
15. Resources

Gel Electrophoresis Online

<http://www.tvdsb.on.ca/westmin/science/sbioac/genetics/Electro.htm>

Show your students how DNA fragments travel through the gel and how they separate into bands.

Gel Electrophoresis from the Genetics Science Learning Center

<http://gslc.genetics.utah.edu/units/biotech/gel/>

A tutorial walks students through the steps of gel electrophoresis and describes why it is used today.

Human Genome Online

<http://www.ornl.gov/hgmis/posters/chromosome>

This is an interactive Web site through which students may search chromosomes to locate genes for disorders.

DNA: The Instruction Manual of Life

http://www.thetech.org/exhibits_events/online/genome/index.html

This Web site details DNA and chromosomes and even addresses some of the ethical aspects of biotechnology.

Animal Genetics Articles

<http://bowlingsite.mcf.com/Genetics/Genetics.html>

This Web site contains a list of articles that deal with animal genetics.

Polymerase Chain Reaction Activity

<http://lamar.colostate.edu/~jsteph/activity6.htm>

Students are taken through the intricate process of PCR and shown the tools needed, as well as their applications.

Other Web sites to consult:

American Zoo and Aquarium Association

<http://www.aza.org>

Chicago Zoological Society / Brookfield Zoo

<http://www.brookfieldzoo.org>

XYZoo

<http://www.xy-zoo.com>

Animal Genome

<http://www.animalgenome.org>

Genetic Science Learning Center

<http://learn.genetics.utah.edu/units/biotech/index.cfm>

National Zoo Golden Lion Tamarin Plan

<http://nationalzoo.si.edu/ConservationAndScience/EndangeredSpecies/GLTProgram/ZooLife/Masterplan/Genetics.cfm>

Educational resources:

National Science Teachers' Association

www.nsta.org

National Association of Biology Teachers

www.nabt.org

Illinois Association of Biology Teachers

www.iabt.net

Texts:

Allendorf, F., and Luikart, G. 2006. *Conservation and the Genetics of Populations*, Blackwell Publishing, 1st edition.

Clark, A. 1998. *Animal Breeding: Technology for the 21st Century*, CRC Publishers.

Falconer, D., and McKay, T. 1997. *Introduction to Quantitative Genetics*, Prentice Hall, 4th Edition.

Frankham, R., Ballou, J., and Briscoe, D. 2004. *A Primer of Conservation Genetics*, 1st edition.

Frankham, R., Ballou, J., and Briscoe, D. 2002. *Introduction to Conservation Genetics*, Cambridge University Press, 1st edition.

Lamb, B. 2000. *The Applied Genetics of Plants, Animals, Humans & Fungi*, World Scientific Publishing Company.

About the Authors

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Jason Crean wears many hats: he is a full-time high school biology instructor and adjunct college instructor, and he works for the Chicago Zoological Society as an instructor in its Conservation, Education, and Training Department. He takes part in service work done by the genetics lab at the zoo, which services many zoos throughout the country. He also serves as an avian consultant to other institutions and provides information and consultancy services for their bird collections. He holds a graduate degree from Saint Xavier University and a graduate certificate in zoo and aquarium science, and he is currently completing another master's degree in biology from Western Illinois University.

Jean Dubach, Ph.D., Conservation Biologist

Dr. Jean Dubach joined Brookfield Zoo in 1989 and oversees the operation of the genetics laboratory, which conducts genetic service work for zoos throughout North America and research projects on captive and wild populations from Australia, Africa, and South America. The laboratory supports a wide range of genetic technologies, from chromosome analysis to DNA fingerprinting, sequencing, and genotyping. Dr. Dubach received an undergraduate degree in nursing from the University of Colorado; holds two master's degrees, one from the University of Colorado in population biology and one from Northern Colorado University in applied statistics; and received a doctorate in population genetics/biochemistry from New Mexico State University. Dr. Dubach is a member of the Research Subcommittee of the Conservation Medicine Center of Chicago.