The Neuroscience Graduate Program at the University of Kansas has a unique mission of training graduate students in the multidisciplinary field of the neurosciences, a field that spans from the molecular to the behavioral level of neurological and neurobehavioral sciences. The Program was approved by the Board of Regents in 2001 and has quickly established itself as a vibrant graduate training program that spans 13 departments, two schools and the College, and the two campuses of the University of Kansas at Lawrence and Kansas City. The Program has attracted good quality students from across the US and the world. The faculty mentors associated with the Neuroscience Graduate Program are well-published and well-funded scientists who have received numerous awards and honors. The number of faculty mentors as of 2009-2010 stands at fifty eight. These mentors have obtained approximately $116 million in research funding during the period of 2001-2010 and have published 1,661 research papers and chapters during this same period. The Neuroscience Graduate Program has already graduated six PhD graduates and two MS graduates. All of the PhD graduates have obtained excellent Post-doctoral Research Associate or Research Fellow positions in prestigious universities and federal laboratories in the US and the United Kingdom. The first graduate of the program has already achieved a permanent position as a Research Scientist with a major pharmaceutical company. The accomplishments of the Neurosciences Graduate Program have led to the recent submission of an application for support of the trainees of the Program by a National Institutes of Health Institutional Training Grant, an important step in terms of external evaluation and possible reinforcement of the achievements of the Program.
University of Kansas

Academic Program Review

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Program Highlights

Neuroscience Graduate Program at the University of Kansas

The Neuroscience Graduate Program at the University of Kansas has a unique mission of training graduate students in the multidisciplinary field of the neurosciences, a field that spans from the molecular to the behavioral level of neurological and neurobehavioral sciences. The Program was approved by the Board of Regents in 2001 and has quickly established itself as a vibrant graduate training program that spans 13 departments, two schools and the College, and the two campuses of the University of Kansas at Lawrence and Kansas City. The Program has attracted good quality students from across the US and the world. The faculty mentors associated with the Neuroscience Graduate Program are well-published and well-funded scientists who have received numerous awards and honors. The number of faculty mentors as of 2009-2010 stands at fifty eight. These mentors have obtained approximately $116 million in research funding during the period of 2001-2010 and have published 1,661 research papers and chapters during this same period. The Neuroscience Graduate Program has already graduated six PhD graduates and two MS graduates. All of the PhD graduates have obtained excellent Post-doctoral Research Associate or Research Fellow positions in prestigious universities and federal laboratories in the US and the United Kingdom. The first graduate of the program has already achieved a permanent position as a Research Scientist with a major pharmaceutical company. The accomplishments of the Neurosciences Graduate Program have led to the recent submission of an application for support of the trainees of the Program by a National Institutes of Health Institutional Training Grant, an important step in terms of external evaluation and possible reinforcement of the achievements of the Program.
The Neuroscience Graduate Program is a multidisciplinary program designed to train graduate students in the scientific fields related to neurological and neuro-behavioral sciences. The Program came into existence in 2001 following review and approval by the Board of Regents. The proposed structure of the Program was that of a bi-campus graduate training program with equal numbers of faculty at the KU Lawrence and KU Medical Center campuses. The faculty of the Neuroscience Graduate Program at the beginning numbered 34 faculty members.

**Faculty.** The number of faculty who are committed to participate in the training of graduate students in the neurosciences has grown from 34 to the current number of 58 faculty mentors. All of the faculty mentors, except for 4 Research Professors, are tenure track faculty members from the College of Liberal Arts and Sciences, the Medical School, and the School of Pharmacy. Only the tenure track faculty can function as primary mentors of graduate students in the Program, the Research Professors may function as co-mentors together with a regular faculty member. The faculty mentors have primary appointments in 13 departments at KU Lawrence and KU Medical Center. Among the faculty mentors are 3 distinguished professors, 8 directors of research centers, and 3 chairs of departments. The faculty of the Neuroscience Graduate Program is also well balanced in terms of junior and senior faculty members, consisting of 10 Assistant Professors, 19 Associate Professors, and 25 Professors. Collectively, the 58 faculty members have published 1,661 research articles, book chapters, invited reviews, and other scholarly publications. In addition, the faculty members have obtained external funding for their research amounting to $116 million during the period between 2001 and 2010 according to figures provided by the Kansas University Center for Research and the Research Institute. Finally, the faculty mentors have distinguished themselves in having received many awards and honors from scientific societies and agencies and from KU.

**Students.** The Neuroscience Graduate Program has grown during the period of 2001 to 2010 from that with a single graduate student to a steady state of 7-9 graduate students in the program over the last few years. The Graduate Program has also experienced substantial growth in terms of the interest of prospective students (26-27 applicants the last two years). The US citizen applicants to the program are approximately 50% of the total population of applicants and their credentials in terms of GRE scores and experiences in research laboratories are quite good. Over the past 9 years, the Neuroscience Graduate Program has graduated 6 PhD graduates and 2 MS graduates. All of the PhD graduates have attained positions as Post-doctoral Research Associates or Research Fellows in prestigious universities and federal laboratories in the US and the United Kingdom. The first graduate of the Program has been appointed in the position of Research Scientist with a pharmaceutical company in the US. In other words, by the fact that the PhD graduates of the Program have found excellent positions for post-doctoral training, a necessity of all graduates in the biomedical sciences, and that the first of our graduates has obtained a permanent position in his field in the
pharmaceutical industry, speaks highly of the type of training our students have received and the relevance of such training for successful careers in the neurosciences.

**Overall Assessment.** The Neuroscience Graduate Program was established in a manner that reflects the multidisciplinary nature of this exciting and rapidly growing discipline in the biomedical sciences. Despite the relative lack of support from the University, the Program has grown primarily because of the high quality of its faculty members as research scientists in vibrant areas of research and as mentors of graduate and post-graduate students. Overall, the Program has performed at a very good level. The goals for the next five years are to: a) increase the funding of the Program so that it may compete more successfully in attracting the best student applicants; b) to compete and be evaluated at the national level for the quality of training that the Program provides; and c) to enhance the management of the Neuroscience Graduate Program in both the KU Lawrence and KU Medical Center components.
University of Kansas

Academic Program Review

2007-2012

Self-Study Questions

Neuroscience Graduate Program at the University of Kansas Lawrence and Kansas City

1) What do we do and why do we do it?

A) Mission of Unit (Program). The mission of the Neuroscience Graduate Program is to provide graduate training in the multidisciplinary field of the neurosciences, a critical area of biomedical sciences. The Neuroscience Graduate Program was reviewed by a three member external review committee appointed by the Board of Regents at the time that the Program was established (review occurred in 2000). The Program has not undergone a previous review by the University.

B) Unit (Program) Goals and Priorities. The goals of the program are to attract bright students from Kansas and around the nation and provide them with training that will enable them to make significant contributions to new knowledge in the neurosciences. Additional goals of the Neuroscience Graduate Program are to strengthen other graduate programs in the pharmaceutical, biological, biomedical, and behavioral sciences at the University of Kansas, to attract very high quality graduate students on both campuses of the University, and to strengthen the research productivity of faculty, students, and post-doctoral associates in both settings of the University.

C) Short Mission Statement. KU has a Neuroscience Graduate Program because training in this field offers career opportunities for its graduates in a dominant field in the biomedical sciences.

D) Role of Unit (Program). The area of Neuroscience research and training is one that has been recognized over the years as an important area of biomedical research at KU. The Neuroscience Graduate Program at KU was approved by the Board of Regents of the State of Kansas in 2000 as a degree granting graduate program (Masters and PhD). The first graduate student was admitted in 2001 but the Program did not start recruiting and admitting graduate students until the academic year 2002-2003.

Approximately five years ago, a council on Life Sciences Research at KU recognized the neuro-behavioral sciences as an area of growing strength and recommended to the Chancellor the creation and funding of a bi-campus research center or institute in the neurosciences. The formation of a Neuroscience Institute at KU-Lawrence (KU-L) has not materialized as funding for such an institute was not appropriated. However, at KU Medical Center (KUMC), an Institute for Neurological Disorders was formed and some of the KU-Lawrence faculty are participants in training and research components of that Institute. Despite the obvious strengths of neuroscience research and scholarship across three schools and over a dozen departments at
KU, this University has been one of the slowest to introduce a graduate training program in the neurosciences.

From an administrative point, the Neuroscience Graduate Program approved by the Board of Regents was based in the School of Pharmacy, department of Pharmacology and Toxicology, even though it was approved as an interdisciplinary program with thirty four faculty members equally divided between KU-L and KUMC. Because of the administrative location of the Neuroscience Graduate Program within the School of Pharmacy, the records maintained by OIRP for the program are presented as part of the Pharmacology and Toxicology department. On page 2 of the AIMS file of data of the Pharmacology and Toxicology department it is stated that it includes those of the Neuroscience Program. The data on Majors and Degree Counts of the graduate students in the Neuroscience Program, as well as the Admission Yield of the Neuroscience Graduate Program, are listed on pages 13 to 17 of the AIMS report for the Pharmacology and Toxicology department. The remaining pages of the report are not representative of the Neuroscience Graduate Program as they refer only to the data of the Pharmacology and Toxicology department. The data about research support of the faculty or teaching productivity of the faculty members of the Neuroscience Graduate Program is spread out throughout the various departments across the two campuses of the University from which the faculty mentors of the Neuroscience Graduate Program are drawn (13 departments from KU-L and KUMC).

The Neuroscience Graduate Program spans across three Schools (the College of Liberal Arts and Sciences, the School of Medicine, and the School of Pharmacy) and is integrated into the fabric of research in the neurosciences performed in these schools. The faculty of the Program is constituted by well-funded investigators who also participate in various research centers whose focus is on neuroscience research. Participation in research centers and large projects of programmatic research within research centers, has led to many collaborations among the faculty mentors on the Program and has amplified the existing long history of cross-training of graduate students and post-doctoral associates that is provided by these faculty mentors. Examples of collaborative research programs with a strong neuroscience component include:

- **Kansas Intellectual and Developmental Disabilities Research Center** – An National Institutes of Health (NIH)-funded research center
- **Role of Reactive Oxygen Species in Aging** – An NIH-funded large program project

The Kansas Intellectual and Developmental Disabilities Research Center has a 44 year history of continuous funding and of close collaborations between KU-L and KUMC. The scientists in this center interact continuously in developing new research programs and sharing new ideas or jointly training pre-doctoral and post-doctoral trainees. One of the largest groups of investigators in this Center is that which is composed of faculty associated with the Neuroscience Program.

Many of the same faculty investigators from both KUMC and KU-L are associated with the Institute for Neurological Disorders mentioned above. The focus of the Institute is on six areas of neurological diseases and the respective basic science research in those clinical areas. In addition, the development of the KU Alzheimer and Memory Program at KUMC has become a catalyst for the establishment of multiple collaborative research and training programs in translational neuroscience that is focused on the dementias, especially, Alzheimer’s disease. The outgrowth of such collaborations across the two campuses of the University has been the development of many new projects spearheaded by faculty on both campuses. An example of continuing collaborations in research and training across the two campuses of the University is the Kansas Center of Neuroscience Research Excellence in Translational Neuroscience, a new
Center that has received a fundable score and is awaiting funding (a center based at KU-L but including KUMC at approximately equal amounts of funding). Based on the long history of strong collaborations and interactions between the faculty in neuroscience at KU-L and KUMC, we believe that the graduate programs in the neurosciences will continue to succeed and to train students in modern neuroscience methods and experimental strategies.

E) Need and Impact Statements. Prospective graduate students have been attracted to join the Neuroscience Graduate Program at KU because of the breadth of research opportunities offered by the faculty of the Program and the very good reputation of the faculty mentors of the Program not only in research but also in graduate and post-graduate training (see below). In the last five years, we have experienced substantial increases in interest for the Neuroscience Graduate Program at KU from qualified students from across the country. We have maintained the program at a relatively low level of students (7-9 students in the program each year over the past 8 years). The reason for the relatively small number of students admitted is that because as an independent graduate program not affiliated with a single department, the Neuroscience Graduate Program receives no funding from the University. There are no GTA positions associated with the Neuroscience Graduate Program. The faculty mentors in the Neuroscience Graduate Program at KU have had to contribute the full stipend support of the students from the beginning of the students' training in the Program to the time of their graduation. Unfortunately, this sets the Neuroscience Program in competition with the support for programs run by the departments of the participating faculty mentors.

With respect to the issue of the need, the employability of graduates of this or other neuroscience graduate programs suggests the level of need. Reported employment rates for PhD graduates in the field of the neurosciences during the late 1990's and continuing to the current period, are 99%, with about 97% of such Ph.D.s being employed in fields for which they were trained. Positions for graduates in the neurosciences fall into several categories: post doctoral positions for recent graduates (less than 5 years), tenure track assistant to full professor, and research scientists in non-academic institutions such as pharmaceutical companies, biotechnology industry, instrumentation design companies, federal research agencies, and various foundations. Within academic institutions, departments that have neuroscientists include the following: anatomy, anesthesiology, biomedical engineering, biopsychology, cognitive linguistic sciences, biology, developmental biology, molecular biology, biochemistry, pharmacology and toxicology, psychology, pathology, pediatrics, geriatrics, physiology, neurology, neurosurgery, and neuroscience.

F) Inventory of Instructional Programs. The Neuroscience Graduate Program offers graduate training leading to the PhD degree, and under specific circumstances to the MS degree. The faculty mentors of the program teach at both the graduate and undergraduate level in their respective departments at KU-L and KUMC. Many of the graduate level courses taught by the faculty of the Neuroscience Graduate Program are cross-listed in one or more of the curricula of departments from which the faculty of the Neuroscience Program are drawn. In addition, specialized research and graduate seminar courses focused on the neurosciences are taught by the faculty mentors of the Neuroscience Graduate Program to students who have matriculated in this Program.

All students trained in the Neuroscience Graduate Program are expected to be able to understand the fundamental principles and contributions of each of the major disciplines that form the core of neurosciences. It is for this reason that new graduate students receive training in biochemistry and molecular biology, cell biology and physiology, before proceeding with the more focused courses in neuroscience. Once students have completed the core courses, then they, together with their Faculty Mentor, decide on the track that they will follow in terms of additional elective courses in neuroscience. Students may choose either the Cell and Molecular
Neuroscience track or the Cognitive and Systems Neuroscience track. This choice depends on the type of research that the student will be conducting under the guidance of their Faculty Mentor. The curriculum at KU-L and KUMC differ slightly, primarily, because all graduate students admitted to the KUMC graduate program have to complete a common curriculum (courses designated as GSMC). However, despite the appearance of differences between the two curricula at the two settings of the program, the curricula are equivalent. Once the initial courses in biomedical sciences are completed at either KU-L or KUMC, then the students progress toward completion of core and elective courses, many of which are designated as NURO courses (i.e., select courses in the neurosciences).

2) Who does it?

A. Quantitative and Qualitative Indicators.

1) Overall counts. From the beginning, the Neuroscience Graduate Program at KU has had extensive representation across several disciplines as reflected in the number of primary, tenure-track, faculty mentors (34 mentors) on both campuses who were enthusiastic about their participation in this graduate program. The initial number of mentors was approximately equally divided between the KU-L and KUMC. The total number of faculty who currently participate in the training of graduate students in the Program is 58 (Table 1).

2) Tenure track, other, GTA. Of these 58 faculty members, 10 are Assistant Professors, 17 are Associate Professors, and 27 are Professors. Among the faculty of the Program, 3 are Distinguished Professors, 9 are Directors of research or clinical centers, and 3 are Chairs of departments. The faculty mentors of the Program are equally represented by faculty members whose appointments to the faculty are at KUMC or KU-L. Two members of the faculty have primary appointments at the Stowers Institute for biomedical research and concurrent adjunct appointments in departments at KUMC. In addition to the primary faculty mentors (i.e., tenure track faculty members), 3 Research Assistant Professors and 1 Research Associate Professor are currently also affiliated with the Neuroscience Graduate Program and can function as co-mentors of graduate students being mentored by primary faculty members. Research Professors are not functioning as primary mentors.

The Program has no GTA positions.

3) Demographics. The Faculty Mentors represent many disciplines and are members of 13 different departments at KU-L and KUMC, thus offering prospective students in this program a wide array of training sites and exciting research opportunities. The departments represented through the faculty mentors associated with the Program include: Anatomy and Cell Biology, Chemistry, Molecular Biosciences, Molecular and Integrative Physiology, Medicinal Chemistry, Neurology, Pharmacology and Toxicology, Pharmacology, Toxicology and Experimental Therapeutics, Psychiatry, Psychology, Linguistics, Otolaryngology and Head and Neck Surgery, and Speech Language and Hearing. The breadth of research opportunities offered by these faculty participants to the graduate students of the Program has been a part of the attractive nature of the Neuroscience Graduate Program to prospective graduate students. The applicants to the Program understand that the field of neurosciences is by its nature multidisciplinary, and they appreciate the fact that such multidisciplinary training and research is well represented among the faculty of the Program.

4) Scholarly output. The list of publications by each faculty mentor of the Program is presented in Table 2. The total number of publications by the current faculty mentors for the period of 2001-2010 is 1,661 (this averages to 29 publications per faculty mentor, a rough measure of productivity). The publications by faculty mentors include research articles in
scientific journals, invited review articles, contributions of chapters to books and encyclopedias, and books edited by the faculty mentors. Each of the faculty mentors is a productive scholar with a good to outstanding output of publications as outlined in Table 3 and in the files of the curriculum vitae for each mentor.

5) Grants and contracts. The research productivity of the faculty of the Neuroscience Graduate Program is listed in Table 4 and Table 5 for the faculty members at KU-L and KUMC, respectively. The tables were generated by the Kansas University Center for Research in Lawrence (Robert Collins) and the Research Institute in Kansas City Medical Center (Kathy Schleeter). The total amount of grant support by the faculty mentors at KU-L from 2001 to 2010 was $61,961,954 and varied between $3.5 and $8.8 million per year. The corresponding numbers for the faculty mentors at KUMC were a total of $ 54,018,538 for years 2001 to 2010 and varied between $2.5 and $5.8 million per year. Some of the faculty members in the early years of the Program have left the University, retired, or died, therefore, their names do not appear in the tabulation of the latest years of grant support. Other faculty mentors joined the Program only within the last 2-3 years. Not included in the statistics of grant support are the two faculty mentors with primary appointments at the Stowers Institute, Drs. Trainor and Krumlauf. Overall, the research grant support of the faculty is excellent. The research accomplishments of these scientists have brought to KU recognition for innovative research in several areas, such as behavior analysis, communication studies, rehabilitation medicine, aging and neurodegenerative conditions, and chemical and pharmacological sciences.

6) Awards. The number of awards, both national and international of the faculty associated with the Program can be gleaned from their curriculum vitae. With such a large number of faculty mentors, it is difficult to enumerate all of the awards received over the years. Nevertheless, most of the senior faculty, including Associate Professors, have functioned as reviewers and editors of scientific journals, as reviewers on initial review committees at the NIH or National Science Foundation (NSF), and have received multiple awards from the universities in which they were trained. In addition to these awards, there are 5 individuals who have received the Chancellor’s Distinguished Teaching award, 3 who received the Chancellor’s Research Award, 2 who received the Higuchi Awards in biomedical sciences, 4 who received special awards from the NIH known as the Jacob Javits award, the MERIT award, or the LEAD award, 7 who received special awards from the professional societies in which they are members, 5 who have been elected Fellows of professional or scientific societies, 3 who received Kemper Fellowship awards for teaching excellence, and 1 who received a HOPE award for teaching excellence.

7) Graduate faculty status. The status of faculty mentors is established within the departments with which the faculty members are associated. The same holds true for the criteria for receiving such status. All tenure track faculty have dissertation chair status.

B. Maintaining Quality

1) Recruiting and retaining faculty. The Steering Committee of the Neuroscience Graduate Program composed of the two site Directors and four faculty mentors (two from each campus), seeks information about new faculty members whose scholarly interests are in the neurosciences. These individuals are approached about a possible affiliation with the Program as faculty mentors and are asked to present a seminar and meet with the students and faculty mentors of the Program. The Steering Committee then decides on and confirms the association of these individuals with the Neuroscience Graduate Program. As shown in a preceding section, the faculty mentors of the Program represent a healthy mix of junior and senior faculty members. The junior faculty members of the Program are active researchers who have already made good contributions to research and training in the Neurosciences.
2) **Succession plan.** The plan of recruiting new faculty members to the Neuroscience Graduate Program seems to be working very well in that we have expanded the number of participants from 34 to 58 and have increased the number of Assistant and Associate Professors, i.e., individuals who will tend to the future success of the Program.

3. **How well do we do it, and who thinks so?**

   A. **Undergraduate-level**

   The Program is operating only at the graduate level.

   B. **Graduate-level**

   1) **Students in profile.** The numbers of applicants to the Program has been rising over the past 5 years, from 7 applicants in 2005 to 26 in 2009. Of the 26 in 2009, 17 were US citizens or permanent residents (Table 6). The numbers for 2009 were not an exception as the numbers for 2010 parallel those of 2009 (27 applicants, of whom 10 are US citizens or permanent residents). The quality of the applicants to the Program is also quite good and the applicants to the Program have received their undergraduate training in colleges and universities across the US and the world (Table 6). The average GRE scores for the 2009 applicants were: Verbal 512, Quantitative 686, and Analytical 4.2. The average GRE scores of current trainees in the Neuroscience Graduate Program are: Verbal 516, Quantitative 664, and Analytical 4.1 (Table 7).

   As indicated in previous sections, the Neuroscience Graduate Program has not received any graduate student support from the University except for one GRA position at KUMC during the first two years of the Program operation. With regard to scholarships, one graduate student received a four-year scholarship from the *Fonds de recherche en santé du Quebec* from the Canadian government, and three graduate students received a four-year Barbara Bishop scholarship for biomedical graduate studies at KU-L. The latter scholarship has assisted the students in paying their tuition and student supplies.

   As indicated in preceding sections, the number of students in the Program since 2002 has been maintained at 7 to 9 students. The graduate students in the Neuroscience Graduate Program have received undergraduate degrees in chemical or biological sciences, except for one current student who joined the Neuroscience Graduate Program after completing the MS degree in Engineering.

   2) **Program Productivity**

   As indicated in a previous section, the first graduate student to the Program was admitted in 2001. Since 2001, the Program graduated 6 PhD graduates and 2 MS degree graduates.

   The average time for graduate students in the Neuroscience Graduate Program to receiving the PhD degree is 5 years. Each of the students who graduated with a PhD or MS degree has published at least one scientific paper containing the results of their studies during their training period. The total number of papers that resulted from the training period of the 6 PhD and one MS graduate for the Program is 17, with a high of 6 papers by one graduate and a low of 1 paper. In addition to the full scientific papers published by the graduates of the Program, all students have made oral and poster presentations in national and international meetings such as the Society for Neuroscience, a society that attracts approximately 35,000 neuroscientists from around the world to its annual meetings.
3) Program Quality Outcome

All PhD graduates of the Neuroscience Program have gone on to post-doctoral training positions in the laboratories of mentors at Universities or Government agencies. For example, one is a Research Fellow at the University College London Institute of Neurology, another is a Post-doctoral Research Associate at the University of Texas Southwestern Medical Center in Dallas, another is a Post-doctoral Research Associate at Washington University School of Medicine in St. Louis, and another a Post-doctoral Research Associate at the NIH laboratories in Montana. One of the graduates of the Program has remained at KU to complete a post-doctoral training period in neurochemistry. The first graduate of the Program assumed a position as a Research Scientist at Vertex Pharmaceuticals Inc. in San Diego, CA.

The satisfaction surveys for the department of Pharmacology and Toxicology probably include the survey responses of the graduates of the Neuroscience Graduate Program as OIRP did not distinguish one from the other of the two programs. The Neuroscience Graduate Program has not conducted satisfaction surveys independent of whatever was done by OIRP.

4. Overall Quality

A. External indicators. The Neuroscience Graduate Program at KU is too new and has not yet received an assessment of its quality from national ranking agencies such as the NRC (NRC 2007 rankings).

Another form of evaluation of a program at the national level is through submission of proposals to the NIH or NSF for possible funding of a pre-doctoral training grant for the support of graduate students in the program. In May 2010, a proposal was submitted to the NIH for an institutional training grant for the support of the Neuroscience Graduate Program. The proposal has not yet been reviewed, therefore, comments assessing the Program at KU have not yet been received.

B. Mission outcomes. During the short history of the Neuroscience Graduate Program at KU, there is clear evidence that: a) many faculty members from various departments are enthusiastic in their participation in the Program; b) the faculty mentors are very productive scholars with well-funded research programs; c) the Program has become increasingly attractive to good quality student applicants from around the nation; d) the Program has had a steady rate of graduates receiving their PhD degrees in a timely fashion; and e) the graduates of the Program have landed positions in excellent research universities and agencies around the nation and the world. Based on these indicators, it appears that the Program is training graduate students in appropriate fields of the neurosciences and rendering the trainees desirable to other highly respected neuroscience research institutions.

C. Overall assessment. The overall assessment of the Neuroscience Graduate Program PhD degree granting component is very good. The MS degree granting component is not assessed separately as that degree is granted only occasionally when a student’s situation changes (usually for personal reasons) that necessitate the termination of the training program at the masters level. The overall assessment of “very good” is to a large extent the result of having operated this graduate program without the benefit of any support from the University. The Neuroscience Graduate Program could have been even better in terms of admissions and national competitiveness if only some University support was given to the Program.

5. Plans to advance the program

The Neuroscience Graduate Program Steering Committee has also functioned as the review committee for applications to the Graduate Program and as the Admissions Committee
when all students were being admitted through the KU Lawrence campus. This approach has been cumbersome and caused delays in trying to make decisions for admission of students interested in joining the Program, especially those interested in the component of the Program at KUMC. The delays were due to the fact that all graduate admissions at KUMC are handled through the Interdisciplinary Graduate Program in Biomedical Sciences, thus undergoing a second level of review.

To simplify the admissions process and the structure of the Neuroscience Graduate Program, some changes are being discussed with a plan to introduce the changes in the upcoming academic year, 2010-2011. The Program will be advertised as having two admissions processes, one at KU-L for students who wish to matriculate at the Neuroscience Graduate Program in Lawrence and a separate one at KUMC for students who wish to enroll in the Neuroscience Graduate Program at the Medical School. The Program will remain a single, Board of Regents-approved graduate program, with a single web site for advertisement of the Program, with a single Steering Committee, and with a joint neuroscience seminar series and some joint courses in neuroscience. All students admitted to the neuroscience graduate program, regardless of the campus to which they will be admitted, will receive the same PhD degree in Neuroscience conferred by the University and the Board of Regents upon successful completion of their studies.

The Steering Committee of the Program will monitor the progress of all graduate students, regardless of the campus program component into which they were admitted. Also, if we are successful in receiving support from the NIH for the training program, the Steering Committee will select the best students in the Program, regardless of the campus component into which they enrolled, for the awarding of training grant support.

Without some level of support for the Program, it will be very difficult to enhance the training component of the Program. Recruitment and support of graduate students is expensive as the competitor institutions provide many levels of support, not just stipend support, that make their programs ultimately more attractive to prospective students. The possible introduction of an undergraduate degree program in Neuroscience has been and will continue to be discussed as a means to expand the Program.

6. Evaluation of future progress and success

The key measures used to assess progress and success of the Neuroscience Graduate Program will be: a) increases in the size and quality of the applicant pool; b) increased funding of the Program by the University and external sources; c) success in attracting the best students to join the Program; d) participation of excellent faculty in the training programs; e) timely graduation of the students admitted to the Program; f) successful placement of all graduates in post-doctoral positions prior to their departure from the KU Program; g) positive ratings in the satisfaction of students with the training they received while in the Program; h) good evaluations of the training program by NIH review committees and, hopefully, success in receiving funding to support the training of graduate students in the Program; and i) good rankings at the national level.
University of Kansas

Academic Program Review

2007-2012

Summary of Self-Study of the Neuroscience Graduate Program at the University of Kansas

The Neuroscience Graduate Program is a multidisciplinary program designed to train graduate students in the scientific fields related to neurological and neuro-behavioral sciences. The Program came into existence in 2001 following review and approval by the Board of Regents. The proposed structure of the Program was that of a bi-campus graduate training program with equal numbers of faculty at the KU Lawrence and KU Medical Center campuses. The faculty of the Neuroscience Graduate Program at the beginning numbered 34 faculty members.

Faculty. The number of faculty who are committed to participate in the training of graduate students in the neurosciences has grown from 34 to the current number of 58 faculty mentors. All of the faculty mentors, except for 4 Research Professors, are tenure track faculty members from the College of Liberal Arts and Sciences, the Medical School, and the School of Pharmacy. Only the tenure track faculty can function as primary mentors of graduate students in the Program, the Research Professors may function as co-mentors together with a regular faculty member. The faculty mentors have primary appointments in 13 departments at KU Lawrence and KU Medical Center. Among the faculty mentors are 3 distinguished professors, 8 directors of research centers, and 3 chairs of departments. The faculty of the Neuroscience Graduate Program is also well balanced in terms of junior and senior faculty members, consisting of 10 Assistant Professors, 19 Associate Professors, and 25 Professors. Collectively, the 58 faculty members have published 1,661 research articles, book chapters, invited reviews, and other scholarly publications. In addition, the faculty members have obtained external funding for their research amounting to $116 million during the period between 2001 and 2010 according to figures provided by the Kansas University Center for Research and the Research Institute. Finally, the faculty mentors have distinguished themselves in having received many awards and honors from scientific societies and agencies and from KU.

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that the first of our graduates has obtained a permanent position in his field in the pharmaceutical industry, speaks highly of the type of training our students have received and the relevance of such training for successful careers in the neurosciences.

**Overall Assessment.** The Neuroscience Graduate Program was established in a manner that reflects the multidisciplinary nature of this exciting and rapidly growing discipline in the biomedical sciences. Despite the relative lack of support from the University, the Program has grown primarily because of the high quality of its faculty members as research scientists in vibrant areas of research and as mentors of graduate and post-graduate students. Overall, the Program has performed at a very good level. The goals for the next five years are to: a) increase the funding of the Program so that it may compete more successfully in attracting the best student applicants; b) to compete and be evaluated at the national level for the quality of training that the Program provides; and c) to enhance the management of the Neuroscience Graduate Program in both the KU Lawrence and KU Medical Center components.