"Follow the tennis ball like a Golden Retriever."

After “riding the roller coaster” of hematopoietic stem cell gene therapy for 30+ years, it is now most gratifying to see children being cured. The study from clinical trials for adenosine deaminase-severe combined immune deficiency (ADA-SCID) children done by my inspirational mentor, Dr. Donald Kohn, demonstrates that durable enzyme replacement can be accomplished by autologous hematopoietic stem cells (HSC) transplantation using lentiviral vector-modified stem cells [1]. I was very fortunate to be a part of the initial HSC gene therapy clinical trials for ADA-SCID children in Don’s group in the early 1990s [2,3]. Fifteen years of training with such an outstanding mentor cemented my love for the field of translational stem cell biology and gene therapy, bridging bench to bedside and working closely in teams with medical doctors.

Our teams at the University of California Davis and many others are now expanding these successful HSC gene therapy techniques, continually refined by the Kohn Lab, to numerous other indications where patients have single gene defects resulting in faulty enzyme function. The development of further advances in gene editing and gene modification is now expected to take this field even farther in the near future.

As a senior scientist who has now trained many of my own students of all ages, my recommendation is to follow your passion. I always tell students to “follow their tennis ball.” Like when a golden retriever sees a tennis ball going by, they can suddenly see nothing else. They follow that ball. Students need to find what that tennis ball is for them personally and then focus on finding ways to follow it.

It is very important for students to find the right mentor in their chosen field. My advice is to find a good mentor who is available for their students (ask the other students). Learn about their research, volunteer with them if you can, and let them see your passion. The mentor–student relationship is mutually beneficial. Some great scientists are shy and do not want to “bother people.” Students should realize that the mentor will also benefit from their excitement and talent, if they are in a field they truly love. I hope that students can find someone who really listens to them and cares about their career development. If they do not find the “right fit” at first, they should not be afraid to change laboratories. The whole field will benefit from their passion!

Author Disclosure Statement
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References

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