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Orthopedics This Week

week in review

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The Best Spine Technologies of 2009

By Robin Young

The Best Spine Technologies of 2009 were officially christened November 9 at a spectacular gala banquet at the Palace Hotel in San Francisco. The spine industries big event under the soaring chandeliers celebrated innovation, engineering and a relentless drive to improve spine care for patients and those who care for them.

Eighty-three technologies were submitted in 8 categories and 26 inventors took home the massive crystal award. The voting by 34 surgeon judges was live and when the dust settled, a weary but elated group of 200 had participated in the selection and celebration of this year's winners.

Three companies were dual winners. Pioneer Surgical Technology won for both nanOSS Cervical and for NuNec Artificial Cervical Disc. Alphatec Spine won for both the OsseoScrew Expandable Screw and for the GLIF-Guided Lateral Interbody Fusion device. NuVasive won for the XLIF and the PCM.

There were several surprising picks. The judges chose to recognize three obscure technologies—the Bionic Spacer from the Israeli firm Spine21; the as yet un-named biomaterial from a consortium of the Aston, Oxford and Keele Universities in the UK and the "bone welding" technology from the Swiss firm WW [WoodWelding] Technology.

Spine 21's Bionic Spacer is a POST OPERATIVE adjustable interspinous process device which distracts via radio control. Imagine real-time distraction with patient feedback regarding pain relief. The three UK universities, Aston, Oxford and Keele, collaborated on a new biomimetic hydrogel nucleus prosthesis to restore intervertebral disc height after surgery for patients with severe disc degeneration. The material has matching properties to those of the patient's native tissue. The Swiss firm, WW Technology, submitted bonewelding for the spine. Bonewelding technology anchors implants into bone using ultrasonic energy. During implantation, the energy liquefies the polymer coating and creates an immediate and extremely strong bonding with the bone.

Then on the other end of the spectrum, the surgeon judges selected technologies that are so widely used, that, frankly, we thought they wouldn't be judged as innovative.

The judges were asked to evaluate each technology according to six criteria:

1. Is the technology creative and innovative?
2. Does the technology have long term significance?
3. Does the technology solve a current clinical problem?
4. Does the technology have the potential to improve standard of care?
5. Would you use it?
6. Is it cost effective?

Based on those criteria, the judges selected the following widely used and, yes, creative and significant technologies:

- Invibio's PEEK-OPTIMA material
- L.I.T.'s ONE HEADLIT
- NuVasive's XLIF
- K2M's SERENGETI MIS system

Invibio's material was used in a fair number of the submitted technologies and a high percentage of the winning technologies. No question about it, surgeons like PEEK-OPTIMA. L.I.T.'s cordless, battery powered head lamp for surgeons may not require a PMA, but it clearly struck a responsive chord among surgeons. The fact that a head lamp would share the stage with such high-end products as the Stabilimax, the M6, or Facet Solution's ACADIA is testament to the importance of basic tools. Finally, NuVasive and K2M have been wildly successful innovators in the market place with such MIS (minimally invasive surgery) systems as the XLIF and SERENGETI. But commercial success did not prevent the Spine Award judges from recognizing true clinical problem solving when they saw it.

In the Biomaterials category, Covidien's recently approved DuraSeal spine sealant system received the judge's award. In Diagnostics and Imaging, two technologies stood out—Nemaris' Surgimap software system and Ortho Kinematics Vertebral Motion Analyzer (VMA). Both offer spine surgeons important new tools. Importantly, Nemaris' system is free. It is an imaging processing software that handles all types of files and even goes so far as to simulate procedures. Ortho Kinematics' VMA system delivers motion diagnostics, which outperforms the current end-stage X-ray methodologies.

Every one of the Best Spine Technologies of 2009 were the result of thousands of hours of intense effort and achievement. No hyperbole—it was an honor to highlight all 83 of the submitted technologies and the hundreds of engineers, inventors and surgeons who contribute to what is the best in the spinal implant and instrument industry.

Motion Preservation:

Facet Solutions, Inc.	ACADIA
Spinal Kinetics, Inc.	M6 Artificial Disc (M6-C Cervical and M6-L Lumbar)
NuVasive, Inc.	PCM
Paradigm Spine, LLC	DSS Spine Stabilization System
Applied Spine Technologies	STABILIMAX

The most prestigious category is Motion Preservation and we won for the PCM, Porous Coated Motion cervical disc replacement of which I am the inventor.

Sincerely,

Paul C McAfee, MD