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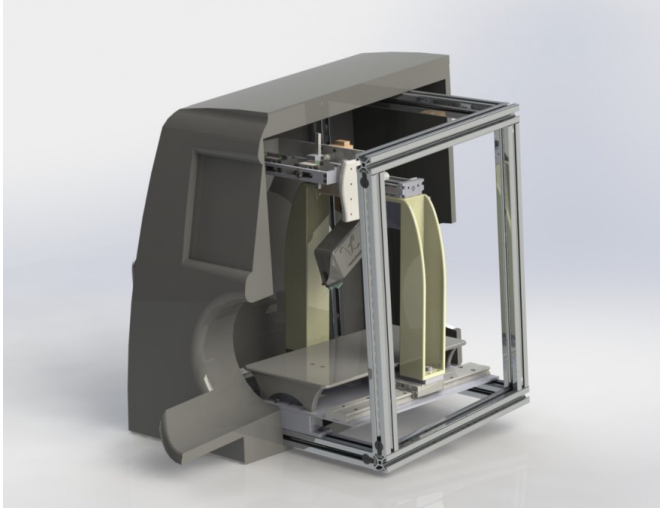
# PRESS RELEASE

## Full automated venipuncture device can improve pediatric experience

September 13, 2013 — A new medical device has been developed that will provide phlebotomists and clinicians with a technology to enable first stick blood drawing accuracy at significantly higher levels than is currently obtainable in the difficult venous access patient demographic. This enhanced accuracy will markedly reduce patient discomfort as well as procedure time and cost. The paper describing this novel advance appears in the inaugural issue of the new journal "Technology".

*Multi-layer cut away design render, demonstrating the major components of the fully autonomous venipuncture device namely: 1) medical grade plastic shell; B) support structure; C) imaging system; D) injection actuation system.*



A team of researchers from VascuLogic, LLC, have developed the world's first automated venipuncture medical device that automates the phlebotomy procedure, either for blood draws or the placement of IV lines. In both *in vitro* and *in vivo* validation studies, including validation on human subjects, the device demonstrated greater than 95% first stick accuracy, and additionally out performed human phlebotomist controls.

"This device will initially be developed for pediatric hospitals," stated Martin Yarmush, M.D., Ph.D, Vasculogic's Chief Academic Adviser and corresponding author on the paper. The group conducted their own intensive survey of over 200 US based phlebotomists, identified difficult venous access as a significant problem in small children, particularly in terms of pain, time, and patient and parent anxiety due to difficult/multiple needle stick(s). Additionally they have validated that parent acceptance of the device is over 98%, given demonstrated efficacy and safety of the device.

"We are encouraged by the autonomous device as it demonstrates a solution to alleviate the anxiety both parents and children experience with a phlebotomy procedure," said Tim Maguire, Ph.D., Vasculogic's CEO. "For children and their families having to bear difficult or multiple needle sticks, the fear of a visit to their doctor is very real. Therefore, any peace of mind we can provide, particularly when a child is fearful or needs ongoing venous access, would be of tremendous benefit."

"The paramount consideration for the design of VenusPro has been safety, "stated Alvin Chen, first author of the paper. To this end, the publication describes how numerous mechanical, electronic, and software safety systems have been included for fault detection and improved operational safety based on regulatory compliance standards. "The overall approach toward ensuring device safety is to distribute internal and external safety mechanisms and software/hardware redundancies across the device's sensor, effector, electrical, computer, and operator components," said Alvin Chen.

Additional co-authors of the publication are Kevin Nikitczuk, PhD, and Jason Nikitczuk, PhD.

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