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Popular Virtual Prototyping Software PZFlex
Announces Winner of Student Innovation Competition

New Zealand University Doctoral Candidate Proposes Research to Benefit Medical Imaging

New York, NY; Mountain View, CA – June 10, 2009 **–** The **PZFlex®** software group at **Weidlinger Associates®, Inc.** (www.pzflex.com), announced that Andrew Dawson, a PhD student at the School of Chemical and Physical Sciences, Victoria University of Wellington, New Zealand, won the first annual **PZFlex® Student Innovation Competition**. The contest was initiated to "inspire novel uses for PZFlex® software in solving today's complex engineering problems" and to advance the use of virtual tools in as many industries as possible. The highly versatile and adaptable virtual prototyping software addresses primary markets totaling hundreds of billions of dollars worldwide. PZFlex® users Dr. Charles DeSilets, CTO at Liposonix, Inc., and Dr. Rainer Schmitt, CTO at Sonovation served as judges, along with PZFlex® Director Dr. Paul Reynolds.

Dr. Reynolds explains that "virtual prototyping simulation packages such as PZFlex® are leading the second great revolution in manufacturing software. The first was the introduction of computer aided design (CAD) packages such as SolidWorks® to allow virtual construction of the prototype. Now we take it to the next step and economically and accurately determine how that prototype will actually perform, without ever having to build it."

Dawson is expected to complete his proposed research in a year and to publish his results with assistance from the contest's sponsors. He will explore the influence of irregularities in aluminum on high-frequency ultrasound wave propagation to understand the analogous influence of collagen macrobundles and other microstructures of tissue, which is usually treated as homogeneous. In his proposal, Dawson favored using PZFlex® for 3D modeling because "it includes mechanisms enabling microstructures of a less regular nature through to an essentially random nature to be easily created and used." He anticipates "potential benefits for both NDT and medical imaging," arguing that "as imaging equipment manufacturers attempt to provide improved resolution by increasing the frequency there must come a point when actually little is achieved unless one can understand the influence of collagen macrobundles."

"We are overjoyed to have won," said Dawson, "especially given the international nature of the contest. PZFlex® provides us with a major step-up in modeling capability; its computation speed will allow us to model structures with greater accuracy. From this we will gain greater insight into the propagation of high-frequency ultrasonic waves in micro-structured materials and tissue." As the winner, Dawson received a copy of PZFlex®, a Dell

laptop computer, and a licensed copy of SolidWorks®. Victoria University of Wellington will receive a free PZFlex® license and 20–30 SolidWorks® educational licenses. Dawson will conduct his research at the Wellington campus of Industrial Research, a Crown Research Institute of more than 300 scientists.

Students were invited to submit proposals for investigation of a technology using PZFlex® on any topic, although it was assumed that it would be in a field where the software is already used, such as NDT, MEMS, SONAR, sensor design, or acoustics. (The competition was restricted to students at academic institutions that are current PZFlex® customers.) One student's research was directed toward improving needle guidance in biopsies and catheter placement and another's toward developing an ultrasound-based technique analogous to conventional CT scanning that eliminates distortions from rotation. The runner up, Sevan Harput, a PhD student from University of Leeds School of Electronic and Electrical Engineering, proposed extending the modeling of surface acoustic waves (SAWs)□ commonly used to model filters, oscillators, and transformers□ to microfluidic systems.

PZFlex® is the registered trademark of virtual prototyping software first in world markets for medical therapeutics and sonar. It is the program of choice for all major US and Japanese medical transducer manufacturers, as well as for scientists at prominent academic institutions engaged in studies of diagnostic and therapeutic medical ultrasound. Developed in the 1980s to improve the modeling of ultrasonic probes, PZFlex® quickly became the most versatile member of a family of codes (FLEX) used to solve huge wave-propagation problems for the US government. During the past two decades of intensive development, PZFlex® has spawned numerous applications and attracted increasing numbers of clients.

Weidlinger Associates®, Inc., is a 300-person structural engineering firm that designs and rehabilitates buildings, bridges, and infrastructure and provides special services in applied science, forensics, and physical security. The firm, which celebrates its 60th year in 2009, is recognized worldwide for its innovative and practical design solutions and for its long-term commitment to advancing the state of the art in engineering. Headquartered in New York City, the firm has branch offices in the United States and the United Kingdom. For more information, please see www.wai.com.

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