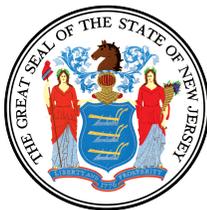


NEW JERSEY COMMISSION ON BRAIN INJURY RESEARCH

2010 Annual Report



Chris Christie, Governor
Kim Guadagno, Lt. Governor



Poonam Alaigh, MD,
MSHCPM, FACP
Commissioner

New Jersey Commission on Brain Injury Research

Members of the Commission

Dennie Todd, Acting Chairperson

Dennis Benigno

Meiling Chin, MBA

Keith Cicerone, Ph.D.

Karl Herrup, Ph.D.

Cynthia Kirchner, MPH

John LoCurto, M.D.

Nicholas Ponzio, Ph.D.

Commission Personnel

John W. Crosbie, Executive Director

Christine Traynor, Administrator

Mary Ray, Fiscal Administrator

**Health & Agriculture Building, Market & Warren Streets, P.O. Box 360
365 S. Warren Street, 5th Floor, Room 502, Trenton, New Jersey 08625
609-633-6465**



January 28, 2011

The Honorable Chris Christie
Governor
Office of the Governor
State House
PO Box 001
Trenton, New Jersey 08625

Dear Governor Christie:

I am pleased to submit the report of the New Jersey Commission on Brain Injury Research for your review and approval. Once again the Commission has had an active and productive year. We recently completed the fourth competition for research projects directed at mechanisms of neural regeneration and repair, and are confident that these efforts will make significant contributions to our knowledge of recovery from traumatic brain injury, the development of effective interventions, and ultimately to the improvement of the quality of life for people who have sustained catastrophic brain injuries.

I would like to acknowledge the efforts and enthusiasm of all of the Commissioners during the past year, as well as the support of the New Jersey Department of Health and Senior Services for their valuable support and contributions towards the work of the Commission on Brain Injury Research.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennie Todd", written over a large, light-colored circular scribble.

Dennie Todd
Acting Chairperson

ACKNOWLEDGMENTS

The NJCBIR would like to express its sincere appreciation to all Commission members, and to the New Jersey Department of Health and Senior Services for their expertise, time, and effort that contributed to the development of this report and support of the program throughout the year.

The NJCBIR also acknowledges the contributions of the Center for Health Statistics for the brain injury surveillance statistics, and to Commission staff members Christine Traynor and Mary Ray for their contributions of substantial material as well as their review and valuable comment.

Table of Contents

Introduction.....	5
Purpose of the Report.....	5
Intent of the Brain Injury Research Act.....	5
Summary of the Act.....	5
Program Objectives.....	6
Funding Priorities.....	7
Anticipated Results.....	7
Budget Management – Proposal for State Fiscal Year 2010.....	7
Accomplishments of the Commission.....	9
Relationship to the NJ Department of Health and Senior Services	10
Financial Statement	12

Appendices

Appendix A.....	13
N.J.S.A.52:9EE-1, et sec (P.L. 2003 c.200) Brain Injury Act.....	13
Appendix B	19
Fiscal Year 2010 Research Guidelines	19
Appendix C.....	29
Commission Membership Information.....	29
Appendix D.....	30
New Jersey Traumatic Brain Injury Surveillance System	30
Appendix E	41
Fiscal Year 2010 Grant Award Recipients	41

New Jersey Commission on Brain Injury Research

I. INTRODUCTION

Purpose of the Report

This report is being submitted in fulfillment of the legislative mandate in the *N.J.S.A. 52:9EE-1, et seq. (P.L.2003, c.200)*. The report describes the implementation of the Brain Injury Research Act (the Act) and evaluates the benefit of the Act for future grant recipients within the neuroscience community.

Intent of the Brain Injury Research Act

The Act was established in January 2004 with the signing of P.L. 2003, c.200. It resulted from the collaborative efforts of people with brain injuries and their families, clinicians, scientists, public officials, and representatives of research, rehabilitation, and nonprofit organizations. The Act anticipates that brain injury research will lead to effective treatments and cures for brain injuries and relieve other consequences of brain injury.

Approximately 175,000 New Jersey residents suffer from traumatic injuries that damage the brain. Based on estimates from the Centers for Disease Control and the New Jersey Department of Health and Senior Services Center for Health Statistics, approximately 12,000 new brain injuries occur each year in New Jersey that require inpatient or outpatient treatment. The economic consequences of the resulting physical disabilities are enormous. Medical and long term care costs to the nation's economy are estimated to be \$48 billion dollars annually. The personal toll on individuals and families with brain injuries is incalculable.

Summary of the Act

Legislation was sponsored by Senator's Joe Vitale and Nia Gill in the Senate; Assemblymen Edward Willis and Peter Eagler sponsored the Assembly version. The Act created the New Jersey Commission on Brain Injury Research (NJCIBIR) whose responsibility is to solicit, approve and administer the support of research grants. The NJCIBIR promotes and funds brain injury research in conjunction with approved research institutions within the State of New Jersey that focus on the development of treatments and cures of brain injuries and the effects associated with them.

The NJCIBIR is establishing and will maintain, in conjunction with the New Jersey Department of Health and Senior Services (NJDHSS), a central registry of persons who sustain brain injuries other than through disease. Health care facilities and providers are required under the Act to report each case of brain injury to the Registry, through regulations established by the NJCIBIR. Those failing to comply with the provisions of the Act will be liable for a penalty of up to \$100 per unreported brain injury case. A penalty sued for under the provisions of the Act shall be recovered by and in the name of the NJCIBIR, and will be deposited in the New Jersey Brain Injury Research Fund.

The New Jersey Brain Injury Research Fund is collected from a \$1.00 surcharge collected from any fine and penalty collected under the provisions of Title 39 of the Revised Statutes, or any other motor vehicle or traffic violation in the State. The surcharge is collected and

New Jersey Commission on Brain Injury Research

forwarded to the State Treasurer. The State Treasurer will annually deposit monies into the Fund established pursuant to Section 9 of P.L. 199, c.202 (C.52:9E-9).

To comply with the provisions of Article VIII, Section II, paragraph 5 of the State Constitution, a municipal or county agency which forwards monies to the State Treasurer pursuant to this subsection may retain an amount equal to two percent of the monies which it collects as compensation for its administrative costs associated with implementing the provisions of this subsection.

The NJCBIR will compile an annual directory of all its funded brain injury research projects within the State of New Jersey.

The creation of precedent setting guidelines for the groundbreaking NJCBIR research agenda and the cutting edge and innovative science needed to accomplish NJCBIR goals is a tedious process that often requires unique and challenging solutions.

Program Objectives

The NJCBIR is committed to accelerating research to develop effective interventions and cures for the disabilities associated with traumatic brain injury. Its primary objectives are:

- To advance the field of brain cell repair and regeneration in the New Jersey research community by encouraging established scientists to apply their expertise to the brain.
- To foster collaborative, interdisciplinary approaches to brain injury research.
- To develop models of neural repair and regeneration that establishes a basis for additional scientific investigation.
- To develop models of neural repair and regeneration after brain injury that can lead to clinical interventions.
- To stimulate epidemiological analysis of the New Jersey TBI Registry data in order to improve injury prevention, develop treatment guidelines and enhance patient outcomes.
- To promote dissemination of the research findings generated by those scientists supported by the NJCBIR.
- To develop and evaluate clinical interventions that lead to improved treatment and function after traumatic brain injury.

NJCBIR awards are intended to promote collaboration among brain injury researchers in New Jersey and encourage innovative research, not to provide long-term support. It is expected that this initial support will lead investigators to acquire necessary levels of preliminary data so that they may compete successfully for federal grant support. Grantees are eligible to apply for funding for additional research projects. All applications will be reviewed competitively.

New Jersey Commission on Brain Injury Research

Funding Priorities

The NJCBIR will fund research activities that hold promise of developing effective interventions and cures for the disabilities associated with traumatic brain injury. The areas of research listed below highlight the focus of current NJCBIR emphasis and funding:

Basic Studies

- Studying strategies to promote neuronal growth and survival, encourage the formation of synapses, enhance appropriate myelination, restore axonal conduction, replace or regenerate injured brain cells, or otherwise improve function after brain injury.
- Evaluating efficacy of drugs and other interventions that prevent or reduce secondary neuronal injury or providing insight into the mechanisms causing progressive damage.
- Defining anatomical characteristics of brain injury in well-defined animal models and in the human brain, specifically documenting the cellular systems vulnerable to injury and the functional losses which occur as a result thereof.
- Translational research on the mechanism and interventions that promote recovery of function after brain injury.
- Demonstrating the efficacy of innovative rehabilitation strategies based on basic research that offers promise to promote recovery of function through their clinical application.

Clinical Studies

- Demonstrating the efficacy of innovative rehabilitation strategies based on basic research that offer promise to promote recovery of function (e.g., physiologic function, cognitive impairment, activity limitation, social participation, quality of life) through their clinical application.
- Demonstrating the putative mechanisms of action of rehabilitation intervention based on changes in brain activity (e.g., functional imaging), neurocognitive function, or psychosocial factors (e.g., resilience).
- Comparative effectiveness research to evaluate the relative risks and benefits of alternative rehabilitation interventions intended to promote recovery of function.
- Epidemiological studies of the New Jersey Traumatic Brain Injury Registry data, to identify contributions of demographic and risk factors; patient transport, rehabilitation and physical therapy; and medical/surgical interventions to population treatment and outcomes.

Anticipated Results

The NJCBIR's goal is to enhance New Jersey's role in the worldwide movement to develop effective treatments and cures for brain injuries and their effects. The NJCBIR will encourage and support meritorious scientific research in New Jersey in pursuit of that goal. This will benefit the State of New Jersey in savings on medical and support costs, enhance the development of the State's public and private biomedical sector, establish leadership in the field of brain injury treatments and cures, and improve the lives of those living with brain injuries and their effects.

New Jersey Commission on Brain Injury Research

Budget Management – State Fiscal Year 2010

The NJCBIR approved funding for eight meritorious and relevant scientific research grants for a total of \$2,323,245 during State Fiscal Year 2010. Four types of grant awards were considered: Individual Research Grants, Programmatic Multi-Investigator Project Grants, Postdoc/Graduate Student Fellowship Grants, and new for 2010 Pilot Research Grants.

- **Individual Research Grant**

Individual Research Grants support (1) strategies to promote neuronal repair and regeneration after traumatic brain injury, or (2) translational research that establishes the relevance of basic research findings to clinical application in human subjects. Applicants were encouraged to apply for a one-year, two-year or three-year award. Maximum funding for each approved grant is up to \$150,000 per year including direct and indirect costs (10% maximum for the latter).

The goals of this program are (1) to encourage investigators to undertake research on neural protection, repair and regeneration after traumatic brain injury; (2) to encourage individuals to undertake research on the effectiveness of clinical interventions for traumatic brain injury; and (3) to enable researchers with novel scientific and clinical ideas to test them and develop pilot data needed to develop a programmatic area of research that can be supported by additional funding from the National Institutes of Health and other funding sources.

- **Programmatic Multi-Investigator Project Grant**

Multi-Investigator Grants support collaborative research from at least three investigators from different laboratories with an emphasis on traumatic brain injury. Preference is given to proposals that demonstrate complementary approaches to addressing a research question through multidisciplinary investigations (e.g., molecular, genetic, physiologic and pharmacologic approaches).

Collaborations are encouraged among independent laboratories within the same institution or among laboratories from different institutions. The principal investigator must be located within a qualifying institution in the State of New Jersey. Proposals must identify a principal investigator within each research site, as well as an overall Principal Investigator (Program Director) who is responsible for ensuring collaboration among all investigators. Applicants were encouraged to apply for a one-year, two-year or three- year award. Maximum funding for each grant is up to \$660,000 per year including direct and indirect costs (10% maximum for the latter).

- **Postdoc/Graduate Student Fellowship Grants**

Postdoctoral Fellowships are generous three-year salary awards that may be active up to and including the 8th postgraduate year. The beginning stipend levels are based on years of relevant research experience since obtaining the doctoral degree, starting at \$40,000 for 0 years experience, then \$42,000 for 1 year experience, etc. For each experience level, salaries for the next two years increase each year by \$2,000. Applicants may apply by no later than their 6th year after their degree award. In addition to the stipend, there will be a research allowance of \$7500 and a travel budget of \$1,500. Additional support includes a fringe benefit supplement at 12% of each annual stipend amount and indirect costs for the institution at 10% of each annual total amount. Institutions may supplement stipends, but not with other full-time fellowship awards, or other NJCBIR monies. Candidates of outstanding

New Jersey Commission on Brain Injury Research

quality must hold a Ph.D., and/or M.D., or equivalent graduate degree. Appropriate degrees must be awarded prior to activation of award. Candidates must be accepted for postdoctoral training under the supervision of an appropriate mentor at a qualifying academic research institution in New Jersey. A candidate may not apply for a NJCBIR Postdoctoral Fellowship and a NJCBIR Individual Research grant in the same grant cycle. If a first-year Fellow applies for and is awarded a NJCBIR Individual Research Grant, funding will be contingent upon cancellation of the second or third year of the fellowship. Non-research activities, such as teaching or clinical care, may not occupy more than 10% of the fellow's time.

Graduate Student Fellowships are three-year awards of \$27,500 per annum. They provide an annual stipend of \$24,000, and consistent with institution policy, a research allowance of \$2,000, and a travel budget of \$1,500. Up to \$6,000 of additional funds will be provided for tuition. No part of this award may be used for institutional overhead. Institutions may supplement stipends, but not with other full-time fellowship awards or other NJCBIR monies. Applicants must be full-time graduate students in residence in a proposed course of study directly related to regeneration and repair of the damaged brain. Students must begin study in the semester following activation unless special permission is received prior to activation date. The NJCBIR prefers to support graduate student candidates who have completed the first year of graduate study and are concentrating on research projects at least 80% of their time. Applicants may serve as teaching assistants while holding a NJCBIR Graduate Student Fellowship without special permission.

- **Pilot Research Grant**

Pilot Research Grants are offered with an emphasis on encouraging 1) experienced investigators to pursue a new direction in brain injury research, or 2) new investigators who want to gather preliminary data for larger research projects. Suitable projects include feasibility studies; secondary analysis of existing data; self contained research projects; development of research methodology; development of new research technologies; and investigation of novel scientific ideas, model systems, tools, agents, targets and technologies that have the potential to substantially advance brain cell regeneration and repair. Applicants are encouraged to apply for a one or two year award. Maximum funding is up to \$75,000 per year for direct costs, and 10% applicable indirect costs.

II. ACCOMPLISHMENTS OF THE COMMISSION

The Commission developed policy guidelines to accommodate what promises to be an exciting research agenda for the New Jersey science community. The NJCBIR is providing the opportunity for New Jersey to become a leader in traumatic brain injury research, as our program was the first of its kind in the nation. As we move forward it is our belief that the NJCBIR will set the example for other states to follow as the search for treatments and cures begins to play a major role in medical research initiatives. Indeed, our early recognition of unmet needs in traumatic brain injury research is paving the way to develop methods of regeneration and repair.

NJCBIR grant programs are designed to provide opportunities attractive to a wide range of researchers. NJCBIR grantees and grantee institutions have capitalized on the opportunities afforded by the availability of Commission funding through advancement of individual

New Jersey Commission on Brain Injury Research

careers, increased institutional investment, and applying for additional outside funding. The NJCBIR has been a major factor in fostering this interest and continued involvement in brain injury research within the State of New Jersey.

Four types of grant programs were offered during Fiscal Year 2010. They include Individual Research Grants, Fellowship Grants, Programmatic Multi-Investigator Research Grants, and Pilot Research Grants. A total of 28 grant applications were received during Fiscal Year 2010. Eight grants were awarded totaling \$2,323,245. The grant awards included four Individual Research grants, two Fellowship grants, and two Pilot Research grants.

- **New Jersey Brain Injury Registry**

The “Brain Injury Research Act” enacted by the Senate and General Assembly of the State of New Jersey in 2004, mandated the establishment of a central registry of people who sustain brain injuries throughout the State. This registry will provide a database indicating the incidence and prevalence of brain injuries and will serve as a resource for research, evaluation, and information on brain injuries.

The NJCBIR maintains a Memorandum of Agreement with the New Jersey Department of Health and Senior Services’ Center for Health Statistics (CHS) to provide for the collection and analysis of brain injury data. The Registry, directed by the Center for Health Statistics, collects brain injury data from New Jersey hospitals, and provides analysis of that data for health professionals

- **Outreach Efforts**

The NJCBIR is committed to broadening its portfolio of institutional grantees and increasing the size and diversity of its funding activities. Through outreach activities, the NJCBIR encourages participation by all research organizations with an interest in brain injury research. The Executive Director continues outreach efforts to the State’s universities, colleges and public and private research institutions to make them aware of the Commission, its mission and the funding it has to offer for brain injury research. Through this outreach, the Commission hopes to expand interest within the scientific community and increase the number and quality of applications submitted for funding.

III. RELATIONSHIP TO THE NEW JERSEY DEPARTMENT OF HEALTH AND SENIOR SERVICES

The NJCBIR is established by statute in, but not of, the New Jersey Department of Health and Senior Services (NJDHSS). Within NJDHSS, the office of the NJCBIR is administratively assigned in the Office of the Commissioner. NJDHSS provides a supportive framework in which the NJCBIR works to effectively implement its mission of service to the public.

Membership

The membership of the NJCBIR is limited to eleven by the statute. The membership consists of the following: Commissioner of the NJDHSS, or Commissioner’s designee, who serves ex-officio; one representative from the University of Medicine and Dentistry of New Jersey; one representative from Rutgers, The State University of New Jersey; six public members

New Jersey Commission on Brain Injury Research

appointed by the Governor with the advice and consent of the Senate including one licensed physician in the State; one person with a brain injury; one public member appointed by the President of the Senate; and one public member appointed by the Speaker of the Assembly.

All public members shall be residents of the State, or otherwise associated with the State, and shall be known for their knowledge, competence, experience or interest in brain injury medical research.

The Commissioner of the NJDHSS may designate an officer or employee of his/her Department to represent him/her at meetings of the NJCBIR, and the designee may lawfully vote and otherwise act on behalf of the NJCBIR.

The term of office for each member of the NJCBIR is three years. Of the members first appointed, three shall be appointed for one year, three for two years, and two for three years. All vacancies shall be filled for the balances of the unexpired terms. Members are eligible for reappointment and shall continue to serve upon the expiration of his/her term until a successor is appointed.

Members of the NJCBIR serve without compensation, but shall be reimbursed by the NJCBIR for the actual and necessary expenses incurred in the performance of their duties as members of the NJCBIR.

The NJCBIR holds public meetings at least four times a year. A Chair and Vice Chairperson are elected annually and preside over all formal proceedings.

New Jersey Commission on Brain Injury Research

IV. FINANCIAL STATEMENT

In accordance with the provisions of P.L. 2003, C.200 (c.52:9EE-9) a \$1 surcharge was added to the amount of each fine and penalty imposed and collected under authority of any law for any violation of the provisions of Title 39 or any other motor vehicle or traffic violation in the State of New Jersey. This surcharge is forwarded to the State Treasurer and deposited in the “New Jersey Brain Injury Research Fund”. The law took effect on July 1, 2004. Interest earned on the money collected, through the Division of Investments, New Jersey State Department of Treasury, is credited to the Fund.

New Jersey Commission on Brain Injury Research State Fiscal Year 2010

FUND BALANCE STATEMENT:

	SFY 2010 <i>Projected</i>	SFY 2010 <i>Actual</i>	SFY 2011 <i>Projected</i>
Opening Fund Balance (July 1)	\$8,095,130	\$8,097,913	\$5,085,876
Revenues			
Assessments ¹	\$3,600,000	\$3,919,037	\$3,600,000
Investments Earnings - Interest ²	\$360	\$68,528	\$75,000
Total Revenue:	\$3,600,360	\$3,987,565	\$3,675,000
Total Funds Available	\$11,695,490	\$12,085,478	\$8,760,876
Disbursements and Expenses			
Spending Plan Reduction	\$3,000,000	\$3,000,000	
Disbursements to Grantees	\$8,357,619	\$3,792,485	\$8,040,000
Total Disbursements	\$11,357,619	\$6,792,485	\$8,040,000
Expenses			
Administrative & Office expense	\$170,916	\$172,348	\$224,650
Professional Review Panel	\$72,000	\$33,244	\$45,000
NJCSOR Registry	\$20,000	\$1,525	\$20,000
Total Expenses	\$262,916	\$207,117	\$289,650
Total Disbursements and Expenses	\$11,620,535	\$6,999,602	\$8,329,650
Closing Fund Balance (June 30)	\$74,955	\$5,085,876	\$431,226

¹Net revenue variance

²Funds plus interest deposited annually in Jan.

New Jersey Commission on Brain Injury Research

APPENDIX A

BRAIN INJURY ACT

CHAPTER 200

AN ACT establishing a New Jersey Commission on Brain Injury Research, supplementing Title 52 of the Revised Statutes and amending R.S.39:5-41.

BE IT ENACTED *by the Senate and General Assembly of the State of New Jersey:*

C.52:9EE-1 Short title.

1. This act shall be known and may be cited as the "Brain Injury Research Act."

C.52:9EE-2 Definitions relative to brain injury research.

2. As used in this act:

"Approved research project" means a scientific research project, which is approved by the commission and which focuses on the treatment and cure of brain injuries.

"Commission" means the New Jersey State Commission on Brain Injury Research established pursuant to this act.

"Institutional support services" means all services, facilities, equipment, personnel and expenditures associated with the creation and maintenance of approved research projects.

"Qualifying research institution" means the University of Medicine and Dentistry of New Jersey and Rutgers, The State University of New Jersey and any other institution approved by the commission, which is conducting an approved research project.

C.52:9EE-3 New Jersey State Commission on Brain Injury Research.

3. a. There is established in the Executive Branch of the State government, the New Jersey State Commission on Brain Injury Research. For the purposes of complying with the provisions of Article V, Section IV, paragraph 1 of the New Jersey Constitution, the commission is allocated within the Department of Health and Senior Services, but notwithstanding that allocation, the commission shall be independent of any supervision or control by the department or by any board or officer thereof.

b. The commission shall consist of 11 members, including the Commissioner of Health and Senior Services, or his designee, who shall serve *ex officio*; one representative of the University of Medicine and Dentistry of New Jersey; one representative of Rutgers, The State University of New Jersey; six public members, appointed by the Governor with the advice and consent of the Senate, one of whom shall be a licensed physician in this State and one of whom shall be a person with a brain injury; and two public members, one of whom shall be appointed by the President of the Senate and one of whom shall be appointed by the Speaker of the General Assembly. All public members shall be residents of the State or otherwise associated with the State, and shall be known for their knowledge, competence, experience or interest in brain injury medical research.

c. The term of office of each public member shall be three years, but of the members first appointed, three shall be appointed for terms of one year, three for terms of two years, and two for terms of three years. All vacancies shall be filled for the balances of the unexpired terms in the same manner as the original appointments. Appointed members are eligible for

New Jersey Commission on Brain Injury Research

reappointment upon the expiration of their terms. A member shall continue to serve upon the expiration of his term until a successor is appointed.

The members of the commission shall not receive compensation for their services, but shall be reimbursed for the actual and necessary expenses incurred in the performance of their duties as members of the commission.

C.52:9EE-4 Duties of commission.

4. The commission shall:

a. Review and authorize approved research projects, emphasizing projects that study nerve regeneration as a means to a cure for brain injury, and may establish an independent scientific advisory panel composed of scientists and clinicians who are not members of the commission to review proposals submitted to the commission and make funding recommendations to the commission;

b. Apportion all available funds to qualifying research institutions to finance approved research projects and necessary institutional support services;

c. Ensure that funds so apportioned to approved research projects are not diverted to any other use;

d. Take steps necessary to encourage the development within the State of brain injury research projects;

e. Compile a directory of all brain injury research projects being conducted in the State; and

f. Provide the Governor and the Legislature with a report by January 30 of each year describing the status of the commission's activities and the results of its funded research efforts.

C.52:9EE-5 Authority of commission.

5. The commission is authorized to:

a. Adopt rules and regulations concerning the operation of the commission, the functions and responsibilities of its officers and employees, the use of moneys from the "New Jersey Brain Injury Research Fund" established pursuant to section 9 of P.L.2003, c.200 (C.52:9EE-9) to meet the operating expenses of the commission, and other matters as may be necessary to carry out the purposes of this act;

b. Maintain offices at such places within the State as it may designate;

c. Employ an executive director and other personnel as may be necessary, whose employment shall be in the unclassified service of the State, except that employees performing stenographic or clerical duties shall be appointed pursuant to Title 11A (Civil Service) of the New Jersey Statutes;

d. Design a fair and equitable system for the solicitation, evaluation and approval of proposals for brain injury research projects;

e. Apply for and accept any grant of money from the federal government, which may be available for programs relating to research on brain injury;

f. Enter into contracts with individuals, organizations and institutions necessary or incidental to the performance of its duties and the execution of its powers under this act; and

g. Accept gifts, grants and bequests of funds from individuals, foundations, corporations, governmental agencies and other organizations and institutions.

C.52:9EE-6 Election of officers.

6. The commission shall annually elect a chairman and a vice-chairman from among its members. The chairman shall be the chief executive officer of the commission, shall preside at

New Jersey Commission on Brain Injury Research

all meetings of the commission and shall perform other duties that the commission may prescribe.

The executive director shall serve as secretary to the commission and shall carry out its policies under the direction of the chairman.

C.52:9EE-7 Direct applications for funds.

7. Nothing in this act shall preclude a qualifying research institution or any other research facility in the State from directly applying for or receiving funds from any public or private agency to conduct brain injury research.

C.52:9EE-8 Central registry of persons who sustain brain injuries.

8. a. The commission shall establish and maintain, in conjunction with the Department of Health and Senior Services, a central registry of persons who sustain brain injuries other than through disease, whether or not the injury results in a permanent disability, in order to provide a database that indicates the incidence and prevalence of brain injuries and that will serve as a resource for research, evaluation and information on brain injuries and available services.

b. The commission shall require the reporting of all cases of brain injuries, except those caused through disease, and the submission of specified additional information on reported cases as it deems necessary and appropriate.

The commission shall, by regulation, specify the health care facilities and providers required to make the report of a brain injury to the registry, information that shall be included in the report to the registry, the method for making the report and the time period in which the report shall be made.

c. The reports made pursuant to this section are to be used only by the commission and the Department of Health and Senior Services and such other agencies as may be designated by the commission or the department and shall not otherwise be divulged or made public so as to disclose the identity of any person to whom they relate; and to that end, the reports shall not be included under materials available to public inspection pursuant to P.L.1963, c.73 (C.47:1A-1 et seq.) and P.L.2001, c.404 (C.47:1A-5 et al.).

d. No individual or organization providing information to the commission in accordance with this section shall be deemed to be, or held liable for, divulging confidential information. Nothing in this section shall be construed to compel any individual to submit to medical, commission or department examination or supervision.

e. A health care facility or health care provider who is required to report a brain injury to the commission and who fails to comply with the provisions of this section shall be liable to a penalty of up to \$100 per unreported brain injury case. A penalty sued for under the provisions of this section shall be recovered by and in the name of the commission and shall be deposited in the "New Jersey Brain Injury Research Fund" established pursuant to this act.

C.52:9EE-9 "New Jersey Brain Injury Research Fund."

9. a. There is established in the Department of the Treasury a nonlapsing revolving fund to be known as the "New Jersey Brain Injury Research Fund." This fund shall be the repository for moneys provided pursuant to subsection f. of R.S.39:5-41. Moneys deposited in the fund, and any interest earned thereon, shall be used for the purpose of making grants for brain injury research projects at qualified research institutions approved by the New Jersey State Commission on Brain Injury Research, and for the purpose of meeting the operating expenses of the commission.

New Jersey Commission on Brain Injury Research

b. Any costs incurred by the department in the collection or administration of the fund may be deducted from the funds deposited therein, as determined by the Director of the Division of Budget and Accounting.

10. R.S.39:5-41 is amended to read as follows:

Fines, penalties, forfeitures, disposition of; exceptions.

39:5-41. a. All fines, penalties and forfeitures imposed and collected under authority of law for any violations of R.S.39:4-63 and R.S.39:4-64 shall be forwarded by the judge to whom the same have been paid to the proper financial officer of a county, if the violation occurred within the jurisdiction of that county's central municipal court, established pursuant to N.J.S.2B:12-1 et seq. or the municipality wherein the violation occurred, to be used by the county or municipality to help finance litter control activities in addition to or supplementing existing litter pickup and removal activities in the municipality.

b. Except as otherwise provided by subsection a. of this section, all fines, penalties and forfeitures imposed and collected under authority of law for any violations of the provisions of this Title, other than those violations in which the complaining witness is the director, a member of his staff, a member of the State Police, a member of a county police department and force or a county park police system in a county that has established a central municipal court, an inspector of the Board of Public Utilities, or a law enforcement officer of any other State agency, shall be forwarded by the judge to whom the same have been paid as follows: one-half of the total amount collected to the financial officer, as designated by the local governing body, of the respective municipalities wherein the violations occurred, to be used by the municipality for general municipal use and to defray the cost of operating the municipal court; and one-half of the total amount collected to the proper financial officer of the county wherein they were collected, to be used by the county as a fund for the construction, reconstruction, maintenance and repair of roads and bridges, snow removal, the acquisition and purchase of rights-of-way, and the purchase, replacement and repair of equipment for use on said roads and bridges therein. Up to 25% of the money received by a municipality pursuant to this subsection, but not more than the actual amount budgeted for the municipal court, whichever is less, may be used to upgrade case processing.

All fines, penalties and forfeitures imposed and collected under authority of law for any violations of the provisions of this Title, in which the complaining witness is a member of a county police department and force or a county park police system in a county that has established a central municipal court, shall be forwarded by the judge to whom the same have been paid to the financial officer, designated by the governing body of the county, for all violations occurring within the jurisdiction of that court, to be used for general county use and to defray the cost of operating the central municipal court.

Whenever any county has deposited moneys collected pursuant to this section in a special trust fund in lieu of expending the same for the purposes authorized by this section, it may withdraw from said special trust fund in any year an amount which is not in excess of the amount expended by the county over the immediately preceding three-year period from general county revenues for said purposes. Such moneys withdrawn from the trust fund shall be accounted for and used as are other general county revenues.

c. (Deleted by amendment, P.L.1993, c.293.)

d. Notwithstanding the provisions of subsections a. and b. of this section, \$1 shall be added to the amount of each fine and penalty imposed and collected through a court under authority of

New Jersey Commission on Brain Injury Research

any law for any violation of the provisions of Title 39 of the Revised Statutes or any other motor vehicle or traffic violation in this State and shall be forwarded by the person to whom the same are paid to the State Treasurer. In addition, upon the forfeiture of bail, \$1 of that forfeiture shall be forwarded to the State Treasurer. The State Treasurer shall annually deposit those moneys so forwarded in the "Body Armor Replacement" fund established pursuant to section 1 of P.L.1997, c.177 (C.52:17B-4.4). Beginning in the fiscal year next following the effective date of this act, the State Treasurer annually shall allocate from those moneys so forwarded an amount not to exceed \$400,000 to the Department of Personnel to be expended exclusively for the purposes of funding the operation of the "Law Enforcement Officer Crisis Intervention Services" telephone hotline established and maintained under the provisions of P.L.1998, c.149 (C.11A:2-25 et al.).

e. Notwithstanding the provisions of subsections a. and b. of this section, \$1 shall be added to the amount of each fine and penalty imposed and collected through a court under authority of any law for any violation of the provisions of Title 39 of the Revised Statutes or any other motor vehicle or traffic violation in this State and shall be forwarded by the person to whom the same are paid to the State Treasurer. The State Treasurer shall annually deposit those moneys so forwarded in the "New Jersey Spinal Cord Research Fund" established pursuant to section 9 of P.L.1999, c.201 (C.52:9E-9). In order to comply with the provisions of Article VIII, Section II, paragraph 5 of the State Constitution, a municipal or county agency which forwards moneys to the State Treasurer pursuant to this subsection may retain an amount equal to 2% of the moneys which it collects pursuant to this subsection as compensation for its administrative costs associated with implementing the provisions of this subsection.

f. Notwithstanding the provisions of subsections a. and b. of this section, during the period beginning on the effective date of this act and ending five years thereafter, \$1 shall be added to the amount of each fine and penalty imposed and collected through a court under authority of any law for any violation of the provisions of Title 39 of the Revised Statutes or any other motor vehicle or traffic violation in this State and shall be forwarded by the person to whom the same are paid to the State Treasurer. The State Treasurer shall annually deposit those moneys so forwarded in the "Autism Medical Research and Treatment Fund" established pursuant to section 1 of P.L.2003, c.144 (C.30:6D-62.2).

g. Notwithstanding the provisions of subsection a. and b. of this section, \$2 shall be added to the amount of each fine and penalty imposed and collected by a court under authority of any law for any violation of the provisions of Title 39 of the Revised Statutes or any other motor vehicle or traffic violation in this State and shall be forwarded by the person to whom the same are paid to the State Treasurer. The State Treasurer shall annually deposit those moneys so forwarded in the "New Jersey Forensic DNA Laboratory Fund" established pursuant to P.L.2003, c.183. Prior to depositing the moneys into the fund, the State Treasurer shall forward to the Administrative Office of the Courts an amount not to exceed \$475,000 from moneys initially collected pursuant to this subsection to be used exclusively to establish a collection mechanism and to provide funding to update the Automated Traffic System Fund created pursuant to N.J.S.2B:12-30 to implement the provisions of this subsection.

The authority to impose additional fines and penalties under this subsection shall take effect 90 days after the effective date of P.L.2003, c.183 and shall expire five years thereafter. Not later than the 180th day prior to such expiration, the Attorney General shall prepare and submit to the Governor and the Legislature a report on the collection and use of DNA samples under P.L.1994, c.136. The report shall cover the period beginning on that effective date and ending four years thereafter. The report shall indicate separately, for each one-year period during those four years that begins on that effective date or an anniversary thereof, the number of each type of biological sample taken and the total cost of taking that type of sample, and also the number of

New Jersey Commission on Brain Injury Research

identifications and exonerations achieved through the use of the samples. In addition, the report shall evaluate the effectiveness, including cost effectiveness, of having the samples available to further police investigations and other forensic purposes.

h. Notwithstanding the provisions of subsections a. and b. of this section, \$1 shall be added to the amount of each fine and penalty imposed and collected under authority of any law for any violation of the provisions of Title 39 of the Revised Statutes or any other motor vehicle or traffic violation in this State and shall be forwarded by the person to whom the same are paid to the State Treasurer. The State Treasurer shall annually deposit those moneys so forwarded in the "New Jersey Brain Injury Research Fund" established pursuant to section 9 of P.L.2003, c.200 (C.52:9EE-9). The Administrative Office of the Courts may retain an amount equal to \$475,000 from the moneys which it initially collects pursuant to this subsection, prior to depositing any moneys in the "New Jersey Brain Injury Research Fund," in order to meet the expenses associated with utilizing the Automated Traffic System Fund created pursuant to N.J.S.2B:12-30 to implement the provisions of this subsection and serve other statutory purposes.

C.52:9EE-10 Regulations.

11. The commission shall adopt regulations pursuant to the "Administrative Procedure Act," P.L.1968, c.410 (C.52:14B-1 et seq.) as are necessary to carry out the provisions of this act.

12. This act shall take effect on the 180thday following enactment.

Approved January 2, 2004.

New Jersey Commission on Brain Injury Research

APPENDIX B

RESEARCH PROGRAM GUIDELINES

FISCAL YEAR 2010 GRANT CYCLE

Approximately 175,000 New Jersey residents suffer from traumatic injuries that damage the brain. Approximately 12,000 new brain injuries occur each year in New Jersey. The economic consequences of the resulting physical disabilities are enormous. Medical and long term care costs to the nation's economy are estimated to be 48 billion dollars annually. The personal toll on individuals and families with brain injuries and their communities is incalculable.

Therefore, in January 2004, Governor James E. McGreevey signed legislation creating the New Jersey Commission on Brain Injury Research (NJCIBIR), allocating funding to the New Jersey Brain Injury Research Fund.

The charge to the NJCIBIR is:

The NJCIBIR will solicit and approve support of research projects, administer the awards through research grants, and promote development of brain injury research projects within the State of New Jersey. Because the majority of brain injuries within the State are a result of traumatic events, the Commission is particularly interested in funding projects that focus on the treatment and cures of traumatic brain injuries. The NJCIBIR will compile a research directory of all traumatic brain injury research projects being conducted within the State, and provide the Governor and the Legislature with an annual report by January 30th of each year describing the status of the NJCIBIR's activities and the results of its funded research projects.

PROGRAM OBJECTIVES

The NJCIBIR is committed to accelerating research to develop effective interventions and cures for the disabilities associated with traumatic brain injury. Its primary objectives are:

- To advance the field of brain cell repair and regeneration in the New Jersey research community by encouraging established scientists to apply their expertise to the brain.
- To foster collaborative, interdisciplinary approaches to brain injury research.
- To develop models of neural repair and regeneration that establish a basis for additional scientific investigation.
- To develop models of neural repair and regeneration after brain injury that can lead to clinical interventions.
- To promote dissemination of the research findings generated by those scientists supported by the NJCIBIR.

NJCIBIR awards are intended to promote collaboration among brain injury researchers in New Jersey and encourage innovative research, not to provide long-term support. Grantees are eligible

New Jersey Commission on Brain Injury Research

to apply for funding for additional research projects; all applications will be reviewed competitively.

FUNDING PRIORITIES

The New Jersey Commission on Brain Injury Research will fund research activities that hold promise of developing effective interventions and cures for the disabilities associated with traumatic brain injury. The areas of research listed below highlight the focus of current NJCBIR emphasis and funding:

- One goal of the Commission is to promote the development of brain injury researchers and their research capabilities so that they may seek federal and other external funding. The program is not meant to provide long-term financial support for brain injury research.
- Studying strategies to promote neuronal growth and survival, encourage the formation of synapses, enhance appropriate myelination, restore axonal conduction, replace or regenerate injured brain cells, or otherwise improve function after brain injury.
- Evaluating efficacy of drugs and other interventions that prevent or reduce secondary neuronal injury or providing insight into the mechanisms causing progressive damage.
- Defining anatomical characteristics of brain injury in well-defined animal models and in the human brain, specifically documenting the cellular systems vulnerable to injury and the functional losses which occur as a result thereof.
- Translational research on the mechanism and interventions that promote recovery of function after brain injury.
- Demonstrating the efficacy of innovative rehabilitation strategies based on basic research that offer promise to promote recovery of function through their clinical application.

ELIGIBILITY

Qualifying Institutions: For the purpose of all NJCBIR grants, a qualifying institution is defined as any academic institution, research organization, public or private institution or other entity, located in the State of New Jersey, with a demonstrated capability to conduct grant funded research, and specifically approved by the vote of the Commission, but in no event can an individual be a qualifying institution. All applicants, organizations/institutions must be located within the State of New Jersey.

All applicants including Principal Investigators and organizations/institutions are encouraged to collaborate with other New Jersey-based researchers as well as with researchers located out-of-state, or out of the country.

New Jersey Commission on Brain Injury Research

PROTECTION OF HUMAN SUBJECTS, ANIMAL WELFARE AND RECOMBINANT DNA

Compliance with National Institutes of Health regulations for the protection of human subjects, animal welfare and recombinant DNA is required for all grants. Inclusion of women and minorities in clinical trials is a target objective for all grants.

a. NJCBIR supports compliance with NIH regulations, OHRP and institutional guidelines defined for the protection of human subjects in research. Violations of these regulations and guidelines must be reported and reviewed by the appropriate institutions and NJCBIR, including but not limited to OHRP, the IRB overseeing the research, the associated institution and the laboratory's senior scientist.

b. NJCBIR shall have the right to arrange for observation and/or auditing without prior notice of any research activity and research records associated with research funded by NJCBIR.

It is the responsibility of the applicant as a potential recipient of a NJCBIR grant to assure that the rights and welfare of all human subjects used in any NJCBIR sponsored research are protected. Any applications involving human subjects must be reviewed and approved by the appropriate institutional review board.

It is the responsibility of the applicant as a potential recipient of a NJCBIR grant to assure proper care and treatment of all laboratory animals used in any NJCBIR sponsored research. Any applications involving laboratory animals must be reviewed and approved by the appropriate institutional review board. Under no circumstance will any funds be released until documentation of full, project-specific IACUC approval has been received by NJCBIR. By its very nature animal-based experimentation into the subject of traumatic brain injury is among the most sensitive types of research programs. Thus, the NJCBIR takes great care in ensuring that any and all animals used in their sponsored research projects are handled appropriately. Investigators are strongly encouraged to have full IACUC approval before submitting their proposal as this will expedite the review process.

It is the responsibility of the applicant as a potential recipient of a NJCBIR grant to assure that the physical and biological containment needed for research involving any recombinant DNA molecules is within policies set out in the current "National Institutes of Health Guidelines for Research Involving Recombinant DNA Molecules." Any applications involving recombinant DNA molecules must be reviewed and approved by the appropriate institutional review board.

New Jersey Commission on Brain Injury Research

RESEARCH GRANTS AVAILABLE

Individual Research Grant

The NJCBIR will fund Individual Research Grants with an emphasis on (1) strategies to promote neuronal repair and regeneration after traumatic brain injury, or (2) translational research that establishes the relevance of basic research findings to clinical application in human subjects. Applicants are encouraged to apply for a one-year, two-year or three-year award. Maximum funding is up to \$150,000 per year plus 10% indirect costs=\$165,000 per year.

The goals of this program are (1) to encourage investigators to undertake research on neural protection, repair and regeneration after traumatic brain injury; (2) to encourage scientists with established research programs in related areas to apply their efforts to brain injury research; and (3) to enable researchers with novel scientific and clinical ideas to test them and develop pilot data needed to develop a programmatic area of research that can be supported by additional funding from the National Institutes of Health, and other funding sources.

Programmatic Multi-Investigator Project Grant

The NJCBIR will fund Programmatic Multi-Investigator Project Grants that supports collaborative research among at least 3 investigators from different laboratories with an emphasis on traumatic brain injury. Preference will be given to proposals that demonstrate complementary approaches to addressing a research question through multidisciplinary investigations (e.g., molecular, genetic, physiologic and pharmacologic approaches). During proposal review, if one sub-project does not receive a favorable recommendation for funding and is not considered necessary for effective implementation of the entire program, the remaining sub-projects, which must be a minimum of 3, may be considered for approval independent of the failed sub-project.

Collaborations are encouraged among independent laboratories within the same institution, or among laboratories from different institutions. The principal investigator must be located within a qualifying institution in the State of New Jersey. Proposals must identify a principal investigator within each research site as well as an overall Principal Investigator who is responsible for ensuring collaboration among all investigators. Applicants are encouraged to apply for a one-year, two-year or three-year award. Maximum funding is up to \$600,000 per year plus 10% indirect costs=\$660,000 per year.

Postdoctoral and Graduate Student Fellowship Grant

Postdoctoral Fellowships are generous three-year salary awards that may be active up to and including the 8th postgraduate year. The stipend levels increase by \$2000 for each year of experience, starting at \$40,000 for 0 years experience, \$42,000 for 1 year experience, etc., and increasing to \$54,000 for the final year. Applicants may apply by no later than their 6th year after their degree award. In addition to the stipend, there will be a research allowance of \$7500 and a travel budget of \$1,500. Additional support includes a fringe benefit supplement at 12% of each annual stipend amount and indirect costs for the institution at 10% of each annual total amount. Institutions may supplement stipends, but not with other full-time fellowship awards, or other NJCBIR monies. Candidates of outstanding quality must hold a Ph.D., and/or M.D., or equivalent graduate degree. Appropriate degrees must be awarded prior to activation of award. Candidates must be accepted for postdoctoral training under the supervision of an appropriate mentor at a qualifying academic research institution in New Jersey. A candidate may not apply

New Jersey Commission on Brain Injury Research

for a NJCBIR Postdoctoral Fellowship and a NJCBIR Individual Research grant in the same grant cycle. If a first-year Fellow applies for and is awarded a NJCBIR Individual Research Grant, funding will be contingent upon cancellation of the second or third year of the fellowship. Non-research activities, such as teaching or clinical care, may not occupy more than 10% of the fellow's time.

Graduate Student Fellowships are three-year awards of \$27,500 per annum. They provide an annual stipend of \$24,000, and consistent with institution policy, a research allowance of \$2,000, and a travel budget of \$1,500. Up to \$6,000 of additional funds will be provided for tuition. No part of this award may be used for institutional overhead. Institutions may supplement stipends, but not with other full-time fellowship awards or other NJCBIR monies. Applicants must be full-time graduate students in residence in a proposed course of study directly related to regeneration and repair of the damaged brain. Students must begin study in the semester following activation unless special permission is received prior to activation date. The NJCBIR prefers to support graduate student candidates who have completed the first year of graduate study and are concentrating on research projects at least 80% of their time. Applicants may serve as teaching assistants while holding a NJCBIR Graduate Student Fellowship without special permission.

All Postdoctoral and Graduate Student Fellows must submit a first-year progress report accompanied by a letter of support from the fellow's mentor. Second-year and third-year fellowship funding is contingent upon the successful review of a comprehensive progress report and a recommendation from the mentor. An Evaluation Form must be submitted to the NJCBIR office each year for two years following termination of the Fellowship grant. All forms are available at www.nj.gov/health/njcbir.

Pilot Research Grant

The NJCBIR will fund Pilot Research Grants with an emphasis on encouraging (1) experienced investigators to pursue a new direction in brain injury research, or (2) new investigators who want to gather preliminary data for larger research projects.

Suitable projects include feasibility studies; secondary analysis of existing data; self contained research projects; development of research methodology; development of new research technologies; and investigation of novel scientific ideas, model systems, tools, agents, targets and technologies that have the potential to substantially advance brain cell regeneration and repair.

Applicants are encouraged to apply for a one-year or two-year award. Maximum funding is up to \$75,000 per year in direct costs plus 10% indirect costs=\$82,500 per year.

FUNDING AVAILABILITY, OBLIGATIONS, DEADLINES, AND TRAINING COURSES

Maximum funding available for all grant categories in the Fiscal Year 2010 grant cycle shall not exceed \$8 million dollars.

Principal Investigators must be affiliated with a New Jersey State academic institution, research organization, public or private agency or other entity with demonstrated capability to conduct research responsibly. The principal investigator will hold an M.D., Ph.D. or equivalent advanced

New Jersey Commission on Brain Injury Research

degree in a related scientific field. Unaffiliated individuals will not be funded. Individuals of any nationality or citizenship status may apply, provided they are employed by or affiliated with a qualified New Jersey State organization/institution.

Awards will begin on or about **June 1, 2010**. All qualifying institutions in the State of New Jersey may apply. Multi-year awards are made through one-year contracts. Each funding award within the multi-year period will be contingent upon the availability of funds. Second-year and third-year support for all grants is contingent upon submission and approval of a comprehensive progress report. All progress reports must be favorably reviewed by an independent scientific merit review panel and recommended to the NJCBIR for continued funding. A final progress report is required for all one, two and three year awards within three months after termination of the grant. All forms are available at www.nj.gov/health/njcbir.

Successful applicants are offered the opportunity to participate in an approved brain injury techniques course. The NJCBIR will make available up to \$4,000 for a grantee to attend a brain injury techniques course at an approved university that has the necessary experience and database on the use of standard brain injury models and devices. Grantees are responsible for making all necessary travel and course participation arrangements and payments. Proof of course completion and expense receipts are required for cost reimbursement.

GRANT SUBMISSION AND REVIEW PROCESS

All research proposals will be reviewed in accordance with the grant review process set forth herein. Scientists supported by the NJCBIR are expected to report on their work at a symposium organized by the NJCBIR. Grantees will acknowledge the support of the New Jersey Commission on Brain Injury Research in all presentations and publications.

All grant applications must be submitted following the guidelines below. Grant applications that do not adhere to these guidelines will be returned to the applicant without further consideration. Grant applications may not be sent by FAX.

The deadline for all grant applications to be received at the NJCBIR office is 5:00PM on September 1, 2009. No exceptions will be made.

All necessary and required grant application forms, progress reports, narrative reports, final narrative reports, policies, research guidelines, and other additional information can be viewed and downloaded from the NJCBIR website at www.nj.gov/health/njcbir.

Documents can also be obtained by sending a written request to the NJCBIR office at:

New Jersey Commission on Brain Injury Research
P.O. Box 360
Market and Warren Streets
Trenton, New Jersey 08625

LETTER OF INTENT

A one-page letter of intent is highly recommended for all grant applications. Letters of intent must be filed with the NJCBIR office by June 1, 2009.

New Jersey Commission on Brain Injury Research

PROPOSAL SUBMISSION

For all grant categories, submission will consist of BOTH electronic and mail services. One signed grant and a set of reprints, appendices, and any attachments must be sent to and received by the NJCBIR office no later than 5:00PM, September 1, 2009. The grants will also be submitted as a PDF to the following e-mail and/or web addresses: dennis.benigno@doh.state.nj.us; toni.tucker@doh.state.nj.us; www.nj.gov/health/njcbir. No grant applications will be accepted past this stated deadline.

Please use this address for all overnight mail deliveries (FedEx, UPS, USPS, Express Mail, etc.):

New Jersey Commission on Brain Injury Research
Warren & Market Streets
5th Floor, Room 502
Trenton, New Jersey 08625

Please use this address for all regular U.S. mail deliveries:

New Jersey Commission on Brain Injury Research
P.O. Box 360
Health & Agriculture Building
Warren and Market Streets
Trenton, New Jersey 08625

GRANT REVIEW PROCESS

For all grant categories, the determination of grant awards will be made through a three-step review process:

1. **Administrative Review** (NJCBIR office):

Upon receipt, all grant applications will be reviewed by the NJCBIR office for compliance with all applicable New Jersey State statutes and regulations, and to ensure completeness, and accuracy. In the event a grant application needs correction due to a budgetary issue, the applicant will be contacted to provide a revised budget.

2. **Independent Relevance Review** (Independent Relevance Review Panel):

Independent relevance review will be conducted by a three-person panel appointed by the office of the NJCBIR. The Independent Relevance Review Panel will determine the relevance of all applications to the NJCBIR mission, priorities and Research Guidelines and will assign scientific reviewers for each proposal that meets those relevancy requirements. In the event the Independent Relevance Review Panel determines that an application does not meet those relevancy requirements, the application will be denied, and will not be forwarded for independent scientific merit review.

The decision to forward an application for independent scientific merit review is based only on relevance to the NJCBIR mission, priorities, and research guidelines, and does not guarantee that an award will be made.

New Jersey Commission on Brain Injury Research

3. **Scientific Merit Review** (Independent Scientific Merit Review Panel):

Members of the Independent Scientific Merit Review Panel will convene to evaluate all grant applications forwarded by the Independent Relevance Review Panel, applying the criteria described below. This panel will assign scores to each application and make funding recommendations to the NJCBIR. If it is determined that ad hoc expertise is needed, additional scientific referees may be used. The Independent Scientific Merit Review Panel will forward its recommendations to the NJCBIR for final review and action.

Grants triaged by either the Independent Relevance Review Panel and/or the Independent Scientific Merit Review Panel will not be forwarded to the NJCBIR, and will not be funded.

The authority to authorize or not authorize grants is fully vested in the NJCBIR according to New Jersey statute N.J.S.A. 52:9E-1-10.

CRITERIA FOR INDEPENDENT SCIENTIFIC REVIEW

Grant applications will be judged on scientific and technical merit, relevance to the NJCBIR's mission and priorities, clinical relevance, and interdisciplinary collaborations.

The independent scientific reviewers will perform two levels of review:

1. Each panel member will peer review his/her assigned proposals for scientific and technical merit and significance, and determine an initial score for each proposal.
2. The panel will then convene for group discussion, final scoring, and ranking of all proposals; the panel will also recommend a cut-off point for funding.

The following topics will be addressed during the review process:

Significance

- Does the research proposal develop new ideas and approaches, or simply extend a current ongoing project that would be better supported by other grant programs?
- Is the research proposal of significance to the field of brain injury research?
- Is the proposed research innovative, including novel concepts, approaches, and/or methods?
- Is the research proposal relevant to NJCBIR priorities?
- Is the research proposal original in theory and application?

Experimental Design and Capability

- Does prior research and theory provide a rational basis for the proposed research?
- Is the proposed project adequate in terms of experimental design and analyses, anticipation of potential problems, and consideration of alternative approaches?
- Does the design have adequate methodological quality and power to increase the likelihood of producing statistically sound conclusions?

New Jersey Commission on Brain Injury Research

- Does the researcher have access to appropriate facilities, equipment, expertise, and research environment either in-house and/or with collaborators or consultants?
- Does the design include interdisciplinary collaborations, and if so, is the proposed combination of disciplines both novel and likely to generate meaningful results?

Investigator

- Are the qualifications, productivity, and time commitments of principal investigator and key staff commensurate with the proposed project?

Animal Welfare

- If a human model is proposed, is the availability of subjects adequate and system of education and protection of subjects appropriate?
- Is there evidence of compliance with National Institutes of Health regulations for the protection of animal welfare?

Budget

- Is the budget reasonable and justified for the project proposed? Is there evidence of institutional commitment and/or cost sharing in the proposal?

Summary

- Are there other factors both pro and con that may affect the ability of the applicant to successfully complete the research goals?
- Will the project make an original and important contribution to the field of brain injury research and more specifically, to the mission of the NJCBIR?

RESULTS NOTIFICATION

All applicants including Principal Investigators and organizations/institutions will be formally notified of the outcome of his/her application at the conclusion of the selection process anticipated to be no later than April 15, 2010. At that time, formal notification will be made to the institutions of successful applicants and contracts will be initiated shortly thereafter by the NJCBIR.

Blinded reviews will be provided to both funded and non-funded applicants; no further information shall be provided. No reviews will be generated for triaged proposals.

Non-funded applicants also will be notified. There is no appeal process. All non-funded applicants in any given grant cycle are eligible to revise their applications based on reviewer feedback and reapply, one time only. All reapplications will be reviewed as new competing proposals for the next cycle.

New Jersey Commission on Brain Injury Research

ANTICIPATED RESULTS

The goal of the NJCBIR is to assume a catalytic role in the worldwide movement to develop effective methods of brain cell regeneration as a means to cure brain injury.

Through the judicious use of funds raised through violations under Title 39 of the Revised Statute, or any other motor vehicle, or traffic violation in the State of New Jersey, the NJCBIR will encourage and support meritorious scientific research in the State of New Jersey in fulfillment of that goal. This will benefit the State of New Jersey in savings on medical and support costs, enhance the development of the State's public and private biomedical sector, establish leadership in the field of brain cell repair, and most importantly, help develop effective interventions and cures for the disabilities associated with brain injury.

New Jersey Commission on Brain Injury Research

APPENDIX C

2010 MEMBERSHIP INFORMATION

<p>Meiling Chin, MBA Summit, New Jersey</p> <p>Public Member</p>	<p>May 12, 2006</p>
<p>Keith Cicerone, Ph.D. Howell, New Jersey</p> <p>Public Member</p>	<p>December 13, 2006</p>
<p>Karl Herrup, Ph.D. Piscataway, New Jersey</p> <p>Representing Rutgers, The State University of NJ</p>	<p>Indefinite</p>
<p>Cynthia Kirchner, M.P.H. Ex-Officio</p> <p>Representing the Commissioner of the New Jersey Department of Health and Senior Services</p>	<p>Indefinite</p>
<p>John LoCurto, M.D. Park Ridge, New Jersey</p> <p>Public Member</p>	<p>September 26, 2008</p>
<p>Nicholas Ponzio, Ph.D. Westfield, New Jersey</p> <p>Representing the University of Medicine and Dentistry of New Jersey</p>	<p>Indefinite</p>
<p>Dennie Todd, Acting Chairperson Medford, New Jersey</p> <p>Public Member</p>	<p>November 15, 2005</p>
<p>VACANT – Public Member</p>	
<p>VACANT – Public Member</p>	
<p>VACANT – Public Member</p>	
<p>VACANT – Public Member/Licensed Physician</p>	

APPENDIX D

New Jersey Traumatic Brain Injury Surveillance System

Traumatic Brain Injury in New Jersey, 2000-2009

The following update on Traumatic Brain Injury (TBI) in New Jersey comes from the New Jersey TBI Surveillance System, which captures inpatient hospitalizations and deaths from TBI in New Jersey. This update covers fatality data and hospitalization data for the most recent year's available.

Annually, approximately 9,000 traumatic brain injuries resulting in inpatient hospitalization or death occur among New Jersey residents, and this number has been steadily increasing. Rates of TBI are higher among men and those aged 65 years and over. Approximately 10 percent of TBIs are fatal, and this has remained stable.

Major causes of TBI are motor vehicle crashes, falls and assaults. [Table 1] The age pattern is largely shaped by trends in these events over the life cycle. Age-specific TBI rates rise somewhat between ages 15-24 years, and then rise sharply at ages over 65 years. [Figure 1] The rise in TBI rates among young adults is primarily due to a temporary increase in unintentional motor vehicle traffic injuries and violence. This age pattern is also demonstrated in comparing TBI rates by race [Figure 2]. However, the age specific rates of whites, in particular, rise dramatically after age 65. TBIs among older persons are primarily due to the rising likelihood of falls. [Figure 3]

TBI rates are higher among males for all major causes of TBI. In fact, the rate of TBIs for males is nearly twice as high as that of females for motor vehicle injuries and falls. [Figure 4] In the case of assaults and self-injury, the male-female ratio is higher. Whites have the highest rates for motor vehicle traffic injuries and self-injury, while the rates for assaults are highest among African Americans. [Figure 5]

Overall, approximately 10 percent of TBI is fatal. The percent fatal is highest in the case of self-injury [Figure 6] and the overall percent fatal rises with age [Figure 7].

After an increase from 2005 to 2006, the age-adjusted rate of hospitalizations for TBI remained fairly stable from 2006 through 2008 before jumping again in 2009. [Figure 8] As seen in Table 2, in 2009 a little more than half of all TBI inpatients were discharged to home. The proportion being discharged to rehabilitation is highest in the case of falls. Overall, 10 percent of TBI admissions were discharged to rehabilitation, and another 20 percent to another type of extended inpatient care. Among all traumatic brain injury hospitalizations in 2009, slightly more than five percent were fatal (these figures exclude those who die before hospitalization).

The hospitalization rate for males increased 14 percent from 2000 to 2009, whereas the rate for females increased over 23 percent during the same period [Table 3]. Hospitalization rates for TBI among younger people have dropped since 2000, but rates for older age groups have increased [Table 4]. This coincides with a drop in the rate of hospitalization for motor vehicle-related TBI and an increase in TBI due to falls [Table 5].

New Jersey Commission on Brain Injury Research

Table 1. Age-adjusted traumatic brain injury incidence rates, New Jersey, 2006-2007

	2006		2007		Rate difference 2006-2007
	<i>N</i>	<i>Rate</i> ¹	<i>N</i>	<i>Rate</i>	
All traumatic brain injuries	9,343	106.2	9,472	106.6	0.4%
Mechanism of Injury					
Motor Vehicle (Traffic)	2,600	30.4	2,309	27.0	-11.2%
Fall	3,886	42.6	4,118	44.5	4.5%
Assault	806	9.6	832	9.8	2.1%
Self-injury	27	0.3	45	0.5	66.7%
Gender					
Male	5,785	142.2	5,795	142.1	-0.1%
Female	3,558	71.5	3,677	73.0	2.1%
Race					
White	5,995	98.6	6,017	97.5	-1.1%
Black/African American	1,335	118.8	1,330	118.5	-0.3%
Hispanic	1,262	109.0	1,307	108.3	-0.6%
Fatality ²					
Fatal	947	10.1%	908	9.6%	-5.4%
Non-fatal	8,396	89.9%	8,564	90.4%	0.6%

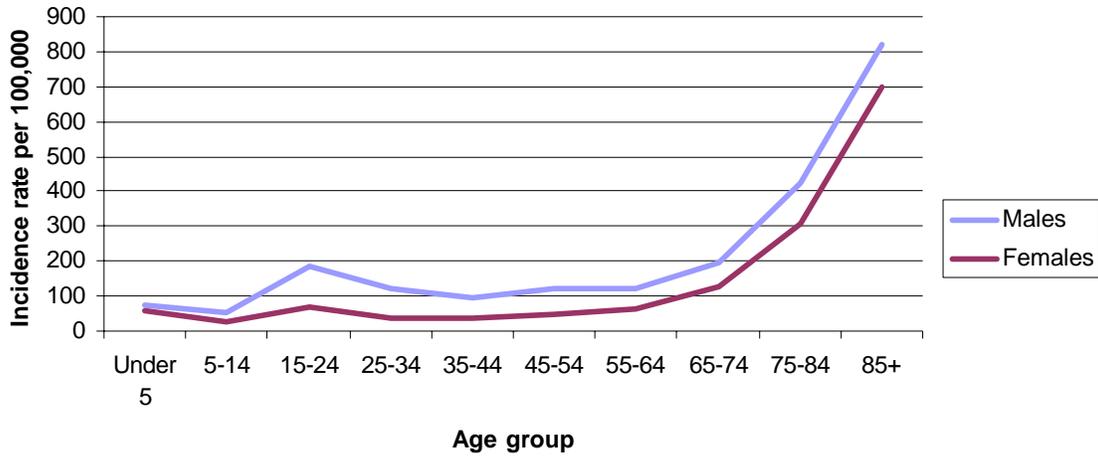
¹Rates are age-adjusted using the 2000 US Standard Population, calculated per 100,000.

²Percents calculated for fatal and non-fatal injuries based on total number of injuries (9,343 in 2006, 9,472 in 2007).

Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010, and includes all New Jersey resident hospitalizations in New Jersey hospitals and deaths of New Jersey residents regardless of state of death.

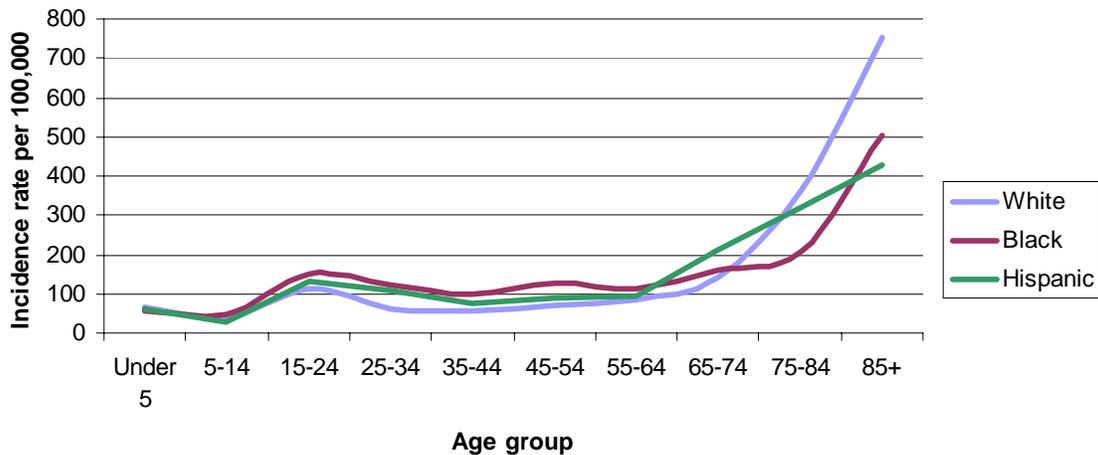
New Jersey Commission on Brain Injury Research

Figure 1. Traumatic brain injury rates by age and gender, New Jersey, 2007



Rates are calculated per 100,000 age-specific and sex-specific population. Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010.

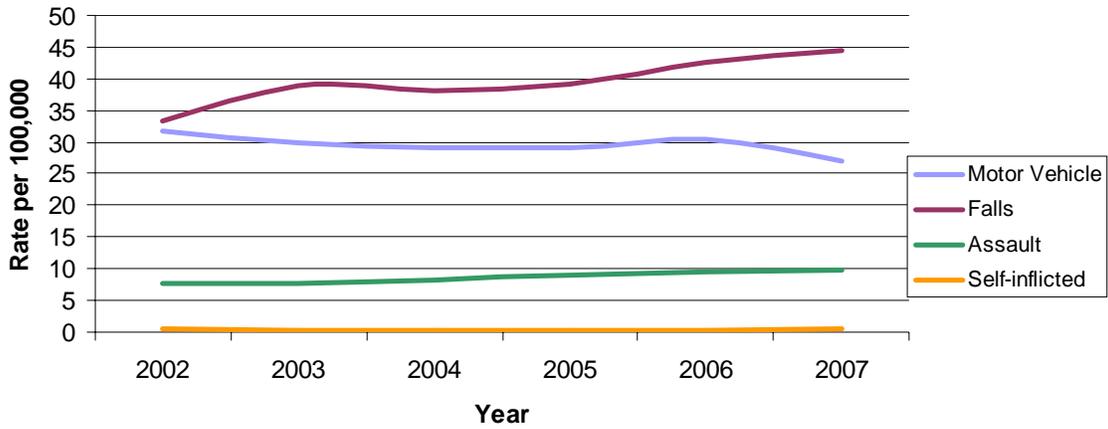
Figure 2. Traumatic brain injury rates by age and race/ethnicity, New Jersey, 2007



Rates are calculated per 100,000 age-specific and race/ethnicity-specific population. "White" is White non-Hispanic, "Black" is Black non-Hispanic, "Hispanic" can be any race. Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010.

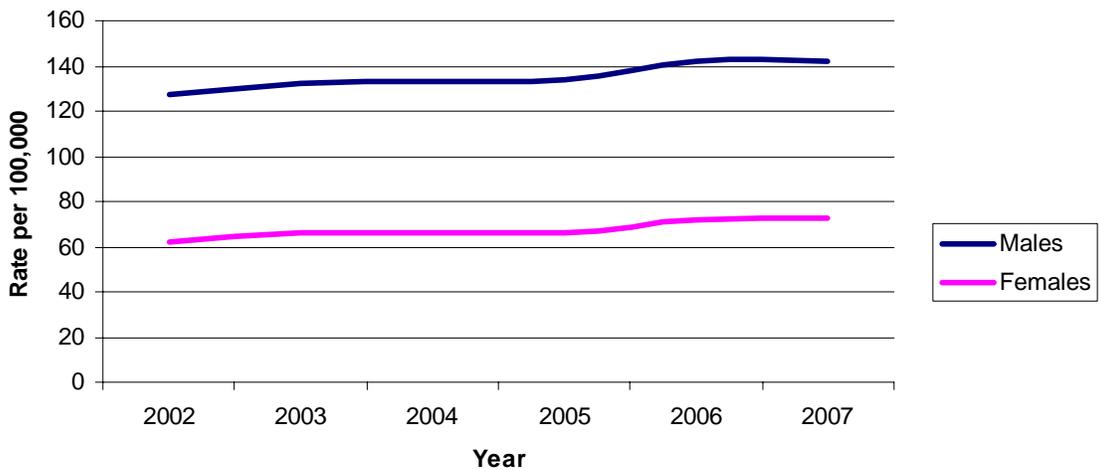
New Jersey Commission on Brain Injury Research

Figure 3. Traumatic brain injury rates for major causes, New Jersey, 2002-2007



Rates are age-adjusted using the 2000 US Standard Population and calculated per 100,000. Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010.

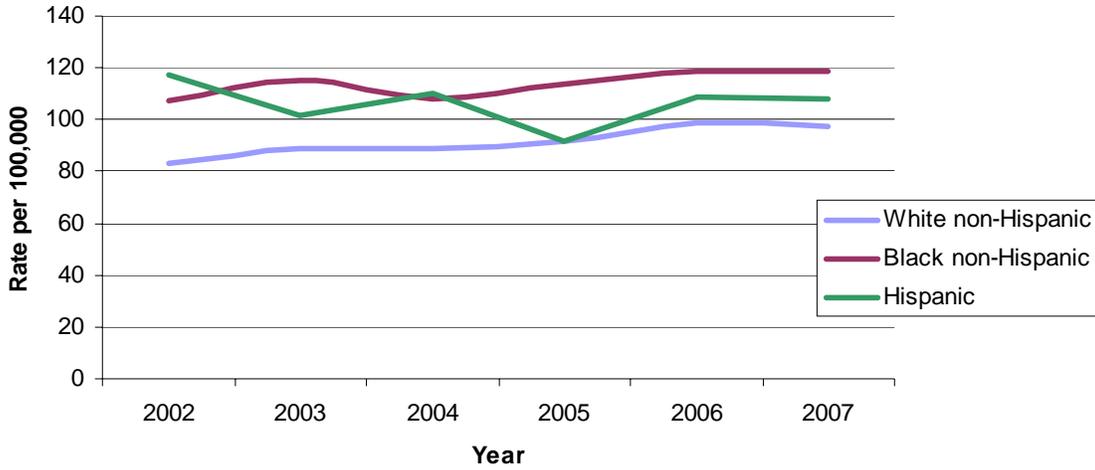
Figure 4. Traumatic brain injury rates by gender, New Jersey, 2002-2007



Rates are age-adjusted using the 2000 US Standard Population, calculated per 100,000 population. Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010.

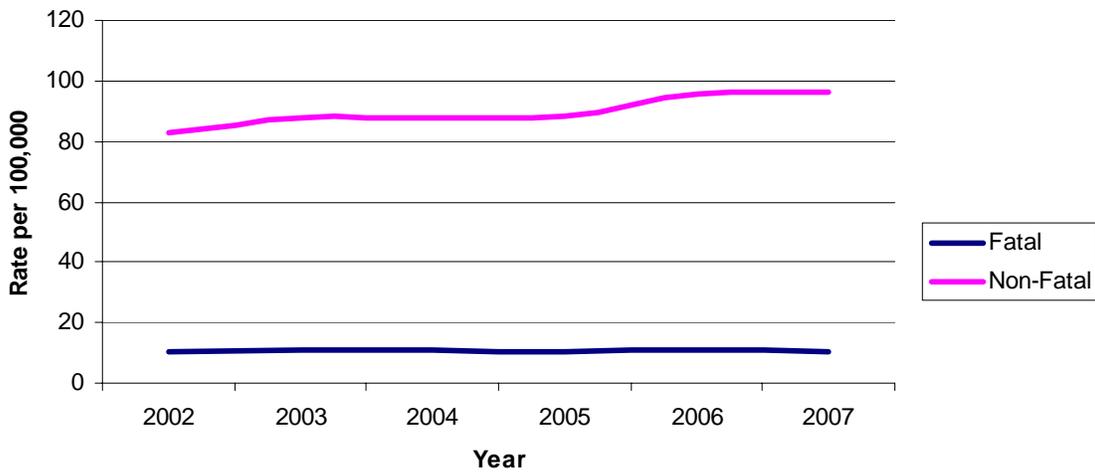
New Jersey Commission on Brain Injury Research

Figure 5. Traumatic brain injury rates by race/ethnicity, New Jersey, 2002-2007



NOTE: Race/ethnicity data are missing for 3,407 (6.5%) of observations. Rates are age-adjusted using the 2000 US Standard Population, calculated per 100,000 population. Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010.

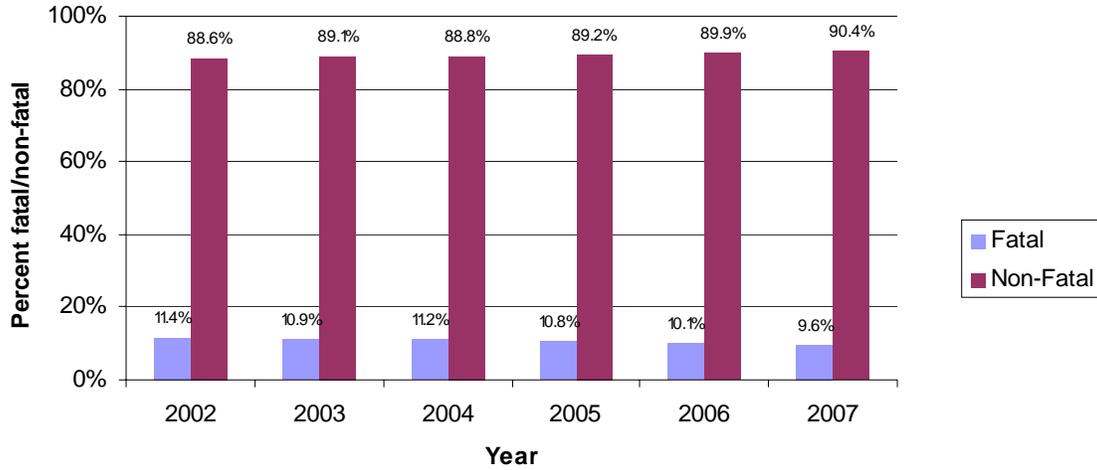
Figure 6. Traumatic brain injury outcome rates, New Jersey, 2002-2007



Rates are age-adjusted using the 2000 US Standard Population, calculated per 100,000 population. Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010.

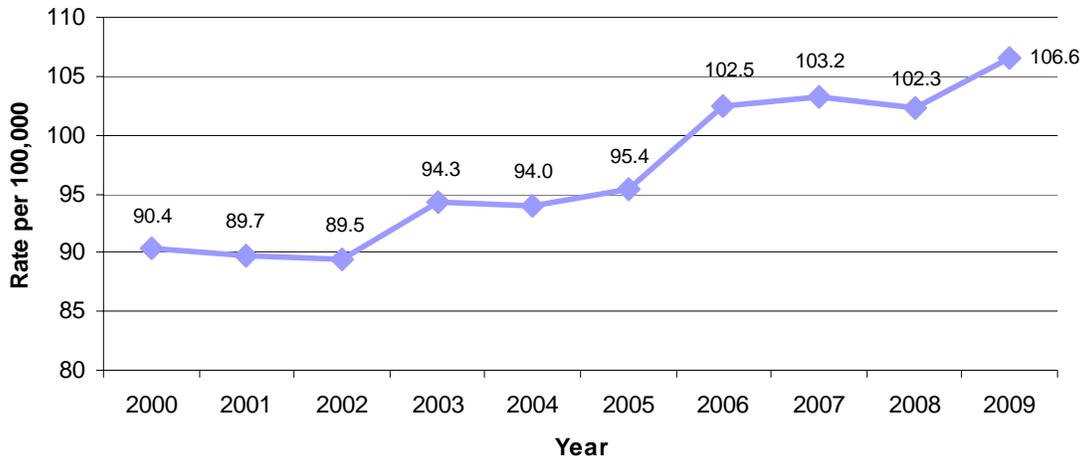
New Jersey Commission on Brain Injury Research

Figure 7. Percent fatal traumatic brain injuries, New Jersey, 2002-2007



Incidence data are from the New Jersey Central Nervous System Injury Surveillance, 2010.

Figure 8. Traumatic brain injury hospitalization rates, New Jersey, 2000-2009



Rates are age-adjusted using the 2000 US Standard Population, calculated per 100,000 population. Hospitalization data are from the UB-92 New Jersey Hospital Discharge Data System, NJDHSS.

New Jersey Commission on Brain Injury Research

Table 2. Discharge disposition of the major causes of traumatic brain injuries, 2009

Cause of injury	Home, routine		Extended inpatient care ¹		Home, with services ²		LTC, nursing, hospice ³		Rehab		Left AMA		Died		Total
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N
Motor vehicle (traffic)	2,277	43.8	1,430	27.5	422	8.1	97	1.9	568	10.9	69	1.3	331	6.4	5,194
Falls	1,472	66.9	197	9.0	100	4.5	6	0.3	294	13.4	35	1.6	97	4.4	2,201
Assault	638	84.5	29	3.8	10	1.3	-	0.0	23	3.0	29	3.8	26	3.4	755
Self-inflicted	23	44.2	16	30.8	2	**	-	0.0	2	**	1	**	8	15.4	52
Other and Unknown	957	63.1	216	14.2	71	4.7	29	1.9	141	9.3	20	1.3	82	5.4	1,516
Total	5,367	55.2	1,888	19.4	605	6.2	132	1.4	1,028	10.6	154	1.6	544	5.6	9,718

Hospitalization data are from the New Jersey Discharge Data Collection System, UB-92 data; percentages are based on New Jersey residents admitted to New Jersey hospitals, all outcomes.

** Percentages not calculated for under 5 observations.

Notes:

¹Includes: Discharges/transfers to other short term general care hospitals, skilled nursing and intermediate care facilities, federal hospitals, psych units, and critical access hospitals

²Includes: Discharges/transfers to home with either a home health service provider or IV therapy

³Includes: Discharges/transfers to long-term care facilities, Medicaid certified nursing facilities, and hospice

Table 3. Hospitalizations for TBI by gender, New Jersey, 2000-2009

Year	Males		Females		Total	
	N	Rate	N	Rate	N	Rate
2000	4,733	121.4	2,884	61.6	7,617	90.4
2001	4,733	120.2	2,883	61.2	7,616	89.7
2002	4,783	120.9	2,904	60.8	7,687	89.5
2003	5,006	125.6	3,173	64.9	8,179	94.3
2004	4,986	125.0	3,219	65.1	8,205	94.0
2005	5,110	127.1	3,256	65.7	8,366	95.4
2006	5,510	135.9	3,524	70.5	9,034	102.5
2007	5,529	136.0	3,660	72.2	9,189	103.2
2008	5,484	133.9	3,711	72.4	9,195	102.3
2009	5,735	139.0	3,983	76.1	9,718	106.6

Rates are age-adjusted using the 2000 US Standard Population, calculated per 100,000 population.

Hospitalization data are from the UB-92 New Jersey Hospital Discharge Data System, NJDHSS.

New Jersey Commission on Brain Injury Research

Table 4. Hospitalizations for TBI by age group, New Jersey, 2000-2009

Year	Under 15		15-24		25-44		45-64		65+		Total	
	<i>N</i>	<i>Rate</i>										
2000	904	51.4	1,287	127.5	1,782	68.0	1,300	67.5	2,344	210.3	7,617	90.3
2001	904	51.2	1,287	125.6	1,781	68.4	1,300	65.7	2,344	210.1	7,616	89.7
2002	865	48.9	1,240	119.4	1,708	66.1	1,368	67.2	2,506	224.4	7,687	90.0
2003	925	52.3	1,209	114.8	1,727	67.6	1,469	70.3	2,849	254.6	8,179	95.3
2004	821	46.6	1,211	113.4	1,664	66.0	1,548	72.3	2,961	264.5	8,205	95.3
2005	828	47.6	1,245	115.0	1,713	68.9	1,568	71.5	3,012	269.0	8,366	97.0
2006	843	49.1	1,347	123.2	1,817	74.3	1,779	79.3	3,248	289.2	9,034	104.8
2007	804	47.2	1,319	119.7	1,652	68.5	1,862	81.5	3,552	313.3	9,189	106.4
2008	826	48.8	1,159	104.8	1,704	71.3	1,890	81.4	3,616	312.9	9,195	106.1
2009	810	47.9	1,133	101.8	1,595	67.5	2,048	86.4	4,132	352.3	9,718	111.6

Rates are directly calculated using the NJ age-specific population, calculated per 100,000. Hospitalization data are from the UB-92 New Jersey Hospital Discharge Data System, NJDHSS.

Table 5. Hospitalizations for TBI by cause of injury, New Jersey, 2000-2009

Year	Falls		Motor vehicle crashes		Assault	
	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>	<i>N</i>	<i>Rate</i>
2000	3,120	36.1	2,810	34.1	676	8.1
2001	3,121	35.8	2,810	33.8	676	8.1
2002	3,279	37.0	2,818	33.6	666	8.0
2003	3,809	42.6	2,669	31.7	684	8.2
2004	3,767	41.7	2,606	30.7	723	8.6
2005	3,908	43.0	2,606	30.7	796	9.5
2006	4,232	46.4	2,762	32.3	855	10.2
2007	4,484	48.4	2,425	28.3	871	10.3
2008	4,747	50.8	2,314	26.9	856	10.1
2009	5,194	54.8	2,201	25.3	755	8.9

Rates are age-adjusted using the 2000 US Standard Population, calculated per 100,000 population. Hospitalization data are from the UB-92 New Jersey Hospital Discharge Data System, NJDHSS.

New Jersey Commission on Brain Injury Research

Case Definition

Currently, the CNS surveillance system includes all TBI injuries resulting in death or inpatient hospitalization. TBIs resulting in emergency department visits only, without subsequent death or hospitalization are not currently included, although they can be analyzed separately using emergency department data.

The specific list of cases included in the New Jersey Traumatic Brain Injury Registry is the following. This is consistent with the list identified by Centers for Disease Control in 2002.

Hospitalizations (ICD-9-CM):

800.0 - 801.9	Fracture of the vault or base of the skull
803.0 - 804.9	Other and unqualified and multiple fractures of the skull
850.0 - 854.1	Intracranial injury, including concussion, contusion, laceration, and hemorrhage
950.1 - 950.3	Injury to the optic chiasm, optic pathways; and visual cortex
959.01	Head injury, unspecified
995.55	Shaken Infant Syndrome

Deaths - Mortality (ICD-10):

S01.0 - S01.9	Open wound of the head
S02.0, S02.1, S02.3, S02.7 - S02.9	Fracture of skull and facial bones
S04.0	Injury to optic nerve and pathways
S06.0 - S06.9	Intracranial injury
S07.0, S07.1, S07.8, S07.9	Crushing injury of head
S09.7 - S09.9	Other and unspecified injuries of head
T01.0	Open wounds involving head with neck
T02.0	Fractures involving head with neck
T04.0	Crushing injuries involving head with neck
T06.0	Injuries of brain and cranial nerve with injuries of nerves and spinal cord at neck level
T90.1, T90.2, T90.4, T90.5, T90.8, T90.9	Sequelae of injuries of head

Benefits of a TBI Registry

A Traumatic Brain Injury Registry is a unique and valuable source of information about the prevalence and burden of TBI. Registry data can be used for research and public health publications that can alert constituents to the extent of this injury. Additionally, the detailed information available in a registry permits analysis of questions such as the relationship between patient and clinical characteristics and outcomes, and other questions relating to the treatment and management of patients with TBI.

Status of the NJ TBI Registry

The New Jersey TBI Registry is still in the process of being fully created. The last major task involves getting non-trauma hospitals to submit clinical data through a web-based version of our trauma software, Collector. This process is under development, but it will probably take close to a year to get all of the hospitals to participate. Fortunately, the vast majority of TBIs are treated in trauma centers, which currently are participating in registries. The hospitals that will be slowest to participate will probably be the smallest

New Jersey Commission on Brain Injury Research

hospitals, which will have the fewest cases, but ultimately we expect to get one hundred percent participation.

Availability of TBI Registry Data

The Office of Injury Surveillance and Prevention is currently in the process of creating several publications based on the TBI registry. In addition, we are available to answer any questions or requests for information about TBI registry data. Those who want access to individual level data from the TBI registry need to make an application through the IRB.

For More Information

Please contact Katherine Hempstead, Director, New Jersey Department of Health and Senior Services Center for Health Statistics by telephone at 609-984-6639 or by email at Katherine.Hempstead@doh.state.nj.us.

New Jersey Commission on Brain Injury Research

APPENDIX E

Fiscal Year 2010 Grant Award Recipients

INDIVIDUAL RESEARCH GRANT RECIPIENTS:

David I. Shreiber, Ph.D.

Rutgers, The State University of New Jersey

Grant Award: \$495,000

Proposal Title: *Evaluation of Genipin as a Multi-potent Therapeutic Agent Following Brain Injury*

Glenn Wylie, Ph.D.

Kessler Foundation

Grant Award: \$374,288

Proposal Title: *Examination of Cognitive Fatigue in Traumatic Brain Injury Using fMRI*

Daniel Osherson, Ph.D.

Princeton University

Grant Award: \$474,836

Proposal Title: *Longitudinal Assessment of Brain Structure and Function in Sports-Related Concussion*

Jean Lengenfelder, Ph.D.

Kessler Foundation

Grant Award: \$348,992

Proposal Title: *Examining Apathy, Depression, and Executive Functions in Individuals with TBI*

PILOT RESEARCH GRANT RECIPIENTS:

Jean Lengenfelder, Ph.D.

Kessler Foundation

Grant Award: \$148,275

Proposal Title: *Aging in Traumatic Brain Injury: A Pilot Study of Cognitive and Cerebral Profiles*

Anthony Liquorices, Ph.D.

Kessler Foundation

Grant Award: \$97,206

Proposal Title: *The Effect of Rozerem on Sleep Disturbance After Traumatic Brain Injury*

New Jersey Commission on Brain Injury Research

FELLOWSHIP GRANT RECIPIENTS:

Yi Pan, Ph.D.

Rutgers, The State University of New Jersey

Grant Award: \$192,324

Proposal Title: *A FEM Kinematic Model for Brain White Matter*

Carolyn M. Tyler, Ph.D.

Princeton University

Grant Award: \$192,324

Proposal Title: *Investigating the Role of MHC Class I Proteins in Traumatic Brain Injury*

