

Spreading Genetics

Design and implementation of an introductory website on Genetics

Judith García González

Grau en Genètica - Universitat Autònoma de Barcelona

INTRODUCTION

In the 21st century, biosciences offer a wide range of job opportunities, one of them being genetics. Knowing molecular genetics main concepts is crucial in understanding storage, expression and regulation of the genetic information found within cells, and helps broadening our vision about genetics further than the one learned in mendelian genetics.

In this work, an educational web page about basic molecular genetics is proposed. It is also expected to be an encouragement and a guide in choosing a professional path in this area.

OBJECTIVES

- Create a webpage for spreading the main ideas of molecular genetics and genomics. It will include theoretical and practical sections which will allow students to acquire knowledge as well as verify its comprehension.
- Orientate students in choosing a professional career in genetics and show them which way is to be followed in each case.
- Promote reading of books about essential genetics and also the most relevant articles and remarkable books in its history.
- Finally, other resources will be offered in order to help users understanding genetics history and complement the information found in this website.

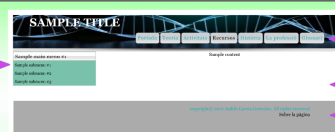
CONTENTS

Index



General structure of a section

Menu on the left showing the main parts of each section

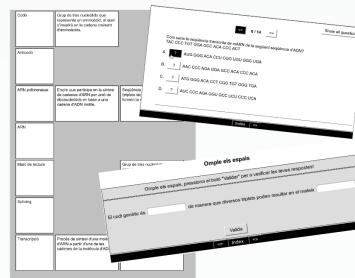
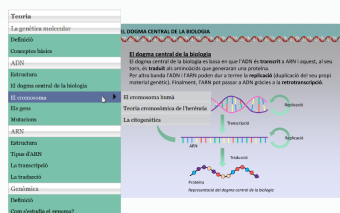


Menu on the top displaying links to the principal sections
Content
Footer

Theory

Activities

History



Shows a general view of the contents present within the website. There is also a slide presentation aiming to inform users about the latest news on the webpage or events and dates that might be interesting for them.

Slides on molecular genetics and genomics are to be found in this section including figures made for this purpose.

Main contents of this sections are shown on the left menu. It is recommended to follow the order of concepts suggested in it.

Activities allow users to validate their knowledge after reading the concepts in the theoretical section.

There are three types of exercises: quizz, filling the gaps in sentences extracted from the slides and concept association.

Here, the chronology of genetics has been split into two main timelines separated by the most remarkable milestone in molecular genetics: the discovery of the structure of the double helix which helped elucidating cell mechanisms that depend on it.

Resources



It includes a list of websites, books and journals aiming to complement the contents appearing in other sections.

Careers in genetics



Tries to provide a vision of the areas in which a geneticist can develop a career.

In addition, names of the main universities offering Bachelor and Master degrees related to genetics are given.

Glossary



Short dictionary containing essential terms in molecular genetics and genomics.

SOFTWARE

deck.js javascript module for presenting slides.



GIMP image editor.



HotPotatoes: software for creating HTML-based activities.



Inkscape: vector graphics editor



Timeline.js javascript module for designing timelines.

FUTURE PROSPECTS

Building up a functional website is a complex task that requires a certain knowledge in both the so-called markup language (HTML in this case) and genetics. Hence, it is necessary to make some improvements in the core code and also in the contents of the page.

Also, in order to broaden the spectrum of users for whom the webpage will be available, a translation into other languages will be needed.

VISIT THE WEBSITE!

<http://genetica.uab.cat/coneixgenetica/>

- References
- Griffiths, Anthony J.F. Introduction to genetic analysis. 9th ed. New York: W.H. Freeman and Co., 2008.
 - Hartwell, Leland. Genetics: from genes to genomes. 4th ed. New York: McGraw-Hill, 2011.
 - Pierce, Benjamin A. Genetics: a conceptual approach. 4th ed., International ed. Basingstoke: Palgrave Macmillan, 2011.

- Capturing the History of Biotech - Life Sciences Foundation. "Capturing the History of Biotech - Life Sciences of Biotech - Life Sciences Foundation. N.p., n.d. Web. 6 May 2013. <<http://www.lifesciencesfoundation.org/>>
- Robson, Elisabeth, and Eric Freeman. Head first HTML and CSS. 2nd ed. Beijing: O'Reilly, 2012.
- Refsnes Data. "W3Schools Online Web Tutorials." W3Schools Online Web Tutorials. <http://www.w3schools.com/> (accessed December 11, 2012).