Mentoring Students in the Lab

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(with input from past and present workshop mentors)

A confession

What I thought about mentoring and group culture as a new faculty member:
“If I have a clear idea of what I want our culture and my mentoring style to be, I will naturally create that and live it out.”

In reality, what happened was:
Not that.

Good mentoring and healthy lab culture are the product of intentional design, clear communication, and consistency

Goals for this session

Equip you to approach mentoring as an *intentional process*, rather than one that just happens by chance or circumstance by developing strategies to:

- communicate expectations to students
- create an inclusive environment that provides equitable access to knowledge and resources
- engage in difficult conversations
- review student progress and development and provide feedback on performance
- help students explore and communicate career aspirations, and make realistic action plans to facilitate their professional growth
- foster a productive and collegial group culture

High-impact mentoring practices

- Care genuinely about the success of every person you mentor
- Recognize that mentoring is helping each person identify and achieve *their* career goals, not replicate *your* career goals
- Nobody is exactly like you – be aware of “hidden curriculum” and diverse work styles/needs
- Set goals and evaluate progress in a clear and transparent way
- Create clarity around responsibilities and protocols for lab members, e.g. via lab manual and structured feedback/evaluation
- Foster ownership – involve your entire group in decisions about lab culture and report/meeting format

Be systematic

Vision: what are the most important things for you to do as a mentor? what do you value, and what do you want your group to value?

Plan: what is a system you can put in place to achieve your desired outcome? (this is just like designing your teaching!)

Communication: how can you communicate that system to everyone in your group with a high level of clarity?

Action: what are the things that will make it tough to follow through and how can you overcome that?

Be systematic – example

Vision: our group values consistent growth and improvement through candid feedback

Plan: annual feedback exercise consisting of anonymous surveys

Communication: instructions outlined in document in Box folder; discussed by me at group meeting with slides (how to give/receive feedback)

Action: low participation; overcome this by setting aside time that everyone gathers (with snacks!) to fill out surveys

Be systematic – example

Vision: our group values professional development and leadership skills

Plan: 10-20 min professional development presentation by me or group members at every group meeting

Communication: outline this in group policy manual; create document for group members to request topics; make slides available on Box folder

Action: this requires some of my time, but I learn a ton by doing it; can recycle presentations occasionally as new members join; group members sometimes volunteer to present

Your turn!

Vision: what are the most important things for you to do as a mentor? what do you value and what do you want your group to value?

Plan: what is a system you can put in place to achieve your desired outcome? (this is just like designing your teaching!)

Communication: how can you communicate that system to everyone in your group with a high level of clarity?

Action: what are the things that will make it tough to follow through and how can you overcome that?

Sample developmental documents

https://tinyurl.com/y45kmgh5

- **Introduction to the laboratory**
  - Expectation setting/Lab mission statement
- **Plans of work**
  - Focus on course requirements & program milestones
  - Establishes path to degree completion
- **Review of student progress (annual/semester)**
  - Focus on research and professional skills
  - Used to set productivity goals for lab
  - Formative assessment for where student should spend effort on skills development
- **Individual development plans (IDPs)**
  - Career focus
  - Student reflection on what they enjoy and are good at in their work life
  - Fosters discussion on long-term aspirations
  - Used to discuss what it will take to succeed in chosen path
  - Sets action plan for career exploration

Lab entry documents/compacts

- Communicate expectations clearly

- Typical topics for discussion/clarification:
  - Laboratory safety expectations
  - Recordkeeping and data management
  - Data ownership
  - Scholarly expectations
  - Work ethic
  - Collegiality and lab citizenship
  - Time off
  - Research integrity
  - ++What students can expect of you

Nobody should wonder how they are doing

What matters to you?

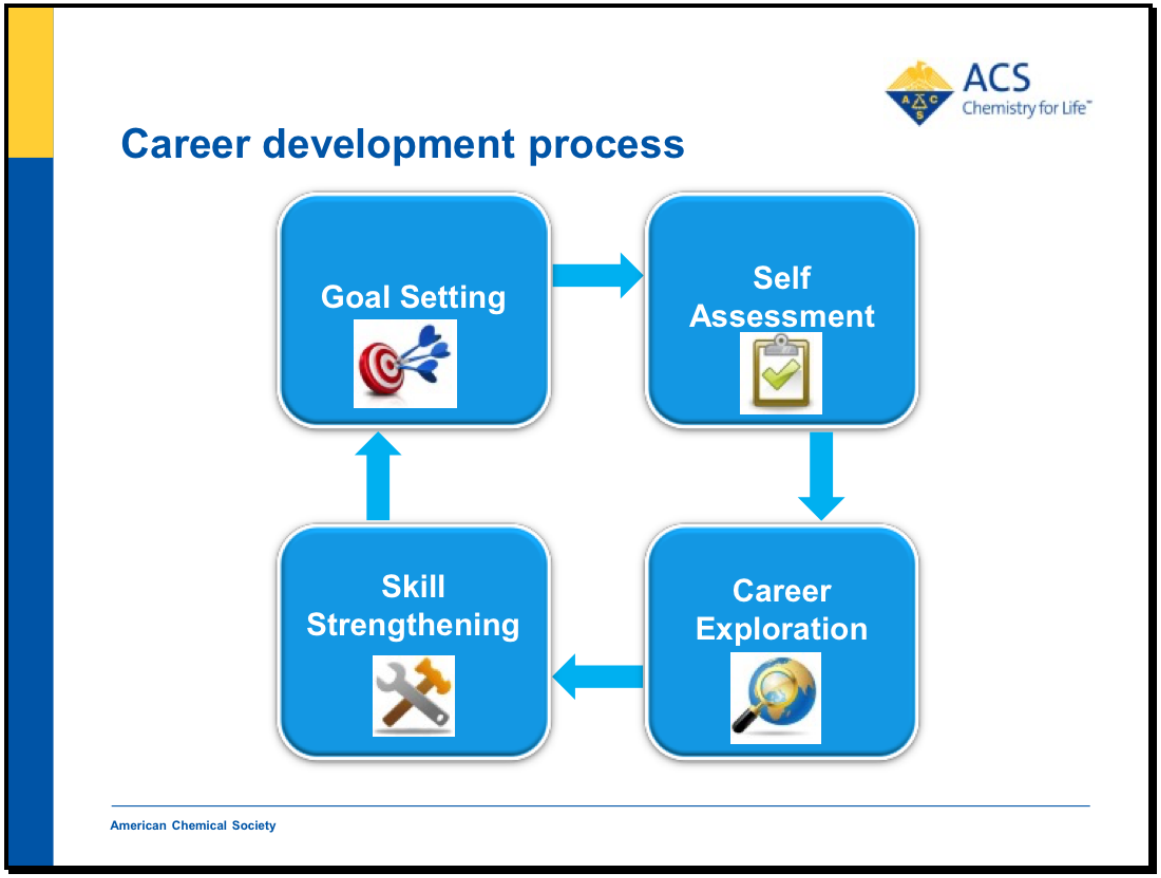
- program milestones
- research goals and progress
- publications and presentations
- professional development and formulation of career plan
- grades (especially for undergraduates)

How can you evaluate and communicate?

- weekly or monthly 1:1 meetings
- annual review or evaluation
- group meetings
- program requirements

The format of reports and meetings should be designed to evaluate all of the things that matter

Individual development plans



sample IDP from New Faculty Workshop website

Case study: The sulky undergraduate

I mentored an undergraduate student who came from another university for the summer. I explained the project to him and taught him some basic techniques and approaches needed for the work. Because my professor and I did not think he had sufficient background for a more complicated project, we chose to have him work on a more basic one. He was very quiet for the first ten days, and then he went to my advisor and complained about the project. He said he wanted a project "like Mark's." Mark was a student with a strong disciplinary background and his project was much more advanced. My advisor insisted that my mentee keep the project I had designed for him, but the student became sulky. As the summer went on and he didn't get much, if any, of his work done, I began to wonder if he understood what we were doing or even cared about it.

Imagine that you are the professor.
What could you have done differently in this situation?

Source: *Entering Mentoring* by Handelsman, *et al.* Pribbenow, Wisconsin Program for Scientific Training

Mentoring undergraduates

- **Everyone** needs to be trained to join a new lab. UGs can be very, very central members of any lab. UGs can also be more creative in many instances than grads/postdocs.

- Intellectual ownership is key to continuing motivation. *UGs should not just be peons who don't get to see the PI.*

- Team roles must be clearly enunciated from the top.

- Work to empower voices from your entire team. Always provide multiple channels for feedback, suggestions, and ideas.

- **Mentoring documents work.** Very clear expectations from the immediate start are very important.

Case study: Explosive personalities

You run a research group with many personalities. One afternoon Carly, a 3rd year graduate student, comes to you visibly upset. James, a 4th year graduate student in your group has referred to her as a “bitch”. You call James into your office, where you clearly express that in your laboratory there is zero tolerance for derogatory statements towards a fellow group member based on gender, race, age or any other stereotype. As the PI you understand that there will be disagreements, but statements like this are inflammatory and are completely unproductive towards settlement of any conflict. James apologizes to you and agrees that the use of this word was in poor taste and further agrees to apologize directly to Carly. He marches into lab, and announces loudly to everyone present (who by now know what is going on) that he was wrong, and he regrets calling a Carly a “bitch”, what he meant to say was that she is an “asshole”. His opinion is that there is no way that could be construed as a gender-biased statement, so he is in the clear.

- *What could the PI have done differently in this situation? (keeping in mind that hindsight is always more clear…)*

- *What actions could/should be taken with respect to James? Will any of these potential actions help to fix the problem? Is there a risk that some of the possible actions might further exacerbate an already bad situation?*

- *Are there ways to diffuse the broader tensions in the lab as a result of this altercation?*

Prioritizing your mentees

Good mentors are available to their mentees and group when needed

1. Plan your time to prioritize your group members and your mentoring. (e.g., before semester starts, block out all group/individual/research meetings)

1. Create a unique communication channel for your group members.
    -Personal contact info (with boundaries)
    -Email priority
    -Slack or other app

2. Enable your group to make plans and organize events (with your review and assent), and then be there when they do.

Case study: Struggling student

I had a very, very smart and capable undergraduate student whose mother died during her freshman year. She kept working hard and was getting straight A's and taking extra classes every semester. Two years later, she stopped showing up regularly to group events, and her class attendance dropped off precipitously. She only infrequently responded to direct email contacts from me and my colleagues and did not respond to communication from her academic students' dean.

What (if anything) should you do?

Mental health crisis in academia

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By Caroline Simon, University of Pennsylvania 2:28 pm EDT May 4, 2017

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How to create a supportive mental health environment in your lab

Faculty can do these 3 things to help their students struggling with mental health issues

by Jen Heemstra

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HEALTH + BEHAVIOR

ENVIRONMENT + CLIMATE

NATION, WORLD + SOCIETY

ARTS + CULTURE

STUDENTS + CAMPUS

Study shows stigma around mental health on campus correlates with students not seeking treatment

UCLA-led research team examined data from the Healthy Minds Study, which surveys campuses across the country

Jessica Wolf | January 23, 2018

Mental health crisis in academia

Degrees and depression

PhD and master's students worldwide report rates of depression and anxiety that are six times higher than those in the general public (T. M. Evans *et al. Nature Biotech.* **36,** 282–284; 2018). The report, based on the responses of 2,279 students in 26 nations, found that more than 40% of respondents had anxiety scores in the moderate to severe range, and that nearly 40% showed signs of moderate to severe depression. The high rates suggested by this study are alarming, says Teresa Evans, a neuroscientist at the University of Texas

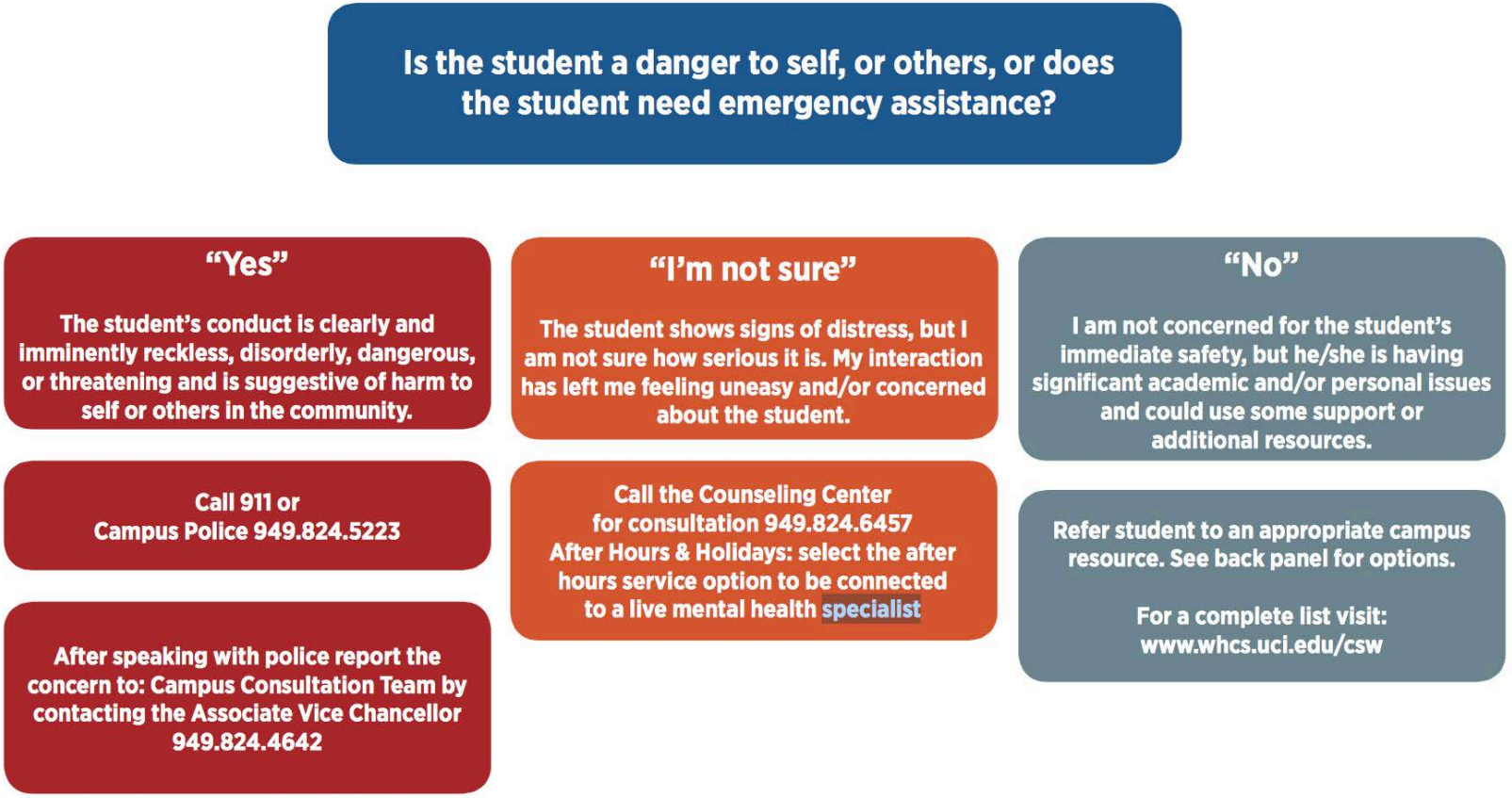
Science **2018**

Take care of yourself

- You can’t be an effective leader and mentor when you are not taking care of yourself
- Sharing your own struggles destigmatizes mental health challenges
- When you devote time to self-care, you give your group members permission to do the same

Resources for students

- “See something/say something/do something”



- Get to know your campus counseling staff (invite to faculty/group meeting)
- Carry relevant numbers/brochures with you
- Be willing to walk/introduce students to key resource people
- Write lab policies that support self-care and mental health

Take away messages

- Past mentoring relationships shape the way you mentor current students.
- Be intentional with your plans and actions and establish clear lines of communication between yourself and your mentees.
- Mentoring documents increase clarity and ensure equitable communication of policies and procedures.
- Leadership and mentoring is an experiment! Talk with your group annually about what you want to change. Try new things and evaluate!
- It's OK to make mistakes. Admit them and learn from them. You will grow as a mentor, just as you do as a scientist.
- Be aware of academic, physical, and psychological indicators of distressed students. Know how to respond and make referrals.