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[CVM](#) > [Departments, Centers and Institutes](#) > [Baker Institute](#) > [News](#) >

From Standardbreds to the horse genome

From Standardbreds to the horse genome: Don Miller's 19 years at the Baker Institute

This year marks Don Miller's 19th anniversary with the Baker Institute for Animal Health. Miller's progression to his position as Research Support Specialist and Laboratory Manager in [Dr. Douglas Antczak's lab](#) is a remarkable story. Miller began as an entry-level technician with no formal training or experience in biology. He did, however, come with a deep knowledge of horses from working in the Standardbred racing industry for several years.

Within a few months it became apparent that Miller was well suited to laboratory work, and to molecular biology in particular. He quickly mastered techniques in gene cloning, amplification, expression, and sequencing. Miller's natural talents also led him to learn programming for various computational biology applications required to analyze data the Antczak lab was generating as part of the international Horse Genome Project.

"Don has a wonderful set of abilities," said Antczak, the Dorothy Havemeyer McConville Professor of Equine Medicine. "He is amazingly organized, and he thinks very mathematically. He is also very resourceful, proactive, and dedicated. Don is an excellent problem solver and always willing to direct his efforts towards any task that needs attention."

With his newly acquired skills, Miller has made substantial contributions to the Institute's equine research projects. He has earned authorship on 27 research publications, including papers in *Nature*, *Proceedings of the National Academy of Sciences*, and the *Journal of Immunology*. "Don has even been a co-author on two papers from other investigators in which I played no part," said Antczak. "This is a very rare accomplishment for any technician. In fact, Don functions very much like an independent postdoctoral scientist."

In addition to his technical work, Miller is the primary person in the Antczak lab responsible for teaching molecular assays to new graduate students, veterinary students, undergraduates, and visitors. "Don has been an outstanding mentor for undergraduate honors students and for [Havemeyer Foundation Veterinary Student Summer Fellows](#)," said Antczak. "He is very generous with his time and with sharing his knowledge to students who work hard and are eager to learn."

Colleagues have elected Miller to several leadership positions related to his work. He is currently the group curator for equids of the major histocompatibility complex section of the [Immuno Polymorphism \(IPD-MHC\) Database](#). Previously Miller served as chair of the horse and camel workshops at the international Plant and Animal Genome (PAG) Conference held yearly in San Diego.

"The international horse genomics community recognizes Don as a trusted and valued colleague," said Antczak. "He is a central figure in the yearly meetings of the Horse Genome Workshop. Even by the high standards of the Baker Institute, the quality of Don Miller's contributions are extraordinary. I have been very fortunate to work with Don, and I count him among my closest friends. Much of the success of my laboratory over the past 20 years is due to Don's efforts."

"One thing that has benefited my career is that Doug's lab is very non-hierarchical," said Miller. "He's never limited me, or put a ceiling on what I could do."

