Mentorship Program for Aspiring Chemistry Teachers (MPACT)
Spring 2020 Application for Graduate Students and Postdocs

Due Date: Friday January 17, 2020 (application is on pp. 5-6)
Please Return To: Doreen Leopold, Mailbox B-1, Smith 211 (dleopold@umn.edu, 6-2047)

Next semester, the Chemistry Department will continue its Mentorship Program for Aspiring Chemistry Teachers (MPACT, pronounced "empact"), to provide some additional teaching experience and guidance for graduate students and postdocs interested in an academic career at the college or university level. This is a volunteer activity for both the mentor and the mentee. Sixty-five postdocs and 70 graduate students have participated during Fall 2009 - Fall 2019, each working with one faculty mentor for one semester (and 12 mentees have participated at least twice). See page 4 for selected end-of-semester program evaluations by some of the mentees. A list of previous MPACT participants is available on our Department website:

http://mpact.chem.umn.edu/

A sign-up sheet for prospective mentees for Spring 2020 is provided on pp. 5-6 below. If there are more applicants than there are faculty mentors, then upon consultation with each mentor, we will make a selection among applicants who requested that mentor and are good fits for the class, with preference given to Chemistry Department postdocs and senior graduate students participating in the program for the first time.

The time commitment for the mentee is expected to be (not more than) 5 hours/week, averaged over the semester. Since this is a significant commitment, we ask that each applicant obtain the research advisor's permission to participate (see signature line on p. 5).

The 11 faculty members listed on the next two pages have volunteered as MPACT mentors during Spring 2020. They are teaching a variety of undergraduate classes, including general chemistry (Chem 1061, 1062), organic (2301, 2302) in our department and at nearby Hamline and Augsburg colleges, green chemistry (4601), and graduate courses in physical chemistry (4021/8021 and 8564). Each mentee will work with one mentor and that person's class. Most mentors plan to meet regularly with their mentees, and to give the mentee the opportunity to present (approximately) two lectures during the semester, with the mentor observing to provide feedback. Mentees for lecture classes in general chemistry or organic chemistry will often choose to lead a weekly "ChemFoundations" section (or a similar problem-solving and discussion section) for students in their mentor's class who wish to participate. This regular involvement with the class also gives the mentor and mentee topics to discuss during their meetings throughout the semester. Additional activities suggested by some of the mentors are noted on the following pages.

The MPACT group as a whole will also meet about four times during the semester, to share experiences, discuss articles on chemistry pedagogy, and eat (typically toasted bagels and cream cheese, with gluten-free and dairy-free alternatives).
Chemistry Faculty Mentor Volunteers and Classes for Spring 2020

All email addresses are xxxx@umn.edu except as noted

General Chemistry:

Chem 1061 Chemical Principles I  Janie Salmon (djsalmon@) MWF 8:00-8:50 AM, Smith 100
Possible additional mentee activities (if they are interested): Writing exam questions, incorporating additional active learning techniques such as small group problem solving, doing clicker questions, demonstrations, incorporating a research presentation of theirs, learning how to use Proctorio (our online exam platform).

Chem 1061 Chem Principles I  Ken Leopold (kleopold@) T Th 9:45 - 11:00, Smith 100

Chem 1061 Chem Principles I  Doreen Leopold (dleopold@) MWF 12:20-1:10 or 2:30-3:20, Smith 100
Possible additional mentee activities: in ChemFoundations meetings, encourage students to do some quantitative problems without a calculator and to estimate.

Chem 1062 Chem Principles II (hybrid)  Michelle Driessen (mdd@) T or Th 09:45-11:00, Bruininks 114

Chem 1062 Chem Principles II  Wayne Gladfelter (wlg@) T Th 1:00 - 2:15, Smith 100

Organic Chemistry:

Chem 2301 Organic Chem I  Janie Salmon (djsalmon@) MWF 9:05-9:55 or 10:10-11:00, Bruininks 230
Possible additional mentee activities (if they are interested): Writing exam questions, incorporating additional active learning techniques such as small group problem solving, doing clicker questions, demonstrations, incorporating a research presentation of theirs, learning how to use Gradescope (our online grading software).

Chem 2302 Organic Chem II  Steve Kass (kass@) Wed. 6:00 - 9:00 PM, Smith 100
Prefer a mentee with excellent spoken English, and some experience with Organic Chem I or II as a TA or ChemFoundations leader.

Hamline:  
Chem 3460 Organic Chem II  Rita Majerle (rmajerle01@gw.hamline.edu (651) 523-2765)  
MWF 9:10 - 10:10  
Possible additional mentee activities: attend as many class meetings as possible, do at least two presentations, contribute to tests and worksheets. hold study sessions for tests.

Augsburg:  
Chem 252 Organic Chem 2  Michael Wentzel (wentzelm@augsburg.edu (612) 330-1129)  
MWF 12:30-1:40

Green Chemistry:

Chem 4601 Green Chemistry  Jane Wissinger (jwiss@) MW 2:30-3:45, Bruininks 420B
**Physical Chemistry:**

* Chem 4021/8021  *Computational Chem Laura Gagliardi* (gagliard@) 9:05 - 9:55 MWF, Kolthoff 140
  * a mentee for this class has already been selected, so this spot is not available

Chem 8564  *Laser Spectroscopy Renee Frontiera* 11:15 - 12:30 MF, Kolthoff 283 (7 week course
meeting during the second half of the semester)

* Prefer a mentee who has either taken Laser Spec or has significant background knowledge in the subject, and can attend all or most class meetings.*
Selected End-of-Semester *MPACT* Evaluations by Mentees, Fall 2009 - Fall 2011

**On giving guest lectures:**
"The mentor's feedback was very useful to help me realize easy ways that I can improve my teaching."
"Yes, this was, in my opinion, the most beneficial aspect of the program. I always prefer to “learn by doing,” and [my mentor] provided detailed feedback with concrete suggestions for improvement. Multiple students also accepted my invitation to provide me with critiques, which were also useful."
"I learned to prepare a chalk talk, which is completely different from a PowerPoint presentation."
"It also gave me insight into the larger classes taught here and how there still is room for teaching at a research institution."
"It was good to realize a large hall can still be an interactive learning environment. It also gave me a feel for the teaching environment at a large school."
"The experience of preparing and giving a lecture was very helpful in giving me confidence to approach larger classes later in my career."
"I have a much better feel for what it's like to teach a class - particularly at a large university. The section I lectured for had 260 students in it. I'm sure this will also be beneficial in my job search."
"It gave me a better idea of what it is like to lecture in front of large groups and the time and depth of preparation that is needed to give a 50 min. lecture."

**On leading a ChemFoundations section:** (These are small, weekly problem-solving sessions.)
"It was often the highlight of my week...It was very informal and I really felt like I was helping the students."
"One-on-one interactions were helpful to illustrate whether or not I was explaining things well."
"I can observe students more closely so I can know how good the communication is."

**On group discussions:**
"The topic I found most helpful was our discussion of finding balance between career and family in an academic position at a large university. Coming in to the meeting, I didn't think such a balance was possible, but I'm convinced now that it is possible. I think what helped me the most was to hear other professors who have kids talk about their lifestyle and how they make time for family."

**Other mentee comments:**
"It was interesting to actually develop new laboratory experiments."
"Not being able to answer a question or making a mistake is something that always used to fluster me...but it was great to be reminded that this is a normal part of the teaching process and that there are always ways to turn such events into positive learning experiences both for the teacher and for the students."
"I just want to let you know that I have accepted the offer from the University of... I have to say one of the most important things for me was the MPACT experience. For all six interviews, I was asked about this MPACT program constantly by search committee members and other faculty, and I think it really played a very important role when I described my teaching experience." (from a former MPACT participant)

**Future letters of recommendation:**
In general, at the end of each semester, the mentees anticipated that they would request letters of recommendation from their mentors for job searches, and the mentors felt prepared to provide good letters.
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*Mentorship Program for Aspiring Chemistry Teachers (MPACT)*  
Spring 2020

Due date:     Friday January 17, 2020 (4 PM)
Please return to:   Doreen Leopold, Mailbox B-1, Smith 211 (dleopold@umn.edu, 6-2047)

Name of applicant             _______________________________    e-mail   _________________
Name of research advisor(s)       ___________________________________________
Signature(s) of advisor(s) indicating approval of applicant's MPACT participation:

___________________________________________  

(If there are two research advisors, then both signatures are required.  
If your advisor(s) is/are out of town, please ask them to send Doreen an e-mail in place of a signature..)

Are you a graduate student ?          YES     NO  
If yes, what year are you in, as of Spring 2020 ?  2\textsuperscript{nd}  3\textsuperscript{rd}  4\textsuperscript{th}  5\textsuperscript{th}    Other __________
Are you a postdoctoral associate ?    YES     NO
Will you be a TA during Spring 2020? If yes, is this 25% or 50%? ____  What course?  __________

Do you plan to pursue a faculty position at a college or university?       YES     NO    MAYBE

Please write a few sentences concerning your career plans.

Please write a few sentences describing why you are interested in participating in this program.

(The mentee application form continues on the next page.)
Spring 2020 MPACT Application for Grad Students and Postdocs (continued)

Please indicate your choices of classes and faculty mentors from the list on pp. 2-3, in order of preference, with #1 as your first choice.

For each choice, please indicate:

a) Have you previously been a TA for this course, and if so, during which semester(s)?
   If you have TA'd for an equivalent course, please describe the course and location.
   If "no" and you are a grad student, please list the courses that you have TA'd for here at the U.

b) Will you be able attend some lectures (or labs) for this class (see class times noted on pp. 2-3)?
   Some mentors may ask the mentee to attend occasional lectures, to assist in active learning activities, demos, prepare for their own lectures, etc.; others may request that the mentee attend most of the lectures.

c) For general chemistry and organic classes: Will you be available to lead a ChemFoundations (once-a-week discussion and problem solving) section of up to about 40 students?

Choice #1  Faculty Mentor: _______________________  Course: CHEM _________

   a) 
   b) 
   c) 

Choice #2  Faculty Mentor: _______________________  Course: CHEM _________

   a) 
   b) 
   c) 

Choice #3  Faculty Mentor: _______________________  Course: CHEM _________

   a) 
   b) 
   c)