Family history played a major role in senior Cassie Johnson’s decision to research blood clotting at Oregon Health Sciences University (OHSU) over the past year as part of the Murdock Scholar Undergraduate Research Program. The program allows undergraduate students from eight Portland-area colleges and universities to compete for internships in labs affiliated with OHSU.

A member of Johnson’s immediate family has survived two blood clots, so when the Biology major from Grand Forks, B.C. learned about OHSU researcher Dr. David Farrell’s work in the area of blood coagulation, the decision seemed obvious. “I had heard a little bit about blood clots and blood disorders,” said Johnson, who was the recipient of the 2006 Marshall K. Christensen Award for Scholarship, WPC’s top academic award. “I wanted to learn a bit more about blood and the clotting process.”

The role of fibrinogen

Johnson’s project involved using blood samples taken from patients with sclerosis of the liver to look for defects in the main protein that causes blood clotting, fibrinogen. Patients with sclerosis of the liver often experience bleeding disorders, and Johnson wanted to see if a defect in fibrinogen may be involved. Johnson said her science studies at Warner Pacific proved an asset as she set about her research.

Each. Once she had derived pure samples of fibrinogen, Johnson used chemicals to create and then break down blood clots, measuring the time involved with each step. She had to be precise, as she had to work with as little as 500 microliters of fibrinogen at a time. “I was probably pretty annoying to everyone in the lab because I was asking a lot of questions to make sure I was doing it right,” Johnson said.

Johnson’s research suggested there were genetic defects in the fibrinogen she sampled, but exactly what they are and what caused them are not yet known. “Cassie has been a jewel,” Dr. Farrell said. “Cassie is exactly the kind of student we are trying to recruit into the Murdock Scholar Program.”

Future nurse

Despite her notable lab skills, Johnson has her sights set on a career as a nurse practitioner. She will attend nursing school at the University of Portland this fall and hopes to someday do medical mission work overseas. She says that even though she doesn’t plan to pursue a career in medical research, the Murdock internship was invaluable. “I think the experience will help me in my future career in the medical field because it taught me to have attention to detail,” Johnson said. “It taught me to be very focused.”