



UMF

IULIU HAȚIEGANU  
UNIVERSITY OF  
MEDICINE AND PHARMACY  
CLUJ-NAPOCA  
ROMANIA



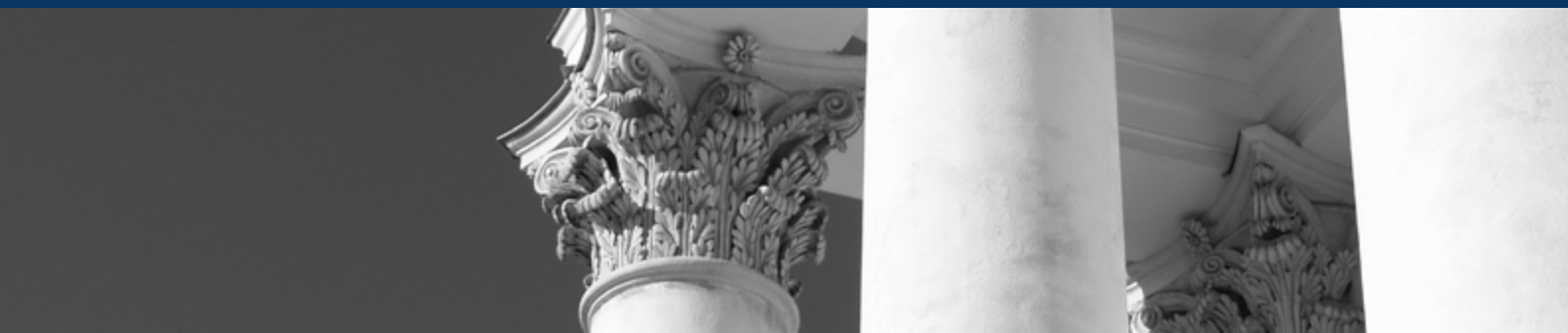
"IULIU HAȚIEGANU" UNIVERSITY  
OF MEDICINE AND PHARMACY

# DOCTORAL SCHOOL NEUROSCIENCE PROGRAM

---

2021-2022 | M 2.1.4

15 MARCH, 2022  
VIRTUAL MEETING





# PhD NEUROSCIENCE PROGRAM COORDINATOR



## Dafin F. Mureșanu

President of the European Federation of  
NeuroRehabilitation Societies (EFNR)

Chairman of EAN Communication and Liaison  
Committee

Co-Chair EAN Scientific Panel Neurotraumatology

Past President of the Romanian Society of Neurology

Professor of Neurology, Chairman Department of  
Neurosciences "Iuliu Hatieganu" University of Medicine  
and Pharmacy, Cluj-Napoca, Romania

# INTERNATIONAL GUEST LECTURER



## Marc Fisher

President World Stroke Organization

Professor of Neurology, Harvard Medical School

Emeritus Professor of Neurology, University of  
Massachusetts Medical School, USA

# PhD NEUROSCIENCE PROGRAM FACULTY 2020-2021

Claudio Bassetti / Switzerland

Ettore Beghi / Italy

Natan Bornstein / Israel

Michael Brainin / Austria

Anca Dana Buzoianu / Romania

Michael Chopp / USA

László Csiba / Hungary

Marc Fisher / USA

Urs Fischer / Switzerland

Ioan Ștefan Florian / Romania

Antonio Federico / Italy

Francesca Federico / Italy

Max Hiltz / Germany

Wolf Dieter Heiss / Germany

Tudor Jovin / USA

Maurizio Leone / Italy

Dafin F. Mureșanu / Romania

Milija Mijajlovic / Serbia

Lăcrămioara Perju-Dumbravă / Romania

Maura Pugliatti / Italy

Johannes Vester / Germany

# ORGANIZER



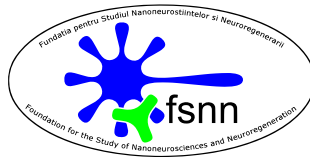
**UMF**  
IULIU HAȚIEGANU  
UNIVERSITY OF  
MEDICINE AND PHARMACY  
CLUJ-NAPOCA  
ROMANIA

University of Medicine and Pharmacy  
"Iuliu Hatieganu", Cluj Napoca, Romania  
[www.umfcluj.ro](http://www.umfcluj.ro)

# ACADEMIC PARTNERS



[www.donau-uni.ac.at](http://www.donau-uni.ac.at)



FUNDATIA JURNALULUI  
**Journal of Medicine  
and Life**



TEL AVIV UNIVERSITY

[www.tau.ac.il](http://www.tau.ac.il)



Institute for Neurological  
Research and Diagnostic

[www.roneuro.ro](http://www.roneuro.ro)



[www.acad.ro](http://www.acad.ro)



## **COURSE PROGRAM**

# COURSE PROGRAM

**15 MARCH, 2022**

VIRTUAL MEETING

---

12:00 – 12:50

Marc Fisher/ USA

Acute stroke therapy: current status and future directions

12:50 – 13:15

Marc Fisher/ USA

Cryptogenic stroke

13:15 – 13:45

Marc Fisher/ USA

Identifying and implementing translational stroke research

13:45 – 14:15

Marc Fisher/ USA

Secondary Stroke Prevention



## **INTERNATIONAL GUEST LECTURER**





# MARC FISHER

USA

---

Dr. Fisher has had a long career as a translational and clinical researcher in the stroke field. He was at the University of Massachusetts Medical School for 36 years, retiring in 2014. While there, he led a stroke modeling lab for 25 years that focused on using MRI technology to evaluate the ischemic penumbra and the effects of many types of therapies on the evolution of ischemic injury. He trained more than 25 research fellows from around the world, many of whom currently hold prestigious positions. He participated in many clinical trials as a principal investigator or steering committee member. Dr. Fisher was also an active clinician and teacher. He has published more than 330 peer reviewed papers with an h-index of 80. Currently, Dr. Fisher is a part time member of the neurology faculty at Beth Israel Deaconess Medical Center in Boston and is a Professor of Neurology (part time) at Harvard Medical School. He continues to see patients and teach residents and stroke fellows. He was the Editor-in-Chief of Stroke from 2010-2020 and continues to serve Stroke as a senior consulting editor. He will assume the presidency of the WSO in November 2020.



# DAFIN F. MUREȘANU

ROMANIA

---

Professor of Neurology, Senior Neurologist, Chairman of the Neurosciences Department, Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, President of the European Federation of Neurorehabilitation Societies (EFNR), Chairman Communication Committee of the European Academy of Neurology (EAN), Past President of the Romanian Society of Neurology, President of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), Chairman "RoNeuro" Institute for Neurological Research and Diagnostic, Corresponding Member of the Romanian Academy, Member of the Academy of Medical Sciences, Romania and secretary of its Cluj Branch. He is member of 17 scientific international societies (being Member of the American Neurological Association (ANA) - Fellow of ANA (FANA) since 2012) and 10 national ones, being part of the executive board of most of these societies. Professor Dafin F. Muresanu is also a specialist in Leadership and Management of Research and Health Care Systems (specialization in "Management and Leadership, Arthur Anderson Institute, Illinois, USA, 1998"; "MBA – Master of Business Administration - Health Care Systems Management, The Danube University - Krems, Austria, 2003"). He has performed valuable scientific research in high interest fields such as: neurobiology of central nervous system (CNS) lesion mechanisms; neurobiology of neuroprotection and neuroregeneration of CNS; the role of the Blood-brain barrier (BBB) in CNS diseases; developing comorbidities in animal models to be used in testing therapeutic paradigms; nanoparticles neurotoxicity upon CNS; the role of nanoparticles in enhancing the transportation of pharmacological therapeutic agents through the BBB; cerebral vascular diseases; neurodegenerative pathology; traumatic brain injury; neurorehabilitation of the central and peripheral nervous system; clarifying and thoroughgoing study on the classic concepts of Neurotrophicity, Neuroprotection, Neuroplasticity and Neurogenesis by bringing up the Endogenous Defense Activity (EDA) concept, as a continuous nonlinear process, that integrates the four aforementioned concepts, in a biological inseparable manner.

Professor Dafin F. Muresanu is coordinator in international educational programs of European Master (i.e. European Master in Stroke Medicine, University of Krems), organizer and co-organizer of many educational projects: European and international schools and courses (International School of Neurology, European Stroke Organisation Summer School, Danubian Neurological Society Teaching Courses, Seminars - Department of Neurosciences, European Teaching Courses on Neurorehabilitation) and scientific events: congresses, conferences, symposia (International Congresses of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), International Association of Neurorestoratology (IANR) & Global College for Neuroprotection and Neuroregeneration (GCNN) Conferences, Vascular Dementia Congresses (VaD), World Congresses on Controversies in Neurology (CONy), Danube Society Neurology Congresses, World Academy for Multidisciplinary Neurotraumatology (AMN) Congresses, Congresses of European Society for Clinical Neuropharmacology, European Congresses of Neurorehabilitation). His activity includes involvement in many national and international clinical studies and research projects, over 500 scientific participations as "invited speaker" in national and international scientific events, a significant portfolio of scientific articles (260 papers indexed on Web of Science-ISI, H-index: 25) as well as contributions in monographs and books published by prestigious international publishing houses. Prof. Dr. Dafin F. Muresanu has been honoured with: „Dimitrie Cantemir” Medal of the Academy of The Republic of Moldova in 2018, Ana Aslan Award 2018 - "Performance in the study of active aging and neuroscience", for the contribution to the development of Romanian medicine, National Order "Faithful Service" awarded by the President of Romania in 2017; "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca, Faculty of Medicine, the "Iuliu Hatieganu Great Award 2016" for the best educational project in the last five years; the Academy of Romanian Scientists, "Carol Davila Award for Medical Sciences / 2011", for the contribution to the Neurosurgery book "Tratat de Neurochirurgie" (vol.2), Editura Medicala, Bucuresti, 2011; the Faculty of Medicine, "Iuliu Hatieganu" University of Medicine and Pharmacy Cluj-Napoca "Octavian Fodor Award" for the best scientific activity of the year 2010 and the 2009 Romanian Academy "Gheorghe Marinescu Award" for advanced contributions in Neuroprotection and Neuroplasticity.



## **ABSTRACTS**

## ACUTE STROKE THERAPY: CURRENT STATUS AND FUTURE DIRECTIONS

---

### MARC FISHER

Professor of Neurology, Harvard Medical School  
Emeritus Professor of Neurology, University of Massachusetts Medical School, USA

The field of acute stroke therapy has seen exciting advances recently. In 2015, five thrombectomy trials were published that clearly demonstrated the efficacy of this treatment in carefully selected patients in patients with proximal, large vessel occlusion when treated within 6–8 hours of stroke onset. The key features of these trials were the substantial rate of recanalization with the use of stent retrievers, the rapidity of the procedure in most cases and the inclusion of patients with a small/moderate sized ischemic core as measured by CT ASPECTS or CT perfusion. More recently, thrombectomy was shown to be highly effective in patients up to 24-hours after stroke onset in the DAWN and DEFUSE-3 trials. In both trials, advanced imaging with CT perfusion or diffusion MRI was used to select patients with small to medium sized ischemic cores. Similar selection criteria will need to be utilized in daily clinical practice to replicate the benefits of the early and later time window thrombectomy trials.

Going forward, many additional thrombectomy trials will be needed to evaluate patients not included in the initial trials, such as those with a more distal intracranial occlusion, lower baseline NIHSS score and larger ischemic core. Additionally, trials to evaluate neuroprotection combined with thrombectomy can be envisioned. Three types of combination trials can be anticipated. The first would be to use very early initiation of neuroprotection to slow down the evolution of the ischemic core while patients are being transferred from a smaller outlying hospital to a thrombectomy center or in patients who will have a long transport time from home to the thrombectomy center. The second type of neuroprotection trial with thrombectomy would be to directly or systemically infuse a drug targeting reperfusion injury after reperfusion has been established by thrombectomy. A third combination would be to use a drug or gas that enhances collateral blood flow prior to thrombectomy to favorably enhance collateral blood flow before thrombectomy to keep the ischemic core as small as possible.

## CRYPTOGENIC STROKE

---

### MARC FISHER

Professor of Neurology, Harvard Medical School  
Emeritus Professor of Neurology, University of Massachusetts Medical School, USA

Cryptogenic stroke is defined as a stroke of uncertain source despite an adequate search for the potential cause. The percentage of ischemic strokes that are cryptogenic vary among case series but contemporary studies suggest that approximately 25–30% of ischemic strokes do not have a determined cause. A recently defined group of cryptogenic stroke patients is those who are likely to have a cardioembolic stroke and they have been called embolic stroke of undetermined source (ESUS). The evaluation of ischemic stroke patients should include an extensive array of tests such as brain and vascular imaging, blood tests, an echocardiogram and monitoring of the cardiac rhythm. Since many cryptogenic strokes are thought to fall into the ESUS category, a more extensive cardiac evaluation should be considered. This would include transesophageal echocardiography and prolonged ECG monitoring in selected patients. The risk for recurrence of cryptogenic stroke is similar to patients with a determined source for their stroke. Secondary prevention should include antiplatelet therapy and risk factor modification. For ESUS patients, it is tempting to consider anticoagulation but current recommendations do not support this approach. Several ongoing clinical trials are comparing direct oral anticoagulants to antiplatelet therapy and the results should be available in a few years.

## IDENTIFYING AND IMPLEMENTING TRANSLATIONAL STROKE RESEARCH

---

### MARC FISHER

Professor of Neurology, Harvard Medical School

Emeritus Professor of Neurology, University of Massachusetts Medical School, USA

Translational stroke research represents the interface between basic science advances in the cerebrovascular field and determining if these advances are helpful for the diagnosis and treatment of stroke patients. The traditional approach to translational stroke research has been to identify basic research advances that may potentially be clinically useful such as the discovery of a novel pathway of ischemic brain injury that can ameliorated by a drug targeted towards this mechanism of injury. At the translational stage this new drug will be tested in appropriate animal models and if it is effective future clinical trials will be organized based upon the stroke modeling data. Another approach to translational research is reverse translation that occurs when a clinical advance triggers basic science research studies such as understanding how a novel therapy may improve stroke outcome or determining how an imaging modality can distinguish between infarction and the ischemic penumbra. A third approach to translational research is lateral translation that is characterized by basic research to improve upon a currently effective therapy. An example of this approach would be the development of better thrombolytic agents than tPA that have enhanced clot lysis effects and a better safety profile.

## SECONDARY STROKE PREVENTION

---

### MARC FISHER

Professor of Neurology, Harvard Medical School

Emeritus Professor of Neurology, University of Massachusetts Medical School, USA

After an initial ischemic stroke an important aspect of patient care is to reduce the risk of subsequent strokes. Good control of vascular risk factors such as hypertension, diabetes and hypercholesterolemia are key components of the effort to reduce recurrent stroke risk. For patients with large or small vessel disease as the mechanism for their stroke, antiplatelet therapy should also be employed. Either aspirin or clopidogrel can be prescribed and it is unclear if one drug reduces subsequent stroke risk more than the other. The combination of aspirin and extended release dipyridamole is another option that in the large PROFESS trial reduced the risk of subsequent ischemic stroke similarly to clopidogrel but with more side effects such as headache and dizziness. The combination of aspirin and clopidogrel should be considered for 3 months in patients with intracranial large vessel stroke. For patients with stroke secondary to atrial fibrillation anticoagulation is recommended. Warfarin was the only option for many years, but four newer oral anticoagulants are now available. I recommend that dabigatran or apixaban be considered for some atrial fibrillation related stroke patients because both have a lower risk of intracranial hemorrhage than warfarin and dabigatran also significantly reduced the risk of subsequent ischemic stroke as compared to warfarin. Apixaban was at least as good as warfarin in reducing ischemic stroke risk as compared to warfarin and had a substantially lower risk of all types of major bleeding side effects. The data are less compelling for rivaroxaban and edoxaban so I do not recommend them.

