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Guest editorial

Bone architecture and the competence of bone

It is now common knowledge that bone architecture is an important factor in the determination of the competence of bone. With the availability of high resolution 3D-CT and 3D-MRI, and sufficient computer power for complex image analysis and large scale FEA, the analysis of bone strength can be pushed beyond the limits set by bone densitometry. So it was quite natural that some of the participants of the 11th Workshop on Bone Densitometry expressed the wish to exchange their ideas on bone architecture with other specialists in the field. Subsequently a first Symposium was organized as a side event of the 10th Conference of the European Society of Biomechanics. The proceedings were published, together with those of other symposiae in: "Bone Research in Biomechanics" (Edited by G. Lowet, P. Rüegsegger, H. Weinans and A. Meunier, IOS Press, Amsterdam, 1997). A second Symposium followed, this time as a side event of the 12th Workshop on Bone Densitometry.

The remarkable success of the first and the second Symposium convinced the organizer that there is a real need for such a highly specialized meeting and it was decided to continue with a third one. The third Symposium was held in a cloister in the vicinity of Zürich, Switzerland and it was, again, a very exciting event.

It is very fortunate, that the European Society for Engineering and Medicine enables to publish the proceedings of the 3rd Symposium as a special issue of *Technology and Health Care*. It is also very fortunate that all scientists who presented at the Symposium were willing to write a manuscript for this special issue. The type of contributions range from review type articles to reports of work in progress, from basic thoughts on optimal architectures to first results of *in vivo* examinations. The great potential of a non-destructive, or even non-invasive analysis of bone microarchitecture just becomes visible and it might well be that the journal you have in your hands documents the start of a new era in the field of bone research.

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