

COVER PAGE

INSTITUTION: **Indiana University–Purdue University Indianapolis (IUPUI)**

CAMPUS: **Indianapolis**

COLLEGE: **Purdue School of Science**

DEPARTMENT/SCHOOL: **Psychology**

DEGREE PROGRAM TITLE: **Ph.D. in Addiction Neuroscience**

SUGGESTED CIP CODE: **42.2706**

PROJECTED DATE OF IMPLEMENTATION: **January, 2016**

NEW DEGREE PROGRAM PROPOSAL SIGNATURE PAGE

Degree Title: Ph.D. in Addiction Neuroscience

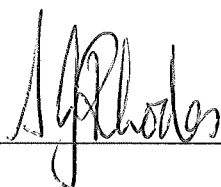
Name of academic unit offering the new degree: Purdue School of Science, IUPUI

Include signatures from all involved programs:



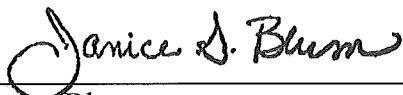
Peggy Stockdale, Professor and Chair
Department of Psychology, IUPUI

9/28/2015
Date



Simon Rhodes, Dean
Purdue School of Science, IUPUI

9/28/15
Date



Janice Blum
Associate Vice Chancellor for Graduate Education, IUPUI

10/1/15
Date

Approval Recommended by the Graduate Council

Date

M.J.T. Smith
Dean of the Graduate School

Date

Debasish (Deba) Dutta
Provost

Date

Executive Summary

A Proposal to Convert the Current Stewarded Psychology Ph.D. Program at the IUPUI Purdue School of Science, Department of Psychology, Addiction Neuroscience Area, to a Site-Approved Ph.D. Program in Addiction Neuroscience

The primary objective of this proposal is to convert the existing Purdue Ph.D. program in Addiction Neuroscience in the Psychology Department, which is entirely delivered on the Indianapolis campus but is currently credited to Purdue University-West Lafayette, to a Purdue Ph.D. program in Addiction Neuroscience that is site-approved for Indianapolis (IUPUI). The IUPUI Department of Psychology has been training Ph.D. students for over twenty years. The program, which was originally called “Psychobiology of Addictions”, admitted its first students in 1994 and graduated the first Ph.D. in 1998. Twenty-three individuals have earned a Purdue University Ph.D. in Psychology, with the vast majority going on to successful careers in science. A second objective of the proposed degree is to make it more efficient to train new researchers that can contribute to the advancement of science as well as the economic development of Indiana and beyond. A final objective of this research-focused Purdue Ph.D. program in Addiction Neuroscience at IUPUI is to empower our research faculty to drive increased research collaboration across campus to make IUPUI more competitive for external funding.

The proposed Ph.D. program in Addiction Neuroscience will provide a nexus for scientific exchange and training that will be unique and much needed to support the local and central Indiana life sciences economy. Currently, there are no other Ph.D. programs in addiction neuroscience in metropolitan Indianapolis. It is also clear that local Ph.D.-training opportunities in addiction neuroscience, particularly in the strength areas of neuropsychopharmacology and neurobehavioral genetics, are desired by local employers such as Eli Lilly and Covance. The creation of a site-approved Ph.D. in Addiction Neuroscience will also serve the goals of the university by increasing graduate research and training with a focus of expertise that aligns and synergizes with the ongoing life-sciences activities on campus, e.g., activities within the IU School of Medicine at IUPUI. Aside from the obvious impact of the planned degree program on the local economy, nationally, the labor market for graduates with doctoral degrees in the neurosciences remains quite strong.

The primary goal of the Addiction Neuroscience program is to train students interested in the behavioral and brain sciences who seek research-based careers in behavioral neuroscience and psychopharmacology. The graduate training is designed to promote a comprehensive understanding of the neural bases of behavior, with an emphasis on the behavioral neurobiology of drugs of abuse. Students are expected to gain expertise in integrative neuroscience, and learn to apply current methods in molecular, cellular and systems neuroscience to key problems of drug abuse and addiction. The program is intended to prepare students for careers in traditional academic institutions, in medical neuroscience research environments, or in pharmaceutical industry or government research settings. To acknowledge our program’s unique emphasis on addiction and in keeping with the modern taxonomy of neuroscience, the historical program name was changed from “Psychobiology of Addictions” to “Addiction Neuroscience” in 2013. This name and our degree emphasis reflect well the stated focus of IUPUI as the “life and health sciences” campus of IU. In this way, Addiction Neuroscience has also minimized overlap and redundancy with existing Ph.D. programs, such as those of the Department of Psychological and Brain Sciences at IU-Bloomington and Psychological Sciences at PUWL, as letters from heads of both those programs attest to (see attached support letters). As is described by this proposal, the course of work, both in the classroom and in the laboratory-based thesis research, will remain programmatically identical to and as rigorous as it has been for the past 21 years. Furthermore, as this proposal is, in effect, a petition to site-approve a 21-year ongoing activity, no new resources are necessary to implement it; the necessary faculty, staff, library resources, and laboratory resources are all currently in place, and have been effectively supporting the described Addiction Neuroscience Ph.D. program for over two decades now.

Program Description

Ph.D. in Addiction Neuroscience to be Offered by Purdue University at Indiana University – Purdue University Indianapolis (IUPUI)

1. Characteristics of the Program

- a. *Campus Offering Program*: Indiana University - Purdue University Indianapolis
- b. *Scope of Delivery (Specific Sites or Statewide)*: IUPUI
- c. *Mode of Delivery (Classroom, Blended or Online)*: Classroom
- d. *Other Delivery Aspects (Co-ops, Internships, Clinical, Practica, etc.)*: Participation in research.
- e. *Academic Unit(s) Offering Program*: IUPUI School of Science, Purdue University Graduate School.

2. Rationale for Program

- a. *Institutional Rationale (Alignment with Institutional Mission and Strengths)*

This proposal aims to establish an Indianapolis-based, Purdue Ph.D. program in Addiction Neuroscience in the Department of Psychology at IUPUI, an Urban Research University that has been designated by the Indiana University System as its “Health and Life Sciences” campus. The program is closely aligned with the campus emphasis on biomedical sciences and its designation as the “Life and Health Sciences Campus” within the Indiana University System. Increasing the number of Ph.D. graduates is a central goal of the IUPUI strategic plan, adopted in 2013. The faculty in the Addiction Neuroscience graduate program are also faculty of the undergraduate Neuroscience Program and the Department of Psychology. The undergraduate Neuroscience Program and Department of Psychology are key contributors to the health emphasis on campus by providing foundational course work for undergraduate health programs, which are key feeder programs for campus professional and health-related graduate programs, including the Addiction Neuroscience graduate program. The Department of Psychology is also the setting for growing externally funded research programs with strengths in a variety of biomedical research fields. The Ph.D. program in Addiction Neuroscience will offer training to the highest degree available at institutions of higher education and will complement the advanced degree programs in the professional schools on campus. The Addiction Neuroscience program has been training Ph.D. students for twenty-one years, with the majority earning the Purdue University Ph.D. in Psychology, a degree awarded on the West Lafayette campus despite the fact that 100% of the course work and research training is completed on the IUPUI campus. Addiction Neuroscience has seen increased interest in its program over the last several years and in the last four years engaged in hiring initiatives that brought additional research-focused faculty members on board. Having a Purdue Ph.D. program that awards degrees in Indianapolis, as we move forward, will allow for increased research collaboration across campus, will make IUPUI more competitive for external funding, and will allow IUPUI to retain rightful ownership of the Addiction Neuroscience Ph.D. degrees awarded.

The program serves several critical needs: (1) supporting and enhancing the research mission of the Department of Psychology, by increasing the profile of the department nationally, enhancing faculty recruitment, and creating an environment in which undergraduate students in Psychology and Neuroscience are immersed in cutting-edge research in biomedical science; and (2) producing doctoral graduates with rigorous classroom training in contemporary addiction neuroscience and first-hand experience in research that advances psychology, particularly in areas relevant to human health and wellbeing.

As stated above, the proposed program does not represent a new training program, but rather a new, independent status for an existing training program that has operated successfully for twenty-one years and with limited autonomy for the last decade. Independent status for the program will only minimally change most aspects of program operation and structure, with the major change being elimination of the required involvement of West Lafayette faculty. Currently, students already take all coursework and exams in Indianapolis and conduct research with IUPUI faculty mentors. The new program structure follows the current structure for graduate training and the requirements of the Purdue University Graduate School, but removes requirements for PUWL approval for admissions and participation in PhD qualifying exam and doctoral advisory committees. This will make it more efficient for PhD students to progress through the program, and will allow the program to grow in ways that best support student success and to be tailored to the particular research strengths of IUPUI Addiction Neuroscience and its faculty.

The Addiction Neuroscience program at IUPUI has developed particular research strengths as a consequence of its location on the IUPUI campus and the opportunities afforded by collaborations with the IU School of Medicine, other departments in the School of Science, and local life sciences enterprises, particularly Eli Lilly. An ongoing collaboration with Eli Lilly ("LGRAD") allows Lilly scientists to obtain the Ph.D. degree while working on collaborative research projects involving Lilly Research Labs and IUPUI.

The general focus of the program involves the study of addiction from a behavioral neuroscience perspective. Research strengths include neuropsychopharmacology (with an emphasis on drugs of abuse), behavioral analyses and development of animal models of alcohol and drug use and abuse, developmental and genetic basis of addictive behaviors, animal models of neuroteratogenic effects of prenatal exposure to drugs of abuse, and gene-by-environment interactions in producing addictive behaviors. In addition, the program has emerging strengths in molecular and electrophysiological approaches to assess the underlying neural deficits in addiction. Approval of autonomy for the program will enhance opportunities for our graduates by providing more direct recognition of the program at IUPUI, thereby raising the profile and status of the program, which will improve our competitiveness for external funding and for recruitment of students at the national level.

- b. *State Rationale "Reaching Higher, Achieving More calls for institutions that advance the specific mission and strengths of each institution."*

The mission and vision statements of the IUPUI Campus are:

Indiana University - Purdue University Indianapolis (IUPUI), a partnership between Indiana and Purdue universities, is Indiana's urban research and academic health sciences campus.

IUPUI's mission is to advance the state of Indiana and the intellectual growth of its citizens to the highest levels nationally and internationally through research and creative activity, teaching and learning, and civic engagement.

By offering a distinctive range of bachelor's, master's, professional, and Ph.D. degrees, IUPUI promotes the educational, cultural, and economic development of central Indiana and beyond through innovative collaborations, external partnerships, and a strong commitment to diversity.

Our vision: To be a leading urban research institution recognized for the success of its students, its advances in health and life sciences, and its intellectual, economic, and cultural contributions to the well-being of the citizens of Indianapolis, the state of Indiana, and beyond.

It should be clear that the Addiction Neuroscience Ph.D. program directly addresses multiple aspects of this mission and vision, including the life/health sciences, research in a distinctive range of doctoral degrees, and the economic development of the central Indiana region. This proposal will advance campus goals by increasing the number of doctoral graduates,

strengthening life sciences research and forging partnerships with regional life sciences enterprises.

c. *Evidence of Labor Market Need*

i. *National, State, or Regional Need.*

An advanced education in neuroscience prepares students for a wide range of career paths. Since the brain is involved in every important human endeavor, understanding brain function and dysfunction is critical in many fields, including medicine, psychology, law, engineering, education, and public policy. Neuroscience is a highly interdisciplinary field, and graduates will master the ability to incorporate knowledge from many levels (from molecules to human behavior) to solve complex problems. Moreover, the emphasis of the Addiction Neuroscience program on an area of great need in the health science field increases the number of employment opportunities. For instance, the Society for Neuroscience careers website currently lists 258 job opportunities with the majority requiring a Ph.D. The Research Society on Alcoholism jobs page lists 23 postdoctoral openings and three faculty openings, all requiring a Ph.D. The College of Problems of Drug Dependence lists seven postdoctoral openings and 24 faculty/industry positions requiring a Ph.D. Finally, with the growth of neuroscience undergraduate and graduate programs, more qualified faculty will be required at both the state and national level to train these incoming students.

ii. *Preparation for Graduate Programs or Other Benefits.*

The Ph.D. is considered a terminal degree, but a large fraction of graduates will go on to post-doctoral training in related fields. However, a Ph.D. in Addiction Neuroscience may also serve as auxiliary or additional specialized training for those seeking ultimate employment in professional areas of business, medicine, or law via the MBA, MD, or JD. Here again, site approval of the Addiction Neuroscience Ph.D. degree benefits IUPUI as a whole by providing this additional graduate training capacity proximal to the IUPUI schools of business, medicine and law.

iii. *Summary of Indiana DWD and/or U.S. Department of Labor Data*

Indiana Department of Workforce Development (DWD) data do not specifically address demand for doctoral graduates, but overall demand in the life sciences is strong. The DWD predicts statewide growth in medical scientist jobs by 421 positions or 27.8% over the current decade, with 'medical scientist' ranked among the top 50 hottest jobs in Indiana. Growth in the area of biological technicians is also projected at 6.56% (113 new jobs) over this same period. The state is unlikely to be able to achieve significant growth in high priority sectors such as biotechnology without access to a pool of individuals trained to the doctoral level in the neurosciences. Overall demand for college graduates in these economic sectors will drive sustained demand of public and private state institutions of higher education for doctoral graduates to serve their instructional and research/development needs.

iv. *National, State or Regional Studies*

The Ph.D. is a global degree, with recipients often seeking high-level positions wherever they exist nationwide. Nonetheless, perhaps due to our strong links with regional employers including Lilly and Covance, we note that 7 of 23 Ph.D. graduates from the current Addiction Neuroscience program are currently employed in Indiana (see Appendix C). National reports, such as the Report of the Working Group of the Advisory Council to the Director of the National Institutes of Health (NIH) *Biomedical Research Workforce Working Group Report* (http://acd.od.nih.gov/Biomedical_research_wgreport.pdf; 2012) shows a high fraction of doctoral graduates in biomedical science are employed in research careers, either in academic institutions or in other settings (government, industry). The fraction of graduates not in the labor force remains very low. For instance, data from the NSF Survey of Doctoral Recipients (SDR; <http://www.nsf.gov/statistics/srvydoctoratework>) shows that of 120,200 doctoral

graduates in Psychology, only 1,200 (1%) were unemployed and in the general area of biological/agricultural/environmental life sciences, of 211,900 doctoral graduates only 4200 (2%) were unemployed at the time of the most recent survey (2013). These unemployment levels are much lower than state and national unemployment levels averaging 2-4 times that rate, and have remained low despite a significant increase in the number of PhDs granted in these fields. Employment of doctoral graduates in Indiana in these two general disciplines was approximately 1400 and 2700, respectively, in 2013 (SDR). Thus, the job market for graduates from this program is robust and is likely to remain so in the future.

v. Surveys of Employers or Students and Analyses of Job Postings

The track record of IUPUI Addiction Neuroscience graduates in advancing their careers is clear evidence of demand for the skills. This is documented in appendix C.

vi. Letters of Support

See attached (Appendix D) letters from Bill Hetrick (Department of Psychological and Brain Sciences at IUB), Gerry Oxford (Stark Neurosciences Research Institute, IUSOM), Terry Powley (Department of Psychological Sciences, PUWL), and John C. Lechleiter (Eli Lilly and Co.).

3. Costs of and Support for the Program

a. Costs

- *Faculty and Staff*

Addiction Neuroscience has 7 tenure track faculty with regular appointments in the Purdue University Graduate School and who are currently able to serve on graduate committees and to mentor students. They will constitute the graduate faculty for the new program. No new faculty positions are required to establish the independent program.

- *Facilities*

The program will be supported by teaching and research facilities that currently exist on the IUPUI campus.

- *Other Capital Costs (e.g. Equipment)*

Student research will be supported by existing capital equipment in the School of Science or by equipment purchased with funds secured by external research awards.

b. Support

- *Nature of Support (New, Existing, or Reallocated)*

This is a continuation of an ongoing program, so only existing funding will be used.

- *Special Fees above Baseline Tuition*

The Addiction Neuroscience PhD program will have the same tuition and fees as other School of Science graduate programs.

4. Similar and Related Programs

a. List of Programs and Degrees Conferred

- *Similar Programs at Other Institutions*

There are related Ph.D. programs in the State of Indiana at Indiana University Bloomington (IUB), including Psychology (with “tracks” in Cognitive Neuroscience and Molecular/Systems Neuroscience) and Neuroscience. There is also the Behavioral Neuroscience program in the Department of Psychological Sciences at Purdue University West Lafayette (PUWL), the program through which we are now operating. The IUPUI campus also has a Ph.D. program in Medical Neuroscience through the School of Medicine. Each of these programs has a focus that makes it unique in many but not in all ways. The independent Addiction Neuroscience Ph.D. program that we propose here will complement existing Indianapolis/IUPUI programs by having a specialization in the sub-discipline of addiction, with an emphasis on the developmental, genetic, neural and behavioral underpinnings of addiction. This focus is synergistic with, and complementary to, research being done in the School of Science Departments of Biology and Mathematical Sciences, as well as the School of Medicine, here on the IUPUI campus.

- *Related Programs at the Proposing Institution*

There is no similar graduate-level program on the IUPUI campus. The IU School of Medicine has research areas in the standard basic biomedical sciences with the obvious emphases on the appropriate applied areas of human health, and the Behavioral Neuroscience program at PUWL does not emphasize addiction.

- b. List of Similar Programs Outside Indiana*

There are too many neuroscience and psychology PhD programs to list in this proposal since there are essentially programs at every research university because a doctoral program is an important complement to a high level of research activity. The most recent National Research Council ranking of research doctoral programs (<http://sites.nationalacademies.org/PGA/Resdoc/index.htm>) lists 93 programs under the category of Neuroscience and Neurobiology, many of which may have aspects of their training that is in some ways comparable to the proposed program. The survey lists 218 programs under the heading of Psychology, with subdisciplines that may (e.g., Biological Psychology) or may not (e.g., Social Psychology) be comparable to the proposed program. Each program is unique and distinguished by the particular research interests of the participating faculty. We would note, however, that the proposed Addiction Neuroscience program would be the only program specialized for training in addiction related behavior and neuroscience. In fact, a Google search for “Neuroscience of Addiction graduate training” shows our program in the first and second highest matching links. Other programs listed, including UC San Francisco and the University of Minnesota (third and fourth links) have large faculties, a minority of whom offer specialized training in the neuroscience of addiction. Important features of our program include collaborative faculty and specialized coursework all dedicated to training in this area.

- c. Articulation of Associate/Baccalaureate Programs*

Not applicable.

- d. Collaboration with Similar or Related Programs on Other Campuses*

Collaborations between the Addiction Neuroscience program and several departments in the Indiana University School of Medicine are extensive. For example, an ongoing National Institute on Alcohol Abuse and Alcoholism (NIAAA)-funded P60 research Center grant (Center on Genetic Determinants of Alcohol Ingestion and Responses to Alcohol; now in Year 28) currently provides funding for multiple IUSM faculty and three of the seven faculty members in Addiction Neuroscience. One current faculty member is the Director of an NIAAA-funded T32 Training Grant (Training Grant on Genetic Aspects of Alcoholism; now in Year 30) that funds the training of graduate students and postdoctoral fellows from related graduate programs across the IUPUI, IUSM, IU

Bloomington and PUWL campuses. Over the last 15 years there have been several funded collaborations between Addiction Neuroscience faculty and faculty in the Psychological and Brain Sciences department at IU-B. Most recently, Addiction Neuroscience faculty collaborated with IUSM and IU-B researchers on the submission of a Grant Linking Universitywide Expertise (GLUE) grant application (Translational Adolescent Cannabis Use Research Center) intended to provide pilot data for the submission of a larger National Institute on Drug Abuse Center grant application.

5. Quality and Other Aspects of the Program

a. Credit Hours Required/Time to Completion

- *Credit hours required for the program and how long a full time student will need to complete the program.*

The Ph.D. requires at least 90 credit hours of course work and research. Students who enter the Ph.D. program with a MS degree can apply a maximum of 30 credit hours toward the 90 credit hours required for the Ph.D. degree.

Program requirements include selecting a Research Advisor, giving a formal research presentation, establishing a Graduate Advisory Committee, passing a Written and an Oral Candidacy Exam, submitting a Plan of Study, submitting a dissertation proposal, submitting and defending a dissertation, and satisfactorily presenting a final Formal Seminar. For a sample plan of study, see Appendix A.

b. Exceeding the Standard Expectations of Credit Hours

Not applicable.

c. Program Competencies or Learning Outcomes

- *List the significant competencies or learning outcomes that students are expected to master.*

Upon completion of the Ph.D. in Addiction Neuroscience, students should be able to:

- Design and conduct well conceived, significant research projects that advance knowledge in the field;
- Critically analyze and evaluate data collected by themselves or others in the field and make judgments about the quality and significance of the data;
- Effectively communicate the results of research in written form to qualified individuals in the field in publications in the scientific literature;
- Write effective proposals to secure support for research projects in the fields of behavioral and addiction neuroscience;
- Orally communicate research results to a professional audience and engage in dialogue with other researchers in the field;
- Demonstrate in-depth knowledge of the scientific literature in the chosen field of inquiry and use this knowledge effectively to inform the selection of research questions and the approach to be taken;
- Conceive new ideas or new ways of understanding questions related to the brain, behavior, addiction and neuroscience in general.
- Demonstrate an appreciation of ethical concerns in research and the importance of research integrity.

- Organize and communicate effectively the scientific basis of knowledge, concepts, and theories concerning neuroscience and addiction in educational settings.

d. Assessment

Progress towards achieving the competencies expected of Ph.D. graduates will be assessed at multiple stages during the student's career:

- Competency in coursework is assessed through examination, oral presentation and written reports.
- At the end of the Spring semester of the second year, students present a full, formal presentation of their research to that point which will be critiqued by all of the Addiction Neuroscience faculty.
- Students are assessed on their knowledge in addiction neuroscience with a written and orally defended qualifying exam approved by the graduate faculty and taken by the end of the third year.
- Students meet at least annually with their advisory committee to review progress towards completion of the research that will be included in the dissertation.
- Students submit the final dissertation to the advisory committee for approval and are examined at an oral defense of their research by the advisory committee.

e. Licensure and Certification

Not applicable.

f. Placement of Graduates

A list of former graduates is attached as Appendix C. Placement of graduates is indicated in the list of previous IUPUI Psychology Department, Addiction Neuroscience Area Ph.D. students. Graduates have gone on to postdoctoral fellowships at prestigious national research institutions, including Harvard, Yale, Johns Hopkins, The Scripps Research Institute and The Rockefeller University, and faculty positions in research institutions such as Louisiana State University Health Sciences Center and University of Puerto Rico School of Medicine. Several graduates are in positions in the life sciences industry or in government (e.g., Eli Lilly, Covance, and NIH).

g. Accreditation

Accreditation is not available for Ph.D. programs in Psychology.

6.

Table 1

Cost of and Support for the Program Detail on Direct Program Costs

Purdue Indianapolis Campus - PhD in Addiction Neuroscience Program

	FTE	Year 1 2016-17	FTE	Year 2 2017-18	FTE	Year 3 2018-19	FTE	Year 4 2019-20	FTE	Year 5 2020-21
Personnel Services										
Faculty	0.3	\$ 27,000	0.6	\$ 54,000	1.0	\$ 90,000	1.3	\$ 117,000	1.4	\$ 126,000
Staff	-	-	-	-	-	-	-	-	-	-
Graduate Assistants	1.0	36,000	2.0	72,000	3.0	108,000	4.0	144,000	5.0	180,000
Total Personnel Services		\$ 63,000		\$ 126,000		\$ 198,000		\$ 261,000		\$ 306,000
Supplies and Expense										
General Supplies and Expense		\$ 14,000		\$ 28,000		\$ 52,800		\$ 66,800		\$ 59,200
Recruiting		-		-		-		-		-
Travel		-		-		-		-		-
Library		-		-		-		-		-
Total Supplies and Expense		\$ 14,000		\$ 28,000		\$ 52,800		\$ 66,800		\$ 59,200
Equipment										
New Equipment (see narrative)		\$ -		\$ -		\$ -		\$ -		\$ -
Equipment Replacement		-		-		-		-		-
Total Equipment		\$ -		\$ -		\$ -		\$ -		\$ -
Facilities (see narrative)		\$ -		\$ -		\$ -		\$ -		\$ -
Student Assistance										
Graduate Fee Scholarships		\$ 18,400		\$ 36,800		\$ 55,200		\$ 73,600		\$ 92,000
Fellowships		-		-		-		-		-
Total Student Assistance		\$ 18,400		\$ 36,800		\$ 55,200		\$ 73,600		\$ 92,000
Total Costs		\$ 95,400		\$ 190,800		\$ 306,000		\$ 401,400		\$ 457,200

Table 2**Projected Headcount and FTE Enrollments and Degrees Conferred**

NEW ACADEMIC DEGREE PROGRAM PROPOSAL SUMMARY

Institution/Location: Indiana University-Purdue University Indianapolis
 Program: Ph. D. in Addiction Neuroscience
 Proposed CIP Code: 42.2706
 Base Budget Year: 2015-16

	Year 1 2016-17	Year 2 2017-18	Year 3 2018-19	Year 4 2019-20	Year 5 2020-21
Enrollment Projections (Headcount)					
PhD Program	4	8	12	16	20
Master of Arts Program	-	-	-	-	-
	4	8	12	16	20
Enrollment Projections (FTE)					
PhD Program	3	7	10	13	15
Master of Arts Program	-	-	-	-	-
	3	7	10	13	15
Degree Completion Projection	-	-	-	-	4

CHE Code:
 Campus Code:
 County Code:
 Degree Level:
 CIP Code:

Appendix A

Curriculum and Requirements

• Admissions Requirements

Applicants for the Ph.D. in Addiction Neuroscience must have a bachelor's or master's degree from an accredited college or university. Academic preparation and performance in the life sciences (e.g., experimental psychology and behavioral neuroscience; cell and systems biology; chemistry) will be given high priority when considering candidates for admission. Critical emphasis is placed on evidence of laboratory research experience. Applicants must include the following material:

- Official Transcripts from all previous undergraduate and/or graduate institutions.
- Nonnative speakers of English must present campus-approved evidence of English language proficiency (<http://iapply.iupui.edu/graduate/english/>). This can be accomplished in a variety of ways, such as a score of 86 or better on the IBT TOEFL (the following IBT subscore minimums must also be met: Writing-18, Listening-14, Speaking-18, Reading-19).
- Graduate Record Exam (GRE) scores within the past five years.
- A personal statement demonstrating effective written communication skills and that clearly explains why the student wants to enter the program.
- Answers to the Department of Psychology Questionnaire (which has questions specific to the Addiction Neuroscience program).
- Three confidential letters of recommendation provided by professionals who are familiar with the applicant's work and strengths.
- Curriculum Vitae (optional)
- Application fee (currently \$60.00)

Students who have completed a M.S. in a related program may be directly admitted to the doctoral program in Addiction Neuroscience with some or all of the master's coursework and thesis credited toward the Ph.D. requirements, as deemed appropriate by the program faculty.

• Curriculum Requirements

The Ph.D. requires at least 90 credit hours of course work and research. Students who enter the Ph.D. program with a M.S. degree can apply a maximum of 30 credit hours toward the 90 credit hours required for the Ph.D. degree. It is expected that the Ph.D. degree will take the average graduate student about five years of full-time, post-bachelor's work.

Within the 90 credit hours, students will be specifically required to take six core courses [PSY 615 - Behavioral Neuroscience (3 credits); PSY 1545 - Psychopharmacology (3 credits); PSY 590 - Drugs of Abuse (3 credits); PSY 590 - Animal Models (3 credits); PSY 600 - Statistical Inference (3 credits); PSY 601 - Correlation & Experimental Design (3 credits)] as well as a Professional Skills/Grant-Writing course (3 credits). They will also be required to participate in the Addiction Neuroscience seminar series each semester [Addictions Seminar (1 credit per semester)]. The remaining 59 credit hours will come from additional elective courses as approved by the Research Advisor, as well as credits earned through the conduct of research.

Overall program requirements include selecting a Research Advisor, presenting a formal research presentation during the Spring semester of Year 2, establishing a Graduate Advisory Committee, submitting a Candidacy Exam Proposal by the end of the Spring semester of Year 2, passing a Written and an Oral Candidacy Exam by the end of the Fall semester of Year 3, submitting a Plan of Study, submitting a dissertation proposal by the end of Summer in Year 3, and submitting and defending a dissertation and satisfactorily presenting a final Formal Seminar by the end of Year 5.

• Sample Curriculum

[All courses are 3 credits unless otherwise noted in parentheses]

Year 1

Fall Semester

- 600 Statistical Inference
- 615 Behavioral Neuroscience
- 590 Readings and Research (variable)
- 590 Addictions Seminar (1)

Spring Semester

- 601 Correlation & Experimental Design
- I545 Psychopharmacology
- 590 Readings and Research (variable)
- 590 Addictions Seminar (1)

Summer Sessions

- D526 Methods in Cell & Neurobiology (4) OR
- 590 Readings and Research

Year 2

Fall Semester

- 590 Animal Models
- I590 Behavior Genetics *or other approved elective*
- 590 Readings and Research (variable)
- 590 Addictions Seminar (1)

Spring Semester

- 590 Drugs of Abuse
- D527 Neuroanatomy *or other approved elective*
- 590 Readings and Research (variable)
- 590 Addictions Seminar (1)

Summer Sessions

- D526 Methods in Cell & Neurobiology (4) OR
- 590 Readings and Research

Year 3

Fall Semester

- xxx Professional Skills/Grant Writing
- 590 Readings and Research (variable)
- 590 Addictions Seminar (1)

Spring Semester

- I595 Seminar in Teaching Psychology (0-3) *or other approved elective*
- 590 Readings and Research (variable)
- 590 Addictions Seminar (1)

Summer Session

- 590 Readings and Research (variable)

Year 4 & Year 5 (all semesters)

- 699 Dissertation credits
- 590 Readings and Research (variable)
- 590 Addictions Seminar (1)

• Existing courses in the proposed curriculum

The required core classes already exist:

- PSY 615 - Behavioral Neuroscience (3)
- PSY I545 - Psychopharmacology (3)
- PSY 590 - Drugs of Abuse (3)
- PSY 590 - Animal Models (3)
- PSY 600 - Statistical Inference (3)
- PSY 601 - Correlation & Experimental Design (3)
- PSY 590 - Addictions Seminar (1)

In addition, the following optional courses also exist and may be taken as electives:

- PSY 590 - Behavior Genetics
- PSY 518 - Memory & Cognition (3)
- PSY 622 - Animal Learning (3)
- PSY 624 - Human Learning & Memory (3)
- PSY 628 - Perceptual Processes (3)
- PSY 655 - Cognitive Development (3)
- PSY I675 - Human Neuropsychology (3)
- PSY I591 - Psychopathology (3)
- PSY I670 - Ethical Issues in Psychology (3)
- PSY I675 - Human Neuropsychology (3)
- ANAT D527 - Neuroanatomy (3)
- BIOL 571 - Developmental Neurobiology (3)

ANAT D526 - Methods in Cell and Neurobiology (4)
BIOC B835 - Neurochemistry (3)
PHAR F809 - Neuropharmacology (3)
ANAT D876 - Neurotransmitter/Neuroendocrine Cytology & Anatomy (3)
ANAT D888 - Developmental & Molecular Neurobiology (3)
ORCHEM 533 – Biochemistry (3)

(Note that Psy 590 is a variable-title course number for specialty seminars or instances in which a permanent course number is not yet assigned. “Drugs of Abuse”, “Animal Models”, and “Behavior Genetics” have been taught multiple times and are in the process of getting a permanent course number assigned.)

• Courses to be added

The only completely new course that will need to be added is the Professional Skills/Grant-Writing course. This will be designed as a 3-credit required course. Currently, it is unofficially conducted as four four-hour sessions that are required for Trainees on the NIAAA-funded T32 training grant (PI: Dr. Cristine Czachowski). As such, all that is required is to transform the current course material and design into a semester-long course.

Appendix B

Program faculty and administrators.

Cristine L. Czachowski, Ph.D.

Associate Professor

Area Head, Addiction Neuroscience Graduate Program

Areas of specialization: Animal learning and behavior; Drug and alcohol abuse; Behavioral pharmacology

Stephen L. Boehm, II, Ph.D.

Associate Professor

Director, Undergraduate Neuroscience Program

Areas of specialization: Neurobehavioral genetics; Developmental neurobiology; Drug and alcohol abuse

Charles R. Goodlett, Ph.D.

Professor

Areas of specialization: Animal models of neurodevelopmental disorders; Fetal alcohol spectrum disorders; Neural systems of learning

Nicholas J. Grahame, Ph.D.

Associate Professor

Director of Graduate Studies for Psychology

Areas of specialization: Behavioral genetics; Alcoholism and drug abuse; Animal learning and behavior

Christopher C. Laphs, Ph.D.

Assistant Professor

Areas of specialization: Cognitive and systems neuroscience; Electrophysiology; Addiction

Marian L. Logrip, Ph.D.

Assistant Professor

Areas of specialization: Electrophysiology; Molecular biology; Stress-alcohol interactions; Sexual dimorphism in neuronal responses

Bethany S. Neil-Beliveau, Ph.D.

Associate Professor

Director of Undergraduate Studies for Psychology

Areas of specialization: Psychopharmacology; Invertebrate models of addiction; Developmental Psychobiology

- i. Degree Title: Ph.D. in Addiction Neuroscience
- ii. CIP Code: 42.2706
- iii. Diploma Information: The diploma will read "Doctor of Philosophy in recognition of the fulfillment of the requirements of that degree awarded for study at Indianapolis in the state of Indiana"

Appendix C. Placement of graduates from 1998-current.

1998

Rock, Stephanie L.

Dissertation: Ethanol and Cocaine Interactive Effects on Local Cerebral Glucose Utilization (LCGU).

Advisor: Bethany Neal-Beliveau

First Position: Scientific Writer, Eli Lilly and Company, Indianapolis

Current Position: Medical Communications Manager, Biogen Idec, Inc., Weston, MA

2002

Smith, Daniel G.

Dissertation: Chronic- and Relapse-Alcohol Drinking Reduce Local Cerebral Glucose Utilization Rates in Alcohol-Preferring P rats.

Advisor: James M. Murphy*

First Position: Postdoctoral, Eli Lilly and Company, Indianapolis

Current Position: Senior Director of Discovery Neuroscience, Autism Speaks, Boston, MA

2003

Melendez, Roberto I.

Dissertation: Involvement of the Mesopallidal Dopamine System in the Biological and Reinforcing Effects of Ethanol.

Advisor: James M. Murphy*

First Position: Postdoctoral Associate; Department of Neuroscience, Medical University of South Carolina, Charleston

Current Position: Assistant Professor, Department of Anatomy and Neurobiology, School of Medicine, University of Puerto Rico, Medical Sciences Campus, San Juan, PR

2004

Foster, Katrina

Dissertation: The Role of the Alpha 1 and Alpha 2 Containing GABA(A) Receptors in Mediating the Neurobehavioral Properties of Ethanol (EtOH).

Advisor: Harry L. June**

First Position: Postdoctoral Associate; Johns Hopkins University, School of Medicine, Baltimore, MD

Current Position: Scientific Review Administrator, National Institutes of Health, Rockville, MD

Woods, James E.

Dissertation: The Reward Cost Potentiates Amphetamine Reinforcing Actions in High Alcohol Drinking (HAD), but not Low Alcohol Drinking (LAD) rats: Regulation by D1, but not D2 Dopamine Receptors of the Nucleus Accumbens.

Advisor: Harry L. June**

First Position: Bioanalytical Systems, Inc., West Lafayette, IN

Current Position: Research Coordinator, Bowman Gray School of Medicine, Wake Forest, NC

2005

Gilpin, Nicholas W.

Dissertation: Ethanol Abstinence-Related Behaviors and the Effects of Neuropeptide Y on these Behaviors in Animals Genetically and Environmentally Susceptible to Ethanol Dependence.

Advisors: Nancy Badia-Elder**/James M. Murphy*

First Position: Postdoctoral Associate, The Scripps Research Institute, La Jolla, CA

Second Position: Research Associate, Committee on the Neurobiology of Addictive Disorders, The Scripps Research Institute, La Jolla, CA

Current position: Assistant Professor, Department of Physiology, Louisiana State University Health Sciences Center, New Orleans, LA

Powrozek, Teresa

Dissertation: Effects of Prenatal Alcohol Exposure on the Development of the Somatosensory Cortical Barrels in C57Bl/6 Mice.

Advisor: Charles Goodlett

First Position: Postdoctoral Associate, Department of Neuroscience and Physiology, SUNY Upstate Medical Center, Syracuse, NY

Current Position: Senior Staff Scientist in Neuroscience & Physiology at SUNY- Upstate Medical Univ., Syracuse, NY

2008

Johnson, Timothy B.

Dissertation: Effects of Neonatal Alcohol Exposure during Different Periods of Brain Development.

Advisor: Charles Goodlett

First Position: Postdoctoral Associate, College of Veterinary Medicine and Biomedical Sciences, Texas A&M University, College Station, TX

Current Position: Instructor, Department of Psychology, Blinn College, Bryan, TX

2009

Franklin, Kelle E.

Dissertation: Caffeine Modulation of Ethanol: Effects on Intake, Metabolism, and Dopamine Neurotransmission in the Medial Prefrontal Cortex of Alcohol-Preferring (P) Rats

Advisor: James M. Murphy*

First Position: Postdoctoral Associate, Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN

Current Position: Study Director, Covance Laboratories, Greenfield, IN

2010

Eiler, William J.A., II

Dissertation: Generality of the Relapse Phenomenon: Reinstatement of Food vs. Brain Stimulation Reinforced Behavior and Its Modulation by mGlu5 Receptor Blockade.

Advisors: Harry L. June**/Jeffrey M. Witkin (Eli Lilly)/James M. Murphy*

First Position: Postdoctoral Associate, Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN

Current Position: Postdoctoral Associate, Department of Neurology, Indiana University School of Medicine, Indianapolis, IN

2011

Bertholomey, Megan

Dissertation: Alterations in the seeking and self-administration of ethanol and anxiety-like behavior following exposure to stress and ethanol deprivation in rats selectively bred for high alcohol intake.

Advisor: Cristine Czachowski/Robert Stewart

First Position: Research Fellow, Alcohol and Drug Abuse Research Center, McLean Hospital, Harvard University, Belmont, MA

Current Position: Postdoctoral Associate in the School of Medicine, Dept of Psychiatry, Univ. of Pittsburgh

Green, Alexis

Dissertation: Intravenous Self-Administration of Alcohol in Selectively Bred High- and Low- Alcohol Preferring Mice

Advisor: Nicholas Grahame

First Position: Visiting Assistant Professor, Hanover College, Hanover, IN

Current Position: Associate Professor of Psychology, Charleston Southern University, Charleston, SC

Toalston, Jamie

Dissertation: Peri-Adolescent Alcohol Consumption Enhances the Reinforcing and Stimulatory Properties of Ethanol within the Adult Mesolimbic Dopamine System in Alcohol Preferring P Rats.

Advisors: James M. Murphy*

First Position: Postdoctoral Associate, Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN

Current Position: Same

2012**Linsenhardt, David**

Dissertation: Using Short-Term Behavioral Selection to Evaluate the Heritability of Ethanol -induced Locomotor Sensitization and its Relationship to Ethanol's Positive Motivational Effects

Advisor: Stephen Boehm

First Position: Postdoctoral Associate, Department of Psychology, Indiana University School of Science, Indianapolis, IN

Oster, Scott

Dissertation: Chronic Ethanol Drinking by Alcohol-Preferring Rats Increases the Sensitivity of the Mesolimbic Dopamine System to the Reinforcing and Stimulating Effects of Cocaine

Advisor: James M. Murphy*

First Position: Lecturer, Department of Psychological and Brain Sciences, Indiana University-Bloomington, Bloomington, IN

Henderson, Angela

Dissertation: Exploring potential pharmacologic treatments for alcoholism: Can the use of drugs selective for the μ -, δ -, and κ - opioid receptors differentially modulate alcohol drinking?

Advisor: Cristine Czachowski

First Position: Postdoctoral trainee, Penn State University College of Medicine, Hershey, PA

2013**Wagner, Jennifer**

Dissertation: Effects of co-administration of D-Napvsipq [NAP] and D-Sallrsipa [SAL] on spatial learning after developmental alcohol exposure

Advisor: Charles Goodlett

First Position: Postdoctoral trainee, College of Pharmacy, Univ. of Kentucky, Lexington, KY

2014**Matson, Liana**

Dissertation: Investigating reactivity to incentive downshift as a correlated response to selection for high alcohol preference and a determination of rash action and alcohol consumption

Advisor: Nicholas Grahame

First Position: Captain, Research Psychologist, Medical Research Inst. of Chemical Defense/US Army

Melón, Laverne

Dissertation: Does binge drinking induce PMDD-like dysfunction for female C57BL/6J mice? Implications for sex differences in addiction vulnerability

Advisor: Stephen Boehm

First Position: Postdoctoral Scholar, Dept. of Neuroscience, Tufts Univ. School of Medicine, Boston, MA

Verplaetse, Terril

Dissertation: Investigating the therapeutic range of prazosin alone and in combination with propranolol and naltrexone: Is combination pharmacotherapy more effective than monotherapy in reducing ethanol-seeking and self-administration in the P rat?

Advisor: Cristine Czachowski

First Position: Postdoctoral Fellow, Yale University School of Medicine, New Haven, CT

Windisch, Kyle

Dissertation: Role of Group II metabotropic glutamate receptor subtype 2 (MGLUR2) in appetitive and consummatory aspects of ethanol reinforcement and nucleus accumbens core MGLUR2/3 in ethanol-seeking

Advisor: Cristine Czachowski

First Position: Postdoctoral fellow, The Rockefeller University, New York, NY

2015

O'Tousa, David

Dissertation: Habit formation in a rodent model of alcoholism: Investigation of genetic susceptibility, differential effects of alcohol-seeking and flavor-seeking behaviors, and pharmacological manipulation

Advisor: Nicholas Grahame

First Position: Lab Instructor, Psychology Department, IUPUI, Indianapolis IN

Halcomb, Meredith

Dissertation: Elucidation of pharmacologically manipulated responding in the delay discounting task in high alcohol-preferring mice

Advisor: Nicholas Grahame

First Position: Postdoctoral Fellow, Department of Neurology, Indiana Univ. School of Medicine, Indianapolis, IN

Students graduated with a terminal Master's degree:			
Student	M.S. Year	Advisor	Current Position
Hewitt, Robert	1994	June	Not available
Lundahl, Kristy	2000	Goodlett	Clinical Research Coordinator, UC-Davis, CA
Hardy, Lathen	2004	June	LC/MS Chemist, Advanced Testing Laboratory, Indianapolis
Katner, Jason	2004	Murphy	Consultant Biologist, Eli Lilly, Indianapolis
Carroll, Michelle	2004	Neal-Beliveau	Instructor, Psychology, IUPUI
Musselman, Heather	2008	Neal-Beliveau	In Vivo Data Coordinator, Eli Lilly, Indianapolis
Jensen, Meredith	2011	Grahame	Not available
Myers, Mallory	2011	Murphy/Goodlett	Research Support Specialist, Stony Brook Univ.
Novotney, Devon	2011	Grahame	Global Study Manager, Covance Central Labs, Indianapolis

[*Professor Emeritus: James M. Murphy]

[**Former faculty: Dr. Badia-Elder is now a clinical staff member at Fairbanks Hospital, Indianapolis, IN. Dr. June is now deceased.]

Appendix D: Letters of Support

See attached letters from:

William Hetrick, Chair, Department of Psychological and Brain Sciences, Indiana University
Bloomington

Gerry Oxford, Executive Director, Stark Neurosciences Research Institute, Indiana
University School of Medicine

Terry Powley, Coordinator Behavioral Neuroscience Area, Department of Psychological
Sciences, Purdue University, West Lafayette

John C. Lechleiter, Chairman, President and Chief Executive Officer, Eli Lilly and Company,
Indianapolis



DEPARTMENT OF PSYCHOLOGICAL AND BRAIN SCIENCES

INDIANA UNIVERSITY
Bloomington

June 24, 2015

Dr. Cristine Czachowski
Area Head, Addiction Neuroscience Graduate Program
IUPUI Department of Psychology
402 N. Blackford Street
Indianapolis, IN 46202-3275

Dear Dr. Czachowski;

I am writing in support of the proposal to convert the Addiction Neuroscience graduate program in the IUPUI Department of Psychology that is currently stewarded by the Psychological Science department at Purdue University-West Lafayette, to a site-approved Ph.D. program.

There are several reasons why I strongly support this proposal. First, the program has grown over its 21-year history to the point where it has a strong, vibrant faculty consisting of seven faculty members—all in the IUPUI Psychology Department. As a group they are excellent scholars and well respected in the field. Second, the program has now established a long record of successfully recruiting and training doctoral students. Third, this proposal will not change the mission or content of the graduate program. My reading of the proposal suggests that nothing new is being added. Rather, the request is simply to permit the program to be administered independently of Purdue University West Lafayette, while maintaining the Purdue PhD degree. Fourth, in my role as a department chair and administrator, I understand and agree with the argument that independent site approval for the program will improve efficiency of the graduate training. Fifth, and for similar reasons, I think that credit should go where credit is due. The proposed change will give proper recognition and better visibility to IUPUI and its faculty. Sixth, and of particular importance to other neuroscience programs in universities in the State of Indiana, the IUPUI Addiction Neuroscience Program has unique characteristics and does not duplicate other neuroscience graduate programs within the state. Finally, the IUPUI Addictions Neuroscience Program has good collaborative connections with neuroscience faculty in the IU School of Medicine and in the IU-Bloomington Department of Psychological and Brain Sciences. I know this, in part, because my own research activities have led me into collaborations with members of this IUPUI program.

Sincerely,

William P. Hetrick, PhD.
Professor and Chair
Department of Psychological and Brain Sciences



June 29, 2015

Dr. Cristine Czachowski
Area Head, Addiction Neuroscience Graduate Program
Department of Psychology
IUPUI
402 N. Blackford Street
Indianapolis, IN 46202-3275

Dear Cris:

It is with enthusiasm and pleasure that I write in support of the proposal to convert the Addiction Neuroscience graduate program in the IUPUI Department of Psychology, that is currently stewarded by the Psychological Science department at Purdue University-West Lafayette, to a site-approved Ph.D. program on the IUPUI campus.

This request is timely given the rapid growth of neuroscience research and education on the IUPUI campus both in terms of faculty recruitment, undergraduate engagement, and graduate training as is the focus of your efforts. This growth has resulted in such a tremendous diversity of training opportunities on campus, that having a set of degree programs that more closely align with both student and faculty research interests will advance. In this manner I see no conflict between the independent emergence of your ongoing PhD program in Addictions Neuroscience and the PhD program based here in the IU School of Medicine in Medical Neuroscience. They are quite complementary, occasionally share training opportunities and faculty, and draw from different, but focused populations of graduate students.

The program in Addiction Neuroscience is actually quite a mature program with notable experience in graduate training (23 PhDs awarded since 1998). The program has attracted a strong faculty (Logrip, Boehm, Czachowski, Goodlett, Grahame, Lapish, Neal-Beliveau) with national recognition for their research and graduate training activities in the behavioral and psychopharmacological underpinnings of addiction. This will surely continue to grow as this nucleus is attractive to prospective faculty and students alike.

Independent site approval for the program will improve efficiency of the graduate training and give proper recognition and better visibility to the IUPUI program that is already nationally competitive. This efficiency will also manifest in the growing interactions among the various components of the IUPUI neuroscience community including the Stark Institute and Medical Neuroscience graduate program.

As I understand the process and proposal, the change will not alter the mission or content of the graduate program and nothing new is being added, thus the benefits are clear and risks non-existent from my perspective. Independent site approval for the program will improve efficiency of the graduate training and give proper recognition and better visibility to the IUPUI program that is already nationally competitive. These are exciting times and this change will fit right in with the national trends in structuring such opportunities.

In summary, I strongly support the proposal and look forward to working with you and the rest of the faculty in the Addictions Neuroscience program to foster research and training in neuroscience that meets the demands of discerning students, engaged faculty, and the workforce needs of the state of Indiana and beyond.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "G. S. Oxford", with a stylized, cursive script.

Gerry S. Oxford, Ph.D.
Executive Director, Stark Neurosciences Research Institute
Professor, Department of Pharmacology & Toxicology

June 26, 2015

Dr. Cristine Czachowski
Area Head, Addiction Neuroscience Graduate Program
Department of Psychology
IUPUI
402 N. Blackford Street
Indianapolis, IN 46202-3275

Dear Dr. Czachowski;

I am writing in full support of the proposal to convert the Addiction Neuroscience graduate program in the IUPUI Department of Psychology that is currently stewarded by the Psychological Science department at Purdue University-West Lafayette, to a site-approved Ph.D. program. I have been Area Coordinator or “Head” of the Behavioral Neuroscience program in the Department of Psychological Sciences in the College of Health and Human Sciences at Purdue University for well over a decade, indeed since before the Addiction Neuroscience program at IUPUI was launched, and I have observed admiringly and participated in the Addiction Neuroscience program’s activities and growth since its inception in 1994.

My full support, based in part on my many interactions and discussions with the AN program’s faculty, is based on a variety of indices:

- The program has attracted quite strong faculty (now at 7, with the addition of Marian Logrip from the Scripps Research Institute in August; others: Boehm, Czachowski, Goodlett, Grahame, Lapish, Neal-Beliveau). The faculty and the AN program achieved considerable national recognition for their research and graduate training activities.
- Now a mature program with extensive experience with graduate training (graduated 23 PhDs since 1998 that have generally gone on to successful careers, see list attached), supervision or monitoring from the Purdue, West Lafayette campus seems superfluous and cumbersome for both programs.
- The proposal will not change the nature of the IUPUI AN graduate program and nothing new is being added. The formal IUPUI request is simply to permit the program to be administered independently of the Behavioral Neuroscience program at Purdue University, West Lafayette, while maintaining the Purdue PhD degree.
- Practically, the AN program has always provided 100% of the course work and first-rate research training of its students.
- The requirement of having a PUWL faculty member on each Addiction Neuroscience student qualifying exam and PhD committee is no longer viewed as being necessary, and the stipulation has become an increasing burden both on PUWL faculty and on the AN program.

- With its focus on Addiction Neuroscience, the graduate program at IUPUI has unique characteristics and does not duplicate the behavioral neuroscience program at PUWL.
- Having a Purdue Ph.D. Addiction Neuroscience program that awards degrees in Indianapolis will give proper visibility and recognition to the IUPUI program and thereby improve its competitive profile nationally.
- It is time for the AN program to assume its rightful well-earned ownership over its own unique program.
- I should say, too, that I think my perception of the IUPUI AN program is a universally held perception in the Purdue Behavioral Neuroscience program.

In sum then, I fully endorse IUPUI's AN program's proposed administrative independence for its mature and nationally recognized status.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry L. Powley", with a stylized, flowing script.

Terry L. Powley
Ben J. Winer Distinguished Professor
And Coordinator of Behavioral Neuroscience

John C. Lechleiter, Ph.D.
Chairman, President, and Chief Executive Officer
317.276.6997 | jcl@lilly.com



Eli Lilly and Company
Lilly Corporate Center
Indianapolis, Indiana 46285
U.S.A.
www.lilly.com

May 11, 2015

Simon J. Rhodes, Ph.D.
Dean, School of Science
IUPUI
402 North Blackford Street, LD 222
Indianapolis, IN 46202

Dear Dr. Rhodes,

I am pleased to offer my support for your proposals for independent Ph.D. degrees in the School of Science at IUPUI. My colleagues at Lilly and I have been pleased to witness the emergence of the School of Science as an excellent research and learning institution and key asset in our shared ambition to make Indiana a hub of discovery and innovation. IUPUI graduates of the current Ph.D. programs awarded through the West Lafayette campus hold important positions in both our research laboratories and in other areas of our company. We have benefitted from the outstanding training they received. Clearly, you are ready to operate your own Ph.D. programs.

We have been particularly pleased with the benefits to our employees who have taken advantage of the opportunity to enhance their qualifications and contributions to our discovery mission by studying for the Ph.D. through the LGRAD program that we developed together. They are well prepared to assume higher levels of responsibility in their research groups. Moreover, this training is beneficial to the company as we seek to develop our own scientists as leaders in their fields of inquiry and to retain the best and brightest.

We also realize that your undergraduate degree students (the vast majority of whom are from Indiana) enjoy opportunities to have significant engagements in research. These research experiences help develop important skills that Indiana employers seek in new hires. Enriching the research environment by solidifying the Ph.D. degree programs will further improve the education and preparation of your undergraduates.

I believe that approval of the independent status you are requesting will strengthen your programs even further by allowing them to participate in national rankings and by making them fully eligible for external funding programs that are restricted to those with independent doctoral degrees. All of us in Indiana's life sciences community, and other contributors to our economy and quality of life, will share the benefits.

Sincerely,