

INDIANA SPINAL CORD AND BRAIN INJURY RESEARCH FUND

2015 ANNUAL REPORT

Submitted September 28, 2016

This report is in compliance with IC 16-41-42.2-5. The report was compiled by the Indiana State Department of Health Division of Trauma and Injury Prevention and edited by Dr. Feuer, Board Chairman.

INDIANA SPINAL CORD AND BRAIN INJURY RESEARCH FUND (ISCBIRF)

Annual Report for 2015 (FY2016)

The Indiana Spinal Cord and Brain Injury Research Fund was created by the 2007 Indiana General Assembly under Indiana Code (IC) 16-41-42.2. Recommendations for grant funding are made by the Spinal Cord and Brain Injury Research Board (Board) to the Indiana State Department of Health (ISDH). Board members are appointed by the Governor, Indiana University, Purdue University, Brain Injury Association of Indiana, National Spinal Cord Injury Association, and Rehabilitation Hospital of Indiana.

The fund is to be used for the following purposes:

1. Establish and maintain a state medical surveillance registry for traumatic spinal cord and brain injuries.
2. Fulfill duties of the Board.
3. Fund research related to the treatment and cure of spinal cord and brain injuries, including acute management, medical complications, rehabilitative techniques, and neuronal recovery. Research must be conducted in compliance with all state and federal laws.
4. Concerning spinal cord injuries, funding at least ten percent (10%) and not more than fifteen (15%) of money in the fund for:
 - a. Post acute extended treatment and services for an individual with a spinal cord injury; or
 - b. Facilities that offer long term activity based therapy services at affordable rates to an individual with a spinal cord injury that requires extended post acute care.
5. Concerning brain injuries, funding at least ten percent (10%) and not more than fifteen (15%) of money in the fund for:
 - a. Post acute extended treatment and services for an individual with a brain injury; or
 - b. Facilities that offer long term activity based therapy services at affordable rates to an individual with a brain injury that requires extended post acute care.
6. Develop a statewide trauma system. However, no more than fifty percent (50%) of money in the fund may be used for purposes of developing a statewide trauma system.

The Board is charged with the following duties:

1. Consider policy matters relating to spinal cord and brain injury research projects and programs.
2. Consider research applications and make grants for approved projects.
3. Consider applications and make grants to health care clinics that:

- a. Are exempt from federal income taxation under Section 501 of the Internal Revenue Code;
 - b. Employ physical therapists licensed under IC 25-27; and
 - c. Provide in Indiana long term activity based therapy services at affordable rates to individuals with spinal cord injuries or brain injuries that require extended post acute care.
4. Consider the application's efficacy in providing significant and sustained improvement to individuals with spinal cord injuries or brain injuries.
 5. Formulate policies and procedures concerning the operations of the board.
 6. Review and authorize spinal cord and brain injury research projects and programs to be financed under IC 16-41-42.2.
 7. Review and approve progress reports and final research reports on projects.
 8. Review and make recommendations concerning the expenditure of money from the fund.

Executive Summary:

The state appropriations for the ISCBIRF for state Fiscal Year 2016 was \$2,108,727. Of this amount, \$600,000 was to be utilized on a one time basis per language contained in the budget bill for a health care clinic described in IC 16-41-42.2-5(j)(3) and in compliance with IC 16-41-42.2-4(j)(4) whose application for funding is approved by the Department of Health.. The remainder of the appropriation, \$1,508,727 was to be utilized for on-going operating costs for the Board to carry out its statutory duties.

The table below summarizes actual fund expenditures for state Fiscal Year 2016:

Grant funding	\$ 1,835,022.00
Peer review contract (CTSI)	\$ 134,609.00
ISDH Staff Support	\$ 143,155.00
Operating Costs (Non-Personnel)	\$ 121,575.00
Total	\$ 2,091,206.00

Revenues collected during the year amounted to approximately \$1,742,000. The Fund ended the fiscal year with a cash balance of \$4,542,551. Against this cash balance, there were grant obligations encumbered but not yet paid that totaled \$2,840,643 that will eventually be liquidated once work is completed. In addition, the cash balance also included the \$600,000 authorized by the legislature. The process for awarding these funds had not been completed and funds were not encumbered by the completion of the fiscal year. The unobligated cash balance going forward into FY 2017 was approximately \$1.1 million.

The board met on several occasions—including the 2015 – 2016 dates of 08/12, 10/22, 12/16, 02/04, 05/16 and 06/29– to conduct official business and plan for the disposition of the fund, review research project progress reports, address requests for project extensions, and elect new board leadership.

The Board issued a request for proposals September 2015 with a deadline of December 2015. The Board voted during its October 2014 meeting to increase the amount of funding from \$60,000/year for two years to \$80,000/year for two years and this funding award was maintained for Fiscal Year 2016. A total of 34 proposals were received. After the peer review was conducted, proposals were ranked by score and 18 applications were recommended to the board for funding. This group of applications was reviewed by the board, along with comments from the peer reviewers, and eventually 14 were selected for funding. The total commitment for proposals was valued at \$2,219,106. A list of FY16 awards is included in Appendix I. The Board held a Spring 2016 conference to acquaint interested parties, primarily clinicians and scientists but also consumers, with the research supported by the ISCBIRF and to provide a forum for researchers funded by the ISCBIRF to learn about each other's work and to facilitate collaborations. The half day conference had 115 attendees, up from 84 since the last conference in 2012. The Board agreed to host a conference once every two years. The trauma and injury prevention program continue to utilize a portion of the fund to clinically analyze the trauma

registry data to determine risk factors for patients transferred from one facility to another. This research is in partnership with Indiana University – Methodist Hospital.

The Board met for a final meeting for FY16 on June 29. The division of trauma and injury prevention provided a summary of the Spring 2016 conference and discussed ongoing support of the registry for spinal cord and brain injuries utilizing the Indiana Network for Patient Care (INPC) from 2004-2014.

Throughout FY16, Joseph Fistrovich, Chief Financial Officer at ISDH, provided a financial overview of the fund to the Board.

Board Membership:

The Board Membership and Leadership were experienced some changes between July 1, 2015 through June 30, 2016. Dr. Henry Feuer continues to serve as Board Chairman. The Governor-appointed position of an Owner or Operator of a facility that provides long-term activity based therapy services at affordable rates to individuals with traumatic spinal cord injuries or brain injuries was filled by Chris Leeuw, President of Neurohope October 9, 2015. A complete list of Board members is provided as Appendix II to this report.

Preparation and Plans for 2015-2016:

The 2016-2017 grant application has been posted; grant applications are due no later than December 31, 2016. It is anticipated the awards will be granted in July 2016. It is projected that approximately \$1.1 million will be available for the FY 2017 grants. The board is also in the final stages of funding a recipient for a clinic that provides activity-based therapy that was added to the law during the 2015 legislative session. The RFP release date was June 4, 2016 and award date is scheduled for late 2016.

Appendix I

2015-2016 ISCBI Grant Recipients

- Michael Bulton, Ph.D., Indiana University, \$160,000
 - “Pathogenesis and prevention of traumatic brain injury-induced visual defects”
- Jinhui Chen, Ph.D., Indiana University, \$160,000
 - “Pharmacological manipulation of adult-born hippocampal neurons to rescue memory in a mouse model of traumatic brain injury”
- Stephanie Combs-Miller, PT, Ph.D., NCS, \$143,653
 - “Physiological complexity of gait over the first six months post stroke”
- Theodore Cummins, Ph.D., \$160,000
 - “Sodium channel function and pharmacology in posttraumatic injury epileptogenesis”
- Johanne Eliacin, Ph.D., \$160,000
 - “Health disparities in traumatic brain injury: Assessing racial and geographical differences in utilization of health care services for TBI in Indiana from 2004-2013”
- Xiaoming Jin, Ph.D., \$160,000
 - “Reorganization of motor cortex following traumatic brain injury and its mechanisms”
- Debomoy K Lahiri, Ph.D., \$160,000
 - “Neuroprotective role of SOAP (Soluble β -myloid Precursor Protein) in brain injury and TBI”
- Samy Meroueh, Ph.D., \$160,000
 - “Small molecules to restore breathing following spinal cord injury”
- Dawn M. Neumann, Ph.D., \$159,644
 - “Behavioral mechanisms underlying facial affect recognition deficits after brain injury”
- Victoria A. Ploplis, Ph.D., \$158,925
 - “Coagulopathy and platelet dysfunction following traumatic brain injury”
- Richard B. Rodgers, Ph.D., \$160,000
 - “Investigation of novel hemoadsorption system in rats with traumatic brain injury”
- Zhiyong Tan, Ph.D., \$160,000
 - “Role of high-mobility group box 1 protein regulating voltage-gated sodium channels in a spinal cord injury model of neuropathic pain”
- Fletcher White, Ph.D., \$156,884
 - “Novel therapeutic strategies against traumatic brain injury-induced neuroinflammation and chronic pain”

- Xiangbing Wu, Ph.D., \$160,000
 - “RhoA/Rho kinase inhibition-mediated neuroprotection after spinal cord injury”
- Andrew J. Saykin, PsyD, \$120,000
 - “Indiana TBI Genetics and Biomarker Neurorepository”

Appendix II

Indiana Spinal Cord and Brain Injury Fund Board Membership List

(** - Governor appointed position)

1. **Physician/Neurosurgeon****
Dr. Hank Feuer (Board Chair)

2. **Spinal Cord/Head Injury Person or Family Member****
Kira Hudson, MBA
Clinical Data Analyst, St. Vincent Indianapolis Hospital

3. **Physiatrist, Board Certified APMR****
Dr. Whitney Pratt, MD PhD
Assistant Clinical Professor, Department of Physical Medicine and Rehabilitation
Indiana University School of Medicine

4. **Technical Life Sciences Industry****
Wade Lange, MS
Vice President, Lange Advisors

5. **Owner or operator of a facility that provides long term activity based therapy services****
Chris Leeuw, *through May 2, 2016*
President, Neurohope

Vacant

6. **Physical Therapist****
Vacant

7. **Indiana University**
Gerry Oxford, PhD

8. **Purdue University**
Alan H. Rebar, DVM, PhD *through October 2015*
Senior Associate Vice President for Research and Executive Director of Discovery Park
Hovde Hall

Howard Zelaznik, PhD *starting October 2015*
Associate Vice President for Research

9. **National Spinal Cord Injury Association**
Janeen Earwood
Director of Rehabilitation, American Senior Communities

10. Rehabilitation Hospital of Indiana

James Malec, PhD, LP, ABPP-Cn, Rp

11. American Brain Injury Association/Brain Injury Assoc. of Indiana

Tom Doehrman