



Importance of student mentoring in the chemical sciences at the community college

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Goal and Objectives

- To foster student success and degree completion
 - Engage students at school
 - Increase retention rates
 - Strengthen faculty workforce
- Create a pool of STEM faculty adequately trained on issues affecting STEM students' success and transfer

What the Guidelines say

- Mentors (8.1)
 - Faculty are well-positioned
 - Maintain communication with employers and four-year institutions.
- Counselors and career advisers (8.2)
 - Be familiar with requirements and needs in chemistry disciplines.
- Faculty members in formal mentoring or advising programs should be compensated or given reassigned time.

- But why does this matter...

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The recommendations in this section haven't really changed. However, the language has been expanded to include chemistry-based technology programs and elaborate on the roles of advisors and mentors.

In the Guidelines, mentors help students build confidence and develop as professionals. Because faculty interact with students frequently, they are well-positioned to serve as mentors. Faculty conducting research have even more one-on-one time with students.

For faculty to be effective mentors, they need to know what professional and academic opportunities exist for students—all the more reason for faculty to stay current in their fields.

In the Guidelines, counselors focus on students' academic needs and advisers focus on career objectives. Both counselors and advisors need to be familiar with the field, both chemistry and allied fields, the academic requirements for those fields, and the career opportunities available.

It is recommended that faculty participating in formal mentoring, counseling, or advising roles be compensated or given release time accordingly. This is to ensure that faculty have sufficient time to fulfill ***all*** of their duties as educators.



Student benefits

- Become more familiar/ comfortable interacting with faculty
- Connect with peers
- Learn about STEM majors and careers
- Develop study skills and work ethics
- Encourage transfer
- Provide a unique academic support network

Meet with a faculty member who has ‘gone through it’

Develop STEM majors and careers awareness

Help students better understand university-level work

Create “studying in STEM” time commitment awareness, as well as proper study habits and techniques

Empower (and facilitate) students to transfer and complete a STEM degree

Have a mentor that has had students like him/her in the past

Share similar stories of success and struggles in school

Become more familiar/ comfortable interacting with faculty



Student challenges

- Financial needs
 - Full-time work, non-eligibility for aid, etc.
 - Family obligations
 - Time management and study skills issues
 - Socially disadvantaged, lack of support at home, etc.
 - Transportation and nutrition issues
 - Lack of role models
 - Many others ...
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STEM mentor vs STEM counselor

- Gives academic and career advice based on first-hand experience
- Understands both challenges and academic/career expectations
- Could write strong letter of recommendation from a STEM faculty perspective
- Can provide networking opportunities within the STEM departments and outside the college

- Gives advice on coursework based on first-hand experience
- Understands the curriculum, and rigorous academic demands
- Could write strong letter of recommendation from a STEM faculty
- Gives first hand experience about research and internships
- Has gone through challenging coursework/sequences in STEM
- May provide networking opportunities within the STEM departments and outside the college
- Knowledge of resources based on first hand experience, such as unique scholarships, etc.
- Can talk about transfer institutions with a STEM academic perspective rather than ... a “popularity” perspective
- First-hand experience of what happens when you transfer
- Positive role model that has gone through the educational system
 - *First-year students often don't know anyone that has gone through it*
- Able to discuss challenges & discriminations that he/she has faced & how he/she got passed it
 - Diversity in STEM (e.g., women and other minorities)
- Gives advice on skills that will benefit the student (e.g., programming, scientific writing, etc.)

- Importance of continuing education in STEM
 - Can talk about the added value of having a long-term goal of a M.S. or Ph.D. degree



Possible mentoring activities

- Group mentoring
 - Individual mentoring at inspiring places
 - Outing at 4-year institutions
 - Outing at STEM related places
 - Cultural and social activities
 - Participation in national and regional conferences
 - Exploring REU sites together, discussing pro's and con's
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Effective strategies

- Build on successful practices in advising and mentoring activities – do not reinvent the wheel
- Foster true collaboration among stakeholders
 - Faculty, counselors, high schools, four-year institutions, industry employers
- Provide faculty mentors with institutional support
 - Campus resources, contacts, referrals, training
- Pair students with appropriate faculty
- Others?

- Build on successful practices in advising and mentoring activities – do not reinvent the wheel
- Collaborate with faculty, counselors, high schools, four-year institutions and industry employers
- Be present when mentoring the students
- Pair students with faculty in the same field as that of interest to the student
- Ensure faculty mentors have institutional support (campus resources, contacts and referrals as needed)
- Remember not everyone can be a mentor
 - Adequate training and sensibility may be required
- Never put the student on your “shoes” nor viceversa
- Others?



Student perceptions

- “My mentor was extremely helpful to me in a time of need, when it came down to my education. He guided and supported me.”
- “[My mentor] put me in contact with people already in the field I want to work in.”
- “[The STEM Mentor Program] gave me the opportunity to network with someone who already has experience and skills essential to getting into a STEM-related field.”
- “My adviser is pretty much living proof that if she can achieve a career in the STEM field, then so can I.”
- “ [My mentor]...didn’t let me give up.”



Resources

- National Research Mentoring Network
 - Sponsored by NIH
 - Nrmnet.net
- SACNAS
 - <http://sacnas.org/get-involved/mentoring/resources>
- Great Minds in STEM
 - <http://www.greatmindsinstem.org>
 - Mentornet.org (Mentor program)