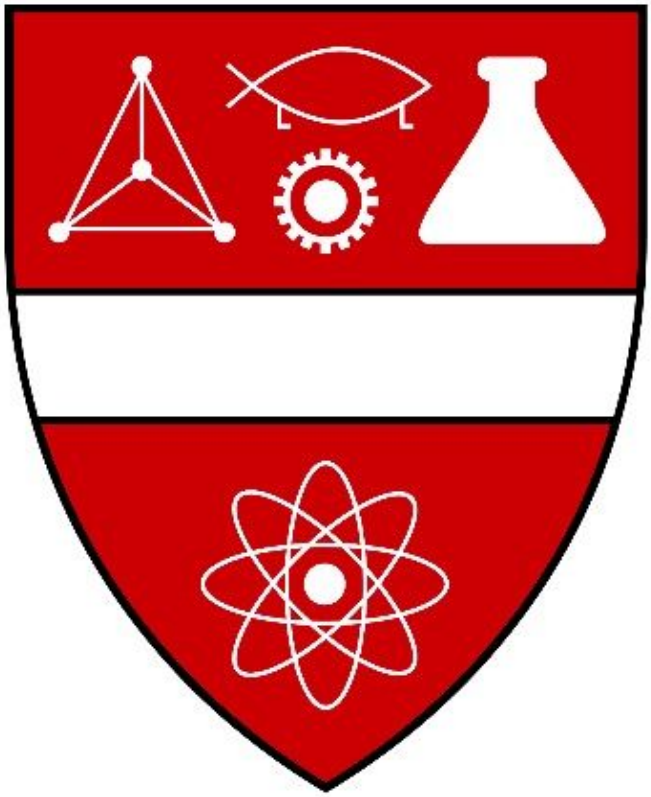

The HGWISE Mentoring Program

Connecting female graduate students with faculty and professionals in the sciences and engineering

Guidelines of the Program and a Brief Guide to Mentoring

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The Seven of Pentacles

Under a sky the color of pea soup
she is looking at her work growing away there actively, thickly like grapevines or pole beans
as things grow in the real world, slowly enough.
If you tend them properly, if you mulch, if you water,
if you provide birds that eat insects a home and winter food, if the sun shines and you pick off caterpillars,
if the praying mantis comes and the ladybugs and the bees, then the plants flourish, but at their own internal clock.
Connections are made slowly, sometimes they grow underground. You cannot tell always by looking what is happening.
More than half the tree is spread out in the soil under your feet. Penetrate quietly as the earthworm that blows no trumpet. Fight persistently as the creeper that brings down the tree. Spread like the squash plant that overruns the garden. Gnaw in the dark and use the sun to make sugar. Weave real connections, create real nodes, build real houses. Live a life you can endure: Make love that is loving. Keep tangling and interweaving and taking more in,
a thicket and bramble wilderness to the outside but to us interconnected with rabbit runs and burrows and lairs.
Live as if you liked yourself, and it may happen:
reach out, keep reaching out, keep bringing in.
This is how we are going to live for a long time: not always, for every gardener knows that after the digging, after
the planting,
after the long season of tending and growth, the harvest comes.
~ Marge Piercy ~

(The Mentor's Guide: Facilitating Effective Learning Relationships by Lois Zachary)

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The HGWISE Mentoring Program

Introduction

This program was created out of concern for the under-representation of women in academic science and engineering. Over the past 30 years, the number of female PhD graduates has risen, to be nearly 50% in life science fields (but much lower in the physical sciences, mathematics and engineering), and the proportion of female faculty has increased, but we are still far from gender equity (NAS, Beyond Bias and Barriers 70-71, 80). The social and institutional reasons that have led to this situation still exist today. The social norm for women to be less assertive is still prevalent, and it influences their behaviors from childhood through university and on into their careers, including, in some instances, deferring to their husbands' careers. In addition, the extreme competitiveness of academia demands that research be the top priority of faculty, a burden that is heavier for women who are usually shouldered with the responsibility of being the primary caregiver for their children.

Mentoring is an important component of a successful career. It provides networking opportunities, insider advice, perspective, and support to mentees. A longitudinal report on graduate school attrition by Nettles and Miller in 2006 showed that female graduate women reported feelings of isolation (NAS, Beyond Bias and Barriers 75) and significantly lower ratings of their interactions with faculty (NAS, Beyond Bias and Barriers 69). Indeed, year after year, female graduate students rated mentoring and female role models as among their top needs during graduate school.

Graduate school is a tough time, perhaps the hardest in the academic path. This is the first time for the vast majority of students to lead their own independent projects and to understand the reality of conducting research. There is a high chance that they are isolated from support networks, as research requires many long hours in solitude, and there is typically little positive feedback of the work they do. The situation becomes more unfavorable for women, who have a smaller number of female faculty role models and have a harder time fitting into a male-dominated environment. Despite the earliness of this stage in the career of a scientist or engineer, it is a crucial one that will shape the impression that she has of academia. Having a female role model and mentor may make all the difference to a

female graduate student on whether she stays in academia for her love of the subject or leaves because of competing pressures.

The HGWISE Mentoring Program is sponsored by the generous support of the Office of Faculty Development and Diversity, the Graduate School of Arts and Sciences, and Harvard Integrated Life Sciences.

Harvard Graduate Women in Science and Engineering (HGWISE)

HGWISE is a graduate student group of GSAS that was created in 2005 for the academic, professional, and personal advancement of female graduate students in the sciences and engineering. HGWISE holds a variety of events, such as seminars with distinguished speakers, workshops to develop skills, networking socials, and coffee hours with local faculty and scientists. HGWISE strives to hold events that promote a strong community of women scientists and leaders on campus.

HGWISE is funded by the generous support of the Graduate School of Arts and Sciences, the Graduate Student Council, the Division of Medical Sciences, Harvard Integrated Life Sciences, Harvard College Women's Center, and the Office of Faculty Development and Diversity.

For more information, contact hgwise@gmail.com or visit http://www.hgwise.org/.

Description of the Mentoring Program

The goal of the program is to connect female graduate students in the sciences and engineering with faculty and professionals in the sciences and engineering in order to provide a mentor who is not formally tied to the student's academic progress. The expectations are for the mentoring pair or group to create a Mentoring Contract, meet at least once per month, and make progress towards addressing the goals and issues of the mentees. The hope of the program is that the both mentors and mentees will grow from this experience and will form connections that will last throughout their careers.

Timeline of the Program

September: Receive your mentoring group
October – May: Meet with your group monthly. During this time, we will

check in with you by email to make sure your group is working well. If something in your group doesn't "click", we can try to re-match you during the year.
May: End of Year Dinner, and announcement of our Mentor of the Year.

What to do if Problems Arise

It is our hope that mentors and mentees will create a mentoring agreement together in the fall to make the expectations and goals clear to both mentors and mentees. However, in the event that issues arise within a mentoring group, mentors and mentees are encouraged to contact us, the organizers, with any questions or comments, which will be dealt with confidentially unless otherwise directed. If issues cannot be resolved, we are happy to rematch you with a new mentor or mentee at any time.

Contact Information

Email the program directly at hgwisementors@gmail.com. Or, you can contact any of our Co-Chairs directly:

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Guidelines for Mentors and Mentees

Why Mentor? Benefits of a Mentoring Relationship

"The primary motivation to be a mentor was well understood by Homer: the natural human desire to share knowledge and experience."
–NAS, Adviser, Teacher, Role Model, Friend

Mentoring is relationship that develops between a more experienced and a less experienced individual that goes above and beyond the role of mere advising. The transition from undergraduate work, in which the main goal was to obtain knowledge, to graduate work, in which one is expected to contribute to the field of knowledge, can be confusing for many students. Mentors can help students better understand their new role and the skills needed to succeed in their field and an understanding of how the discipline operates. Yet, the relationship is a mutually beneficial one that provides academic, personal, and professional support and guidance for the mentee, as well as self-reflection and satisfaction for the mentor. Here are some specific benefits for the mentor and mentee.

Positive effects of mentoring for the mentor include:

- Pride in helping a young scientist find her place in the scientific community
- Personal satisfaction from passing on wisdom to a mentee and seeing her succeed
- Respect from peers for contributing to the development of young scientist
- Support from the young scientist who seeks your counsel
- Keeping abreast of new knowledge and techniques from complementary or divergent fields
- Perspective on one's career and life
- Engagement of the curiosity and energy of fresh minds
- Participation in creating the next generation of leaders in academia and society
- Development of your professional network
- The gift of renewal and regeneration through reflection and observation

Positive effects of mentoring for the mentee include:

- Increased confidence
- Increased ability to deal with personal and professional challenges of academia
- Growth in productivity levels – research, publications, conference presentations, and grant writing
- Enhancement of student identity
- Greater knowledge of post-degree career options
- Emotional and moral support
- Better performance in academic coursework
- Acquisition of a body of knowledge and skills
- Development of professional skills, such as collaborating and networking
- Perspective on how a discipline operates academically, socially, and politically
- A sense of scholarly citizenship by understanding her role in a larger educational enterprise

Stages of a Mentoring Relationship

A mentoring relationship may appear to be simply a situation in which a mentor and mentee meet and discuss issues of the mentee, but research on mentoring has led to a characterization of the relationship into recognizable stages. Mentoring workshops and how-to guides teach an awareness of these stages and the steps in each stage that lead to a successful mentoring relationship.

There are several models of the stages of a mentoring relationship. One classic theoretical model was described by Kathy Kram in which the mentoring relationship consists of four stages: Initiation, Cultivation, Separation, and Redefinition. This model focuses on mentoring relationships in the workplace, but may be generalized to academic mentoring relationships, as well. We will combine the descriptions of these stages, below, with those in a practical model (originally for mentors, but applies to mentees, as well) put forth by Lois Zachary (Zachary 2000) that provide some possible steps to successfully navigating through each stage. These are stereotypical stages, but an awareness of them may help you gain perspective on the progression of the relationship and understand your mentor or mentee better.

Initiation

This stage typically lasts for a few months, during which time both mentor and mentee(s) learn from each other. The mentee feels valued and sustained by someone she looks up to who can provide both career, social, and supportive functions. The mentor finds in the mentee an attentive mind to impart her values and perspectives on life and sees herself contributing to the mentee's growth and development. These positive expectations and results lead both members of the pair to devote time to the relationship in order to have it flourish (Kram 51-53).

This stage corresponds roughly to the Preparing and Negotiation phases in Zachary's model. In the Preparing phase, the mentor and mentee evaluate whether or not they are ready to be in a mentoring relationship in which they will be receiving and giving. Once mentor and mentee have decided that they are ready for mentoring, they pass into the Negotiation phase, in which they identify issues and challenges to the relationship and think of potential solutions. Zachary strongly emphasizes the need to be clear about each person's expectations, goals, needs, and availability. The most common causes of disappointment in a mentoring relationship are unmet expectations of benefits to be given or received and availability, so it is important to be clear and candid about these rather delicate subjects.

ADVICE FOR NEW MENTORS

For most people, good mentoring, like good teaching, is a skill that is developed over time. Here are a few tips for beginners:

Listen patiently. Give the student time to get to issues they find sensitive or embarrassing.

Build a relationship. Simple joint activities – walks across campus, informal conversations over coffee, attending a lecture together – will help to develop rapport. Take cues from the student as to how close they wish this relationship to be.

Don't abuse your authority. Don't ask students to do personal work, such as mowing lawns, baby-sitting, and typing.

Nurture self-sufficiency. Your goal is not to "clone" yourself but to encourage confidence and independent thinking.

Establish "protected time" together. Try to minimize interruptions by telephone calls or visitors.

Share yourself. Invite students to see what you do, both on and off the job. Tell of your own successes and failures. Let the student see your human side and encourage the students to reciprocate.

Provide instructions. Help the student develop a professional network and build a community of mentors.

Be constructive. Critical feedback is essential to spur improvement, but do it kindly and temper criticism with praise when deserved.

Don't be overbearing. Avoid dictating choices or controlling a student's behavior.

Find your own mentors. New advisors, like new students, benefit from guidance by those with more experience.

In order to help mentors and mentees know each other's expectations and goals, we have provided a Mentoring Contract, based on a model by Zachary, to be filled out together at the Mentoring Kick-off Dinner or whenever you first meet. In the following pages, there are various tips from National Academies' Adviser, Teacher, Role Model, Friend, which is freely available online.

Cultivation

In the Cultivation stage, the transfer of knowledge and skills reaches its peak. Often career functions, such as sponsorship, exposure, networking, coaching, and protection, appear first (Kram 23). Then follows social/support functions, such as role modeling, acceptance-and-confirmation, counseling, and friendship, as the mentor and mentee(s) begin to know and understand each other better (Kram 23). There are differences between relationships in the scope of functions provided, based on differences in needs, individual ability to accept or provide certain functions, and scheduling constraints that might limit the interaction.

Kram's Cultivation stage corresponds to the Enabling phase in Zachary's model. Zachary states that the growth and development of a mentee is fostered by support, challenge, and vision from the mentor. Engaging in meaningful feedback is an important component of this stage and is a necessity for growth. When feedback is given in the right way, it can foster growth; if it is given in the wrong way, it can undermine the relationship. Zachary points out that the mentor's challenge is to

BUILDING RESPECT

A successful mentoring relationship is founded on mutual respect between mentor and student. Here are some guidelines on promoting respect:

Take students seriously. A question or problem that seems trivial or irrelevant to you might not be, or it might mask a more serious issue. Listen carefully.

Don't dictate answers. Suggest various "road maps," but allow students to choose the destination.

Be frank and direct. Let students know what you can (and can't) offer in the mentoring relationship.

Help students develop self-esteem. Provide praise as well as suggestions for improvement.

Invite other mentors. Acknowledge that no single person can fill all a student's needs.

Address fears without belittling. Know about a student's money worries, low self-esteem, fear of failure, parental pressures, and doubts about belonging. Don't wait for fears to grow into problems that might cause a student to stumble or even leave your program.

Meet on "neutral ground." Don't always meet in your office; a student might be more comfortable at a laboratory bench, local cafeteria, or jogging track.

provide “thoughtful, candid, and constructive feedback”, while the mentee’s challenge is to be able to ask for feedback, receive and accept it, and apply it.

The HHMI publication Entering Mentoring, which is free online, does a concise, good treatment of the following topics: Judging aptitude—innate ability; Fairness: monitor prejudices and assumptions; Changing behavior; Every mentoring relationship is different (HHMI 57-62).

Separation

If the mentoring relationship is successful, a mentee will grow under her mentor’s guidance and eventually gain independence from her mentor. At this point, a Separation stage is entered in which the relationship becomes less prominent in each person’s life. The separation may lead to feelings of loss and anxiety, but may also be an exciting time for both mentor and mentee: the mentee may feel energized by her ability to handle her issues by herself, while the mentor may feel proud of the mentee’s accomplishments. This stage may also be entered due to a physical separation of the mentor and mentee, which interrupts the normal progression of the relationship (Kram 56-60).

BUILDING TRUST

The mentoring relationship might focus on work, but it is fundamentally a *personal relationship* built on trust. There are many ways to build trust and strengthen the relationship:

Be a “wise and trusted counselor.” For many students, emotional support is crucial; a mentor is one who cares and who is there when needed. Caring can be demonstrated in such routine ways as being on time for meetings, making notes on what you talk about, and referring to those notes before the next meeting.

Don’t try to over-direct a student. *Too much help can hinder a student’s progress.* Unless the student learns to do the fixing, nothing is gained.

Look for the “real” problem. A student with a truly urgent problem might cover it with small talk. Give important issues time to emerge.

Encourage feedback. Remind students that you have to understand their needs in order to help. Ask whether you are sufficiently – or too – involved.

Be direct. At times, a good mentor must take steps that cause pain. You might decide that a student cannot do the work, despite the best efforts of both of you. Explain your concerns directly and recommend a change.

Talk at a good time. If a student approaches you at an inconvenient moment, suggest an alternative time instead of listening impatiently.

Watch for depression. Fatigue, pessimism, isolation, and difficulty concentrating can indicate major depression, which can lead to inability to function and even suicide. Keep handy the telephone number of a counselor or resource person. Be prepared to walk the student across campus yourself if necessary.

Remember the goal. Your objective is not to produce “another you.” It is to help a person achieve a satisfying education and professional career = and become an effective mentor to future students.

Kram’s Separation stage corresponds to the Coming to Closure phase in Zachary’s

model. Zachary advises that before the relationship is ended for any reason, it is important for the mentor and mentee together to reflect on what has been learned, what went well or not during the relationship, and what else needs to be learned.

Redefinition

Although the mentoring relationship as it was has ended, the relationship between the mentor and mentee continues, redefined. In some cases, if the changes in the needs of the mentee can be met once again by the mentor, a new mentoring relationship develops that addresses a different set of needs. More often in other cases, the new relationship is one of friendship in which the mentor and mentee maintain contact and mutual support, and the mentor continues to take pride in the mentee's accomplishments.

Characteristics of Successful Mentoring Relationships

The most important components of a successful mentoring relationship are a firm commitment, a willingness to invest time and energy by both the mentor and mentee, and clarity about expectations. Research has shown that the main cause of unsuccessful mentoring relationships is unmet expectations of time devoted to the relationship and benefits given or received. In order to ensure that both mentor and mentee understand each other's expectations, they will develop a Mentoring Agreement at the kick off dinner, in which the expectations of each person are put forth and negotiated to create a plan that is acceptable to both members. As

the semester progresses, both mentors and mentees will find that they have increasing demands on their time. The challenge will be to maintain contact and use the time you have efficiently.

A mentoring relationship is something that develops over time. You were paired with a mentor or mentee, but both members of the match must work to make this formal pairing into a fruitful mentoring relationship.

Elements of a good mentoring relationship:

- Focus on the learning
    - The mentor should not just dispense advice and knowledge, but should facilitate the mentee in the learning process.
- Mutual trust, understanding, confidentiality, and empathy
- Good communication

    - It is essential to be clear what your goals and expectations are for the relationship.
    - Listening effectively and periodically checking that you understand each other is critical.
- Mentors and mentees are at ease with each other
    - In order to be able to communicate effectively, it is important that the mentee and mentor trust each other and are comfortable with each other, so that they can interact on a meaningful level.
- Building and maintaining the relationship
    - Building a relationship takes time and energy, but it is important to continue to invest that time and energy into maintaining the relationship or it could fizzle out.
- Stay in touch and respond to your mentor/mentee in a timely manner
    - If you receive an email from your mentor or mentee, but don't have time to respond to it in depth, send them a quick email saying you will get back to them when things get less hectic. It is important in the developmental stages of the relationship that neither party feels as if they are being ignored.

A good mentor…

- is accessible and approachable.
- sees what is missing along with the obvious issues.
- listens carefully and is open-minded and non-judgmental.
    - What was good for the mentor may not be good for the mentee.
- promotes and encourages self-sufficiency.
- acts as a guide for the mentee.
- tries to see below the surface of what the mentee is saying.
    - Don't assume that "fine" means fine.
- is patient.
- connects their mentee to people and resources that can contribute to the mentee's objectives.
- provides constructive feedback.

A good mentee…

- identifies the needs she has so that she can present them to her mentor.
- is open-minded and ready to try the mentor's advice.
- makes explicit requests for help.

- is honest and able to bring up any issue.
- is open and willing to trust.
- respects and appreciates the mentor's effort.

As Zachary says in her model, it is important to remember that mentoring is a gift of time and energy. The greatest gift a mentor can give is to provide ongoing listening and advice.

Annotated Bibliography

Adviser, Teacher, Role Model, Friend. National Academy of Sciences. Washington, D.C.:National Academy Press, 1997. http://www.nap.edu/catalog.php?record_id=5789

A short guide to mentoring with an emphasis on dealing with difficult situations. Somewhat elementary, but is easy and quick to read and may provide insight or solutions.

Bias and Barriers – Fulfilling the potential of women in academic science and engineering. National Academy of Sciences. Beyond Washington, D.C.: National Academy Press, 2007. http://www.nap.edu/catalog.php?record_id=11741

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A guide to mentoring graduate students with an emphasis on those from different backgrounds.

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A comprehensive reference for workplace mentoring.

Zachary, Lois J. The Mentor's Guide: Facilitating Effective Learning Relationships. San Francisco, CA: Joseey-Bass Inc, 2000.

A practical and detailed guide to mentoring for mentors, with specific exercises to gain self-insight, hone skills, and improve relationships. A wonderful resource for understanding mentoring and gaining skills to make mentoring relationships successful.