



## Pioneering Initiative = Improved Standard of Care + Educational Success

On January 15, 2014, the UPMC Artificial Heart/Ventricular Assist Device (VAD) Program achieved a remarkable milestone: 100,000 cumulative days of circulatory support in 830 heart failure patients beginning in October 1985 through January 2014.



This is a noteworthy milestone that is the product of the contributions of many clinical specialists, coupled with the contributions of a cadre of bioengineers. For those who may be interested, the [Regenerative Medicine Podcast](#) by McGowan Institute for Regenerative Medicine faculty member [Harvey Borovetz, PhD](#), a Distinguished University Professor and former chair of Bioengineering, gives some insight into the formative days of the program. Also, the [podcast](#) by Bryan Williams who was supported by a VAD and received a heart transplant at UPMC may be of interest.

This milestone is particularly exciting for the University of Pittsburgh's Swanson School of Engineering and the Department of Bioengineering. The Department has been a true partner in the UPMC Artificial Heart/VAD Program these many years. For the past 20 years, the clinical artificial heart/VAD bioengineering program has excelled under this partnership. The current collaborators include McGowan Institute for Regenerative Medicine faculty member [Robert Kormos, MD](#), Director of the UPMC Artificial Heart Program, Co-Director of the UPMC Heart Transplantation Program, and Medical Director of UPMC Artificial Heart Program/Vital Engineering, the Department of Bioengineering management team and graduates, and McGowan Institute for Regenerative Medicine affiliated faculty members [Steve Winowich](#), Senior Biomedical Engineer and Director of Operations at UPMC Artificial Heart Program/Vital Engineering, and [Richard Schaub, PhD](#), an Adjunct Assistant Professor of Bioengineering at the University of Pittsburgh, the Senior Director of UPMC Artificial Heart Program/Vital Engineering (Biotronics), and Clinical Director of Bioengineering of the UPMC Artificial Heart Program. UPMC Artificial Heart Program/Vital Engineering is a UPMC program that offers around-the-world medical consultation, physician training, and patient support regarding the implementation of various VADs.

Today, Mr. Winowich and Dr. Schaub are sought out by members of heart failure programs nationally and internationally regarding establishing their own circulatory support programs and/or providing consultations for use of a particular circulatory support technology. As well, within the VAD industry, these experts provide patient support worldwide.

In addition to the UPMC Artificial Heart/VAD Program's pioneering initiative in saving lives, the program offers a unique training opportunity: bioengineering students, both undergraduate and graduate, have had the distinctive opportunity over the years to participate as part-time clinical artificial heart/VAD bioengineers. Many of these students have used this clinical



experience as a stepping-stone to professional careers as clinical total heart/VAD bioengineers in heart failure programs across the U.S, as leaders in this specialization at the FDA, or as bioengineers in medical device companies. All of these students say that the opportunity to participate as part-time clinical artificial heart/VAD bioengineers was the highlight of their bioengineering education at Pitt. It is certainly fair to say that no other academic bioengineering department/program has a comparable program.

Congratulations to all who have contributed to the advancement of these technologies and providing unique training opportunities to many bioengineering students!

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