students. But for the non-tenured advisors, they themselves have high pressure. And they need immediate progress on the project, so that they can publish paper, they can get patent, finally they can get funding from different foundations, so that they can get tenured. These pressures make them push students usually harder than the tenured advisors. In this case, most grad students in the non-tenured advisor's lab have higher pressure. These higher pressures also give them higher/more production [productivity].”  
[An international student]

However, some of the student and senior faculty participants felt that advising would be



an additional pressure the junior faculty.

“But I see a lot of pressure in our area with junior faculty in terms of getting tenured. I don’t want to put unnecessary the burden of being the chair of a student committee on them because they have a workload on them to maintain.” [A domestic student]

### *Faculty availability*

Another notion was that the junior faculty members spent more face time with students in the lab and in their offices than the senior faculty members. Senior faculty members were perceived to have more committee work and other service/administrative commitments that reduced their availability to students.

“Senior faculty members are the ones who are in all the high committees and may have meetings all day. So it’s like if you work with this guy he is busy all the time, he is a senior guy and he is almost on every committee. But if you want time [with the advisor] you work with junior faculty who have time.” [A domestic student]

However, the students were sceptical about the long term availability of junior faculty since there was the risk of their not getting tenured and leaving the school.

“If you want to work for an untenured faculty or junior faculty there’s a high risk that they’re not going to be there for the duration of your PhD...there’s a very short window of opportunity with junior faculty, so I think they get three years funding...and the average PhD in science is 6 years so, you can get halfway through and find yourself in a much less well-established university’s PhD program with a faculty member who has dropped down a few rungs in the social standing and it just gets harder.” [An international student]

### *Faculty credibility*

Students often seemed to be doubtful about the credibility of faculty at an early career stage. Junior faculty were considered to have less resources and fuzzier research agendas.

“Sometimes junior faculty are seen by students as not having proven already that they can produce papers at such a pace, so they might choose a lab that has proven already that students don’t have any problems in producing the papers.” [A pre-tenure male faculty]

### *Comfort and collegiality in work relationships*

Participants also noted that the junior faculty were perceived to have “*a lot in common with students*” since they were close in age and experience and the interaction with them were more “*collegial*” and “*comfortable*”.

“Our department is growing quite rapidly and we have more junior faculty who are in their early to mid-thirties and they’re a lot more available, more open to discussing a wide range of topics. They don’t have as many responsibilities as the other faculty, and they have a lot more current, recent experience that they can give to you. So they’re like, ‘five years ago I was where you are, this is how I got where I am now’, whereas a lot of the older faculty, in terms of science, graduated when it was a completely different world, and when they got their PhDs the career paths were so different.”

[An international student]

### *Student Selection Factors*

Some features of the students that the faculty examined affect their preferences for and acceptance of certain advisees. The main features that both the faculty and student participants reported included student credentials and the perceived ability of the student to contribute to research.

### *Student credentials*

While assessing the credentials of the students, the faculty took note of the scores in the standardized tests and/or qualifying exams as well as students’ skill set and experience.

“A lot of my work involves certain skills, and previous experiences are helpful in judging whether that student will be successful and so it's a combination of the student applying to the program to work specifically with a faculty member and the faculty member looking at the set of applicants interested in working with them and selecting one that provides the highest, perhaps, potential matched with their interest area.” [A tenured female faculty]

In some programs, graduate students do not have an advisor until they pass the qualifying examination. In these cases, the qualifying examination score will be used as an important scale to assign an advisor. An international student participant pointed out that if the student acquired a higher score in the qualification examination, more freedom would be given to him/her in the choice of an advisor.

#### *Ability to contribute to research*

The faculty participants also were concerned with the ability of the student to contribute to research meaningfully. The student participants pointed out that some of the faculty were interested in making sure that the students contributed to the faculty's own area of research.

“In the years since I entered he [the advisor] has chosen a very narrow path of research and the impact that has had on his career is that he is now recruiting just those students who want to work in his narrow field of interest. I am the last student who is not doing work in this particular line of research. Although he has tried to mould my interest but I have been very firm on that I don't want to work on that. When he accepted me it was based on my qualification and my research interest at that time but now he is only taking students interested in this particular area and thus when student work they obviously indirectly help him to advance in his field.” [A domestic student]

#### *Schemas Associated with Student Nationality*

Faculty and student participants acknowledge that schemas linked to student nationality

were often the basis of expectations from students.

### *Naïve versus sophisticated views about graduate education*

The international students have been perceived to be “more naïve” and as “lacking awareness of the elements of the educational system and academic structure in the US” (such as selecting the right courses, grading, and tenure system). Domestic students were viewed as more “sophisticated” in understanding the system and negotiating relationships than the international students.

“Domestic students are more sophisticated in the sense that they probably get better socialized, I mean they learn to think and look for the fact” [A pre-tenure female faculty]. “I think every graduate student chooses their future advisor based on future career... I think the domestic students are a little bit more savvy in respect to this, because they are more informed about society. The graduate students from other countries a little bit more informal about what constitutes success, [they have] a more romantic notion of what they want to do” [A pre-tenure female faculty].

### *Language barriers and difficulty in training*

Many suspected that the language was a barrier to effective advising and sometimes resulted in misunderstanding and conflicts.

“I’ve really struggled, I’ve had students doing [lab] rotations and it’s never really been clear to me whether the student fully understood things that I might have said, so there is this big communication gap with students from Asian countries as was said earlier. It’s not quite as true if you’re getting students from Europe or India that actually have a better command of English” [A tenured male faculty].

Domestic students were considered better at communication and socializing in general. Meanwhile, it has been felt that faculty had to take special measures to address the international

students' unfamiliarity with language and culture in the US.

"I could see that some of the difficulties in communication for the graduate disappeared over time. But I think the faculty had to just be very sure that the students were understanding exactly what was expected and directions. They did require a lot more interaction in terms of writing up their research, pretty much a fundamental skill development in respect to writing." [A tenured female faculty]

"I have a lot of Asian students in my group and I have basically banned them from speaking their home language in the lab or in the office or to each other while they're at work because they started to give presentations and I realized that their communication skills have not improved at all in the last year." [A tenured male faculty]

### *Privilege versus entitlement*

It was felt that the international students had a greater appreciation of their education and saw graduate school as a privilege. Domestic students were perceived to enter graduate school with a sense of entitlement, but with a lesser sense of purpose.

"For the right reasons or the wrong reason I think that many of the non-domestic students actually come with a singleness of purpose, to get the degree. And many, not all, domestic students come because they don't know what else to do after college. And they're just sort of continuing along, and maybe they'll get something figured out" [A pre-tenure female faculty].

### *Work ethic: 'hard work' versus 'lifestyle'*

International students were seen as more hardworking while the domestic students were assumed to be more concerned with "*lifestyle*".

"The only thing that I actually see at least for us that's a bit different now is that for a lot of what we refer to as the domestic or the U.S. students, they're beginning to get a little bit more 9-5 ish where as most of the international students perhaps based on the training and what they had to do to get out of their countries and into a U.S. school are actually much more aggressive and often they're the

folks you'll find there early and they're the folks you'll find there late." [A tenured male faculty]

### *Tokenism*

International students were subjected to tokenism and were expected to serve as the representative of their country.

"I have met only one other student from my home country since being here as a student, and I've found that you do have to represent your country, especially if you're in a certain minority. Even as an English speaker, I find that I'm being judged for the whole of XXX [name of the country], and I know that this has had an impact on admissions because it was actually discussed how well I was doing in that [admission committee] meeting...so basically his [an applicant] acceptance or rejection depended on me, which was totally unfair on the guy...your performance has an impact on other people's lives" [An international student].

### *Time of Selection*

We found that preference for an advisor or advisee could emerge at three different time periods viz. prior to the admission of the student into the program, during the admission process and after the admission. At each of these time periods, the extent of information on various selection factors available to both faculty and students vary and so do the sources of information. Because of this non-uniform nature of information, some factors look more important than the other in each time period and the preferences are likely to change as one moves from one time period to the next. For example, when advisor-advisee matching is undertaken prior to or during admission, it is based mainly on the research interests. When the admission process involves personal interviews (with faculty and/or other graduate students), some assessment of personality also is done. Where the selection process takes place only after the student joins the department, the decision is much more influenced by compatibility in personality and work styles and other

instrumental concerns. In this case, the decisions are often influenced by the student grapevine.

“I don’t think we make individual decisions about faculty. In our department whenever I have interaction with faculty I tell someone about it and we give feedback. A couple of us actually started a club called ‘Strange encounter with academia’ and every time something weird happens we share it” [A domestic student].

Faculty were concerned about the misinformation spreading through the grapevine.

“What I have seen is a grapevine of inaccurate data. So for example, this past year one of the things that I provided for a group of students that I work with was fact finding. They came to me with questions, does it really take 7 years to get a Ph.D. in so and so’s lab, or has so and so really never had funding for last twenty years” [A pre-tenure female faculty].

### ***Departmental Factors***

Even when both faculty and students have preferences as to who to work with, certain features of the graduate programs were found to influence the actual pairing of an advisor and advisee.

### ***Quota or limits on the student numbers***

Some departments had restrictions about the number of students that a faculty member could have in their labs. Some programs restricted the number of international students they could admit due to funding constraints. While the restrictions helped to make sure that nobody was being burdened with too many students, sometimes it limited students’ choices.

### ***Departmental processes***

Different departments varied in when and how advisor-advisee pairing was done. Some departments had structured approaches which required the students to go through lab rotations

where they are given the opportunity to work with all faculty members and then make a formal announcement of their preferences. But in a majority of departments, the processes were rather unclear. Students usually relied on senior students for guidance. They had to be very proactive in approaching faculty and expressing their interest. This caused a sense of insecurity and competition. There was also competition among faculty to get good students, though it was usually not acknowledged openly. The junior faculty felt they were at a disadvantage as sometimes the bad students were thrust on them.

### *Rewards for advising students*

Training the advisees was an activity that is not always rewarded, especially in the case of pre-tenure faculty.

“I had a most recent student, a good one who wanted to leave. He had some self-confidence issues, maybe didn’t think he deserved a masters. I was approached by our program director and our chairman saying, ‘You find a way to get this guy a masters because it’s important for your career that he has a degree of some sort and doesn’t just leave the program’.” [A pre-tenure male faculty]

The reward structure is such that it works as a punishment if the faculty member does not train a specified number of students. A pre-tenure faculty may not get tenure unless they meet the numbers, it appears. In some departments the rewards associated with training a masters student was less compared to that for a doctoral student.

## **Discussion**

Thus we see that selection of an advisor or advisee is a complex process with a variety of factors involved. Just as in the administrative process for matching supervisor and supervisees, students also consider match in the research interests as a key criterion (Donald et al 1995). As



Zhao, Golde and McKormick (2007) found they show a very pragmatic orientation in ensuring funding and timely completion and even forethought to capitalize on the advisory relationship to build the future career. Individual students however could vary in the weight they attach to each of these factors. The faculty members in turn saw the advising as something that should enhance their career. In science fields, this is especially true as students the key resources to take faculty projects forward.

The eye-opening aspect of the finding is how schemas lead to biased evaluation of faculty and student credentials and ultimately affect the choice of an advisor/advisee. It is known from the past research that such schemas influence the perceptions about effectiveness of the relationships (Eland 2001; Ferreira 2006), but it was probably not fully established before that schemas and stereotypes will prevent the formation of a relationship itself, and thus adversely affect the professional success of the student as well as the faculty member. For example, if female faculty members are viewed as less capable of securing funding and tenure in certain fields, this could negatively impact their ability to attract advisees, and result in lower research productivity in the long run. Similarly, if international students from certain countries are perceived to need more language and cultural support, the faculty members may refrain from taking students from those countries. The lack of a systematic process of identifying advisors and advisees opens the door to a host of schemas and biases (Valian, 1999).

The lack of consistency in the processes is further revealed in differences in time of selection of advisors and imposition of departmental restrictions that hurt its own members. The taken-for-grantedness of the process is not the way forward. Even though it is an age old process, it needs to be more clearly articulated with enabling support structures.

## **Suggestions for practice**

We suggest that departmental administrators and senior faculty leaders (in American universities as well as universities that plan to follow the American model) design and implement systems and support structures to help both students and faculty members make more informed choices about the advisor-advisee relationship, as follows.

### ***Enhance clarity in departmental policy***

Departments should undertake a review of the extant processes used by students and faculty to make advising decisions, and determine steps to make the process of selection more equitable, transparent, and participative. Departmental guidelines and timelines for advisor/advisee selection need to be articulated.

### ***Implement an orientation for students.***

A recurring theme in the findings was the need for an orientation for graduate students, especially international students, on how to navigate through graduate school. Students may find it useful to have formal information sessions on how to choose an advisor, rather than simply asking for the opinions of other students. An organized information session would be a venue for not only talking about the factors that students should consider and the processes that they could follow, but also for creating awareness about the various schemas – gender, faculty tenure status and nationality - that might subtly infuse decision making. Appointing a faculty member or peer guide/resource person in each department for students to talk with if they are finding the decision difficult may be a good follow up measure to the information session.

### ***Make faculty information available to students***

In the absence of rich information about faculty members, the student grapevine takes over. Departments vary widely in the amount of faculty information shared on web pages and in other departmental information brochures. Including all relevant information that may help students make informed choices is an important step. The content information to be shared could include research interests in general, current research projects, research assistants, sources of funding, list of publications, future projects, etc. Another way of providing faculty information to students and enhancing opportunities for interaction would be ‘meet-the faculty’ type seminars where each faculty member has the opportunity to present his or her research to the new cohort of students and address their questions.

### ***Provide support to faculty.***

There is the need for open discussion among the faculty about their student resource needs. This may be a sensitive issue for discussion, and the chair and senior faculty leaders should ensure that junior faculty members have a voice in this discussion. Other areas that faculty members should discuss are the rewards for advising students and measures to assess the effectiveness of advising.

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**FIGURE 1**

**An Empirical Model of Advisor-Advisee Selection Perceived by Both Student and Faculty Participants**

