



**International
Neurodegenerative Disorders
Research Center**

**Annual Report
2023**

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Basic information about organization

| | |
|----------------|--|
| Name | International Neurodegenerative Disorders Research Center, z.ú. |
| Headquarters | Evropská 2758/11, 160 00 Praha 6, Česká republika |
| Founder | Martin Tolar, MD, PhD |
| ID No. | 11883383 |
| Account number | 6151333379/0800 |

Executive Board

| | |
|---------------|--|
| Chairman | Martin Tolar, MD, PhD |
| Board Members | Prof. Ing. Vladimír Mařík, DSc John Hey, PhD Pavel Hroboň, MD, MS Prof. RNDr. Václav Snášel, CSc. Milan Kulhánek Ing. Eva Troppová, PhD Ing. Jaroslav Lískovec Cezary Kaliszyk, PhD |

Director

| | |
|--------------------|-------------------------------|
| Executive Director | Mgr. Lenka Uldrijanová |
|--------------------|-------------------------------|

Scientific Advisory Board

Ara S. Khachaturian, PhD – Chairman

Prof. Dr. rer. nat. Wolfgang Wahlster
Prof. Bruno Vellas, MD, PhD
Prof. Paolo Maria Rossini, MD
Joseph Lombardo
Michelle Mielke, PhD
Jakub Hort MD, PhD, FEAN
Research Assistant Professor Jean-Marie Charles Bouteiller, PhD
Kateřina Sheardová, MD, PhD
Michael W. Lutz, PhD
Ing. Josef Šivic, PhD
Prof. Robert Mikulík, MD, PhD
Zaven Khachaturian, PhD
Ira Haraldsen, MD, PhD
Menghis Bairu, MD
Dennis Chan, MD, PhD
Ornit Chiba Falek, PhD
Louis Kirby, MD
Norman A. Mazer, MD, PhD
Klaus Romero, MD, MS
Sudhir Sivakumaran, PhD
Prof. Peter J. Snyder, PhD.
Prof. Jacques Touchon, MD, PhD.

Mission

The International Neurodegenerative Disorders Research Center, is a private, non-profit global research institute established to apply artificial intelligence (AI) and machine learning (ML) solutions to identify and develop treatments for Alzheimer's disease and other neurodegenerative diseases. The scientific institute was established in 2021 in Prague.

The aim of the institute is to build a multidisciplinary technology platform for the development of breakthrough treatments based on the use of AI to process large amounts of data and information about normal function and diseases of the human brain.

The search for effective treatments remains extremely slow, largely due to a lack of understanding of the complex interrelationships between brain structure, function and disorders.

Therefore, the organization is focusing on these problems:

1. Understanding the complex relationship between the structure and function of the human brain
2. Limited knowledge of the pathogenic pathways that damage or destroy neurons and their connections
3. Lack of applications of artificial intelligence and machine learning solutions to study the function and information processing of the healthy and diseased human brain

Vision

INDRC's vision is to become the leading international non-profit research centre for Alzheimer's disease and other neurodegenerative diseases.

INDRC aims to bring together and develop globally fragmented knowledge through fellowship programs of excellence, to provide cutting-edge independent research programs, to build a world-class research scientific community, and to enable technological and therapeutic innovations with real impact on society and humanity.

To connect experts in the fields of neuroscience, machine learning and artificial intelligence.

With the financial support of partners, including private and individual donors, INDRC is able to develop multidisciplinary links between medicine and IT in an effort to understand and then effectively treat neurodegenerative diseases of the human brain.

Selected Media Reports and Press Releases



TISKOVÁ ZPRÁVA Alzheimerova choroba – současné poznatky

Press release

May 30, 2023

„Alzheimerova choroba - současné poznatky“

<https://indrc.cz/tiskova-zprava-alzheimerova-choroba-soucasne-poznatky/>



TISKOVÁ ZPRÁVA Generali penzijní společnost a vědci z institutu INDRC spojují síly v boji proti Alzheimerově nemoci

Press release

August 9, 2023

„Generali penzijní společnost a vědci z institutu INDRC spojují síly v boji proti Alzheimerově nemoci“

<https://indrc.cz/tiskova-zprava-generali-penzijni-spolecnost-a-vedci-z-institutu-indrc-spojuji-sily-v-boji-proti-alzheimerove-nemoci/>



Ke Světovému dni Alzheimerovy choroby filmaři odhalují první ukázkou z filmu Tancuj, Matylde inspirovaného skutečnou událostí

Press release

October, 2023

„Ke Světovému dni Alzheimerovy choroby filmaři odhalují první ukázkou z filmu Tancuj, Matylde inspirovaného skutečnou událostí.“

<https://indrc.cz/ke-svetovemu-dni-alzheimerovy-choroby-filmari-odhaluji-prvni-ukazku-z-filmu-tancuj-matylde-inspirovaneho-skutecnou-udalosti/>



Neotřelý teambuilding: Generali penzijní společnost vyrazila do domova pro seniory

Press release

November 27, 2023

„Neotřelý teambuilding: Generali penzijní společnost vyrazila do domova pro seniory“

<https://indrc.cz/neotrelly-teambuilding-generalni-penzijni-spolecnost-vyrazila-do-domova-pro-seniory/>



Umělá inteligence spojuje Francii a Česko – ve výzkumu i využití v praxi

Press release

December 19, 2023

**„INDRC na misi českých expertů v oblasti AI do Paříže
UMĚLÁ INTELIGENCE SPOJUJE FRANCII A ČESKO – VE VÝZKUMU I VYUŽITÍ V PRAXI“**

<https://indrc.cz/umela-inteligence-spojuje-francii-a-cesko-ve-vyzkumu-i-vyuziti-v-praxi/>

Scientific Publications

1. **Khachaturian A, et al:** Accelerating Innovations for Enhanced Brain Health. Can Artificial Intelligence Advance New Pathways for Drug Discovery for Alzheimer’s and other Neurodegenerative Disorders?
The Journal of Prevention of Alzheimer’s Disease 2023;10, 1-4
2. **Kaliszyk C, et al:** Combining Higher- Order Logic with Set Theory Formalizations,
Journal of Automated Reasoning
3. **Zhang L, et al:** Learning Proof Transformations and its Applications in Interactive Theorem Proving, *Frontiers of Combining Systems 2023; 14279, 236-254.*
4. **Jakubův J, et al:** MizAR 60 for Mizar 50, *arXiv 2023; 06686*
5. **Parsert J, et al:** Experiments on Infinite Model Finding in SMT Solving, *EasyChair 2023;94, 317-328*

INDRC “in action”

**INDRC presenting its’s activities at the Ladies club of Regional Chamber of Commerce and networking club Business Friends in Brno, Czech Republic
March 21, 2023**

Mgr. Lenka Uldrijanova, Executive Director of INDRC, presented the vision of INDRC, z.ú.



MUDr. Kateřina Sheardová, PhD, INDRC Scientific Advisory Board member, with her interesting talk about the activities of the Memory Disorders Centre - ICRC and the importance of a healthy lifestyle in the prevention of neurodegenerative and other diseases.



INDRC at the SingularityU Czech Summit Conference in Prague, Czech Republic October 2-3, 2023

Martin Tolar, MD, PhD, INDRC Founder and Executive Board Chair presented update on mission and accomplishments of institute.



Ing. Josef Šivic, PhD as INDRC Scientific Advisory Board member presented update on scientific projects of institute.



**Mission of leading Czech AI researchers and institutions to France
(Paris and Ile-de-France).
October 17 - 18, 2023**

Mgr. Lenka Uldrijanova, Executive Director of INDRC, presented the vision of INDRC, z.ú. and it's connection of AI and health, primarily neurodegenerative diseases.

Prof. Vladimír Mařík, Research Director CIIRC, Vice-Chair of the Czech RDI Council and INDRC Executive board member and Ing. Josef Šivic, Leading Researcher at CIIRC, Chair of AICzechia (Formerly Inria, AI Chair in Prairie) and INDRC Scientific Advisory Board member presented INDRC project CLARA and cooperation with Czech, French and German participating institutions.

The Mission of leading Czech AI researchers and institutions was jointly organized by the Ministry of Foreign Affairs of the Czech Republic, the Czech Embassy in Paris, the Czech Institute of Informatics, Robotics and Cybernetics of the Czech Technical University in Prague, the French Embassy in Prague and with the support of other partners.

The aim of the event was to bring together leading experts from various fields of artificial intelligence, universities, scientific institutions and representatives of political representation of the Czech Republic and France. Participants had an opportunity to visit Institut du Cerveau – Paris Brain Institute, Inria, PRAIRIE, DATAIA Institute, HI!Paris and HI!Paris and see excellent cooperation between french institutions, universities, scientific workplaces and private companies.

**INDRC at the CTAD conference in Boston
CLINICAL TRIALS ON ALZHEIMER'S DISEASE
October 24 – 27, 2023**

Ara Khachaturian presented poster:
*In Silico Simulation
of Dementia-Alzheimer-Syndrome:
Application of hybrid computing approach
to the study of emergent behavior*



Fulfilling Objectives

We have managed to develop a number of established cooperations on both professional and commercial levels. There were 14 entities among Czech Institutions, Universities, Hospitals and Foundations and 8 international cooperations.

Established and developed cooperations with 18 private companies helped further INDRC advancement.

INDRC increased the number of its Partners. The Board members and Founders were actively involved in the development of the institute and its activities.

2023 Year in Summary

- Management transition
- Two Partners elected: IOCB TECH s.r.o. and VUP Medical, a.s.
- INDRC at the ADPD conference in Gothenburg, Sweden
- Commencement of activities of the authorities of the registered institute: Executive Board, Assembly, Scientific Advisory Board
- Gradual expansion of the members of the Scientific Advisory Board, reached number of 24. Ara Khachaturian, PhD. continued to lead The INDRC Scientific Advisory Board throughout 2023.
- INDRC Statute changes – simplification of the structure
- Project specification, selection of expert scientific centers for the consortium, coordination and preparation of the project CLARA: Center for Artificial Intelligence and Quantum Computing in System Brain Research, part of cal: EU Teaming Call
- 3 scientific projects identified:
 1. *Detecting unrecognized cognitive impairment*

This project intends to build capabilities to support the ongoing development of algorithms to detect unrecognized cognitive impairment and dementia within community healthcare bioinformatic systems and electronic health records

2. *Drug response and the ways to improve clinical trials*

The project aims to use computational and -omics methods to explore factors for failure or non-responsive in subsets of individuals who participated in unsuccessful Alzheimer's intervention clinical trials. Specifically, the effort will examine the question of the "optimal profile" within a subset of trial samples that positively responds to a specific intervention/asset. The issue of AD heterogeneity and approaches to limit its impact on the design, conduct and analysis of future clinical trials will be a key outcome.

3. *Developing new conceptual models of AD* as a part of EU grant application, teaming project CLARA.

The need for new comprehensive models dementia is mandated by

- 1) the necessity to broaden the spectrum of therapeutic targets,
- 2) accounting for mixed pathologies in the clinical expression of the disorders,
- 3) the need to understand the transitions from various stages of cognitive, behavioral and functional impairments. This effort seeks to identify gaps in knowledge and potential barriers to advancing the discovery and development of disease modifying or preventive therapies.

- Identifying active partners and supporters of the Institute and maintaining the relationships with them

- **Executive Board Meetings**
Wednesday July 26, 2023
Wednesday September 6, 2023
Tuesday October 24, 2023

- **INDRC Assembly meeting**
Wednesday September 6, 2023

- **INDRC Scientific Advisory Board Meetings**
Friday January 5, 2023
Friday February 3, 2023
Friday March 3, 2023
Friday May 5, 2023
Friday June 2, 2023
Saturday July 15, 2023
Friday September 8, 2023
Tuesday October 24, 2023
Friday December 1, 2023

Financial Statements

In 2023, financial contributions were received for the running and development of the Institute in the total amount of CZK 1.694.000.

INDRC Partners and Supporters

Statutory partners



Partners



Hospitals, Associations, Foundations



FN MOTOL

University Hospital in
Motol in Prague



International Clinical Research
Center of St. Anne's University
Hospital in Brno



Czech National Institute
of Mental Health

a...

Česká
alzheimerovská
společnost

Czech Alzheimer Society



Alzheimer Nadační
fond

Institutions and Universities



Institute of Organic Chemistry and Biochemistry of Czech Academy of Sciences



J. Heyrovsky Institute of Physical Chemistry of Czech Academy of Sciences



NUDZ National Institute of Mental Health



RECETOX Research Center of Masaryk University in Brno



Czech Institute of Informatics, Robotics, and Cybernetics of Czech Technical University in Prague



Center for Economic Research and Graduate Education – Economics Institute of Charles University in Prague



Vrije Universiteit Amsterdam



German Research Center for Artificial Intelligence



Platinum Supporters



Gold Supporters



Silver Supporters



Biomatrix Partners

JUDr. Róbert Pružinský

Balance Sheet Overview

As of December 31, 2023, in whole thousands CZK
ID No.: 11883383

| Label a | ASSETS b | Status at the first day of the accounting period 1 | Status at the last day of the accounting period 2 |
|---------------------|-----------------------------------|---|--|
| B. | Short-term assets total | 585 | 1 467 |
| B.I. | Inventories total | 0 | 0 |
| B.II. | Receivables total | 381 | 704 |
| B.III. | Short-term financial assets total | 197 | 754 |
| B.IV. | Other assets total | 7 | 9 |
| ASSETS TOTAL | | 585 | 1 467 |

| Label a | PASSIVE b | Status at the first day of the accounting period 3 | Status at the last day of the accounting period 4 |
|----------------------|---------------------------------|---|--|
| A. | Own resources total | 569 | 1 294 |
| A.I. | Equity total | 666 | 1 548 |
| A.II. | Economic result total | -97 | -254 |
| B. | External resources total | 16 | 173 |
| B.III. | Short-term payables total | 16 | 173 |
| PASSIVE TOTAL | | 585 | 1 467 |

Profit and Loss Statements

For non-profit organizations in full, as of December 31, 2023

ID No.: 11883383

| Label a | COSTS b | Activity | | |
|--------------------|--|--------------|---------------|--------------|
| | | main 1 | economic 2 | total 3 |
| A.I. | Purchases and services consumed | 536 | 0 | 536 |
| A.II. | Changes in inventories of own operations and capitalisation | 0 | 0 | 0 |
| A.III. | Personal costs | 1.386 | 0 | 1.386 |
| A.IV. | Taxes and fees | 0 | 0 | 0 |
| A.V. | Other costs | 26 | 0 | 26 |
| A.VI. | Depreciation, assets sold, creation and use of provisions and valuation allowances | 0 | 0 | 0 |
| A.VII. | Contributions provided | 0 | 0 | 0 |
| A.VIII. | Income tax | 0 | 0 | 0 |
| COSTS TOTAL | | 1.948 | 0 | 1.948 |

| Label a | REVENUES b | Activity | | |
|-----------------------|--|--------------|-----------------|--------------|
| | | main 1 | economical 2 | total 3 |
| B.I. | Operational subsidies | 0 | 0 | 0 |
| B.II. | Contributions received | 1.672 | 0 | 1.672 |
| B.III. | Revenue from own performance and goods | 20 | 0 | 20 |
| B.IV. | Other revenues | 1.811 | 0 | 1.811 |
| B.V. | Revenues from the sale of assets | 0 | 0 | 0 |
| REVENUES TOTAL | | 1.694 | 0 | 1.694 |
| C. | Profit before tax | -254 | 0 | -254 |
| D. | Profit after tax | -254 | 0 | -254 |

Annex to 2023 Financial Statements

Accounting entity: International Neurodegenerative Disorders Research Center, z.ú.

ID No.: 11883383

Notes:

1. *Values are stated in thousands of CZK unless the entity decides otherwise in individual cases.*
2. *The information in the notes is based on accounting records and other documentation available to the entity*
3. *The notes to the financial statements are prepared in accordance with the Accounting Act No. 563/1991 Coll., as amended, and in particular with the implementing Decree No. 504/2002 Coll.*

General Information

Basic information about the accounting entity:

| | |
|---|--|
| Name of accounting entity | International Neurodegenerative Disorders Research Center, zapsaný ústav |
| Headquarters | Evropská 2758/11, 160 00 Praha 6, Czech republic |
| Legal form | Registered Institute |
| Purpose of the registered institute in its entirety as registered in the Commercial Register | Independent interdisciplinary research on neurodegenerative diseases and related aspects and support for the development of scholarship, research excellence and innovation in the field, including technology transfer |
| Date of establishment of the entity or date of commencement of operations | September 27, 2021 |

The individuals or legal entities that established the institute:

| Person | Date |
|---|----------------|
| MUDr. Martin Tolar, Ph.D. | Sept. 27, 2021 |
| prof. Ing. Vladimír Mařík, DrSc., dr. he. | Sept. 27, 2021 |
| MUDr. Pavel Hroboň, M.s. | Sept. 27, 2021 |
| PhDr., Mgr. Vít Dočkal, Ph.D. | Sept. 27, 2021 |
| Ing. Eva Troppová, Ph.D. | Sept. 27, 2021 |

Names and surnames of the statutory or supervisory authorities or their members at the balance sheet date:

| Person | Funciton |
|----------------------------------|-----------------------|
| Mgr. Lenka Uldrijanová | ředitel |
| MUDr. Martin Tolar, Ph.D. | předseda správní rady |
| prof. Ing. Vladimír Mařík, DrSc. | člen správní rady |
| MUDr. Pavel Hroboň, M.S. | člen správní rady |
| Ing. Jaroslav Lískovec | člen správní rady |
| Ing. Eva Troppová, PhD. | člen správní rady |
| PhDr., Mgr. Vít Dočkal, Ph.D. | člen správní rady |
| Prof. RNDr. Václav Snášel, CSc. | člen správní rady |
| Cezary Seweryn Kaliszyk | člen správní rady |
| Milan Kulhánek | člen správní rady |
| John Hey, Ph.D. | člen správní rady |

A description of the entity's organizational structure and its significant changes during the accounting period: The Institute was founded and established on September 27, 2021, by registration in the Commercial Register. The purpose of the Institute is to carry out publicly beneficial activities in the field of independent interdisciplinary research in the field of neurodegenerative diseases and to support the development of education, research excellence, and innovation in the field, including technology transfer.

INFORMATION ON ACCOUNTING METHODS, GENERAL ACCOUNTING PRINCIPLES AND VALUATION TECHNIQUES:

Method of valuation of *purchased inventories*: 0

Method of valuation of *own-produced inventories*: not applicable

Valuation method for internally generated *intangible fixed assets*: not applicable

Valuation method for *securities and shares*, derivatives, and the part of assets and liabilities secured by derivatives: not applicable

Method of determining the *replacement cost of assets measured at that cost* and acquired during the accounting period: not applicable

The types of *acquisition-related costs* included in the cost of inventories purchased and the types of costs included in the cost of *inventories* determined at cost level: not applicable

Significant changes in *valuation, depreciation, and accounting policies* -there were no changes in valuation methods or accounting policies during the financial year

Method of determining the *valuation allowance*, indicating the source of information for determining the amount of the valuation allowance: not applicable

The method of preparing *depreciation schedules for fixed assets* (accounted for in accounting class 0) and the depreciation methods used in determining depreciation: not applicable

Method applied in the *conversion of foreign currency data into Czech currency* (application of exchange rates announced by the CNB as current or fixed rates with indication of the dates of their changes): the Institute uses the actual exchange rates announced by the CNB at the date of the accounting case

Method of determining the *fair value of assets and liabilities* measured at fair value in accordance with the law: not applicable

SUPPLEMENTARY INFORMATION TO THE BALANCE SHEET AND PROFIT AND LOSS ACCOUNT:

Schedule of tangible assets encumbered by a lien or, in the case of immovable property, an easement, indicating the nature and form of the security: not applicable

The aggregate amount of *overdue receivables*; data are taken from the relevant analytical accounts: 500

Aggregate amount of *overdue liabilities*; data are taken from the relevant analytical accounts: 0

Liabilities covered by a pledge, indicating the nature and form of the collateral in the event of default: not applicable

Liabilities (monetary and non-monetary) *not accounted for in the accounts and not shown on the balance sheet*, e.g. guarantees received on behalf of another enterprise in respect of a bank loan or a bill of exchange, unless they have been booked as cash reserves: 0

Equity holdings: 0

Result: the financial results of the main activity were closed with a loss of CZK 254,000.

Data on employees: the institute employs 1 employee on a work performance agreement,

1 employee on a main employment contract.

Taxes: in accordance with the Income Tax Act (Section 18a, paragraph 5 of the Income Tax Act) as amended, and the profit and loss account for the financial year 2023, the entity is not required to pay income tax.

Foundation contribution from NADACE GCP: the Institute was granted a foundation contribution according to the contract on the foundation contribution from NADACE GCP No. 2023/14 (see table Foundation contributions below) for the activities of the registered institute and for the support of research and prevention of neurodegenerative diseases. This is a contribution that is subject to the accounting of actual expenditures within 14 calendar months. 23 459,43 CZK remains to be drawn until the next period (476 540,57 CZK was used in 2023).

Donations: the entity received the following donations during the financial year:

| Entity | ID No. | Amount |
|--------------------------------|------------|---------------------------|
| Farma Pálava | 29187125 | 3 600 CZK |
| Nadace Progresus spolu | 14166682 | 100 000 CZK |
| In Investements, a.s. | 030002578 | 30 000 CZK |
| JUDr. Róbert Pružinský | 71470042 | 50 000 CZK |
| Just Investements s.r.o. | 03697045 | 20 000 CZK |
| Biometrix Partners Ltd. | 46-3130281 | 50 922,75 CZK (2 150 EUR) |
| Equifarm, s.r.o. | 28340132 | 50 000 CZK |
| Výtahy Brno, s.r.o. | 255 85 819 | 50 000 CZK |
| Mgr., Bc. Milan Konečný | 881 44 534 | 50 000 CZK |
| MUDr. Martin Borský, s.r.o. | 241 50 037 | 100 000 CZK |
| ACCACE Outsourcing, s.r.o. | 289 50 321 | 25 000 CZK |
| MK Market, spol. s r.o. | 624 12 051 | 10 000,00 CZK |
| Marcela Strnadová | | 1 200,00 CZK |
| Brněnské komunikace a.s. | 607 33 098 | 50 000,00 CZK |
| Ing. Ivan Točev, MBA | | 5 000,00 CZK |
| Progressus Holding Core s.r.o. | 139 95 758 | 100 000,00 CZK |
| EPG Varyada Karlovy Vary | 040 84 047 | 300 000,00 CZK |
| MUDr. Martin Borský s.r.o. | 241 50 037 | 50 000,00 CZK |

Foundation Contributions:

| Entity | ID No. | Amount |
|--|------------|----------------|
| Martin Tolar, MD, PhD gift, award Alzheimer nadační fond | 248 28 360 | 100 000,00 CZK |
| Nadační fond Ludmila | 275 65 530 | 50 000,00 CZK |
| Nadace GCP | 290 18 200 | 500 000,00 CZK |

Deposits of Statutory Partners:

| Entity | ID No. | Amount |
|--------------------------|---------------|---------------|
| VUP Medical, a.s. | 155 46 578 | 55 000 CZK |
| IOCB TECH s.r.o. | 289 34 024 | 55 000 CZK |
| CertiCon, a.s. | 258 83 341 | 200 000 CZK |
| VŠB - Tech. Un. Ostrava | 619 89 100 | 20 000 CZK |
| TRIX Connections, s.r.o. | 284 17 976 | 50 000 CZK |
| Alzheon, Inc. | | 500 000 CZK |
| Deloitte Advisory s.r.o. | 275 82 167 | 100 000 CZK |