



University
of Basel

Department of
Biomedical Engineering

Seminar Series FS 2020: **Robotics, Lasers and Beyond**

Lecture Room 14.03.002, Department Biomedical Engineering, Gewerbestrasse 14, Allschwil

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What a promising journey – Robotics in surgery

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Abstract:

The use of computer-assisted orthopaedic surgery has been controversial. See also: [Friederich N et al. The use of computer-assisted orthopaedic surgery for total knee replacement in daily practice: a survey among ESSKA/SGO-SSO members](#). Computer assisted surgery has evolved from simple guiding tools for the surgeon to robots, overtaking part (or almost all) of the surgical procedure. There has been an evolution; from simple routine to complex osteotomies to total knee replacement. It has in fact quite been a journey. With ups and downs. *George Santayana (The Life of Reasons, 1905/1906) stated: Those who forget the past are condemned to repeat it.* We shall not repeat the disaster of the Robodoc® area.

The lecture will be a journey through times – highlighted with some personal experiences.

Curriculum:

Niklaus F. Friederich is an experienced orthopaedic surgeon at the University of Basel. He specialized in knee biomechanics and authored several papers and textbooks. He studied medicine at the University of Berne, and did fellowships in bone radiology, knee biomechanics and knee surgery in San Diego, CA, San Antonio, TX and Toronto, ON, Canada. He specialized in knee surgery at the University of Basel and held the position of head of the Department of Orthopaedic Surgery at the Kantonsspital Bruderholz from 1998 till 2013. His special interest is knee biomechanics, from orthobiologics to complex knee reconstruction. His publications range from clinical studies to biomechanical in-vitro studies to advanced research in cartilage biomechanics utilizing atomic force microscopy. *Stolz et al: Early detection of aging cartilage and osteoarthritis in mice and patient samples using atomic force microscopy. Nature nanotechnology 2009. | DOI: 10.1038/NNANO.2008.410.* He has on-site experience with early surgical robots like Acrobot®, Galileo® and Mako® and he is a member of several international organizations.