



## International Clinical Think Tank Targets Upper-Limb Innovation

By Pam Martin

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From left: Julie Schick, Shawn Swanson Johnson, Byron Backus, Erik Andres, Dan Conyers, Robert Lipschultz, Randy Seidenkranz, Wolfgang Gröpel, John Miguelez, Greg Schneider, Trond Schonhowd, Janos Kalmar, Tim Shride, Hans-Willem van Vliet, Axel Eichinger, and Hans Oppel. Photograph courtesy of Advanced Arm Dynamics.

**"None of us is as smart as all of us."** —Japanese proverb

An international group of upper-limb specialists has created its own nimble version of an innovative culture. Formed in October 2009, the hand-picked group has met several times to share ideas, expertise, and problem-solving skills, focusing their brain power exclusively on this relatively small but important patient population. Originally operating under the working title Experts Meeting Experts, the recently named Strategic Consortium for Upper Limb Prosthetic Technologies (SCULPT) is the brainchild of Otto Bock HealthCare, Duderstadt, Germany, and combines the intellectual and experiential know-how of physicians, engineers, occupational therapists, clinicians, and technicians for the purpose of openly sharing expertise in the pursuit of a common goal: better outcomes for upper-limb amputee patients.

In addition to Otto Bock, SCULPT members include INAIL Centro Protesi, a division of the Italian Workers' Compensation Authority focused on upper-limb patient care and clinical research near Bologna, Italy; NovaVis, a pediatric amputee patient care center near Stuttgart, Germany; Norsk Teknisk Ortopedi, an orthopedic workshop near Hamar, Norway, which is focused on a range of

upper-limb prostheses from simple finger to advanced arm devices; the Rehabilitation Institute of Chicago (RIC), Illinois; and Advanced Arm Dynamics (AAD), Redondo Beach, California.

Otto Bock chose member participants because each share a "history of innovative approaches to upper-extremity prosthetic patient care," according to Kevin Kelley, international project coordinator, Otto Bock Healthcare Products, Vienna, Austria. Through relationships with partners that have a clinical focus, Otto Bock has received "frank feedback consisting of constructive criticism and suggestions for improvement concerning existing products, and [the company has] also [been given] suggestions and wish lists for future developments," Kelley says. This feedback, as well as early testing of new products, has enabled "Otto Bock...to deliver better products," he adds. But the information loop rewards more than simply the manufacturer.

"It's invigorating to share information in a non-competitive environment," says consortium member John Miguelez, CP, FAAOP, president and senior clinical director of AAD. Miguelez says that talking about the different approaches each company takes when dealing with a similar type of residual limb, "influences all of us and enhances our approach." Conducted for the most part in English, the discussions are lively, Miguelez says, and if a participant "lobs out an idea, [he or she] needs to be prepared to support it." But he also notes that the environment is friendly and non-judgmental.

The first two meetings of the upper-limb consortium were held in Berlin and Vienna, respectively. The third meeting, held September 27-29 of this year, brought members to AAD's International Center for Research and Education in Dallas, Texas. Members are required to act as hosts because, as Miguelez explains, "It's one thing for me to tell you about how we provide care; it's something completely different for me to show you how we provide care in our facility." The group sought members who were willing to invest the time and resources required for the level of commitment consortium participation demands. From the six partner organizations, about 20 representatives typically attend meetings. AAD treated consortium members to a Dallas welcome replete with a Tex-Mex dinner followed by a memorable Longhorn ride.

Dallas discussions focused on technology, techniques, targeted muscle reinnervation (TMR), and the challenges involved in various approaches to patient care, Miguelez says. One result of the meeting was that participants decided to share their case studies. They now share access to an online database where each can upload case study information. Miguelez finds the system useful for sharing clinical and technological approaches including socket design, socket material, and software adjustments for myoelectric arms, or the components being chosen and

why they are being chosen, as well as patient outcomes. He says it is a comprehensive approach that helps all the partners become the very best they can become.

"It's not a, 'Hey, our way is the best way,'" Miguelez says. "The group is not trying to find the very best in socket design, per se," because "then all of a sudden it could become somewhat competitive because we all feel like our approaches are the best." He explains that "when you stop competing, and...you're just talking about what the thought process is in determining your socket design and your material selection, it enhances the spectrum of what the criteria are for creating that socket design. So really what's going to happen is that everybody's socket design is going to evolve. It doesn't mean that we're going to end up with the exact same socket design; it means that everybody is going to have that much broader of a perspective. Everybody's willing to share their best without competition. It becomes a learning, nurturing environment."

Size was key in the functionality of the group. Kelley says that Otto Bock didn't want the consortium's membership to be too large. He describes the close to 20 attendees as the "sweet spot for...lively discussion." He says the small number, "was important to avoid a hierarchical structure and to simplify communications within the group."

Trust was established early on by guaranteeing members that their intellectual property and commercial rights would be protected. "A legal agreement was drafted to cover these points and many others," Kelley says. He adds that should any of the protected innovations seem "promising and likely to result in better outcomes, Otto Bock could certainly discuss with the relevant partner(s) about reaching a business agreement if there was the desire to incorporate the innovations into future products."

During the most recent meeting, "the walls really came down and people were much more comfortable sharing information," Miguelez says. "The first meeting, everybody loved the idea, but they were trying to see if the reality of sharing their intellectual capital was realistic. By the third meeting, not only did we recognize that it's possible, but we could see all the opportunities that can come from that collaboration. So now, we're just really excited about where we can go as a group, and to use the size of the whole consortium's patient base to really look at outcomes, to look at products, to look at techniques, and technologies is going to be something that was really never possible before."

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