

CURRICULUM VITAE

Pauli Puolakkainen 25.9.2018

DATE AND PLACE OF BIRTH: 5 April, 1959, Helsinki, Finland

CURRENT AND PERMANENT POSITION:

Professor of Surgery, Chairman, Department of Surgery, Helsinki University Hospital and University of Helsinki, Finland, acting since September 1st, 2010, appointed April 1st, 2012.

PERSONAL DATA

Nationality: Finnish

Address: Home: Pitkänkalliontanhua 4 D 21, FI-02170 Espoo, Finland

Telephone: +358 50 5829785

E-mail: pauli.puolakkainen@hus.fi or pauli.puolakkainen@helsinki.fi

Family: Married (1983), three children (1988, 1989, 1995)

EDUCATION AND TRAINING

M.D. (Licentiate of Medicine), University of Helsinki 1984

Licence to practise medicine, University of Helsinki 1985

Ph.D., Doctor of Medical Sciences, University of Helsinki, 1989

Specialist in Surgery, University of Helsinki and Helsinki University Central Hospital 1991

Docent in experimental surgery, University of Helsinki 1994

Subspecialist in abdominal (GI) surgery, University of Helsinki and Helsinki University Central Hospital 1997

Docent in abdominal surgery, University of Helsinki 1999

Specialist in administration, University of Helsinki 2005

Professor in Surgery, University of Turku, Finland 2007

Specialist in medical education, The Finnish Medical Association 2008

Leadership training 2008

Official language examinations: Swedish

Language skills: Finnish, Swedish, English, German (basics)

PREVIOUS PROFESSIONAL APPOINTMENTS

Resident in anaesthesiology, Maria Hospital, Helsinki, 1982

General practitioner, Mänttä Health Care Center, Finland 1982, 1983

General practitioner, Espoo Health Care Center, Finland 1983

General practitioner, Nurmijärvi Health Care Center, Finland 1985

Resident in surgery, Lahti City Hospital, Finland 1984-1985

Resident in radiology, Helsinki University Central Hospital, Finland 1985

Visiting Scientist, Department of Surgery, University of Cincinnati, OH, USA 1985

Senior surgeon, Lahti City Hospital, Finland 1985-1986

Resident in surgery, Department of Surgery, Helsinki University Central Hospital 1986-1989

Visiting Scientist, Bristol-Myers Squibb Pharmaceutical Research Institute, and

University of Washington, Seattle, USA 1990-1993

Resident in surgery, Helsinki University Central Hospital 1993-1994

Resident in abdominal surgery, Helsinki University Central Hospital 1995-1997

Senior lecturer/ Assistant Professor / Attending Specialist in Abdominal

Surgery, Helsinki University Central Hospital 1997-2000

Visiting Professor, The Hope Heart Institute and University of Washington, Seattle, USA 2000-2002

Visiting Professor, Dept. of Surgery, University of Sapporo, Japan 2004

Visiting Professor, Dept. of Surgery, University of Texas Southwestern

Medical Center, Dallas, USA 2005

Senior lecturer/ Assistant Professor / Attending Specialist in Abdominal

Surgery, Helsinki University Central Hospital 2002-2007

Professor in Surgery, Chairman, Department of Surgery, Turku University Hospital, Turku 2007-2010

Acting Professor in Surgery, Chairman, Department of Surgery, Helsinki

University Central Hospital and University of Helsinki, Finland, 2010-2012

Professor in Surgery, Chairman, Department of Surgery, Helsinki

University Hospital and University of Helsinki, Finland 2012-

RESEARCH AWARDS, HONOURS AND MAJOR GRANTS

Bristol-Myers Squibb Pharmaceutical Research Institute, and
University of Washington, Seattle, USA1990-1993
The Hope Heart Institute and University of Washington,
Seattle, USA2000-2002
The Paulo Foundation and Sapporo University, Japan, 2004
Helsinki University Central Hospital Research Funds (EVO), 88 500 €, 2003-5
Helsinki University Central Hospital Research Funds (EVO), 65 000 €, 2005-7
Helsinki University 3-year research grant, 100 000 €2005-7
Sigrid Juselius Foundation, 70 000 €, 2005-6
Sigrid Juselius Foundation, 170 000 €, 2007-11
Helsinki / Turku University Central Hospital Research Funds (EVO), 400000€2007-11
Helsinki University Central Hospital Research Funds (EVO), 129 000 €2013-16
Sigrid Juselius Foundation, 46000 €2014-16
Sigrid Juselius Foundation, 46000 €2015-17
Helsinki University Funds, 36000€2018

EDITORIAL BOARD MEMBERSHIPS

Scandinavian Journal of Surgery, Associate Editor 2007-
Finnish Textbook of Gastroenterology and Hepatology, Editor2011, 2018
Editorial Boards and scientific advisory boards:
- Scandinavian Journal of Surgery2005-
- The Finnish Medical Journal2010-
- World Journal of Gastroenterology2009
- World Journal of Gastrointestinal Pathophysiology2010
- Journal of Carcinogenesis and Mutagenesis2010
- JAMA Surgery2018

MEMBERSHIPS IN SCIENTIFIC SOCIETIES

The Finnish Surgical Society (President 2012-14)
The Finnish Surgical Society (President-Elect 2011)
The Finnish Gastroenterological Association (President 2011-13)
The Finnish Association of Physicians
The Finnish Digestive Surgeons, Board member 2006-2010
The Finnish Medical Society Duodecim, 1985-
Joint CME committee, The Finnish Gastroenterological Association and The
Finnish Digestive Surgeons
European Surgical Association (ESA) 2015-
International College of Surgeons
Wound Healing Society
American Pancreatic Association
International Society of Surgery
International Gastric Cancer Association (council member) 2013-

OTHER ACADEMIC AND PROFESSIONAL ACTIVITIES

Visiting Scientist/Professor, Bristol Mayer Squibb, The Hope Heart Institute and
University of Washington, Seattle, USA1990-1993
2000-2002
Gerson Lehrman Group's Council of Healthcare advisors, USA2004
International health professional of the year, International Biographical Centre,
Cambridge, UK2005
Scientific advisory board, European Pancreatic Club Meeting2006
Scientific board, Nordic Meeting of Gastroenterology2007
Abstract committee, International Society of Surgery (ISS), 2009, 2011
Joint CME committee, The Finnish Gastroenterological Association and
The Finnish Digestive Surgeons2006-
Permanent expert for National Authority for Medicolegal Affairs in
Finland (Valvira), 2005-
Expert, Patient Insurance authority (Potilasvahinkolautakunta), Finland2004-
Program committee (member), The Finnish Medical Convention2004-
Scientific advisory board, AstraZeneca, Finland2006-8
Scientific advisory board, Leiras, Finland2006-
The Finnish Research Foundation of Digestive Diseases (secretary/member/
vice chair)2004-
Panelist, Publication Forum, Clinical Medicine, Finland2010-
Pro Medico Council, Finland2010-

Council member, (Issues of health care professionals, TANK) Ministry of Social Affairs and Health, Finland 2010-
Consultant, The Finnish Cultural Foundation, Finland 2010-
Council of Health Research, Academy of Finland 2013-

University of Helsinki/ Helsinki University Central Hospital:

- Vice member, Faculty Council, Faculty of Medicine 2010-
 - Vice Chair, Institute of Clinical Medicine, Faculty of Medicine 2010-
 - Vice Chair, Department of Surgery, Institute of Clinical Medicine, Faculty of Medicine 2010-
 - Member, Research Council, Faculty of Medicine 2007-
 - Member, Council of Basic Medical Education, Faculty of Medicine 2004-
 - Coordinator, surgical teaching, Faculty of Medicine 1997-
 - Ethical committee of Dept. of Surgery, Helsinki University Central Hospital 2003-
 - Committee of animal care of Dept. of Surgery, Helsinki University Central Hospital 2002-5
 - Committee of teaching, simulator training research and resident training, Helsinki University Central Hospital 2007-
 - Board of experts, University of Helsinki 2008-
 - Meilahti hospital renovation committee, Helsinki University Central Hospital 2010-
 - Executive board, Department of Surgery, Helsinki University Central Hospital 2010-
 - Head of own research laboratory, Biomedicum Helsinki, Finland 2003
 - Director, EVO research funds, Operative Unit HUCH 2011-15
 - Member of the Teacher's Academy of University of Helsinki 2015-
 - Director, Research funds, HUCH Abdominal Centre, 2016-
- University of Turku / Turku University Central Hospital
- Chairman, Department of Surgery 2007-11
 - Chair, Executive board of research and education 2007-11
 - Member, SAPA Executive board 2007-11
 - Member, PET Executive board 2007-11
 - Member, Ethical committee 2007-11
 - Member, Institute of Clinical Medicine, Faculty of Medicine 2007-11

Referee for Journals: Journal of Cellular Biochemistry, Histology and Histopathology, Gut, Expert Opinion in Pharmacotherapy, J Histochem Cytochem, Pancreatology, Scandinavian Journal of Gastroenterology, Scandinavian Journal of Surgery, Ann Med, Journal of Pancreas, Duodecim, Leukemia, Molecular Vision, Arch Med Res, Br J Surg, World Journal of Surgery, World Journal of Gastroenterology...

Organizing international meetings

- LOC, European Pancreatic Club, Tampere, 2006
- Scientific Committee, The XXXIX Nordic Meeting of Gastroenterology, 2008
- Vice President, Local organizing committee, International Surgical Week, Helsinki, 2013
- Sigrid Juselius Symposium, Helsinki, 2019

Organizing national meetings

- President, Finnish Surgical Society, Naantali, 2009
- Chairman of the organizing committee, Meeting of the Finnish Society of Gastroenterology, Tampere 2010.
- President, Finnish Society of Surgery, Lappeenranta 2013
- President, Finnish Society of Surgery, Vaasa 2014
- Chairman of the organizing committee, The Finnish Pancreas club, Helsinki 2017

Scientific qualification for professorships

- Professor May Reed, University of Washington, Seattle, USA, 2008

Scientific education

I have received scientific education in the following centres:

Laboratory of Minerva Foundation (Professor J. Schröder) 1983-4, Laboratory of Experimental Surgery, Helsinki University Central Hospital (Dr. T. Schröder, Professor E. Kivilaakso) 1981-, Dept. of Surgery, University of Cincinnati (Professor S. Joffe) 1985, Bristol-Myers Squibb Pharmaceutical Research Institute, Seattle, WA, and University of Washington, Seattle, WA, USA (Professors D. Twardzik, J. Olerud, P. Bornstein, H. Sage) (1990-1993), The Hope Heart Institute and University of Washington, Seattle, WA, USA (Professors E. Sage, J. Olerud, P. Bornstein) (2000-2002). The education includes theoretical and practical basic, experimental and clinical research.

Scientific publications

(For complete list of publications, submitted papers and the 20 most representative publications, please, see List of Publications)

- Original publications : PubMed 217

- Submitted/ in preparation original manuscripts:8
- Reviews, editorials, letters and book chapters:37
- Abstracts:>150
- Others:7
- Mean of impact factors of all publications : 4,05
- Number of times cited : 6576
- h-index: 47
- Sum of impact factors of the 20 chosen papers : 269,5
- Mean of impact factors of the 20 chosen papers: 13,5

Supervision of doctoral dissertation/ thesis

- Esko Kemppainen: Early phase of acute pancreatitis; screening, diagnosis, and severity grading with new laboratory markers and imaging techniques, (accepted with special honours, best surgical dissertation of the year in Finland), 1997
- Arto Kokkola: The etiopathogenesis and new diagnostic methods of gastric cancer, 1998
- Tuula Ranta-Knuutila: The protective mechanisms of gastric mucosa, 2000
- Laura Tielinen: The effect of bioabsorbable polylactide pins with polymer paste, containing TGF-beta1, on the healing of osteotomies and bone defects, 2000
- Leena Kylänpää-Bäck: Acute pancreatitis: diagnosis and assessment of severity with markers of inflammation, 2001
- Eija Tukiainen: Complex trait of acute pancreatitis: Studies of candidate genes and adipokines, 2008
- Anna Nieminen: Extracellular matrix proteins and gastric cancer (under supervision) 2012
- Tuuli Kauttu: ADAM's in esophageal and gastric cancer 2017
- Taru Lehtonen: Severe acute pancreatitis: MODS, infectious complications and operative interventions (under supervision) 2012
- Aino Koski: TAM's and inflammation in pancreatic cancer 2017
- Johan Back: Complication in gastric cancer surgery (under supervision)

Official opponent in academic doctoral dissertations

- Markku Haapamäki: Phospholipase A2 in inflammatory bowel disease, Turku 1999
- Hanna Pelli: Recurrence of acute alcoholic pancreatitis, Tampere 2008
- Hai-Tao Jin: Polyamines in experimental taurocholate-induced and clinical acute pancreatitis, Tampere 2009
- Anna Thiel: COX-2 in gastric carcinogenesis, 2012
- Jahangir Khan: Infections and lipids in alcohol induced acute pancreatitis, 2014
- Matias Laaninen: Prediction and management of complications after pancreaticoduodenectomy, 2016
- Jussi Nikkola: Long-term outcome and prevention of recurrences after acute alcoholic pancreatitis, 2017

Reviewer of professorships, docentships or doctoral thesis

- Jyri Lepistö: PDGF in Experimental Wound Healing (PhD) 1996
- Juha Ranne: Experimental study of healing and reinnervation of skin flaps and muscle fibers after nerve transection (PhD)1999
- Jyrki Kössi: Hexose sugars and sucrose in wound healing (PhD) 2000
- Petri Juvonen: Gastrointestinal perfusion in acute pancreatitis (PhD) 2000
- Sari Rätty: The role of gallbladder, cholecystokinin and microbes in gallstone and post-ERCP pancreatitis (PhD) 2000
- Susanna Sarkio: Gastrointestinal complications after kidney transplantation (PhD) 2005
- Miretta Tommila: Granulation tissue formation. The effect of hydroxyapatite coating of cellulose on cellular differentiation, Turku 2010
- Sari Rätty: Docentship, Tampere 2007
- Johanna Laukkarinen: Docentship, Tampere 2010
- Runkuan Yang: Docentship, Tampere 2010
- Professorship: May Reed, University of Washington, Seattle, USA, 2004
- Johanna Laukkarinen: Docentship, Tampere 2012

Action as a reviewer of international grant applications

- Research into Ageing, UK, 2005

Selected invited talks / teaching /scientific activity in scientific congresses, meetings and courses

- "Treatment of malignancies with laser surgery, hyperthermia and photodynamic therapy."
- Meeting of the growth regulators study group. Bristol-Myers Squibb Pharmaceutical Research Institute, Seattle, WA, 1991
- "Growth factors and extracellular matrix proteins in wound healing"
- Senior staff presentation. Bristol-Myers Squibb Pharmaceutical Research Institute, Seattle,1992
- "Mucosal injury caused by cytotoxic drugs. Experimental models of mucosal damage".
- Cytoprotection meeting, Bristol-Myers Squibb Pharmaceutical Research Institute, Seattle, 1992
- "ECM proteins in wound healing"
- Department of Biological Structure Research Seminar, University of Washington, Seattle, 1992
- "TGF-beta1 and bone healing"
- Orthopaedic research seminar, School of Medicine, University of Washington, Seattle, 1993
- "Wound healing model: delivery system for growth factors and their effects on extracellular matrix". Advanced Tissue Sciences Corp. J. Jolla, CA, 1993

"Models for studying inflammation, regeneration and adaptation in the intestine"
Immunex Corp. Seattle, WA, 1995

"Current aspects of diagnostics and prognostication of acute pancreatitis,"
Harvard Medical School, Boston, USA, 1999

"The role of enzymes and their proforms in the the diagnosis and prognostication of acute pancreatitis" Pancreatic Disease Meeting, Southampton, UK, 2000

"Reduced foreign body reaction in mice lacking matricellular protein SPARC"
University of Washington, Seattle, 2001

"Reduced dermal fibrotic response to implanted biomaterials in SPARC-null mice."
First Friday Hope Heart Institute Research Seminar Series, 2001

"Severe acute pancreatitis: A continuig clinical challenge"
UT- Southwestern Medical Center, Dallas, TX, 2002

"Acute Pancreatitis"
University of Ulm, Germany 2003

"Acute pancreatitis – diagnosis and severity assessment"
Estonian Surgical Society, Tallinna, Estonia, 2004

"Current concepts of acute pancreatitis"
Harvard Medical School, Boston, USA 2000

"SPARC-thrombospondin 2 double-null mice exhibit enhanced epithelial closure and dermal wound healing", Annual meeting of the Wound Healing Society, Seattle, USA 2003

"Enhanced growth and decreased levels of apoptosis in pancreatic tumors in SPARC null mice is asso-ciated with altered extracellular matrix"
UEGW, Madrid, 2003.

"Severe acute pancreatitis: A continuing clinical challenge"
First Dept. of Surgery, Sapporo Medical University, 2004

"Perioperative treatment in abdominal surgery"
First Dept. of Surgery, Sapporo Medical University, 2004

"Early diagnosis and risk factors of gastric cancer"
AstraZeneca CME training program, Hanasaari, Espoo, 2004

"The effects of pancreatic elastase are mediated through NFkB and TOLL2"
American Pancreatic Association, Chicago, USA 2004

"Complications and survival after curative D1 vs. D2-3 resection for gastric cancer"
International Gastric Cancer Congress, Yokohama, Japan, 2005

"Angiogenesis and wound healing"
Dept. of Surgery, University of Texas Southwestern Medical Center, Dallas, USA 2005

"Gastric cancer –continuing clinical challenge"
Dept. of Surgery, University of Texas Southwestern Medical Center, Dallas, USA 2005

"The healing of injury in biliary tract"
Meeting of the Finnish Gastroenterological Association, Aulanko, Finland, 2005

"Special aspects of biliary acute pancreatitis"
Pancreas 2000 CME training program, Solvalla, Finland, 2005

"Pathophysiology of chronic pancreatitis"
The Finnish Pancreatic Club Meeting, Turku, 2005

"Abdominal complaints – how should I treat?"
CME teaching program in over 20 different health care centres in Finland 2005-6

"How to write a scientific article"
Meeting of the Finnish Phycicians, Helsinki, 2006

"Acute pancreatitis", Meeting of The Finnish Gastroenterological Association, Turku, 2006

"Pathophysiology of ulcer disease"
CME training, Helsinki University Central Hospital, 2006

"Surgical interventions in acute pancreatitis"
Nordic training for SSAI anesthesiologist, Espoo, 2006

"Immunosuppression and MOF in necrotizing pancreatitis"
The 38th Meeting of the European Pancreatic Club, Tampere, Finland, 2006

"Excluding oher etiologies than alcohol and biliary disease"
The 38th Meeting of the European Pancreatic Club, Tampere, Finland, 2006

"Severity assessment: Biochemical markers and scoring systems"
The 38th Meeting of the European Pancreatic Club, Tampere, Finland, 2006

"Acute abdomen", Herttoniemi Hospital, Helsinki, 2007

"When acute abdomen is not operated in the elderly", Herttoniemi Hospital, Helsinki, 2007

"Acute abdomen in the elderly", University of Helsinki /Palmenia, Lahti 2007

"The etiology and clinical examination of acute abdominal pain", HUCH, 2007

"Acute abdominal pain"; In Emergency medicine lecture course, Meilahti Hospital 2007

"Acute pancreatitis, from basic research to clinics", University of Turku, 2007

"The role of sentinel node navigation in the treatment of gastric cancer"
The Annual Meeting of The Finnish Surgical Society, 2007

"Every man's surgery: Acute Abdomen, clinical examination and treatment" Annual presentation in Finnish Medical

Convention, 2007, 2008, 2009, 2010, 2011

"When acute abdomen is not operated in the elderly", Tampere health care center physicians, 2007

"Old Abdomen", Finnish Medical Convention, 2006

"Every man's surgery: Acute Abdomen, clinical examination and treatment" Turku Medical Convention, 2008

"Surgery for pancreatic cancer, up-date", Satakunta Central Hospital, Pori, 2009.

"Acute abdomen in the elderly", Laakso Hospital, Helsinki, 2009

"Acute abdomen in the elderly", Haartman hospital, Helsinki, 2010

"Acute pancreatitis as systemic disease" Thursday meeting series, Meilahti hospital, 2010

"Current treatment methods for gastric cancer", The meeting of the Finnish Society of Gastroenterology, Tampere, 2009

"Acute pancreatitis as systemic disease", Tampere University Central Hospital, 2010

"Acute pancreatitis as systemic disease", University of Turku, 2010

"Acute abdomen", Haartman Hospital 2010

"Matrix metalloproteinases in GI malignancy - from basic research to clinical applications" The Hungarian Society of Gastroenterology, Hungary, 2010

"Acute pancreatitis 2013" International Surgical Week, Helsinki, 2013

"Acute pancreatitis 2014" University of Chicago, USA, 2014

"Acute pancreatitis 2014" Tuft's institute, Boston, USA, 2014

"Risk group screening in gastric cancer" Meeting of the International Gastric Cancer Association, Sao Paulo 2015

"The role of macrophages in cancer" Meeting of the International Gastric Cancer Association, Beijing 2017

"The treatment of acute pancreatitis" World Congress of Surgery, Basel 2017

"The operative treatment of chronic pancreatitis" World Congress of Surgery, Basel 2017

Patents

Method for modulation of inflammatory status and proliferative, invasive and angiogenic properties using micro-organisms by normalizing intestinal epithelial cell function (pending)

Pedagogical training, experience, achievements

For details, please, see Appendix at the end of the CV summarizing all pedagogy and teaching related issues.

Person of the year, Teaching, Medical Faculty, 2012

Member of the Teacher's Academy (University of Helsinki) 2014-

Clinical portfolio

Specialist / clinical positions / Clinical leadership

- Senior lecturer / Professor / Attending Specialist in surgery and abdominal surgery, 1997-2000, 2002-,

- ongoing surgical activity includes operations, endoscopies, on-call duties

- own clinical interest and expertise mostly in upper-GI (gastro-pancreatico-biliary) surgery

- on call responsibilities cover the fields of abdominal surgery, abdominal emergency/trauma surgery and endocrine surgery

Activity as a private practitioner

- Previously: Kannelmäki Medical Center, Hemo Medical Center (Lahti), Diacor Länsi-Pasila, Laseri, Ars Medicina

- Currently: Pihlajalinna/ Dextra Medical Center, (1997-) Helsinki

Own continuing education

Regularly, several times annually, attending numerous international and national courses and work-shops. (DDW, UEGW, APA, EPC, Gastric Cancer Congress, Meetings of National societies such as The Finnish Surgical Association, The Finnish Gastroenterological Association, The Finnish Digestive Surgeons etc.)

International and national invitations

(For complete list, please, see also the list of invited lectures)

- Harvard Digestive Diseases Center, Boston, USA, 1999

- Pancreatic Disease Meeting, Southampton, UK, 2000

- University of Ulm, Germany, 2003

- Estonian Surgical Society, Tallinn, Estonia, 2004

- Dept. of Surgery, Sapporo University, Japan 2004

- Dept. of Surgery, UT Southwestern Medical Center, Dallas, USA 2005

- The Hungarian Society of Gastroenterology, Hungary, 2010

- The Chinese College of Surgeons, 2011

- University of Chicago, 2014

- The Tufts Institute, Boston, 2014

- Session chair, American Pancreatic Association meeting, San Diego, 2017

Contribution in the development of clinical work

- Finding of C-reactive protein being reliable in assessing severity of acute pancreatitis. It is currently in clinical use all over the world.

- Laboratory diagnostics and treatment of acute pancreatitis

- Prophylactic antibiotics in severe acute pancreatitis

- Surgical treatment of acute pancreatitis

- Development in laser technology (hyperthermia) in medicine.
- Genetic background of gastric cancer
- Gastric cancer surgery
- Use of growth factors in promoting healing of injured tissues

LIST OF PUBLICATIONS (Pauli Puolakkainen 2017)

A) ORIGINAL PUBLICATIONS

1984

1. Parkkinen E, Nordling S, Puolakkainen P, Kiviluoto T, Schröder T, Schröder J: Distribution of Ia positive cells in the pig and human pancreas. *Eur Surg Res* 1984;16:336-9. IF: 1,5

1985

2. Schröder T, Kivisaari L, Standertskjöld-Nordenstam C-G, Somer K, Lehtola A, Puolakkainen P, Karonen S-L, Kivilaakso E, Lempinen M: Pancreatic blood flow and contrast enhancement in computed tomography during experimental pancreatitis. *Eur Surg Res* 1985;17:286-91. IF: 1,5

1986

3. Lehtola A, Kivilaakso E, Puolakkainen P, Karonen S-L, Lempinen M, Schröder T: Effects of Dextran-70 versus chrystalloids in the microcirculation of porcine hemorrhagic pancreatitis. *Surg Gyn Obstet* 1986;162:556-62.

4. Puolakkainen P, Lempinen M, Schröder T: Fatal pancreatitis - A study of 64 consecutive cas-es. *Acta Chir Scand* 1986;152:379-38.

5. Rämö OJ, Schröder T, Kuusi T, Puolakkainen P, Mäkelä A, Jalovaara P: Long-term ethanol ingestion causes an increase of phospholipase A2 activity in acute experimental pancreatitis in rats. *J Surg Res* 1986;41:362-6. IF: 2,18

1987

6. Lehtola A, Talja M, Puolakkainen P, Nordling S, Schröder T: Peritoneal lavage combined with volume therapy in porcine hemorrhagic pancreatitis: Effects on hemodynamics, microcirculation and peritoneal morphology. *Scand J Gastroent* 1987;22:559-67. IF: 2,08

7. Puolakkainen P, Brackett K, Sankar MY, Joffe SN, Schröder T: Effects of electrocautery, CO2-laser and contact Nd:YAG laser scalpel on the healing of intestinal incisions. *Lasers Surg Med* 1987;7:507-11. IF: 2,60

8. Puolakkainen P, Paananen A, Kaarne M, Kuusi T, Lempinen M, Schröder T: Aprotinin and Na₂CaEDTA in experimental hemorrhagic pancreatitis in pigs. *Scand J Gastroent* 1987;22:35-41. IF: 2,08

9. Puolakkainen P, Valtonen V, Paananen A, Schröder T: C-reactive protein (CRP) and serum phospholipase A2 in the assessment of the severity of acute pancreatitis. *Gut* 1987;28:764-71. IF: 9,36

1989

10. Hahl J, Ovaska J, Paetau A, Puolakkainen P, Schröder T: Nd:YAG laser in subtotal thyroid-ectomy: A prospective randomized study. *Lasers Med Sci* 1989;4:275-8. IF: 2,57

11. Hukki J, Lipasti J, Castren M, Puolakkainen P, Schröder T: Lactate dehydrogenase in laser incisions: A comparative analysis of skin wounds made with steel scalpel, electrocautery, super-pulse-continuous wave mode carbon-dioxide lasers, and contact Nd:YAG laser. *Lasers Surg Med* 1989;9:589-94. IF: 2,60

12. Puolakkainen P: Early assessment of acute pancreatitis: A comparative study of computed tomography and laboratory tests. *Acta Chir Scand* 1989;155:25-30.

13. Puolakkainen P: Early diagnosis and assessment of the severity of acute pancreatitis: an ex-perimental and clinical study. A thesis. (Väitöskirja), Helsinki, Finland, 1989.

14. Puolakkainen P, Kivisaari L, Sipponen J, Standertskjöld-Nordenstam C-G, Nuutinen P, Schröder T: Magnetic resonance imaging (MRI) in detecting acute oedematous and hemorrhagic pancreatitis: an experimental study in pigs. *Eur Surg Res* 1989;21:25-33. IF: 1,5

15. Rämö OJ, Puolakkainen P, Seppälä K, Schröder T: Self-administration of enzyme substitution in the treatment of exocrine pancreatic insufficiency. *Scand J Gastroenterol* 1989;24:688-92. IF: 2,08

16. Schröder T, Hukki J, Castren M, Puolakkainen P, Lipasti J: Comparison of surgical lasers and conventional methods in skin incisions. *Scand J Plast Reconstr Surg*. 1989;23:187-90. IF: 0,55

17. Schröder T, Puolakkainen P, Hahl J, Rämö OJ: Fatal air embolism as a complication of laser-induced hyperthermia. *Lasers Surg Med* 1989;9:183-5. IF: 2,60

1990

18. Hahl J, Haapiainen R, Puolakkainen P, Schröder T: Laser-induced hyperthermia in the treatment of liver tumors. *Lasers Surg Med* 1990;10:319-21. IF: 2,60

19. Mäkelä A, Sternby B, Kuusi T, Puolakkainen P, Schröder T: Phospholipase A2 activity and concentration in several body fluids in patients with acute pancreatitis. *Scand J Gastroent* 1990;25:944-50. IF: 2,08

20. Schröder T, Puolakkainen P, Rämö J, Nuutinen P, Kivilaakso E, Kiviluoto T, Haapsaari P, Ki-visaari L: Long term results after pancreatic resection and peritoneal lavage for acute hemorrhagic pancreatitis. *Surg Res Comm* 1990;7:145-9.

1991

21. Castren-Persons M, Schröder T, Rämö OJ, Puolakkainen P, Lehtonen E: The contact Nd:YAG laser potentiates the tumor cell killing effect of hyperthermia. *Lasers Surg Med* 1991;11:595-600. IF: 2,60

22. Puolakkainen P, Haapiainen R, Mecklin J-P, Järvinen H, Schröder T: Ischemic colitis - a clinical study of 7 patients with special emphasis on diagnostic problems. *Ann Chir Gyn* 1991;80:245-9. IF=Scand J Surg: 0,82

23. Schröder T, Sainio V, Kivisaari L, Puolakkainen P, Kivilaakso E, Lempinen M: Pancreatic re-section vs. peritoneal lavage in acute necrotizing pancreatitis - A prospective randomized trial. *Ann Surg* 1991;214: 663-6. IF: 7,9

24. Twardzik D, Ranchalis J, Puolakkainen P: Transforming growth factor- β induces tumor differentiation. In: Waxman S, Rossi GB, Takaku F (eds.), *The status of differentiation therapy of cancer*, Vol. II, 133-139, Raven Press, 1991.

1992

25. Castren-Persons M, Lipasti J, Puolakkainen P, Schröder T: Laser-induced hyperthermia: Comparison of two different methods. *Lasers Surg Med* 1992;12:665-8. IF: 2,60

1993

26. Gombotz WR, Pankey SC, Bouchard LS, Ranchalis J, Puolakkainen P: Controlled release of TGF- β 1 from a biodegradable matrix for bone regeneration. *J Biomater Sci* 1993;5:49-63. IF: 2,51

27. Puolakkainen P, Paciucci P, Ranchalis J, Oleksowicz L, Twardzik D: Interleukin-2 (IL-2) augments the expression of transforming growth factor beta in patients with disseminated cancer. In: *Growth Factors, Peptides and Receptors*. pp. 425-433, Terry W. Moody (ed.) Plenum Press, New York, 1993.

28. Puolakkainen P, Ranchalis JE, Strong DM, Twardzik DR: The effect of sterilization on transforming growth factor β isolated from demineralized human bone. *Transfusion* 1993;33:679-85. IF: 2,98

29. Reed M, Puolakkainen P, Lane T, Dickerson D, Bornstein P, Sage H: Differential expression of SPARC and thrombospondin 1 in wound repair: immunolocalization and in situ hybridization. *J Histochem Cytochem*, 1993;41:1467-77. IF: 2,37

1994

30. Gombotz WR, Pankey SC, Bouchard LS, Phan DH, Puolakkainen P: Stimulation of bone healing by transforming growth factor beta1 released from polymeric or ceramic implants. *J Appl Biomat*, 1994;5:141-50. IF: 0,94

31. Mumper RJ, Hoffman AS, Bouchard LS, Puolakkainen P, Gombotz WR: Calcium-alginate beads for the oral delivery of TGF- β 1: Stabilization of TGF- β 1 by the addition of polyacrylic acid coupled with acid-hydrolysis of beads. *J Contr Rel* 1994; 30:241-51. IF: 5,95

32. Puolakkainen P, Ranchalis J, Gombotz W, Hofman A, Mumper RJ, Twardzik DR: Novel delivery system for inducing quiescence in intestinal stem cells in rats by TGF- β 1. *Gastroenterology*, 1994;107:1319-26. IF: 12,90

1995

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OTHERS PUBLICATIONS

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2. Puolakkainen P. Somatostatiini ja oktreotidi abdominaali-kirurgiassa.(Somatostatin and octreotide in abdominal surgery; review in Finnish.) Sandoreport 3:5-8, 1996.

3. Puolakkainen P, Turunen JP, Kivisaari L, Kekki P: Kurssimuotoisen koulutuksen laatu ja vaikuttavuus ja niiden arviointi erikoislääkärikoulutuksessa. Suomen Lääk L 2001;56(51-52):5295-300.

4. Rau BM, Kemppainen EA, Gumbs AA, Uhl W, Büchler MW, Wegscheider K, Bassi C, PA Puolakkainen, Beger HG, Schilling MK: Prokalsitoniini haiman infektioiden ja kokonaisennusteen arvioinnissa vaikeaa akuuttia haimatulehdusta sairastavilla potilailla: prospektiivinen, kansainvälinen monikeskustutkimus. Early assessment of pancreatic infections and overall prognosis in severe acute pancreatitis by procalcitonin (PCT). a prospective international multicenter study. Duodecim 2007;123:1256-1257

5. Mentula P, Kemppainen E, Puolakkainen P. Sappikivitaudin hoito akuutin sappikivien aiheuttama-haimatulehduksen yhteydessä. Duodecim 2007; 123: 2449-53

6. Järvinen M, Höckerstedt K, Alhava E, Juvonen T, Puolakkainen P et al. Kirurgian professorit: selvityshenkilöiltä varsin radikaaleja ehdotuksia erikoislääkärikoulutuksesta. Suomen Lääkärilehti 2007; 41: 3777-9

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8. Puolakkainen P, Aaltonen L, Alitalo K. Äyräpään palkinto 2011 Juha Kerelle. Duodecim 2011;127:107-8

APPENDIX

TEACHING-focused CV / Pauli Puolakkainen 2017

Pedagogical training (University of Helsinki unless other vice marked)

- Tutor teaching course (1 day)1996/ Teaching EBM-course (1-day)1996/ "Simulated patients" (1-day)1996 / A course of University pedagogy (Korkeakoulupedagogiikan kurssi)(6 sw) accepted with distinction and special honours (Professor Lonka,1997-8)/ The course "Portfolio", (2-days)1997-1998/ Information technology in medical education (1-day) 2004/ Electronic library services (1-day)2004/ The OSCE examination training (1-day)2005/ Train the Trainers international pedagogical workshop (4-day course), World Gastroenterology Organization, Uruguay, 2005/ MD Profession – Medical teaching (1-day)2007/ The AMEE Meeting, Prague 2008, Lyon 2012, Milan 2014/ The day of learning in the Faculty of Medicine – Comparing educational practices between Helsinki and Lindköping 2009/ IT-Medi semi-nar, (1-day)2010/

Blended-learning –symposium 2010/ Moodle- basic course(1-day) 2010/ Several iPad courses 2014

Practical teaching experience

I have been teaching medicine /surgery for 20 years

- Lecturer, School for Dental Technicians and Schools of Nursing, 1983-2000 Helsinki/ Teaching some medical students (as Visiting Professor) at Benaroya Research Institute and at University of Washington, Seattle, USA, 2000-2002/ Intensive programme in surgery co-ordinating meeting, Göttingen, Germany, 1999/ Lecturer: Harvard Digestive Disease Center, Boston USA 1999/ Teaching medical (and dental) students and surgical residents (as Assistant Professor / Senior Lecturer) at University of Helsinki, 1994-2000, 2002-2007, 2010- (as Professor, ongoing) / Teaching medical students and surgical residents (Professor of Surgery) at University of Turku, 2007-2010/ Supervising several “Extended studies” –programs for medical students 1994-ongoing/ Teaching abdominal surgery in English to international medical students, University of Helsinki, 2002- ongoing / Annual educational site visit (surgery) with medical students to Stockholm, 1994-/ - Supervisor of 8 completed PhD theses, 5 ongoing, managing own Puolakkainen laboratory in Bio-medicum Helsinki since 2002.

- Planning, lecturing, arranging, organizing and participating educational annual symposia: Finnish Digestive Surgeons (board member), The Finnish Gastroenterological Association (Vice President 2009-11, President 2011-2013), The Finnish Surgical Society (board member, Vice President 2010-2012, President 2012-2014.), Joint Education Committee: The Finnish Digestive Surgeons and The Finnish Gastroenterological Association; Program Committee, The Annual Finnish Medical Convention

- Planning, lecturing, arranging, organizing and participating in educational and scientific international symposia : European Pancreatic Club 2006, Nordic Meeting of Gastroenterology 2008, International Surgical Week (World Congress in Surgery) 2013 (Vice President)

- Annual Hanasaari -symposium for residents: Gastroenterological diseases, (2 days), 2007-
- Experimental animal hands-on courses (Lap-simulator, endo-simulator, experimental animals) for residents and specialists on techniques in abdominal surgery, 2005- (mean of 8-10 one-day courses/year)
- Courses on surgery and emergency surgery, Department of General Medicine, University of Helsinki, 2002-
- Lecture series “Abdominal complaints – how should I treat ? ” in over 20 health care centres in Finland, 2005-6
- “Every man’s surgery” – annual symposium during Finnish Medical Convention, 2006-
- “Acute abdomen in the elderly”, Annual Lecture series, Lahti / University of Helsinki, 2005-
- “To be a certified MD in Finland” – lecture series for foreigners, University of Helsinki, 2008, 2011-
- In addition, tens of educational talks over the years in different levels of medical profession in conferences and meetings in Finland and abroad (Sapporo, Tallin, Dallas)

Contribution in the Development of teaching

- I was actively involved in the development of Helsinki 2000 teaching curriculum at Faculty of Medicine, University of Helsinki (1996-2000). Curriculum represent a hybrid including both conventional teaching methods and problem based learning (PBL). Curriculum includes mentor teaching, a technique in developing of which I was actively involved. In 2005 we updated the program according to Bologna process. During the last 3 years I have been heavily involved in the development of our curriculum to Helsinki 2020.

- As coordinator of surgical teaching in the Faculty of Medicine, University of Helsinki, I have been responsible for applying modern pedagogical techniques in teaching. I have been involved in planning the “Learning laboratory / Taitopaja” for hands-on practicing for medical students. Recently, I have started to apply a simulator in teaching surgical residents (operating a “virtual patient”). I have also been organizing courses of operative techniques using experimental animals. Teaching videos and virtual patient concept have also been implemented as part of the development process.

- For our residents I have started to organize courses including theoretical lectures, experimental animal training on operative techniques, simulators and finally, teaching operations. Titles include surgery on: Hernias, Thyroid, Gallbladder, Liver, and GERD.

- I have actively participated in the development of teaching in various other projects as a member of the Council of the basic medical teaching (perustutkinnon suunnittelutoimikunta) 2002-.

- In University of Turku (as a Professor 2007-2010) I up-dated the teaching methods and practices of both C7 (Basics and introduction to surgery) and C12 (Surgery) courses to meet both national and international modern standards.

- Other teaching planning projects include:

- “Abdominal diseases” – block as part of Helsinki 2000 curriculum

- Development of the assessment of OSCE examination

- “Organization, quality and validation of postgraduate theoretical courses / Teoreettisen kurssimuotoisen koulutuksen organisointi, laatu ja validointi erikoislääkärikoulutuksessa” -, 2000.

- Vice Chair (educational issues), Institute of Clinical Medicine; University of Helsinki, 2010-

- Member, Council of medical professionals, Ministry of Social Affairs and Health, Finland 2010-

Related pedagogical publications

- Lonka K, Pitkälä K, Puolakkainen P, Sauri P, Vanhanen H. A problem -based tutorial laboratory - a method of mentoring medical teachers. Meeting of the European Society for Medical Teachers. Gothenburg, Sweden, 1998. Abstract.

- Vanhanen H, Puolakkainen P, Pitkälä K, Strandberg T, Lonka K. The problem based learning tutorial laboratory - a method of teaching medical teachers. Meeting for Medical Teachers, Prague, 1998. Abstract

- Vanhanen H, Pitkälä K, Puolakkainen P, Strandberg TE, Lonka K. The problem-based learning tutorial laboratory – a method for training medical teachers. *Med Teach* 2001;23:99-101. Original paper
- Puolakkainen P, Turunen JP, Kivisaari L, Kekki P: Kurssimuotoisen koulutuksen laatu ja vaikuttavuus ja niiden arviointi erikoislääkärikoulutuksessa. *Suomen Lääk L* 2001;56(51-52):5295-300. Original report and review.
- Several articles and reviews in Finnish (*Duodecim*, *Suomen Lääkäreilehti*)
- Editor: *Gastroenterology and Hepatology*, 2013, (*Gastroenterologia ja hepatologia; The Finnish Text-book*).
- Puolakkainen P. Proktiitit. Kirjassa: *Sukupuolitaudit*. *Duodecim*, (*Proctitis ; A Review in the textbook of sexually transmitted diseases*) (in Finnish), Helsinki, 1994.
- Puolakkainen P: Akuutti haimatulehdus. Kirjassa: *Kunnamo I (päätoim.) Lääkärin käsikirja* 2004. Helsinki: Kustannus Oy Duodecim, 2004; s. 374-5. 951-656-144-6
- Puolakkainen P: Krooninen haimatulehdus. Kirjassa: *Kunnamo I (päätoim.) Lääkärin käsikirja* 2006. Helsinki: Kustannus Oy Duodecim, 2006; s. 383-5. 951-656-213-2
- Puolakkainen P: Krooninen haimatulehdus [online]. *Lääkärin tietokannat/Lääkärin käsikirja*. Helsinki: Kustannus Oy Duodecim, 2005. [päivitetty 5.3.2005]. Saatavilla Internetissä (vaatii käyttäjätunnuksen): <http://www.terveysportti.fi>
- Puolakkainen P: Acute pancreatitis. In: *Evidence-Based Medicine Guidelines*. Ed. Kunnamo I, John Wiley & Sons, Ltd, England, ISBN 0-470-01184-X, pp. 338-39, 2005. A book chapter
- Puolakkainen P: Akuutti haimatulehdus [online]. *Lääkärin tietokannat/Lääkärin käsikirja*. Helsinki: Kustannus Oy Duodecim, 2006. [päivitetty 24.5.2005]. Saatavilla Internetissä (vaatii käyttäjätunnuksen): <http://www.terveysportti.fi>
- Puolakkainen P: Akuutti haimatulehdus. Kirjassa: *Jousimaa JP (päätoim.) Lääkärin käsikirja* 2011. Helsinki: Kustannus Oy Duodecim; s. 380-81
- Puolakkainen P: Krooninen haimatulehdus. Kirjassa: *Jousimaa JP (päätoim.) Lääkärin käsikirja* 2011. Helsinki: Kustannus Oy Duodecim s. 381-3.
- Puolakkainen P: Haimasyöpä. Kirjassa: *Jousimaa JP (päätoim.) Lääkärin käsikirja* 2011. Helsinki: Kustannus Oy Duodecim s. 384-5.

Teaching merits, feedback, awards and recognition

- Supervised thesis (Esko Kemppainen) was accepted with special honours, and was awarded as the best surgical dissertation of the year in Finland, 1997
 - Numerous very positive feed-back reports over the years: applying to both lectures and group teaching (both medical students and residents and doctors undergoing CME training).
 - The group teacher of the year, 1999, Faculty of Medicine, University of Helsinki (chosen by the medical students)
 - Speciality in medical teaching /education, 2008 (The Finnish Medical Association)
 - Teaching person of the year, 2012, University of Helsinki (chosen by the medical students)
 - dedicated song in the song book of medical students ("Kultainen uvula", song 136)
 - I have received annual grant from the Helsinki University Central Hospital Research Funds (EVO) for the development of teaching techniques, personnel and related purposes (over 100 000 E during the last 5 years)
- Teaching demonstration of teaching skills
- Formal lectures assessing teaching skills (both graded as excellent):
- 1994 Docent in experimental surgery, University of Helsinki
 - 1999 Docent in gastrointestinal surgery, University of Helsinki
 - Site visit /evaluation of centres of excellence in university education: Observation of teaching activities; tutorial at the clinical stage of studies (2008), University of Helsinki
 - Teaching skills were demonstrated in all during the process that led to the Speciality in Medical Education and Professorship in Surgery first in Turku and 2011 in Helsinki