

## **SPIR Ask Annie - JUN 2017**

**Written by Dr. Anne Gill, Children's Healthcare of Atlanta, Emory University Hospital**

### **Who is Dr. Julio Palmaz?**

Dr. Julio Palmaz earned his medical degree from National University of La Plata in Argentina in 1971 and proceeded to study angiography until he immigrated to the United States to study diagnostic Radiology at UC Davis. While there, he attended his first SIR meeting and listened to Dr. Andreas Gruentzig speak about his invention of balloon angioplasty. The ability to open vessels through a catheter and with an expandable balloon was a new, amazing technique in 1978. Dr. Palmaz was impressed that Dr. Gruentzig shared the limitations of the technique and began to think about potential solutions to the angioplasty problem: unavoidable occlusion of the vessel after balloon dilation.

Dr. Palmaz visualized a type of “scaffold” to support the vessel after angioplasty and eventually wrote up a report describing his idea. This helped his vision take shape and pushed him to investigate implantable metals and other tools that could help in the creation of such a device. He began tinkering with wires and soldering equipment at his home to construct a model. He began collecting angioplasty balloons that were used during procedures in the IR lab at work, washing the balloons and bringing them home to experiment with. One day in his garage, he found a piece of metal lathe that had staggered openings and after manipulating it he realized it was exactly the design he had been trying to create: one that could collapse for positioning within a tight space and then expand with the help of a balloon. He began making cardboard replicas of the metal lathe in his garage and played with different iterations for years.

He eventually was invited to begin a new position in San Antonio with his mentor. Dr. Palmaz contacted several companies and eventually found one that was willing to make a prototype. After years of bench testing, animal prototypes, and clinical trials, the first peripheral stent placement in a patient was done at Freiburg University in Germany in 1987. Later that same year, the first coronary stent was placed in a patient in Brazil. Finally, in 1991, the FDA approved the first stent for the treatment of peripheral atherosclerotic occlusive disease, and it was the

Palmaz-Schatz stent. Since this time, there have been many modifications to the balloon-expandable stent, but it remains a vital tool in any interventional radiologist's armamentarium.