

*Please forward to
the Academic Senate.
David W. Crosby
11/9/17*



November 6, 2017

A. Lorris Betz
Interim Senior Vice President for Health Sciences
5th Floor, Clinical Neuroscience Center
Campus

RE: Graduate Council Review
Department of Biochemistry

Dear Vice President Betz:

Enclosed is the Graduate Council's review of the Department of Biochemistry. Included in this review packet are the report prepared by the Graduate Council, the Department Profile, and the Memorandum of Understanding resulting from the review wrap-up meeting.

After your approval, please forward this packet to President David Pershing for his review. It will then be sent to the Academic Senate to be placed on the information calendar for the next Senate meeting.

Sincerely,

David B. Kieda
Dean, The Graduate School

Encl.

XC: W. Rory Hume, Assoc. Vice President for Academic Affairs and Education
Wayne M. Samuelson, Interim Dean, School of Medicine
Christopher P. Hill, Co-Chair, Department of Biochemistry
Wesley I. Sundquist, Co-Chair, Department of Biochemistry

The Graduate School
201 Presidents Circle, Room 302
Salt Lake City, Utah 84112-9016
(801)581-7642
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The Graduate School - The University of Utah

GRADUATE COUNCIL REPORT TO THE SENIOR VICE PRESIDENT
FOR HEALTH SCIENCES AND THE ACADEMIC SENATE

March 27, 2017

The Graduate Council has completed its review of the **Department of Biochemistry**. The External Review Committee included:

David Bernlohr, PhD
Professor and Head
Department of Biochemistry, Molecular Biology, and Biophysics
University of Minnesota-Twin Cities

Steven McKnight, PhD
Professor and Chair
Department of Biochemistry
University of Texas Southwest Medical Center

William Weis, PhD
William M. Hume Professor in the School of Medicine
Department of Structural Biology
Stanford University

The Internal Review Committee of the University of Utah included:

Kathleen A. Cooney, PhD
Professor and Chair
Department of Internal Medicine

Lynn Jorde, PhD
Professor and Chair
Department of Human Genetics

Erik Jorgensen, PhD
Distinguished Professor
Department of Biology

This report of the Graduate Council is based on the self-study submitted by the Department of Biochemistry, the reports of the external and internal review committees, and the Department Co-Chairs' response to the external and internal committee reports.

DEPARTMENT PROFILE

Program Overview

The mission of the Department of Biochemistry is to conduct cutting-edge research in biochemistry, to train graduate and medical students, and to integrate productively with other components of the School of Medicine and the University. From review of the External and Internal Committees' report, this mission is being accomplished through effective leadership, collegiality, and fiscal responsibility. The Department is led by Co-Chairs Chris Hill and Wes Sundquist, who have been serving since 2009. During this time, the Co-Chairs have increased the number of tenure-line faculty from 10 to 15, nearly doubled NIH funding, and implemented an incentive-based salary plan.

The faculty are engaged in graduate and medical education. Nearly all of the tenure-line faculty are teaching. The faculty provide mentorship for PhD students, as well as deliver a rich didactic curriculum.

Research in the Department encompasses cell biology, nucleic acid biochemistry, structural biology, metabolism, and chemical biology. All tenure-line faculty have external grant funding (save one who has taken a lead role as a medical student administrator and teaching instructor), with an average annual direct cost funding level of \$720,000. New faculty who have been hired since 2009 have already obtained extramural funding.

The goals outlined since the last review include increasing the number of graduate students, increasing the number of faculty, improving mentoring for junior faculty, modifying the curriculum to increase the emphasis on problem solving and conceptual thinking, and better defining roles for research-track faculty. These goals have been met and are reported in the Internal Review document, page 2.

Faculty

Since 2009 there has been significant growth in the faculty from 30 members (10 tenure-line) to 47 members (15 tenure-line) in 2016. Seven new tenure-track faculty joined during this time as one tenure-line faculty member retired and another left the Department for a position at another university. All 7 hires are male and 5 of the 7 are ethnic minorities. The new faculty have been well-mentored and are successful in securing external funding. Five new career-line research-track faculty were hired during this same period to support research efforts of the Department, including one female and two ethnic minorities. There has been a strong effort to increase diversity of the faculty. Although efforts to increase ethnic diversity have been successful, there has been an increase in gender imbalance with more men than women in the Department faculty. The Chairs plan to increase the number of faculty by 8 in the next 5 years.

All faculty report that the Department is collegial. There is a Research-in-Progress (RIP) seminar series that serves as a venue to discuss research and fosters sharing in the Department. Although the majority of faculty members have teaching roles, the bulk of the medical school teaching is provided by a small number of dedicated faculty members. The teaching evaluations are "above average" to "excellent," with several faculty members receiving university teaching awards. Concerning scholarship, faculty

members have significant funding from NIH and other peer-reviewed sponsors. The faculty consistently publish in high profile journals and receive research awards for their work. Faculty mentoring in research is strong and successful.

Students

The Department of Biochemistry draws graduate students from both the Molecular Biology and Biological Chemistry umbrella graduate programs. PhD students currently in the Department are equally derived from these two programs at a rate of ~15% of these program students being recruited into the PhD program of the Department. Despite intensive efforts, the underrepresented minority demographic profile of the graduate students in the program is not diverse (11% ethnic minority). But in the last 5 years, the combined graduate programs have reached parity between women and men (51.3% women). The Department is forging efforts to work toward more ethnic balance in the student population through the University of Utah Medical School's presence in URM-based organizations such as SACNAS. Commendably, a faculty member in the Department of Biochemistry spearheaded the reinstatement of the local SACNAS chapter's recognition by this national organization and serves as the faculty advisor.

Graduate students in the Department enter with high GRE scores and GPAs, comparing favorably to other science departments at the University of Utah. The students are recruited from a national/international pool but generally favor the Western U.S. The students are supported with a stipend during their first year (\$27,000 for 2016-2017). Thereafter, students are paid from Research Assistantships or fellowships for which they have applied. Students serve as a teaching assistant once in their graduate career, either in an undergraduate or graduate course.

Students report a strong research environment, approachable faculty, top core facilities, and quality of life as factors that determined their decision to choose the Department. Students noted the collaborative, interactive and respectful environment the Department created. Major concerns voiced by the PhD students are largely outside of departmental control, including a highly negative opinion of the health insurance provided.

The postdoctoral scholars represent a significant number in the Department (n=31), coming to Utah from a wide variety of PhD programs around the country. They are attracted to the Department based on individual faculty research interests and scholarly reputation as well as the quality of life in Salt Lake City. The postdocs report a high degree of satisfaction with the Department. Major concerns voiced by the postdoc students include the lack of significant speaking opportunities and career development. Further, postdocs expressed the need for a postdoc network in the medical sciences as the current resources are seemingly oriented at non-science disciplines.

Curriculum

Structures are in place for monitoring of student progress through PhD studies. Students take a core curriculum during their first year, defined by either the Molecular Biology or Biological Chemistry programs. In addition, departmental electives are required to complete additional didactic coursework specifically in biochemistry. All PhD students take a course in grant writing and an additional course in research ethics. PhD students carry out 4 rotations and make advisor selections at the end of Year 1. The preliminary exam is taken by the end of fall semester of the second year in graduate school. Average time to completion of

the PhD is 5.5 years. Since 2010 approximately 40 students have obtained PhD degrees. All students are required to accumulate at least 14 credit hours of PhD thesis research and to pass the thesis defense.

The graduate curriculum will undergo significant changes in 2016-2017, including new coursework in critical thinking and grant writing as well as a capstone exam at the end of Year 1. These changes are viewed favorably by students and faculty alike.

Program Effectiveness and Outcomes Assessment

From 2001–2009, the average time from admission to one of the umbrella programs to the PhD degree completion ranged from 5.9 to 7.1 years. Since that time, the average degree completion time has been shortened by several months because of a modification in the Preliminary Exam process initiated after the last Graduate Council review in 2009.

For the 72 students graduating between 2006 and 2016, all have published at least one peer-reviewed paper, with an average number of publications of 3.9 (range: 1 to 12). The average number of first-author publications was 1.5, with a range of 0 to 5. Since 2009, two graduate students have been supported by NIH or NSF fellowships.

The graduate students are employable. Of the 92 graduate students who were in the Department between 2009 and 2016, 33 are still working toward PhD degrees, 15 are employed as postdoctoral fellows, four have faculty appointments, five are employed as scientists in academic or government laboratories, 11 are employed in industry, five in medical/clinical practice or training, and four have transferred to another program. Data on 12 students is not available and only three are employed in positions that do not require advanced scientific training.

Employment data was also gathered for 66 postdoctoral fellows who were in the Department from 2009 to 2016. Twenty-three are still postdoctoral fellows in the Department, 10 are employed as postdoctoral fellows outside the Department, six have faculty positions, seven are scientists working in academic or government laboratories, 15 are employed in industry, one is in medical/clinical practice or training and two are employed in scientific writing or publishing.

Total external grant expenditures have increased from \$8.5M to \$14.3M within the review period. During this time the Department has increased its rank from 31st to 14th among Biochemistry departments for NIH funding.

Facilities and Resources

The Department had a \$415K surplus last year. The leadership has performed well in managing the finances of the Department during difficult financial times for universities.

The Department occupies 2.5 floors of the Emma Eccles Jones Medical Research Building. The research labs are in close proximity to one another within the building, comprising 17,080 sq ft, which is currently adequate for the 15 tenure-line faculty. This enables the interactive and collegial culture of the Department and the sharing of instruments and research faculty expertise. Grants have been submitted to obtain state-of-the-art equipment for future use in structural biology. The different cores are subsidized to different extents, based on an understanding that research enabled by the cores ultimately brings more grant

dollars and indirect monies. Faculty are satisfied with the fee-for-service model of the cores. The Department recovers \$567 per square foot from grants, which exceeds the expected return of \$500 / sq ft.

The Department is expected to nearly double from 15 to 28 faculty in the next 10 years. For the next 5 years, the only solution will be to provide faculty with alternative research space. The coherence and strength of the research program will be negatively impacted if faculty were to be geographically distributed. After five years, the Department will need a new building to house the expanded faculty, student numbers and facility needs.

COMMENDATIONS

1. **Research:** The research component of the Department faculty is uniformly high quality. Recent successful hires reinforce the areas of metabolism and chemical biology among others. External grant expenditures increased by 40% and from 31st to 14th nationally among Biochemistry departments in NIH funding since the last review.
2. **Collegiality:** The Department is uniquely collegial among department faculty, staff and students at all levels and shares a strong sense of scientific mission.
3. **Students:** Recruitment of qualified, energetic graduate students is consistent. The graduate students are happy with their education and quality of life and productive in research and publication. The implementation of a required graduate research-in-progress seminar is to be praised.
4. **Leadership:** The constancy of good leadership coupled with sustained financial support from administration has led to the vibrancy and success of the Department. The Co-Chairs, Drs. Hill and Sundquist, represent the basic science departments at the medical school and serve on high level committees for the School of Medicine.

RECOMMENDATIONS

1. **Faculty Diversity:** It is recommended that the Department evaluate the results of their plan for recruiting women and underrepresented minority faculty on an annual basis to ensure progress and adapt accordingly.
2. **Space:** Additional space is needed as the research program of the Department continues to grow and faculty numbers increase. Consider locating the new hires proximal to the research laboratories of existing faculty. It is recommended that the Department begin coordinating with the School of Medicine immediately to plan for future space needs.
3. **Graduate Students:** Growth in faculty requires requisite recruitment efforts of motivated and qualified graduate students. The Department and Bioscience Graduate Programs more generally need to develop a strategic plan for recruitment of a larger number of graduate students. Graduate students indicated that they felt isolated from peers. It is recommended that annual research retreats to include all trainees and all faculty will aid in creating this collegial culture. Needs and feedback regarding student health insurance coverage should be relayed to the Graduate School Dean.

4. Postdoctoral Fellows: The postdocs noted that they have few opportunities to interact with other postdocs in a shared community. In addition to developing more mentoring opportunities for postdoctoral fellows at a departmental level, it is recommended that the Department work with the Graduate School and the Office of Postdoctoral Affairs to increase engagement with existing central resources and communicate needs for additional resources.
5. PhD Theses: It is recommended that the Department consult with the Graduate School and Thesis Office in particular to develop resources to aid in faster completion of the thesis submission process.

Submitted by the Ad Hoc Committee of the Graduate Council:

Ryan E. Smith (Chair)
Associate Professor, School of Architecture

Joanna B. Schaefer
Associate Professor, College of Social Work

Bryan G. Trump
Assistant Professor, School of Dentistry

College Name
School of Medicine

Department Name
Biochemistry

Program Name
All

Faculty Headcount

		2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
With Doctoral Degrees Including MFA and Other Terminal Degrees	Full Time Tenured Faculty	9	9	9	9	8	9	7
	Full Time Tenure Track			1	3	3	4	5
	Full Time Career Line/Adjunct Faculty	6	6	7	8	9	9	10
	Part Time Tenure/Tenure Track					1		2
	Part Time Career Line/Adjunct Faculty		1	1	1	1	1	2
Total		15	16	18	21	22	23	26
With Masters Degrees	Full Time Tenured Faculty	0	0	0	0	0	0	0
	Full Time Tenure Track			0	0	0	0	
	Full Time Career Line/Adjunct Faculty	0	0	0	0	0	0	
	Part Time Tenure/Tenure Track					0		
	Part Time Career Line/Adjunct Faculty		0	0	0	0	0	
Total		0	0	0	0	0	0	0
With Bachelor Degrees	Full Time Tenured Faculty	0	0	0	0	0	0	
	Full Time Tenure Track			0	0	0	0	
	Full Time Career Line/Adjunct Faculty	0	0	0	0	0	0	
	Part Time Tenure/Tenure Track					0		
	Part Time Career Line/Adjunct Faculty		0	0	0	0	0	
Total		0	0	0	0	0	0	0
Total Headcount Faculty	Full Time Tenured Faculty	9	9	9	9	8	9	7
	Full Time Tenure Track			1	3	3	4	5
	Full Time Career Line/Adjunct Faculty	6	6	7	8	9	9	10
	Part Time Tenure/Tenure Track					1		2
	Part Time Career Line/Adjunct Faculty		1	1	1	1	1	2
Total		15	16	18	21	22	23	26

Cost Study

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Direct Instructional Expenditures						1,882	379
Cost Per Student FTE						42	8

FTE from Cost Study

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Full-Time Salaried	11	10	11	11	10	10	12
Part-Time or Auxiliary Faculty	1	1	2	2	1	1	0
Teaching Assistants							

Funding

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Total Grants	9,291,682	9,723,950	10,137,752	10,173,036	11,139,997	10,453,920	10,942,913
State Appropriated Funds							1,951,038
Teaching Grants	2,100	0	25,584	75,321	162,971	281,366	206,882
Special Legislative Appropriation*							
Differential Tuition*							

Student Credit Hours and FTE

		2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
SCH	Lower Division							
	Upper Division							
	Basic Graduate	206.1	243.1	255.3	190.6	212.7	241.7	159.2
	Advanced Graduate	744.8	669.7	668.0	602.3	610.3	661.7	813.2
FTE	Lower Division							
	Upper Division							
	Basic Graduate	10.3	12.2	12.8	9.5	10.6	12.1	8.0
	Advanced Graduate	37.2	33.5	33.4	30.1	30.5	33.1	40.7
FTE/FTE	LD FTE per Total Faculty FTE							
	UD FTE per Total Faculty FTE							
	BG FTE per Total Faculty FTE	0.9	1.1	1.0	0.8	1.0	1.1	0.7
	AG FTE per Total Faculty FTE	3.2	3.1	2.7	2.5	2.8	3.0	3.5

Enrolled Majors

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Undergraduate Pre-Majors							
Undergraduate Majors							
Enrolled in Masters Program	2	1	1	1			
Enrolled in Doctoral Program	32	34	35	36	36	35	41
Enrolled in First Professional Program							

Degrees Awarded

	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Undergraduate Certificate							
Graduate Certificate							
Bachelors							
Masters	1		1	1	2	1	2
Doctorate	7	4	9	10	6	1	7
First-Professional							



Memorandum of Understanding Department of Biochemistry Graduate Council Review 2016-17

This memorandum of understanding is a summary of decisions reached at a wrap-up meeting on September 18, 2017, and concludes the Graduate Council Review of the Department of Biochemistry. A. Lorris Betz, Interim Senior Vice President for Health Sciences; Wayne M. Samuelson, Interim Dean of the School of Medicine; W. Rory Hume, Associate Vice President for Academic Affairs and Education; Christopher P. Hill, Co-Chair of the Department of Biochemistry; Wesley I. Sundquist, Co-Chair of the Department of Biochemistry; David B. Kieda, Dean of the Graduate School; and Katharine S. Ullman, Associate Dean of the Graduate School, were present.

The discussion centered on but was not limited to the recommendations contained in the review summary report presented to the Graduate Council on March 27, 2017. The working group agreed to endorse the following actions:

Recommendation 1: Faculty Diversity: It is recommended that the Department evaluate the results of their plan for recruiting women and underrepresented minority faculty on an annual basis to ensure progress and adapt accordingly.

The Department has had very good success in recruiting underrepresented minority faculty. While they intend to evaluate this in an ongoing manner, their central concern is the gender balance of the faculty. Plans for departmental growth provide a prime opportunity, and Chairs Hill and Sundquist expressed a desire for their department to lead in this area, setting their sights above the 29% national average for female tenure-track faculty in Biochemistry (once a recently recruited faculty member arrives, over a quarter of the department tenure-line faculty will be female). The Chairs articulated a detailed plan to further address this issue in an updated response memo. Among the points discussed was the success of a Rising Stars Symposium, which involves soliciting recommendations from colleagues across the country for postdoctoral fellows emerging as scientific leaders, with attention to diversity. A cohort is then invited to participate in a symposium here as an opportunity to showcase the scientific environment and broader community. In turn, this provides a chance to identify strong faculty candidates and sets the stage for recruitment. During the search itself, the Department front-loads the interview schedule with female applicants, which often comprise 50% of those interviewed despite an applicant pool closer to 20%. The Department has excellent strategies ongoing, but some recent developments need to be addressed for continued success in this area. Specifically, the Department was recently advised by central School of Medicine (SOM) finance

administration not to include children of candidates in campus visits and to restrict spouse/partner participation in the first visit. SVP Betz agreed that, while motivated by the intention to be fiscally responsible, these guidelines may have detrimental consequences, particularly to the recruitment of diverse candidates. He suggested bringing the issue to the SOM Executive Committee. The Chairs agreed to do so and to provide an update. The group also discussed strategies to increase postdoctoral fellow diversity, such as broadly posting open positions, since diversity at all levels can be self-reinforcing. Overall, the Department is well-positioned, with concrete strategies and recent recruitment successes that point to a positive trajectory in expanding diversity and creating gender balance.

Recommendation 2. Space: Additional space is needed as the research program of the Department continues to grow and faculty numbers increase. Consider locating the new hires proximal to the research laboratories of existing faculty. It is recommended that the Department begin coordinating with the School of Medicine immediately to plan for future space needs.

With a plan already in progress to expand tenure-track faculty from 15 to 28 over a 10-year period, addressing the need for more space is critical. At the same time, the Chairs expressed a desire to do this without creating tension among SOM colleagues, despite the challenge of accommodating space -- at least in an interim manner -- in existing facilities. SVP Betz is equally aware of this central issue and noted that a Health Sciences Research Council was recently formed and will tackle space planning within a broader strategic context. He indicated that, although current building initiatives on the Health campus have a different focus, attention will turn next to research space. Fully addressing a long-term plan for space awaits the hire of a new SVP and resolution of underlying funding issues. It was agreed that a key priority in the meantime is to ensure junior faculty are not isolated. If contiguous space becomes too limited, then creating pods where experienced Biochemistry faculty create community and foster mentorship is an option. Ongoing discussion between the Chairs and SOM Administration to find creative, constructive solutions to space needs will be required.

Recommendation 3. Graduate Students: Growth in faculty requires requisite recruitment efforts of motivated and qualified graduate students. The Department and Bioscience Graduate Programs more generally need to develop a strategic plan for recruitment of a larger number of graduate students. Graduate students indicated that they felt isolated from their peers. It is recommended that annual research retreats to include all trainees and all faculty will aid in creating this collegial culture. Needs and feedback regarding student health insurance coverage should be relayed to the Graduate School Dean.

The Chairs underscored the existential importance of keeping the combined Bioscience Programs robust, as this institutional investment underpins the Department's research and training missions, and has been pivotal to their success. The Department takes a partnership role in this investment, both in terms of faculty effort devoted and with the recent hiring of a staff member focused on underrepresented minority recruitment

to the Programs, paid for by the Department. The Chairs feel strongly that an interdepartmental entryway graduate program is vital to recruit high quality students. AVP Hume further endorsed this from observation of premier programs elsewhere. SVP Betz acknowledged the central importance of the combined Programs and pointed to the need to continue to engage SVP Watkins and VPR Weyrich in the strategic planning for program expansion. With regard to other items brought out in this recommendation, the Chairs noted that a recent dip in students entering Biochemistry from the combined Programs seemed to be an anomaly, as numbers this year are back up. Responding to the constructive suggestion of holding annual retreats, the Department has such a trainee-focused retreat planned for this semester. They also more broadly polled students about healthcare coverage and did not find widespread concern. It was noted that the Graduate School now provides dental and vision coverage in the Fall 2017 insurance package. MOU updates to the Graduate School are one way to convey issues about insurance if they come up in further monitoring.

Recommendation 4. Postdoctoral Fellows: The postdocs noted that they have few opportunities to interact with other postdocs in a shared community. In addition to developing more mentoring opportunities for postdoctoral fellows at a departmental level, it is recommended that the Department work with the Graduate School and the Office of Postdoctoral Affairs to increase engagement with existing central resources and communicate needs for additional resources.

While the Department had a previous interaction with the Office of Postdoctoral Affairs in the Graduate School that was not positive, Dean Kieda noted that over the past couple of years, the postdoctoral community has become more engaged. With a critical threshold now active, there is a Utah Postdoctoral Association and a group of active fellows and, correspondingly, a wider array of activities available to this group. Given these positive changes, the plan to reinforce links to the current Postdoctoral Office was discussed, along with the need for continued evaluation. If needs are not being met, different models to provide centralized resources for postdoctoral fellows could be further considered, including the possibility of a separate Postdoctoral Office for biomedical or life sciences. The group also discussed the need for local as well as central resources for postdoctoral fellows. One model for the former is to galvanize postdoctoral fellows as a unit within a building (across departmental boundaries) to form a local hub of postdoctoral fellows that maximizes the peer-mentoring potential of this community. Postdoctoral fellows can be encouraged to identify activities that would help their professional development (such as job talk practices, writing groups, etc.) which can be supported with a relatively small investment of resources and input/advice from faculty as needed. The Chairs agreed that finding ways to increase communication among this group, and to heighten their awareness of activities organized centrally for postdoctoral fellows, could have very positive effects. They expressed an intention to follow up, first by exploring what other departments are doing at a Basic Science Chairs Working Group meeting. Lastly, the group discussed the general issue (not specific to Biochemistry) that postdoctoral fellows are not mentioned/invited when general events are advertised. Simple adjustments to make sure that postdocs are made aware of trainee-oriented opportunities when appropriate would likely further help in linking postdocs to resources.

Recommendation 5. It is recommended that the Department consult with the Graduate School and Thesis Office in particular to develop resources to aid in faster completion of the thesis submission process.

By way of inclusion in these recommendations, communication with the Graduate School on this topic has been reinforced. The Chairs offered specific written feedback in a response memo, which has been relayed to the Thesis Office. Dean Kieda expressed a willingness to help resolve problems with supportive tools and policies. One such policy currently being piloted is a pre-consultation deadline intended to streamline the editing process. Another initiative under consideration is support for college-level staff who help students meet writing and formatting standards. While there is an initiative underway to review and update formatting requirements, the current format meets the baseline standards of ProQuest, the publisher of theses and dissertations for the University. It was pointed out that making it clear in the Thesis Office guidelines that these support ProQuest publication would help the process seem less adversarial. Finally, to ensure that students are linked to updated templates, guidelines, and policies early in the process, the Graduate School will coordinate regular Thesis Office resource presentations on the Health campus to reach students in Biochemistry and the broader biomedical research community. Future updates to the Graduate School on progress toward recommendations in this MOU should include further feedback on the thesis submission process.

Dr. Betz ended the meeting with a reminder that, although we had spent the time discussing how to solve specific problems, the emphasis of the Graduate Council review of Biochemistry was on the strong accomplishments of this department. We wholeheartedly concur and are grateful for the Chairs' leadership in creating this stellar training environment.

This memorandum of understanding is to be followed by regular letters of progress, upon request of the Graduate School, from the Chairs of the Department of Biochemistry. Letters will be submitted until all of the actions described in the preceding paragraphs have been completed. In addition, a three-year follow-up meeting may be scheduled during AY 2019-20 to discuss progress made in addressing the review recommendations.



A. Lorris Betz
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David B. Kieda
Dean, The Graduate School
November 6, 2017