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Polymerase Chain Reaction (PCR)

Seminar Series

Last Modified:

This is a video series on Polymerase Chain Reaction (PCR) presented by Dr. Alexandra (Lexa) Scupham. Read on for a brief biography in her own words and description of the seminar content.

For the past 30 years I have been regularly failing at PCR, and learning more with every failure. I received my Ph.D. in bacteriology in 2000 from the University of Wisconsin-Madison, where I studied the role of antibiotic synthesis and resistance in *Rhizobium* competitiveness. During a postdoc at the University of California-Riverside I started to study molecular microbial ecology in soils and the murine intestine. In 2003 I started working for the USDA in Ames, Iowa at the National Animal Disease Center, where my laboratory studied intestinal microbial community development in turkeys, with the goal of developing anti-*Campylobacter* probiotics. In 2010 I joined the USDA Center for Veterinary Biologics, where I test genetically engineered vaccines prior to licensure. The following 5 videos are seminars recorded in 2020-21. The first four are Zoom-based recordings of a course I give yearly at ISU together with the ISU DNA Facility. They consist of 1) an introduction to PCR that is far more in-depth and wide ranging than anything else I can find on the internet 2) Primer and TaqMan probe design 3) real-time PCR and 4) PCR and real-time PCR troubleshooting. The fifth is a video of me performing a real-time

PCR and doing the data analysis steps. Please feel free to contact me at any time for questions or assistance at alexandra.scupham@usda.gov

[Part 1 - Polymerase Chain Reaction \(PCR\): the not-so-basics](#)

[Part 2 - Primer & Probe Design \(oligonucleotides, also called oligos\)](#)

[Part 3 - Real Time PCR](#)

[Part 4 - PCR & qPCR Troubleshooting](#)

[Real Time PCR in Action](#)

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