

CURRICULUM VITAE

NAME: Clauss, Matthias A.

EDUCATION:

UNDERGRADUATE: 1982: Diploma (combined bachelor/ master program) in chemistry at the Albert-Einstein-University in Ulm (Germany)

GRADUATE: 1988: Dr. rer. nat. (PhD equivalent) in biology at the Ruprecht-Karls-University and within the German Cancer Research Center in Heidelberg (Germany)

POSTDOCTORAL: 1988 to 1991: Postdoctoral research fellow at the department of Physiology and Cellular Biophysics of the Columbia University in New York with Dr. David Stern
1992 to 1994: Scientific Assistant at the Max-Planck-Institute for Neurobiology in Martinsried (Munich), Germany
1994 to 1997: Scientific Assistant at the Max-Planck-Institute for Physiological and Clinical Research in Bad Nauheim, Germany

ACADEMIC APPOINTMENTS:

1997-2003 Assistant Professor of Molecular Cell Biology and Biochemistry, Bad Nauheim and Philipps-University Marburg, Germany

02/18/03-present: Associate Research Professor of Cellular & Integrative Physiology, Microbiology and Immunology and of Internal Medicine, Indiana University School of Medicine Member of the Indiana Center for Vascular Biology and Medicine, Indiana University School of Medicine

OTHER APPOINTMENTS & PROFESSIONAL CONSULTANTSHIPS:

1987-1988: Fellow at the German Cancer Research Center in Heidelberg (Germany)

LICENSURE AND CERTIFICATION:

1997 Habilitation (eligibility for academic teaching) for Biochemistry and Cell Biology

PROFESSIONAL ORGANIZATIONS:

American Association for the Advancement of Science
American Heart Association
American Thoracic Society
North American Vascular Biology Organization (NAVBO)
German Society for Physiology
German/European Society for Microcirculation

HONORS AND AWARDS

1992 Helmholtz-Award for Neurobiology by the BMBF

2006 Best Publication 2004-2006 by J. Vasc. Res. and the Eur. Soc. Microcirculation

RESEARCH INTERESTS

My research program is focused on endothelial cell activation and cytokine biology, which we study both in cell culture and in transgenic and non-transgenic animal models of ischemia, inflammation and angiogenesis. Disease model include lung emphysema, nephropathy and coronary vascular disorders. We analyze endothelial cell activation and signaling in response to cytokines, growth factors and HIV virus and study the effects of activation on interaction with other cells such as blood monocytes, endothelial progenitor cells and adipose stromal stem cells.

PUBLICATIONS:

I. Peer refereed original publications:

1. Richter KH, Schnapke R, **Clauss M**, Fürstenberger G, Hinz D, Marks F (1990) Epidermal G1-chalone and transforming growth factor β are two endogenous inhibitors of epidermal cell proliferation. *J. Cell Physiol.* 142: 496-504
2. **Clauss M**, Murray JC, Vianna M, de Waal R, Thurston G, Nawroth P, Gerlach H, Gerlach M, Bach R, Familletti PC, Stern D (1990) A polypeptide factor produced by fibrosarcoma cells that induces endothelial tissue factor and enhances the procoagulant response to tumor necrosis factor/cachectin. *J. Biol. Chem.* 265: 7078-7083
3. Ogawa S, Shreeniwas R, Brett J, **Clauss M**, Furie M, Stern D (1990). The effect of hypoxia on capillary endothelial cell function: modulation of barrier and coagulant function. *Br. J. Haemat.* 75: 517-524
4. **Clauss M**, Gerlach M, Gerlach H, Brett J, Wang F, Familletti PC, Pan Y-CE, Olander JV, Connolly DT, Stern D (1990) Vascular permeability factor: A tumor-derived polypeptide that induces endothelial cell and monocyte procoagulant activity, and promotes monocyte migration. *J. Exp. Med.* 172: 1535-1545
5. Ogawa S, **Clauss M**, Shreeniwas R, Butura C, Koga S, Stern DM (1991) Hypoxia induces endothelial cell synthesis of novel membrane-associated proteins including a new activator of coagulation factor X. *Proc. Natl. Acad. Sci. U. S. A.* 88: 9897-9901
6. Murray JC, **Clauss M**, Denekamp J, Stern D (1991) Selective induction of endothelial cell tissue factor in the presence of a tumour-derived mediator: A potential mechanism of flavone acetic acid action in tumour vasculature. *Int. J. Cancer* 49: 254-259
7. Murray JC, **Clauss M**, Thurston G, Stern D (1991) Tumour-derived factors which induce endothelial tissue factor and enhance the procoagulant response to TNF. *Int. J. Radiat. Biol.* 60: 273-277
8. Schmidt A-M, Vianna M, Gerlach M, Brett J, Ryan J, Esposito C, Kao J, Hegarty H, Hurley W, **Clauss M**, Wang F, Pan Y-CE, Tsang C, Stern D (1992) Isolation and characterization of two binding proteins for advanced glycosylation end products from bovine lung which are present on the endothelial cell surface. *J. Biol. Chem.* 267: 14987-14997
9. Kao J, Ryan, J, Brett G, Chen J, Shen H, Fan Y-G, Godman G, Familletti PC, Wang F, Pan Y-CE, Stern D, **Clauss M** (1992) Endothelial-monocyte activating polypeptide II. A novel tumor-derived polypeptide that activates host-response mechanisms. *J. Biol. Chem.* 267: 20239-20247
10. Shen H, **Clauss M (1. & 2. author contributed equally)**, Ryan J, Schmidt AM, Tijburg P, Borden L, Connolly D, Stern D, Kao J (1993) Characterization of vascular permeability factor/vascular endothelial growth factor receptors on mononuclear phagocytes. *Blood* 81: 2767-2773
11. Gerlach H, Gerlach M, **Clauss M** (1993) Relevance of tumor-necrosis-factor-alpha and interleukin-1-alpha in the pathogenesis of hypoxia-related organ failure. *Europ. J. Anaesth.* 10: 273-285
12. Kao J, Fan YG, Haehnel I, Brett J, Greenberg S, **Clauss M**, Kayton M, Houck K, Kisiel W, Seljelid R, Burnier J, Stern D (1994) A peptide derived from the amino-terminus of endothelial-monocyte-activating

- polypeptide II modulates mononuclear and polymorphonuclear leukocyte functions, defines an apparently novel cellular interaction site, and induces an acute inflammatory response. *J. Biol. Chem.* 269: 9774-9782
13. Achen MG, **Clauss M**, Schnürch H, Risau W (1995) The non-receptor tyrosine kinase Lyn is localised in the developing murine blood-brain barrier. *Differentiation* 59: 15-24
 14. Kuwabara K, Ogawa S, Matsumoto M, Koga S, **Clauss M**, Pinsky DJ, Lyn P, Leavy J, Witte L, Joseph-Silverstein J, Furie MB, Torcia G, Cozzolino F, Kamada T, Stern DM (1995) Hypoxia-mediated induction of acidic/basic fibroblast growth factor and platelet-derived growth factor in mononuclear phagocytes stimulates growth of hypoxic endothelial cells. *Proc. Natl. Acad. Sci. U. S. A.* 92: 4606-4610
 15. Breier G, **Clauss M**, Risau W (1995) Coordinate expression of VEGF receptor-1 (flt-1) and its ligand suggests a paracrine regulation of murine vascular development. *Developmental Dynamics* 204: 228-239
 16. Grell M, Douni E, Wajant H, Löhden M, **Clauss M**, Maxeiner B, Georgopoulos S, Lesslauer W, Kollias G, Pfizenmaier K, Scheurich P (1995) The transmembrane form of tumor necrosis factor (TNF) is the prime activating ligand of the 80 kDa TNF receptor. *Cell*: 83: 793-802
 17. **Clauss M**, Weich H, Breier G, Knies U, Röckl W, Waltenberger J, Risau W (1996) The vascular endothelial growth factor receptor flt-1 mediates biological activities: Implications for a functional role of placenta growth factor in monocyte activation and chemotaxis. *J. Biol. Chem.* 271: 17629-17634
 18. **Clauss M**, Grell M, Fangman C, Fiers W, Scheurich P, Risau W (1996) Synergistic induction of endothelial tissue factor by tumor necrosis factor and vascular endothelial growth factor: functional analysis of the tumor necrosis factor receptors. *FEBS Letters* 390: 334-338
 19. Hippenstiel S, Krüll M, Ikemann A, Risau W, **Clauss M**, Suttorp N (1998) VEGF induces hyperpermeability by a direct action on endothelial cells. *Am. J. Physiol.* 274: L678-684
 20. Knies UE, Behrendorf HA, Mitchell C, Deutsch U, Risau W, Drexler H, **Clauss M** (1998) Regulation of endothelial monocyte-activating polypeptide II-release by apoptosis. *Proc. Natl. Acad. Sci. U. S. A.* 95: 12322-12327
 21. Meyer M, **Clauss M**, Lepple-Wienhaus A, Waltenberger J, Augustin HG, Ziche M, Lanz C, Büttner M, Rziha H-J, Dehio C (1999) A novel vascular endothelial growth factor encoded by Orf virus, VEGF-E, mediates angiogenesis via signalling through VEGFR-2 (KDR) but not VEGFR-1 (Flt-1) receptor tyrosine kinases. *EMBO J.* 18: 363-374
 22. Fischer S, **Clauss M**, Wiesnet M, Renz D, Schaper W, Karliczek GF (1999) Hypoxia induces permeability in brain microvessel endothelial cells via VEGF and NO. *Am. J. Physiol.* 276: C812-820
 23. Daemen MARC, Van 't Veer C, Denecker G, Heemskerk VH, Wolfs TGAM, **Clauss M**, Vandenabeele P, Buurman WA (1999) Inhibition of apoptosis induced by ischemia-reperfusion prevents inflammation. *J. Clin Invest.* 104: 541-549
 24. Behrendorf HA, Van de Craen M, Knies UE, Vandenabeele P, **Clauss M** (2000) The endothelial monocyte-activating polypeptide II (EMAP II) is a substrate for caspase-7. *FEBS Letters* 466: 143-147
 25. Knies UE, Kröger S, **Clauss M** (2000) Expression of EMAP II in the developing and adult mouse. *Apoptosis* 5: 141-151
 26. Heil M, **Clauss M**, Buschmann IR, Willuweit A, Suzuki K, Fischer S, Schaper W (2000) Vascular endothelial growth factor (VEGF) stimulates monocyte migration through endothelial monolayers via increased integrin expression. *Eur. J. Cell Biol.* 79: 850-857
 27. Mechtcheriakova D, Schabbauer G, Lucerna M, deMartin R, **Clauss M**, Binder BR, Hofer E (2001) Specificity, diversity and convergence in VEGF and TNF-alpha signaling events leading to tissue factor

- upregulation via EGR-1. *FASEB J.* 15: 230-242
28. **Clauss M**, Sunderkötter C, Sveinbjörnsson B, Hippenstiel S, Willuweit A, Marino M, Haas E, Seljelid R, Scheurich P, Suttorp N, Grell M, Risau W (2001) A permissive role of tumor necrosis factor in vascular endothelial growth factor induced vascular permeability. *Blood* 97: 1-9
 29. Shalak V, Kaminska, M, Mitnacht-Kraus, R, Vandenabeele P, **Clauss, M**, Mirande M (2001) The EMAPII cytokine is released from the mammalian multisynthetase complex after cleavage of its p43/proEMAPII component. *J. Biol. Chem.* 276: 23769–23776
 30. Blum S, Issbrücker K, Willuweit A, Hehlhans S, Von der Ahe D, Mechtcheriakova D, Lucerna M, Walsh K, Hofer E, **Clauss M** (2001) A negative regulatory role of PI3-kinase activity for VEGF-induced endothelial tissue factor production. *J. Biol. Chem.* 276: 33428–33434
 31. Willuweit A, Sass G, Schöneberg A, Eisel U, Tiegs G, **Clauss M** (2001) Chronic inflammation and protection from acute hepatitis in transgenic mice expressing tumor necrosis factor in endothelial cells. *J. Immunol.* 167: 3944-3952
 32. Urbich C, Mallat Z, Tedgui A, **Clauss M**, Zeiher AM, Dimmeler S (2001) Upregulation of TRAF3 by shear stress blocks CD40-mediated endothelial activation. *J. Clin. Invest.* 108: 1451–1458
 33. Leenders W, Lubsen N, van Altena M, **Clauss M**, Deckers M, Löwik C, Breier G, Ruitter D, de Waal R (2002) Design of a variant of vascular endothelial growth factor-A (VEGF-A) antagonizing KDR/flk-1 andflt-1. *Lab. Invest.* 84: 473-481
 34. Heil M, Ziegelhoeffer T, Pipp F, Kostin S, Martin S, **Clauss M**, Schaper W (2002) Blood monocyte concentration is critical for enhancement of collateral artery growth. *Am J Physiol (Heart Circ Physiol.)* 283: 2411-9.
 35. Lucerna M, Mechtcheriakova D, Kadl A, Schäfer R, Schabbauer G, Gruber F, Yuri Koshelnickl, Issbrücker K, **Clauss M**, Binder BR, Hofer E (2003) NAB2, a corepressor of EGR-1, inhibits VEGF-mediated gene induction and angiogenic responses of endothelial cells, *J. Biol. Chem.* 278:11433-40
 36. Matschurat S, Knies UE, Person V, Fink L, Stoelcker B, Ebenebe C, Behrendorf HA, Schaper J, **Clauss M** (2003) Regulation of EMAP II by Hypoxia. *Am J Pathol.* 162: 93-103
 37. Issbrücker K, Marti HH Hippenstiel S, Springmann G, Voswinckel R, Gaumann A, Breier G, Drexler H, Suttorp N, **Clauss M** (2003) p38 MAPK - a molecular switch between angiogenesis and vascular permeability. *FASEB J.* 17: 262-264
 38. Pipp F, Heil M, Issbrücker K, Ziegelhoeffer T, Martin S, van den Heuvel J, Weich H, Fernandez B, Schaper W, **Clauss M** (2003) The VEGFR-1 selective VEGF-homologue PlGF is arteriogenic: evidence for a monocyte mediated mechanism, *Circ. Res.* 92:378-385
 39. Koczulla R, von Degenfeld G, Zahler S, Kroetz F, Gloe T, Issbrücker K, Lebherz C, Boekstegers P, Vogelmeier C, **Clauss M**, Bals R (2003) An angiogenic role for the human peptide antibiotic LL-37/hCAP-18, *J. Clin. Invest.* 111: 1665-72
 40. Matschurat S, Blum S, Dejkman H, Kanal L, de Waal R, **Clauss M** (2003) A negative regulatory of PI3-kinase in TNF-induced tumor necrosis. *Int. J. Cancer* 107: 30–37
 41. Voswinckel R, Ziegelhöfer T, Heil M, Kostin S, Breier G, Deutsch U, Mehling T, Haberberger R, **Clauss M**, Gaumann A, Schaper W, Seeger W (2003) Circulating vascular progenitor cells do not contribute to compensatory lung growth. *Circ. Res.* 93: 372-379
 42. Lucerna M, Mechtcheriakova D, Kadl A, Schabbauer G, Schafer R, Gruber F, Koshelnick Y, Muller HD, Issbrücker K, **Clauss M**, Binder BR, Hofer E (2003) NAB2, a corepressor of EGR-1, inhibits vascular endothelial growth factor-mediated gene induction and angiogenic responses of endothelial cells. *J. Biol.*

Chem. 278:11433-11440.

43. Heil M, Mitnacht-Krauss R, Issbrucker K, van den Heuvel J, Dehio C, Schaper W, **Clauss M**, Weich HA (2003) An engineered heparin-binding form of VEGF-E (hbVEGF-E). Biological effects *in vitro* and mobilization of precursor cells. *Angiogenesis* 6:201-211
44. Zohlhofer D, Nuhrenberg TG, Neumann FJ, Richter T, May AE, Schmidt R, Denker K, **Clauss MA**, Schomig A, Baeuerle PA (2004) Rapamycin effects transcriptional programs in smooth muscle cells controlling proliferative and inflammatory properties. *Mol. Pharmacol.* 65:880-889
45. Heidenreich R, Machein M, Nicolaus A, Hilbig A, Wild C, **Clauss M**, Plate KH, Breier G (2004) Inhibition of solid tumor growth by gene transfer of VEGF receptor-1 mutants. *Int. J. Cancer.* 111: 348-357
46. Tsai BM, Wang M, **Clauss M**, Sun P, Meldrum, DR (2004) Endothelial monocyte-activating polypeptide II causes NOS-dependent pulmonary artery vasodilation: a novel effect for a proinflammatory cytokine. *Am. J. Physiol. (Regul. Integr. Comp. Physiol.)* 287:R767-771
47. Rajashekhar G, Willuweit A, Patterson CE, Sun P, Hilbig A, Breier G, Helisch A, **Clauss M** (2006) Continuous endothelial cell activation increases angiogenesis: evidence for the direct role of endothelium linking angiogenesis and inflammation. *J. Vasc. Res.* 43: 193-204
48. Hou Y, Plett PA, Ingram DA, Rajashekhar G, Orschell CM, Yoder MC, March KL, **Clauss M** (2006) Endothelial-monocyte-activating polypeptide II induces migration of endothelial progenitor cells via the chemokine receptor CXCR3. *Exp. Hematol.* 34(8): 1125-32.
49. Lucerna M, Pomyje J, Mechtcheriakova D, Kadl A, Gruber F, Sobanov Y, Schabbauer G, Breuss J, Bilban M, Wagner O, Bischoff M, **Clauss M**, Binder BR, Hofer E (2006) Sustained adenoviral expression of EGR-1 blocks angiogenesis and tumor growth. *Cancer Res.* 66(13): 6708-6713 1.
50. Rajashekhar G, Grow M, Willuweit A, Patterson CE, **Clauss M** (2007) Divergent and convergent effects on gene expression and function in acute versus chronic endothelial activation. *Physiol. Genomics* 31(1): 104-13
51. Nührenberg, TG, Langwieser N, Schwarz JBK, Hou Y, Frank P, Sorge F, Matschurat S, Seidl S, Schömig A, **Clauss M**, Zohlhöfer D (2008) EMAP-II downregulation contributes to the beneficial effects of rapamycin after vascular injury. *Cardiovasc. Res.* 77: 580-589
52. Fernandez L, Rodriguey, S, Huang H, Chora A, Fernandez J, Mumaw C, Cruz E, Pollok K, Cristina F, Krause DS, Price JE, Ferkowicz MJ, Scadden DT, **Clauss M**, Cardoso AA, Carlesso N (2008) Tumor Necrosis Factor α and endothelial cells modulate Notch signaling in the bone marrow microenvironment during inflammation. *Exp. Hematol.* 36: 545-558
53. Rajashekhar G, Roell WC, Traktuev DO, Merfeld-Clauss S, Johnstone BJ, Van Natta B, Rosen ED, March KL, **Clauss, M** (2008) Adipose stromal cell differentiation is reduced by endothelial cell co-cultivation: Role of canonical Wnt-signaling. *Stem Cells* 26:2675-2681
54. Hu W, Criswell M H, Fong S-L, Temm CJ, Rajashekhar G, Cornell TL, **Clauss MA** (2009) Differences in the temporal expression of regulatory growth factors during choroidal neovascular development. *Exp Eye Res.* 2009 88(1):79-91
55. Zhong Y, Herbert, B-S, Rajashekhar G, Ingram DA, Yoder MC, **Clauss M**, Rehman J (2009) Premature senescence of highly proliferative endothelial progenitor cells is induced by tumor necrosis factor- α via the p38 mitogen-activated protein kinase pathway. *FASEB J.* 23(5):1358-65
56. Rajashekhar G, Mitnacht-Kraus R, Ispe U, Garrison J, Hou Y, Taylor B, Petrache I, Vestweber D, **Clauss M** (2009) A monoclonal rat anti-mouse EMAP II antibody that functionally neutralizes pro- and mature-

EMAP II in vitro. *J Immunol Methods*. 350(1-2):22-8.

57. Gupta SK, Johnson RM, Mather KJ, **Clauss M**, Rehman J, Saha C, Desta Z, Dubé MP (2010) Anti-inflammatory treatment with pentoxifylline improves HIV-related endothelial dysfunction: a pilot study. *AIDS*. 24(9):1377-80.
58. Rajashekhar G, Kamocka M, Renwick A, Suckow M, Wolter WR, Badve S, Sanjeevaiah AR, Pumiglia K, Rosen E, and **Clauss M** (2011) Pro-inflammatory angiogenesis is mediated by p38 MAP kinase. *J Cell Physiol*. 226(3):800-08.
59. **Clauss M**, Voswinckel R, Rajashekhar G, Sigua NL, Fehrenbach H, Rush NI, Garrison J, Schweitzer KS, Yildirim AO, Kamocki K, Fisher AJ, Gu Y, Safadi B, Nikam S, Hubbard WC, Tuder RM, Presson RG Jr, Sethi S, and Petrache I. (2011). Lung endothelial monocyte activating protein II is a novel therapeutic target in murine emphysema. *J. Clin. Invest.*, 121(6):2470–2479.
60. Kim C, Gupta SK, Green, L, Taylor BM, Deuter, M, Desta, Z and **Clauss M** (2011) Abacavir, didanosine, and tenofovir do not induce inflammatory, apoptotic, or oxidative stress genes in coronary endothelial cells: *Antiviral Therapy* 16 (in press)
61. Rajashekhar,G, Gupta, A, Marin, A, Friedrich, J, Willuweit, A, Berg, DT, Cramer, MS, Sandusky, SE, Sutton, TA, Basile, DP, Grinnell, BW and **Clauss, M**. (2011). Soluble thrombomodulin reduces inflammation and prevents microalbuminuria induced by chronic endothelial activation in transgenic mice. *Am. J. Physiol. (renal)* in press.

II. Review articles:

1. Männel D, Murray C, Risau W, Clauss M (1996) Tumor necrosis: factors and principles. *Immunol. Today* 17, 254-256
2. Clauss M (1998) Functions of the VEGF receptor-1 (Flt-1) in the vasculature. *Trends in Cardiovascular Medicine* 8 (6), 243-247
3. Clauss M, Schaper W (2000) Vascular endothelial growth factor: A Jack-of-all-trades or a nonspecific stress gene? *Circ Res*. 86: 251-252
4. Clauss M (2000) Molecular biology of the VEGF- and VEGF-receptor-family. *Sem. Thromb. Hemostas*. 26 (5), 561-569
5. Clauss M, Pipp F, Issbrücker K, Weich H, Heil M, Schaper W (2003) Dissection of monocyte and endothelial activities by using VEGF-receptor specific ligands. *Adv Exp Med Biol*. 522:75-82

III. Book articles:

1. Clauss, M, Ryan, J, Stern D (1991) Modulation of endothelial hemostatic properties by tumor necrosis factor/cachectin: Insights into the role of endothelium in the host response to inflammatory stimuli. In: *Tumor Necrosis Factors: The molecules and their emerging role in medicine*. S. 49-63, Raven Press, Ed. B. Beutler
2. Grell M, Clauss M (2000) TNF and TNF receptor superfamily. In *Int. Rev. Immunol - special issue.: Cytokines and Cytokine Receptors*. S. 118-148. Harwood Academic Press. Ed. C.A. Bona & J.-P. Revillard
3. Willuweit A, Hofer E, Clauss M (2001) Role of endothelial activation in the vascular targeting of tumors. In *Vascular Endothelium – Source and Target of Inflammatory Mediators*, NATO Science Series I – Vol. 330, S. 256-269, IOS Press Ohmsha, Ed. J.D. Catravas, A.D. Callow, U.S. Ryan, M. Simionescu
4. Mechteriakova D, Clauss M, Hofer E (2001) Specificity, diversity and convergence in angiogenic and

inflammatory signaling in endothelial cells. In *Vascular Endothelium – Source and Target of Inflammatory Mediators*, NATO Science Series I – Vol. 330, S. 211-226, IOS Press Omaha, Ed. J.D. Catravas, A.D. Callow, U.S. Ryan, M. Simionescu

5. Patterson CE, Clauss MA: Signaling of Prolonged Activation; Chap. 6. in Patterson CE (ed.): *In: Perspectives on Lung Endothelial Barrier Function*. Vol 35 of *Advances in Molecular and Cellular Biology*, Elsevier, Amsterdam, 2005, pp.165-204. Published Book Chapter No 2005
6. M. Clauss, C. E. Patterson: "Mechanism of Inflammation: Activation of the Endothelium" in: *Leukocyte Trafficking*. Edited by A. Hamann and B. Engelhardt WILEY-VCH, Weinheim (2005) pp 129-153.

IV Book editor:

Clauss, M and Breier, G: *Mechanisms of angiogenesis* (2004) Publ. Birkäuser, Basel

V. Invited lectures (selection):

„Vascular endothelial growth factor/vascular permeability factor: An overview.“ 15th meeting of the British Cytokine Group, London (1995)

„Reciprocal relation between tissue factor and VEGF“, 5th International Meeting of the European Vascular Biology Association (Proteinases in Vascular Biology), Leuven (1998)

„Regulation of endothelial monocyte-activating polypeptide II-release by apoptosis: a novel mechanism of monocyte recruitment.“ 4th DAAK/GAAC Symposium in Current Problems of Molecular Medicine (The Role of Cytokines in Human Disease II Kloster Seeon (1998)

“The Tissue Factor-VEGF-Axis” 43rd yearly meeting of the “Gesellschaft für Thrombose- und Hämostase-Forschung”, Mannheim (1999)

Overview lecture: “Effects of VEGF and EMAP II in endothelial cells” at the 11th Endothel Symposium, Nijmegen (1999)

Overview lecture on inflammation: joint symposium of SFB 402 and 601, Heidelberg (2000)

“Activation and properties of tumor endothelium” 3rd symposium on the biology of endothelial cells, Giessen (2001)

Role of VEGF in Edema, Minisymposium “Lung Dysfunction: Focus on Oedema”, Konstanz (2001)

“Dissection of monocyte- and endothelial-selective VEGF-activities by the use of receptor specific VEGF-homologues“ auf dem internationalen Symposium „Novel Angiogenic Mechanisms“, Columbus, OH (2002).

„Continuous endothelial activation by expression of the transmembrane form of TNF α “ at the „State of Art Conference“ „Rheumatoid Arthritis: Mechanisms of Inflammation and Joint Damage“, Bad Nauheim (2002)

“Vascular Targeting of Tumor Blood Vessel” FASEB (Experimental Biology) San Francisco (2003)

Invited speaker for the annual “Alley Lecture“ University of Iowa (2004)

“TNF α and EMAP II: two molecules linking inflammation with angiogenesis”, VBT, Yale, New Haven (2007)

and Vanderbilt University, Nashville (2007)

“Adipose stromal cell differentiation is reduced by endothelial cell co-cultivation” IFATS Meeting, Indianapolis (2007)

“Molecular analysis of continuous endothelial activation in chronic disease”. Medical college of Georgia (2011)

TEACHING:

Philipps-University of Marburg within the faculty of Medicine (summer and winter semester):

Introduction into clinical medicine: 1994 – 1998

Seminars with clinical relations for pre-clinical students of human medicine 1998-2001

Introduction into the cell biology for pre-clinical students of human medicine 1998-2001

Integrated course in biochemistry for students of human medicine: 1994-2002

Lecture “Human Biology III/Physiology” for students of human biology (4th semester) 2002

Extramural teaching:

Bad Nauheim: Special course “Endothelial cell biology and angiogenesis”: 1994

Bad Nauheim: Special course “Function and relevance of cytokines in tumor biology”: 1995

ETH Zürich: Invited special lecture in cell biology: 2000

Indiana University School of Medicine and of Dentistry:

G706 (Cell-Cell Communication): WS (Fall Term) 2003, 2004, 2005

X604 (Concepts of Health and Disease): SS (Spring Term) 2004 und SS 2005

F 705 (Molecular & Cellular Physiology): WS 2005 until 2007

School of Dentistry: Systems Approach to Biomedical Sciences (Physiology of the respiratory system): SS 2005 until now

F713 Mini Course (Angiogenesis) WS 2004 until now

PROFESSIONAL SERVICE:

NATIONAL AND INTERNATIONAL

Grant and other reviewing activities:

Ad hoc NIH reviewer (ZHL1, LIRR and RIBT NHLBI Study Sections)

Chairman and reviewer for NYSTEM (New York State Stem Cell) study sections (AIBS)

NIR grant applications managed by the Florida Department of Health

Cancer Research Campaign (CRC, London)

German Research Foundation (DFG)

Austrian National Bank (ÖNF)

IMF of the University of Münster

Ad hoc evaluation of research professors for the University of Antwerpen

External peer review activities (site visits):

The Cancer Research Campaign (CRC, London)

Journal Review Service:

Invited Reviewer for the following journals:

Circ. Res., Am. J. Physiol., Oncogene, EMBO J, Internat. J. Cancer, J. Biol. Chem., Arterioscl. Thromb. Vasc. Biol., Thromb. & Haemo. J. Vasc. Res, J. Exp. Cell Res. and others.

UNIVERSITY SERVICE:

UNIVERSITY COMMITTEE SERVICE

Department of Cellular & Integrative Physiology:

Steering Committee, 2004-2007
Seminar Committee, 2004-2006 (Chairman)

STUDENT SERVICE

TRAINEES

Graduate Students:

Ulrike Knies (University of Giessen: PhD thesis in 1998)
Sabine Blum (University of Tuebingen: PhD thesis in 1999)
Heike Behrendorf (University of Marburg: PhD thesis in 2000)
Antje Willuweit (University of Darmstadt: PhD thesis in 2001)
Andreas Hilbig (University of Giessen: MD thesis in 2002)
Katja Ißbrücker (University of Marburg: PhD in 2002)
Susanne Matschurat (University of Marburg: PhD thesis in 2002)
Ting Wang, Department of Microbiology and Immunology, 2011-now

Graduate Student Committees:

Sybille Esser (1998, University of Marburg),
Thomas Korff (1999, University of Marburg) Andreas Kappel (1999, University of Marburg)
Regina Heidenreich (2000, University of Marburg)
Mi-Ran Choi (2002, University of Münster)
Marc Van de Craen (PhD 1999, University of Gent, Belgium)
Liyang Cai, Cellular & Integrative Physiology, 2004-2008
Angelia Locket, Cellular & Integrative Physiology, 2006-2008
Jie Xie Cellular and Integrative Physiology, 2010-now
Carla Mangum Cellular and Integrative Physiology, 2010-now

Graduate Master Students:

Daniel Prater, 2005

Postdoctoral Fellows:

Dr. Rajashekhar Gangaraju, 10/2004-2010
Dr. Yonghao Hou, 09/2004-04/2006
Dr. Chul Kim, 2009-2010
Dr. Linden Green, 2011-now

Graduate Student Committees from other Departments:

Karim Nassib Mroueh (Ped-Neonatal/Perinatal), 2004-2006
Jing Mo (Department of Medical & Molecular Genetics), 2006-2008
Chris Roberts (Department of Medical & Molecular Genetics), 2006-2008

OTHER PROFESSIONAL ACTIVITIES:

Meeting organization:

Organizer of the symposium entitled "Tumor necrosis: factors and principles" at castle Ringberg (1995)

Patents:

Endothelial monocyte-activating polypeptide II: A mediator which activates host response, U.S. 6,228,837 B1 (May 2001)

Method for diagnosing and treating emphysema Application filed 12/933,278 “” (2011).

GRANTS AND FELLOWSHIPS:**CURRENT SUPPORT:**

NIH, R01HL090950-01A1: EMAP II, a molecular link of inflammation and apoptosis in pulmonary emphysema (2008-2012).

Major Goals: Understanding the role of EMAP II in pulmonary emphysema with the central working hypothesis that EMAP II contributes to endothelial cell death in cause of smoke-induced emphysema development.

NIH (RFA-HL-08-003), 1R01HL095149-01: HIV, Inflammation, and Endothelial Dysfunction (2008-2013).

Major Goals: To analyze the role of inflammation in cardiovascular dysfunction in a patient study and experimentally in vitro. This PI will address the role of HIV and HIV-induced cytokines in proinflammatory endothelial activation and dysfunction.

PREVIOUS SUPPORT:

Research grant sponsored by Gilead Sciences, Inc: Effects of HIV drugs on Endothelial Cell Inflammation, and Oxidative Stress (04/2009 – 04/2010).

Major Goals: Understanding the proinflammatory role of HIV drugs via assessment of endothelial activation.

Research grant sponsored by Eli Lilly, Co (PI): Assessment of the anti-inflammatory role of recombinant proteins in an endothelial activation model of chronic inflammation (2006–2009).

Major Goals: Understanding the role of endothelial activation in a transgenic mouse model of chronic inflammation.

Subcontractor of a NIST/APT grant to Cosmix, Co (PI): Anti-angiogenesis by VEGF inhibition (2008)

Major Goals: Assessment of novel D-peptides for neutralizing angiogenesis in vitro and in tumors.

Previous European funding (relinquished in 2003 because of move to the USA):

European Community program project in “Cell Factory/ Therapeutic Strategies “ (PI): Targeting signaling mechanisms essential for angiogenesis (2002-2003)

Major Goals: Identifying signaling mechanism, which are specific for the tumor endothelium in order to specifically target tumor angiogenesis.

Program Project SFB 547 “The Cardio-Pulmonal Vasculature” by the German Research Society (PI): Role of EMAP II in cardio-pulmonary diseases (1997–2003)

Major Goals: Identifying mechanisms of EMAP II induced pro-inflammatory mechanisms and generation of lung specific inducible EMAP II expression.

Grant in-Aid by the German Research Society (PI): Continuous endothelial activation by transmembrane TNF-expression (2002 – 2003)

Major Goals: Analysis of mice expressing endothelial TNF-alpha.

Program Project PPG 1069 “Angiogenesis” by the German Research Society (PI): Dissection of angiogenesis and vascular hyperpermeability.

Major Goals: Analysis of VEGF receptors and signaling pathways, which are specific for VEGF-induced vascular leakage or angiogenesis.