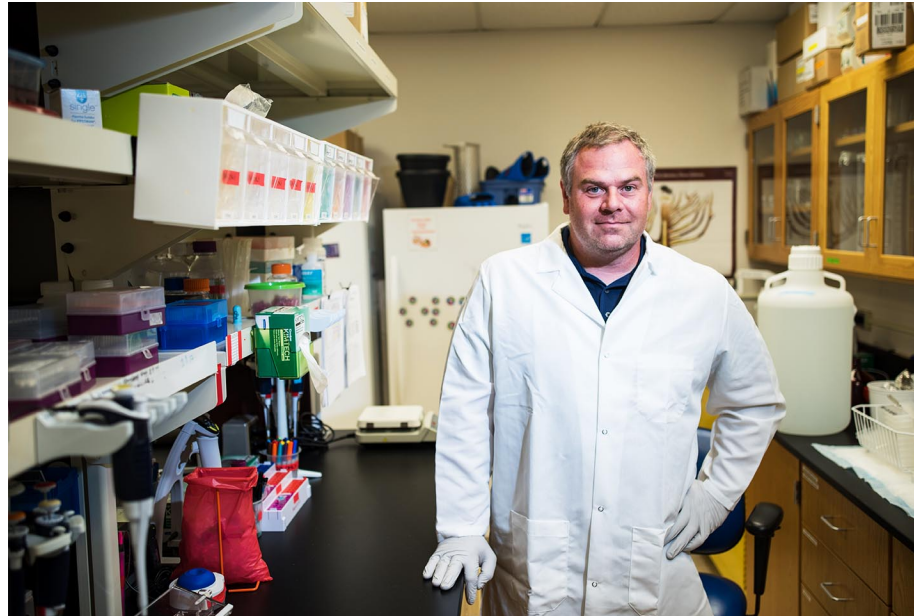


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Blood clot research earns OU professor \$2 million in grants from NIH, AHA

Dr. Randal Westrick, an assistant professor of biological sciences at Oakland University, is using a \$1.8 million grant from the [National Institutes of Health](#) and a \$150,000 grant from [American Heart Association](#) to help identify genes that decrease susceptibility to blood clotting in mice, and to explore whether those genes could one day lead to therapies designed to prevent life-threatening blood clots in human beings.

“Most people are familiar with the type of blood clot you get when you cut yourself,” **Westrick** said. “It’s on the outside of the body, and it facilitates the healing process. What we’re talking about is a condition where the clot happens inside a blood vessel, whether it’s an artery or a vein. When that happens, it occludes the space of the vessel and prevents blood from flowing through. If not treated, this condition can result in death.”



Dr. Randal Westrick, an assistant professor of biological sciences at Oakland University, has been awarded a \$1.8 million grant from the National Institutes of Health and a \$150,000 grant from American Heart Association for his research into life-threatening blood clots.

According to the [U.S. Centers for Disease Control and Prevention](#) (CDC), blood clots affect as many as 900,000 Americans each year and result in about 100,000 premature deaths.

“Clots in coronary arteries are especially dangerous because they cut off nutrients to the heart and lead to heart attacks,” Westrick said. “Also hazardous are clots occurring within veins, commonly developing in the deep veins of the leg. This condition is called deep venous thrombosis.”

According to Westrick, deep venous thrombosis is dangerous because it can result in a pulmonary embolism, which happens when a venous blood clot breaks off and travels to the lungs. Symptoms of PE include shortness of breath, rapid or irregular heartbeat, cough, leg pain or swelling, fever, excessive sweating, and chest pain.

“Pulmonary embolism is misdiagnosed in about one-third of patients because they come to the emergency room with chest pain and the clinicians think it is a heart attack,” Westrick said. “By the time they figure it out, the disease has already progressed.”

Westrick plans to use the five-year NIH grant to study the mouse genome and identify the genes that recuse venous blood clotting risk associated with the most prevalent risk factor in humans, Factor V Leiden.

“People that inherit Factor V Leiden have an increased chance of getting a venous blood clot,” Westrick said. “We have

The two-year grant from the AHA will be used to initiate a pilot program to see if similar methodologies can be used to identify genes in arterial blood clotting.

“We would love to define the genes contributing to arterial and venous blood clots and then use this information to develop a preventative therapy where people could just take it and go about their day and leave worries about blood clots to us,” he said.

According to Westrick, projects like this are also notable to increasing student participation in science.

“At OU, we are dedicated to the scientific training of graduate and undergraduate students,” he said, noting that graduate student Amy Siebert-McKenzie played a major role in developing the project. “These grants are significant because they will be used to provide support for graduate and undergraduate students so they can begin to develop their own careers while also making progress toward our scientific goals.”