

Seattle Institute for Biomedical and Clinical Research

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Featured Member



William Ledoux, PhD

William R. Ledoux, Ph.D., is a Core Investigator at the RR&D Center of Excellence for Limb Loss Prevention and Prosthetic Engineering and an Affiliate Assistant Professor in the Departments of Mechanical Engineering and Orthopaedics and Sports Medicine. He received his B.S. in Biomedical Engineering (1992) from Rensselaer Polytechnic Institute and his M.S. (1993) and Ph.D. (1999) in Bioengineering from the University of Pennsylvania. The RR&D Center's mission is to improve the quality of life and functional status of veterans who are at risk for lower limb amputation and veterans who are amputees. As such, Dr. Ledoux's research emphasizes amputation prevention by concentrating on two main thrusts: 1) the relationship between foot structure and foot function and 2) the effect of diabetes on the mechanics of the foot.

Institutional Highlights

BENEFIT CHANGES

SIBCR has some new and exciting changes to our benefits plan which are now in effect. Some of these added benefits include:

- Increase in SIBCR contributions for families to 75% of premium cost.
- The maximum sick leave accrual is increased from 208 to 240 hours.
- Annual leave accrual at 12 years will increase to 23 days per year.
- A voluntary Life Insurance program has been added. Open enrollment is annual every September 1st.
- Flex-Plan Services will be the new administrator for our FSA, replacing Wells Fargo. This takes effect October 1, 2006.

For more information, please contact Human Resources at X62929 or X62130.

RESEARCH NEWS

- Please plan ahead for the upcoming February 1st NIH deadline. RO1s will be submitted electronically to NIH. Allow five working days prior to due date for processing submissions during this transition period.

- His foot structure and function work has included a three-year VA Merit Review to use CT scans to objectively quantify static weight-bearing foot shape in three dimensions. Significant differences were found among high arched, neutrally aligned and low arched feet, and the parameters derived from the CT scans were also able to predict plantar pressure. This study has led to a follow-up Merit Review in which feet from the same three groups were imaged with an MR scan in multiple static positions ranging from plantar flexed and internally rotated to dorsiflexed and externally rotated. Taken together, these scans provide a quasi-dynamic understanding of how the bones of the foot move relative to each other. Additionally, another Merit Review has expanded on 7 years of static cadaveric foot testing to develop a robotic gait simulator that simulates the dynamics of foot ground interaction by moving the "ground" relative to a fixed foot. He and his collaborators at the RR&D Center have successfully simulated the kinematics, kinetics and ground reaction forces of prosthetic feet and is expanding into cadaveric feet.

- The other area of Dr. Ledoux's amputation prevention research deals directly with the diabetic foot. He is nearing completion of a 3-year Epidemiology Merit Review to use weight-bearing CT scans to quantify structural differences between diabetic feet with and without ulcers. Furthermore, Dr. Ledoux has recently begun an SIBCR-administered NIH study to examine the effect of diabetes on the characteristics of the plantar soft tissue. He will quantify material and cellular/matrix properties and look for associations; it is expected that the diabetic tissue will be stiffer with increased amounts of collagen and collagen cross-links.

Welcome!

SIBCR is pleased to welcome the following employees:

Salwa Al-Noori, Joli Bartell, Linda Castine, Christopher Click, David Dunn, Kathleen Fitzpatrick, Sarah Green, Tae-Hyun Kim, Crystal Kimmie, Autum Claire Kriofske, Raksmeiy Lim, Gretchen Otto, Teresa Owens, and Alan Wesley.

IMPORTANT ANNOUNCEMENT

The first Washington State Biomedical Research Week will be held on Nov 14-15, 2006 in Seattle. On Tuesday, November 14th, a research forum with the theme "Collaborations in Life Sciences Research" will be held at Town Hall from 8:30 am to 1 pm. Regional physicians, the press, medical students and others from the medical community will be in attendance. This will be a great networking opportunity. SIBCR and VA R&D will be participating. Town Hall is located in Seattle on 8th and Seneca at 1119 8th Avenue.