



# The Genetics Education Toolkit

A resource for high school science educators teaching the fundamentals of genetics.

Created by the Genetics Education Committee of Oklahoma (GECO)

## Genetics Toolkit

Welcome, science educators! The Genetics Education Committee of Oklahoma (GECO\*) is pleased to provide you with this “toolkit” for teaching genetics in the classroom. This guidebook is a comprehensive overview of what genetics is, how it affects us, and how it is being used in the world around us. The contents include background information and interactive teaching modules covering topics such as DNA structure, basic genetic concepts, birth defects prevention, newborn screening, human genetics, DNA technology, and ethical dilemmas in genetics. Also included in the toolkit will be a Career in Genetics Handout, Genetics Booklist and a list of genetic resources on the Web. Many of the activities will be interactive to engage the students and enhance knowledge retention by providing activities that allow them to apply what they have learned to real life scenarios.

It is our hope that this toolkit will prepare students to serve as medical advocates for themselves and their families by knowing the fundamentals of genetics and being aware of the related legal, social, and ethical issues. The toolkit promotes acceptance of genetic variation by exposing students to positive examples of those living with genetic differences. By educating students about the effects of exposures during pregnancy and the importance of taking folic acid, it is hoped that birth defects may be prevented. We also hope that some students will be inspired to consider one of the many different careers available in genetics!

If you have any suggestions of resources you would find helpful, or would like to be involved in providing feedback on the kits, please contact the State Genetics Educator at 1-800-766-2223 or by email [Sharonav@health.ok.gov](mailto:Sharonav@health.ok.gov).

GECO\* is a subcommittee of the Oklahoma Genetics Advisory Council (OGAC) and is dedicated to providing genetics education to all Oklahomans to ensure everyone benefits from the advance in genetics.

The Genetics Education Committee of Oklahoma would like to acknowledge the following organizations for providing excellent learning opportunities through access to their websites:

University of Utah Genetic Science Learning Center

DNA Interactive

Nature

Public Broadcasting Service

National Institute of Health

National Association of Biology Teachers

Cold Spring Harbor Laboratory

Science Museum

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