

Materials Provided to Faculty Candidates & Evaluation Rubrics for Tenure Track Positions

James Madison University, Department of Chemistry and Biochemistry, Fall 2021

Link to website: <http://www.jmu.edu/chemistry/jobs>

Link to narrative about the search: [ChemRxiv Link](#)

1. Rubric used to evaluate candidate cover letters.

Rubrics were not provided to candidates during the 2021 search; they will be refined and provided to candidates during future searches.

	3 (acceptable)	1 (limited)	0 (not addressed)
DEI knowledge	Shows knowledge of DEI issues, some understanding of the challenges faced by underrepresented individuals, acknowledges the importance of DEI.	Only defines diversity in a single dimension; does not look at diversity broadly (nationalities, race, ethnicity, gender, ableism, etc.).	No knowledge or awareness about DEI issues concerning gender, ethnicity, race, sexual orientation, disabilities, or cultural differences.
DEI commitment	Demonstrates strong interest in contributing to promoting DEI in teaching, research, or service; describes promoting DEI as a core value.	Vaguely states commitment without providing specifics.	Not addressed or does not feel personal responsibility for helping to create an equitable and inclusive environment.
DEI experience	Strong commitment through past participation.	Minimal evidence of past participation.	Did not discuss any prior work in DEI.
Undergraduate commitment	Talks specifically about working with undergraduates.	References undergraduates in vague ways.	Discusses graduate students; does not mention undergraduates.
Research interests	Clearly articulates a question in the chemical sciences they seek to answer.	Partially defines a question in the chemical sciences they seek to answer.	Does not discuss future research interests.
Past accomplishments	Describes their prior research accomplishments, provides a broader context for their research, or discusses implications for their research.	Generically describes former research.	Does not mention prior research.
Undergraduate role	Provides a plan for how undergraduates will be included in research.	Vague statement of undergraduate involvement in research.	Discusses graduate research; does not mention undergraduates.

If candidates did not address **their commitment to contributing to an equitable and inclusive environment**, they were not invited to submit materials for further review.

2. Instructions on submitting an anonymized research and teaching & diversity statements.

These instructions were sent to candidates who were successful during the first round of review.

The JMU Chemistry & Biochemistry search committee reviewed your preliminary application and we want to know more! We would like you to submit teaching and research statements for further consideration.

For the first round of review, we used a blinded application process to mitigate unconscious biases that might compromise a fair assessment of the strengths of your application. Non-anonymous information was administratively separated before documents were seen by the search committee.

We will continue to use a blinded application process for this round of review. We ask you to submit **anonymized** statements. To be clear, “anonymized” does not mean that you obscure the specific content of your work and plans. Rather, **you omit your name, research mentors’ names, institution names, and journal names so that the search committee can focus on the merit of your application.** Examples are provided in the attachments. During this round, the committee will only review the two statements that you provide.

We have attached guidelines to help you prepare teaching and research statements that align with our search criteria and our Diversity Statement.

- Your statements should be sent to [search email] with the subject line “*Research and teaching statements for the tenure track position.*”
- Research and teaching statements should be submitted as separate files in a single email. Your research statement should include the word ‘research’ in the filename; your teaching statement should include the word ‘teaching’ in the filename.
- Only your email should contain identifying information. All identifying information should be removed from your teaching and research statements.
- Materials should be submitted by [date]. If you need additional time, contact me at your earliest convenience.

ANONYMIZED TEACHING AND DIVERSITY STATEMENT

Tenure track faculty at JMU teach lower division classes of 100-200 people with students from diverse majors. They also teach upper division courses and electives of 3-60 students. All tenure track faculty are involved in laboratory instruction through both formal lab courses and undergraduate research labs. Your statement should address these learning environments. A list of existing course offerings can be found here: <https://bit.ly/3AQPQbk>. **Please describe the equitable and inclusive learning environment that you will create for a diverse group of JMU undergraduates in the classroom, in your research program, and in other learning spaces.**

Your statement should be no longer than 1,200 words, excluding references. Your filename should include the word ‘research’. **Omit your name, mentors’ names, institution names, and journal names so that the search committee can focus on the merit of your application.**

The search committee will evaluate your statement along these dimensions.

- How well does the candidate describe how they will create an equitable learning environment? How well does the candidate make use of their prior experiences and personal attributes to meet this goal? *To maintain anonymity, do not include names of people involved in these experiences or institutions where you had these experiences or training.*
- What goals does the candidate have for their students? How well does the candidate define and measure student success?
- How well does the candidate demonstrate a knowledge and awareness of Diversity, Equity, and Inclusion (DEI) issues in higher education? How well does the candidate describe a plan to promote DEI as a JMU faculty member through their teaching, research, and service?

- How well does the candidate discuss approaches to effectively engage students? To what extent does the candidate consider the impact of these approaches on learners with different backgrounds, expectations, and needs?
- How does the candidate plan to continually develop as a teacher?

You should write your **anonymized** statement like this.

- As a graduate student, I was a guest lecturer in General Chemistry II, where I implemented Peer-Led Team Learning techniques that I learned through a professional development program.

You should **avoid writing** your statement like this non-anonymized statement.

- As a participant in the University of Harrisonburg workshop called *How to be an Amazing Teacher*, I learned about Peer-Led Team Learning, which I used when I was a guest lecturer in General Chemistry II for *Professor Nobel Laureate at Number One University*.

ANONYMIZED STATEMENT OF FUTURE RESEARCH PLANS

Our department has a vibrant undergraduate research culture and over the past 5 years has published an average of 17 peer-reviewed publications/year and has secured ~\$1.2M/year in new external funding. You will be expected to recruit, train, and retain a diverse group of undergraduate researchers. **Please describe your goals and vision for your future research program in this environment of JMU.** In your statement, we want you to focus on a single research direction you plan to initiate at JMU.

Your statement should be no longer than 1,200 words, excluding references. Figures are encouraged. Your filename should include the word 'research'. **Omit your name, mentors' names, institution names, and journal names so that the search committee can focus on the merit of your application.**

The search committee will evaluate your statement along these dimensions.

- How well has the candidate identified and defined a specific research direction? Does this direction demonstrate independence? How well are the broader impacts of the research articulated? How strong is the plan to bring projects to publication prior to tenure? *Candidates should include a realistic timeline for their research plan.*
- How developed is the candidate's plan to recruit, train, and retain undergraduates in their research lab?
- How will the candidate use the major instrumentation and facilities currently available at JMU? If resources are not available, how strong is the candidate's plan to utilize start-up funds or collaborations to obtain or access the resources needed? *A list of departmental instrumentation can be found here: <https://www.jmu.edu/chemistry/instrumentation.shtml>*
- How strong is the candidate's plan to obtain funding to sustain an undergraduate research program?
- What past experiences and qualifications does the candidate have that make them well-suited to achieve their research goals?

You should write your **anonymized** statements like this.

- "As a postdoc I designed and synthesized a new material that is infinitely recyclable [*what you did*]. This material will eliminate plastic waste [*important finding*]. I was the first author on this study and wrote the manuscript [*your contributions*]. Reference: "Whiz-bang material to eliminate plastic waste" [*article title*], 2020.

You should **avoid writing** your statements like this non-anonymized statement.

- As the Curie Research Fellow in Professor Marie's lab at University of Harrisonburg, I designed and synthesized a new material that is infinitely recyclable [*what you did*]. This material will eliminate plastic waste [*important finding*]. Reference: J. Madison, C. Marie, et al. "Whiz-bang material to eliminate plastic waste", *Science*, 2020.

JMU Department of Chemistry and Biochemistry Diversity Statement

Diversity, equity, and inclusion are important to our department. You've made it to this stage in the application process because you've indicated that this is also important to you. Since we've asked you to share your values with us, we'd like to share our values with you.

The Chemistry and Biochemistry Department is committed to an inclusive environment that celebrates the diversity of its community. We view our opportunity to teach, serve, and interact with many, varied individuals to be a privilege. We will strive to reach, support, and show respect to every person and we expect our community will do the same. We affirm that the lives and experiences of Black, Indigenous, and People of Color matter, and that we as a community, and as individuals, have a moral obligation to acknowledge, condemn and change hurtful behaviors and structures. We pledge to uphold these values through action, active listening, and accountability to our BIPOC community.

You can learn more about the Department's commitment towards inclusivity, diversity, equity, and antiracism in our [5-year plan](#).

3. Rubric used to evaluate anonymized research statements.

Rubrics were not provided to candidates during the 2021 search; they will be refined and provided to candidates during future searches.

PRIMARY CRITERIA	4-3	2	1-0
Project definition	Research questions are clearly articulated and grounded in prior research. Addresses a timely problem in the chemical sciences (molecular level science).	Research questions are present but vague.	Research direction is vague. Questionable direction for the chemical sciences.
Experimental plan	Initial experiments to achieve the research goal are logical and clearly described. (Plans for day 1 at JMU.) Statement addresses potential roadblocks and proposes alternative plans.	A few details are missing or unclear, but generally a solid plan.	Unclear or illogical.
Broader impact	Clearly articulates the importance of the larger problem; sets it in a broader context.	Some context is provided; too vague or general	Trivial or problem is not set in context.
Timeline	Estimates are provided for experimental milestones and publications. These are aligned with pre-tenure publication expectations.	Timeline is vague but seems reasonable.	No timeline is provided. Overly ambitious or unambitious.
Undergraduate involvement	Candidate provides details of activities done by undergraduate researchers and how they will accommodate different levels of students. Discusses how they will promote an environment to recruit and retain students.	Some information about undergraduate participation and retention is provided.	Vague examples of how undergraduates would participate in research or other activities that would retain students.
Feasibility at JMU	Reasonable in scope. Proposal describes how instrumentation resources are available at JMU or provides a mechanism to access routinely needed instrumentation.	Likely feasible, but candidate has not thought through how they will access routinely needed instrumentation.	Resources are not available at JMU. There is no plan to access routinely needed equipment.
Departmental needs	Research program is in [areas of need].	Research program touches on [areas of need].	Research program is outside of [areas of need].
SECONDARY CRITERIA		2	0
Funding plans		Has identified appropriate funding sources for their research plan.	Not identified.

4. Rubric used to evaluate anonymized teaching and diversity statements

	4-3	2	1-0
Equitable learning / DEI plans	Clear and detailed plans for making learning environments more equitable; detailed plans for advancing DEI.	Some ideas about promoting equity in the classroom but lacks a knowledge base, interest, or details; some ideas about advancing DEI but not much detail.	Does not present a plan to create a more equitable learning environment. (Give a 0.)
DEI awareness	Clear and deep understanding of dimensions of DEI in higher education.	Some evidence of awareness but does not demonstrate significant knowledge base or deep interest.	Little to no evidence of awareness of DEI issues in higher education or their field.
Student success	Candidate describes concrete goals for their students. They identify what student success looks like and have concrete plans to achieve their goals. Has appropriate goals for different populations of students (e.g. ISCI vs. Quantum, i.e. they meet the students where they are).	Provides generic goals for students, e.g. students will learn and do well on tests.	Learning goals described for students are vague or are framed solely in instructor-centered terms.
Student engagement	Provides specific examples of how they will engage students in different teaching environments.	Provides specific examples of how they will engage students in limited learning environments (e.g. just classroom or just research lab).	Provides generic or no examples of how they plan to effectively engage students.
Prior experience	Brings in concrete examples of prior teaching and reflects on the implications for future teaching. (Teaching experiences should be broadly defined.)	Discusses specific examples from prior teaching experiences.	Mentions prior teaching experiences but is vague and does not connect prior experiences to future plans.
Development plan	Has a concrete plan to stay up to date or improve their teaching practice.	Has a vague plan or has expressed generic ideas like 'the need to stay current.'	Does not discuss their development as a teacher.
Departmental Needs	Content expert and can teach in [areas of need].	Can teach it if they have too; content knowledgeable or has experience in [areas of need].	Teaching interests are outside of [areas of need].

5. Phone interview questions provided to candidates.

1. Why did you apply to JMU? What is attractive about our environment?

JMU Chemistry and Biochemistry is a unique environment. We are not an R1 graduate program, nor are we a small, undergraduate only liberal arts college. We are a research-intensive BS-level program at a large institution. JMU is moving to R2 status, but our department is committed to undergraduate education.

- Learn more about the JMU experience <https://www.jmu.edu/humanresources/recruitment/recruiting/applicant/index.shtml>

2. One of our challenges in our General Chemistry program is that our students come in with different levels of preparation. Every semester, we work with underprepared students. How would you support these students in your General Chemistry class?

At JMU, all STEM majors and most pre-professional health majors take CHEM 131 & CHEM 132 (General Chemistry I & II). While a few very well-prepared students take an accelerated version of this course, most students enroll in a section of 120-150 students. We support students through drop in hours with faculty, Peer-Assisted Study Sessions (PASS), and tutoring through the Science & Math Learning Center and in-house free tutors.

3. Which classes (lectures and labs) would you be most interested in teaching? With support, which other courses could you teach? How will you create an inclusive environment in a large-enrollment course?

We have teaching needs in analytical chemistry, inorganic chemistry, and our service courses (Concepts of Chemistry, General Chemistry, Organic Chemistry, Biochemistry, and ISCI). Most faculty teach at least one large-enrollment course. A list of courses taught by faculty in our department can be found here <https://bit.ly/3AQPQbk>

Here are the typical class sizes for our lecture courses.

- *Concepts of Chemistry, General Chemistry I & II: 120-160 students*
- *Organic Chemistry I & II, Biochemistry: 80-120 students*
- *ISCI 101 - Physics, Chemistry, and the Human Experience (General Education): 40-60 students*
- *Analytical Chemistry, Instrumental Analysis, Inorganic Chemistry I, Physical Chemistry I, Literature & Seminar I & II: 30-60 students*
- *Biochemistry II, Inorganic Chemistry II, Physical Chemistry II, Biophysical Chemistry, electives: 5-25 students*

4. What instrumentation, equipment, and safety needs will you have when you arrive at JMU and during your pre-tenure period? What collaborations will you have or need to establish?

We are interested in learning what you will need to be successful at JMU. A list of our existing instrumentation, equipment and facilities can be found here: <https://docs.google.com/document/d/10AfYEhOk4XCyuX9of7rVmyvPd7EKZhmT/edit>

Which existing instrumentation and equipment will you use? What else will you need to purchase with start-up funds? What external facilities will you need to access? What instrumentation do you hope to obtain later through competitive grants? What hazards (chemical, biological, mechanical, etc.) are involved with your research and how will you minimize potential risks? Do you expect to collaborate with other JMU faculty either in the department or another academic unit? Do you have plans to work with external collaborators?

5. What are your long term professional goals? How do you see your career ten years from now?¹

Our department is committed to supporting the development of faculty as teachers-scholars. We have extensive professional development opportunities on campus through our Center for Faculty Innovation (CFI) <https://www.jmu.edu/cfi/index.shtml>. The department encourages faculty to be active in professional societies and attend meetings in their field.

6. How will you benefit from being a part of a cohort hire? What will you bring to the cohort?

The Department of Chemistry and Biochemistry is hiring a cohort of faculty that we hope will develop together, support each other, and support the department's mission to improve diversity, equity, and inclusion in our program. We'd like you to reflect on how being part of a cohort could impact your teaching, scholarship, and overall professional development.

7. Do you have any questions for us?

Feel free to ask us anything.

¹ One of our candidates pointed out that this question was ageist; it was discriminatory to chemists who may be closer to retirement. This language should be refined to be less biased.

7. Seminar guidelines provided to candidates.

Day 1: Research Seminar

You will give your presentation in a conference style room. There will be a podium computer and screen. We would prefer to use the JMU computer (PC) so we can Zoom broadcast to students and faculty who cannot attend your seminar in person. If you have any accessibility needs, please let us know so that we can accommodate you.

You will give a ~45 minute seminar on your prior research. This talk will be followed by a 10-15 minute question and answer session with students, faculty, and staff. A student who has completed a semester of organic chemistry should be able to understand a significant portion of your talk. You may need additional slides to support students to go from their knowledge of general and organic chemistry to the level of your research. We will use your talk to further evaluate your teaching and mentoring of undergraduates and your commitment to a diverse and inclusive learning environment.

Day 2: Research Proposal Presentation

On the second day of your interview, we have set aside 45 minutes for you to discuss your proposed research plans if you were to start as a tenure track professor at JMU. You will give this talk in the chemistry building, but your presentation will be over Zoom. A member of the JMU faculty will be present to help with technical issues. Again, we request that you give your seminar on the JMU computer and please let us know about any accessibility needs.

This is a 'nuts and bolts' talk where you will pitch your proposed research to the instructional and professional faculty. This is an informal presentation where you should expect interruptions and questions. These are the areas that the faculty hope your presentation will address. Any of these questions might be asked.

Research Plan

- What is the candidate's proposed primary research project?
- What is the intellectual merit of the proposed primary research project?
- What are the broader impacts of the research? *The candidate should address both ongoing research and other research groups in the field.*
- What other projects would the candidate like to begin during their pre-tenure period?
- What experience does the candidate have in this research area?
- How is this research similar to or different from the candidate's prior research?

Resources

- What existing instrumentation will be used? What instrumentation will need to be purchased? What instrumentation will be accessed through collaboration?

- What experiments will be done through collaboration? With whom? What are the anticipated contributions of the candidate and the collaborator?
- What are the candidate's start up costs? *Please provide a budget.*

Timeline and Dissemination

- What is the timeline to bring projects to publication prior to tenure? *Candidates should include a realistic timeline for their research plan.*
- In which journals does the candidate anticipate publishing their work?

Sustainability

- From where will the candidate obtain funding to sustain their undergraduate research program? *The candidate should identify funding agencies and specific programs.*
- What are anticipated roadblocks in the research proposal? What plans does the candidate have for unexpected setbacks, e.g. the proposed research doesn't work?

Undergraduate Involvement (training, recruitment, safety)

- How will the candidate pitch this problem to potential undergraduate researchers?
- What experiences will undergraduate researchers need to join the lab? How long will it take to get undergraduate researchers up to speed?
- How will the candidate recruit, train, and retain undergraduates in their research lab?
- What will students do on a day-to-day basis? What time commitments will be required by students? How will research efforts be distributed over the academic year and summer?
- How will the candidate promote a culture of safety?