

NEW JERSEY

# Commission on Brain Injury Research

Annual Report 2022



New Jersey Department of Health





NEW JERSEY COMMISSION ON  
BRAIN INJURY  
RESEARCH

*Dear Governor Murphy,*

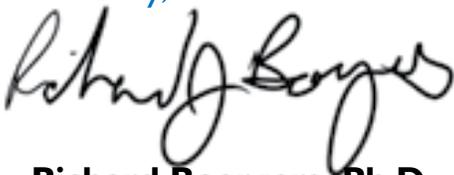
 n behalf of the New Jersey Commission on Brain Injury Research, I am pleased to present the Annual Report for Fiscal Year 2022.

Since its founding in 2004, the Commission has been committed to accelerating research to develop effective interventions and cures for the disabilities associated with traumatic brain injury. Commission grant programs have increased the importance of brain injury research, have brought new brain injury researchers into the State of New Jersey, and have laid the groundwork for new research and leveraged additional grants and funding.

Commission grants attract talented senior researchers and engage Ph.D. and Post-Doctoral students and young researchers to the field of brain injury research all while stimulating additional investments. Support for researchers funded by the Commission by other organizations validates the Commission grant process, and the standing of its researchers within the scientific community. The Commission has been a major factor in fostering interest and continued involvement in brain injury research within the State of New Jersey.

I would like to acknowledge the efforts and enthusiasm of all the Commissioners during the past year, as well as the New Jersey Department of Health for their valuable support and contributions.

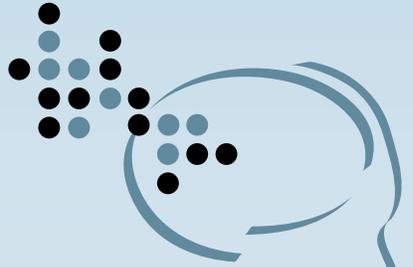
Sincerely,



**Richard Boergers, Ph.D., ATC**

*Chair, New Jersey Commission on Brain Injury Research*

A Message  
From the  
Chair



NEW JERSEY COMMISSION ON  
BRAIN INJURY  
RESEARCH

**Members of the Commission**

**Richard Boergers, Ph.D., ATC,**  
*Chairperson*

**Carolyn Daniels, D.H.Sc., M.Ed.**

**Sharon Cross**

**ACKNOWLEDGEMENTS**

*The New Jersey Commission on  
Brain Injury Research would like to  
express its sincere appreciation to  
all present and past Commission  
members, and the New Jersey  
Department of Health staff.*

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## Executive Summary

**T**he New Jersey Commission on Brain Injury Research was established in 2004 to fund brain injury research projects in New Jersey.

**Since 2007, the New Jersey Commission on Brain Injury Research (Commission) has awarded over \$45 million to individual scientists at various academic and research institutions and approved 132 separate scientific research projects.**

- Progress made by researchers has been presented in abstracts, scientific conferences, symposia, and meetings.
- Commission programs have facilitated scientific interaction and research collaborations, in New Jersey as well as out-of-state.
- The number of qualified research institutions eligible to apply for Commission grant funding opportunities has grown substantially since 2004.
- Success in achieving Commission funding has resulted in academic and career advancement for New Jersey researchers.

### Introduction

This report is written in accordance with the enabling Statute, which stipulates that the Commission shall provide a report to the Governor and the Legislature on the status of the Commission's activities and the results of its funded research efforts.<sup>1</sup> The Brain Injury Research Act created the New Jersey Commission on Brain Injury Research and the New Jersey Brain Injury Research Fund to support its activities. The Brain Injury Research Act resulted from the collaborative efforts of people with brain injuries and their families, clinicians, scientists, public officials, and representatives of research, rehabilitation, and non-profit organizations.

The Commission provides 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. The Commission serves as a role model for other states to follow in search of medical research, treatments, and interventions. The early recognition of unmet needs in traumatic brain injury research is paving the way to develop methods of regeneration and repair.

### Background

Traumatic brain injury (TBI) is a major cause of death and disability in the United States. TBIs contribute to about 30 percent of all injury deaths<sup>2</sup> Every day, 153 persons in the United States die from injuries that include TBI.<sup>3</sup> For those who survive a TBI, they may experience effects that last a few days, or alternatively the rest of their lives. Effects may include: impaired thinking or memory,

1- P.L. 1968, c.410 N.J.S.A. 52:9EE-1, et seq. Enabling statute is attached hereto as "Attachment A".

2- Centers for Disease Control and Prevention, (2016). "Traumatic brain injury in the United States: fact sheet." Available at: [http://www.cdc.gov/traumaticbraininjury/get\\_the\\_facts.html](http://www.cdc.gov/traumaticbraininjury/get_the_facts.html).

movement, sensation (e.g., vision or hearing), or emotional functioning such as personality changes and depression.

Motor vehicle injuries represent the leading cause of traumatic brain injury deaths in the nation. In 2013, about 2.8 million TBI related emergency department (ED) visits, hospitalizations, and deaths occurred in the United States. Of the 2.8 million motor vehicle injuries, TBI contributed to the deaths of nearly 50,000 people, 282,000 hospitalizations and 2.5 million ED visits.<sup>4</sup>

It is estimated that 12,000 to 15,000 New Jersey residents suffer brain injuries from traumatic events each year, of which 1000 are fatal. Approximately 175,000 New Jersey residents are currently living with disabilities that result from TBI. The total cost of ED visits, hospitalizations, and deaths related to traumatic brain injuries, either alone or in combination with other injuries, exceeds \$82 billion annually.<sup>5</sup>

## New Jersey Brain Injury Registry

The “Brain Injury Research Act” mandated the establishment of a central registry of people who sustain brain injuries throughout the state. This registry consists of a database that provides information on the incidence and prevalence of brain injuries and serves as a resource for research, evaluation, and information on traumatic brain injuries. The Registry collects brain injury data from New Jersey hospitals and provides data analysis for health professionals.

## New Jersey’s Commitment to Brain Injury Research

The Brain Injury Research Act anticipates that brain injury research will lead to effective treatments and cures for brain injuries and relieve other consequences of brain injury.

New Jersey is a leader in supporting research aimed at developing effective interventions and cures for disabilities associated with traumatic brain injury. The Commission provides research grant programs for both established scientists and young researchers committed to the goals of brain injury research. The Commission also supports the New Jersey Department of Health, which maintains a database of traumatic brain injuries in New Jersey.

Now in its 18th year of operation, the Commission has funded 124 scientific research projects and supported individual scientists at institutions around the State. Its impartial and scientifically rigorous application and review process has helped make the work of the Commission vital to New Jersey’s best scientists in their pursuit of brain injury research.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Based on 2015 estimates from the Centers for Disease Control and the New Jersey Department of Health Center for Health Statistics.

# Executive Summary

***New Jersey is a leader in supporting research aimed at developing effective interventions and cures for disabilities associated with traumatic brain injury.***

### Mission and Goals

**T**he Commission's mission is to encourage and promote innovative brain injury research projects in New Jersey through the funding of approved research projects at qualifying research institutions in the State of New Jersey.

The Commission supports meritorious research projects that advance the understanding of traumatic brain injuries and is committed to accelerating research to develop effective interventions and treatment for the disabilities associated with traumatic brain injury.

Simply stated, the Commission's goals are:

- To advance and accelerate brain injury research,
- To promote collaboration among brain injury researchers in New Jersey
- To promote the development of brain injury researchers and their research capabilities for obtaining federal and other external funding, and,
- To encourage innovative research.

Brain injury is often misdiagnosed, misunderstood and under-funded. Until there is a cure, people who sustain brain injuries must have timely and equal access to expert trauma care, specialized rehabilitation, lifelong disease management and individualized support services. This is critical for individuals to live healthy, independent and satisfying lives. The State of New Jersey benefits in savings on medical and support costs as well as research activities for treatments and cures for brain injuries and their effects.

### Objectives

The Commission 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 New Jersey's research community, by encouraging established scientists to apply their expertise to brain injury research.
- 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 Traumatic Brain Injury Registry data 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 New Jersey Commission on Brain Injury Research.
- To develop and evaluate clinical interventions that lead to improved treatment and function after traumatic brain injury.

## Membership and Organization

Created as a semi-independent public body, the New Jersey Commission on Brain Injury Research is “...allocated in, but not of...” the New Jersey Department of Health. It is subject to all the administrative rules and procedures of the Department but is not part of the Department’s budget.

The Commission establishes and oversees the administrative operations of the grants making process as well as other activities that are implemented by its administrative staff. Eleven uncompensated Commissioners are appointed by the Governor with the advice and consent of the Senate and serve a three-year term.

Two Commission seats are designated by Statute to represent the state’s major academic research institutions and stakeholders.<sup>6</sup> Public members provide a diversity of backgrounds and interests united by a shared commitment to brain injury research. The Commission will always have one or more individuals from each of the following institutions and categories:

The Commissioner of the New Jersey Department of Health, or designee, Rutgers, The State University of New Jersey, eight public members – at least one licensed physician, an individual with a brain injury, a parent of an individual 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.

Any qualified person wishing to be considered for appointment may submit his or her name to the Governor’s Office of Appointments.<sup>7</sup>

Public meetings are held at least four times a year. Members are recused from discussing or voting on matters in which they may have a potential conflict. A Chair and Vice-Chairperson are elected and preside over all formal proceedings.

The Commission also maintains committees that meet and provide an informal structure to discuss issues on an ad hoc basis prior to presenting them to the Commission.

## New Jersey Commission on Brain Injury Research

***The Commission’s mission is to encourage and promote innovative brain injury research projects in New Jersey through the funding of approved research projects at qualifying research institutions in the State of New Jersey.***

6- New Jersey Statute (N.J.S.A. 52:9EE-1)

7- Information on how to apply can be found on the following website at: <http://www.state.nj.us/governor/admin/bca>

## New Jersey Commission on Brain Injury Research

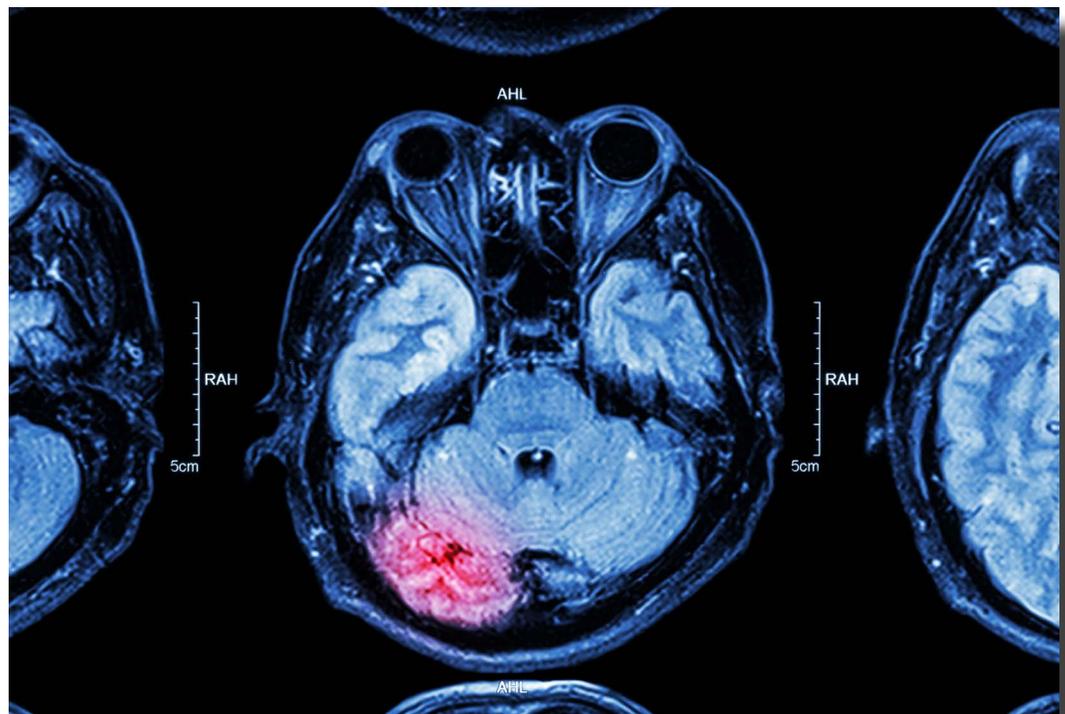
### Administration

The Commission's administrative office provides the vital linkages to implement its programs and ensure the integrity of its operations. The office staff manages the day-to-day operations, including program administration, interaction with applicants and grantees, contract administration, budgeting and financial matters, record-keeping and reporting.

The office staff schedule and facilitate all activities, manage the scientific merit review process, negotiate with outside vendors, and maintain the necessary relationships within state government.

### Funding

Under the enabling Statute, the work of the Commission is supported entirely by a one-dollar surcharge on all traffic and motor vehicle fines or penalties. Monies generated from these fines or penalties are collected by the State Treasurer for deposit into the New Jersey Brain Injury Research Fund. All grant programs and other activities are funded entirely from this dedicated source. No part of the operating budget is paid for out of New Jersey's general tax revenue.



**T**he Research Program Guidelines set forth the Commission's scientific agenda, research criteria and areas of interest.<sup>8</sup> The guidelines offer applicants detailed guidance and instruction on funding criteria and policies.

The Commission funds research activities that hold the promise of developing effective treatments, interventions and cures for the disabilities associated with traumatic brain injury. An array of grant programs is offered including Individual Research Grants, Fellowships, Pilot Research Grants, Brain Injury Core Facilities Grants, and Programmatic Multi-Investigator Research Grants. The areas of research listed below highlight the focus of current emphasis and funding

## Basic Studies

- Study 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.
- Evaluate the efficacy of drugs and other interventions that prevent or reduce secondary neuronal injury or providing insight into the mechanisms causing progressive damage.
- Define anatomical characteristics of brain injury in animal models and in the human brain, specifically documenting the cellular systems vulnerable to injury and the functional losses which occur.
- Perform translational research on the mechanism and interventions that promote recovery of function after brain injury.

## Clinical Studies

- Demonstrate 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.
- Demonstrate mechanisms of action and rehabilitation intervention based on changes in brain activity (e.g., functional imaging), neurocognitive function, or psychosocial factors (e.g., resilience).
- Perform comparative effectiveness research to evaluate the relative risks and benefits of alternative rehabilitation interventions intended to promote recovery of function.
- Conduct 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.

## Research Funding Priorities

*The Commission is committed to accelerating research to develop effective interventions and cures for the disabilities associated with traumatic brain injury.*

8- The full text appears on the website at: [www.nj.gov/health/njcbir](http://www.nj.gov/health/njcbir)

## Grant Application and Review Process

The grants review process was modeled on the National Institutes of Health standards and procedures to provide an impartial and rigorous review of research proposals. This effort has been largely successful and has earned respect from grantees and applicants.

### Application Process

The grant application process is now entirely electronic utilizing the State of New Jersey System for Administering Grants Electronically (SAGE). The on-line process ensures broad access, convenience, flexibility, and greatly reduces administrative workloads for applicants, the Commission office, and the Scientific Merit Review Panel.

### Grant Review Process

The grant review process consists of a three-step review.

- First, all grant applications are reviewed by the Commission's administrative staff to ensure compliance with New Jersey Statutes and regulations and to ensure accuracy.
- Second, an independent relevance review is conducted by a four-person panel appointed by the office of the Commission. The Independent Relevance Review Panel determines the relevance of all applications to the Commission's mission, priorities and Research Program Guidelines, and will assign scientific reviewers for each proposal that meets the relevancy requirements. In the event the panel determines that an application does not meet those requirements, the application will be triaged, and will not be forwarded for independent scientific merit peer review.
- Third, members of the Independent Scientific Merit Peer Review Panel 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 Commission. If it is determined that an ad hoc expertise is needed, additional scientific referees may be used.

### Recommendations and Authorization

The Independent Scientific Merit Review Panel will forward its recommendations to the Commission 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 Commission and will not be funded.<sup>9</sup>

<sup>9</sup>- The authority to authorize or not authorize grants is fully vested in the Commission according to New Jersey Statute (N.J.S.A. 52:9EE-1).

**G**rant programs are designed to provide scientific opportunities attractive to a wide range of researchers. Awards are intended to promote collaboration among brain injury researchers in New Jersey and encourage innovative research. The intent is not to provide long-term support for research. It is expected that this initial support will lead investigators to acquire the necessary levels of preliminary data, so they may compete successfully for federal grant support.

The Individual Research Grant is designed to fund senior independent researchers, while the Fellowship Grant offers encouragement to graduate students and post-doctoral researchers. The Programmatic Multi-Investigator Grant supports collaborative research from at least three investigators from different laboratories, the Pilot Research Grant enables researchers to pursue a new direction in brain injury research, or encourages new investigators who want to gather preliminary data for larger research projects, the Brain Injury Core Facilities Grant was designed to make research more efficient and provides state-of-the-art equipment and highly skilled staffing to support researchers with centralized expertise.

Inter-institutional and/or inter-state collaboration is strongly encouraged. Complete details on all grant programs are available on the Commission's website.

## Individual Research Grants

- Individual Research Grants support senior scientists to explore meritorious novel scientific and clinical ideas.
- Up to \$540,000 for up to three years (\$180,000 per year).
- The key goal is to enable established researchers to test and develop pilot data needed for future funding.

## Fellowship Grants

- Postdoctoral and Graduate Student Fellowships engage promising young investigators in brain injury research.
- All fellowships include an annual stipend, research allowance and travel budget.
- Post-doctoral Fellowships are three-year awards based on years of relevant research experience since obtaining a doctoral degree and range from \$64,550 to \$83,376 a year.
- Graduate Fellowships are three-year awards with a total award of \$33,500 per year.

## Pilot Research Grants

- Enable independent investigators to pursue a new direction in brain injury research, or new investigators who want to gather preliminary data for larger research projects.
- Up to \$180,000 for a two-year award (\$90,000 per year).

## Current Grant Programs

*The Commission funds research activities that hold the promise of developing effective treatments, interventions and cures for the disabilities associated with traumatic brain injury.*

### Current Grant Programs

#### **Programmatic Multi-Investigator Research Grants**

- Support collaborative research from at least three investigators from different laboratories.
- Preference is given to proposals that demonstrate complementary approaches to addressing a research question through multi-disciplinary investigations.
- Collaborations are encouraged among independent laboratories within the same institution or among laboratories from different institutions.
- Up to \$720,000 per year for up to three years with a maximum of \$2.1 million.

#### **Brain Injury Core Facilities Grants**

- Brain Injury Core Facilities Grants make research more efficient and productive by providing services and technologies that cannot be readily reproduced in individual laboratories in an efficient, cost-effective manner.
- Provides state-of-the-art equipment along with highly skilled staffing to support researchers.
- Makes use of sophisticated technologies and equipment to provide researchers with access to centralized expertise and service.
- Provides education and training opportunities for aspiring researchers.
- Up to \$1,500,000 is available to provide researchers with an opportunity to facilitate the establishment of new Brain Injury Core Facilities.



## 2007- 2022 Summary and Performance Record

Since 2007, the Commission has funded 132 separate scientific research projects by scientists at New Jersey academic and research institutions. These awards represent an investment in brain injury research of over \$45 million.

Approximately 60 grant applications are received annually; approval of ten or more new grant awards totaling \$3 to \$4 million are made.

Due to its continued investment in brain injury research, the number of New Jersey researchers interested in the field is growing.

## 2007- 2022 Summary and Performance Record

*The grants review process was modeled on the National Institutes of Health standards and procedures to provide an impartial and rigorous review of research proposals. This effort has been largely successful and has earned respect from grantees and applicants.*



## New Jersey Qualified Research Institutions

**U**nder the Brain Injury Research Act, funds may only go to researchers affiliated with “New Jersey Qualified Research Institutions.” The following organizations have been designated as Qualified Research Institutions by the New Jersey Commission on Brain Injury Research.

- ❖ **Rutgers, The State University of New Jersey**
- ❖ **Kessler Foundation**
- ❖ **Stevens Institute of Technology**
- ❖ **Princeton University**
- ❖ **Cooper University Hospital & Cooper Medical School of Rowan University**
- ❖ **Atlantic Health Systems Hospital Corporation**
- ❖ **St. Barnabas Medical Center**
- ❖ **Edge Therapeutics, Inc.**
- ❖ **The Center for Neurological & Neurodevelopment Health LLC, Clinical Research Center of NJ, & The Center for Neurological & Neurodevelopment Health II, Inc. – NeurAbilities**
- ❖ **Centra State Medical Center**
- ❖ **Montclair State University**
- ❖ **Coriell Institute for Medical Research**
- ❖ **New Jersey Institute of Technology**
- ❖ **Hackensack Meridian Health**
- ❖ **International Brain Research Foundation**
- ❖ **Englewood Hospital Research**
- ❖ **Hackensack Meridian Health JFK Medical Center – The Neuroscience Institute**
- ❖ **Hackensack Meridian School of Medicine at Seton Hall University**
- ❖ **Seton Hall University**
- ❖ **Rowan University**
- ❖ **Morristown Medical Hospital & Medical Center**
- ❖ **Veterans Administration NJ Health Care System & Veterans Biomedical Research Institute**
- ❖ **The College of New Jersey**
- ❖ **Visikol, Inc.**
- ❖ **St. Joseph’s University Medical Center**
- ❖ **William Paterson University of New Jersey**
- ❖ **Bright Cloud International Corporation**

The Commission is committed to broadening its portfolio of institutional grantees and increasing the size and diversity of its funding activities. Through outreach activities, the Commission encourages participation by all research organizations with an interest in brain injury research.

**T**he Commission developed policy guidelines to accommodate what promises to be an exciting research agenda for the New Jersey science community.

Grant programs are designed to provide opportunities attractive to a wide range of researchers. Awarded grantees and grantee institutions have capitalized on the opportunities afforded by the availability of Commission funding through advancement of individual careers, increased institutional investment, and applying for additional outside funding.

### 2022 Overview

The Commission has, in over eighteen years of its operation, funded an impressive portfolio of brain injury research projects while supporting an expanding group of new and senior investigators in the field.

### 2022 Applications

Due to the State of Emergency declared by Governor Phil Murphy to combat the Coronavirus pandemic, and the resulting financial impact to the New Jersey Commission on Brain Injury Research's Trust Fund, it was determined to make available and offer one grant program in Fiscal Year 2022 – the Pilot Research Grant program. A total of 22 Pilot Research Grant applications were received.

Information on existing grant awards can be found within the Research Grant Directories located on the Commission's website.<sup>10</sup>

### 2022 Outreach and Development Efforts

The Commission maintains an ongoing interest in expanding brain injury research in New Jersey. Direct contacts, attendance at events and meetings, plus website and publication resources are some of the ways used to publicize grant opportunities throughout the state.

### Publication of Grant Programs

Official Notices of Fund Availability advise interested parties of the Commission's grant programs. These notices are published annually on the Commission's website and in the New Jersey Department of Health's *Directory of Grant Programs*.<sup>11</sup>

## 2022 Year in Review

**Since 2007, the Commission has funded 132 separate scientific research projects by scientists at New Jersey academic and research institutions.**

<sup>10</sup> - <https://nj.gov/health/njcbir/directories-outcomes/>

<sup>11</sup> - NJ Department of Health Directory of Grant Programs: [www.healthapps.state.nj.us/noticeofgrant/noticegrants.aspx](http://www.healthapps.state.nj.us/noticeofgrant/noticegrants.aspx).

### Return on Commission Investments

**G**rantees have benefited from the opportunities afforded by the availability of Commission funding. The Commission has been a major factor in fostering interest and continued involvement in brain injury within the State of New Jersey. Commission grant programs have increased the importance of brain injury research, have brought new brain injury researchers into the State of New Jersey, and have laid the groundwork for new research and leveraged additional grants and funding.

Commission funded research has been published in well regarded peer reviewed journals. Commission researchers have presented their findings via oral and poster sessions at scientific conferences, symposia, and meetings.

Commission programs have facilitated scientific interaction and research collaborations in New Jersey, as well as out-of-state. Active scientific collaborations have been formed both nationally, internationally and within the State of New Jersey. Success in achieving Commission funding has resulted in academic and career advancement for New Jersey researchers.

Support for researchers funded by the Commission by other organizations validates the Commission grant process, and the standing of its researchers within the scientific community.

Commission grants attract talented senior researchers and engage students and young researchers to the field of brain injury research all while stimulating additional investments.



In Fiscal Year 2023, an estimated \$3 million was allocated for brain injury research projects. The Commission authorized three grant programs for Fiscal Year 2023 offering Individual Research Grants, Pilot Research Grants, and Fellowship Research Grants.

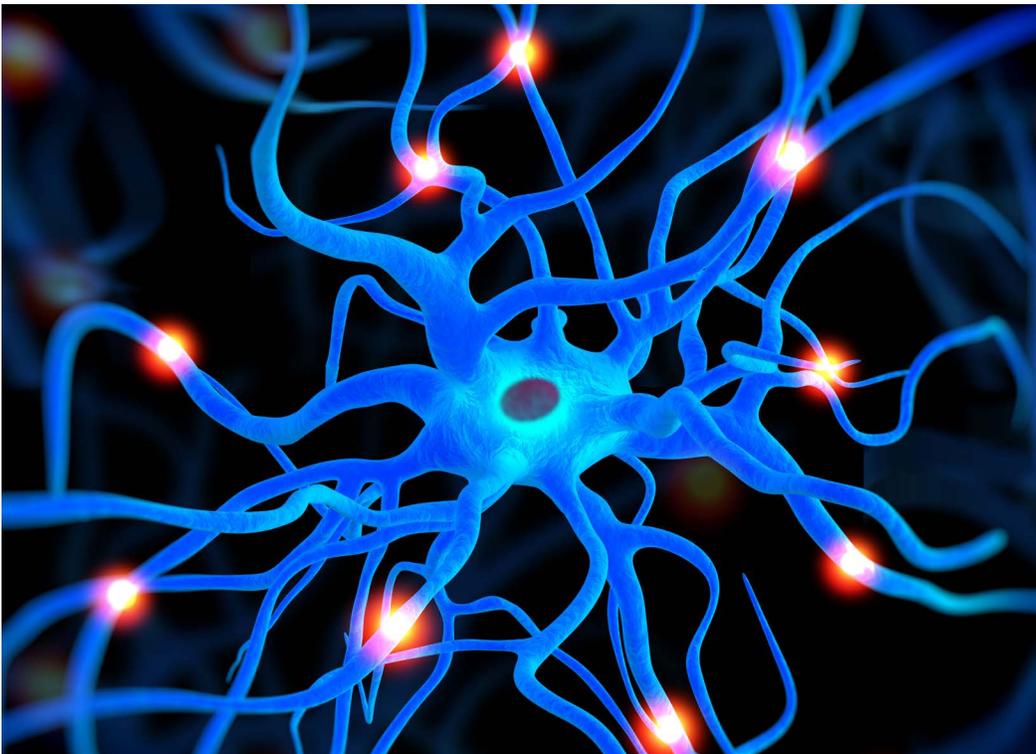
## 2023 Grant Cycle Information

**Letter of Intent Due: August 3, 2022**

**Grant Application Deadline: October 3, 2022**

**Award Notification Date: March 31, 2023**

## Grants Program for 2023



*Commission grant programs have increased the importance of brain injury research, have brought new brain injury researchers into the State of New Jersey, and have laid the groundwork for new research and leveraged additional grants and funding.*

## Financial Statement

The activities and programs of the Commission are supported by the New Jersey Brain Injury Research Fund as established by the Brain Injury Research Act. A one-dollar surcharge is imposed on all fines or penalties from motor vehicle or traffic violations. This revenue surcharge is collected and forwarded to the New Jersey State Treasurer. The funds are then deposited annually in an interest-bearing account designated as the New Jersey Brain Injury Research Fund.

### State Fiscal Year 2022 Fund Balance Statement:

#### FUND BALANCE STATEMENT:

	SFY 2022 <i>Projected</i>	SFY 2022 Actual	SFY 2023 <i>Projected</i>
<b>Opening Fund Balance (July 1)</b>	\$3,022,855	\$3,172,032	\$3,138,617
<b>Revenues</b>			
Assessments <sup>1</sup>	\$1,750,000	\$2,756,091	\$2,500,000
Investments Earnings - Interest <sup>2</sup>	\$15,000	\$33,323	\$30,000
Total Revenue:	\$1,765,000	\$2,789,414	\$2,530,000
<b>Total Funds Available</b>	<b>\$4,787,855</b>	<b>\$5,961,446</b>	<b>\$5,668,617</b>
<b>Disbursements and Expenses</b>			
Spending Plan Reduction	\$1,184,094	\$1,184,094	\$1,184,094
Disbursements to Grantees <sup>3</sup>	\$3,000,000	\$1,419,277	\$3,000,000
Total disbursements	\$4,184,094	\$2,603,371	\$4,184,094
<b>Expenses</b>			
Administrative & Office expense	\$150,000	\$198,958	\$200,000
Professional Review Panel	\$40,000	\$20,500	\$25,000
NJCBIR Registry		\$0	\$0
Total expenses	\$190,000	\$219,458	\$225,000
<b>Total Disbursements and Expenses</b>	<b>\$4,374,094</b>	<b>\$2,822,829</b>	<b>\$4,409,094</b>
<b>Closing Fund Balance (June 30)</b>	<b>\$413,761</b>	<b>\$3,138,617</b>	<b>\$1,259,523</b>

<sup>1</sup> Net revenue variance

<sup>2</sup> Funds plus interest deposited annually in Jan.

<sup>3</sup> Funds for Multi-year grants

### Pilot Research Grant Recipients:

**Sona Patel, Ph.D.**

**CBIR22PIL018**

**Seton Hall University**

**\$180,000**

#### **Project Title**

#### ***Speech Indicators of Dysfunction and Recovery following Mild Traumatic Brain Injury***

We seek to identify speech changes after mTBI in order to develop a sensitive, fast, and accessible method of detecting the presence of concussion and monitoring changes during the recovery process. The growing concern of brain diseases resulting from repetitive concussions calls for a more sensitive protocol for detecting total symptoms and objectively monitoring recovery of athletes with concussion. Current assessments have improved in recent years to expand beyond physical evaluation with components measuring cognition and psychological status. However, these tests are basic and do not capture the full array of cognitive domains that may be impacted in mTBI. More sensitive assessments have not been adopted in standard of care, due in part to the cost of time and resources associated. The ability to detect changes in the brain using fast and easy measurements, such as speech changes, could radically change concussion evaluation. Acoustic changes for speech also convey emotional and physiological, information beyond what is said. Recent research also shows that speech is a robust indicator of brain damage. Further, speech production is a natural metric for measuring total symptoms in concussion as it is generated through a combination of thought (cognition), movement (physical), and emotion (psychology). The possibility of evaluating whether or not a child has sustained a concussion simply by talking into an iPad or phone is powerful. The goal of this research is to use speech metrics as a means for more precisely detecting concussion symptoms. By obtaining more accurate estimates of injury and progression in recovery, we hope to be able to make recommendations of academic accommodations during recovery, inform the RTP process, and minimize the risk of secondary concussion in our young athletes. Establishment of such metrics for refined assessment of concussions will result in a direct and easily transferable impact on the standard of care, thus improving the health, safety, and rehabilitation outcomes of student athletes with concussion in New Jersey.

#### **Contact Information**

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**Seton Hall University**

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**South Orange, NJ 07079-2646**

**973-313-6081**

**[sona.patel@shu.edu](mailto:sona.patel@shu.edu)**

## Fiscal Year 2022 Research Grant Awards

**Xiaobo Li, Ph.D.**

**CBIR22PIL002**

***New Jersey Institute of Technology***

**\$180,000**

### **Project Title**

***Early brain predictors for psychopathology progression in adolescents with childhood TBI***

This study will apply the innovative ensemble learning approach in longitudinal data to identify and validate early brain predictors for psychopathology progression in adolescents with childhood TBI.

Traumatic Brain Injury (TBI) in children is a major public health problem. About 35% of children develop severe attention deficits within two years of their TBI, who were found to have heightened risk for developing severe psychopathology in late adolescence. Identification of early brain markers that can precisely predict later psychopathology progression in children with TBI is urgently expected for the development of refined early prevention and long-term intervention strategies.

Our neuroimaging studies in children with post-TBI attention deficits (TBI-A) and matched controls have revealed structural and functional brain abnormalities in frontal and parietal lobes that were associated with inattention problems in children with TBI-A. Functional alterations in fusiform gyrus (FG) have also been observed in TBI-A. FG anomalies have been found to play critical role in severe psychopathology, especially psychosocial and emotional dysregulation and psychosis. Based on these prior studies, we hypothesize that post-TBI structural and functional alterations in FG, frontal and parietal lobes will contribute to severe late adolescence psychopathology, with the FG significantly involved in anxious/depressed, social and thought problems, while frontal and parietal anomalies involved in attention problems.

The proposed project will re-evaluate 153 subjects in our child TBI study cohort at their 16-19 years of age, by re-collecting clinical, behavioral, and age-appropriate psychopathology measures. The baseline and follow-up time point measurements will allow us to assess the longitudinal behavioral changes and their interactions with early markers of anatomical and functional brain abnormalities. By utilizing a machine learning approach, we will identify and validate the most significant early brain markers for precisely predicating severe psychopathology in late adolescence.

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**Bonnie Firestein, Ph.D.**  
**CBIR22PIL020**

**Rutgers, The State University of NJ**  
**Dept. Cell Biology & Neuroscience**  
**\$180,000**

**Project Title**

***Metabolic Mechanisms for Recovery after mild TBI***

The current studies address whether therapeutics that change metabolism can be used to promote recovery after a single mild TBI or concussion, paving the way for future drug development for humans.

Concussion, or mild traumatic brain injury (mTBI), is the most common neurological condition seen in both children and adults, and the incidence of concussions is increasing with a growing awareness of the possible consequences of repetitive concussions on brain health. After a TBI, there is a loss of coenzymes that are involved in energy metabolism and production in neurons. With previous funding from the NJCBIR, we identified two small molecule compounds that protect neurons from injury, promote nerve cell function, and protect learning and memory in animals with TBI. However, it is currently unknown 1) if these molecules can be used as a therapeutic for concussion and 2) if these molecules replace the lost coenzymes. Experiments will not only test whether our small molecules hold potential but also will elucidate metabolic changes to the brain after concussion and during development, leading to much needed therapies for those who have suffered a concussion.

**Contact Information**

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**Nancy Chiaravalloti, Ph.D.**

**CBIR22PIL003**

**Kessler Foundation**

**\$169,383**

**Project Title**

***Examining the Long-term Neurological Impact of COVID-19 in Individuals with TBI***

The current study examines the long-term impact of COVID-19 on individuals with moderate-severe TBI as compared with neurologically healthy individuals in cognitive and neurological functioning.

Growing evidence suggests that COVID-19 impacts the brain and neurological symptoms often persist after recovery from the virus. Individuals with underlying neurological impairment, such as traumatic brain injury (TBI), are vulnerable to infection with COVID-19, and those who are infected have worse outcomes. The current study examines the neurological consequences of COVID-19 in individuals with moderate to severe TBI in comparison to those without TBI.

Kessler Foundation (KF, NJ) and the Icahn School of Medicine at Mount Sinai (ISMMS, NY City) have pre-COVID-19, baseline cognitive data for 633 individuals with TBI, and 270 healthy individuals, as well as baseline neuroimaging data on 204 individuals with TBI and 147 healthy individuals. We will identify participants with and without TBI who have been diagnosed with COVID-19 and re-evaluate their cognitive and neurological functioning with annual follow-ups. We will thus be able to directly compare the cognitive and neurological status of those with TBI who had COVID-19, to pre-COVID neurologically healthy individuals.

The proposed work will represent an important contribution to the COVID-19 literature in that we will document changes in cognitive and neurological functioning from pre- to post-COVID-19 in individuals with and without TBI and continue to monitor change over time. Subsequent projects will follow these patients long-term. Additional future directions will examine both the risk for cognitive decline and late-in-life ramifications, such as dementia, and develop and evaluate treatment options for neurological symptoms. Given that individuals with TBI are already at elevated risk for dementia, and that COVID-19 may ALSO serve an independent risk factor for cognitive decline, the longitudinal follow-up of this sample is imperative to manage future cognitive decline, maximize quality of life and facilitate continued inclusion into society.

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**Jean Lengenfelder, Ph.D.**

**CBIR22PIL029**

**Kessler Foundation**

**\$175,996**

### **Project Title**

***Improving Social Skills for Young Adults with Brain Injury***

The current proposal will apply an existing treatment to improve social skills, previously utilized in autism, to youth who have sustained a TBI.

Social skills are important in our relationships with others such as friends, family, teachers and employers. As young adults with TBI finish school and enter the workforce, social skills are important to secure a job as well as maintain their job.

The current study applies a social skills program to youth with TBI in the critical age where they will be transitioning from school to work. The program, The Assistive Soft Skills and Employment Training (ASSET), has been used with young adults with autism with very positive results, improving performance of social skills as well as self-confidence, depression and anxiety. The current study would apply ASSET, a 15 sessions treatment, to individuals with TBI between the ages of 15 and 25 in small groups of 4 to 6 people to improve social skills.

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**Michael Matise, Ph.D.**

**CBIR22PIL016**

**Rutgers, The State University of NJ**

**Biomedical & Health Sciences**

**\$180,000**

### **Project Title**

***Role of Hh-responsive astrocytes in restoring homeostasis following acute cortical injury***

The goal of the proposal is to gain a better understanding of the cellular and molecular mechanisms that regulate the response of a sub-population of astrocytes to TBI in a rodent model system.

The goal of the proposal is to better understand of the mechanisms that regulate the response to, and repair of, traumatic brain injuries (TBI) in a rodent model

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system. We have found that a subset of astrocytes in the brain are under the control of the Sonic hedgehog (Shh) signaling factor that plays a key role in CNS diseases and injuries. Shh sensitive astrocytes respond to traumatic brain injury (TBI) by becoming hypertrophic, re-entering the cell cycle to generate new astrocytes, and contributing to the glial scar and repair of the blood-brain barrier (BBB). We have also found that cortical astrocytes under the control of Shh signaling respond to TBI by first shutting down their sensitivity to the pathway and then re-acquiring sensitivity at later stages during glial scar formation and BBB restoration. Furthermore, our preliminary data shows that the BBB fails to be repaired in the spinal cord of mice in which the Shh pathway has been blocked in reactive astrocytes, suggesting a crucial role in CNS injury repair. Together, these data support our hypothesis that proper modulation of Hh signaling in cortical astrocytes is required for their reactive response and restoration of tissue homeostasis following TBI.

The current pilot study proposal will address this hypothesis by using molecular genetic tools to selectively manipulate the Shh pathway in reactive cortical astrocytes following TBI. The study will comprise two specific aims that will combine conditional mutagenesis (gene inactivation and activation), genetic lineage tracing, and surgically induced TBI.

Results from our work will lay the foundation for future efforts to determine whether manipulation of the Hh pathway could increase the efficacy of CNS repair following TBI. Many small-molecule compounds that regulate Hh signaling both positively and negatively have already been identified, allowing for rapid development of potential new therapies from the bench to the bedside.

### Contact Information

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### **Annika Barber, Ph.D.**

**CBIR22PIL016**

**Rutgers, The State University of NJ**  
**Waksman Inst of Microbiology**  
**\$173,898**

### **Project Title**

***Molecular and circuit mechanisms of traumatic brain injury-induced disruption of sleep and circadian rhythms in Drosophila***

This proposal uses a new fruit fly traumatic brain injury paradigm to investigate how traumatic brain injury alters neuronal function to cause sleep and circadian rhythm disorders.

Traumatic brain injury (TBI) contributes to one-third of all injury-related deaths in the United States, and the long-term complications resulting from TBI in survivors are complex and under-reported. These complications include dysregulated circadian rhythms and sleep disorders, which may underlie or exacerbate other elevated risks found in TBI survivors such as mood disorders, endocrine disorders, and neurodegenerative disease.

The goal of this project is to identify the how TBI causes neurological damage that disrupts daily activity patterns and sleep. Molecular circadian clocks in the brain coordinate the timing of biological systems within an animal with respect to each other and the environment. Misalignment of the timing of different biological functions can result in mood, metabolic and sleep disorders. This proposal will test how the time of injury affects health and survival to determine how molecular circadian clocks in the brain contribute to recovery from both single-incident and mild, repetitive TBI. Understanding the role of molecular circadian clocks in TBI recovery will help researchers design interventions that leverage our bodies' natural timing system to improve outcomes for TBI survivors. This project will also determine how TBI alters the function of neurons specialized in controlling daily biological rhythms and sleep to cause sleep and circadian rhythm disorders. After measuring the effects of TBI on daily activity timing and measures of sleep quantity and quality, we will examine how TBI damages the neurons regulating sleep and circadian rhythms. These pilot studies will set the stage for us to identify the processes that occur in the brain after injury that damage circuits, so that we can find new therapeutic targets that prevent progressive neuronal damage. We will also test how environmental and pharmacological treatments that improve sleep and circadian rhythms can improve outcomes for TBI survivors.

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## Fiscal Year 2022 Research Grant Awards

**Mark Zimering, MD., Ph.D.**

**CBIR22PIL016**

**Veterans Biomedical Research Institute**

**\$180,000**

**Project Title**

***Neurodegeneration after Traumatic Brain injury: Protection by Serotonin Receptor Peptide***

The goal is to determine whether a serotonin 2A receptor peptide decreases the risk of anhedonia and impaired pattern separation (dentate gyrus-dependent) after mild traumatic brain injury in adults. Traumatic brain injury (TBI) contributes to substantially increased global disability and has been associated with major depressive disorder through unknown mechanisms. Chronic inflammation increased autoantibodies to a serotonin receptor in the bloodstream of adults suffering with major depression. The autoantibodies were also found in blood of TBI patients having dementia and impaired thinking. A new drug was designed to bind the autoantibodies. Neurons in a specific brain region called dentate gyrus have many serotonin receptors which help in normal thinking and recovery from depression. Depressed patient autoantibodies bind to dentate gyrus neuron serotonin receptor interfering with memory and recovery from depression symptoms such as anhedonia, the inability to feel pleasure.

We propose to test Aim 1 whether the new serotonin peptide receptor drug given 1 day after TBI in rats prevents anhedonia and protects against the loss of pattern separation. In Aim 2, the dentate gyrus will be examined in the rat to determine if number, shape or maintaining proper location of neurons after TBI may explain drug's protective effect on maintenance of normal thinking in pattern separation task. Aim 3 will test whether higher autoantibody in blood in traumatic brain-injury patients predicts worsening performance on a pattern separation thinking task. The knowledge gained from the proposed studies could help validate the utility and advance the development of a new candidate serotonin receptor drug which could prevent a major symptom of depression (inability to feel pleasure) and lessen impaired thinking and memory following TBI. The knowledge and techniques resulting from the study can benefit persons in New Jersey and throughout the United States.

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## Attachment A

**A**n 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:
  - a. “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.
  - b. “Commission” means the New Jersey State Commission on Brain Injury Research established pursuant to this act.
  - c. “Institutional support services” means all services, facilities, equipment, personnel and expenditures associated with the creation and maintenance of approved research projects.
  - d. “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. New Jersey State Commission on Brain Injury Research.
  - 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

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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 appointed member shall be three years, but of the members first appointed, three shall be appointed for a term of one year, four for terms of two years, and three 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 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 IIA (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.

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## **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 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, 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 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.
- 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**

#### **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

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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 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

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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 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 180th day following enactment.

***Approved January 2, 2004.***

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NEW JERSEY COMMISSION ON  
BRAIN INJURY  
RESEARCH