

Awardees 2011-2015

2015 Kalenian Awardees

Celebrating the “ideas and inventiveness” of its students, faculty, and staff, Worcester Polytechnic Institute has recognized four novel research projects with the prestigious Kalenian Award. The 2015 award was presented by Paul Kalenian at the Rubin Campus Center on November 10. More than 70 people participated in the selective process; 26 proposals were reviewed and winnowed to the top four. This year’s honorees, who will share a \$20,000 prize purse, include: Ben Pulver, Elizabeth van Zyl, and Taylor Flaxington (not in photo), students developing a cell-phone microscope to diagnose malaria; Pamela Weathers, a biology professor studying plant-based cancer treatments; Huong Higgins, Kevin Sweeney and Fabienne Miller (not in photo), Foisie School of Business professors conducting a feasibility study for a WPI merger and acquisition center; and Nick Crider and Tom Villani (both not in photo), alumni working on a chemical process that renders tissue samples transparent for examination.



2015 Awardees



Paul and Cathy Kalenian



Paul Kalenian



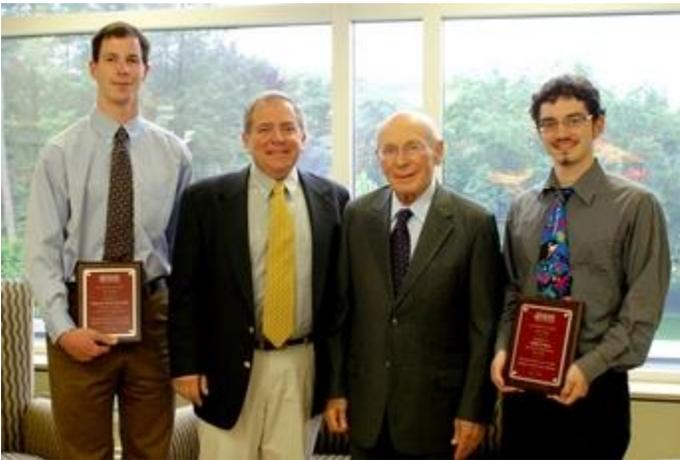
2006 Winners Professor Allen Hoffman, Michael Scarsella, and Stephen Toddes with Paul Kalenian



2007 Winner Albert G. Prescott with David Wolf and Paul Kalenian



2008 Winner Professor Dalin Tang



2009 First Place: WPI Professor James Van de Ven with Paul Kalenian, David Wolf, and WPI alumni Allan Katz '07, '09.



2009 First Honorable Mention: Robert Breznak '09, Mark Mordarski '11, Paul Kalenian, David Wolf, Kevin Harrington '09, and Alex Camillo '09



2010 First Place Rich Sadowski '68 BSME with Mark Urbin '10 MBA and Mac Banks



2011 Awardees Diana Lados and Xiang Chen



2012 Awardees Izabela Stroe, Michael Abramson, and Kevin Harrington



2013 Awardee Taskin Padir



2014 Awardees Qiang Wang and Sarah Hernandez with Paul Kalenian



2015 Awardees, Pamela Weathers, Ben Pulver, Elizabeth van Zyl, Huong Higgins and Kevin Sweeney with Paul Kalenian

2014 Kalenian Awardees

Much congratulations goes to two research teams that will share the 2014 Kalenian Award. Paul Kalenian and his lovely wife Cathy were present at the October 14 2014 Venture Forum program in the Rubin Campus Center. The first recipient was Sarah Hernandez. Sarah and her advisor, Professor Tanja Dominko, have patented a novel system that allows cells to live longer and have proposed the commercialization of a qualitative diagnostic screening device that detects a biomarker associated with pre-cancerous cells. Their research has a revolutionary potential to develop screens and treatments for a disease that patients have yet to develop. The next recipients were Yan Wang and Qiang Wang (no relation) who are researching a novel low temperature method to produce iron and steel creating less greenhouse gases as a by-product.

Paul Kalenian delivered a very heartfelt speech about his father and invention, and received a warm round of applause. He was very pleased with the opportunity to present the awards this year and to meet awardees of years past, Taskin Padir, Diana Lados, and Xiang Chen. The 2014 winners received an engraved plaque as a memento and will also receive a

grant. WPI is privileged to have alumni like Paul Kalenian paying it forward. Through the funding of good ideas in their early stages, the Kalenian Award will enable researchers and inventors to pay it forward in their own way. Congratulations to the 2014 Kalenian Awardees and thank you Paul and Cathy Kalenian for their support and engaged participation in WPI's entrepreneurial ecosystem!

2013 Kalenian Awardees

In recognition of an innovative and entrepreneurial business spirit, a team led by Professor Taskin Padir, assistant professor of robotics engineering/electrical and computer engineering, received WPI's \$25,000 Kalenian Award on December 10, 2013 for a project Padir, and robotics engineering doctoral candidate Velin Dimitrov, hope will someday make life easier for those with cognitive or physical disabilities.



The competitive award is often used to further research and bring products or innovations that have the potential to benefit the larger society closer to market. Padir's team is focusing on helping people with such disabilities interact with assistive devices that not only make tasks easier but that also anticipate their needs.

Officially titled "Electromyography Input Interface: Enabling Intuitive Operation of Assistive Robotic Platforms," Padir's work puts research and technology innovation into real use. The high-bandwidth EMG technology allows users to interact more efficiently with an assistive device so any process is faster and more accurate.

Information collected from sensors that record activities of daily life (getting meals or brushing teeth), develops into a finely detailed algorithm, says Padir. As the person uses the device and more information is recorded, an assistive device can be uniquely tailored to more or less predict what a person needs. As Padir explains, although it won't read someone's mind, the device will accurately estimate an individual's intent. "This can help an individual interact with a device in a smoother way," he says. "This is a small step in a big vision."

Receiving the award means the team can bring the project closer to real use. "There are others who are using similar approaches," says Padir, "but we think the customizing ability of the sensor system makes it unique. We see the Kalenian Award as an enabling award to improve the prototype and results with solid research," he says. Eventually, they will seek funding from national sources like the National Science Foundation, but the award offers validation. "It's reassuring that they looked at the project and saw the value in it," says Padir. "It gives us confidence."

The Kalenian Award is given in honor of the late Aram Kalenian '33, an inventor and founder of Vee Arc Corp. It was established by Aram's wife, Alba, in 2006. Twenty-two applications came in this year, five of which advanced to the short list, says Gina Betti, associate director of WPI's Collaborative for Entrepreneurship and Innovation.

Aram's son, Paul, decides who receives the final award. He says many applications had great merit, but the winning project exemplified his father's outlook. "His concept was that a WPI education is best utilized by inventing, patenting, and employment," says Paul Kalenian from his home in Santa Fe. He believes in paying it forward when it comes to funding worthy projects, and says he hopes that pattern is continued with each award. "If things work out well for a recipient," he says, "I'd like to see them come back to WPI in five or 50 years and say, 'The reason I made it in this world is because of this and I want to do the same thing.'"

Padir notes that while Hollywood features human-thinking robotic devices in the movies, society is pretty far away from that right now. But using assistive devices to help people enrich their lives and make daily tasks easier is thrilling. "These are the first attempts to take theory and put it into the hands of those who can use the technology," he says. "That's very exciting to me."

Dimitrov enjoys seeing the plan take shape from an idea into actual use. “In conducting this project, we talked with people and saw the problems they have with daily life activities,” says Dimitrov. “But people don’t want robots to do everything; they want to be in control. It’s about how they interact with the technology.”

The award also fosters a long-cherished WPI tradition between professors and students. “As a professor I always enjoy seeing my research team learn and grow in this field as experts,” says Padir. “Through this effort we are educating a new generation of engineers who are sensitive to the needs of society.”

By Julia Quinn-Szcesuil

2012 Kalenian Awardees

An assistant physics professor at Worcester Polytechnic Institute (WPI) and an alumnus who now serves as an intellectual property attorney will share the 2012 Kalenian Award, the university's top prize recognizing commercialization potential for a given invention. Izabela Stroe, the physics professor, won for an early detection device she is developing for Alzheimer's Disease patients, while Michael T. Abramson (WPI '05) was recognized for a product that will identify odorless, colorless, and tasteless so-called "date-rape drugs" that are surreptitiously slipped in one's drink. The pair will each receive \$12,500 to help

develop their inventions. WPI officials also recognized Kevin Harrington, (WPI '10), who received \$5,000 in in-kind legal services from Boston-based intellectual property law firm Wolf, Greenfield & Sacks, P.C., for development of a STEM education kit (science, technology, engineering and mathematics) for young learners. [Full Press Release](#)



2012 Kalenian Award Winners

2011 Kalenian Awardees

The 2011 Kalenian Award is presented to Diana Lados and Xiang Chen, for their Hybrid Materials Project. Congratulations! Paul Kalenian said, "Their application was originally submitted in 2010 and was noted as first runner up in the 2010 Kalenian Award Competition. Last year they were encouraged to re apply, showing improvements and progress. This year's application showed both perseverance and progress toward their goal of documented demonstration of concept, and therefore qualified as this year's unanimous choice amongst the judges. We congratulate Diana and Xiang for validating their concept and hope that this recognition and monetary award will speed their progress toward implementation in industry."



2011 Kalenian Awardees Lados and Chen

"Today, in the transportation sector, 75% of the annual energy consumption (~23 Quadrillion Btu) and CO₂ emissions (~1,600 Million Metric Tons) happen on the nation's roads, primarily from light-duty vehicles. Increased energy efficiency and reduced carbon pollution are becoming global priorities (e.g. CAFE standards for light vehicle are set to 35 mpg by 2020; greenhouse gas emissions are expected to be reduced by 28% by 2020). *We have created a high-strength lightweight material that may accelerate reaching our nation's ambitious transportation energy and environmental*

goals. To meet these goals, the transition to renewable and clean energy must be complemented by higher energy efficiencies through *vehicle weight reduction*. Using novel high-performance lighter metals is a most effective way to reduce vehicle weight. In 2009, over 53M automobiles were produced worldwide. Every 10% automobile mass reduction results in up to 8% improvement in fuel economy. Energy savings, manufacturing efficiencies, and performance and environmental benefits could be tremendous using our materials in the transportation industries. And, even more applications for our invention were discovered since last year's proposal!" said Professor Lados.

In the view of judge David Wolf of Wolf Greenfield & Sacks, P.C., the program is advanced and well-thought out, contains innovative ideas, is furthest along in the development that those programs examined. Further, it apparently involves some fundamental work which required more than casual testing and examination. Proof of concept is also well under way and will be quite appealing to this in the investment field who will be able to rely upon the proponents of this hybrid material to foresee and solve upcoming problems. In addition, the product and its program is likely to make a contribution to the advancement of hybrid metals and use of transportation.