

Faculty of Science Guidelines for Faculty Searches

(revised September 2, 2020)

1. After the Dean has notified a Department Head that a search for a position has been approved, the Head will convene a meeting of faculty members to recommend on the priorities of the search (clause 18.B.2.1 of UMFA contract). Please note that tenure-track searches that do not close their application periods by January 10 will be held over to the next year, barring extraordinary circumstances (See below), so Heads and departments should act expeditiously on any positions approved.
2. The Head will prepare a Request-to-Fill form and submit it to the Faculty HR Officer for review by the Dean. If a joint or cross-department search has been approved, a single Request-to-Fill will be submitted by the two Heads. It is important that all questions in the Request-to-Fill be answered in full and an example of a properly completed form is attached as Appendix 1.
3. A Search Committee will be established as specified in clause 18.B.2.2 of the UMFA contract. The academic staff members with faculty rank of the department meeting in committee will select five (5) persons to recommend to the Dean from which the Dean will select 3 to serve on the committee. The Departments should look to achieve diversity in their elected search committee members whenever possible.
4. The Dean will issue a memo to academic faculty members describing the composition of the Search Committee including the Chair, which normally will be the department Head.
5. At its first meeting the Search Committee will first view and discuss the video on bias training located here <http://www.chairs-chaires.gc.ca/program-programme/equity-equite/bias/module-eng.aspx?pedisable=false>. The Search committee will then finalize the advertisement for the position for review by the Dean's Office, will determine where the position will be posted, and will review confidentiality and conflict of interest policies. The Search Chair should assure that protocol, confidentiality and all policy related aspects of the hiring process are discussed at the beginning of the first meeting of the committee, and as needed they should schedule a representative from Human Resources or the Provost's Office to come to the first meeting for this purpose.

Please pay close attention to the following points:

- (a) The draft advertisement, prepared by the Chair, must use the appropriate template provided by the Faculty of Science. Once the committee has finalized the draft for the position, the Chair will transmit it to the Dean for review and approval, and the Dean will forward it to Human Resources for final approval.
- (b) Changes to the template will have to be justified by a strong argument to the Dean. It is the intent to attract a large and diverse pool of candidates of high caliber consistent with the strategic goals of the Department and Faculty. Only the very best candidates will be chosen

for interview and the wording provides the basis upon which to select the best. Searches within a single narrow disciplinary boundary will have to be particularly well justified to the Dean and may not be approved. Over time, this approach will lead to a strong faculty that builds the strategic goals of the department and faculty. The templates will also assure that if and when the top candidate is an international candidate, it will be possible to hire that individual.

(c) The deadline for receipt of applications and initiation of the interview process must be no later than January 10 of the year following the initiation of the search process. Any searches that are delayed beyond this date will be put on hold until the next academic year, barring strong justification and explicit approval from the Dean. Ideally searches will be initiated in the spring, with closing dates of early to mid September, so that interviews can be conducted prior to the end of fall semester.

(d) The location of advertising will be discussed. Searches will normally be international in scope with an advertisement appearing on at least one site that will guarantee broad international coverage. The object is to ensure that all Canadian expatriates are made aware of the opening and to attract the best candidates. Additionally, it will be important for the individuals on the search committee and in the department more generally to reach out actively to individuals to recruit them to apply for open positions, including diverse individuals, and this should be discussed by faculty members when recommending priorities (see point #1 above) and at this first meeting. The Search Chair should make sure that a significant number of strong candidates and a diverse set of strong candidates are contacted and asked to consider applying to the position and be prepared to describe what was done in this regard to solicit the broadest possible set of applications. Postings in locations that directly address the desire to secure a diverse range of applicants are encouraged, and as needed, the Dean's Office can provide additional funding for this purpose. Normally advertisements should be posted for at least a month and remain active until the application close date.

(e) The need for and guidelines of confidentiality will be reviewed. Specifically, no applicants or information about applicants will be discussed outside of the committee or material shared until such time as the short list of candidates to be interviewed is announced. Only the short-listed candidates and their application material including CV, research plans and teaching statement will be made public to department members for review.

(f) The grounds for conflict of interest will also be reviewed. Search committee members must declare any and all conflicts of interest. If an applicant is working for or has worked with any member of the committee in the last five years, the Chair will notify the committee member(s) that he or she (they) must resign from the committee before any discussion of the candidates by the committee. The Chair will notify the Dean of these conflicts and discuss if there are any additional conflicts of interest that might negatively impact the search. If additional members must be added to the search committee, the Dean's Office will do so. A new memo to the faculty members of the department will be issued with the final

composition of the Search Committee by the Dean's office. Any difficulties following this protocol should be discussed with the Dean.

(g) The search committee will decide on the steps to be followed in determining the short list of candidates to be interviewed. Three options for requesting letters of reference might be envisioned. (i) Letters of reference may be requested as part of the application. (ii) The Chair may request letters of reference from the top ranked 6 to 10 candidates after numerical ranking by committee members, but before any committee discussion of candidates (see 5(a) below). (iii) Letters may be requested only from the short-listed candidates invited for interview. Approaches will vary depending on the number of applications anticipated for a given position.

(h) Whereas, the application materials of short-listed candidates, including CVs, research plans, and teaching statements can be shared with faculty members in the department, they should be kept in a secure location for viewing, and reference letters must not be shared. The latter are for the confidential search committee only.

6. Once applications are received, the committee will meet to rank the candidates, declare any new conflicts of interest and to define the search protocol.

(a) The process of creating a short list of candidates for interview will differ among departments, but one commonly used expedient, particularly when there is a large number of applications, involves a pre-ranking step. Each committee member reviews the candidates in advance of the ranking meeting and provides the Chair with grades or a ranked list of all the candidates for which they have no conflict. Experience shows that there is usually good agreement on the top-ranked candidates. From that information the Chair creates a long list of candidates for discussion by the committee, which may include outlier candidates in addition to the consensus top candidates. Care should be made to reviewing and providing opportunity for diverse candidates to be considered in the long list. Electronic/written references can be solicited for the long list prior to committee discussion (see point 4(g) above). At this point, before any discussion of candidates takes place, committee members having a conflict with the long list of candidates must resign from the committee (see 5(b) below). Pre-interviews by video conferencing of long list candidates may be helpful at this point in constructing the final short-list for campus interview. If pre-interviews are arranged, they should be done in a timely manner so as not to extend the timeline of the search. Additionally, every effort should be made to create a diverse set of short-listed applicants. If there are strong candidates who are members of underrepresented populations who fall naturally just outside the final short-listed candidate pool, the Dean's Office will, as necessary, provide extra funding to include an additional such candidate in the short list. In general, budget for travel should never limit consideration of the best candidates.

(b) All hiring committee members must make a declaration of any conflict(s) of interest including a close relationship with any of the candidates. If an apparent conflict arises at this stage, the Chair will immediately take the matter to the Dean for resolution. As noted in point

4(f), once the committee meets to discuss candidates, no committee member can have supervised or worked with any of the candidates in the past five years.

(c) The protocol to be followed during the interview process will be defined. This will also vary among Departments but will include the number and types of seminars, the format of the meeting with the committee, entertainment, etc. Each candidate must be treated similarly and undergo the same steps during their interview.

(d) Candidates should be ranked without regard to nationality. You will want to keep track of the rationale for excluding candidates so that if we ultimately determine the best candidates are not Canadian you will have the needed justifications in hand to move forward in an expedited manner. Consultation with the FoS HR representative to assure you catalog the relevant information is advised.

7. The Chair will send the short list of candidates along with their CVs and a summary of the process followed by the committee to the Dean for review and approval, prior to bringing candidates in for interview. The Dean may wish to review with the Chair the top 1/3 of the candidates to better understand the final ranked candidates. Once the short list is finalized, the CVs and attached information will be made available to all members of the Department in a secure location.

8. The interview provides an opportunity for the Department to sell itself to the candidates as well as to assess the candidates. There should be wide participation from among faculty members (ideally all) and students in the department. This will facilitate both the candidates learning about the department and the department learning about the candidate. Likewise, if a candidate has interests outside the department or faculty (e.g. engineering, health sciences, environment, agriculture, etc.), they should be accommodated.

9. It is critical to put forward the most inviting face to all candidates; we are selling the Department, the Faculty, the University and the City of Winnipeg. All candidates should be met at the airport and ferried to the hotel on arrival. During the interview process, candidates should be picked up at the hotel each morning and escorted between all interview sessions. Professionalism should be observed throughout.

10. The Chair should discuss startup needs with the candidates as part of the interview process.

11. The members of the search committee should actively solicit and utilize input from Department members on the short-listed candidates following the candidates' visits/presentations and take that input into account in their decision making/development of a recommendation to the Dean. Likewise, the search committee may collect input from appropriate involved individuals outside the department.

12. The Committee will meet to discuss the interviewed candidates, taking into account all input received. The suitability of candidates will be determined, the pros and cons of each candidate

identified and the suitable candidates will be ranked. The Chair will prepare a summary of the ranked candidates with pros and cons of each candidate and rationale for the ordering clearly identified for submission to the Dean.

13. The Chair will call the referees to confirm the references of the ranked candidates.
14. The Chair will send the committee's recommended ranking of the candidates and their CVs to the Dean for consideration. If necessary, the Chair will meet with the Dean to review the recommendations and to agree on the order of making the offer.
15. The Chair will then contact the top-ranked candidate to inform her/him that a formal offer is being formulated and to confirm that he/she is still interested in the position. At this time the Chair should inquire about spousal/partner hiring needs.
16. Once the Dean has decided how to proceed, the Chair will prepare a Summary of Search outlining the ranked candidates and rationale for the Committee's recommendations. A Summary of Search Procedures form (#703.I) will be completed and signed by the Chair. If a non-Canadian has been recommended, a Report on Canadian Applicants will be prepared. These documents along with the CV of the recommended applicant will be forwarded to Faculty HR Officer for review.
17. The Dean and HR Officer will consult with the Faculty Business Officer to establish an appropriate salary range and start-up research support for each candidate to provide the Chair with the basis for negotiation.
18. Once approved by the HR Officer, the Dean will sign the Summary of Search Procedures form, and the HR Officer will forward the package of documents to the Assistant to the Vice-Provost (Academic Affairs) for consideration and approval by the Provost.
19. Any concerns on the part of the Department Head about the time taken to receive approval, should be addressed to the Dean and the Faculty HR Officer. They will inquire of the Provost, as appropriate, and update the Head.
20. The Chair will make a formal offer only after Provost approval is received. The Dean will be kept informed of any subsequent negotiations and the status of all hiring stages.
21. Questions concerning the search should be directed by the Chair to the Dean's Office, who can follow up, if needed, with the Provost's Office or HR.
22. In the case of joint hires, typically the committee will have cochairs (the Heads of the engaged departments) and the committee will be comprised of individuals from each department. The goal remains to hire the strongest possible candidate, regardless of their ultimately home department.

Appendix 1. Completed Request-to-Fill Form

The Departments of Chemistry and Microbiology are requesting an interdisciplinary, tenure-stream Assistant, Associate or Full Professor with expertise in cryo3D Transmission Electron Microscopy (TEM) of proteins and other biological assemblies.

Position Justification

1. Teaching, research and service needs in the units

The Departments of Chemistry and Microbiology have a strong history of integrated teaching and research in Biochemistry. We offer very long-standing and effective joint programs in undergraduate Biochemistry (Honours, Major and Co-operative), which are managed through the Joint Microbiology Chemistry Committee on Biochemistry. The Departments collaborate extensively on research, especially in the area of Structural Biology, and these collaborations have supported a range of research projects, and the acquisition of large facilities such as the X-ray diffractometer. Expertise is also shared through membership on graduate advising committees.

The current challenge in structural biology involves elucidating the structures of nano-scale biological assemblies. Nano-scale details of biological structures are best studied using cryo3D Transmission Electron Microscopy (TEM), and the fact that the 2017 Nobel Prize in Chemistry was awarded to the developers of this technique indicates the impact it has already had in the study of macromolecular assemblies. The University of Manitoba has acknowledged the importance of this area by spearheading a significant funding initiative for bringing a cryoTEM facility to the Faculty of Science. This collaborative effort will result in the first centralized cryoTEM facility in central Canada and will greatly complement initiatives out of the University of Alberta. Cryo3D TEM is technically demanding as well as costly to operate, and this significant investment can only be fruitful if a new research faculty member and support staff specializing in cryo3D TEM are hired to complement the existing expertise in biochemistry in the Faculty. Properly equipped, a cryo3D TEM expert will be able to contribute to some of the great unsolved questions in biology. TEM has rapidly become a ubiquitous tool in Materials Science and the new hire will likely establish lasting collaborations with researchers in Physics, Computer Science, Engineering, the Manitoba Institute of Materials and the Rady Faculty of Health Sciences, and would greatly strengthen our current Biochemistry programs and graduate training.

Biochemistry courses are core to multiple undergraduate programs: Chemistry, Biochemistry, Microbiology, and the interdisciplinary Genetics program. A large number of students also take these courses as part of 3-year General degrees to be followed by professional programs. The core biochemistry courses (2360/2370 and 2770/2780) involve about 800 students per year (2019-2020). There are multiple required CHEM (14) and MBIO (4) and optional CHEM (27) and MBIO (19) courses in the Biochemistry programs. Over the past 5 years there has been more than a doubling in the number of honours/major students in in our interdisciplinary

Biochemistry programs (45 to 105 students), demonstrating the growing interest in these degree offerings.

Thus, there is a strong need for biochemistry teaching across both Departments.

At the graduate level, new courses developed by the new hire will provide cutting edge training to graduate students who are involved in projects with aspects of Biochemistry or Structural Biology. The new member will contribute to service in both Departments and will contribute to a wide range of service activities in the Department, Faculty, University and scientific community.

2. The academic and research priorities of other units in the Faculty/School and in the University.

Researchers in the Cell, Molecular and Developmental Biology group in the Department of Biological Sciences pursue a molecular understanding of animal, insect and plant cells and would benefit through collaboration with an expert in cryoTEM. And because cryoTEM is being applied to solve important problems in Materials Research, members of the Biophysics and Condensed Matter Physics groups in the Department of Physics and Astronomy as well as members of the Manitoba Institute of Materials could greatly benefit from local collaboration with a cryo3D TEM expert. For example, cryoTEM has been used to obtain nanoscale information about the evolution of morphological changes in materials with a resolution of less than 1 s. Most importantly, researchers at the Rady Faculty of Health Sciences have had a long-standing interest in cellular ultrastructure and imaging including protein structures and protein assemblies. On the order of 15 faculty members work in the area of electron microscopy and their research programs would be highly complementary to the proposed cryoTEM expert. The proposed faculty member would also benefit from and be of benefit to Professor Timothy Booth, Adjunct Professor in the Department of Medical Microbiology and Director of the Viral Disease Division of the National Microbiology Laboratory, a leading expert in cellular imaging and TEM.

3. Enrolment in the program over the last five years.

Faculty members in the Departments of Chemistry and Microbiology contribute to teaching in multiple Honours and Major programs. The average number of students per year over the last five years is provided below and include students in Co-op programs. Numbers are from the nominal role, September 24, 2019, and do not consider the teaching that is part of the three-year BSc general degree. Numbers in parentheses indicate totals as of September 2015, showing the increased demand for Biochemistry programs and other programs that utilize them.

Joint Chemistry-Microbiology Program in Biochemistry Major 72 (27 in 2015)

Joint Chemistry-Microbiology Program in Biochemistry Honours 33 (24)

Chemistry Major 37 (34)

Chemistry Honours 23 (24)

Microbiology Major 142 (104)

Microbiology Honours 34 (27)
Biotechnology programs (11, now closed to new students)

In addition, the faculty in Chemistry and Microbiology are advising about 85 and 45 graduate students this year (2020 Fall); this number has been slowly increasing as new faculty members join the Departments.

Hiring a new faculty member will allow both Departments to increase capacity for training graduate students, and provide them with outstanding training.

4. The University's strategic direction(s); the unit's three-year plan and the unit's long-range strategic plan.

(a) With reference to the **University of Manitoba Strategic Research Plan**, and the **Faculty of Science Strategic Priorities** emanating from it, the new faculty member will be in a position to contribute to all of the priority areas:

I. Inspiring Minds – by participating in effective and engaging interdisciplinary undergraduate and graduate teaching, including use of cutting-edge techniques such as cryo3D Transmission Electron Microscopy (cryoTEM).

II. Driving Discovery and Insight – by establishing an independent research program and contributing to collaborative research between the Departments, and at the faculty and university levels; by developing the use of cryoTEM technologies at the University of Manitoba.

III. Creating Pathways to Indigenous Achievement – by contributing to the development of these pathways, through participation in University of Manitoba initiatives. We are very fortunate to have an Indigenous Scholar in each Department, which will facilitate exposure of Indigenous trainees to advanced techniques. In Chemistry, the Centre for Oil and Gas Research and Development (COGRaD) has developed close collaborations with Indigenous communities in the Province. In Microbiology collaborations with these communities focus on investigations into water safety. The new hire will contribute to and benefit from those relationships in both teaching and research.

IV. Building Community – through interactions that will enhance the connections between and the well-established research and teaching communities in Chemistry, Microbiology, Science, the Manitoba Institute of Materials, the Rady Faculty of Health Sciences and the University of Manitoba.

V. Forging Connections with Community – through outreach activities at all levels.

(b) With reference to the **Research Themes** identified in the **University of Manitoba Strategic Research Plan** (2015-2020), the successful applicant for the requested position, depending on area of specialization, could contribute to

i) *fundamental research* in Microbiology and Biochemistry, as nano-structures are involved in microbiological and biochemical processes in nature.

ii) *integrative research in health and well-being*, in terms of understanding the roles of microbial proteins in both health and disease through advanced structural analysis.

iii) *safe, healthy, just and sustainable food systems*, in terms of using understanding proteins,

enzymes and structures that enhance agriculture.

(c) The *Departmental Short- and Long-term Strategic Plans*

The Department of Chemistry Strategic Research Plan aims to build strength in the Life Science and Materials Science aspects of Chemistry. The proposed new hire in cryoTEM will be a structural biologist who will greatly strengthen Life Science research in the Department and will closely collaborate with all 3 Biochemists. However, cryoTEM imaging technology is also being applied to Materials Science research and it is expected that the new Faculty Member will enhance the research programs of several Materials Chemists in the Department and across the University and specifically with those affiliated with the Manitoba Institute of Materials. Another critical need in Chemistry is to hire a synthetic organic chemist who can contribute to undergraduate and graduate teaching and research. The recent passing of a colleague has left a significant gap in synthesis expertise that would benefit both the Life Science and Materials Science research foci in the Department. We envision hiring a Bio-inspired Materials researcher who would support our recent Tier 1 Canada Research Chair in Synthetic Biology. As mentioned above, cryoTEM is increasingly being used by Materials Chemists to characterize morphological changes in new materials and these two positions would be highly complementary.

The Microbiology Strategic Research Plan emphasizes a network of related research areas rather than defining narrow areas of expertise. Nonetheless, the Department has identified four areas of research strength, all of which would be enhanced by the activities of a researcher with strengths in structural microbiology. These areas are:

- i) Microbe-based biotechnology (bioprocessing, discovery of novel enzymes or drugs)
- ii) Microbe-host interactions (molecules involved in plant-microbe, host-pathogen, host-virus interactions)
- iii) Antibiotics – discovery and resistance mechanisms (biochemistry of enzymes and transporters)
- iv) Protein structure and function (membrane proteins, structural proteins and enzymes)

These areas are by nature interdisciplinary and understanding of the molecular machineries and structures involved is critical. Cryo3D TEM rapidly is becoming the gold standard for structure determination for all areas of biochemistry.

5. Staff shortfalls due to prospective retirements and resignations.

The Department of Chemistry employs 4 biochemists to cover half of the Biochemistry undergraduate and graduate programs. One of the Biochemists is a Tier 1 Canada Research Chair with a reduced teaching load. One of the 3 remaining Biochemists, with expertise in Structural Biology and Nuclear Magnetic Resonance (NMR) spectroscopy, is retiring as of July 1, 2021. His undergraduate and graduate teaching are entirely in the highly-subscribed undergraduate Biochemistry programs at the introductory second-year level and at the advanced 4th-year level. With his departure, the Department of Chemistry will find it very difficult to fulfill its commitments to undergraduate and graduate Biochemistry teaching.

The addition of a faculty member with expertise in Biochemistry is essential for teaching of Microbiology courses, including those core to the Biochemistry programs. In general, the staffing level in the Department of Microbiology is somewhat low; we have members of the Rady Faculty of Health Sciences regularly teaching MBIO 4410 (Virology; ~30 students in 2020R), an adjunct member from a local industry teaching MBIO 3000 (Biological Safety; ~120 students) and sessional instructors have been teaching MBIO 4520 (Industrial Bioprocessing; ~ 30 students) since the retirement of Michael Butler. These individuals are making excellent contributions to our program, but the efforts of outside members cannot be assumed every year. The Department of Microbiology was fortunate to hire a biochemist, G. Prehna, who is teaching two core biochemistry courses (MBIO/CHEM 2370 and MBIO 3460). However, in 2023, we anticipate the retirement of two faculty members who are regular contributors to teaching in the Biochemistry programs, both in terms of core, required microbiology courses (MBIO 1010 and MBIO 2020) and advanced courses (MBIO 3450 and MBIO 4540).

In terms of graduate teaching, there is demand every year for MBIO 7200, a graduate course on structural biology. Due to other teaching and administrative commitments of potential instructors, this course has not been offered for the last 2 years. A hire in Biochemistry could co-teach this course. In Chemistry, CHEM 7400, a graduate course that contains 50%-100% Structural Biology content, depending on the year in which it is taught, has been taught every year for the past 5 years.

6. The presence of full-time faculty in existing unsecured appointments within the Faculty/School/Department who have demonstrated academic excellence in teaching/research.

There are no faculty in unsecured appointments in Chemistry and Microbiology.

7. The unit's staffing goals with respect to improving the representation of designated groups (women, Aboriginal peoples, persons with disabilities, members of visible minorities).

The Departments of Microbiology and Chemistry have a strong history of hiring excellent faculty members, many of whom are from underrepresented groups. There are 18 faculty members in Microbiology and of them, 5 are female, 2 are members of visible minorities, 1 is an Indigenous scholar, and 1 is a person with a disability. Chemistry is home to 26 faculty including 1 Indigenous scholar, 3 representatives of visible minorities and 9 females. We will continue to consider all excellent candidates and encourage those from underrepresented groups to apply.

8. Attracting to the University particular external candidates.

Faculty members from both Departments are active in the area of Structural Biology and cryo3D TEM and are known to leaders in the field including one of the recent Nobel Prize winners. They will use these contacts to recruit the very best candidates for the position.

9. Other considerations unique to this request.

None.