



TECHNOLOGY

Phylogeny Teaching Models

OVERVIEW

Background

Phylogenetics is the study of evolutionary relatedness among organisms and is one of the most important fields in evolutionary biology. It is a central component of undergraduate biology programs at colleges and universities as well as high school AP biology courses. However, phylogenetics is one of the most challenging subjects to teach and learn and the effectiveness of commonly used teaching methods is limited. In response to the need for a more effective teaching method, researchers at University of Maryland have designed a unique educational product for teaching phylogenetic reconstruction techniques.

Innovative Technology

Education researchers at University of Maryland have created an engaging and diverse group of model organisms large enough for students to hold and examine. Students evaluate and compare variation among the models to create evolutionary trees using the same techniques employed by professional biologists studying evolution. The effectiveness of hands-on pedagogical methods is well established and product testers from several universities report that, relative to standard teaching methods, students using these models were much more engaged and developed a better understanding of phylogenetics. This product has been designed for use in either the teaching laboratory or the classroom, which greatly expands the potential market.

Advantages

- 1) Familiarizes students with fundamental phylogenetic concepts
- 2) Models designed to represent imaginary organisms to avoid student preconceptions and misconceptions about trait similarities and evolutionary histories
- 3) Hands-on methodology improves learning and retention
- 4) Large market potential
- 5) Easy to manufacture
- 6) Low cost

Applications

- 1) Potential learning tools for phylogeny for undergraduates, high school students, and younger students in advanced STEM programs in domestic and international learning institutions

Available for licensing. For more information, please contact Sangeetha Raghavan at sangeeth@umd.edu , 301-405-

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Additional Information

INSTITUTION

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CATEGORIES

- Information Technology

EXTERNAL RESOURCES

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