

Curriculum Vitae      Detlev BOISON

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**Citizenship status:**          German Citizen, Permanent Resident USA

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**Present Appointments**

*Robert Stone Dow Chair of Neurology and Director of Neurobiology Research*  
R.S. Dow Neurobiology Laboratories, Legacy Research Institute, Portland, Oregon

*Director of Basic and Translational Research*  
Legacy Research Institute, Portland, Oregon

*Adjunct Full Professor*  
Department of Neurology, Oregon Health & Science University, Portland, Oregon

*Adjunct Full Professor*  
Department of Veterinary Medicine, Washington State University, Vancouver, Washington

*Adjunct Faculty, Neuroscience Graduate Program*  
Oregon Health & Science University, Portland, Oregon

*Adjunct Faculty, Neuroscience Graduate Program*  
Washington State University, Vancouver, Washington

*Privatdozent*  
University of Zurich Medical School, Zurich, Switzerland

**Degrees**

6/2005                      Venia legendi (Habilitation) in Cellular Pharmacology  
University of Zurich Medical School

6/1994                      Ph.D. in Biochemistry, University of Köln, Germany  
Thesis: "Functional analysis of the proteolipid proteins PLP and DM20 in a transgenic mouse model. *In vivo* mutagenesis by homologous recombination in embryonic stem cells."  
Grade: first class honors

10/1989                    M.Sc. in Molecular Biology, University of Köln, Germany  
Diploma Thesis: "Molecular biological analysis of the proteolipid protein gene of the myelin deficient (md) rat." Grade: first class honors

## Positions

- 2014 – *Robert Stone Dow Chair of Neurology & Director of Neurobiology Research*  
Legacy Research Institute, Portland, OR
- 2014 – *Adjunct Faculty, Neuroscience Graduate Program*  
Washington State University, Vancouver, WA
- 2014 – *Adjunct Professor, Department of Veterinary Medicine*  
Washington State University, Vancouver, WA
- 2010 – *Director of Basic and Translational Research*  
Legacy Research Institute, Portland, OR
- 2010 – *Adjunct Faculty, Neuroscience Graduate Program*  
Oregon Health & Science University, Portland, OR
- 2010 – *Adjunct Professor, Department of Neurology*  
Oregon Health & Science University, Portland, OR
- 2010 – 2013 *Interim Dow Chair of Neurology and Director of Neurobiology Research*  
Legacy Research Institute, Portland, OR
- 2010 *Visiting Professor of Biology*  
Portland State University, Portland, OR
- 2009 – 2010 *Senior Scientist*  
R.S. Dow Neurobiology Labs, Legacy Research Institute, Portland, OR
- 2005 – 2009 *Associate Scientist*  
R.S. Dow Neurobiology Labs, Legacy Research Institute, Portland, OR
- 2005 – *Privatdozent*  
University of Zurich Medical School, Zurich, Switzerland
- 2002 – 2005 *Oberassistent (equivalent to Associate Professor)*  
Institute of Pharmaceutical Sciences  
Department of Chemistry and Applied Biosciences, ETH Zurich
- 2001 – 2002 *Assistent (equivalent to Assistant Professor)*  
Institute of Pharmaceutical Sciences  
Department of Chemistry and Applied Biosciences, ETH Zurich
- 1995 – 2001 *Assistent (equivalent to Assistant Professor)*  
Department of Neuropharmacology  
Institute of Pharmacology and Toxicology, University of Zurich
- 1994 – 1995 *Postdoctoral Position, Department of Neurobiology*  
Institute of Biochemistry, Medical Faculty, University of Köln
- 1991 – 1994 *PhD Student, Department of Neurobiology*  
Institute of Biochemistry, Medical Faculty, University of Köln
- 1990 – 1991 *Community Service, University Hospital of Köln*
- 1988 – 1989 *Diploma Student, Department of Neurobiology*  
Institute of Biochemistry, Medical Faculty,  
University of Köln

## Research grants

### Active grants – received as Principal Investigator

- 05/2014 – 04/2019 NIH / NINDS, R01 NS084920 (PI: Boison)  
“Glycine augmentation therapy for the treatment of epilepsy”  
USD: 1,800,000.-
- 04/2015 – 03/2020 The Good Samaritan Hospital Foundations  
“Brain regeneration after stroke”  
USD: 1,000,000.-
- 05/2016 – 03/2018 The Good Samaritan Hospital Foundations  
“Gene Therapy for Cancer”  
USD: 1,100,000.-

### Active grants – received as Co-Investigator

- 09/2015 – 06/2020 NIH / NINDS, 1R01NS089709 (PI: Iliff)  
Role of perivascular aquaporin-4 polarization in post-traumatic neurodegeneration  
USD: \$338,250.-

## Completed grants

### Received as Principal Investigator

- 04/2015 – 03/2017 NIH / NINDS, R21 NS088024 (PI: Boison)  
“Adenosine kinase antisense gene therapy for temporal lobe epilepsy”  
USD: 825,000.-
- 04/2009 – 07/2016 NIH / NIMH, R01 MH083973 (PI: Boison)  
“Adenosine and schizophrenia: mechanisms and therapies”  
USD: 2,496,925.-
- 09/2013 – 08/2015 CURE Foundation  
“Prevention of acquired epilepsy through an epigenetic intervention”  
USD: 249,798.46
- 07/2012 – 07/2015 US Department of the Army, USAMRMC – PRMRP (PI: Boison)  
W81XWH-12-1-0283  
“Transient delivery of adenosine as a novel therapy to prevent epileptogenesis”  
USD: 995,508.00.-
- 12/2010 – 07/2014 NIH / NINDS, R01 NS065957 (Multi-PI: Boison, Geiger, Masino)  
“The role of adenosine in ketogenic diet therapy”  
USD: 1,696,028.-
- 06/2012 – 05/2014 Parkinson’s Northwest Group, The Oregon Community Foundation  
“Adenosine augmentation therapies for Parkinson’s Research”  
USD: 500,000.-
- 04/2009 – 03/2014 NIH / NINDS, R01 NS061844 (PI: Boison)  
“Astrocyte dysfunction in epileptogenesis: the role of adenosine”  
USD: 1,552,360.-
- 04/2012 – 03/2014 Good Samaritan Hospital Foundations (PI: Boison)  
“Adenosine therapy of Alzheimer’s”  
USD: 100,000.-

- 10/2010 – 09/2012 US Department of the Army, USAMRMC - TATRC (PI: Boison)  
W81XWH-10-1-0757  
“Survival and injury outcome after TBI: influence of pre- and post-exposure to caffeine”  
USD: 299,961.-
- 01/2008 – 11/2011 NIH / NINDS, R01 NS058780 (PI: Boison)  
“Adenosine-releasing brain implants for epilepsy therapy”  
USD: 1,250,361.-
- 04/2008 – 03/2010 NIH / NINDS, R21 NS057538 (PI: Boison)  
“Adenosine kinase as therapeutic target to induce and maintain ischemic tolerance”  
USD: 379,000.-
- 04/2008 – 03/2010 NIH / NINDS, R21 NS057475 (PI: Boison)  
“Adenosine kinase as novel therapeutic target to prevent acquired epilepsy”  
USD: 379,000.-
- 01/2008 – 12/2009 CURE Foundation / Department of Defense (PI: Boison)  
“Prevention of Posttraumatic Epilepsy by Transient Modulation of Adenosine Receptors”  
USD: 150,000.-
- 01/2008 – 12/2008 King Pharmaceuticals (PI: Boison):  
Drug development project on adenosinergic agents for epilepsy therapy  
USD: 130,000.-
- 01/2007 – 12/2008 Epilepsy Foundation:  
Epilepsy Therapy Development Project  
“Adenosine-releasing brain implants for epilepsy therapy”  
USD: 134,000.-
- 06/2006 – 05/2007 Legacy Research Advisory Committee (RAC) grant:  
“Evaluation of adenosine as a novel therapeutic tool to promote myelination in multiple sclerosis”  
USD 19,266.-
- 04/2001 – 09/2005 Funding by the National Center for Competence in Research “Neural Plasticity and Repair”  
1 PhD student position + consumables
- 04/2003 – 09/2005 Swiss National Science Foundation, No. 3100A0-100841  
“Adenosine releasing stem cell grafts for the therapy of drug resistant focal epilepsy”  
CHF 252'200.-
- 04/2000 – 03/2003 Swiss National Science Foundation, No. 31-59109.99  
“Ex vivo gene therapy of focal epilepsy: seizure suppression by intraventricular grafting of encapsulated adenosine releasing cells”  
CHF 235'000.-
- 04/1996 – 03/2000 Swiss National Science Foundation, No. 31-46965.96  
“Gene therapy of focal epilepsy: Generation of GABA- and adenosine releasing cells for intracerebral grafting”  
CHF 285'600.-

Received as Co-Investigator

- 02/2012 – 11/2015 NIH / NHLB, R01 HL09556  
The role of adenosine kinase in atherosclerosis (PI: Huo)  
USD: 1,457,696.-
- 01/2013 – 12/2014 Auckland Medical Research Foundation Grant No. 1 112 009  
“Otoprotection by adenosine receptors” (PI: Vlajkovic)  
NZ\$ 146,752.-
- 01/2008 – 12/2009 Epilepsy Foundation / Partnership for Pediatric Epilepsy Research  
“High neuronal adenosine kinase expression as risk factor for febrile-seizure induced epileptogenesis”.  
USD: 75,000.- (PI: Li)
- 01/2008 – 12/2009 Lottery Health Research Committee, New Zealand  
“Adenosine therapies for hearing loss”  
NZD: 45,000.- (PI: Vlajkovic)
- 04/2002 – 09/2005 Swiss National Science Foundation, No. 3100-066855**  
“Schizophrenia: From **concepts to drugs. Genetic dissection of two novel therapeutic targets.**” CHF 773'260.- (PI: Mohler)

## Recognition of scientific work

### Honors/Awards

- 2013** **Brighter Future Award; Citizens United for Research in Epilepsy (CURE)**  
**1998** **Third price** for presentation of the lecture “Gene therapy of experimental focal epilepsy” at the 49<sup>th</sup> Meeting of the German Neurosurgical Society in Hannover, Germany;  
**Awarded from the German Society for Neurosurgery**  
**1995** **First class honors for PhD thesis (published in PNAS)**  
**1989** **First class honors for diploma thesis (published in EMBO J.)**

### Cover Art

Selection of Fig.3B1 from Fedele, D.E., Li, T., Lan, J.Q., Fredholm, B.B., and **Boison, D.** (2006) “Adenosine A1 receptors are crucial in keeping an epileptic focus localized” as cover art for July 2006 issue of *Experimental Neurology*.

Selection of Fig. 3C from Studer, F.E., Fedele, D.E., Marowsky, A., Schwerdel, C., Wernli, K., Vogt, K., Fritschy, J.-M., and **Boison, D.** (2006) “Shift of adenosine kinase expression from neurons to astrocytes during postnatal development suggests dual functionality of the enzyme” as cover art for *Neuroscience* Vol. 142.

Selection of Fig. 2C from Ren G, Li T, Lan JQ, Wilz A, Simon RP, **Boison D.** (2007) “Lentiviral RNAi-induced downregulation of adenosine kinase in human mesenchymal stem cell grafts: a novel perspective for seizure control” as cover art for November 2007 issue of *Experimental Neurology* Vol. 208.

Selection of Fig. 3B from **Boison D.** (2008) “The adenosine kinase hypothesis of epileptogenesis” as cover art for the March 2008 issue of *Progress in Neurobiology* Vol. 84.

“Food for thought” cover of the July 2011, Volume 121, Number 7 issue of the *Journal of Clinical Investigation* featuring Masino SA, Li T, Theofilas P, Sandau US, Ruskin DN, Fredholm BB, Geiger JD, Aronica E, **Boison D** (2011) A ketogenic diet suppresses seizures in mice through adenosine A<sub>1</sub> receptors.

### Patents

U.S. Patent 6110902, August 29, 2000  
Methods for inhibition of neuronal activity by local delivery of adenosine

International Patent WO 2005/118789, December 15, 2005  
European Patent EP 1 765 989 B1, November 2, 2016  
Therapeutic delivery of adenosine into a tissue

U.S. Patent 9040073, May 26, 2015  
Silk polymer-based adenosine release: therapeutic potential for epilepsy

### Published Patent Applications

U.S. Patent Application Serial No. 15/284,432 entitled TRANSIENT INHIBITION OF ADENOSINE KINASE AS AN ANTI-EPILEPTOGENESIS TREATMENT, April 6, 2017

## Commentaries and press/media coverage of on own research

1. Adenosine Grafts for Epilepsy  
*TRENDS in Molecular Medicine*, Vol.7, No.8, August 2001: p338
2. Cell Therapy Alleviates Epileptic Seizures in Rats  
*Biotechnology News*, June 21, 2001, Vol. 21, No. 4: p4
3. Seizure Saviour  
*New Scientist.com* June 12, 2001
4. Grafts of Encapsulated Fibroblasts Engineered to Release an Anticonvulsant Substance  
*Epilepsy Currents* 2002, 2:125-126
5. Gene Therapy in Epilepsy  
*Epilepsy Currents* 2004, 4:87-90
6. Adenosine Kinase Elevation Increases Activity in the Kainic Acid Model of Epilepsy  
*Epilepsy Currents* 2004, 4:178-179
7. Targeting the Brain: Focal Delivery of Natural Anticonvulsant Molecules  
*Epilepsy Currents* 2005, 5:241-243
8. Supersmart Mice: Surprising or Surprised?  
*Behavioral Neuroscience* 2007, 121:1137-1139
9. Epilepsy and Brain Pathology Linked Together by the Protein ADK  
*Editor's pick: Journal of Clinical Investigation*, January 2, 2008
10. Adenosine prevents kindled seizures – an effect as smooth as silk  
*Epilepsy Currents* 2010, 10(2):51-52
11. Adenosine: front and center in linking nutrition and metabolism to neuronal activity  
*The Journal of Clinical Investigation* 2011, July 1<sup>st</sup> by Robert W. Greene
12. Understanding the antiepileptic benefits of an Atkins-like diet  
*Editor's pick: Journal of Clinical Investigation*, June 23, 2011
13. Detlev Boison Discovers Why A Ketogenic Diet Controls Epilepsy  
*The Livin' La Vida Low-Carb Show with Jimmy Moore*, June 27, 2011
14. More Than Just a Cup of Coffee  
*Featured in: Army AL&T Magazine* January-March 2012
15. Adenosine: A Fundamental Factor Formed From Fatty Feasts For Fighting Fits?  
*Epilepsy Currents* 2012, 12(1):19-21
16. Caffeine Shows Promise in Saving Lives of Brain Injured  
*U.S. Medicine*, February 2012
17. On the mark: changes in DNA methylation in epilepsy  
*JCI Impact; Editor's Pick*, August 1, 2013
18. Oregon researchers test novel way to treat epilepsy  
*The Oregonian; OregonLive*, July 30, 2013
19. Silk brain implant could improve epilepsy  
*Metro US; ZipTrials*, August 1, 2013
20. Silk brain implants  
*Science Update (AAAS)*, August 7, 2013

## Evaluation of Others' Work / Editorial / Committee Work / Organizational Tasks

### Editor

- Masino SA, Boison D, eds. *Adenosine: a key link between metabolism and central nervous system activity*. First Edition. Springer 2012
- Boison D, Masino SA, eds. *Homeostatic control of brain function*. First Edition, Oxford University Press 2015
- Boison D, Meier JC, Masino SA, eds. (2017). *Metabolic Control of Brain Homeostasis* (206 pages). Lausanne: Frontiers Media. doi: 10.3389/978-2-88945-286-6

### Section Editor

- Masino SA, ed. *Ketogenic Diet and Metabolic Therapies*. First Edition, Oxford University Press 2016  
Boison D, Section III: *Ketogenic diet in the laboratory*.

### Contributing Editor (2012-2014)

*Epilepsy Currents* (American Epilepsy Society)

### Associate Editor (current)

*Frontiers in Molecular Neuroscience*

### Review Editor (current)

*Frontiers in Epilepsy*

### Regional Editor N. America (current)

*Current Drug Discovery Technologies*

### Guest Editor

- GLIA Special Issue "*Epilepsy – a crucial role for astrocytes*"
- Hot topics issue "*Adenosine-Based Modulation of Brain Activity*"  
*Current Neuropharmacology*, Volume 7, Number 3, September 2009
- Hot topics issue "*Purinergic Signalling in Epilepsy*", Volume 4, 2010  
*The Open Neuroscience Journal*

### Editorial Boards

*Current Neuropharmacology* (current)

*Journal of Caffeine and Adenosine Research* (current)

### Review of Grant Applications

CDMRP 2017 Epilepsy Research Program Peer Review Meeting (2017)  
NIH, ZRG1 BBBP-T (57) R PAR Panel: Preclinical Research on Model Organisms to Predict Treatment Outcomes for Disorders Associated with Intellectual and Developmental Disabilities (2017)  
NIH, ZAG1 ZIJ-P (O2) P01 review panel (2017)  
NIH, CNNT Study Section Review Panels (2015)  
NIH, ZNS1 SRB N (04) EUREKA for Neuroscience and Disorders of the Nervous System Panel (2013)  
NIH, ZRG1 MDCN-J (50&54) CounterACT U01 and U54 Review Panels (2013)  
NIH, ZHD1 DRG-D (55) Neuroscience Blueprint: Tools for Glial Research Review Panel (2012)  
NIH, ZNS1 SRB-B (33) Epileptogenesis CWOW P20 Review Panel (2012)  
NIH, ZNS1-SRB-B (32) Epilepsy EUREKA Review Panel (2011)  
NIH, ZRG1 MDCN-G(04) Teleconference (2011)  
NIH, ZRG1 BDCN-N02 M Review Panel (2009)  
NIH, ZRG1-BDCN T58; mail reviewer (2009)  
NIH, NTRC Study Section Review Panel (2007)  
VA Merit Review Panel Mental Health and Behavioral Science B (MHBB) (2017)  
VA Merit Review Panel Neurobiology B (NURB) (2013)  
USAMRMC (2009)  
American Institute of Biological Sciences / PRMRP (2012)  
Civilian Research & Development Foundation (CRDF) (2009)  
U.S. - Israel Binational Science Foundation (2010, 2012)  
Citizens United for Research in Epilepsy (CURE); Member: Scientific Standing Review Panel (2016-2017)  
Citizens United for Research in Epilepsy (CURE); Challenge Award Review Panel (2015)



Citizens United for Research in Epilepsy (CURE); Innovator Award Review Panel (2013, 2014)  
Citizens United for Research in Epilepsy (CURE); mail reviewer (2006, 2011)  
Standing member of Scientific Review Board: Sonderforschungsbereich (SFB) 1977 "Learning, Memory and Brain Plasticity: Implications for Psychopathology" Heidelberg/Mannheim, Germany (2003-2007)  
European Research Council (2012)  
Alzheimer's Association (2011, 2012)  
Italian Ministry of Health (2009, 2010, 2011, 2012, 2013)  
Austrian Science Fund (2011)  
National Science Center, Poland (2011, 2015)  
The Wellcome Trust, UK (2005, 2011)  
French National Research Agency (ANR) (2011, 2013, 2015)  
Medical Research Council (MRC), UK (2006, 2010, 2016)  
Fonds Wetenschappelijk Onderzoek – Vlaanderen, Belgium (2015)  
Auckland Medical Research Foundation (2010)  
Neurological Foundation of New Zealand (2010)  
Association Française contre les Myopathies (2010)  
Health Research Board (HRB) Ireland (2009)  
German Research Foundation (DFG) (2008)  
Dutch Research Council (2008)  
Epilepsy Research, UK (2007, 2008, 2014, 2016)  
AXA Research Fund, EU (2012)

### **Committee Work**

Board member: AES/NINDS Epilepsy Benchmarks Stewards Committee (2017 – current)  
Board member: Oregon Partnership for Alzheimer's Research (2010-2016)  
Board member: NSCOR Scientific Advisory Board for CNS NASA Specialized Center of Research  
“Mechanisms underlying charged particle-induced disruption of CNS function.” UC Irvine (2015 - current)  
Chair of Institutional Biosafety Committee, Legacy Research Institute (2007-2011)  
Chair of Institutional Animal Care and Use Committee, Legacy Research Institute (2007-2011)  
Promotion Committee University of Auckland, New Zealand (2010)  
Promotion Committee Occidental College, Los Angeles, CA (2010)  
Promotion Committee Trinity College, Hartford, CT (2012)  
Promotion Committee University of Queensland, Brisbane, Qld., Australia (2013)  
Promotion Committee Warwick University, Coventry, UK (2016)  
Promotion Committee University of California, Riverside, CA (2017)  
Promotion Committee Institute of Molecular Medicine, University of Lisbon, Portugal (2017)

### **Consultancies**

Consultant for Merck & Co, Inc. (05/2009-05/2010)  
Consultant for Biotechnology Greenhouse Corporation of SE Pennsylvania, d/b/a BioAdvance (2010)  
Consultant for UCB Pharma (Belgium) (2015)  
Consultant for Roche (Switzerland) (2016, 2017)  
Consultant for GSK (2016)  
Expert Witness for Miles & Stockbridge (2017)

### **Organization of Symposia and Conferences**

Epilepsy Research UK – International Expert Workshop, Oxford, UK (03/2014)  
Chair of session: *From unwitnessed fatality to witnessed rescue: pharmacological intervention.*  
International Neural Transplantation and Repair Conference (INTR11): Co-Chair of Symposium “*Cell Therapy for Epilepsy*” (05/2011)  
American Epilepsy Society: Organization of Investigator's Workshop “*Adenosine and Epilepsy – Promising Start into a New Century: The First Decade*”. (12/2010)  
European Federation of Neurological Societies (EFNS) (09/2009):

- Convenor of Main Topic: “*New Therapeutic Avenues in Epilepsy*”
- Chairperson of Short Communications: “*Epilepsy and Child Neurology*”

Purines 2014 – Nucleotides, Nucleosides and Nucleobases, International Conference on Signalling, Drugs, and Targets, Bonn, Germany (07/2014)

Organizer and Chair of Symposium: “Adenosine deaminase and intracellular purine metabolizing enzymes.”

Spring Hippocampal Research Conference, Taormina, Italy (06/2015)

Organizer and Chair of session: “The role of astrocytes in epilepsy.”

Partners for Mortality in Epilepsy (PAME)

- Planning committee for the PAME 2016 Conference in Alexandria, VA.
- PAME Enduring Materials Planning Committee
- Organizer and Moderator of Breakout Session “Mechanisms of SUDEP”.

**Assignment as Referee** – *Pharmacological Reviews, Journal of Clinical Investigation, Proceedings of the National Academy of Sciences USA, Brain, Annals of Neurology, Biological Psychiatry, Molecular Neurobiology, Journal of Neuroscience, Trends in Neurosciences, Progress in Neurobiology, Schizophrenia Bulletin, Stem Cells, Critical Care Medicine, Neurology, Biomaterials, Molecular Psychiatry, Cerebral Cortex, and others*

**Memberships** – *American Epilepsy Society (AES), Society for Neuroscience (USA), Federation of European Neuroscience Societies (FENS), American Society for Neurochemistry (ASN), International Society for Neurochemistry (ISN)*

## Teaching and Mentoring

- 2016** CONJ 650: The Practice and Ethics of Science (Oregon Health and Science University)  
*Managing Stress, Anxiety, and Depression*
- 2015** Neuroscience Graduate Thesis Committee for Matthew Simon (candidate), Oregon Health and Science University
- 2014** Neuroscience 138: Freshman Seminar in Neuroscience, Washington State University  
Lecture: *The many faces of adenosine.*
- Since 2014** Faculty, Neuroscience Graduate Program, Washington State University
- 2014** University of Pittsburgh, PA; member of thesis defense committee of BPhil thesis *IL-1 $\beta$  Associations with Post-Traumatic Epilepsy: A Genetic and Biomarker Cohort Study* by Matthew L. Diamond. Role: external committee member; examiner.  
Thesis published in *Epilepsia*  
Winner of the 2014 *Epilepsia* prize for the best study published in *Epilepsia* by a new investigator in 2014
- 2013** University of Coimbra, Portugal; member of thesis defense committee of PhD thesis *Role of adenosine A<sub>2A</sub> receptors in astrocytes – implications for glutamatergic activity* by Marco Antonio Paisana de Matos. Role: main opponent.
- Since 2012** Mentor for Partnership of Scientific Inquiry (OHSU): Students in the program gain firsthand knowledge of research methods, and, with their mentors' help, present published research articles in journal club format and write their own research proposals.
- Since 2012** Mentor for OHSU's Diversity Program: Students from a disadvantaged minority group join my lab for three months to perform mentored research and present their research findings at a concluding event of the program.
- Since 2010** Mentor for high school students from St. Mary's Academy: Students join my lab for three months to perform mentored research and present their research findings at a school event after completion of the project.
- Dec 2010** Mentor for young scientists at the American Epilepsy Society Conference
- Since 2010** Faculty, Neuroscience Graduate Program, Oregon Health & Science University
- Sept 2009** 300 Level class "Physiological Psychology"  
University of Alaska, Fairbanks Topic: Translational Research.
- Since 2007** Member of the ILAE Faculty of 1000  
Educational initiative of the International League Against Epilepsy
- Education**  
May 2004: "Didactics for Faculty" organized by Prof. Lucien Goldschmid.

### Teaching assignments (1991-2005)

#### i) ETH Zurich: Pharmacology and Toxicology for students of Pharmaceutical Sciences

1995 – 2005 Practical Course; topics: molecular biology, gene therapy, cell therapy (4 afternoons per year)

2003 - 2005: Drug seminar, topic: “stem cells for drug delivery”. This is a problem based learning unit over a 6-week span developed by myself (24 contact hours).

2004 Main lecture: Pharmacology and Toxicology  
Topics: Hypertension, Atherosclerosis, Cardiac Insufficiency  
4 hours per semester

#### ii) University of Zurich: Pharmacology and Toxicology for students of Medicine

2002 - 2005: Colloquium in Pharmacology and Toxicology:

Topics: pharmacokinetics, pharmacodynamics, pharmacogenetics, biotransformation, drug metabolism, drug interactions, hypertension, arteriosclerosis, angina pectoris, heart failure, vasodilators, cardaca, diuretics, lipid metabolism, gout, calcium homeostasis, hormon systems (3 to 4 hours per semester)

#### iii) University of Zurich: Pharmacology and Toxicology for students of Human Biology

2005 Main Lecture: “Experimental Therapies” (1 hour)

#### iv) University of Köln: Biochemistry for students of Medicine

1991 – 1995: Practical Course and Seminar (2 hours per week)

1994 – 1995: Colloquium in Biochemistry (1 hour per week)

Topics: Biochemical basis for disease (e.g. in diabetes, gout, cholelithiasis)

#### v) Postgraduate courses at the University of Zurich:

1997 PhD-course on gene therapy

Advanced education for PhD students at the Institute of Pharmacology and Toxicology

1998 PhD-course on virology

Advanced education for PhD students at the Institute of Pharmacology and Toxicology

### Evaluation of Teaching

2003 Evaluation of Teaching at the ETH Zurich

“Academic teachers, who stayed in memory and the reason for that”:

D.Boison: “Motivating leadership, scientific and social competence”

### Training of Masters Students

#### 2014 Co-Mentor for:

Matthew L. Diamond. University of Pittsburgh, PA;

Role: External thesis committee member, examiner.

BPhil thesis: *IL-1 $\beta$  Associations with Post-Traumatic Epilepsy: A Genetic and Biomarker Cohort Study*

Thesis published in *Epilepsia*

Winner of the 2014 *Epilepsia* prize for the best study published in *Epilepsia* by a new investigator in 2014

2012 External Examiner for Megan Masters; Royal College of Surgeons in Ireland

“*In vivo* inhibition of miR-132 and miR-134 in a mouse model of temporal lobe epilepsy”.

2006 Francesca Studer (ETHZ): “Adenosine kinase regulation in brain development and injury”

2005 Claudia Schuhmacher (ETHZ): “Biomaterials as substrate for the differentiation of glial precursor cells”

2004 Michèle Lentz (ETHZ): “Histochemical investigations on the modulation of brain activity by glycine and adenosine”

2003 Michaela Good (ETHZ): “Characterization of adenosine kinase mutant stem cells and mice”

2002 Catherine Suard (ETHZ): “Generation and characterization of adenosine releasing myoblasts and astrocytes”

1997 Marc Cuny (UZH): “Structure and transcription of the adenosine kinase gene and development of an animal model for epilepsy”

## Training of Doctoral Dissertations

2013

### Co-Mentor for:

Antonio Paisana de Matos, University of Coimbra, Portugal

Role: External thesis committee member, examiner.

PhD thesis *Role of adenosine A<sub>2A</sub> receptors in astrocytes – implications for glutamatergic activity*

### Thesis work published in **Biological Psychiatry**

2010 - 2012 Rebecca Williams-Karnesky (PhD, OHSU): "Role of adenosine kinase as epigenetic regulator in stroke and epilepsy"

### Thesis work published in **The Journal of Clinical Investigation**

2002 - 2006 Denise Fedele (PhD, UZH): "Adenosine kinase: a key regulator of hippocampal inhibition, seizure susceptibility, and neuronal development".

### Thesis work published in **Brain**

2001 - 2005 Nicolette Gouder (PhD, UZH): "Adenosine-based neuromodulation: Involvement in epileptogenesis and efficacy in the treatment of pharmacoresistant temporal lobe epilepsy"

### Has been awarded first prize for best **Epilepsy PhD thesis in 2005 from League against Epilepsy; thesis work published in **Journal of Neuroscience****

2001 - 2005 Martin Güttinger (PhD, ETHZ): "Characterization of adenosine-releasing cellular brain implants for long-term seizure control".

2003 - 2004 Fiona Claire Möhler (MD, UZH): "Differentiation of adenosine kinase-deficient dermal stem cells into adenosine releasing neurons: an evaluation of methods"

1998 - 2001 Valérie M. Zumsteg (PhD, UZH): "Establishment and characterization of neuronal grafts for an adenosine based therapy of focal epilepsy"

1998 - 2001 Alexander F. Huber (PhD, ETHZ): "Generation and characterization of adenosine releasing cell systems for an ex vivo gene therapy of focal epilepsies"

### **Amedis Award: best dissertation at ETH in 2001. Thesis work published in **PNAS****

## Invited Lectures & Seminars – Detlev Boison

1995

1. **Cologne Spring Meeting**, Köln, Germany: Molecular biology of the nervous system  
*"Molecular analysis of structure and function of CNS myelin"*
2. **Philippe Laudat Conference**, Aix-les-Bains, France: Demyelination and remyelination  
*"Altering the ultrastructure of CNS myelin by disrupting the PLP-gene"*

1998

3. **19. Rauischholzhausener Symposium**, Rauischholzhausen, Germany: Grundlagen des therapeutischen Gen-transfers  
*"Gentherapeutische Ansätze bei CNS-Erkrankungen"*
4. **49. Jahrestagung der Deutschen Gesellschaft für Neurochirurgie**, Hannover, Germany  
*"Gene therapy of experimental focal epilepsy by intracerebral grafting of engineered adenosine-releasing cell lines"*  
*Award for 3<sup>rd</sup> best presentation*

1999

5. **Joint Meeting of the Swiss Society for Neuroscience and the Swiss Society of Biological Psychiatry**, University of Zurich  
*"Seizure suppression by intraventricular grafting of adenosine releasing cell capsules in kindled rats"*
6. **Klinisch-Biochemisches Kolloquium**  
University Children's Hospital, Department for Clinical Chemistry and Biochemistry, University of Zurich  
*"Gene therapy of experimental focal epilepsy by intracerebral grafting of encapsulated adenosine releasing cells"*

2000

7. **Proteomics Group Meeting**  
Institute of Pharmaceutical Sciences, Department of Applied Biosciences, ETH Zurich  
*"Ex vivo gene therapy approaches for the treatment of focal epilepsy"*
8. **ZMMK Gastvortrag**  
Center for Molecular Medicine, University of Köln, Germany  
*"An ex vivo gene therapy approach in experimental focal epilepsy"*

2001

9. **Colloquium**  
Institute of Laboratory Animal Sciences, University of Zurich  
*"Genetisch induziertes Mausmodell für den plötzlichen Kindstod"*

2002

10. **Aktuelle Probleme der Krankheitsforschung**  
Department of Pathology, University Hospital Zurich  
*"Ex vivo gene therapy of epilepsy"*
11. **Pharmaceutical Seminar**  
Institute of Pharmacy, University of Innsbruck, Austria  
*"Seizure suppression by grafts of adenosine releasing cells"*
12. **SFB Seminar**, Institute of Reconstructive Neurobiology, University of Bonn, Germany  
*"Seizure suppression by grafts of adenosine releasing cells"*
13. **SFB-Seminar**, Institute of Experimental and Clinical Pharmacology and Toxicology  
University of Erlangen-Nürnberg, Germany  
*"Anfallssuppression durch Adenosin-freisetzende Zelltransplantate"*

2003

14. **Developmental Biology Seminar**  
The Hospital for Sick Children, University of Toronto, Canada  
*"Cell therapy for focal epilepsy"*
15. **Epilepsy Seminar**  
Swiss Epilepsy Center, Zurich  
*"Anfalls-Suppression durch Adenosin-freisetzende Zelltransplantate"*
16. **Seminars on Drug Discovery and Development**  
Institute of Pharmaceutical Sciences, ETH Zurich  
*"Stem cells engineered for drug delivery"*

2004

17. **NCCR Mini-Symposium: "Neural Stem Cells and Differentiation"**, ETH Zurich  
*"Engineering of stem cells for drug delivery"*
18. **Neuroscience Seminar**  
Institute of Neurosciences, EPF Lausanne, Switzerland  
*"Adenosine and Epilepsy: Implications for Disease and Therapy"*
19. **NCCR Neural Plasticity and Repair Symposium**, Konstanz, Germany  
*"Adenosine-based cell therapy for pharmacoresistant epilepsy"*
20. **Advanced Issues in Behavioral Neuroscience**  
Laboratory of Behavioural Neurobiology, Schwerzenbach, ETH Zurich  
*"Adenosine-based cell therapy in animal models of partial epilepsy"*
21. **Biological Colloquium**  
Department of Genetics and Cytogenetics, University of Duisburg-Essen, Germany  
*"Der Natur abgesehen: vom körpereigenen Aktivitäts-Modulator zur Zelltherapie der Epilepsie"*
22. **American Epilepsy Society Annual Meeting**, New Orleans, USA  
Special Interest Group: Transplantation and gene therapy – alternatives in alternative therapies for temporal lobe epilepsy  
*"Adenosine-Based Cell Therapy for Pharmacoresistant MTLT"*
23. **36<sup>th</sup> Seminar Week**, Institute of Pharmaceutical Sciences, ETHZ  
New drugs for the brain in Lenzerheide, Switzerland  
*"Epilepsie: Versuch einer Stammzell Therapie"*

2005

24. **R.S. Dow Neurobiology Laboratories, Legacy Research**, Portland, OR, USA  
*"Adenosine and epilepsy: from therapeutic rationale to cell therapies"*
25. **25<sup>th</sup> European Winter Conference on Brain Research**, Arc 1800, France  
Session: Adenosine and related substances in brain research  
*"Adenosine and epilepsy: from therapeutic rationale to adenosine-based cell therapies"*

2006

26. **26<sup>th</sup> European Winter Conference on Brain Research**, Villars, Switzerland  
Session: Purines and related substances in brain research  
*"Adenosine and epilepsy: from animal models to novel cell and gene therapies"*
27. **7<sup>th</sup> European Congress on Epileptology**, Helsinki, Finland  
Discussion Group Session: Focal drug and gene delivery for refractory epilepsy: fantasy or clinical reality?  
*"In vivo experience with adenosine in epilepsy: polymers vs neuronal grafting"*
28. **Symposium - Collaborative Research Grant 636 – Learning, Memory and Brain Plasticity: Implications for Psychopathology**, Schwetzingen Castle, Germany  
*"Animal models of neurological disease: new insights for the treatment of epilepsy and schizophrenia"*

## 2007

29. **27<sup>th</sup> European Winter Conference on Brain Research**, Villars, Switzerland  
Symposium: Purines and related substances in brain research.  
*"Adenosine kinase, epilepsy, and stroke: mechanisms and therapies"*
30. **Pharmacological Seminar**  
Institute of Pharmacology and Toxicology, University of Zurich, Switzerland  
*"Adenosine kinase, epilepsy, and stroke: mechanisms and therapies"*
31. **British Neuroscience Association, 19<sup>th</sup> National Meeting**, Harrogate, UK  
Symposium: Purines in physiology, plasticity and pathology.  
*"Adenosine, astrogliosis and epilepsy: a rational approach for novel cell and gene therapies"*
32. **Oregon Medical Laser Center**, Beaverton, OR  
*"Adenosine releasing stem cells for epilepsy therapy"*
33. **Karolinska Institutet**, Institute of Physiology and Pharmacology, Stockholm, Sweden; invited seminar.  
*"Adenosine and adenosine kinase regulate epileptogenesis"*
34. **Glial Cells in Health and Disease**, the VIIIth European Meeting; London, UK  
Symposium: The role of astrocyte dysfunction in epilepsy.  
*"Adenosine, astrogliosis and seizures: a new perspective of epileptogenesis"*
35. **Lundbeck A/S**, Copenhagen, Denmark  
*"Adenosine and adenosine kinase regulate epileptogenesis"*
36. **American Epilepsy Society 2007 Annual Meeting**, Philadelphia, PA  
Investigator's Workshop: Emerging Cell and Molecular Targets for Antiepileptogenesis  
*"The adenosine kinase hypothesis of epileptogenesis"*

## 2008

37. **University of North Dakota**, Grand Forks, ND  
Invited seminar at Biomedical Program at UND School of Medicine and Health Sciences  
*"The adenosine kinase hypothesis of epileptogenesis"*
38. 4<sup>th</sup> Workshop on **New Horizons in the Development of Antiepileptic Drugs**, Dublin, Ireland  
Non-traditional approaches to treat epilepsy; theme 2: Cell Therapy.  
*"Engineering adenosine-releasing cells: human mesenchymal stem cells and human embryonic stem cells"*
39. **Portland State University (PSU)**, Portland, OR  
Lester Newman Seminar Series, Department of Biology  
*"Adenosine and epilepsy: how to translate basic research into novel stem cell therapies"*

## 2009

40. 42<sup>nd</sup> Annual **Winter Conference on Brain Research**, Copper Mountain, CO  
Panel: Food for Thought: Adenosine, Metabolism, and Brain Activity  
*"Adenosine dysfunction and hyperactivity in epilepsy"*
41. **Telemedicine and Advanced Technology Research Center** (Department of Defense)  
Neurotrauma Product Line Review, Los Angeles, CA  
*"Prevention of posttraumatic epilepsy (PTE) by transient modulation of adenosine receptors"*
42. 40<sup>th</sup> Annual Meeting **American Society for Neurochemistry**, Charleston, SC  
Workshop: Molecular Stroke Research: What is New?  
*"Adenosine kinase: therapeutic target to prevent ischemic neuronal death"*
43. **University of Iowa**, Iowa City, IA  
Neurosurgery Research Conference  
*"Therapeutic epilepsy research: the road to focal adenosine augmentation therapies"*
44. 28<sup>th</sup> **International Epilepsy Congress**, Budapest, Hungary  
Parallel Session: New targets for disease modification and epilepsy prevention.  
*"Adenosine kinase hypothesis of epileptogenesis"*



45. **Universita degli Studi di Roma "Sapienza"**, Rome, Italy  
Seminar at the Department of Physiology and Pharmacology  
*"Adenosine and epilepsy: from therapeutic rationale to adenosine augmentation therapies"*
46. **13<sup>th</sup> Congress of the European Federation of Neurological Societies (EFNS)**, Florence, Italy  
Convenor of Main Topic: New Therapeutic Avenues in Epilepsy  
Chairperson of Short Communications: Epilepsy and Child Neurology  
Invited Lecture in Main Topic: *"Genetic engineering of adenosine-secreting fibroblasts and local drug delivery in epilepsy"*
47. **University of Alaska**, Fairbanks, AK  
Biomedical Seminar at the Institute of Arctic Biology  
*"Adenosine: sensor and switch for cellular homeostasis"*
48. **University of Alaska**, Fairbanks, AK  
Physiology Seminar at the Institute of Arctic Biology  
*"Adenosine kinase in epilepsy and stroke: the road to adenosine augmentation therapies"*
49. **Pennsylvania State University**, State College, PA  
Neuroscience Seminar at the Huck Institutes of the Life Sciences)  
*"Therapeutic epilepsy research: the road to adenosine augmentation therapies"*
50. **Oregon Health and Science University**, Portland, OR  
Seminar at Department of Behavioral Neuroscience  
*"Adenosine: Molecular link between epilepsy, schizophrenia, and Alzheimer's disease?"*
51. **11<sup>th</sup> Annual Symposium on Advances in Battlefield Medicine and Surgery**  
Oregon Medical Laser Center and US Army, Portland, OR  
*"Stem Cells and Brain Regeneration"*
52. **Tufts University**, Medford, MA  
Seminar at Department for Biomedical Engineering  
*"Therapeutic epilepsy research: the road to adenosine augmentation therapies"*

## 2010

53. **43<sup>rd</sup> Annual Winter Conference on Brain Research**, Breckenridge, CO  
Panel: Probing the Glial Hypothesis of Epilepsy  
*"rAAV vectors to probe the adenosine kinase hypothesis of epileptogenesis"*
54. **Epilepsy Pipeline Update, Epilepsy Therapy Project**, San Francisco, CA  
*"Adenosine-releasing silk-based brain implants for epilepsy therapy"*
55. **The Cleveland Clinic**, Cleveland, OH  
Epilepsy Grand Rounds Seminar  
*"Therapeutic epilepsy research: the road to focal adenosine augmentation therapies"*
56. **50. Jahrestagung der Deutschen Gesellschaft fuer Epileptologie**, Wiesbaden, Germany  
Symposium: Stammzellen bei neurologischen Erkrankungen mit oder ohne Epilepsie: was bringt die Zukunft wirklich?  
*"Stem cells and epilepsy: the therapeutic potential of adenosine"*
57. **Ghent International Epilepsy Symposium**, Ghent, Belgium  
New Approaches for Epilepsy Treatment in Europe: Back to the Future  
*"Basic research in new drugs for local delivery"*
58. **VA Medical Center**, Portland, OR  
*"Translational brain research: harnessing the therapeutic potential of adenosine"*
59. **University of Zurich**, Zurich, Switzerland  
Pharmacological Seminar, Institute of Pharmacology and Toxicology  
*"Translational brain research: harnessing the therapeutic potential of adenosine"*
60. **Swiss Epilepsy Clinic**, Zurich, Switzerland  
Grand Rounds Seminar  
*"Therapeutic epilepsy research: the road to focal adenosine augmentation therapies"*

61. Sue & Bill Gross **Stem Cell Research Center**, University of California, Irvine, CA  
Stem Cell Seminar Series  
*"Translational epilepsy research: therapeutic prospect of stem cells and focal adenosine delivery"*
62. **American Epilepsy Society 2010 Annual Meeting**, San Antonio, TX  
Special Interest Group (SIG) on SUDEP  
*"The adenosine hypothesis of SUDEP"*
63. **American Epilepsy Society 2010 Annual Meeting**, San Antonio, TX  
Organizer and moderator of Investigator's Workshop.  
*"Adenosine and Epilepsy – Promising start into a new century: the first decade"*

#### 2011

64. Department of Psychiatry, McLean Hospital, **Harvard Medical School**, Belmont, MA  
Neuroscience Seminar Series  
*"Non-dopaminergic hypotheses of schizophrenia; the roles of glycine and adenosine"*
65. Department of Neuroscience, **Tufts University Medical School**, Boston, MA  
Neuroscience Seminar  
*"Glial dysfunction in epilepsy: focus on adenosine"*
66. **Gordon Research Conference: Glial Biology: Functional Interactions among Glia & Neurons**, Ventura, CA.  
*"Glial dysfunction of adenosine signaling in epilepsy"*
67. **International Neural Transplantation and Repair Conference (INTR11)**, Clearwater Beach, FL  
Symposium: Cell Therapy for Epilepsy  
*"Stem cells and gene therapies for adenosine augmentation in epilepsy"*
68. **Signature Interdisciplinary Program in Neuroscience and the Neuroscience Collaborative**, University of South Florida, Tampa, FL  
Symposium: Emerging Therapies for Epilepsy and Other Neurological Disorders  
*"Silk-based adenosine-delivery: a focal approach to epilepsy therapy"*
69. **Oregon National Primate Research Center**, Beaverton, OR  
Neuroscience Seminar  
*"Adenosine signaling and function in glial cells: from concepts to therapies"*
70. **Oregon Health and Science University**, Portland, OR  
MS Collaborative Research Group Meeting  
*"Therapeutic epilepsy research: focus on adenosine"*
71. **Telemedicine & Advanced Technology Research Center**, Fort Detrick, MD  
Warfighter Neuro System Dysfunction Product Line Review, Frederick, MD  
*"Survival and injury outcome after TBI: Influence of pre- and post-exposure to caffeine"*
77. **20<sup>th</sup> International Epilepsy Symposia**, Ribeirão Preto, SP, Brazil  
*"Why stem cells can control seizures"*
78. **Institute of Molecular Medicine**, University of Lisbon, Portugal  
*"Homeostatic bioenergetic network regulation: towards a new philosophy to understand and to treat neurological disorders"*
79. **75<sup>th</sup> American Epilepsy Society Annual Meeting**, Baltimore, MD  
Investigator's Workshop: The "Methylation Hypothesis:" Does Epigenetic Chromatin Modification Play a Role in Epileptogenesis?  
*"Adenosine: a novel regulator of DNA methylation in epilepsy"*

#### 2012

80. **Epilepsy Pipeline Update, Epilepsy Therapy Project**, San Francisco, CA  
*"Adenosine-releasing brain implants for epilepsy therapy"*
81. **Purine 2012 – International Symposium on Purinergic Signaling in New Strategy of Drug Discovery**, Fukuoka, Japan  
Symposium: Purinergic signaling – coupling glia and neurons in health and disease  
*"Neuroglial regulation of adenosine homeostasis and epilepsy"*

82. **8<sup>th</sup> FENS Forum of Neuroscience**, Barcelona, Spain  
Symposium: Astrocyte dysfunction and epileptogenesis  
*"Glial dysfunction of adenosine signaling in epilepsy"*
83. **Washington State University**, Vancouver, WA  
*"Translational epilepsy research: focus on adenosine"*
84. **Federal University of Rio Grande do Sul**, Porto Alegre, RS, Brazil  
*"Translational epilepsy research: focus on adenosine"*
85. **3<sup>rd</sup> Meeting of the Brazilian Purine Club**, Ouro Preto, MG, Brazil  
Symposium: Effects of caffeine in the central nervous system  
*"Can coffee save your life?"*
86. **10<sup>th</sup> European Congress on Epileptology**, London, UK  
Session: Experimental strategies to modify or prevent epileptogenesis  
*"Adenosine and neuromodulation as antiepileptogenic strategy"*
87. **Oregon Health and Science University**, Portland, OR  
Research Seminar: Department of Anesthesiology and Perioperative Medicine  
*"Translational epilepsy research: focus on adenosine"*

#### 2013

88. **Oregon Health and Science University**, Portland, OR  
Biology of Neurodegeneration (BOND) interest group  
*"Translational epilepsy research: focus on adenosine"*
89. **University of Manitoba**, Winnipeg, Canada  
Edge of Science and Medicine Seminar Series, Faculty of Medicine  
*"Translational epilepsy research: focus on adenosine"*
90. **4<sup>th</sup> London-Innsbruck Colloquium on Status Epilepticus & Acute Seizures**, Salzburg, Austria  
*"Role of adenosine in status epilepticus – a potential new target?"*
91. **2013 PRO Parkinson's Conference**, Parkinson's Resources of Oregon, Eugene, OR  
Lunch Keynote: *"Towards a Cure for Parkinson's Disease – Therapeutic Potential of Adenosine"*
92. **Antiepileptic Drug and Device Trials XII**, Aventura, FL  
*"Adenosine Augmentation Therapy"*
93. **Pacific Northwest Basal Ganglia Coterie**, 7<sup>th</sup> Annual Meeting, Portland, OR  
*"The role of adenosine in Parkinson's disease"*
94. **59<sup>th</sup> Annual Meeting of the Radiation Research Society**, New Orleans, LA  
Symposium: CNS effects of radiation damage  
*"Prenatal radiation exposure – a risk factor for the development of epilepsy"*

#### 2014

95. **Safar Center for Resuscitation Research, University of Pittsburgh**, Pittsburgh, PA  
*"Translational adenosine research"*
96. **Warwick University, School of Life Sciences**, Coventry, UK  
*"Translational adenosine research"*
97. **Epilepsy Research UK – International Expert Workshop**, Oxford, UK  
SUDEP: time for prevention; evidence and clinical translation  
*"The adenosine hypothesis of SUDEP"*
98. **Oregon Health and Science University**, Portland, OR  
Biology of Neurodegeneration (BOND) interest group  
*"Comorbidities in Neurology: the search for common mechanisms"*
99. **Society of Biological Psychiatry 68<sup>th</sup> Annual Meeting**, New York City, NY  
Symposium: The growing significance of astrocytes in psychiatric disease  
*"The adenosine hypothesis of schizophrenia"*

100. **PAME (Partners Against Mortality in Epilepsy) Conference**, Minneapolis, MN  
Plenary Session: SUDEP Mechanisms: Respiratory  
*“Adenosine in Brainstem”*
101. **Purines 2014 (International Conference on Signaling, Drugs, and Targets)**, Bonn, Germany  
Symposium: Adenosine deaminase and intracellular purine metabolizing enzymes  
*“Adenosine kinase: exploitation for therapeutic gain”*
102. **Twelfth Eilat Conference on New Antiepileptic Drugs (EilatXII)**, Madrid, Spain  
Plenary lecture: *“Adenosine-releasing silk”*
103. **4<sup>th</sup> Global Symposium on Ketogenic Dietary Therapies**, Liverpool, UK  
Plenary lecture: *“Adenosine & Epigenetics: Stopping and preventing epilepsy”*
104. **Third Military University**, Chongqing, China  
Invited lectures: *“Homeostasis of adenosine in epilepsy and brain trauma”*, and *“Targeting astrocytes for the treatment of schizophrenia”*
105. **68<sup>th</sup> American Epilepsy Society Annual Meeting**, Seattle, WA  
Speaker at Special Interest Group: *“Ketogenic diet: does the ketogenic diet offer a ‘cure’ for epilepsy?”*
106. **53<sup>rd</sup> Annual Meeting American College of Neuropsychopharmacology**, Phoenix, AZ  
Panel: When psychiatry and neurology inform each other: astrocyte dysfunction and behavioral disease.  
*“Comorbidities in psychiatry and neurology: focus on astrocytes and adenosine dysregulation”*

#### 2015

107. **48<sup>th</sup> Annual Winter Conference on Brain Research**, Big Sky, MT  
Panel: The science of intractable epilepsy: when small molecules fail.  
*“Adenosine: seizure suppression and epilepsy prevention”*
108. **48<sup>th</sup> Annual Winter Conference on Brain Research**, Big Sky, MT  
Panel: Novel therapies for brain disease in those patients that are going downhill fast.  
*“The epigenetics of ketogenic diet therapy – prospects for epilepsy prevention”*
109. **BNA2015 Festival of Neuroscience**, Edinburgh, UK  
Symposium: Fats are fitting for brain disease, but how do they work?  
*“The epigenetics of ketogenic diet therapy - opportunities for epilepsy prevention”*
110. **University of Calgary, Alberta Children’s Hospital**, Calgary, AB  
Developmental Neurosciences Grand Rounds  
*“EAT: Epigenetics for Antiepileptogenic Therapy”*
111. **Oregon Health and Science University**, Portland, OR  
Biology of Neurodegeneration (BOND) interest group  
*“EAT: Epigenetics for Antiepileptogenic Therapy”*
112. **Antiepileptic Drug and Device Trials XIII**, Aventura, FL  
*“Adenosine Augmentation Therapy”*
113. **Oregon Health and Science University**, Portland, OR  
Research Seminar: Department of Anesthesiology and Perioperative Medicine  
*“Maladaptive changes of adenosine homeostasis after brain trauma”*
114. **Spring Hippocampal Research Conference**, Taormina, Italy  
Session organizer and presenter.  
Session: The role of astrocytes in epilepsy  
Presentation: *“Astrocyte-driven epigenetic mechanisms of epileptogenesis”*
115. **Neurotrauma 2015; 33<sup>rd</sup> Annual Symposium of the National Neurotrauma Society**, Santa Fe, NM  
Symposium: Purines – forgotten mediators in CNS injury  
*“Role of adenosine in posttraumatic seizures and epilepsy: a potential new target”*
115. **UCB Pharma**, Braine-l’Alleud, Belgium  
Plenary Lecture: *“Therapeutic adenosine augmentation for the prevention of epilepsy”*

## 2016

116. **Washington State University, Health Sciences**, Spokane, WA  
Research Seminar: *“Comorbidities in Neurology: Maladaptive Changes in Glial Adenosine Homeostasis”*
117. **Washington State University, Integrative Physiology and Neuroscience**, Pullman, WA  
Research Seminar: *“Adenosine Kinase: Exploitation for Therapeutic Gain”*
118. **Epilepsy Foundation Pipeline Conference 2016**, San Francisco, CA  
*“Adenosine for Epilepsy Prevention”*
119. **Building Better Brains**, Neuroepigenetics Symposium, Univ. of North Dakota, Grand Forks, ND  
Plenary Lecture: *“EPICURE: targeting epigenetics for the prevention of epilepsy”*
120. **Thirteenth Eilat Conference on New Antiepileptic Drugs (EilatXII)**, Madrid, Spain  
Plenary lecture: *“Adenosine”*
121. **5<sup>th</sup> Global Symposium on Ketogenic Therapies**, Banff, Canada  
Plenary Lecture: *“DNA Methylation, Histone Modifications, and Epileptogenesis”*
122. **Society for Neuroscience in Anesthesiology & Critical Care, 44<sup>th</sup> Annual Meeting**, Chicago, IL  
Dinner Lecture: *“Basic Science of Epilepsy”*
123. **Genentech**, South San Francisco, CA  
Research Seminar: *“Adenosine Kinase Inhibitors for the Prevention of Epilepsy”*
124. **University of California, Riverside**, Riverside, CA  
Research Seminar: *“Prevention of Epilepsy: The Therapeutic Potential of Adenosine”*
125. **Cleveland Clinic**, Cleveland, OH  
Grand Rounds Lecture: *“Prevention of Epilepsy: The Therapeutic Potential of Adenosine”*

## 2017

126. **Antiepileptic Drug and Device Trials XIII**, Aventura, FL  
*“Adenosine kinase inhibitors for antiepileptogenic therapies”*

# List of Publications – Detlev Boison

## Peer reviewed publications:

1. Boison D, Stoffel W. (1989) Myelin-deficient rat: a point mutation in exon III (A→C, Thr75→Pro) of the myelin proteolipid protein causes dysmyelination and oligodendrocyte death. **EMBO J.** 8:3295-3302. PMID: PMC401462
2. Boison D, Stoffel W. (1994) Disruption of the compacted myelin sheath of axons of the central nervous system in proteolipid protein-deficient mice. **Proc Natl Acad Sci U S A.** 91:11709-11713. PMID: PMC45301
3. Boison D, Bussow H, D'Urso D, Muller HW, Stoffel W. (1995) Adhesive properties of proteolipid protein are responsible for the compaction of CNS myelin sheaths. **J Neurosci.** 15:5502-5513. PMID: 7543946
4. Gutierrez R, Boison D, Heinemann U, Stoffel W. (1995) Decompaction of CNS myelin leads to a reduction of the conduction velocity of action potentials in optic nerve. **Neurosci Lett.** 195:93-96. PMID: 7478276
5. Stoffel W, Boison D, Bussow H. (1997) Functional analysis in vivo of the double mutant mouse deficient in both proteolipid protein (PLP) and myelin basic protein (MBP) in the central nervous system. **Cell Tissue Res.** 289:195-206
6. Boison D, Scheurer L, Tseng JL, Aebischer P, Mohler H. (1999) Seizure suppression in kindled rats by intraventricular grafting of an adenosine releasing synthetic polymer. **Exp Neurol.** 160:164-174. PMID: 10630201
7. Huber A, Padrun V, Deglon N, Aebischer P, Mohler H, Boison D. (2001) Grafts of adenosine-releasing cells suppress seizures in kindling epilepsy. **Proc Natl Acad Sci U S A.** 98:7611-7616. PMID: PMC34716
8. Boison D, Scheurer L, Zumsteg V, Rulicke T, Litynski P, Fowler B, Brandner S, Mohler H. (2002) Neonatal hepatic steatosis by disruption of the adenosine kinase gene. **Proc Natl Acad Sci U S A.** 99:6985-90. PMID: PMC124515
9. Boison D, Huber A, Padrun V, Deglon N, Aebischer P, Mohler H. (2002) Seizure suppression by adenosine-releasing cells is independent of seizure frequency. **Epilepsia.** 43:788-796. PMID: 12180995
10. Huber A, Guttinger M, Mohler H, Boison D. (2002) Seizure suppression by adenosine A(2A) receptor activation in a rat model of audiogenic brainstem epilepsy. **Neurosci Lett.** 329:289-292. PMID: 12183033
11. Zumsteg V, Boison D. (2002) The use of real-time PCR with fluorogenic probes for the rapid selection of mutant neuroectodermal grafts. **J Neurosci Methods.** 120:85-94.
12. Gouder N, Fritschy JM, Boison D. (2003) Seizure suppression by adenosine A1 receptor activation in a mouse model of pharmacoresistant epilepsy. **Epilepsia.** 44:877-885. PMID: 12823569
13. Wieser HG, Rudolph U, Blau N, Boison D, Imhof HG, Bernays R, Yonekawa Y. (2003) Amino acid composition of brain cysts: levels of excitatory amino acids in cyst fluid fail to predict seizures. **Epilepsy Res.** 55:191-199.
14. Brill J, Klocke R, Paul D, Boison D, Gouder N, Klugbauer N, Hofmann F, Becker CM, Becker K. (2004) Entla, a novel epileptic and ataxic *Cacna2d2* mutant of the mouse. **J Biol Chem.** 279:7322-7330.
15. Gouder N, Scheurer L, Fritschy JM, Boison D. (2004) Overexpression of adenosine kinase in epileptic hippocampus contributes to epileptogenesis. **J Neurosci.** 24:692-701. PMID: 14736855
16. Fedele DE, Koch P, Scheurer L, Simpson EM, Mohler H, Brustle O, Boison D. (2004) Engineering embryonic stem cell derived glia for adenosine delivery. **Neurosci Lett.** 370:160-165. PMID: 15488315

17. Gabernet L, Pauly-Evers M, Schwerdel C, Lentz M, Bluethmann H, Vogt K, Alberati D, Mohler H, Boison D. (2005) Enhancement of the NMDA receptor function by reduction of glycine transporter-1 expression.  
**Neurosci Lett.** 373:79-84. PMID: 15555781
18. Boison D. (2005) Adenosine and epilepsy: from therapeutic rationale to new therapeutic strategies.  
**Neuroscientist.** 11:25-36. Review. PMID: 15632276
19. Guttinger M, Padrun V, Pralong WF, Boison D. (2005) Seizure suppression and lack of adenosine A1 receptor desensitization after focal long-term delivery of adenosine by encapsulated myoblasts.  
**Exp Neurol.** 193:53-64. PMID: 15817264
20. Fedele DE, Gouder N, Guttinger M, Gabernet L, Scheurer L, Rulicke T, Crestani F, Boison D. (2005) Astrogliosis in epilepsy leads to overexpression of adenosine kinase, resulting in seizure aggravation.  
**Brain.** 128:2383-2395.
21. Guttinger M, Fedele D, Koch P, Padrun V, Pralong WF, Brustle O, Boison D. (2005) Suppression of kindled seizures by paracrine adenosine release from stem cell-derived brain implants.  
**Epilepsia.** 46:1162-1169.
22. Yee BK, Balic E, Singer P, Schwerdel C, Grampp T, Gabernet L, Knuesel I, Benke D, Feldon J, Mohler H, Boison D. (2006) Disruption of glycine transporter 1 restricted to forebrain neurons is associated with a procognitive and antipsychotic phenotypic profile.  
**J Neurosci.** 26:3169-3181. PMID: 16554468
23. Uebersax L, Fedele DE, Schumacher C, Kaplan DL, Merkle HP, Boison D\*, Meinel L. (2006) The support of adenosine release from adenosine kinase deficient ES cells by silk substrates.  
**Biomaterials** 26:4599-607 (\*corresponding author)
24. Fedele DE, Li T, Lan JQ, Fredholm BB, Boison D. (2006) Adenosine A1 receptors are crucial in keeping an epileptic focus localized.  
**Exp Neurol.** 200:184-190. PMID: 16750195
25. Studer FE, Fedele DE, Marowsky A, Schwerdel C, Wernli K, Vogt K, Fritschy JM, Boison D. (2006) Shift of adenosine kinase expression from neurons to astrocytes during postnatal development suggests dual functionality of the enzyme.  
**Neuroscience.** 142:125-137. PMID: 16859834
26. Boison D. (2006) Adenosine kinase, epilepsy and stroke: mechanisms and therapies.  
**Trends Pharmacol Sci.** 27:652-658. Review. PMID: 17056128
27. Pignataro G, Simon RP, Boison D. (2007) Transgenic overexpression of adenosine kinase aggravates cell death in ischemia.  
**J Cereb Blood Flow Metab.** 27:1-5.
28. Pignataro G, Studer FE, Wilz A, Simon RP, Boison D. (2007) Neuroprotection in ischemic mouse brain induced by stem cell-derived brain implants.  
**J Cereb Blood Flow Metab.** 27:919-927.
29. Boison D. (2007) Adenosine-based cell therapy approaches for pharmaco-resistant epilepsies.  
**Neurodegener Dis.** 4:28-33. Review. PMID: 17429216
30. Li T, Steinbeck JA, Lusardi T, Koch P, Lan JQ, Wilz A, Segschneider M, Simon RP, Brustle O, Boison D. (2007) Suppression of kindling epileptogenesis by adenosine releasing stem cell-derived brain implants.  
**Brain** 130:1276-88. PMID: 17472985
31. Boison D. (2007) Cell and gene therapies for refractory epilepsy.  
**Curr Neuropharmacol.** 5: 115-125. Review.
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