The Quest for the Holy Wheel

By Randy Shih

(A tribute to Hugh Currin at the 2014 Retirement Recognition Dinner, May 20, 2014)

Hugh and I started at Oregon Tech. in 1984, almost 30 years ago. I began to know Hugh actually through our students. It was at the beginning of 1985, a student came to my office and told me he was in Hugh’s office to ask a question, but Hugh wanted him to first answer three questions. The student felt that he was facing the Bridge-keeper on the Bridge of Death: The scene from the Monty Python and the Holy Grail:

“He who successfully answers these three questions may pass in safety,”
“However, anyone who fails to correctly answer all three questions will be cast into the Gorge”
Of course, Hugh’s three questions are never “What is your name?”, “What is your favorite color?”
It is more like “Explain Newton’s 2nd law of motion in 2 sentences” or “If Amy leaves at 8 AM, driving at 45 mph, and John leaves at 9AM driving at 60 MPH, at what time will John catch up with Amy?”
Hugh earned my respect that day.

Hugh and I are the two computer geeks in the department. Hugh and I take care of the majority of the computer related classes in the department. In the early 1990s, Hugh worked on getting the Boeing Grant to help us incorporate the “Leading Edge Solid modeling” into our programs. I still remember, with the help of the Boeing Grant, Hugh and I went to quite a few workshop and seminars, to learn and examine the different CAD packages. And it wasn’t too long after we started we began to contribute greatly to the development of CAD software. At the workshops, we would begin to ask questions “Can your software do this? Or do that?” We actually crashed several systems during that time. We were somewhat famous for bringing the system down.

Now, 20 years later, I am happy to report to you that we now offer courses on four different “Computer Aided Design” software packages. And our students are outstanding in passing the Certification Examine for the SolidWorks package. The 1st time passing rate for this examine is around 50%, but it is around 90% for our students. Compared to the other colleges and universities, we have perhaps the highest passing rate around the world.
Besides Computers, Hugh also has a strong passion about Wheels. So, instead of the quest for the Holy Grail, for Hugh, it is really the quest for the holy Wheel.

I still remember the conversation I had with Hugh. When Hugh told me he was going to start a senior project team to work on an HPV project.
What is HPV? I asked
Hugh answered “HPV stands for Human Powered Vehicle.”
When I heard that, I kind of hesitated but I said it anyway.
“Hmm…. In Taiwan, we have this thing that we called a bicycle…….”
Hugh continued and said “A bicycle is a type of HPV, but a lot of the better HPV designs actually have three wheels.”
“Hmmm…. In Taiwan, we also have this thing that we called a Tricycle that is one driver paddling and typically 2 or 3 people seated behind the driver.”
Hugh then began to explain to me that the concept of HPV is to be more environmentally friendly, we want to go faster, and be more comfortable, and “You don’t want just have one person paddling, you gain much more power if you have two or three people paddling together.
Now, Asian usually thinks in terms of “making the design smaller and more compact.”
For HPV, bigger is a good thing, as we will have more power and run faster.
And my life was changed forever, although I started riding bicycle to school when I was in middle school and all the way through college. I have never viewed a bicycle so differently that day.

Hugh’s HPV senior project continued for many years, he took the students to national competitions and did very well. Most of the designs were three wheels with covers to reduce wind resistance.
One year, Hugh took a group of students to California for a competition and they arrived a day earlier; during a test run, they hit a pot hole and broke the HPV in half. And it is only with our programs’ emphasis on hands-on experiences, Hugh and the students found a community college, borrow their welding equipment and put the vehicle back together and completed the race successfully.
Hugh’s quest for the Holy Wheel continues.
After having the HPV on pavements for a few years, Hugh started to look into having the HPV go over different type of terrain.

His senior project teams joined the Kinetic Sculpture competition, which is really a combination of HPV and art. The vehicle needs to go through different types of terrain and eventually into water. Hugh and Denise organized and brought the competition to the community. They have held the competitions near the lake. And I can tell you that the students learned very quickly about their designs, when their vehicles flipped upside down in water.

And one of the biggest designs the senior project teams came up with was the “Big Easy”, the wheel itself was over 6 feet in diameter, it has four people paddling and the pivot is right at the center.

Hugh is also an expert in “Wind energy”, “wind mill” you know…
He once advised a senior project, where the students designed and built a wind mill generating electricity with the wind power, on the small hill west of the Purvine hall.

The windmill was somewhat a success, it was generating electricity; but we had a wind storm a few weeks after that. And the blade was spinning too fast that eventually torn down the bearing and the whole structure.

I asked Hugh about the failure of the system, and Hugh told me that the students failed to see the issue when the blades are turning too fast. I kind of asked the wrong question when I said “So You didn’t stress the importance of the brake system to the students?”

Hugh’s face got red and said “Of course I know the importance of the brake system, I have worked on bicycles… HPV … for decades.”
It may be because of the failure of the wind mill, Hugh decided to continue his education and earned his PHD degree through the University of Nevada. Where he emphasized his study on Green energy. 
And I have to tell you that Hugh was a changed person after he completed his PHD degree.
He is more energetic, He even had Denise baked cookies and he would take the cookies to his classes. And you can hear his laughter coming through to the other side of the building.

Although, “The bridge keeper’s three questions” are still there.

In 2012, Hugh worked with Prof. James Long and received a grant to work on a Hybrid Motorcycle.

And now Hugh has retired.
I want to thank Hugh for what he had done for the department, the campus and the community.
Hugh had served as program director, department chair, and it was through his leadership that we are offering degrees in Mechanical Engineering and Master in Manufacturing Engineering Technology.

Hugh, thank you and congratulations.

And I know your quest for the Holy Wheel will continue.