

# CURRICULUM VITAE

## PERSONAL DATA:

**Name:** Peter Angele, M.D.

**Address:** Department of Trauma Surgery  
University Hospital Regensburg  
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Germany  
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93051 Regensburg  
Germany  
Phone: + 9405-919740  
E-mail: angelepeter@aol.com

**Date of Birth:** 08/19/1967

**Citizenship:** Germany

## EDUCATION:

1977 - 1986 Lessing-College Preparatory School in Neu-Ulm  
1986 - 1987 Military Service, Germany  
1987 - 1994 Medical School, University of Ulm, Germany  
01/96 Doctoral dissertation (Summa cum laude):  
Hämatopoetische Stammzelldefizienz nach  
Knochenmarktransplantation durch virologische  
und nicht-virologische Einflüsse auf das murine  
Knochenmarkstroma.

07/96 Award for best doctoral dissertation  
(Promotionspreis der Ulmer  
Universitäts-gesellschaft)

## **WORK EXPERIENCE:**

7/1994-12/1995 „Arzt im Praktikum“ (first year residency) in  
orthopaedic clinic, Straubing, Germany: Dr.  
Ebner, Dr. Eichhorn, Dr. Fett, Prof. Dr.  
Strobel, Dr. Bertagnoli

1/1996-11/1997 Resident in Department of Trauma Surgery,  
University Hospital Regensburg  
Chairman: Prof. Dr. med. M. Nerlich, M.D.

12/1997-11/1998 DFG-postdoctoral fellowship: Department of  
Orthopaedics, Case Western Reserve  
University, Cleveland, Ohio, USA (Chairman:  
Prof. Dr. V. Goldberg, M.D., Group leader: B.  
Johnstone, Ph.D.)

12/1998-05/1999 Resident and research associate of the  
Department of Orthopedics, Case Western  
Reserve University, Cleveland, Ohio, USA  
(Chairman: Prof. Dr. V. Goldberg, M.D.,  
Group leader: B. Johnstone, Ph.D.)

06/1999 – 10/2001 Resident in Department of Trauma Surgery,  
University Hospital Regensburg  
Chairman: Prof. Dr. med. M. Nerlich, M.D.

Since 2000 Clinical coordinator of the Experimental  
Laboratory of Trauma Surgery, University  
Hospital Regensburg

10/2001 Board examination: General Surgery

10/2001 Consultant Department of Trauma Surgery,  
University Hospital Regensburg  
Chairman: Prof. Dr. med. M. Nerlich, M.D.

Since 2001 Coordinator of clinical speciality group: „Knee  
surgery and Tissue Engineering“ Department  
of Trauma Surgery, University Hospital  
Regensburg

07/2004 Habilitation (Venia legendi):

	„Meniscus-reconstruction - Possibilities of Tissue Engineering“
08/2004	Board examination: Trauma Surgery Orthopaedic Surgery
2005-2008	First Oberarzt in Department of Trauma Surgery, University Hospital Regensburg
01/04/2008	Consultant Regenerative Joint Therapy in Department of Trauma Surgery, University Hospital Regensburg Partner sporthopaedicum Straubing, Berlin, Regensburg
23/12/2008	Professor
06/03/2008	Coordinator FIFA-Medical Center of Excellence Regensburg

### **ADDITIONAL QUALIFICATION:**

10/1995-11/1995	Ultrasound of the locomotor apparatus
08/1996	Radiology of the skeletal system
11/1997	Sports medicine
11/1997	Emergency Medicine
ab 2003	Instructor for cartilage repair techniques (Aesculap-Akademy)

### **EDITORIAL:**

Acta Chirurgica Austriaca  
Medac aktuell  
Biomaterials  
Biomacromolecules  
Unfallchirurg

### **MEMBERSHIP:**

German Society of Trauma Surgery  
Society for Arthroscopy (AGA)  
European Tissue Engineering Society (ETES)  
International Cartilage Repair Society (ICRS)

**AWARDS:**

- 07/1996 Award for best doctoral dissertation  
(Promotionspreis der Ulmer  
Universitätsgesellschaft)
- 06/1998 Award for best poster, 39. Austrian Society for  
Surgery; Baden, Vienna, Austria  
„Optimized amplification of human  
chondrocytes with growth factors“
- 11/1999 Prize for best research project, German  
Society of Trauma Surgery  
63. Annual Meeting German Society for  
Trauma Surgery; Hannover, Germany  
„Retroviral gene transduction of mesenchymal  
stem cells for repair of osteochondral cartilage  
defects“
- 09/2000 Prize for best research project, German  
Society of Trauma Surgery  
64. Annual Meeting German Society for  
Trauma Surgery; Berlin, Germany  
„Influence of cell count, cell distribution and  
scaffold composition for redifferentiation of  
amplified human chondrocytes“
- 5/2002 Günther Schlag Memorial Award  
“Intravitalmicroscopy for the  
Online-Monitoring of angiogenesis in Tissue  
Engineering Products for repair of  
osteochondral defects”
- 11/2003 Prize for best research project, German  
Society of Trauma Surgery  
67. Annual Meeting German Society for  
Trauma Surgery; Berlin, Germany  
„Influence of cyclic biomechanical  
compression on chondrogenic differentiation  
of mesenchymal stem cells in Tissue  
Engineering scaffolds”.

## **PATENTS:**

06/2003

European Patent, Munich, Germany: „Poröse Kompositmatrix, deren Herstellung und Verwendung“ (PCT99.963373.8; Patentnummer 1135177)

07/2004

US-Patent: “Porous composite scaffolds of hyaluronan and collagen“ (PCT/EP99/09444 Patent number: 09/857,343)

## **PUBLICATION AND LECTURES:**

### **Original articles**

Reddehase MJ., Dreher-Stumpp L., **Angele P.**, Balthesen M., Susa M.  
Hematopoietic stem cell deficiency resulting from cytomegalovirus infection of bone marrow stroma.  
Ann Hematol 64: A125 - A127 (1992)

**Angele P.**, Nerlich A., Kujat R., Möller H., Nerlich M.  
Wachstumsverhalten von Chondrozyten auf Polytetrafluorethylen-Membranen in Fibrin-Coating- Ein neues Verfahren auf dem Wege zur Ausbildung hyalinen Knorpels.  
Langenbecks Arch Chir Forum, Suppl I: 499 - 503 (1997)

Mayer A., Podlech J., Kurz S., Steffens H P., Maiberger S., Thalmeier K., **Angele P.**, Dreher L., Reddehase M J.  
Bone marrow failure by cytomegalovirus is associated with an in-vivo deficiency in the expression of essential stromal hemopoietin genes.  
J Virol 71: 4589 – 4598 (1997).

**Angele P.**, Kujat R., Faltermeier H., Weigel B., Möller H D., Nerlich M.  
Redifferenzierungsverhalten von Chondrozyten in Fibrinmatrix auf Hyaluron-säure/Fibrin/Cellulose- Vliesstruktur.  
Hefte zum „Unfallchirurg“: 804-806 (1997).

Mayer A., Podlech J., Kurz S., Steffens HP., Maiberger S., Thalmeier K., **Angele P.**, Dreher L., Reddehase MJ.  
Bone marrow failure by cytomegalovirus is associated with an in vivo deficiency in the expression of essential stromal hemopoietin genes.  
J Virol. 71: 4589-4598 (1997)

**Angele P.**, Faltermeier H., Kujat R., Maghsudi M., Möller HD., Nerlich M.  
Improvement of the amplification rate of human chondrocytes in vitro by IGF-I und RGD  
Langenbecks Arch Chir Suppl Kongressbd. 115(Suppl I):205-208 (1998)

Steffens HP., Podlech J., Kurz S., **Angele P.**, Dreis D., Reddehase MJ.  
Cytomegalovirus inhibits the engraftment of donor bone marrow cells by downregulation of hemopoietin gene expression in recipient stroma.  
J Virol. 72: 5006-5115 (1998)

Alteria de Gross MG., Holtappels R., Steffens HP., Podlech J., **Angele P.**, Dreher L., Thomas D., Reddehase MJ.

Control of cytomegalovirus in bone marrow transplantation chimeras lacking the prevailing antigen-presenting molecule in recipient tissues rests primarily on recipient-derived CD8 T cells.

J Virol. 72: 7733-7744 (1998)

**Angele P.**, Faltermeier H., Kujat R, Englert C, Möller HD., Hente R., Nerlich M. Amplifikationsoptimierung humaner Chondrozyten durch Wachstumsfaktoren.

Improvement of the amplification rate of human chondrocytes by growth factors.

Acta Chirurgica Austriaca 31: 257-260 (1999)

**Angele P.**, Kujat R., Nerlich M., Yoo J., Goldberg V., Johnstone B.

Engineering of osteochondral tissue with bone marrow progenitor cells in a hyaluronic acid-gelatin composite sponge.

Tissue Eng 5: 545-553 (1999)

**Angele P.**

Eingeladener Kommentar zu „Möglichkeiten zur chirurgischen Therapie von Knorpelschäden“

Acta Chirurgica Austriaca 32: 194-196 (2000)

Jagodzinski M, Kleemann V, **Angele P**, Schönhaar V, Iselborn KW, Mall G, Nerlich M  
Experimental and clinical assessment of the accuracy of knee extension measurement techniques.

Knee Surgery Sports Traumatology Arthroscopy 8, 329-336 (2000)

J. Yoo, I. Mandell, **P. Angele**, B. Johnstone

Chondrogenitor cells and gene therapy

Clin Orthop 379: 164-170 (2000)

M.K. Angele, S.M. Nitsch, F. Gmach, T. Hernandez-Richter, **P. Angele**, R.A. Hatz, F.W. Schildberg

Testosterone mediates gender specific activation of p38 MAP kinase signaltransduction pathways following trauma-hemorrhage.

Surg Forum 51: 150-151 (2001)

D. Schumann, P.v. Breitenbuch, R.Kujat, M. Steinbauer, M.Guba, M. Nerlich, **P. Angele**  
Intravitalmikroskopie zum Online-Monitoring der Angiogenese in Tissue Engineering  
Produkten auf dem Wege zur Reparatur osteochondraler Defekte  
Langenbecks Arch für Chirurgie, 477-479 (2002)

M.K. Angele, S.M. Nitsch, T. Hernandez-Richter, **P. Angele**, R.A. Hatz, M.W.  
Wichmann, F.W. Schildberg  
L-Arginine: A unique amino acid for improving depressed wound immune function  
following hemorrhage.  
Eur Surg Research 34:53-60 (2002)

**P. Angele**, R. Kujat, H. Faltermeier, D. Schumann, R. Müller, M. Nerlich  
Biodegradable hyaluronan-ester/gelatin compositmatrices for osteochondral  
differentiation of mesenchymal progenitor cells  
Biomaterialien 4, 11-18 (2003)

Völk M., **Angele P.**, Hamer O., Feuerbach S.  
Digital image composition in long-leg radiography with a flat-panel detector: first clinical  
experiences.  
Investigative Radiology 38 (4):189-192 (2003)

Völk M., Paetzel C., **Angele P.**, Seitz J., Füchtmeier B., Hente R., Feuerbach S., Strotzer  
M.  
Routine skeleton radiography using a flat-panel detector: Image quality and clinical  
acceptance at 50% dose reduction.  
Investigative Radiology 38 (4):230-235 (2003)

**P. Angele**, JU. Yoo, C. Smith, J. Mansour, KJ. Jepsen, M. Nerlich, B. Johnstone  
Cyclic hydrostatic pressure enhances the chondrogenic phenotype of human  
mesenchymal progenitor cells differentiated in vitro.  
J Orthop Res 21: 451-457 (2003)

Martin K. Angele, Stefan Nitsch, Markus W. Knöferl, Alfred Ayala, **Peter Angele**,  
Friedrich W. Schildberg, Karl W. Jauch, Irshad H. Chaudry  
Sex Specific p38 MAP Kinase Activation following Trauma-Hemorrhage: involvement  
of Testosterone and Estradiol.  
Am J Physiol Endocrinol Metab 285(1):E189-E196 (2003)

M.C. Frantz, M.W. Wichmann, S.J. Eisenmenger, **P. Angele**, K.W. Jauch, M.K. Angele

Dehydroepiandrosterone (DHEA) restores the suppressed PBMC function following major abdominal surgery

Langenbecks Arch für Chirurgie, (2003)

S.M. Nitsch, F. Wittmann, **P. Angele**, M.W. Wichmann, E. Faist, R. Hatz,

I.H. Chaudry, K.W. Jauch, M.K. Angele.

Physiological levels of 5alpha-dihydrotestosterone depress wound immune function and impair wound healing following trauma-hemorrhage.

Arch Surg 139:157-163 (2004)

MG. Jeschke, C. Rose, **P. Angele**, B. Füchtmeier, M. Nerlich, U. Bolder.

Development of new reconstructive techniques: the use of Integra in combination with fibrin glue and negative vacuum pressure for reconstruction of acute and chronic wounds.

Plast Reconstr Surg. 113(2):525-30 (2004)

Kellner K, Tessmar J, Milz S, **Angele P**, Nerlich M, Schulz MB, Blunk T, Gopferich A.

PEGylation does not impair insulin efficacy in three-dimensional cartilage culture: an investigation toward biomimetic polymers

Tissue Eng. 10(3-4):429-40 (2004)

Eisenmenger SJ, Wichmann MW, **Angele P**, Faist E, Hatz R, Chaudry IH, Jauch KW, Angele MK.

Differences in the expression of LPS-receptors are not responsible for the sex-specific immune response after trauma and hemorrhagic shock.

Cell Immunol. 230:17-22 (2004)

**Angele, P.**, Abke, J., Kujat, R., Faltermeier, H., Schumann, D., Nerlich, M., Kinner, B., Englert, C., Ruszczak, Z., Mehrl, R., Mueller, R.

Influence of different collagen species on physico-chemical properties of crosslinked collagen matrices.

Biomaterials 25:2831-2841 (2004)

**P. Angele**, D. Schumann, M. Angele, B. Kinner, C. Englert, R. Hente, B. Füchtmeier, M. Nerlich, C. Neumann, R. Kujat

Cyclic, mechanical compression enhances chondrogenesis of mesenchymal progenitor cells in tissue engineering scaffolds.

Biorheology 41: 335-346 (2004)

Miller LE, Weidler C., **Angele P.**, Falk W., Grifka J., Schölmerich J., Straub RH.

The prevalence of Semaphorine 3C, a repellent of sympathetic nerve fibers, is increased in the synovial tissue of patients with rheumatoid arthritis.

Arthritis Rheum. 50(4):1156-63 (2004)

Johnstone B, **Angele P.**, Yoo J, Goldberg VM. Tissue engineering of meniscus.

Orthopaedic Tissue Engineering: Basic Science and Clinical Practice, Marcel

Dekker, NY (2004)

Weidler C, Holzer C, Harbuz M, **Angele P.**, Schölmerich J, Straub RH

Low intensity of sympathetic nerve fibres and increased density of brain derived neurotrophic factor positive cells in RA synovium.

Ann Rheum Dis, 64:13-20 (2005)

Wittmann F, Prix N, Mayr S, **Angele P.**, Wichmann MW, van den Engel NK, Hatz R,

Hernandez-Richter T, Chaudry ICH, Jauch KW, Angele MK.

L-arginine improves wound healing after trauma-hemorrhage by increasing collagen synthesis.

J Trauma 59:162-168 (2005)

Muller R, Abke J, Schnell E, Macionczyk F, Gbureck U, Mehrl R, Ruszczak Z, Kujat R,

Englert C, Nerlich M, **Angele P.**

Surface engineering of stainless steel materials by covalent collagen immobilization to improve implant biocompatibility.

Biomaterials 26:6962-6972 (2005)

**Angele P.**, Zellner J, Englert C, Nerlich M.

Surgical treatment options for focal articular lesions – microfracture, osteochondral transplantation.

Akt Traumatol35:255-259 (2005)

Appel B, Maschke A, Weiser B, Sarhan H, Englert C, **Angele P**, Blunk T, Goepferich A.  
Lipidic implants for controlled release of bioactive insulin: effects on cartilage  
engineered in vitro.

Int J Pharm 314:170-178 (2006)

Schumann D, Kujat R, Nerlich M, **Angele P**.

Mechanobiological conditioning of stem cells for cartilage tissue engineering.

Biomed Mater Eng 16:37-52 (2006)

Schumann D, Kujat R, Zellner J, Angele MK, Nerlich M, Mayr E, **Angele P**.

Treatment of human mesenchymal stem cells with pulsed low intensity ultrasound  
enhances the chondrogenic phenotype in vitro.

Biorheology 43:431-443 (2006)

Mueller F, Voithenleitner R, Schuster C, **Angele P**, Weigel B.

Operative treatment of proximal humeral fractures with helix wire.

Unfallchirurg 109:1041-1047 (2006)

Mayr S, Walz CR, **Angele P**, Hernandez-Richter T, Chaudry IH, Loehe F, Jauch KW,  
Angele MK.

Castration prevents suppression of MHC class II (Ia) expression on macrophages after  
trauma-hemorrhage.

J Appl Physiol 101:448-453 (2006)

Huang JI, Durbhakula MM, **Angele P**, Johnstone B, Yoo JU.

Lunate arthroplasty with autologous mesenchymal stem cells in a rabbit model.

J Bone Joint Surg Am. 88:744-752 (2006)

Prantl L, **Angele P**, Schreml S, Ulrich D, Pöppl N, Eisenmann-Klein M.

Determination of serum fibrosis indexes in patients with capsular contracture after  
augmentation with smooth silicone gel implants.

Plast Reconstr Surg 118:224-229 (2006)

Mueller R, Abke J, Schnell E, Scharnweber D, Kujat R, Englert C, Taheri D, Nerlich M, **Angele P**.

Influence of surface pretreatment of titanium- and cobalt-based biomaterials on covalent immobilization of fibrillar collagen.

Biomaterials 27: 4059-4068 (2006)

**Angele P**, Fritz J.

Navigation-guided transfer of cartilage defect geometry for arthroscopic autologous chondrocyte transplantation.

Orthopaedics 29:S100-S103 (2006)

Englert C, Blunk T, Fierlbeck J, Kaiser J, Stosiek W, **Angele P**, Hammer J, and Straub R. Steroid hormones strongly support articular cartilage integration in the absence of interleukin-1 $\beta$ .

Arthritis Rheum 54 (12):3890-7 (2006)

[Prantl L, Schreml S, Heine N, Eisenmann-Klein M, Angele P.](#)

Surgical treatment of chronic phantom limb sensation and limb pain after lower limb amputation.

Plast Reconstr Surg. 118(7):1562-72 (2006)

Capellino S, Riepl B, Rauch L, **Angele P**, Cutolo M, Straub RH.

Quantitative determination of steroid hormone receptor positive cells in synovium of RA and OA patients: Is there a link to inflammation?

Ann Rheum Dis 66(1):53-58 (2007)

[Englert C, Angele P, Fierlbeck J, Dendorfer S, Schubert T, Muller R, Lienhard S, Zellner J, Nerlich M, Neumann C.](#)

Conductive bone substitute material with variable antibiotic delivery.

Unfallchirurg 110(5):408-413 (2007)

Prantl L, Schreml S, Schwarze H, Eisenmann-Klein M, Nerlich M, **Angele P**, Jung M, Füchtmeier B.

A safe and simple technique using the distal pedicled reversed upper arm flap to cover large elbow defects.

J Plast Reconstr Aesthet Surg. 2008;61(5):546-51.

**Angele P**, Johnstone B, Kujat R, Zellner J, Nerlich M, Goldberg V, Yoo J.

Stem cell based tissue engineering for meniscus repair.

J Biomed Mater Res A. 2008 May;85(2):445-55

Capellino S, Lowin T, **Angele P**, Falk W, Grifka J, Straub RH.

Increased chromogranin A levels indicate sympathetic hyperactivity in patients with rheumatoid arthritis and systemic lupus erythematosus.

J Rheumatol. 2008 Jan;35(1):91-9.

Dirmeier M, Capellino S, Schubert T, **Angele P**, Anders S, Straub RH.

Lower density of synovial nerve fibres positive for calcitonin gene-related peptide relative to substance P in rheumatoid arthritis but not in osteoarthritis.

Rheumatology (Oxford). 2008 Jan;47(1):36-40.

Brechenmacher SA, Bruns CJ, Van den Engel NK, **Angele P**, Loehe F, Jauch KW, Angele MK.

Influence of surgical trauma on the mRNA expression of sex hormone receptors in PBMCs in male and female patients.

Langenbecks Arch Surg. 2008 Nov;393(6):871-6

Klein SM, Prantl L, Berner A, Schreml S, Schubert T, Rennert J, Fellner C, Stopfer A, **Angele P**, Schreyer AG, Schreyer CI, Feuerbach S, Jung EM.

A new method to quantify the effect after subcutaneous injection of lipolytic substances.

Aesthetic Plast Surg. 2008 Jul;32(4):667-72

**Angele P**, Mueller R, Schumann D, Englert C, Zellner J, Johnstone B, Yoo J, Hammer J, Fierlbeck J, Angele MK, Nerlich M, Kujat R.

Characterization of esterified hyaluronan-gelatin polymer composites suitable for chondrogenic differentiation of mesenchymal stem cells.

J Biomed Mater Res (Part A) (accepted, 2008)

Geis S, Babilas P, Schreml S, **Angele P**, Nerlich M, Jung EM, Prantl L.

Transcutaneous pO<sub>2</sub> measurement during tourniquet-induced venous occlusion using dynamic phosphorescence imaging.

Clin Hemorheol Microcirc. 2008;40(4):249-58.