

# CURRICULUM VITAE

## Adam Andras Institoris M.D., Ph.D.

### I. PERSONAL INFORMATION

Address:

Hotchkiss Brain Institute  
Department of Physiology and Pharmacology  
Cumming School of Medicine  
University of Calgary  
Room 1B40A, Building HRIC  
3330 Hospital Dr NW  
Calgary, AB, Canada  
T2N 4N1  
Email: [instiadam@gmail.com](mailto:instiadam@gmail.com)  
Cell phone: (587)-439-9111

Nationality:

Canadian, Hungarian

Date of Birth:

02.17. 1982

Marital Status:

Married

Children:

2

Language skills:

1. Hungarian: native language.
2. English: highly proficient:  
-Hungarian State Examination (certificate No. 042699/B/99 & 033897/A/99).  
-IELTS 2015 Score: 7.5
3. German: basic level.

### II. EDUCATION

2008-2010

Wake Forest University, Department of Physiology and Pharmacology, Winston-Salem, NC, **Postdoctoral Fellow**

2006-2008

University of Szeged, Szeged, Hungary  
**Ph.D. in Medical Sciences**, January 2009

2000-2006

University of Szeged, Szeged, Hungary  
**M.D.**, September 2006

### III. SCIENTIFIC EMPLOYMENT/ ACADEMIC APPOINTMENTS

2014-Present

**Research Analyst, Hotchkiss Brain Institute**, Department of Physiology and Pharmacology, Cumming School of Medicine, University of Calgary

2010- 2013

**Research Associate/Assistant Lecturer**, Department of Physiology, University of Szeged, Szeged, Hungary

2008-2010

**Postdoctoral Fellow**, Wake Forest University Health Sciences, Department of Physiology and Pharmacology, Winston-Salem, NC

## IV. RESEARCH AND SCHOLARSHIP

### Research grants and Contracts

Title:	"The impact of age on impaired cerebrovascular reactivity after cortical spreading depolarization"
Agency:	<b>Hungarian Microcirculation Society</b> , PI: Bari Co-PI: Institoris
Duration:	01/03/2013 - 12/31/2013. 1000 USD
Title:	"Effect of Cyclooxygenase inhibitors on ischemia-induced neurogenesis in the rat hippocampus"
Agency:	<b>Richter Gedeon Pharmaceutical Company</b> , PI: Farkas, Co-Investigator: Institoris
Duration:	2005-2007. 7000 USD

## V. PUBLICATIONS

*\*mentored students*

### 1. Original publications in peer-reviewed journals

1. **Institoris, A.**, Vandal, M., Peringod, G., Tran, C.H., Yu, X., Molina, L., Breitener, C., Khakh, B., Gordon, G.R. Delayed astrocyte Ca<sup>2+</sup> transients amplify sustained functional hyperemia in the neocortex. In Preparation.
2. Shin, S.<sup>#</sup>, **Institoris, A.**<sup>#</sup>, Gorzo, K., Weiling, N., MacVicar B.A., Gordon G.R., Modest fluctuations in external potassium controls astrocyte steady-state free calcium and cerebral arteriole tone through a bicarbonate and KCC dependent mechanism. In Preparation.
3. Haidey, J.N., **Institoris, A.**, Peringod, G., and Gordon, G.R. (2020) Autonomous astrocyte endfoot-arteriole communication controls multiple arteriole tone states and contributes to cerebral vasomotion in vivo. Under revision.
4. **Institoris, A.**, Yu, X., Breitener, C., Molina, L., Khakh, B.S., Gordon G.R. Local excitatory synapses drive a first responder neurovascular coupling pathway bypassing astrocytes and vascular conduction. Under Revision.
5. Balasubramanian, P., Tamas Kiss, T., Tarantini, S., Nyúl-Tóth, Á., Ahire, C., Yabluchanskiy, A., Csipo, T., Lipecz, A., Tabak, A., **Institoris, A.**, Csiszar, A., Ungvari, Z., (2020) Synergistic Effects of Aging and Obesity on Cognitive Impairment: a Microvascular Perspective. Under Revision.
6. **Institoris, A.**, Murphy-Royal, C., Tarantini, S., Yabluchanskiy, A., Haydei, J., Csiszar, A., Ungvari, Z., Gordon, G.R. (2020) Whole brain irradiation in mice causes long-term impairment in astrocytic calcium signaling but preserves astrocyte-astrocyte coupling. GeroScience. doi: 10.1007/s11357-020-00289-8.
7. Yao, J.<sup>#</sup>, Sun, B. <sup>#</sup>, **Institoris, A.**, Zhan X, Guo, W., Song, Z., Liu, Y., Hiess, F., Wang, R., Keurs, H., Back, T.G., Fill, M., Turner R.W., Gordon, G.R., and Chen, S. R. W. (2020) Limiting RyR2 Open Time Prevents Alzheimer-related Neuronal Hyperactivity and Memory Loss Irrespective of  $\beta$ -amyloid Accumulation. Cell Reports. 2020 Sep; 32(12), doi:108169.
8. Murphy-Royal, C., Johnston, A.D., Boyce, A.K., Diaz-Castro, B., **Institoris, A.**, Peringod, G., Zhang, O., Stout, R.F., Spray, D.C., Thompson, R.J., Khakh, B.S., Bains, J.S. <sup>#</sup>, Gordon G.R. <sup>#</sup>, (2020) Stress gates an astrocytic energy reservoir to impair synaptic plasticity. Nat Commun. 2020 Apr 24;11(1):2014. doi: 10.1038/s41467-020-15778-9.
9. **Institoris, A.**, Rosenegger, D.G. and Gordon, G.R. (2015) Arteriole dilation to synaptic activation that is sub-threshold to astrocyte endfoot Ca<sup>2+</sup> transients. J Cerebral Blood Flow Metab. 2015 Sep;35(9):1411-5.
10. Clark, D., **Institoris, A.**, \*Kozák, G., Bere, Z., Tuor, U., Farkas, E., Bari, F. (2014) Impact of aging on spreading depolarizations induced by focal brain ischemia in rats. Neurobiol Aging. 2014 Dec;35(12):2803-11. doi: 10.1016/j.neurobiolaging.2014.06.013.
11. \*Wappler, E.A., **Institoris, A.**, Dutta, S., Katakam, P.V., Busija, D.W. (2013) Mitochondrial Dynamics Associated with Oxygen-Glucose Deprivation in Rat Primary Neuronal Cultures. PLoS One. 2013 May 2;8(5):e63206. doi: 10.1371.

12. Katakam, P.V., Wappler, E.A., Katz, P.S., Rutkai, I., **Institoris, A.**, Domoki, F., Gáspár, T., Grovenburg, S.M., Snipes, J.A., Busija, D.W. (2013) Depolarization of mitochondria in endothelial cells promotes cerebral artery vasodilation by activation of nitric oxide synthase. *Arterioscler Thromb Vasc Biol.* 2013 Apr;33(4):752-9.
  13. Clark, D.L., Tuor, U., Thompson R., **Institoris, A.**, Kulynych, A., Zang, X., Kinniburgh, D.W., Bari, F., Busija, D.W., Barber P.A. (2012) Pre-treatment with resveratrol reduces ischemic injury following recurrent stroke and protects endothelial cells following oxygen-glucose deprivation. *PLoS One.* 2012;7(10):e47792.
  14. **Institoris, A.**, Lenti, L., Domoki, F., Wappler, E., Gáspár, T., Katakam, P.V., Bari, F., Busija, D.W. (2012) Cortical blood flow responses of insulin resistant rats are preserved to physiological and pathological stimuli. *Microcirculation.* 2012 Nov;19(8):749-56.
  15. Farkas, E., Obrenovitch, T.P., **Institoris, A.**, Bari, F. (2011) Effects of early aging and cerebral hypoperfusion on spreading depression in rats. *Neurobiol Aging.* 2011 Sept; 32(9): 1707-15.
  16. **Institoris, A.**, Snipes, J.A., Katakam, P.V., Domoki, F., Boda, K., Bari, F., Busija, D.W. (2011) Impaired vascular responses of insulin resistant rats after mild subarachnoid hemorrhage. *Am J Physiol Heart Circ Physiol.* 2011 Mar 18. 300(6):H2080-7.
  17. Mracskó, E., Hugyecz, M., **Institoris, A.**, Farkas, E., Bari, F. (2010) Changes in pro-oxidant and antioxidant enzyme levels during cerebral hypoperfusion in rats. *Brain Res.* 2010 Mar 19;1321:13-9.
  18. Katakam, P.V., Domoki, F., Lenti, L., Gaspar, T., **Institoris, A.**, Snipes, A., Busija, D.W., (2009) Cerebrovascular responses to insulin in rats. *J. Cereb. Blood Flow Metab.* 2009 Dec;29(12):1955-67.
  19. Gáspár, T., Domoki, F., Lenti, L., **Institoris, Á.**, Snipes, J.A., Bari, F., Busija, D.W. (2009) Neuroprotective effect of adenoviral catalase gene transfer in cortical neuronal cultures. *Brain Res.* 1270:1-9.
  20. **Institoris, A.**, Farkas, E., \*Berczi, S., Sule, Z., Bari, F. (2007) Effects of cyclooxygenase (COX) inhibition on memory impairment and hippocampal damage in the early period of cerebral hypoperfusion in rats. *Eur J Pharmacol.* 574(1):29-38.
  21. Farkas, E., **Institoris, Á.**, Domoki, F., Mihály, A., Bari, F. (2006) The effect of pre- and post-treatment with diazoxide on the early phase of chronic cerebral hypoperfusion in the rat. *Brain Res.* 1087, 168-174.
  22. Farkas, E., Domoki, F., **Institoris, Á.**, Annaházi, A., Busija, D.W., Bari, F. (2006) Neuroprotection by diazoxide in animal models for cerebrovascular disorders. *Vasc. Dis. Prev.* 3, 253-263.
  23. Farkas, E., Annaházi, A., **Institoris, Á.**, Mihály, A., Luiten, P.G.M., Bari, F. (2005) Diazoxide and dimethyl sulfoxide alleviate experimental cerebral hypoperfusion-induced white matter injury in the rat brain. *Neurosci. Lett.* 373(3), 195-199.
  24. Farkas, E., **Institoris, Á.**, Domoki, F., Mihály, A., Luiten, P.G.M. and Bari, F. (2004) Diazoxide and dimethyl sulfoxide prevent cerebral hypoperfusion-related learning dysfunction and brain damage after carotid artery occlusion. *Brain Res.* 1008(2), 250-258.
- (\* = mentee, # = equal contributor)

## 2. Book chapters

1. **Institoris, A.**, Domoki, F., Busija, D.W., Bari, F., (2008). The role of cyclooxygenase (COX)-2 in ischemic brain injury. *Recent Advances and New Strategies in Stroke Research*, 2008: 135-150. (Ed.: F. Erdo).

## 3. Abstracts Presented at Scientific Meetings

1. **Institoris, A.**, Tran, C.H., Rosenegger, D., Peringod, G., Gordon, G.R. Neurons and astrocytes control local brain blood flow on distinct timescales. 13th Annual Canadian Neuroscience Meeting - May 22 – 26 2019 Toronto. Poster presentation.
2. Peringod, G., Tran, C.H., **Institoris, A.**, Gordon, G.R., Spatiotemporal dynamics of vascular Ca<sup>2+</sup> and tissue oxygenation in the awake mouse brain. 11th World Congress for Microcirculation. Vancouver, Canada. 2018. Talk.
3. **Institoris, A.**, Tran, C.H., Rosenegger, D., Gordon, G.R., Neurons and astrocytes control local brain blood flow on distinct timescales. *Glia in Health and Disease*, Cold Spring Harbour Laboratory Meeting, 2018. Poster presentation.
4. **Institoris, A.**, Rosenegger, D.R.G., Gordon, G.R., Neurovascular coupling independent of astrocyte Ca<sup>2+</sup> transients. XXVIIth International Symposium on Cerebral Blood Flow and Metabolism, and Function. Berlin, Germany. 2017. Poster presentation.

5. **Institoris, A.**, Rosenegger, D.R.G., Gordon, G.R., Mediators of astrocyte-independent neurovascular coupling. Society for Neuroscience 45th Annual Meeting. San Diego, 2016. Poster presentation.
6. **Institoris, A.**, Gordon, G.R., Mediators of astrocyte-independent neurovascular coupling. 10th Annual Canadian Neuroscience Meeting - May 29 - June 1 2016 Toronto. Poster presentation.
7. **Institoris, A.**, Gordon, G.R., Modulators of the activity threshold for evoked astrocyte Ca<sup>2+</sup> signals during neurovascular coupling. Society for Neuroscience 45th Annual Meeting. Chicago, 2015. Poster presentation.
8. **Institoris, A.**, Rosenegger, D.R.G., Gordon, G.R., Arteriole dilation to synaptic activation that is sub-threshold to astrocyte endfoot Ca<sup>2+</sup> transients. XXVIth International Symposium on Cerebral Blood Flow and Metabolism, and Function. Vancouver, Canada. 2015. Talk.
9. **Institoris, A.**, Rosenegger, D., Gordon, G.R. Moderate neuronal stimulation induces arteriolar dilation independent of astrocyte endfeet. Society for Neuroscience 44th Annual Meeting. Washington D.C., USA, 2014. Poster presentation.
10. **Institoris, A.**, Rosenegger, D., Gordon, G.R. Astrocyte endfeet are not involved in moderate neuronal stimulation induced arteriolar dilation. 11th International Symposium on Resistance Arteries. Banff, Canada, 2014. Poster presentation.
11. **Institoris, A.**, Clark, D., Bere, Zs. Farkas, E., Tuor U.I., Bari, F., (2013) The impact of aging on peri-infarct depolarizations induced by focal cerebral ischemia in the rat brain. XXVIth International Symposium on Cerebral Blood Flow and Metabolism, and Function. Shanghai, China, 2013. Poster presentation.
12. Clark, D.L., Thompson R., **Institoris, Á.**, Kulynych, A., Busija, D., Tuor, U. (2011) Pre-treatment with resveratrol reduces ischemic injury following recurrent stroke and protects endothelial cells following oxygen-glucose deprivation. XXVth International Symposium on Cerebral Blood Flow and Metabolism, and Function, 2011. Poster presentation.
13. **Institoris, A.**, Snipes, J., Katakam, P.V., Domoki, F., Bari, F., Busija, D.W.(2011) Impaired vascular responses of insulin resistant rats after mild subarachnoid hemorrhage. XXVth International Symposium on Cerebral Blood Flow and Metabolism, and Function. Barcelona, Spain. May 25-28. 2011. Poster presentation.
14. Lelkes Z, Bodosi B, **Institoris, A.**, Mracsko, E., Hugyecz, M., Bari, F. (2010) Effects of carotid occlusion on sleep-wake activity in rats. 20th Congress of the European Sleep Research Society, Lisbon, Portugal, 2010. Poster presentation. J.Sleep Research 19(Suppl1): P779, 2010.
15. Lelkes, Z., Bodosi, B., **Institőris, Á.**, Mracskó, É., Hugyecz, M., Bari, F. (2010) Effects of carotid occlusion on sleep-wake activity in rats. IBRO International Workshop 2010, Pécs, Hungary, 2010. Front. Neurosci. doi: 10.3389/conf.fnins.2010.10.00042. Poster presentation.
16. Katakam, P.V., **Institoris, A.**, Domoki, F., Gaspar, T., Snipes, J.A., Busija, D.W.(2010) Microvascular endothelial mitochondria and nitric oxide generation. Experimental Biology 2010, Anaheim, California, USA, 24-28 April, 2010. FASEB J. 24: 777.8. Poster presentation.
17. **Institoris, A.**, Domoki, F., Bari, F., Busija, D.W.(2010) Cerebrovascular reactivity after experimental subarachnoid hemorrhage (SAH) in insulin resistant (IR) rats. Experimental Biology 2010, Anaheim, California, USA, 24-28 April, 2010. FASEB J. 24: 978.7. Poster presentation.
18. **Institoris, A.**, Gaspar, T., Katakam, P.V., Domoki, F., Bari, F., Busija, D.W.(2010) Pre- and postconditioning with the mitochondrial ATP-sensitive potassium (mitoKATP) channel opener BMS-191095 protects cerebral endothelial cells against oxygen glucose deprivation (OGD) Experimental Biology 2010, Anaheim, California, USA, 2010. FASEB J. 24: 598.14. Poster presentation.
19. **Institoris, A.**, Mracskó, E., Hugyecz, M., Mátyás, A., Süle, Z., Farkas, E., Bari, F. (2009) Changes in Nitric Oxide Synthase (NOS), Cyclooxygenase-2 (COX-2) and Superoxide Dismutase (SOD) Protein Levels in Chronic Cerebral Hypoperfusion in Rats. XXIVth International Symposium on Cerebral Blood Flow and Metabolism. 2009, Chicago. Poster presentation.
20. **Institoris, A.**, Lenti, L., Gaspar, T., Domoki, F., Bari, F., Busija, D.W. Characterization of cortical blood flow (CoBF) responses with laser Doppler flowmetry in Zucker obese and Zucker lean rats. XXIVth International Symposium on Cerebral Blood Flow and Metabolism,. 2009. Chicago, USA. Poster presentation.
21. **Institoris, A.**, Lenti, L., Gaspar, T., Domoki, F., Bari, F., Busija, D.W. Effects of insulin resistance on cortical blood flow responses to physiological and pathological stimuli in Zucker obese and lean rats. Experimental Biology, 2009. New Orleans, LA, USA. Talk.
22. **Institőris, Á.**, Mracskó, É., Hugyecz, M., Süle, Z., Berczi, S., Farkas, E., Domoki, F., Busija, D. W., Bari, F. (2008) Changes in prooxidant and antioxidant protein levels and autoregulatory capacity in chronic cerebral hypoperfusion in rats. Society for Neuroscience 38th Annual Meeting, 2008. Washington D.C., USA. Poster

- presentation.
23. **Institoris, Á.**, Mracskó, É., Hugyecz, M., Berczi, S., Farkas, E., Bari, F. Changes in nitric oxide synthase (NOS), cyclooxygenase-2 (COX-2), superoxide dismutase (SOD) protein levels and cerebral autoregulatory capacity in the early and late phase of chronic cerebral hypoperfusion in rats. IBRO International Workshop, 2008, Debrecen, Hungary. Poster presentation.
  24. **Institoris, Á.**, Farkas, E., Berczi, S., Süle, Z., Bari F. Cyclooxygenase (COX-2) inhibition prevents memory failure and neuron loss in cerebral hypoperfusion in rats. Society for Neuroscience 36th Annual Meeting, 2006. Atlanta, Georgia, USA. Poster.
  25. Bari, F., Annaházi, A., Mracskó, É., **Institoris, Á.**, Süle, Z., Farkas, E. Novel approaches to reduce the hypoperfusion-induced memory deficit and brain damage in rats. Gordon Research Conferences, Magdalen College, Oxford, England; 2006, Poster presentation.
  26. Bari F., **Institoris A.**, Annahazi A., Mracsko E., Sule Z., Farkas E., Novel approaches to reduce the hypoperfusion-induced memory deficit and brain damage in rats. The 5th International Congress of Pathophysiology, Beijing, China, 2006. Chinese J. Pathophysiol. 22: 140, 2006. Talk.
  27. Annaházi, A., Farkas, E., Mracskó, É., **Institoris, Á.**, Süle, Z., Karg, E., Mihály, A., Penke, B., Bari, F. Systemic administration of alpha-tocopherol attenuates cerebral hypoperfusion-induced learning dysfunction in rats. IBRO International Workshop, 2006. Budapest, Hungary. Poster presentation.
  28. **Institoris, Á.**, Farkas, E., Süle, Z., Annaházi, A., Bari, F. COX-2 inhibition prevents memory failure and neuronal death in cerebral hypoperfusion in rats. IBRO International Workshop, 2006. Budapest, Hungary. Poster presentation.
  29. Bari, F., Annaházi, A., **Institoris, Á.**, Domoki, F., Farkas, E. Administration of diazoxide, a mitoKATP channel opener decreases hypoperfusion-related memory dysfunction and neuronal damage in rats. XXXV. International Congress of Physiological Sciences, 2005. San Diego, USA. Poster and Talk. In: FASEB J., 19 (5), A1250-A1250 Part 2 Suppl. S.
  30. Bari, F., Farkas E., **Institoris, Á.**, Domoki, F., Mihály, A., Luiten P.G.M. Post-traumatic treatment with diazoxide and dimethyl sulfoxide prevents ischemic hippocampal damage in the rat brain. 4th Forum of European Neuroscience, 2004. Lisbon, Portugal. Poster presentation.
  31. **Institoris, Á.**, Farkas, E., Domoki, F., Mihály, A., Bari, F. Diazoxide prevents microglia activation in experimental cerebral hypoperfusion. IBRO International Workshop, 2004. Budapest, Hungary. Poster presentation.

## VI. ORAL PRESENTATIONS (since 2006)

1. "Neurons and astrocytes control local brain blood flow on distinct timescales" Adam Institoris, David Rosenegger, Govind Peringod, Grant R. Gordon. 7th Annual Meeting of the Canadian Neurometabolic Club Satellite meeting of the Canadian Association for Neuroscience. Toronto, Canada. 2019.
2. "The cellular deconstruction of neurovascular coupling" Adam Institoris, Cam Ha Tran, David Rosenegger, Govind Peringod, Grant R. Gordon. 11th World Congress for Microcirculation. Vancouver, Canada. 2018. Microcirculation (2019) 26(4), 43. <https://doi.org/10.1111/micc.12524>, Invited speaker.
3. "On the regulation of local cerebral blood flow by neurons and astrocytes." International Conference on Heart Congress, Vascular Biology and Surgeon's Meeting. Dallas, USA. 2017. Invited speaker.
4. "Arteriole dilation to synaptic activation that is sub-threshold to astrocyte endfoot Ca<sup>2+</sup> transients." XXVIth International Symposium on Cerebral Blood Flow and Metabolism, and Function. Vancouver, Canada. 2015.
5. "The impact of aging on cortical potential and hemodynamic responses following focal ischemia" Annual Meeting of the Hungarian Physiological Society. 2013 Budapest, Hungary.
6. "Insulin resistance exacerbates impaired cerebrovascular reactivity after mild subarachnoid haemorrhage" Annual Meeting of the Hungarian Physiological Society. 2011 Pecs, Hungary.
7. "Effects of insulin resistance on cortical blood flow responses to physiological and pathological stimuli in Zucker obese and lean rats." Experimental Biology, 2009. New Orleans, LA, USA.
8. "The effect of diazoxide on the early phase of chronic cerebral hypoperfusion in rats." 100<sup>th</sup> Anniversary of Research for Alzheimer's Disease, 2006. Szeged, Hungary.

## VII. PROFESSIONAL SERVICE

Journal Reviewer:

American Journal of Physiology, Heart and Circulatory Physiology  
 European Journal of Neuroscience  
 Brain Research  
 Journal of Cerebral Blood Flow and Metabolism

**Administrational duties:**

2010-2013 Administrator of the department's website and of the electronic education system at the Department of Physiology, Faculty of Medicine, University of Szeged, Hungary

**Mentorship activity:**

2015- Mentor of the Hotchkiss Brain Institute Student Mentorship program  
 2018- Co-evaluator of "Special problems in medical science" course of the Bachelor of Health Sciences program at the University of Calgary

**VIII. HONORS, AWARDS and SPECIAL RECOGNITION**

2019 Hotchkiss Brain Institute Research Day Poster Award  
 2016 Hotchkiss Brain Institute Trainee Publication Award  
 2015 Hotchkiss Brain Institute Research Day Poster Award  
 2014 Trainee Poster Competition Award of the 11th International Symposium on Resistance Arteries  
 2013, 2015 Brain & BrainPET 2013 Young Investigator Travel Bursary  
 2011 Prize of the "Dr. Ferenc Joó Foundation for Brain Research"  
 2007 Travel award of the 2<sup>nd</sup> Meeting of the Neuroscience Summer Training Program  
 2005, 2007 Special prize at the Hungarian National Scientific Congress for Undergraduate Students (Medical Section)  
 2003-2006 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> prizes at the Scientific Congress for Undergraduate Students at the University of Szeged, Faculty of Medicine

**IX. MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

2015-present Canadian Neuroscience Society  
 2011-present International Society for Cerebral Blood Flow and Metabolism  
 2011-present Hungarian Physiological Society  
 2009 -present American Physiological Society  
 2007 -present Hungarian Microcirculation Society  
 2005-present Hungarian Society for Neuroscience-Federation of European Neuroscience Societies

**X. TEACHING HISTORY**

2018 November Lecturing in the Neuroscience Graduate Program, University of Calgary, Canada  
 2016 January Teaching Assistant of the Microscopy Module, REALIZE Program, University of Calgary, Canada  
 2017 and 2015 July Instructor at the Canadian Light Microscopy Course, University of Calgary, Canada  
 2010-2013 Integrated Medical Physiology labs, seminars, lectures and examinations (10-14h/week) in English and Hungarian at the Department of Physiology, Faculty of Medicine, University of Szeged, Hungary  
 2005-2008 Integrated Medical Physiology labs, seminars and examinations (4-8h/week) in English and Hungarian at the Department of Physiology, Faculty of Medicine, University of Szeged, Hungary

