

## Personal information form for Fellow members of EAMBES

### Personal Info



Name: Karin Wårdell

Gender: Female

Date and place of birth: March 20, 1959, Finspång, Sweden

Present affiliations and functions: Professor, Department of Biomedical Engineering, Linköping University

Presents e-mail address: [karin.wardell@liu.se](mailto:karin.wardell@liu.se)

Webpage address when applicable:

<http://www.imt.liu.se/bit/staff/karwa/>

### Short CV

#### 1. University degrees

MSc 1987 Linköping Institute of Technology (LiTH), Linköping University (LiU)

PhD 1994 Biomedical Instrumentation, LiU

Docent 1997 Biomedical Instrumentation, LiTH

#### 2. Professional affiliations

Since 2002 Professor Biomedical Engineering, LiTH/LiU

2003-2007 Vice Director, Department of Biomedical Engineering, LiU

1998-2001 Acting Professor, Biomedical Instrumentation, LiTH

1996-2006 Project Manager, Swedish Competence Centre NIMED

1995-2000 Co-founder and Software Manager, Lisca AB

1997-2000 Director of Research Studies, Department of Biomedical Engineering, LiU

1989-1994 PhD-studies Biomedical Instrumentation, LiTH

1981-1983 Software Developer, Ericsson Radar Electronics AB, Kista/Stockholm

#### 3. Major activities at the national and international level

Research visits at Yale Medical School USA and University of New South Wales Australia. Undergrad studies at RWTH Aachen University, Germany. Ongoing collaborations with Institute of Neurology, UCL, and Institute of for Medical and Analytical Technologies, University of Applied Sciences Northwestern Switzerland. Associate Editor MBEC. EU-projects: HIRELADO, IMPACT.

#### 4. Major scientific interests

Biomedical instrumentation and neuro-engineering. Biomedical optics, deep brain stimulation, patient specific modelling and simulation, stereotactic and functional neurosurgery, assessment of brain and skin tissue viability in clinical environments, microcirculation and laser Doppler.

<http://www.imt.liu.se/bit/mint/> <http://www.imt.liu.se/bit/neuroengineering/>

#### 5. Publications

90 Journal Papers, 22 Book Chapters and Reviews, >175 Conference Papers, Patents 3

## 6. Selected references

Åström M, Diczfalusy E, Martens H, **Wårdell K**, [Relationship between neural activation and electric field distribution during deep brain stimulation](#). *IEEE Trans Biomed Eng.* 2015 Feb;62(2):664-72.

Rejmstad P, Åkesson G, Åneman O, **Wårdell K**, [A laser Doppler system for monitoring cerebral microcirculation: implementation and evaluation during neurosurgery](#). *Med Biol Eng Comput.* 2015 Jun 24.

Alonso F, Simone Hemm-Ode S, **Wårdell K**, Influence on Deep Brain Stimulation from Lead Design, Operating Mode and Tissue Impedance Changes – a Simulation Study, *Brain Disorder & Therapy* 2015, 4:3, 2015, <http://dx.doi.org/10.4172/2168-975X.1000169>

Johansson JD, **Wårdell K**, [Intracerebral quantitative chromophore estimation from reflectance spectra captured during deep brain stimulation implantation](#). *J Biophotonics.* 2013 May;6(5):435-45. doi: 10.1002/jbio.201200055. Epub 2012 Aug 24.

**Wårdell K**, Zsigmond P, Richter J, Hemm S. [Relationship between laser Doppler signals and anatomy during deep brain stimulation electrode implantation toward the ventral intermediate nucleus and subthalamic nucleus](#). *Neurosurgery.* 2013 Jun;72(2 Suppl Operative):ons127-40; discussion ons140.

Richter J, Haj-Hossini N, Andersson-Engels S, **Wårdell K**, [Fluorescence spectroscopy measurements in ultrasonic navigated resection of malignant brain tumors](#). *Lasers in Surgery and Medicine*, 43(1):8-14, 2011.

Hemm S, **Wårdell K**, [Stereotactic implantation of deep brain stimulation electrodes: a review of technical systems, methods and emerging tools](#), *Med Biol Eng Comput*, Jul;48(7):611-24, 2010.

Haj-Hosseini N, Richter J, Andersson-Engels S, **Wårdell K**, [Optical touch pointer for fluorescence guided brain tumour resection using 5-aminolevulinic](#), *Lasers Surg Med*, Jan;42(1):9-14, 2010.

Åström M, Tripoliti E, Hariz MI, Zrinzo LU, Martinez-Torre I, Limousin P, **Wårdell K**, [Patient-specific model-based investigation of speech intelligibility and movement during deep brain stimulation](#), *Stereotact Funct Neurosurg* 2010;88:224-233

Åström M, Zrinzo LU, Tisch S, Tripoliti E, Hariz MI, **Wårdell K**, [Method for patient-specific finite element modeling and simulation of deep brain stimulation](#). *Med Biol Eng Comput*, 47; 21-28, 2009.

**Wårdell K**, Blomstedt P, Richter J, Antonsson J, Eriksson O, Zsigmond P, Bergenheim AT, Hariz MI, [Intracerebral microvascular measurements during deep brain stimulation implantation using laser Doppler perfusion monitoring](#). *Stereotac Func Neurosurg*;85:279-286, 2007.

**Wårdell K**, Jakobsson, A. & Nilsson G.E. [Laser Doppler perfusion imaging by dynamic light scattering](#). *IEEE Trans on Biomedical Engineering*, Vol. 40, No. 4 pp 309-316, 1993