Mentoring 101
Essential Skills for Mentors & Mentees

Presented at the 40th SACNAS National Conference, October 6th, 2013

Malika Bell, MS, Director of STEM Diversity Programs
Zia Isola, PhD, Director of the CBSE Research Mentoring Institute
What is a mentor?

- Advisor
- Teacher
- Role model
- Resource
- Ally
- Friend (?)
Activity

Write a short description of a good mentoring experience and share with your group.
What is mentoring?

Mentors are **advisors**, people with experience willing to share their knowledge; **supporters**, people who give emotional and moral encouragement; **tutors**, people who give specific feedback on one's performance; **masters**, in the sense of employers to whom one is apprenticed; **sponsors**, sources of information about and aid in obtaining opportunities; **models of identity**, of the kind of person one should be to be an academic (Zelditch, 1990).
Taking stock: what makes a good mentor?
What are some essential functions of the mentoring relationship?

- Communication
- Motivation
- Providing feedback
- Building professional network
- Providing structure and guidance
- Developing critical thinking skills
- Time management skills
- Identification of strengths/areas that can be improved
- Career planning
“He explained everything very well, trusted me with the work that I could complete on my own, and challenged me.”

- mentee comment from the UROC Program at CSU Monterey Bay
What can I do to be a better mentor?

• Help mentees see their potential

• Help mentees develop strategies to overcome challenges

• Help mentees become confident (HOW?)

• Create “scaffold” that allows mentee to become increasingly independent in their research project (applies to other areas of action as well)
# Project Scaffolding

<table>
<thead>
<tr>
<th>Modeling</th>
<th>Scaffolding</th>
<th>Fading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expert carries out the task, verbalizing the process. Student observes and build a conceptual model of the process.</strong>&lt;br&gt;</td>
<td><strong>Student carries out the task, with prompts/support from the expert.</strong>&lt;br&gt;</td>
<td><strong>Supports are gradually removed, resulting in independent execution of the task.</strong>&lt;br&gt;</td>
</tr>
</tbody>
</table>
Push (just enough)

- Allow for a certain level of discomfort / challenge, but be aware of ‘the freeze.’

- Scaffold new information and tasks, progressively leading to more independence.

- Don’t hesitate to give (constructively) critical feedback.

- Be clear about expectations, and don’t be afraid to hold mentees to high standards, based on their full potential.
Assessing Knowledge

- Establish an environment that encourages questions
  - Be aware of body language and facial expression (furrowed brow to the ‘smile-and-nod’)
- Use prompts
  - What questions do you have for me...
  - How do you think that relates to...
- Answer questions with a question, leading the student to a better understanding of what they are learning
- Pause. Don’t give the answer right away
Considerations When Developing a Research Project:

- Feasibility.
- Challenge (based on the student’s ability, knowledge, and drive).
- Appropriate scope or scale.
- Scaffolded from shadowing to independence.
- Built-in difficulties (after the student has developed basic skills and some confidence).
- Build or refine valued skill sets.
- Clarity of hypothesis.
- Connections to significance.
- Likely to generate data the student can present.

Adapted from ‘Entering Mentoring’
What can I do to be a better mentee?

- Develop self-understanding: what is your vision of the mentoring you need?
- Think of previous mentors in your life and the kind of support they provided; look for mentors that might have similar qualities.
- Don’t be afraid to communicate your needs-your mentor is not a mind reader.
- Reach out to your mentors and let them know when you need support and what kind of support will best benefit you:
  - Clarification about expectations
  - Introduction to the culture of the department/lab/profession

Adapted from the online publication “How to Obtain the Mentoring You Need” by the Graduate School of the University of Washington
What can I do to be a better mentee?
(continued)

• Communicate if you need more/less structure and guidance
• Ask for introductions to professional networks
• Ask for feedback about your strengths/areas that can be improved
• Career planning – “how did you do it?”
• Not all mentors are people you have formal “mentor-mentee” agreements with; think of people who have been ready to help with advice and encouragement, or just by being an example for you.

Adapted from the online publication “How to Obtain the Mentoring You Need” by the Graduate School of the University of Washington
• Think “multiple mentors” - the more mentors, the better!
Putting yourself in the path of mentoring

- Get to know your professors, post-docs, program managers, and TA’s
- Go to office hours, department talks, colloquia, etc.
- Be pro-active in scheduling meetings with your mentors
- Show up on time, and be prepared with questions or topics that you want to discuss
- Value the information-take notes
- Be sure to acknowledge your mentor’s contribution of time and energy- say thank you!
Activity

Write down your biggest challenge as a mentor or as a mentee. We’ll pick one and discuss solutions as a group.
Why is mentorship so critical?

“For me it’s important because I needed to understand that academic excellence was expected of me, and that the level at which I perform is a personal standard set by my own expectations of myself. Previously I viewed education as something that was being done to me – now it’s a different relationship: it’s something I am doing for myself.”
## Mentor Assessment: Mentoring Goals & Strategies

<table>
<thead>
<tr>
<th>Goals</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build a productive relationship</td>
<td></td>
</tr>
<tr>
<td>Communicate effectively</td>
<td></td>
</tr>
<tr>
<td>Provide context / background</td>
<td></td>
</tr>
<tr>
<td>Develop skills (lab, tech., etc.)</td>
<td></td>
</tr>
<tr>
<td>Establish appropriate benchmarks</td>
<td></td>
</tr>
<tr>
<td>Foster high-level performance</td>
<td></td>
</tr>
<tr>
<td>Provide effective assessment &amp; feedback</td>
<td></td>
</tr>
<tr>
<td>Addressing obstacles &amp; challenges</td>
<td></td>
</tr>
<tr>
<td>Foster critical thinking &amp; synthesis</td>
<td></td>
</tr>
<tr>
<td>Foster independence</td>
<td></td>
</tr>
<tr>
<td>Introductions to the scientific community</td>
<td></td>
</tr>
<tr>
<td>Assist with career planning</td>
<td></td>
</tr>
</tbody>
</table>

Adapted from "Nature’s Guide for Mentors" (Vol 447 | 14 June 2007)
Setting Concrete Goals:
Mentors and Mentees can participate in creating goals for learning outcomes

- **Outcome**
  - What will the mentee achieve as a result of this project or assignment?

- **Activity**
  - What will the mentee ‘do’ during the project to accomplish the outcome?

- **Evidence/Product**
  - What will result from these activities?

- **Criteria**
  - How will those products be judged?

What can the mentee DO as a result of this work?
DEVELOPING YOUR MENTORING PHILOSOPHY
Your Mentoring Philosophy

What you expect of your mentee

• Scholarly expectations.
• Level of effort.
• Hours and timeliness.
• Products and outcomes.
• Level of independence.

What your mentee should expect of you

• Level of availability.
• Communication plan.
• Level of assistance.
• Areas you will serve as a resource.

What you expect of yourself as a mentor
Example: Mentoring Philosophy

“The primary goal...is for you, the beginning research student, to develop a proficiency in the study of chemistry by investigating as yet unexplored topics and to learn how to produce good scientific results in the process. Emphasis is placed on the development of your independent scientific thought and practice of experimental design, laboratory work, use of the chemical literature, and in professional writing and speaking...”

A. Monte, University of Wisconsin – La Crosss
As printed in the Council on Undergraduate Research Quarterly (Dec. 2001)
Example: Mentoring Philosophy

“You have a right to 1 hour a week of my time (and depending upon the project, you may get much more); it will be your responsibility to make sure that you get the time you need. Be careful to use the time well. You can and should also use me as a source of advice on careers as well as your project...”

P. Heideman, College of William and Mary
As printed in Mentoring: Summary report of a working group from the DISCCRS I Symposium, 2003
Zia Isola, PhD  
CBSE Diversity Programs Director  
isola@soe.ucsc.edu  
(831) 459-1702  
www.cbse.ucsc.edu/diversity/rmi

Malika Bell, MS  
STEM Diversity Programs Director  
malika@ucsc.edu  
831-459-4770  
www.stemdiv.ucsc.edu

Acknowledgements:  
Portions of this presentation are based on content developed by Jessica Brown and William Head, California State University Monterey Bay Undergraduate Research Opportunities Center (UROC) and the mentor-training manual Entering Mentoring: A Seminar to Train a New Generation of Scientists (Jo Handlesman, ed., University of Wisconsin Press, 2009)