

## Assessment Handout

UMD goals in *italics*.

### *1. Knowledge and Scholarly Formation*

#### **1. Demonstrate knowledge of core disciplines and specialization in a field of concentration**

1A. Graduates will demonstrate proficiency in one core specialization discipline of choice (Analytical/Environmental Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, or Physical/Computational Chemistry) [percent students with GPA above 3.0 and above 3.5 at coursework completion in their area of specialization as defined in the student's degree program]

1B. Graduates will be able to demonstrate proficiency in the broader field of chemistry outside of their area of specialization. [percent students with overall GPA above 3.0 and above 3.5 at coursework completion]

1C. Students will be able to critically read and apply scientific information. [research proposal, Graduate Seminar, thesis by anonymized questionnaires by the committee]

### *2. Research and Methodological Skills Relevant to Field*

#### **2. Students will demonstrate proficiency in the design and practice of research.**

2A. Students will demonstrate proficiency in the design of research, using appropriate methodology and experimental techniques to address a question or set of questions in chemistry [anonymized questionnaires by the committee]

2B. Students will complete an original research project and write an original thesis approved by their committee. [anonymized questionnaires by the committee]

### *3. Communication Skills*

#### **3. Students will demonstrate proficiency in scientific oral and written communication.**

3A. Students will effectively communicate their research orally. [short questionnaire at 2nd year seminar and thesis defense filled out by the thesis committee]

3B. Students will effectively communicate their research in written form. [short questionnaire about the thesis filled out by the thesis committee]

3C. Students will demonstrate effective communication of scientific concepts to non-specialists. [short evaluation at 2nd year seminar filled out by audience, and/or TA evaluations]

#### *4. Leadership and Collaborative Skills*

**4. Students will demonstrate proficiency in leading a project, working collaboratively, and taking initiative in the laboratory.**

4A. Students will demonstrate proficiency in project planning and goal-setting. [project proposal evaluated by thesis committee, progress reports evaluated by advisor]

4B. Students will have demonstrated individual initiative sufficient for successful completion of research project. [thesis defense evaluated by thesis committee short anonymized questionnaire]

4C. Students will demonstrate proficiency in carrying out original research working with a mentor and mentoring other students in research. [thesis committee will complete a short anonymized questionnaire]

#### *5. Cultural Competence and Global Context Formation of the Field*

**5. Students will be competent in cultural and international aspects of research.**

5A. Students will demonstrate knowledge of cultural competence [completion of the two-part research ethics workshop that includes diversity and inclusion; short written examination at the end of the workshop]

5B. Students will have used international research as reference for their thesis project [committee will complete a short, anonymized questionnaire]