

# Applications of Biotechnology in the Classroom (ABC)



## Three-Part Professional Development Workshop Series

A partnership between Shoreline Community College's Amgen Bruce Wallace Lab Program and the Northwest Association for Biomedical Research (NWABR)

Designed to be taken individually or in series based on your needs and skills!

All workshops will be held at Shoreline Community College in Shoreline, WA.

Bruce Wallace

**BIOTECHNOLOGY LAB PROGRAM**

**NWABR.ORG**  
Northwest Association for Biomedical Research

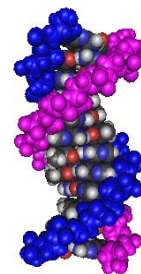
To find out more and to register, visit: <http://www.nwabr.org/shoreline-partnership-workshop>

**Clock hours, meals, and access to free biotechnology kits for your classroom will be provided!**

## A: An Understanding of DNA: Making the Invisible Visible

**Fri., Dec. 7, 2012. 4:00-8:00 PM. Sat., Dec. 8, 2012. 9:00AM-5:00PM**

This *introductory* workshop is designed for **middle school life sciences teachers and high school biology teachers** who are new to working with DNA in the classroom. Activities include an introduction to micropipetting and agarose gel electrophoresis (separating molecules based on size), DNA extraction from cheek cells (purifying DNA that you can see), genomic DNA purification from cheek cells (purifying DNA that you can use in an experiment), and using a bioethics case study about how genetic information is impacting medical decisions. Teachers will also learn how to use the freely-available Cn3D program to help students visualize a variety of macromolecules. **No prior experience required.**



## B: Bringing PCR into the Biology Classroom

**Fri., Feb. 15, 2013. 4:00-8:00 PM. Sat., Feb. 16, 2013. 9:00AM-5:00PM**

Designed for high school biology, biotechnology, marine biology or chemistry teachers who have experience with micropipetting, DNA extraction, and agarose gel electrophoresis and want opportunities to build on these skills while bringing authentic research experiences into their classrooms. This workshop introduces teachers to DNA barcoding, with activities including DNA purification, polymerase chain reaction (PCR), in depth usage of agarose gel electrophoresis, and basic bioinformatics skills. **Basic skills in micropipetting and agarose gel electrophoresis required.**<sup>1</sup>

## C: Cloning DNA to Make Protein

**Thursday - Saturday, June 20-23, 2013. 9:00AM-3:30PM daily**

Also designed for high school biology, biotechnology, marine biology or chemistry teachers who have experience with micropipetting and agarose gel electrophoresis (i.e. separating molecules by size). Teachers will learn the basic techniques used in DNA cloning which include: using restriction enzymes, ligation, bacterial transformation, protein expression and purification. Teachers will also receive training in bioinformatics and explore ways to infuse science career awareness into their classrooms. **Basic skills in micropipetting and agarose gel electrophoresis required.**<sup>1</sup>



<sup>1</sup> For example, participation in the introductory workshop, "An Understanding of DNA" (above), NWABR's advanced bioinformatics workshop, the Science Education Partnership (SEP), or the Amgen Bruce Wallace summer program for teachers.