

Final Progress Report for Research Projects Funded by Health Research Grants

Instructions: Please complete all of the items as instructed. Do not delete instructions. Do not leave any items blank; responses must be provided for all items. If your response to an item is “None”, please specify “None” as your response. “Not applicable” is not an acceptable response for any of the items. There is no limit to the length of your response to any question. Responses should be single-spaced, no smaller than 12-point type. The report **must be completed using MS Word**. Submitted reports must be Word documents; they should not be converted to pdf format. Questions? Contact Health Research Program staff at 717-231-2825.

1. **Grantee Institution:** Trustees of the University of Pennsylvania
2. **Reporting Period (start and end date of grant award period):** 1/1/2011 – 12/31/2014
3. **Grant Contact Person (First Name, M.I., Last Name, Degrees):** Gearline Robinson-Hall, BSF
4. **Grant Contact Person’s Telephone Number:** 215-746-6821
5. **Grant SAP Number:** 4100054874
6. **Project Number and Title of Research Project:** 2- Enhancing Cognitive Neuroscience and Neuroimaging Research at Penn - Research Infrastructure
7. **Start and End Date of Research Project:** 3/1/2011 – 12/31/2014
8. **Name of Principal Investigator for the Research Project:** Glen N. Gaulton, PhD
9. **Research Project Expenses.**

9(A) Please provide the total amount of health research grant funds spent on this project for the entire duration of the grant, including indirect costs and any interest earned that was spent:

\$ 1,418,947

9(B) Provide the last names (include first initial if multiple individuals with the same last name are listed) of **all** persons who worked on this research project and were supported with health research funds. Include position titles (Principal Investigator, Graduate Assistant, Post-doctoral Fellow, etc.), percent of effort on project and total health research funds expended for the position. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name, First Name	Position Title	% of Effort on Project	Cost
None			

9(C) Provide the names of **all** persons who worked on this research project, but who *were not* supported with health research funds. Include position titles (Research Assistant, Administrative Assistant, etc.) and percent of effort on project. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name, First Name	Position Title	% of Effort on Project
Gaulton, Glen	PI / Chief Scientific Officer	< 1%

9(D) Provide a list of **all** scientific equipment purchased as part of this research grant, a short description of the value (benefit) derived by the institution from this equipment, and the cost of the equipment.

Type of Scientific Equipment	Value Derived	Cost
None		

10. Co-funding of Research Project during Health Research Grant Award Period. Did this research project receive funding from any other source during the project period when it was supported by the health research grant?

Yes No

If yes, please indicate the source and amount of other funds:

PSOM and Other University Funds: \$8,277,033 (not final funding)

11. Leveraging of Additional Funds

11(A) As a result of the health research funds provided for this research project, were you able to apply for and/or obtain funding from other sources to continue or expand the research?

Yes No

If yes, please list the applications submitted (column A), the funding agency (National Institutes of Health—NIH, or other source in column B), the month and year when the application was submitted (column C), and the amount of funds requested (column D). If you have received a notice that the grant will be funded, please indicate the amount of funds to be awarded (column E). If the grant was not funded, insert “not funded” in column E.

Do not include funding from your own institution or from CURE (tobacco settlement funds). Do not include grants submitted prior to the start date of the grant as shown in Question 2. If you list grants submitted within 1-6 months of the start date of this grant, add a statement below the table indicating how the data/results from this project were used to secure that grant.

A. Title of research project on grant application	B. Funding agency (check those that apply)	C. Month and Year Submitted	D. Amount of funds requested:	E. Amount of funds awarded:
None	<input type="checkbox"/> NIH <input type="checkbox"/> Other federal (specify: _____) <input type="checkbox"/> Nonfederal source (specify: _)		\$	\$

11(B) Are you planning to apply for additional funding in the future to continue or expand the research?

Yes X No _____

If yes, please describe your plans:

Although this is an infrastructure project, we anticipate that Penn investigators will use this facility and continue to submit grants and successfully collaborate on and compete for grant funding that will allow for further exploration of cognitive neurosciences.

12. Future of Research Project. What are the future plans for this research project?

The newly upgraded space will continue to provide integral research infrastructure support for the current and future needs of the University of Pennsylvania scientific community.

13. New Investigator Training and Development. Did students participate in project supported internships or graduate or post-graduate training for at least one semester or one summer?

Yes _____ No X

If yes, how many students? Please specify in the tables below:

	Undergraduate	Masters	Pre-doc	Post-doc
Male				
Female				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
Hispanic				
Non-Hispanic				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
White				
Black				
Asian				
Other				
Unknown				
Total				

14. Recruitment of Out-of-State Researchers. Did you bring researchers into Pennsylvania to carry out this research project?

Yes No

If yes, please list the name and degree of each researcher and his/her previous affiliation:

We have recruited several new faculty members who will use the renovated space, including:

- *Emily Falk*, assistant professor of Communication at the Annenberg School for Communication, was recruited from the University of Michigan. Her lab employs a variety of methods in the performance of her research, with a focus on functional magnetic resonance imaging (fMRI). She has worked to develop a program of research in what she calls “Communication Neuroscience” to link neural activity (in response to persuasive messages) to behaviors at the individual, group and population levels.
- *Jason Moore* has been recruited from Dartmouth University to serve as the first permanent Director of the Penn Institute for Biomedical Informatics (IBI), beginning March 1. The primary focus of his translational bioinformatics research program is to develop, evaluate, and apply novel computational and statistical algorithms for identifying combinations of DNA sequence variations along with combinations of environmental factors that are predictive of common disease endpoints.

15. Impact on Research Capacity and Quality. Did the health research project enhance the quality and/or capacity of research at your institution?

Yes No

If yes, describe how improvements in infrastructure, the addition of new investigators, and other resources have led to more and better research.

Renovation of the Richards Building significantly improved the capacity of the school's programs to conduct impactful and innovative research by providing state-of-the-art facilities for Penn's present and future programs. This newly renovated space not only unites researchers from a diverse array of departments and specialties across various schools, but will also attract top recruits to join Penn's biomedical research community.

16. Collaboration, business and community involvement.

16(A) Did the health research funds lead to collaboration with research partners outside of your institution (e.g., entire university, entire hospital system)?

Yes _____ No X _____

If yes, please describe the collaborations:

16(B) Did the research project result in commercial development of any research products?

Yes _____ No X _____

If yes, please describe commercial development activities that resulted from the research project:

16(C) Did the research lead to new involvement with the community?

Yes _____ No X _____

If yes, please describe involvement with community groups that resulted from the research project:

17. Progress in Achieving Research Goals, Objectives and Aims.

List the project goals, objectives and specific aims (as contained in the grant agreement). Summarize the progress made in achieving these goals, objectives and aims for the period that the project was funded (i.e., from project start date through end date). Indicate whether or not each goal/objective/aim was achieved; if something was not achieved, note the reasons why. Describe the methods used. If changes were made to the research goals/objectives/aims, methods, design or timeline since the original grant application was submitted, please describe the changes. Provide detailed results of the project. Include evidence of the data that was generated and analyzed, and provide tables, graphs, and figures of the data. List published abstracts, poster presentations and scientific meeting presentations

at the end of the summary of progress; peer-reviewed publications should be listed under item 20.

This response should be a DETAILED report of the methods and findings. It is not sufficient to state that the work was completed. Insufficient information may result in an unfavorable performance review, which may jeopardize future funding. If research findings are pending publication you must still include enough detail for the expert peer reviewers to evaluate the progress during the course of the project.

Health research grants funded under the Tobacco Settlement Act will be evaluated via a performance review by an expert panel of researchers and clinicians who will assess project work using this Final Progress Report, all project Annual Reports and the project's strategic plan. After the final performance review of each project is complete, approximately 12-16 months after the end of the grant, this Final Progress Report, as well as the Final Performance Review Report containing the comments of the expert review panel, and the grantee's written response to the Final Performance Review Report, will be posted on the CURE Web site.

There is no limit to the length of your response. Responses must be single-spaced below, no smaller than 12-point type. If you cut and paste text from a publication, be sure symbols print properly, e.g., the Greek symbol for alpha (α) and beta (β) should not print as boxes (\square) and include the appropriate citation(s). DO NOT DELETE THESE INSTRUCTIONS.

In order to support interdisciplinary research related to the areas of cognition, cognitive neurology, brain imaging, and cognitive neuroscience, the Centers for Cognitive Neuroscience (CCN) and Functional Neuroimaging (CfN) will be coalesced within 40,000 square feet of newly renovated space at Penn. This multi-phase project – approximately 20,000 sf for Phase II, which is described in this final progress report summary – will unite members of the CCN who study cognitive effects and defects with members of the CfN who develop the machine and mathematical interfaces for imaging. The resulting facility will provide access to emerging technologies and shared resources and dramatically promote collaborative science within the neurosciences. Furthermore, this facility will foster the recruitment and development of new faculty and high impact programs.

Cognitive neuroscience is a rapidly evolving field with broad consequences for human health and society. It includes research on normal and abnormal brain development, normal behavior and the effects of brain injury and disease. It integrates concepts from the study of basic human cognition, broadly construed to include emotion, with new noninvasive imaging modalities and other methods to study brain function in healthy subjects and patients with neurological and psychiatric disorders. Penn has 16 core faculty scientists working on cognitive neuroscience and neuroimaging in eight different locations scattered across its campus. This multi-phase project will support the renovation the historical Richards Building, which is centrally located space to support their interdisciplinary research programs and facilitate interaction. An initial phase, completed in 2011, involved the renovation of two floors (10,000 sf) of the adjacent Goddard Building for the CCN. In Phase II, supported by this project, completion of an additional 20,000

sf will consolidate all CCN components and integrate faculty from the CfN in collaborative research efforts. The long-term goal and the future project phase of the proposed space will also house key instrumentation including MRI, EEG/ERP, TMS, testing, and advanced computing, and will dramatically improve the quality of lab space for many of the faculty who currently conduct their research under substandard conditions.

To fully benefit from Penn's extensive intellectual resources in cognitive neuroscience, as well as to attract the best new faculty and trainees, Penn seeks to create an environment that more effectively supports this essential multidisciplinary collaboration. An exceptional opportunity to realize this synthesis of scientific team, research target, and methodological technique now presents itself. With strong support of both University and School of Medicine leadership, the project integrates the faculty, research laboratories, and infrastructure of the CCN and the CFN to form a world-class neurobehavioral research institute with multidisciplinary expertise in an extremely interactive and collaborative environment. The major need is for contiguous space to accommodate 16 principal faculty and their associates including graduate students, postdoctoral fellows, research faculty and administrative staff, along with seminar space and associated dry lab facilities for testing neurological and psychiatric patients.

In support of this overarching goal, the specific aims of this project which are being met (and in many respects, exceeded) include:

1. Dramatically improving the quality of the research facilities for neurobehavioral research
2. Consolidating a highly collaborative but geographically distributed faculty
3. Creating new infrastructure for Magnetic Resonance Imaging (MRI), electroencephalography and event related potentials (EEG, ERP) and transcranial magnetic and direct current stimulation (TMS, DCS) methods to encourage and enable multi-method research
4. Broadening the scope of neurobehavioral research across the lifespan and health-disease continuum
5. Developing a geographical focal point on the medical campus for clinical researchers to access collaboration and training in cognitive neuroscience
6. Increasing energy efficiency and environmental impact in a national landmark research building complex

The feasibility study and cost estimate for renovations to the Richards Building were completed and received in July of 2012, after which the architect – EYP – began schematic design. Over the next year, a construction manager was hired to work with EYP in order to develop construction documents and detailed estimates for Phase II of the overarching project. Meanwhile, the design team dedicated effort to developing a renovation timeline and strategy based on the functional needs of the operational areas, as construction would be underway while half of the building remained occupied.

Planning for this project focused primarily on the ways in which the new infrastructure would support the evolving needs of the researchers that would be occupying the space. Both CCN's and CfN's needs changed since the initial planning phase; both groups also collaborated closely

with CNI to ensure that the planning for all floors would work for all groups.

The project quickly focused on the relocation of occupants and animals affected by this phase of renovation, the removal of asbestos, and the protection of this historical landmark building. Strategies for proper restoration were researched and developed in-depth, prior to construction commencing.

Construction started with the demolition of many block and drywall partitions that were not original to the building on the fifth, sixth and penthouse floors. This supported the intent of returning the building to its original design for open floor plates. Many linear feet of lab utility piping for water, gases, compressed air and vacuum lines had to be removed. Much of the concrete, brick and block surfaces had been inappropriately painted, damaged or altered in some way; the project has been painstakingly returning the building to its original state as one of the first mid-century modern design icons by restoring these surfaces.

The existing ductwork on the fifth and sixth floors - that supported an outdated forced air system - was removed to make room for state-of-the-art chilled beam duct and piping installations. This system is designed to operate far more efficiently and economically, following Penn's "green" initiative effort. This system also uses far smaller ducts to accomplish the required air changes for the new office uses. In the Utility penthouse, there will be one new air handler feeding the C and D towers replacing the two original units. The old exhaust fans have also been removed due to the capacity of the new unit.

In the basement electrical room, most of the electrical switchgear for the building has been replaced to bring the building up to code and support the shift from wet lab to dry office research. The service has also been increased to support future renovations. The fifth and sixth floors have received new electrical service panels for both standard use and emergency needs. All of the electrical distribution has been replaced on the floors, and the cables supporting data and phone lines have been replaced, fed from a new data room on the fifth floor.

Plumbing lines to support the new air system were (and are still being) installed in the towers as well as new domestic water lines for the bathrooms and kitchenettes. This will allow the Richards Building to be brought up to code regarding bathrooms with ADA compliant facilities for both men and women on every floor, rather than every other floor. Pumps to support the chilled and domestic water uses have been increased in size to accommodate the future renovations for all towers.

The exterior windows for all of C and D towers are in the process of being replaced to support the new air system, which requires a closed envelope. Prior to being replaced, the existing stainless steel frames are being restored to support the new energy efficient glazing. Many of the existing windows leak and have open gaps in the joints to the exterior; this replacement alone will provide substantial energy savings to Penn.

As an economy of scale, Penn agreed to continue demolition on the remaining floors in C and D towers to prepare for the next phase of construction. This allowed the project team to address utility conditions that will benefit all subsequent phases of renovation. Larger pump sizes,

electrical panel locations/capacity and concealed piping locations are all examples of work that benefited from the additional demolition and investigation.

In conclusion, this funding from the Commonwealth allowed us to make major headway in reaching our overarching aims of this multi-phase project. Significant time and effort has been devoted to researching and executing the proper restoration of a historic landmark, as well as undoing years of damage from previous renovations. The work accomplished with this funding ensures that the original design intent of this building will be carried forth in all future purposes that this building serves on campus. Phase II also allowed the planning and preparation of major air and utility systems that benefit the entire building and directly contribute to the completion of future phases of this overall project.

18. Extent of Clinical Activities Initiated and Completed. Items 18(A) and 18(B) should be completed for all research projects. If the project was restricted to secondary analysis of clinical data or data analysis of clinical research, then responses to 18(A) and 18(B) should be “No.”

18(A) Did you initiate a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes
 No

18(B) Did you complete a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

Yes
 No

If “Yes” to either 18(A) or 18(B), items 18(C) – (F) must also be completed. (Do NOT complete 18(C-F) if 18(A) and 18(B) are both “No.”)

18(C) How many hospital and health care professionals were involved in the research project?

_____ Number of hospital and health care professionals involved in the research project

18(D) How many subjects were included in the study compared to targeted goals?

_____ Number of subjects originally targeted to be included in the study
_____ Number of subjects enrolled in the study

Note: Studies that fall dramatically short on recruitment are encouraged to provide the details of their recruitment efforts in Item 17, Progress in Achieving Research Goals, Objectives and Aims. For example, the number of eligible subjects approached, the number that refused to participate and the reasons for

refusal. Without this information it is difficult to discern whether eligibility criteria were too restrictive or the study simply did not appeal to subjects.

18(E) How many subjects were enrolled in the study by gender, ethnicity and race?

Gender:

Males
 Females
 Unknown

Ethnicity:

Latinos or Hispanics
 Not Latinos or Hispanics
 Unknown

Race:

American Indian or Alaska Native
 Asian
 Blacks or African American
 Native Hawaiian or Other Pacific Islander
 White
 Other, specify: _____
 Unknown

18(F) Where was the research study conducted? (List the county where the research study was conducted. If the treatment, prevention and diagnostic tests were offered in more than one county, list all of the counties where the research study was conducted.)

19. Human Embryonic Stem Cell Research. Item 19(A) should be completed for all research projects. If the research project involved human embryonic stem cells, items 19(B) and 19(C) must also be completed.

19(A) Did this project involve, in any capacity, human embryonic stem cells?

Yes
 No

19(B) Were these stem cell lines NIH-approved lines that were derived outside of Pennsylvania?

Yes
 No

19(C) Please describe how this project involved human embryonic stem cells:

20. Articles Submitted to Peer-Reviewed Publications.

20(A) Identify all publications that resulted from the research performed during the funding period and that have been submitted to peer-reviewed publications. Do not list journal abstracts or presentations at professional meetings; abstract and meeting presentations should be listed at the end of item 17. **Include only those publications that acknowledge the Pennsylvania Department of Health as a funding source** (as required in the grant agreement). List the title of the journal article, the authors, the name of the peer-reviewed publication, the month and year when it was submitted, and the status of publication (submitted for publication, accepted for publication or published.). Submit an electronic copy of each publication or paper submitted for publication, listed in the table, in a PDF version 5.0.5 (or greater) format, 1,200 dpi. Filenames for each publication should include the number of the research project, the last name of the PI, and an abbreviated title of the publication. For example, if you submit two publications for Smith (PI for Project 01), one publication for Zhang (PI for Project 03), and one publication for Bates (PI for Project 04), the filenames would be:

- Project 01 – Smith – Three cases of isolated
- Project 01 – Smith – Investigation of NEB1 deletions
- Project 03 – Zhang – Molecular profiling of aromatase
- Project 04 – Bates – Neonatal intensive care

If the publication is not available electronically, provide 5 paper copies of the publication.

Note: The grant agreement requires that recipients acknowledge the Pennsylvania Department of Health funding in all publications. Please ensure that all publications listed acknowledge the Department of Health funding. If a publication does not acknowledge the funding from the Commonwealth, do not list the publication.

Title of Journal Article:	Authors:	Name of Peer-reviewed Publication:	Month and Year Submitted:	Publication Status (check appropriate box below):
1. None				<input type="checkbox"/> Submitted <input type="checkbox"/> Accepted <input type="checkbox"/> Published

20(B) Based on this project, are you planning to submit articles to peer-reviewed publications in the future?

Yes _____ No X

If yes, please describe your plans:

With the opening of this newly renovated facility, a large number of papers from highly productive investigators in the field of cognitive neuroscience will undoubtedly be submitted.

21. Changes in Outcome, Impact and Effectiveness Attributable to the Research Project.

Describe the outcome, impact, and effectiveness of the research project by summarizing its impact on the incidence of disease, death from disease, stage of disease at time of diagnosis, or other relevant measures of outcome, impact or effectiveness of the research project. If there were no changes, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. DO NOT DELETE THESE INSTRUCTIONS. There is no limit to the length of your response.

None

22. Major Discoveries, New Drugs, and New Approaches for Prevention Diagnosis and Treatment.

Describe major discoveries, new drugs, and new approaches for prevention, diagnosis and treatment that are attributable to the completed research project. If there were no major discoveries, drugs or approaches, insert “None”; do not use “Not applicable.” Responses must be single-spaced below, and no smaller than 12-point type. DO NOT DELETE THESE INSTRUCTIONS. There is no limit to the length of your response.

None

23. Inventions, Patents and Commercial Development Opportunities.

23(A) Were any inventions, which may be patentable or otherwise protectable under Title 35 of the United States Code, conceived or first actually reduced to practice in the performance of work under this health research grant? Yes _____ No X

If “Yes” to 23(A), complete items a – g below for each invention. (Do NOT complete items a - g if 23(A) is “No.”)

- a. Title of Invention:
- b. Name of Inventor(s):
- c. Technical Description of Invention (describe nature, purpose, operation and physical, chemical, biological or electrical characteristics of the invention):
- d. Was a patent filed for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?
Yes _____ No _____

If yes, indicate date patent was filed:

- e. Was a patent issued for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?
Yes _____ No _____

If yes, indicate number of patent, title and date issued:

Patent number:

Title of patent:

Date issued:

- f. Were any licenses granted for the patent obtained as a result of work performed under this health research grant? Yes _____ No _____

If yes, how many licenses were granted? _____

- g. Were any commercial development activities taken to develop the invention into a commercial product or service for manufacture or sale? Yes ___ No ___

If yes, describe the commercial development activities:

23(B) Based on the results of this project, are you planning to file for any licenses or patents, or undertake any commercial development opportunities in the future?

Yes _____ No _____ X _____

If yes, please describe your plans:

24. Key Investigator Qualifications. Briefly describe the education, research interests and experience and professional commitments of the Principal Investigator and all other key investigators. In place of narrative you may insert the NIH biosketch form here; however, please limit each biosketch to 1-2 pages.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Gaulton, Glen N.	POSITION TITLE Professor, Department of Pathology and Laboratory Medicine Executive Vice Dean and Chief Scientific Officer		
eRA COMMONS USER NAME (credential, e.g., agency login) gaulton			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
University of Southern California	B.S.	1974	Biology
University of California, Santa Barbara	Ph.D.	1981	Biochem. & Mol. Biol.

A. Personal Statement

The interests of the Gaulton laboratory focus on an increased understanding of the molecular processes that regulate the infection and pathology of retroviruses, such as HIV, the impact of these infections on the immune system, and the detection of these infections using novel imaging and diagnostic approaches. More specifically, the laboratory has investigated the effects of human and, as experimental models, murine retroviruses during active infection of adult, pediatric and neonatal subjects. Recent results have identified the primary mechanisms whereby retroviruses induce cell destruction through cell-cell fusion, also known as syncytia formation. The laboratory has pioneered the use of magnetic resonance imaging (MRI) techniques to detect HIV infection within cells and is now applying these techniques to in vivo, whole body imaging of active infections. Lastly, using state-of-the-art engineering technology, the laboratory is developing highly sensitive yet mobile, hand-held devices to detect HIV infection in blood and other body fluids. These devices are critical for diagnosing new infections, and to monitor HIV levels in patients undergoing active therapy and/or participating in vaccine trials.

Dr. Gaulton also serves as the Executive Vice Dean and Chief Scientific Officer of Penn Medicine. In this role he is responsible for developing and implementing the institutional strategic plan in scholarship and research training for the School of Medicine. Dr. Gaulton has senior planning, operations and management responsibility for the academic component of all scholarly activities and graduate training missions within the School of Medicine (1,428 faculty and 2,219 students). In this capacity Dr. Gaulton oversees Penn Medicine's graduate and post-graduate training programs (Combined Degree Programs, Biomedical Graduate Studies, Postdoctoral Programs and Masters Programs). Dr. Gaulton's responsibility also encompasses research strategic planning, space allocation and management, and faculty appointments and promotions. A key component of this responsibility is the integration of the School's strategic vision with the President and Provost, with the Deans of the other 11 schools of the University, and with Penn Medicine's Health System and primary institutional affiliates. These efforts ideally position him to lead this DP7 initiative.

B. Positions and Honors

Academic Appointments

1985-1991 Asst. Professor, Dept of Pathology and Laboratory Medicine, U.Penn, Sch. of Med., Phila, PA

1991-1998	Associate Professor (with tenure), Department of Pathology and Laboratory Medicine, U.Penn
1993-1998	Assoc. Dean and Dir., Combined Degree and Physician Scholar Prgms., U.Penn Sch. of Med.
1995-1998	Director, Biomedical Graduate Studies, University of Pennsylvania
1998-	Professor, Department of Pathology and Laboratory Medicine, U.Penn, School of Medicine
1998-2006	Vice Dean for Research and Research Training, University of Pennsylvania School of Medicine
2006-	Executive Vice Dean and Chief Scientific Officer, University of Pennsylvania School of Medicine

Honors and Awards

1986-1990	National Multiple Sclerosis Society, Harry Weaver Scholar
1990-	American Association of Immunologists
1991-1996	Leukemia Society of America Scholar
1994	University of Pennsylvania Leonard Berwick Teaching Award
1996	University of Pennsylvania Christian and Mary Lindback Teaching Award

C. Selected Peer-reviewed Publications

Additional recent publications of importance to the field (in chronological order)

1. Schwartz, P. and Gaulton, G.N. 1999. Addressing the needs of basic and clinical research: analysis of graduates of the University of Pennsylvania MD-PhD Program. *JAMA* 281: 96-99.
2. Chung, M., Kizhatil, K., Albritton, L.M., and Gaulton, GN. 1999. Induction of Syncytia by Neuropathogenic Murine Leukemia Viruses Depends on Receptor Density, Host Cell Determinants and the Intrinsic Fusion Potential of Envelope protein. *J. Virology* 73: 9377-9385. PMID: PMC112972
3. Majka, M., Rozmyslowicz, T., Honczarenko, M., Ratajczak, J., Wasik, M.A., Gaulton, GN, and Ratajczak, M.Z. 2000. Biological significance of the expression of HIV-related chemokine coreceptors (CCR5 and CXCR4) and their ligands by human hematopoietic cell lines. *Leukemia* 14: 1821-1832.
4. Majka, M., Rozmyslowicz, T., Ratajczak, J., Dobrowsky, A., Pietrzowski, Z., Gaulton, GN, Janowska-Wieczorek, A., and Ratajczak, M.Z. 2000. The limited infectability by R5 HIV of CD34+ cells from thymus, cord and peripheral blood and bone marrow is explained by their ability to produce β -chemokines. *Experimental Hematology*. 28: 1334-1342.
5. Rozmyslowicz, T., Majka, M., Kijowski, J., Murphy, S.L., Conover, D.O., Poncz, M., Ratajczak, J., Gaulton, GN and Ratajczak, M.Z. 2003. Platelet- and megakaryocyte-derived microparticles transfer CXCR4 receptor to CXCR4-null cells and make them susceptible to infection by X4-HIV. *AIDS* 17: 33-42.
6. Levinson A.I., Zheng Y., Gaulton GN, Song D., Moore J., and Pletcher H. 2003. Intrathymic Expression of Neuromuscular Acetylcholine Receptors and the Immunopathogenesis of Myasthenia Gravis. *Immunol. Res.*, 27:399
7. Levinson A.I., Zheng Y., Gaulton GN, Moore J., and Pletcher H., Song D., and Wheatley L.M. 2003. A new model linking intrathymic acetylcholine receptor expression and the pathogenesis of myasthenia Gravis. In *Myasthenia gravis and related disorders*. Ann. N.Y. Acad. Sci. 998:257-265.
8. Landers, CM., Dugger, N., Quadros, M., Hoffman, P. M., and Gaulton, GN. 2004.

Neuropathogenic murine leukemia virus TR1.3 induces selective syncytia formation of brain capillary endothelium. *Virology*. 321: 57-64.

9. Murphy, SL, Honczarenko, MJ, Dugger, NV, Hoffman, PM and Gaulton, GN. 2004. Disparate regions of envelope protein regulate syncytium formation versus spongiform encephalopathy in neurological disease induced by murine leukemia virus TR. *J. Virol.* 78: 8392-8399. PMID: PMC446142
10. Levinson AI, Song D, Gaulton GN, and Zheng. 2005. The intrathymic pathogenesis of myasthenia gravis. *Clin Dev. Immunol.* 11: 215-220. PMID: PMC2486327
11. Lin G., Murphy, SL, Gaulton GN, and Hoxie JA. 2005. Modification of a viral envelope glycoprotein cell-cell fusion assay by utilizing plasmid encoded bacteriophage RNA polymerase. *J Virol. Methods.* 128: 135-142.
12. Murphy, SL, Landers, CM, Honczarenko, MJ and Gaulton, GN. 2006. Linkage of reduced receptor affinity and superinfection to pathogenesis of TR1.3 murine leukemia virus. *J. Virol.* 80: 4601-4609. PMID: PMC1472024
13. Murphy, SL and Gaulton, GN. 2007. TR1.3 Viral Pathogenesis and Syncytia Formation are Linked to Env-Gag Cooperation. *J Virol.* 81(19):10777-85. PMID: PMC2045439
14. Rozmyslowicz T, Wroblewski K, Moodley J and Gaulton GN. 2010. A Decrease in the Cellular Phosphodiester to Phosphomonoester Lipid Ratio is Characteristic of HIV-1 Infection, *Curr. HIV Res.* 8, 355-363.
15. Rozmyslowicz T, Murphy SL, Conover DO and Gaulton GN. 2010. HIV-1 infection inhibits cytokine production in human thymic macrophages; *Exp. Hematol.* 38, 1157-1166. PMID: PMC3034405

D. Research Support

Ongoing Research Support

8-UL1-TR000003-07

FitzGerald (PI)

07/01/2011 - 06/30/2016

NIH/NCATS

Institutional Clinical and Translational Science Award

The major goals of this project are:

- To develop an interdisciplinary approach to clinical and translational science,
- To expand the reach and inter-institutional development of the Institute for Translational Medicine and Therapeutics (ITMAT) to assume the role of the “academic home” for clinical and translational science,
- To develop new Centers, new cores and interdisciplinary programs and multiple new educational programs with ITMAT,
- To develop focused strategic alliances with the FDA, the pharma and computing industries, and the state of Pennsylvania to foster clinical and translational science, and
- To enhance medical practice by application of the results of CTSA supported research to physician practices.

Role: Co-PI

1-G20-RR029785-01A1

Gaulton (PI)

07/01/2011 - 06/30/2015

NIH/NCRR

Neurointensive Care and Assessment Facility

The overall goal of this proposal is to create a shared Neurointensive Care and Assessment Facility (NCAF) for the study of acute and long-term responses in large animal models of disease and injury, thereby enabling the development of new treatments and technologies to promote and preserve neurological function. The project goals are accomplished through two

closely linked specific aims:

- 1) Enhance the Conduct of Neurointensive Care Research through Creation/Renovation of an Integrated Study Unit.
- 2) Promote Animal Welfare and Human Health by Upgrading the Facility Physical Plant to Federal and other Regulatory Requirements.

Role: PI