OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG

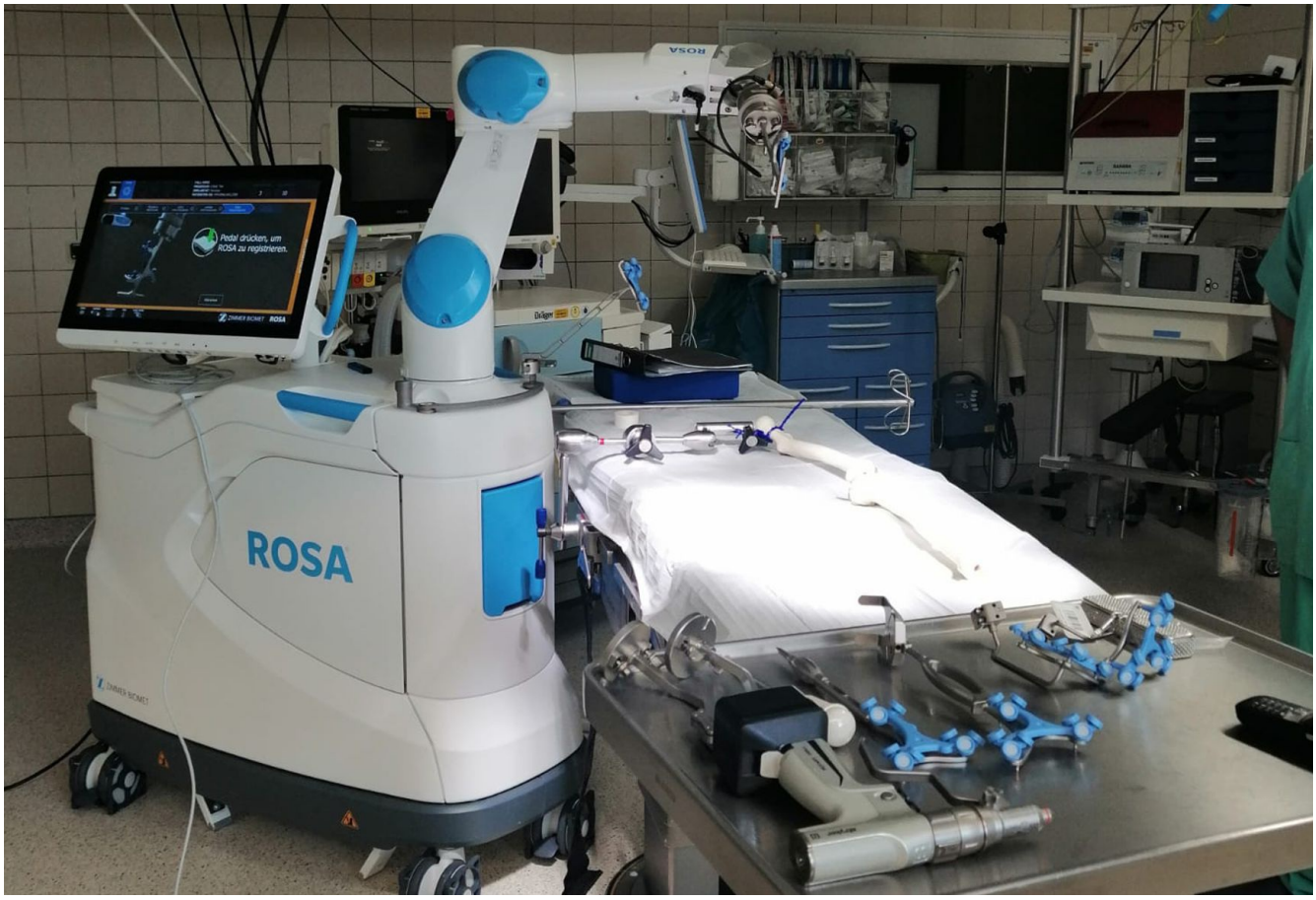
STUDY PROGRAM BIOMECHANICAL ENGINEERING

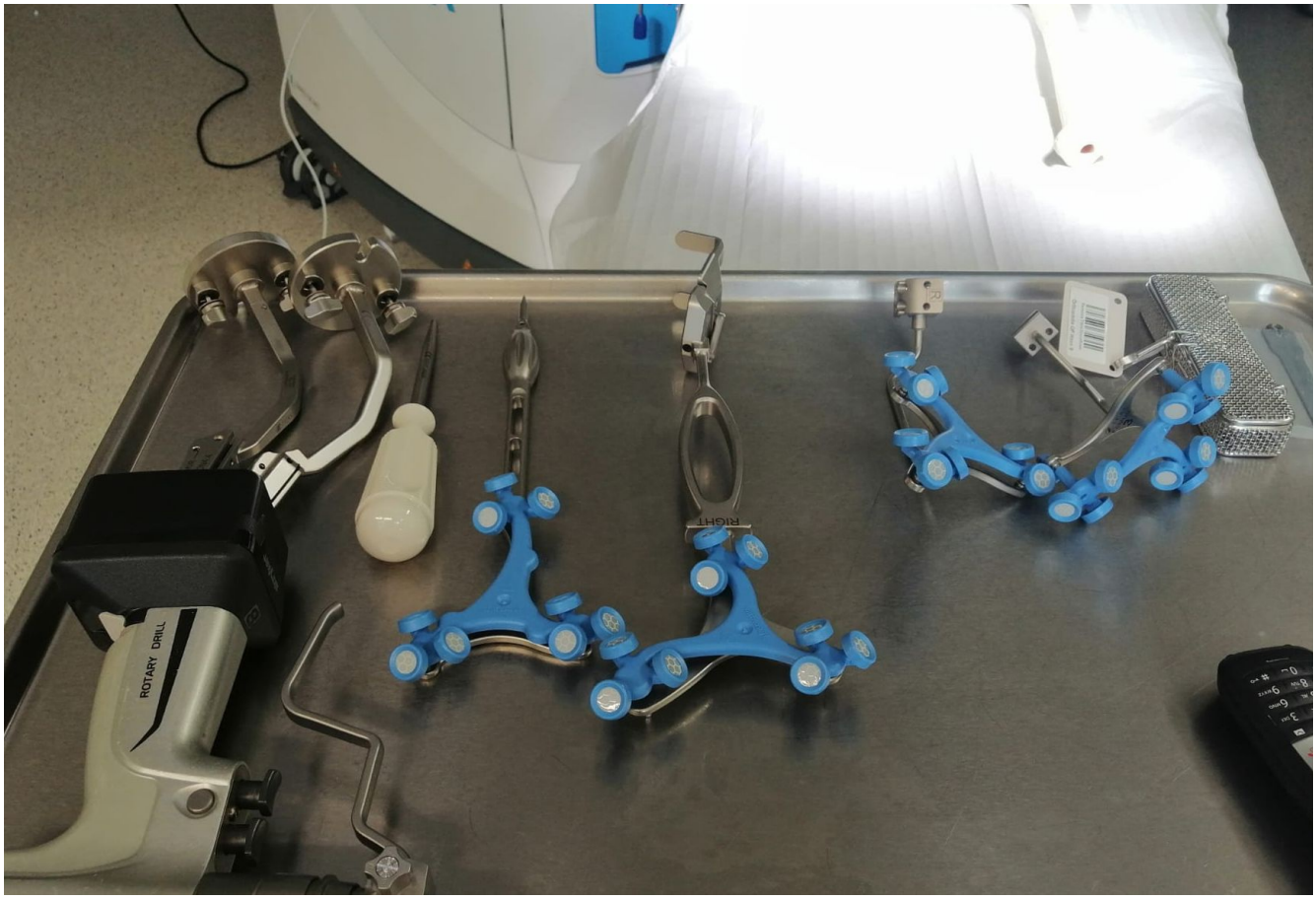
Visiting the semi-active knee robot in the operating room

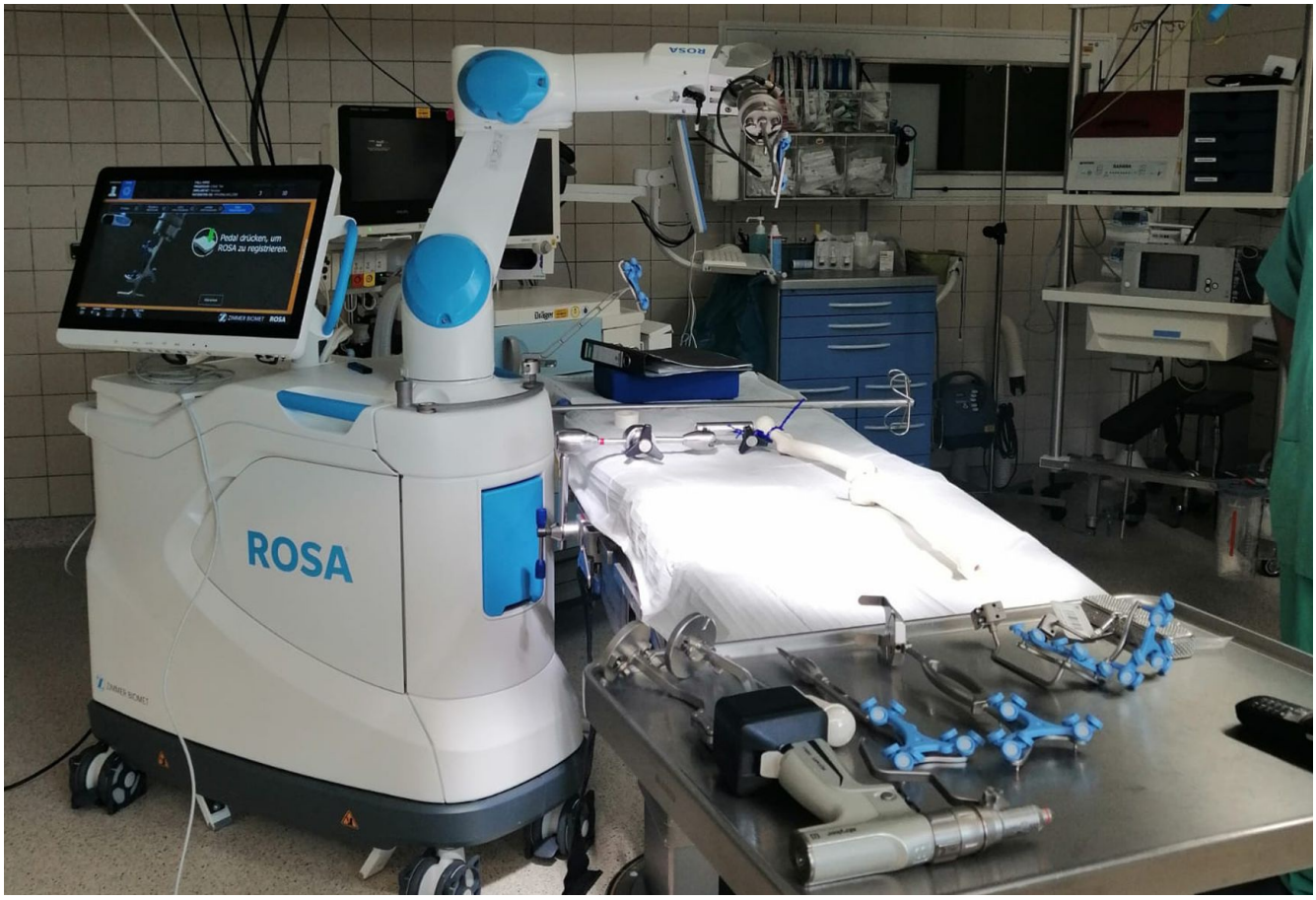
Have you ever wanted to know how a robotic-assisted knee replacement surgery works? Our students were allowed to enter the operating room at the Orthopedic University Hospital Magdeburg.

Photos: Rebecca Höpfer

ROSA© knee robotic system and its equipment as well as the practical demonstration given by the orthopedic surgeons (4 pictures) (4 Bilder)


ROSA
Pedal drücken, um ROSA zu registrieren.
ROSA


ROTARY DRILL
RIGHT



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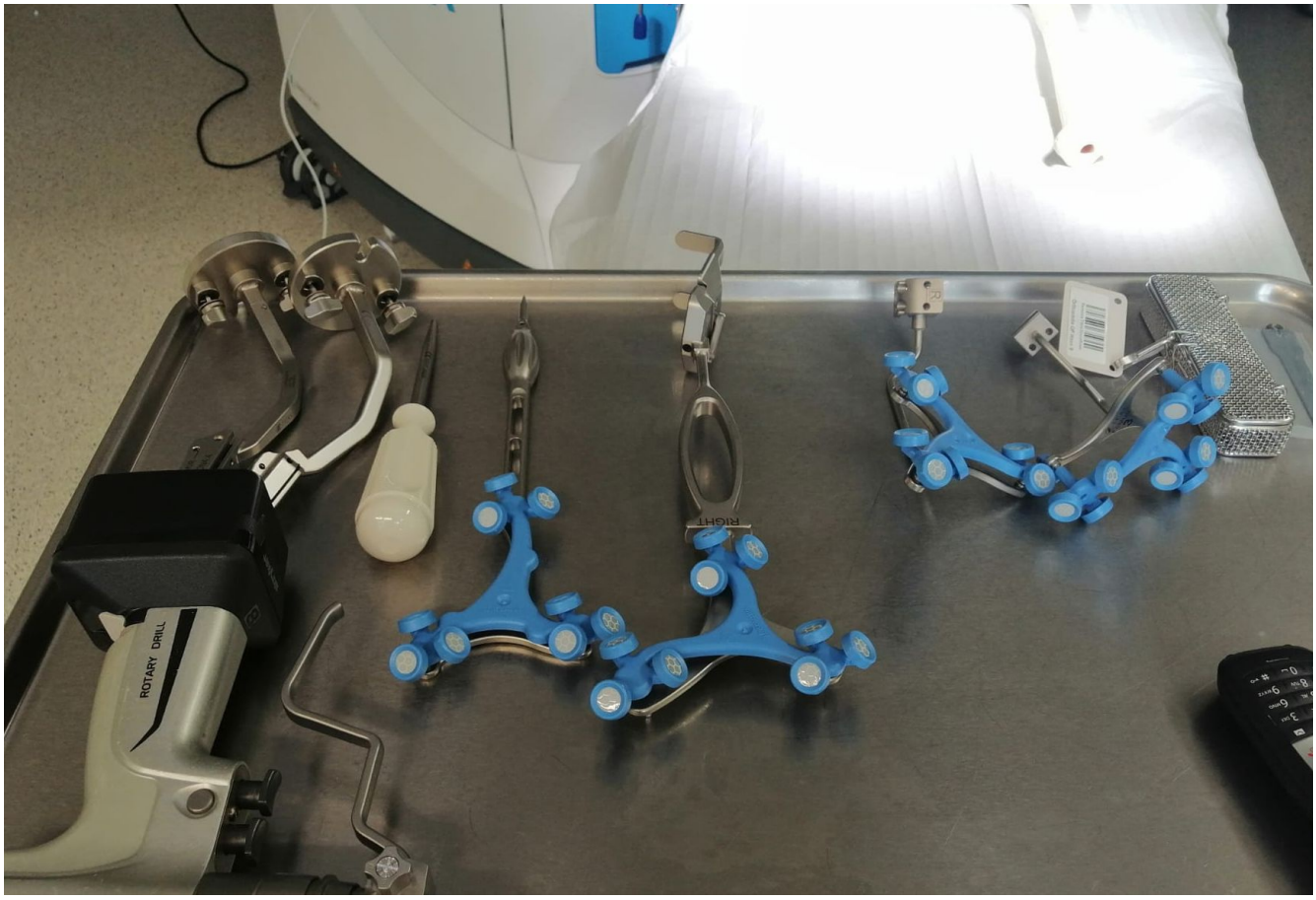

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Our students in the operating room

Our students had to change their street clothes for clean surgical gowns, nose and mouth guards to enter the modern state of th art operating room of the ›Orthopedic University Hospital Magdeburg (https://kort.med.ovgu.de/en/) .

Under the guidance of the orthopedic surgeons Dr. med. Marcus Klutzny and Martin Lohrengel, they visited the semi-active surgery robot ROSA© from the company Zimmer Biomet. This surgical assistant supports orthopedic surgeons during operation by providing precise information on the exact positioning of the instruments, which improves implant position and alignment over conventional techniques.

In practical demonstrations, students learned about the functions, requirements, software, calibration, and the intra-operative handling of the collaborative robot. Based on 2D radiographs, the software generates a 3D patient-specific virtual model. This model is intra-operatively mapped to the patient by a bony landmark registration system. This was demonstrated on an artificial knee made of femur and tibia bones. The computer-assisted systems transfers' real-time tracking of the instruments to this 3D model of the surgical area. After a completed planning, the robotic arm guides cutting blocks onto the femur or tibia bone and the surgeon uses freehand a bone saw through the cutting guides to prepared the femur and tibia bone.

Ihr Browser kann dieses Video nicht wiedergeben.	Ihr Browser kann dieses Video nicht wiedergeben.
Students prepare the artifical knee joint to calibrate the surgery robot.	

Computer-assisted orthopedic surgery (CAOS) is mainly used for minimally invasive surgery, hip and knee replacements as well as surgical planning and guidance in osteosynthesis of bone fractures.

Innovative semi-active ›robotic-assisted knee surgery (https://kort.med.ovgu.de/en/Range+of+Services/Knee/Knee+Prosthesis+with+Robot.htm is performed in Magdeburg by the team of Clinic Director Prof. Dr. med. Christoph Lohmann since November 2020.

◄ Vorherige Meldung Nächste Meldung ►