

CURRICULUM VITAE

Petra Margarete Klinge

Business Address 55 Claverick Street
Providence, RI 02903
Business Telephone (401) 455-1749
Business Fax Number (401) 455-1292

EDUCATION

Undergraduate:

Baccalaureate in Chemistry, Mathematics, History and Latin 06/83 – 06/86
Gymnasium und Schulzentrum an der Kurt-Schumacher Allee
Bremen, Germany

Ruhr – University Bochum, Germany 10/86 – 06/88

Medical School:

Dr. med., Magna Cum Laude 10/88 – 06/93
Christian-Albrechts-University
Kiel, Germany

Habilitation (Postdoctoral lecture qualification “Venia Legendi”) 07/02
in Neurosurgery, Hannover Medical School, Germany

POSTGRADUATE TRAINING

Residency:

Neurosurgery – Department of Neurosurgery 06/93 – 11/94
Westküstenhospital, Heide-Holstein, Germany

Neurosurgery – Department of Neurosurgery 01/95 – 10/02
Medical School Hannover, Germany

Attending Neurosurgeon, International Neuroscience 11/02-04/2009
Institute, Hannover, Germany (Mentor and Director:
Professor Dr. Madjid Samii)

PROFESSIONAL LICENCES AND BOARD CERTIFICATION

Schleswig-Holstein, German Medical License 12/94

Accreditation for Medical Specialization in Neurosurgery
Medical Association of Lower Saxony 07/02

Rhode Island Medical License (NO 00007) 12/08

ACADEMIC APPOINTMENTS

Assistant Professor of Neurosurgery 07/02 – 07/08
International Neuroscience Institute, Hannover

Associate Professor (APL) of Neurosurgery 07/08 – Present
Hannover Medical School, Germany

Associate Professor of Warren Alpert Medical School,
Brown University, Providence, Rhode Island 12/09-Present

Master of Arts *ad eundem degree*, Warren Alpert Medical School,
Brown University, Providence, Rhode Island 05/2011
[University 243rd commencement, Sunday May 29th 2011]

HOSPITAL APPOINTMENTS AND APPOINTED PRIVILEGES

International Neuroscience Institute Hannover 11/02 – 04/09
Senior Physician

Attending Neurosurgeon 05/09 -Present
Rhode Island Hospital, Providence, RI

Interim Director, Pediatric Neurosurgery
Rhode Island Hospital, Providence, RI 10/09 – Present

Co-director of the “Southern New England Normal Pressure
Hydrocephalus Center”, Butler Hospital, Providence, RI 04/10-Present
(Partners: Dr. S. Salloway, Director of the Memory and Dementia
Program, Dr. Paul Malloy, Director of Cognitive Neurology,
Butler Hospital)

Additional Hospital Privileges:

- Miriam Hospital, Providence, Rhode Island 05/2009
- Butler Hospital, Providence, Rhode Island 01/2010
- Women&Infants Hospital, Providence, Rhode Island 04/2011

OTHER APPOINTMENTS AND ACADEMIC ACTIVITIES

Co-Chair, International NPH-Advisory Board for evaluation of guidelines for the diagnosis and therapy of Normal pressure hydrocephalus	2001 - 2005
Principal Investigator of the “European Multicenter Study on NPH”	2004 – Present
Member, Editorial Board, <i>Clinical Neurology and Neurosurgery</i>	2005 - Present
Chair, annual meeting of the Society for Research into Hydrocephalus and Spina Bifida (www.srhsb.org)	2005 – Present
Invited Participant, Hydrocephalus Workshop, Progress & Controversies in Hydrocephalus. Neurosurg (Suppl. Pediatrics) 107:345-457, 2007.	2005
President, Hydrocephalus 2008 (International Hydrocephalus Conference) www.hydrocephalus2008.com	2008
Board Member, German working committee on Spina Bifida and Hydrocephalus	2008 –2009
Member of the National Advisory Board of Hydrocephalus 2009 (International Hydrocephalus Conference) www.hydrocephalus2009.com	2009
Continental Editor of “Journal of Hydrocephalus,” (Editor-in-chief Shizuo Oi, Professor of Neurosurgery, Jikei University School of Medicine, Tokyo, Japan)	2009 – Present
Ad hoc reviewer of peer-reviewed journals in the field of neurosurgery medicine and basic sciences (Neurosurgery, JNNP, CNN, JCBFM, Brain, JMR, EJON, Acta Scan, Exp Neurol, NSCI Letters, CSFR, Nature Clinical Practice, Acta Neurochir., Journal of Alzheimer’s disease; International Journal of Alzheimers disease, Journal of Neurogenetics)	2003 – Present
Faculty member, International Hydrocephalus Symposium/ Europe (Codman, Johnson & Johnson), Normal Pressure Hydrocephalus Symposium. Copenhagen, Denmark 25th to 26th of November 2010	2002 – Present
Associate Editor of “Clinical Neurology and Neurosurgery” CNN Elsevier Science, Editor in Chief: Peter Paul De Deyn	11/2009 - Present
Editorial board member of “ Journal of Fluid Barriers in the CNS ” Editors-in-Chief	07/2010- Present

Hazel Jones, King's College London
Tetsuya Terasaki, Tohoku University

Faculty member, Hydrocephalus Symposium/ 2010 – Present
Canada, Chair: Mark Hamilton, University of Calgary, Canada
(Codman Canada, Johnson & Johnson) , **Symposium on the Management
of Adult Hydrocephalus in Toronto, Sheraton Terminal 3 Airport Hotel,
May 6th 2011**

Faculty member of the **Fetal Medicine @ Brown. BIOL 5720** 2010 – Present
<http://med.brown.edu/pedisurg/Fetal/Seminar/Schedule.html>

Presenter of the interdisciplinary **Pediatric Neuro-Oncology Tumor Board** 02/2010- Present
Rhode Island Continuing Medical Education, Every second Thursday, 8am
To 9 am , APC 12 Conference Room RIH
(Presenters: Douglas Harrison, M.D. and Petra Klinge, M.D.)

MEMBERSHIP IN SOCIETIES

Society for Research into Intractable Hydrocephalus and 2004 – Present
Spina Bifida

Founding and Board Member, Informationszentrums für 2005 – 2009
Altershirndruck

President-elect, International Society of Hydrocephalus and 2008 – Present
CSF Disorders (www.ISHCSF.com)

President, International Society of Hydrocephalus and 05/2010 – Present
CSF Disorders (www.ISHCSF.com)

SESSION CHAIRS at International Meetings since Affiliation with Brown University 2009:

Klinge, P. Session Chair, Oral Session 2b “Normal Pressure Hydrocephalus”
September 17, 2009. **International Hydrocephalus Conference “ Hydrocephalus 2009”**,
16th to 19th September 2009, Baltimore, MA, USA

Klinge, P. Session I Definition and classification Moderators Carsten Wikkelsø, President
ISHCSF Petra Klinge, President-Elect ISHCSF, 5th International Hydrocephalus workshop,
May 20th to 23rd 2010, Crete, Greece (Organized by the Hellenic Neurosurgical Society

and Commonwealth University, Richmond, VA in affiliation with the International Society of Hydrocephalus and Cerebrospinal fluid disorders

PUBLICATIONS

1. Schmidt, D.; **Klinge, P.**; Harms, D.: Fibromatosen im Kindesalter. Verh. Dtsch Ges. Pathol. **74; 1990; 670.**
2. Schmidt, D.; **Klinge, P.**; Leuschner, I.; Harms, D.: Infantile desmoid-type fibromatosis. Morphological features correlate with biological behavior. **J Pathol. 1991 ug; 164(4): 315-9.**
3. Schatzmann, C.; Heissler, H.E.; Koenig, K.; **Klinge, P.**; Rickels, E.; Muhling, M.; Borschel, M.; Samii, M.: Treatment of elevated intracranial pressure by infusions of 10% saline in severely head injured patients. **Acta Neurochir Suppl. 1998; 71:31-3.**
4. **Klinge, P.**; Rickels, E.; Fischer, J.; Knapp, W.H.; Samii, M.: Hirndurchblutungsmuster bei Patienten mit chronisch hydrocephaler Symptomatik vor und nach Shuntanlage. **Geriat. Forsch. 8: 7-15; 1998.**
5. **Klinge, P.**; Heissler, H.E.; Fischer, J.; Koenig, K.; Zumkeller, M.; Rickels, E.: Cerebral blood flow in chronic hydrocephalus--a parameter indicating shunt failure- new aspects. **Acta Neurochir Suppl. 1998; 71:347-9.**
6. **Klinge, P.**; Fischer, J.; Brinker, T.; Heissler, H.E.; Burchert, W.; Berding, G.; Knapp, W.H.; Samii, M.: PET and CBF studies of chronic hydrocephalus: a contribution to surgical indication and prognosis. **J Neuroimaging. 1998 Oct; 8(4): 205-9.**
7. Brinker, T.; Beck, H.; **Klinge, P.**; Kischnik, B.; Oi, S.; Samii, M.: Sinusoidal intrathecal infusion for assessment of CSF dynamics in kaolin-induced hydrocephalus. **Acta Neurochir (Wien). 1998; 140(10): 1069-75.**
8. **Klinge, P.**; Herzog, T.; Lesinski-Schiedat, A.; Becker, H.: Superselektive Angiographie der Arteria occipitalis bei pulssynchronen Tinnitus. **Klinische Neuroradiologie 1999; 45-49.**
9. **Klinge, P.M.**; Berding, G.; Brinker, T.; Knapp, W.H.; Samii, M.: A positron emission tomography study of cerebrovascular reserve before and after shunt surgery in patients with idiopathic chronic hydrocephalus. **J Neurosurg. 1999 Oct; 91(4):605-9.**
10. **Klinge, P.M.**; Beck, H.; Brinker, T.; Walter, G.F.; Samii, M.: Induction of heat shock protein 70 in the rat brain following intracisternal infusion of autologous blood: evaluation of acute neuronal damage. **J Neurosurg. 1999 Nov; 91(5): 843-50.**

11. **Klinge, P.M.**; Groos, S.; Wewetzer, K.; Haastert, K.; Rosahl, S.; Vafa, M.A.; Hosseini, H.; Samii, M.; Brinker, T.: Regeneration of a transected peripheral nerve by transplantation of spinal cord encapsulated in a vein. **Neuroreport**. 2001 May 8; 12(6): 1271-5.
12. **Klinge, P.M.**; Vafa, M.A.; Brinker, T.; Brandis, A.; Walter, G.F.; Stieglitz, T.; Samii, M.; Wewetzer, K.: Immunohistochemical characterization of axonal sprouting and reactive tissue changes after long-term implantation of a polyimide sieve electrode to the transected adult rat sciatic nerve. **Biomaterials**. 2001 Sep; 22 (17): 2333-43.
13. Schuhmann, M.U.; Schneekloth, C.G.; **Klinge, P.**; Engel, M.; Samii, M.; Brinker, T.: Dynamic shunt testing applying short lasting pressure waves--inertia of shunt systems. **Acta Neurochir Suppl**. 2002; 81:19-21.
14. Lüdemann, W.; Kondziella, D.; Tienken, K.; **Klinge, P.**; Brinker, T.; Berens von Rautenfeld, D.: Spinal cerebrospinal fluid pathways and their significance for the compensation of kaolin-hydrocephalus. **Acta Neurochir Suppl**. 2002; 81:271-3.
15. **Klinge, P.**; Muhlendyck, A.; Lee, S.; Lüdemann, W.; Groos, S.; Samii, M.; Brinker, T.: Temporal and regional profile of neuronal and glial cellular injury after induction of kaolin hydrocephalus. **Acta Neurochir Suppl**. 2002; 81:275-7.
16. **Klinge, P.**; Berding, G.; Brinker, T.; Schuhmann, M.; Weckesser, E.; Knapp, W.H.; Samii, M.: The role of cerebral blood flow and cerebrovascular reserve capacity in the diagnosis of chronic hydrocephalus- a PET-study on 60 patients. **Acta Neurochir Suppl**. 2002; 81:39-41.
17. **Klinge, P.**; Berding, G.; Brinker, T.; Schuhmann, M.; Knapp, W.H.; Samii, M.: PET-studies in idiopathic chronic hydrocephalus before and after shunt-treatment: the role of risk factors for cerebrovascular disease (CVD) on cerebral hemodynamics. **Acta Neurochir Suppl**. 2002; 81:43-5.
18. **Klinge, P.**; Berding, G.; Brinker, T.; Weckesser, E.; Knapp, W.H.; Samii, M.: Regional cerebral blood flow profiles of shunt-responder in idiopathic chronic hydrocephalus--a 15-O-water PET-study. **Acta Neurochir Suppl**. 2002; 81:47-9.
19. **Klinge, P.**; Ruckert, N.; Schuhmann, M.; Dorner, L.; Brinker, T.; Samii, M.: Neuropsychological testing to improve surgical management of patients with chronic hydrocephalus after shunt treatment. **Acta Neurochir Suppl**. 2002; 81:51-3.
20. **Klinge, P.**; Rückert, N.; Schuhmann, M.; Berding, G.; Brinker, T.; Knapp, W.H.; Samii, M.: Neuropsychological sequels to changes in global cerebral

blood flow and cerebrovascular reserve capacity after shunt treatment in chronic hydrocephalus--a quantitative PET-study. **Acta Neurochir Suppl.** **2002; 81:55-7.**

21. **Klinge, P.M.**; Samii, A.; Muhlendyck, A.; Visnyei, K.; Meyer, G.J.; Walter, G.F.; Silverberg, G.D.; Brinker, T.: Cerebral hypoperfusion and delayed hippocampal response after induction of adult kaolin hydrocephalus. **Stroke.** **2003 Jan; 34(1):193-9.**
22. Schuhmann, M.U.; Mokhtarzadeh, M.; Stichtenoth, D.O.; Skardelly, M.; **Klinge, P.M.**; Gutzki, F.M.; Samii, M.; Brinker, T.: Temporal profiles of cerebrospinal fluid leukotrienes; brain edema and inflammatory response following experimental brain injury. **Neurol Res.** **2003 Jul; 25(5):481-91.**
23. Schuhmann, M.U.; Stiller, D.; Skardelly, M.; Bernarding, J.; **Klinge, P.M.**; Samii, A.; Samii, M.; Brinker, T.: Metabolic changes in the vicinity of brain contusions: a proton magnetic resonance spectroscopy and histology study. **J Neurotrauma.** **2003 Aug; 20(8):725-43.**
24. **Klinge, P.**; Paulus, W.: Die Diagnose und Behandlung des Normaldruckhydrozephalus [Diagnosis and Treatment of Normal pressure hydrocephalus]. **Aktuelle Neurologie.** **2004; 31:439-448**
25. Kaminsky, J.; **Klinge, P.**; Rodt, T.; Bokemeyer, M.; Luedemann, W.; Samii, M.: Specially adapted interactive tools for an improved 3D-segmentation of the spine. **Comput Med Imaging Graph.** **2004 Apr;28(3):119-27.**
26. **Klinge, P.**: Updates in diagnostic evaluation and management of Normal pressure hydrocephalus. **Reviews in Neurosurgery.** **Vol.3/3.2004**
27. Marmarou, A.; Black, P.; Bergsneider, M.; **Klinge, P.**; Relkin, N.; International NPH Consultant Group. Guidelines for management of idiopathic normal pressure hydrocephalus: progress to date. **Acta Neurochir Suppl.** **2005; 95:237-40.**
28. Marmarou, A.; Bergsneider, M.; Relkin, N.; **Klinge, P.**; Black, P.M.: Development of guidelines for idiopathic normal-pressure hydrocephalus: introduction. **Neurosurgery.** **2005 Sep;57(3 Suppl):S1-3.**
29. Relkin, N.; Marmarou, A.; **Klinge, P.**; Bergsneider, M.; Black, P.M.: Diagnosing idiopathic normal-pressure hydrocephalus. **Neurosurgery.** **2005 Sep;57(3 Suppl):S4-16.**
30. Marmarou, A.; Bergsneider, M.; **Klinge, P.**; Relkin, N.; Black, P.M.: The value of supplemental prognostic tests for the preoperative assessment of idiopathic normal-pressure hydrocephalus. **Neurosurgery.** **2005 Sep; 57(3 Suppl):S17-28.**
31. Bergsneider, M.; Black, P.M.; **Klinge, P.**; Marmarou, A.; Relkin, N.: Surgical

management of idiopathic normal-pressure hydrocephalus. **Neurosurgery. 2005 Sep; 57(3 Suppl):S29-39**

32. **Klinge, P.**; Marmarou, A.; Bergsneider, M.; Relkin, N.; Black, P.M.: Outcome of shunting in idiopathic normal-pressure hydrocephalus and the value of outcome assessment in shunted patients. **Neurosurgery. 2005 Sep; 57 (3 Suppl):S40-52**
33. **Klinge, P.M.**; Samii, A.; Niescken, S.; Brinker, T.; Silverberg, G.D.: Brain amyloid accumulates in aged rats with kaolin-induced hydrocephalus. **Neuroreport. 2006 Apr 24; 17(6):657-60.**
34. Gielow, P.; **Klinge, P.**; Knapp, W.H.; Berding, G.: Synthesis and preliminary biological evaluation of [¹²³I]Me2Pyr; a new potential ligand for imaging of central cannabinoid CB1 receptors. **Appl Radiat Isot. 2006 Jul;64(7):763-8.**
35. **Klinge, P.M.**; Brooks, D.J.; Samii, A.; Weckesser, E.; van den Hoff, J.; Fricke, H.; Brinker, T.; Knapp, W.H.; Berding, G.: Correlates of local cerebral blood flow (CBF) in normal pressure hydrocephalus patients before and after shunting-A retrospective analysis of [(15)O]H(2)O PET-CBF studies in 65 patients. **Clin Neurol Neurosurg. 2008 Apr 110(4): 369-75.**
36. Mirzayan, M.J.; **Klinge, P.M.**; Ude, S.; Hotop, A.; Samii, M.; Brinker, T.; Korkmaz, Z.; Meyer, G.J.; Knapp, W.H.; Samii, A.: Modified calcium accumulation after controlled cortical impact under cyclosporin A treatment: a (45)Ca autoradiographic study. **Neurol Res. 2008 Jun 30(5): 476-9.**
37. Johanson, Conrad E.; Duncan, John A.; **Klinge, Petra M.**; Stopa, Edward G. and Silverberg, Gerald PD: Multiplicity of Cerebrospinal Fluid Functions: New Challenges in Health and Disease; **Cerebrospinal Fluid Research 2008 May 14, 5-10.**
38. Jones, H.C.; **Klinge, P.M.**: Hydrocephalus 2008, September 17-20, Hannover, Germany; a conference report. **Cerebrospinal Fluid Research. 2008 Dec 16, 5-19.**
39. Heile, A.M.; Wallrapp, C.; **Klinge, P.M.**; Samii, A.; Kassem, M.; Silverberg, G.; Brinker, T.: Cerebral transplantation of encapsulated mesenchymal stem cells improves cellular pathology after experimental traumatic brain injury. *Neurosci Lett.* 2009 Oct 9;463(3):176-81. Epub 2009 Jul 26.
40. Deren, K.E.; Forsyth, J.; Abdullah, O.; Hsu, E.W.; **Klinge, P.M.**; Silverberg, G.D.; Johanson, C.E.; McAllister, J.P.: 2nd.Low levels of amyloid-beta and its transporters in neonatal rats with and without hydrocephalus. *Cerebrospinal Fluid Res.* 2009 May 26;6:4.
41. Gerganov, V.M.; **Klinge, P.M.**; Nouri, M.; Stieglitz L.; Samii M.; Samii A.:

Prognostic clinical and radiological parameters for immediate facial nerve function following vestibular schwannoma surgery. *Acta Neurochir (Wien)*. 2009 Jun;151(6):581-7.

42. Silverberg, Gerald David; Miller, Miles C; Machan, Jason T; Johanson, Conrad E; Caralopoulos, Ilias N; Pascale, Crissey L; Heile, Anna; **Klinge, Petra M.:** Amyloid and Tau accumulate in the brains of aged hydrocephalic rats. *Brain Res*. 2010 Mar 4;1317:286-96. Epub 2010 Jan 4.
43. **Klinge PM**, Harmening K, Miller MC, Heile A, Wallrapp C, Geigle P, Brinker T. Encapsulated native and glucagon-like peptide-1 transfected human mesenchymal stem cells in a transgenic mouse model of Alzheimer's disease. *Neurosci Lett*. 2011 Apr 12. [Epub ahead of print]
44. Silke Glage, **Petra M. Klinge**, Christine Wallrapp, Peter Geigle , Hans-J. Hedrich and Thomas Brinker, Therapeutic concentrations of Glucagon-like peptide-1 after cell- based delivery into the ventricular CSF space. **Accepted for publication in FluidbarriersCNS. May 2011**
45. Hellström, P., **Klinge, P**, Tans, J., Wikkelsø, C. Neuropsychological findings in the European multicentre study on iNPH. **Accepted for publication in Clinical Neurology and Neurosurgery. May 2011 CNN D-10-873R1**

BOOK CHAPTERS

1. **Klinge, P.;** Heissler, H. E.; Rickels, E.; König, K.; Fischer, J.; Burchert, W.; Zumkeller, M. Cerebral blood flow (CBF) in chronic hydrocephalus: new aspects. In: *New trends in cerebral Hemodynamics and Neurosonology*. J. Klingelhöfer; E. Barthels; E. B. Ringelstein (eds.). **Elsevier Science B.v.; Amsterdam – Lausanne – New York – Oxford – Shannon – Singapore – Tokyo: 150-155; 1997.**
2. **Klinge, P. M.** Diagnosis and Treatment of Adult Hydrocephalus (chapter IV;23; pp 249-258); in: *Samii´s Essentials in Neurosurgery*; Editors: Ramina R; Pires Aguiar PH; Tatagiba M. Springer **Verlag; 2008.**
3. **Klinge, P.M.** Animal Models of Normal Pressure Hydrocephalus (Part VII. pp 615-640) in: *Animal Models of Dementia*. **Editors: Peter De Deyn and Debby Van Dam. Springer Verlag. Humana Press (Neuromethods 48 Wolfgang Wlazz, Series Editor); 2010**

PUBLISHED ABSTRACTS

1. **Klinge-Xhemajli, P.**; Rickels, E.; Burchert, W.; König, K.; Zumkeller, M.: Die Messung der Hirndurchblutung bei chronischem Hydrozephalus - Neue Aspekte zur Therapieplanung und Pathophysiologie. **Zentralbl. Neurochir. (Suppl.): 80; 1996.**
2. **Klinge-Xhemajli, P.**; Fischer, J.; Rickels, E.; Burchert, W.; König, K.; Zumkeller, M.: Normal pressure hydrocephalus and cerebrovascular disease: new aspects in the therapeutic management by PET-CBF studies. **Cerebrovasc. Dis. 6(Suppl. 2): 1-31; 1996.**
3. König, K.; Rickels, E.; Krömer, S.; Heissler, H.E.; **Klinge-Xhemajli, P.**: Focal temporary ischemia in the rat brain. The influence of controlled ventilation during 1 hour of middle cerebral artery (MCA) occlusion. **Cerebrovasc. Dis. 6 (Suppl. 2): 32-178; 1996.**
4. **Klinge-Xhemajli, P.**; Rickels, E.; König, K.; Burchert, W.; Zumkeller, M.: Cerebral Blood flow (CBF) in chronic hydrocephalus – new aspects. **Cerebrovasc Dis 6 (Suppl. 3): 1-70; 1996.**
5. **Klinge-Xhemajli, P.**; Heissler, H.; Rickels, E.; Fischer, J.; Zumkeller, M.; Samii, M.: Hirndurchblutung bei chronischem Hydrozephalus: Vergleichsstudie früher und später Durchblutungsmuster nach Shuntanlage. **Zentralbl. Neurochir. (Suppl.): 40; 1997.**
6. Fischer, J.; **Klinge-Xhemajli, P.**; Burchert, W.; Hundeshagen, H.: 15O-H2O-PET-Fluß-Studien zur Beurteilung der cerebralen Perfusion bei Patienten mit Normaldruckhydrozephalus vor und nach ventrikulo-peritonealer Shuntanlage. **Radiologe. 37: 105-122; 1997.**
7. Fischer, J.; **Klinge-Xhemajli, P.**; Burchert, W.; Hundeshagen, H.: Validating prognosis of shunt-therapy in normal pressure hydrocephalus with 15-O-H2O-PET Studies of cerebral blood flow. **Eur. J. Nucl. Med. 24: 1006 P254; 1997.**
8. **Klinge, P.**; Fischer, J.; Burchert, W.; Rickels, E.; Samii, M.: About PET-CBF-studies with diamox in chronic hydrocephalus before and after shunt surgery- new aspects?. **Zentralbl. Neurochir. (Suppl.): 28; 1998.**
9. **Klinge, P.**; Lüdemann, W.; Beck, H.; v. Rautenfeld, D. Berens; Brinker, T.; Oi, S.; Samii, M.: Morphological changes in hydrocephalic rats with respect to glutamatergic transmission and vascular arrangement. **Zentralbl. Neurochir. (Suppl.): 28-29; 1998.**
10. **Klinge, P.**; Berding, G.; Fischer, J.; Knapp, W.H.; Samii, M.: Positron emission tomography (PET) in idiopathic chronic hydrocephalus of the elderly: the potential clinical value of CBF studies. **Zentralbl. Neurochir. (Suppl.): 31-32; 1999.**
11. Lee, S.; **Klinge, P.**; Brinker, T.; Walter, G.F.; Samii, M.: Immune- and Ezyme-histochemical studies of the periventricular Gliosis in Kaolin-Hydrocephalus.

Zentralbl. Neurochir. (Suppl.): 25; 1999.

12. **Klinge, P.**; Rückert, N.; Dörner, L.; Brinker, T.; Samii, M.: Neuropsychologische Testverfahren zur Verbesserung des neurochirurgischen Managements von Patienten mit chronischem Hydrocephalus. **Zentralbl. Neurochir. 61 (Suppl.): 27; 2000.**
13. **Klinge, P.**; Mühlendyck, A.; Lüdemann, W.; Brinker, T.; Samii, M.: Zeitliche und regionale Schädigungsprofile beim Kaolinhydrocephalus der adulten Ratte. **Zentralbl. Neurochir. 61 (Suppl.): 16; 2000.**
14. **Klinge, P.M.**; Wewetzer, K.; Meyer, U.; Groos, S.; Samii, M.; Brinker, T.: Bioartificial nerve grafting – histological findings on implantation of embryonic spinal nervous tissue and a polyimide sieve probe on degenerating and regenerating rat sciatic nerves. **Restorative Neurology and Neuroscience 16 (3;4): 205; 2000.**
15. **Klinge, P.M.**; Wewetzer, K.; Haarstert, K.; Samii, M.; Brinker, T.: A flexible polyimide-sieve-electrode for interfacing severed peripheral nerves-immunohistological characterization of axonal sprouting and reactive tissue changes after long term implantation to the transected rat sciatic nerve. **Restorative Neurology and Neuroscience 16 (3;4): 206; 2000.**
16. **Klinge, P.M.**; Mühlendyck, A.; Luedemann, W.; Groos, S.; Samii, M.; Brinker, T.: Cellular response in hydrocephalus resembles brain damage after neurotrauma. **Restorative Neurology and Neuroscience 16 (3;4): 218; 2000.**
17. Schuhmann, M.U.; Scardelly, M.; Lüdemann, W.; **Klinge, P.**; Thomas, S.; Samii, M.; Brinker, T.: Regional changes of glutamate metabolism as monitored by glutamate dehydrogenase activity following focal brain injury. **Restorative Neurology and Neuroscience 16 (3;4): 219; 2000.**
18. Berding, G.; **Klinge, P.**; Brinker, T.; Weckesser, E.; Samii, M.; Knapp, W.H.: Prognostic value of [15O] water PET before shunt surgery in patients with chronic hydrocephalus. **Nuklearmedizin 39: A70; 2000.**
19. **Klinge, P.**; Berding, G.; Schuhmann, M.; Brinker, T.; Samii, M.: Einfluß zerebrovaskulärer Risikofaktoren auf die zerebrale Hämodynamik nach Shuntanlage beim idiopathischen Normaldruckhydrocephalus. **Zentralbl. Neurochir. (Suppl.): 34 - 35; 2001.**
20. Berding, G.; **Klinge, P.**; Brinker T.; Weckesser, E.; Brooks, D.J.; Van den Hoff, J.; Samii, M.; Knapp, W.H.: An H215O-PET study of chronic hydrocephalus before and after ventriculoperitoneal shunting. **J Nucl Med 42: 145P; 2001.**
21. Berding, G.; **Klinge, P.**; Brinker, T.; Weckesser, E.; Fricke, H.; Samii, M.; Knapp, W.H.: Studie des Zusammenhangs von cerebraler Perfusion und klinischer Symptomatik beim Normaldruckhydrocephalus mit 15-O-Wasser-PET.

Nuklearmedizin 40: A42; 2001.

22. Berding, G.; **Klinge P.**; Brinker, T.; Weckesser, E.; Van den Hoff, J.; Samii, M.; Knapp, W.H.: Untersuchung zur Pathophysiologie des fehlenden Therapieerfolgs nach ventriculoperitonealem Shunt bei Normaldruckhydrozephalus mit 15-O-Wasser-PET. **Nuklearmedizin 40: A56; 2001.**
23. **Klinge, P.**; Berding, G; Brinker, T; Brooks, DJ; Knapp, W; Samii, M.: The role of cerebral blood flow (CBF) and cerebrovascular reserve capacity in the diagnosis of idiopathic normal pressure hydrocephalus (NPH). **European Journal of Neurology 2002. Volume 9 (Suppl 2): FW-16-3.**
24. **Klinge, P. M.**; Gerkmann, I.; Samii, A.; Brinker, T.: Incomplete reversibility of selective hippocampal response after early and delayed shunting in adult kaolin-hydrocephalus – implications for early shunt treatment. **Cerebrospinal Fluid Research 2004;1(Suppl 1): S33.**
25. **Klinge, P.M.**; Berding, G.; Brooks, D.J.; Brinker, T.; Knapp, W.H.; Samii, M.: Changes in local cerebral blood flow were associated with functional improvement of patients with idiopathic Normal-pressure hydrocephalus after shunt-treatment – a 15O-H2O- PET-Study. **Cerebrospinal Fluid Research 2004 ; 1 (Suppl 1): S16.**
26. **Klinge, P.M.**; Rückert, N.; Brinker, T.; Dörner, L.; Samii, M.A: Short neuropsychological test battery for measuring functional outcome after shunt placement in patients with Normal pressure hydrocephalus. **Cerebrospinal Fluid Research 2004 ; 1 (Suppl 1): 21.**
27. **Klinge, P.M.**; Brinker, T; Samii, M.A.; Silverberg G.D.: Brain amyloid accumulation in senescent rats with kaolin-induced hydrocephalus. **Cerebrospinal Fluid Research 2005; 2 (Suppl 1): S32.**
28. Silverberg, G.; Johanson, C.; Duncan, J.; Brinker, T.; Slone, S.; Messier, A.; Soltman, S.; **Klinge, P.**: Does NPH equal ischaemia? **Cerebrospinal Fluid Research 2007; 4 (Suppl 1): S 2.**
29. **Klinge, P.M.**; Messier, A.; Heile, A.; Nouri, M.; Johanson, C.E.; Duncan, J.; Brinker, T.; Silverberg, G.D.: Opposite changes in cerebellar vs. cortical blood brain barrier (BBB) expression in aged and hydrocephalic rats. **Cerebrospinal Fluid Research 2007; 4 (Suppl 1): S 3.**
30. Johanson, C.E.; **Klinge, P.M.**; Soltman, S.; Flaherty, S.; Messier, A.; Duncan, J.A. III; Stopa, E.; Silverberg, G.D.: Enhanced expression of the LRP-1 transporter at the blood-CSF interface in chronic hydrocephalus. **Cerebrospinal Fluid Research 2007; 4(Suppl 1): S44.**
31. Heile, A.; Baltés, S.; **Klinge, P.M.**; Wallrapp, C.; Brinker, T.. GLP-1 secreting

- encapsulated human mesenchymal stem cells for neuroprotection. **Cerebrospinal Fluid Research 2007; 4 (Suppl 1): S46.**
32. **Klinge, P.M.**; Heile, A.; Slone, S.; Johanson, C.E.; Miller, M.; Duncan, J.A.; Brinker, T.; Silverberg, G.: Evidence of TAU pathology in kaolin-induced hydrocephalus model of the aged rat. **Cerebrospinal Fluid Research 2008; 6 (Suppl 1) S17.**
33. A. Heile; S. Knippenberg; M. Miller, C.E. Johanson; G.D. Silverberg; **P.M. Klinge.**: Pathology of AD-related inflammatory and oxidative stress mediators in Kaolin-induced hydrocephalus model of the aged rat. **Clinical Neurology and Neurosurgery 2008; 110 (Suppl 1) S17**
34. K.E. Deren, J. Forsyth, **P.M. Klinge**, G.D. Silverberg, C.E. Johanson, J.P. McAllister. Amyloid-beta clearance in experimental neonatal hydrocephalus. **Clinical Neurology and Neurosurgery 2008; 110 (Suppl 1) S17**
35. L.H. Stieglitz, L. Droll, W. Luedeman, **P.M. Klinge**, A. Samii, M.Samii. Introduction of a new instrument for easy frameless stereotactic placement of shunt catheters. **Clinical Neurology and Neurosurgery 2008; 110 (Suppl 1) S26**
36. C. Wikkelsö, **P.M. Klinge**, J.T.H.J. Tans, The European NPH Study group. Clinical course of patients in the European INPH study. **Clinical Neurology and Neurosurgery 2008 ; 110 (Suppl 1) S28**
37. A. Heile, S. Knippenberg, C. Wallrapp, **P.M. Klinge**, T. Brinker. Ex vivo gene therapy of hydrocephalus: Intrathecal implantation of mesenchymal stem cells producing the neuroprotective peptide Glucagon like peptide-1. **Clinical Neurology and Neurosurgery 2008; 110 (Suppl 1) S30**
38. S. Glage, C. Wallrapp, **P.M. Klinge**, H.J. Hedrich, T. Brinker. Ex-vivo gene Therapy: A retrievable device for cell-based peptide delivery into the CSF space. **Clinical Neurology and Neurosurgery 2008; 110 (Suppl 1) S31**
39. B. Kischnik, D.D`Avella, T. Brinker, **P.M. Klinge**. Internet-based database facilitates international multicentric normal-pressure hydrocephalus study. **Clinical Neurology and Neurosurgery 2008; 110 (Suppl 1) S35**
40. V.M. Gerganov, A. Pirayesh, P.M. Klinge, A. Samii, M. Samii. Neurological outcome and morbidity rate after surgical treatment of patients with vestibular schwannoma and associated hydrocephalus. **Clinical Neurology and Neurosurgery 2008; 110 (Suppl 1) S40**

SCIENTIFIC PRESENTATIONS

1. **Klinge-Xhemajli, P.**; Burchert, W.; Rickels, E.; Zumkeller, M.; Heissler, H.: Ist die Messung der zerebralen Perfusion eine Hilfe bei der Indikationsstellung zur Shunt-OP bei Hydrozephalus? **Lecture at the German Neurosurgical Society's annual sub-committee meeting "Intracranial pressure – brain edema – brain blood flow"; Würzburg, October 19-20 1995.**
2. **Klinge-Xhemajli, P.**; Rickels, E.; Burchert, W.; König, K.; Zumkeller, M.: Die Messung der Hirndurchblutung bei chronischem Hydrozephalus - Neue Aspekte zur Therapieplanung und Pathophysiologie. **Poster on the 47th annual meeting of the German Neurosurgical Society; Hamburg, June 17 – 20 1996.**
3. **Klinge, P.**; Fischer, J.; Rickels, E.; Burchert, W.; König, K.; Zumkeller, M.: Normal pressure hydrocephalus and cerebrovascular disease: new aspects in the therapeutic management by PET-CBF studies. **Lecture at the Joint 3rd World Stroke Congress and 5th European Stroke Conference; Munich, September 1- 4 1996.**
4. König, K.; Rickels, E.; Krömer, S.; Heissler, H.E.; **Klinge-Xhemajli, P.**: Focal temporary ischemia in the rat brain. The influence of controlled ventilation during 1 hour of middle cerebral artery (MCA) occlusion. **Poster at the Joint 3rd World Stroke Congress and 5th European Stroke Conference; Munich, September 1- 4 1996.**
5. **Klinge-Xhemajli, P.**; Rickels, E.; König, K.; Burchert, W.; Zumkeller, M.: Cerebral Blood flow (CBF) in chronic hydrocephalus – new aspects. **Poster at the 1st Meeting of the European Society of Neurosonology and Cerebral Hemodynamics; Munich August 29 – September 1 1996.**
6. **Klinge- Xhemajli, P.**; Heissler, H.; Fischer, J.; Rickels, E.; Zumkeller, M.: Cerebral blood flow (CBF) in chronic hydrocephalus – a guideline for treatment? **Lecture at the 4th International Symposium of Central Nervous System Monitoring; Gmunden, Austria, September 5 - 7 1996.**
7. **Klinge-Xhemajli, P.**; Rickels, E.; Fischer, J.; König, K.; Zumkeller, M.: Cerebral blood flow (CBF) in chronic hydrocephalus – New aspects in therapeutic Management and Pathophysiology. **Lecture at the Joint Meeting of the Germany Neurosurgical Society and the Society of British Neurological Surgeons; Hanover, September 14 - 17 1996.**
8. Fischer, J.; **Klinge-Xhemajli, P.**; Burchert, W.; Hundeshagen, H.: 15O-H₂O-PET-Fluß-Studien zur Beurteilung der der cerebralen Perfusion bei Patienten mit Normaldruckhydrozephalus vor und nach ventrikulo-peritonealer Shuntanlage. **Lecture at the Joint Meeting of the north-german society for radiography with the societies for radiography of the states of Lower-saxony and Sachsen-Anhalt; Hanover, February 21 - 22 1997.**

9. **Klinge-Xhemajli, P.**; Fischer, J.; Heissler, H.E.; Zumkeller, M.; Rickels, E.: Cerebral Blood Flow Studies in Chronic Hydrocephalus: A Contribution to Surgery Indication and Prognosis. **Poster at the 29th Annual Meeting of The American Society of Neuroimaging; Puerto Rico, USA, March 5 - 8 1997.**
10. **Klinge-Xhemajli, P.**; Heissler, H.; Rickels, E.; Fischer, J.; Zumkeller, M.; Samii, M.: Hirndurchblutung bei chronischem Hydrocephalus: Vergleichsstudie früher und später Durchblutungsmuster nach Shuntanlage. **Lecture at the 48th annual meeting of the German Neurosurgical Society; Berlin, April 27 – 30 1997.**
11. **Klinge-Xhemajli, P.**; Rickels, E.; Heissler, H.; Fischer, J.; König, K.; Zumkeller, M.; Samii, M.: Cerebral blood flow in chronic hydrocephalus: A parameter indicating shunt failure – New aspects. **Lecture at the 10th International Symposium on intracranial pressure and neuromonitoring in brain injury; Williamsburg, Virginia, USA, May 25 - 27 1997.**
12. **Klinge-Xhemajli, P.**; Rickels, E.; Heissler, H.E.; Fischer, J.; Samii, M.: Cerebral blood flow in chronic hydrocephalus: a parameter indicating shunt failure. **Poster at the 11th international congress of neurological surgery; Amsterdam July 6 - 11 1997.**
13. König, K.; Rickels, E.; Krömer, S.; Heissler, H.E.; **Klinge-Xhemajli, P.**; Samii, M.: Mannitol therapy vs. controlled ventilation during 1 our of temporary middle cerebral artery (MCA) occlusion in the rat. **Poster at the 11th international congress of neurological surgery; Amsterdam July 6 - 11 1997.**
14. Fischer, J.; **Klinge-Xhemajli, P.**; Burchert, W.; Hundeshagen, H.: Validating prognosis of shunt-therapy in normal pressure hydrocephalus with 15-O-H₂O-PET- Studies of cerebral blood flow. **Poster at the European Association of Nuclear Medicine (EANM) Congress; Glasgow, UK, August 23 - 27 1997.**
15. **Klinge, P.**; Fischer, J.; Burchert, W.; Rickels, E.; Samii, M.: About PET-CBF-studies with diamox in chronic hydrocephalus before and after shunt surgery- new aspects? **Lecture at the 49. annual meeting of the German Neurosurgical Society; 1st Joint Meeting with the Brazilian Society of Neurosurgery; 3rd Joint Meeting with the Japanese Society of Neurosurgery; Hanover, June 12 – 16 1998.**
16. **Klinge, P.**; Lüdemann, W.; Beck, H.; v. Rautenfeld, D. Berens; Brinker, T.; Oi, S.; Samii, M.: Morphological changes in hydrocephalic rats with respect to glutamatergic transmission and vascular arrangement. **Lecture at the 49. annual meeting of the German Neurosurgical Society; 1st Joint Meeting with the Brazilian Society of Neurosurgery; 3rd Joint Meeting with the Japanese Society of Neurosurgery; Hanover, June 12 - 16 1998.**
17. **Klinge, P.**; Berding, G.; Fischer, J.; Knapp, W.H.; Samii, M.: Die Korrelation von cerebraler acetazolamidstimulierter Durchblutung zur basalen Perfusion bei

Patienten mit chronischem Hydrocephalus. **Lecture at the German Neurosurgical Society's annual sub-committee meeting Intracranial pressure – brain edema – brain blood flow; Marburg, October 30 - 31 1998.**

18. Lee, S.; **Klinge, P.**; Lüdemann, W.; Brinker, T.; Samii, M.: Histologische Untersuchungen zur Zytopathologie der astrozytären „Gliose“ Reaktion beim Kaolinhydrozephalus. **Lecture at the German Neurosurgical Society's annual sub-committee meeting Intracranial pressure – brain edema – brain blood flow; Marburg, October 30 - 31 1998.**
19. Lee, S.; **Klinge, P.**; Brinker, T.; Walter, G.F.; Samii, M.: Immune- and Enzyme-histochemical studies of the periventricular Gliosis in Kaolin-Hydrocephalus. **Poster at the 50th annual meeting of the German Neurosurgical Society; Munich, June 5 – 9 1999.**
20. **Klinge, P.**; Berding, G.; Fischer, J.; Knapp, W.H.; Samii, M.: Positron emission tomography (PET) in idiopathic chronic hydrocephalus of the elderly: the potential clinical value of CBF studies. **Poster at the 50th annual meeting of the German Neurosurgical Society; Munich, June 5 - 9 1999.**
21. **Klinge, P.**; Mühlendyck, A.; Lüdemann, W.; Brinker, T.; Samii, M.: Das Periventrikuläre Ödem beim Hydrocephalus – Ein neuronales Trauma! **Lecture at the German Neurosurgical Society's annual sub-committee meeting Intracranial pressure – brain edema – brain blood flow; Bad Homburg, October 14 - 15 1999.**
22. Berding, G.; **Klinge, P.**; Brinker, T.; Weckesser, E.; Samii, M.; Knapp, W.H.: Prognostic value of [15O]water PET before shunt surgery in patients with chronic hydrocephalus. **Poster at the annual joint meeting of the German; Austrian and Swiss Societies for Nuclear Medicine; Munich, March 29 – April 1 2000.**
23. **Klinge, P.**; Berding, G.; Brinker, T.; Schuhmann, M.; Knapp, W.H.; Samii, M.: PET-studies in idiopathic chronic hydrocephalus before and after shunt-treatment: the role of risk factors for cerebrovascular disease (CVD) on cerebral hemodynamics. **Lecture at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
24. Lüdemann, W.; Kondziella, D.; Tienken, K.; **Klinge, P.**; Brinker, T.; von Rautenfeld, D. Berens: Spinal Cerebrospinal Fluid Pathways and their Significance for the Compensation of Kaolinhydrocephalus. **Lecture at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
25. **Klinge, P.**; Rückert, N.; Dörner, L.; Schuhmann, M.; Brinker, T.; Samii, M.: Neuropsychological testing for improved surgical management of patients with idiopathic chronic hydrocephalus after shunt treatment. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in**

brain injury; Cambridge, UK, July 22 - 27 2000.

26. **Klinge, P.**; Berding, G.; Brinker, T.; Weckesser, E.; Knapp, W.H.; Samii, M.: Regional cerebral blood flow profiles of shunt-responder in idiopathic chronic hydrocephalus – a ¹⁵O-water PET-study. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
27. **Klinge, P.**; Rückert, N.; Schuhmann M.; Berding, G.; Brinker, T.; Knapp, W.H.; Samii, M.: Neuropsychological sequels to changes in global cerebral blood flow and cerebrovascular reserve capacity after shunt treatment in chronic hydrocephalus – a quantitative PET-study. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
28. **Klinge, P.**; Berding, G.; Brinker, T.; Schuhmann, M.; Weckesser, E.; Knapp, W.H.; Samii, M.: The role of cerebral blood flow and cerebrovascular reserve capacity in the diagnosis of chronic hydrocephalus – a PET-study on 60 patients. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
29. **Klinge, P.**; Mühlendyck, A.; Lüdemann, W.; Groos, S.; Samii, M.; Brinker, T.: Sustained neuronal injury despite spontaneous normalisation of ICP in the sub-acute stage of kaolin induced hydrocephalus. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
30. **Klinge, P.**; Lee, S.; Mühlendyck, A.; Lüdemann, W.; Groos, S.; Samii, M.; Brinker, T.: Temporal and regional profile of neuronal and glial cellular injury after induction of kaolin hydrocephalus. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
31. Schuhmann, M.; Schneekloth, C.; **Klinge, P.**; Engel, M.; Samii, M.; Brinker, T.: Dynamic Shunt Testing Applying Shot Lasting Pressure Waves- Inertia of Shunt Systems. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
32. Schuhmann, M.; Schneekloth, C.; Engel, M.; **Klinge, P.**; Brinker, T.; Samii, M.: Shortening the Distal catheter of Shunts – Effects on Hydrodynamic Shunt Properties. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**
33. Schuhmann, M.; Engel, M.; Schneekloth, C.G.; **Klinge, P.**; Brinker, T.; Samii, M.: Laboratory Shunt Testing – Shunt Performance is Independent of Compliance

Characteristics of Shunt Testing Rig. **Poster at the Eleventh International Symposium on intracranial pressure and neuromonitoring in brain injury; Cambridge, UK, July 22 - 27 2000.**

34. **Klinge, P.**; Rückert, N.; Dörner, L.; Brinker, T.; Samii, M.: Neuropsychologische Testverfahren zur Verbesserung des neurochirurgischen Managements von Patienten mit chronischem Hydrocephalus. **Lecture at the 51st annual meeting of the German Neurosurgical Society; Lübeck, Germany, September 13 - 16 2000.**
35. **Klinge, P.**; Mühlendyck, A.; Lüdemann, W.; Brinker, T.; Samii, M.: Zeitliche und regionale Schädigungsprofile beim Kaolinhydrocephalus der adulten Ratte. **Poster at the 51st annual meeting of the German Neurosurgical Society; Lübeck, Germany, September 13 - 16 2000.**
36. **Klinge, P.M.**; Wewetzer, K.; Meyer, U.; Groos, S.; Samii, M.; Brinker, T.: Bioartificial nerve grafting – histological findings on implantation of embryonic spinal nervous tissue and a polyimide sieve probe on degenerating and regenerating rat sciatic nerves. **Lecture at the 5th International Neurotrauma Symposium; Garmisch-Partenkirchen, Germany, October 1 - 5 2000.**
37. **Klinge, P.M.**; Wewetzer, K.; Haarstert, K.; Samii, M.; Brinker, T.: A flexible polyimide-sieve-electrode for interfacing severed peripheral nerves-immunohistological characterization of axonal sprouting and reactive tissue changes after long term implantation to the transected rat sciatic nerve. **Lecture at the 5th International Neurotrauma Symposium; Garmisch-Patenkirchen, Germany, October 1 - 5 2000.**
38. **Klinge, P.M.**; Mühlendyck, A.; Ludemann, W.; Groos, S.; Samii, M.; Brinker, T.: Cellular response in hydrocephalus resembles brain damage after neurotrauma. **Poster at the 5th International Neurotrauma Symposium; Garmisch-Patenkirchen, Germany, October 1 – 5 2000.**
39. Schuhmann, M.U.; Scardelly, M.; Lüdemann, W.; **Klinge, P.**; Thomas, S.; Samii, M.; Brinker, T.: Regional changes of glutamate metabolism as monitored by glutamate dehydrogenase activity following focal brain injury. **Poster at the 5th International Neurotrauma Symposium; Garmisch-Patenkirchen, Germany, October 1 – 5 2000.**
40. **Klinge, P.**; Berding, G.; Brinker, T.; Schuhmann, M.; Knapp, W.H.; Samii, M.: Der Einfluß zerebrovaskulärer Risikofaktoren auf Hirndurchblutung und Reservekapazität vor und nach Shuntanlage bei Patienten mit idiopathischem chronischem Hydrozephalus: quantitative PET-Studien. **Lecture at the German Neurosurgical Society's annual sub-committee meeting; Intracranial pressure – brain edema – brain blood flow; Fulda, Germany, October 13 - 14 2000.**

41. Mühlendyck, A.; **Klinge, P.**; Lüdemann, W.; Kondziella, D.; Samii, M.; Brinker, T.: Neuronale Schädigungsmuster während der spontanen Hirndrucknormalisierung in der subakuten Phase des Kaolinhydrozephalus. **Lecture at the German Neurosurgical Society's annual sub-committee meeting Intracranial pressure – brain edema – brain blood flow; Fulda, Germany, October 13 - 14 2000.**

42. Schuhmann, M.; Scardelly, M.; Stiller, D.; **Klinge, P.**; Lüdemann, W.; Bernarding, J.; Samii, M.; T. Brinker: Regionale Unterschiede der Glutamatdehydrogenase-Aktivität und der MR-spektroskopischen Glutamatkonzentration nach experimentellen fokalem Kontusionstrauma. **Lecture at the German Neurosurgical Society's annual sub-committee meeting; Intracranial pressure – brain edema – brain blood flow; Fulda, Germany, October 13 - 14 2000.**

43. Berding, G.; **Klinge, P.**; Brinker, T.; Weckesser, E.; Fricke, H.; Samii, M.; Knapp, W.H.: Studie des Zusammenhangs von cerebraler Perfusion und klinischer Symptomatik beim Normaldruckhydrozephalus mit 15-O-Wasser-PET. **Lecture at the annual meeting of the Germany Society of Nuclear Medicine; Hamburg, April 25 - 28 2001.**

44. Berding, G.; **Klinge, P.**; Brinker, T.; Weckesser, E.; Van den Hoff, J.; Samii, M.; Knapp, W.H.: Untersuchung zur Pathophysiologie des fehlenden Therapieerfolgs nach ventricluoperitonealem Shunt bei Normaldruckhydrozephalus mit 15-O-Wasser-PET. **Lecture at the annual meeting of the Germany Society of Nuclear Medicine; Hamburg, April 25 - 28 2001.**

45. **Klinge, P.**; Berding, G.; Brooks, D.J.; Brinker, T.; Knapp, W.H.; Samii, M.: Changes in local cerebral blood flow were associated with functional improvement of patients with Normal-pressure hydrocephalus (NPH) after shunt-treatment - a 15O-H20- PET-Study. **Lecture at the 3rd International Hydrocephalus Workshop; Kos, Greece, May 17 - 20 2001.**

46. Lüdemann, W.; Tienken, K.; Kondziella, D.; **Klinge, P.**; Brinker, T.; von Rautenfeld, D. Berens: Significance of Spinal Cerebrospinal Fluid Pathways for the Compensation of Kaolin-Hydrocephalus. **Lecture at the 3rd International Hydrocephalus Workshop; Kos, Greece, May 17 - 20 2001.**

47. **Klinge, P.M.**; Samii, A.; Mühlendyck, A.; Visnay, K.; Lüdemann, W.; Samii, M.; Brinker, T.: Selective hippocampal response after chronic cerebral hypoperfusion during the spontaneous course of adult kaolin- hydrocephalus. **Poster at the 3rd International Hydrocephalus Workshop; Cos, Greece, May 17 – 20 2001.**

48. **Klinge, P.**; Rückert, N.; Weißenborn, K.; Dörner, L.; Samii, M.; Brinker, T.: A practical neuropsychological test battery for measurement of cognitive and motor function in patients with Normal-pressure hydrocephalus (NPH). **Poster at the 3rd International Hydrocephalus Workshop; Kos, Greece, May 17 – 20 2001.**

49. **Klinge, P.**; Berding, G.; Brinker, T.; Schuhmann, M.; Knapp, W.H.; Samii, M.: The role of cerebrovascular reserve capacity in the diagnosis of idiopathic Normal-pressure hydrocephalus - a PET-study on 41 patients. **Poster at the 3rd International Hydrocephalus Workshop; Kos, Greece, May 17 – 20 2001.**
50. Schuhmann, M.U.; **Klinge, P.M.**; Skardelly, M.; Samii, A.; Samii, M.; Brinker, T.: Common Sequential Patterns of Neuronal Hippocampal Response in Kaolin-Hydrocephalus and Traumatic Brain Injury. **Poster at the 3rd International Hydrocephalus Workshop; Kos, Greece, May 17 – 20 2001.**
51. **Klinge, P.**; Berding, G.; Schuhmann, M.; Brinker, T.; Samii, M.: Einfluß zerebrovaskulärer Risikofaktoren auf die zerebrale Hämodynamik nach Shuntanlage beim idiopathischen Normaldruckhydrozephalus. **Lecture at the 52. annual meeting of the German Neurosurgical Society; Bielefeld, Germany, May 27 - 30 2001.**
52. Berding, G.; **Klinge, P.**; Brinker, T.; Weckesser, E.; Brooks, D.J.; Van den Hoff, J.; Samii, M.; Knapp, W.H.: A H₂¹⁵O-PET study of chronic hydrocephalus before and after ventriculoperitoneal shunting. **Lecture at the SNM 48th Annual Meeting; Toronto, Canada, June 23 - 27 2001.**
53. **Klinge, P.**; Rittierodt, M.: Der idiopathische Normaldruckhydrozephalus (iNPH). Geschlechtsspezifische Differenzen unter besonderer Berücksichtigung prädisponierender Faktoren. **Poster at the 27th scientific annual meeting of the German Federation of women in medicine (“Best Poster Award”); Hanover, August 7- 9 2001.**
54. Gerkmann, I.; **Klinge, P.**; Lüdemann, W.; Brinker, T.: Reversibilität selektiver hippokampaler Reaktionsmuster nach früher und später Shuntanlage beim Kaolinhydrozephalus der adulten Ratte. **Lecture at the German Neurosurgical Society’s annual sub-committee meeting; Intracranial pressure – brain edema – brain blood flow; München – Bogenhausen, October 12 - 13 2001.**
55. **Klinge, P.**; Berding, G.; Brinker, T.; Knapp, W.H.; Samii, M.: Die Rolle der Hirndurchblutungsmessung und der zerebrovaskulären Reservekapazität beim idiopathischen Normaldruckhydrozephalus – Ergebnisse einer PET-Studie von 70 Patienten. **Lecture at the 54th annual meeting of the German Neurosurgical Society; Saarbrücken, Germany, May 25 - 28 2003.**
56. **Klinge, P.**; Visnyei, K.; Mühlendyck, A.; Samii, A.; Silverberg, G.D.; Brinker, T.: Chronische Hirndurchblutungsminderung und Delayed Neuronal Injury im Spontanverlauf des adulten Kaolin-hydrozephalus. **Poster at the 54th annual meeting of the German Neurosurgical Society; Saarbrücken, May 25 - 28 2003.**
57. **Klinge, P.**; Gerkmann, I.; Lüdemann, W.; Brinker, T.: Reversibilität selektiver

hippokampaler Schädigungsmuster nach früher und später Shuntanlage beim Kaolin-hydrozephalus der adulten Ratte- eine Indikation zur rechtzeitigen Shuntanlage.
Poster at the 54th annual meeting of the German Neurosurgical Society; Saarbrücken, May 25 - 28 2003.

58. Vafa, M.A.; Poessnecker, J.; Harms ,N.; Wewetzer, K.; Haastert, K.; **Klinge, P.M.**; Brinker, T.: A biotechnical graft for functional restoration of degenerated nerves.
Poster at the 54th annual meeting of the German Neurosurgical Society; Saarbrücken, May 25 - 28 2003.

59. Brinker, Thomas; Vafa, Ali; Rosahl, Steffen; **Klinge, Petra Margarete**: An elastic chitosan spiral cuff used as a nerve guidance channel. **Poster at the 54th annual meeting of the German Neurosurgical Society; Saarbrücken, May 25 - 28 2003.**

60. **Klinge, P. M.**; Gerkmann, I.; Samii, A.; Brinker, T.: Incomplete reversibility of selective hippocampal response after early and delayed shunting in adult kaolin-hydrocephalus – implications for early shunt treatment. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 48th Annual Scientific Meeting; Dublin, June 23 - 26 2004.**

61. **Klinge, P.M.**; Berding, G.; Brooks, D.J.; Brinker, T.; Knapp, W.H.; Samii, M.: Changes in local cerebral blood flow were associated with functional improvement of patients with idiopathic Normal-pressure hydrocephalus after shunt-treatment – a 15O-H2O- PET-Study. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 48th Annual Scientific Meeting; Dublin, June 23 - 26 2004.**

62. **Klinge, P.M.**; Rückert, N.; Brinker, T.; Dörner, L.; Samii, M.A.: short neuropsychological test battery for measuring functional outcome after shunt placement in patients with Normal pressure hydrocephalus. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 48th Annual Scientific Meeting; Dublin, June 23 - 26 2004.**

63. **Klinge, P.M.**; Brinker, T.; Samii, A.; Silverberg, G.D.: Brain amyloid accumulation in senescent rats with kaolin-induced hydrocephalus. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 49th Annual Scientific Meeting; Barcelona, June 29 – July 2 2005.**

64. Akhmetshina, Alfiya; **Klinge, Petra M.**; Samii, Amir; Brinker, Thomas; Silverberg, Gerald D.: Pattern of positive neuronal staining of normal TAU and specific hyperphosphorylated TAU proteins involved in PHF pathogenesis in aged rats and after induction of kaolin-hydrocephalus. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 50th Annual Scientific Meeting; Cambridge, UK, August 20 – September 2 2006.**

65. **Klinge, Petra M.**; Johanson, Conrad E.; Akhmetshina, Alfiya; Samii, Amir; Brinker, Thomas; Silverberg, Gerald D.: Changes of specific receptors for amyloid transportation at the blood brain barrier in the cortex and the choroid plexus mimic the effects of aging in kaolin-hydrocephalus of senescent rats. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 50th Annual Scientific Meeting; Cambridge, UK, August 20 – September 2 2006.**
66. **Klinge, P.M.**; Johanson, C.E.; Samii, A.; Brinker, T.; Silverberg, G.D.: Increased brain amyloid accumulation and specific BBB receptor changes mimic the effects of aging in Kaolin-hydrocephalus of senescent rats. **Lecture at the 1. International Hydrocephalus Congress (Hydrocephalus 2006) Gothenburg, Sweden, September 6 - 8 2006.**
67. **Klinge, P.**; Samii, A.; Akhmetshina, A.; Johanson, C.; Brinker, T.; Silverberg, G.: Evidence of Alzheimer-related pathology in aged rats with kaolin-induced hydrocephalus. **Lecture at the 58th Annual meeting of the German Neurosurgical Society; e.V. (DGNC); Leipzig, April 26 - 29 2007.**
68. Freund, I.; Baltés, S.; **Klinge, P.**; Samii, A.; Wallrapp, C.; Brinker, T.: Experimental investigation of doxorubicin and irinotecan loaded microspheres for intratumoral treatment of glioma. **Lecture at the 58. annual meeting of the German Neurosurgical Society e.V. (DGNC); Leipzig, April 26 - 29 2007**
69. Heile, A.; Baltés, S.; **Klinge, P.**; Samii, A.; Wallrapp, C.; Brinker, T.: GLP-1 secreting encapsulated human mesenchymal stem cells for neuroprotection after traumatic brain injury in rats. **Lecture at the 58. annual meeting of the German Neurosurgical Society e.V. (DGNC); Leipzig, April 26 – 29 2007.**
70. **Klinge, Petra**; Brinker, Thomas; Samii, Amir; Duncan, John; Johanson, Conrad and Silverberg, Gerald D.: Amyloid and Tau accumulate in aged rats with kaolin-induced hydrocephalus. **Poster at the Annual meeting der American society of Neurological Surgeons (AANS); Washington DC; April 14 - 17 2007**
71. **Klinge, P.**; Johanson, C.E.; Slone, S.; Messier, A.; Akhmetshina, A.; Duncan, J.A.; Brinker, T.; Silverberg, G.D.: A-beta transport at the blood brain barrier (BBB) is decreased in ageing and in Kaolin-induced hydrocephalus leading to A-beta and TAU accumulation. **Poster at the 4th Hydrocephalus Workshop; Progress and Controversies in Hydrocephalus; Rhodes, Greece, May 17 – 20 2007.**
72. **Klinge, P.**; Wikkelsö, C.; Tans, J. – on behalf of the European NPH study group. An observational study of 100 patients diagnosed with idiopathic Normal pressure hydrocephalus (INPH) based on clinical and radiological findings – the European-INPH-trial group. **Lecture at the 4th Hydrocephalus Workshop; Progress and Controversies in Hydrocephalus; Rhodes, Greece, May 17 – 20 2007.**
73. Silverberg, G.; Johanson, C.; Duncan, J.; Brinker, T.; Slone, S.; Messier, A.; Soltman,

- S.; **Klinge, P.:** Does NPH equal ischaemia? **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 51st Annual Scientific Meeting; Heidelberg, June 27 - 30 2007.**
74. **Klinge, P.M.;** Messier, A.; Heile, A.; Nouri, M.; Johanson, C.E.; Duncan, J.; Brinker, T.; Silverberg, G.D.: Opposite changes in cerebellar vs. cortical blood brain barrier (BBB) expression in aged and hydrocephalic rats. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 51st Annual Scientific Meeting; Heidelberg, June 27 - 30 2007.**
75. Johanson, C.E.; **Klinge, P.M.;** Soltman, S.; Flaherty, S.; Messier, A.; Duncan, J.A. III; Stopa, E.; Silverberg, G.D.: Enhanced expression of the LRP-1 transporter at the blood-CSF interface in chronic hydrocephalus. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 51st Annual Scientific Meeting; Heidelberg, June 27 - 30 2007.**
76. Heile, A.; Baltés, S.; **Klinge, P.M.;** Wallrapp, C.; Brinker, T.: GLP-1 secreting encapsulated human mesenchymal stem cells for neuroprotection. **Lecture at the annual meeting of the Society for Research into Hydrocephalus and Spina Bifida. 51st Annual Scientific Meeting; Heidelberg, June 27 - 30 2007.**
77. Silverberg, G.D.; Johanson, C.E.; Duncan, J.A.; Brinker, T.; **Klinge, P.M.:** Expression of choroid plexus amyloid transporters is upregulated in NPH. **Lecture at the 13th International Symposium on Intracranial Pressure and Brain Monitoring; San Francisco, July 22 – 27 2007.**
78. **Klinge P.;** Akhmetshina A.; Johanson C.E.; Samii A.; Duncan J. A.; Brinker T.; Silverberg G.D.: Alzheimer-related pathology in aged rats with Kaolin-induced hydrocephalus. **Poster at the 13th International Symposium on Intracranial Pressure and Brain Monitoring; San Francisco, July 22 – 27 2007.**
79. **Klinge, P.M.;** Heile, A.; Slone, S.; Johanson, C.E.; Miller, M.; Duncan, J.A.; Brinker, T.; Silverberg, G.: Evidence of TAU pathology in kaolin-induced hydrocephalus model of the aged rat. **Lecture at the Annual Meeting of the Society for Research into Hydrocephalus and Spina Bifida. 52nd Annual Scientific Meeting; Heidelberg, June 11 – 14 Providence, RI, 2008.**
80. A. Heile; S. Knippenberg; M. Miller, C.E. Johanson; G.D. Silverberg; **P.M. Klinge.:** Pathology of AD-related inflammatory and oxidative stress mediators in Kaolin-induced hydrocephalus model of the aged rat. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
81. K.E. Deren, J. Forsyth, **P.M. Klinge,** G.D. Silverberg, C.E. Johanson, J.P. Mc

- Allister. Amyloid-beta clearance in experimental neonatal hydrocephalus. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
82. L.H. Stieglitz, L. Droll, W. Luedeman, **P.M. Klinge**, A. Samii, M.Samii. Introduction of a new instrument for easy frameless stereotactic placement of shunt catheters. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
83. C. Wikkelsö, **P.M. Klinge**, J.T.H.J. Tans, The European NPH Study group. Clinical course of patients in the European INPH study. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
84. A. Heile, S. Knippenberg, C. Wallrapp, **P.M. Klinge**, T. Brinker. Ex vivo gene therapy of hydrocephalus: Intrathecal implantation of mesenchymal stem cells producing the neuroprotective peptide Glucagon like peptide-1. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
85. S. Glage, C. Wallrapp, **P.M. Klinge**, H.J. Hedrich, T. Brinker. Ex-vivo gene Therapy: A retrievable device for cell-based peptide delivery into the CSF space. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
86. B. Kischnik, D.D`Avella, T. Brinker, **P.M. Klinge**. Internet-based database facilitates international multicentric normal-pressure hydrocephalus study. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
87. V.M. Gerganov, A. Pirayesh, P.M. Klinge, A. Samii, M. Samii. Neurological outcome and morbidity rate after surgical treatment of patients with vestibular schwannoma and associated hydrocephalus. **Poster at the International Hydrocephalus Conference “Hydrocephalus 2008”. 17th to 20th September 2008, Hannover, Germany.**
88. **Petra Klinge**, Jos Tans and Carsten Wikkelsø. The On behalf of the European iNPH study group correlation between Rout and CSF TT and outcome after surgery in 146 patients included in the The European Multi-Centre-Study. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2009”. 16th to 19th September 2009, Baltimore, MA, USA**
89. **Petra M. Klinge**, Kathrin Harmening, Anna Heile, Miles C. Miller, Crissey Pascale,

Conrad Johanson, Gerald D. Silverberg and Thomas Brinker. Intraventricular implantation of alginate-encapsulated GLP-1 producing human mesenchymal stem cells in a double transgenic mouse model of AD: Neurosurgical implications for stem cell treatment of neurodegenerative diseases. *Awarded as TOP 10 ORAL PRESENTATIONS*; Lecture at the International Hydrocephalus Conference “Hydrocephalus 2009”. 16th to 19th September 2009, Baltimore, MA, USA

90. Per Hellström, Carsten Wikkelsö, Jos Tans, **Petra Klinge**. Neuropsychologic findings in the European iNPH study. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2009”**. 16th to 19th September 2009, Baltimore, MA, USA
91. Edward Stopa, Conrad Johanson, **Petra Klinge**, John Donahue, Stephen Salloway, Brian Ott, Stephen Mernoff, John Stoukides, Suzanne de la Monte, Miles C Miller, Victor Alvarez, Mirfida Geller, Gerald Silverberg. Cognitive improvement after ventriculoperitoneal shunt placement in Alzheimers disease and non-Alzheimers dementias. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2009”**. 16th to 19th September 2009, Baltimore, MA, USA
92. Carsten Wikkelsö, Jos Tans, Per Hellström, **Petra Klinge**. Symptoms and signs in 146 patients included in the European Multicentre Study on iNPH. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2009”**. 16th to 19th September 2009, Baltimore, MA, USA
93. Carsten Wikkelsö, **Petra Klinge**, Per Hellström, Jos Tans. The predictive value of symptoms and signs fort he outcome after shunting iNPH patients included in the European Multicentre Study on INPH. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2009”**. 16th to 19th September 2009, Baltimore, MA, USA
94. **Petra Klinge**, Jos Tans, Carsten Wikkelsö. The correlation between Rout and CSF TT and outcome after surgery in 146 patients included in the European Multicentre Study on iNPH. **Lecture at the International Hydrocephalus Conference “Hydrocephalus 2009”**. 16th to 19th September 2009, Baltimore, MA, USA
95. Miles C. Miller, Heather Spader, Kathrin Harmening, Anna Heile, Crissey L. Pascale, Conrad E. Johanson, Thomas Brinker, Gerald D. Silverberg, **Petra M. Klinge**. "Microglial downregulation in a double transgenic mouse model associated with early-onset Alzheimer's disease (AD) after intraventricular implantation of alginate encapsulated glukagon-like-peptide-1 (GLP-1) producing human mesenchymal stem-cells"**17th Annual Research Celebration RIH, Thursday, Oct. 22, 2009.**
96. Hellström P., **Klinge P.**, Tans J., Wikkelsø C. Neuropsychological changes following

shunt treatment in the European Multicenter study on INPH. **Lecture 5th International Hydrocephalus workshop, Crete, Greece, 20th to 23rd of May 2010.**

97. Stopa E.G., Nikonova E.V., Tanis K.Q., Podtelezhnikov A.A., Finney E.M., Stone D.J., Camargo L.M., Parker L., Verma A., Baird A., Miller M.C., Donahue J.E., Gonzalez A.M., Eliceiri B., Silverberg G.D., **Klinge P.M.**, Johanson C.E. GENE EXPRESSION PROFILING OF CHOROID PLEXUS IN ALZHEIMER'S DISEASE REVEAL IMPORTANT IMPLICATIONS FOR CSF DYNAMICS. **Lecture 5th International Hydrocephalus workshop, Crete, Greece, 20th to 23rd of May 2010.**

INVITED LECTURES/ TEACHING ACTIVITIES
(Brown University and National and International meetings)

1. **Klinge, P.M.** International Guidelines in NPH. **Lecture at the 1. Lund International NPH Workshop, Lund-University/Sweden, May 2 – 4 2002.**
2. **Klinge, P.M.** Blood flow measurements in NPH. **Lecture at the 1. Lund International NPH Workshop, Lund-University/Sweden, May 2 – 4 2002.**
3. **Klinge, P.M.** NPH Follow-up Scales. **Lecture at the 1. Lund International NPH Workshop der Lund-University/Sweden, May 2 - 4 2002.**
4. **Klinge, P.M.** Der Normaldruckhydrozephalus beim älteren Menschen. **Lecture at the annual meeting of the German working committee Spina bifida and Hydrocephalus e.V.; Fulda, November 29 – 30 2002.**
5. **Klinge, P.M.** Updates in Diagnostic Evaluation and Management of Normal Pressure Hydrocephalus. **Lecture at the Hydrocephalus symposium at the 12th congress for the European Association of Neurological Surgeons (EANS) (B. Romner; Lund-University; Schweden; P. Klinge; INI-Hanover; Sponsor: Codman; Johnson&Johnson); Lisbon, September 9 2003.**
6. **Klinge, P.M.** CSF in normal pressure hydrocephalus: diagnosis and treatment. **Lecture at the EKN symposium (Symposium on CSF in neurological diseases) Belgium, Alden Biesen, October 16 2003.**
7. **Klinge, Petra M.** Diagnosis and Treatment of Normal Pressure Hydrocephalus. **Lecture at the First STARS Symposium: Intracranial Pressure Control and Treatment in Hydrocephalus; Detroit, USA, May 21 - 22 2004.**
8. **Klinge, P.M.:** Updates on the Guidelines for Diagnosis and Management of Normal pressure hydrocephalus. **Lecture at the 2nd Lund International**

NPH Workshop Lund-University/Sweden; Lund, September 9 - 11 2004.

9. **Klinge, P.M.** PET-CBF measurements in NPH. **Lecture at the 2nd Lund International NPH Workshop Lund-University/Sweden; Lund, September 9 -11 2004.**
10. **Klinge, P.M.** Evidence based approach of Guidelines for Diagnosis and Management of Idiopathic NPH. **Lecture at the Symposium “Hydrocephalus: Current and Future Challenges;” Birmingham, UK, October 14 - 15 2004.**
11. **Klinge, P.M.** The Diagnosis of NPH. **Lecture at the Hydrocephalus Workshop “1965-2005: NPH turns forty; but looks much younger” at the 13th World Congress of Neurosurgery (B. Romner; Lund-University; Sweden; P. Klinge; INI-Hanover; Sponsor: Codman; Johnson&Johnson); Marrakech; June 19 - 23 2005.**
12. **Klinge, P.M.** Perspektiven der neurochirurgischen Behandlung des Normaldruck-hydrozephalus. **Lecture at the satellite symposium (Update Normal Pressure hydrocephalus”) during the 78th annual congress of German Neurological Society (Klinge PM-Hanover; Paulus W – Göttingen); Wiesbaden, September 21 - 24 2005.**
13. **Klinge, P.** Der Normaldruckhydrozephalus. **Lecture on the “Dementia Fair Congress” (Schirmherrschaft Dr. Ursula Leyen; German Federal Family Ministry); Bremen, February 7 - 8 2007.**
14. **Klinge, P.** Improving Outcomes in Hydrocephalus: Bridging the Gap between basic Science and Clinical Management. H. Jones. Role of CSF circulation in protein clearance in Alzheimer’s disease and Normal Pressure Hydrocephalus. **The National Institute of Neurological Disorders and Stroke and the STARS KID Foundation, September 14-15, 2009 Hyatt Regency, Baltimore, MD.**
15. **Klinge, P.** Evidence based approaches to the diagnosis and treatment of idiopathic normal pressure hydrocephalus (INPH) – Results of the prospective European INPH multicenter trail on the prediction of outcome in INPH. (2005-2008) **Neurology Grand Rounds, October 21, 2009 RIH Providence, RI.**
16. **Klinge, P.** Encapsulated Mesenchymal Stem-Cell Based Cerebrospinal Fluid (CSF) Drug Delivery for Neuroprotective and Neruoregenerative Treatment. **Pediatric Research Colloquium, October 23, 2009 W&I Hospital Providence, RI.**
17. **Klinge, P.** Aspects and results of translational research in Normal pressure

Hydrocephalus-Neurosurgical implications for treatment of dementia and neurodegenerative diseases. **Memory clinic Research Meeting, October 28, 2009 RI Hospital, Providence, RI.**

18. **Klinge, P.** New insights into pathophysiology and treatment of hydrocephalus – implications from translational research. **Pediatric Grand Rounds, RIH, December 11th, 2009.**
19. **Klinge, P.** Discussion of the Case: Diagnosis, Pathology and Treatment of Hydrocephalus. **Neonatology CPC, Perinatal Management Conference, Department of Pediatrics (B. Stonestreet, S. Delamonte), W& I, January 13th 2010**
20. **Klinge, P.** Surgical Management of Hydrocephalus. **Dementia CPC Brown University (S. Salloway and J. Donahue). March 10th, 2010.**
21. **Klinge, P.** Neurological anomalies in the fetus. Hydrocephalus, Open neural tube defects, Pre- and postnatal treatment. **Faculty member of the Fetal Medicine @ Brown. BIOL 5720**
<http://med.brown.edu/pedisurg/Fetal/Seminar/Schedule.html> March 10th, 2010.
22. **Klinge, P.** New insights into surgical treatment of Hydrocephalus – from CSF diversion to CSF augmentation. **Surgical Grand Rounds, RIH, March 16th 2010.**
23. **Klinge, P.** Discussion of the Case: Diagnosis, Pathology and Treatment of Hydrocephalus. **Neuropathological Grand Rounds (J. Donahue), March 31st 2010**
24. **Klinge, P.** Surgical management of spina bifida . **Interdisciplinary MADAM Conference, Women& Infants, May 5th 2010**
25. **Klinge, P.** The practice guidelines for the diagnosis and management of NPH History and perspectives. Special session: The importance of Dr. Anthony Marmarou. **Invited speaker at the 5th International Hydrocephalus workshop, Crete, Greece, 20th to 23rd of May 2010.**
26. **Klinge, P.** Neurosurgical Management Baby G, C *11/24/09. Difficult Decisions and Outcomes for Discordant Twins. **Neonatology CPC, Perinatal Management Conference, Department of Pediatrics (B. Stonestreet), W& I, June 30th 2010**
27. **Klinge, P.** Hydrocephalus Management. Depuy Residents Weekend. Codman Neurosurgery&Endovascular Course. **Moderator: Petra M. Klinge. Saturday August 14th, 2010, Raynham, MA**

28. **Klinge, P. A fetus with a posterior fossa lesion.** Brain Lesions Big and Small Significance and Perinatal Management. **Interdisciplinary MADAM Conference, Women& Infants, December 3rd, 2010**
29. **Klinge, P.** New insights into surgical treatment of Hydrocephalus – from CSF diversion to CSF augmentation. **Lecture at the Invitation of the Brown Students Neurosurgical Interest Group (Brandon Kirsch), February 23rd 2011.**
30. **Klinge, P.** Neurological anomalies in the fetus. Hydrocephalus, Open neural tube defects, Pre- and postnatal treatment. **Faculty member of the Fetal Medicine @ Brown. BIOL 5720**
<http://med.brown.edu/pedisurg/Fetal/Seminar/Schedule.html> March 9th, 2011.
31. **Klinge, P.** Adult Hydrocephalus Pathophysiology: Progressive neurodegenerative disorder?. Breakfast seminar: **Contemporary management for Adult Hydrocephalus. Moderator: Guy M. McKhann II, MD. Lecture at the AANS meeting in Denver, Colorado, April 9th to 13th 2011**

Special international teaching activities:

Teaching in the diagnosis, pathophysiology, treatment and outcome assessment of Chinese Neurosurgeons on behalf of Codman, Johnson&Johnson, US.

China Academic Neurosurgical departments visited centres during the months of July 2008:

- Dep. Of NCH, the Second Affiliated Hospital of Guangzhou Medical College
- Dep of Neurosurgery, First Affiliated Hospital, Sun Tae-sen University, Guangzhou
- People's Hospital Province Guangdong
- Dep. Of Neurosurgery, West China Hospital
- Dep. of Neursurgery, Hua Shan Hospital, Shanghai Neurosurgical Center
- Dep. Of NCH, The Second Affiliated Hospital, Zhejiang University
- Dep. Of NCH, Zhejian Provincial People's Hospital
- General Hospital of Tianjin - Medical School
- NCH Department of Ping Jin Hospital of the Chinese people's Armed police Forces Medical University
- Tianjin First Central Hospital
- Yu Quan Hosptial (Second Hospital), Tsinghua University, Beijing

GRANTS

<p>“Encapsulation Technologies for Intracerebral Application of Endostatin in Glioblastoma Treatment.” Investigator International Neurobionik Foundation Rudolf-Pichlmayr-Strasse 4, 30625 Hannover (www.neurobionik-stiftung.de)</p>	<p>12/2003-6/2004 30,000 €</p>
<p>“Experimental Studies on the AD-related pathology Kaolin-induced hydrocephalus of the ageing rat.” Investigator EUNOE Science, CA, USA (now: INTEGRA™ Life Sciences)</p>	<p>06/2003-06/2005 10,000 €</p>
<p>German Ministry of Research Project ANCI, “Sub-project: Stem-cell therapy in brain tumors.” Co-Investigator German Ministry of Research</p>	<p>01/2005 – 01/2007 200,000 €</p>
<p>“European Multicenter Study on the prediction of outcome in idiopathic hydrocephalus.” Principal Investigator Codman & Shurtleff, a Johnson and Johnson Company 325 Paramount Drive, Raynham, MA 02767, USA (Michael V. Ward, DVM Worldwide Director, Clinical Research)</p>	<p>08/2004–12/2008 \$250 000</p>
<p>“Hydrocephalus 2008” Hannover, September 17 – 20 2008. (www.hydrocephalus.com) Principal Investigator Codman & Shurtleff, a Johnson and Johnson Company 325 Paramount Drive, Raynham, MA 02767, USA</p>	<p>06/2007 – 09/2008 36,000 €</p>
<p>BRAUN Aesculap, Aesculap AG & Co. KG, 78532 Tuttlingen, Deutschland</p>	<p>25,000 €</p>
<p>MEDTRONIC 710 Medtronic Parkway Minneapolis, MN 55432-5604; USA</p>	<p>12,500 €</p>
<p>INTEGRA™ 311 Enterprise Drive Plainsboro, New Jersey 08536, USA</p>	<p>5,000 €</p>
<p>Möller Medical GmbH & Co KG, Wasserkuppenstraße 29-31 36043 Fulda, Germany</p>	<p>5,000 €</p>
<p>”Foundation/creation of an international</p>	<p>09/2007</p>

hydrocephalus society.”
Investigator

Codman & Shurtleff, a Johnson and Johnson Company 5,000 €
325 Paramount Drive, Raynham, MA 02767, USA

MEDTRONIC
710 Medtronic Parkway Minneapolis, MN 55432-5604; USA 5,000 \$