Biology Resources

Teaching Resources in Biology

Instructional Resources in Biology (Harvard University Department of Molecular and Cellular Biology).
An alphabetical listing of links to a wide range of instructional resources for college biology educators, ranging from biology associations and science museums to sites such as Science Gems, Virtual FlyLab, Virtual Hospital, and much more.
https://www.mcb.harvard.edu/mcb/p/library-links/ [1]

MERLOT (Multimedia Educational Resource for Learning and Online Teaching) Biology Portal.
This site is the portal to materials, resources, and a community for teaching biology with technology. Offers teaching tips, learning materials such as animations and tutorials, and other resources for biology educators.

National Science Digital Library (NSDL): Biology
Provides comprehensive links to materials in biology in higher education such as museum collections, databases, and ongoing research. Searchable database by format, topic, educational level, and specialized area.
https://nsdl.oercommons.org/browse [3]

BUBL LINK Catalogue of Internet Resources: Life Sciences, Biology (Centre for Digital Library Research, University of Strathclyde, Glasgow, United Kingdom).
This comprehensive website with a searchable database, provides links in all areas of the biological sciences, including education, genome mapping, specific systems in animals, genetics, evolution, ecology, etc.
http://sherlock.strath.ac.uk/search?q=Life%2C+biology&x=0&y=0&site=All&output=xml_no_dtd&client=StrathPublic&proxystylesheet=StrathPublic [4]

MIT OpenCourseware: Biology (Massachusetts Institute of Technology).
Course materials free online from MIT's undergraduate and graduate biology courses, including syllabi, exams, projects and assignments, image galleries, and other resources.

Association for Biology Laboratory Education.
The focus of ABLE is to improve the undergraduate biology laboratory experience by developing and disseminating innovative and reliable laboratory exercises. Don’t miss their tab “Hot” Biology Websites under Resources for everything from course pages to biological animations for the classroom and much, much more.

Bioliteracy Project Home Page (University of Colorado with support from NSF and a John Doctor prize from the Society for Developmental Biology).
This project is dedicated to providing tools for assessing whether or not students are learning the scientific concepts teachers think they are. Can they think scientifically? Resources include Concept Lists, a Biology Concept Inventory, course & curricular design, articles, and more.
http://bioliteracy.colorado.edu/ [7]

**BioQUEST Curriculum Consortium** (Beloit College).
This consortium “actively supports undergraduate biology education through collaborative development of open curricula in which students pose problems, solve problems, and engage in peer review.” Has downloadable resources, links to BQ projects and collaborations, and a BQ blog.
http://bioquest.org/ [8]

**Howard Hughes Medical Institute BioInteractive.**
Free resources for science teachers and students: video, animations, lectures, virtual labs, and much more.
http://www.hhmi.org/biointeractive [9]

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Resources for Teaching Evolution

**Evolution Resources** (From the National Academies of Sciences).
A comprehensive collection of books, reports, statements, papers, articles and web resources about evolution, including science and religion issues, legal issues, and material for educators.
http://nationalacademies.org/evolution/ [10]

In this article for the McGill Journal of Education (Spring 2007) Nelson presents three scientifically and pedagogically accepted strategies for helping students develop more scientifically valid understandings of evolution.

**National Center for Science Education, NCSE: Defending the Teaching of Evolution in Public Schools.**
This Center provides advice and links to resources for teaching evolution in the science classroom.
http://ncse.com/ [12]

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Resources for Teaching Genetics

**Genetics Society of America.**
The focus of this society is on research, interaction among geneticists, communication of discoveries, and education. This homepage provides annotated links to a wide variety of online educational resources in genetics (see Education pull-down menu): teaching websites, courses, laboratory tools, and time-lapse movie websites. Also links to 30 model organism databases. Publishes Genetics, with abstracts and some articles available free online.
http://www.genetics.msu.edu/ [13]
American Society for Human Genetics.
Provides information for those interested in human genetics at all educational levels. Publishes American Journal of Human Genetics; abstracts free online, subscription required.
http://www.ashg.org/ [14]

Human Genome Project.
This project is dedicated to identifying all the genes in human DNA. The site provides links to educational material such as online classroom educational modules and webcasts; current research; ethical/legal issues; and much more.

Genome Consortium for Active Teaching, GCAT (Davidson College).
The purpose of GCAT is to “bring functional genomic methods into undergraduate curriculum primarily through student research.” Provides a clearing house of information for teaching genomics, a database for pedagogical use, a centralized DNA chip reader, and chips at a modest cost.

Dolan DNA Learning Center (an operating unit of Cold Spring Harbor Laboratory).
Offers multimedia animation programs on cellular and molecular processes and other resources and programs on genetics education.
https://www.dnalc.org/ [17]

Also see teaching resources in genetics for MSU’s Microbiology and Molecular Genetics Department
http://fod.msu.edu/oir/microbiology-and-molecular-genetics [18].
Additional Human Genetics educational resources can be found at http://fod.msu.edu/oir/pediatrics-human-development [19]

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Resources for Teaching Conservation Biology and Biodiversity

Network of Conservation Educators and Practitioners (Center for Biodiversity and Conservation, American Museum of Natural History).
A global initiative to improve training in biodiversity conservation. This site offers student-active educational modules downloadable without charge; a free online journal, Lessons in Conservation; and an opportunity to connect with educators teaching biodiversity conservation.

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Journals in Teaching College and University Biology

**Bioscene: Journal of College Biology Teaching** (Association of College and University Biology Educators, ACUBE).
Full copy of journals from 1975 to the present can be accessed online, also AMCBT/ACUBE Newsletters (1964-1974), and AMCBT/ACUBE Proceedings (1957-1972).
http://www.acube.org/bioscene/ [21]

**Cell Biology Education: Life Sciences Education** (The American Society for Cell Biology).
Free peer-reviewed quarterly online journal encompassing diverse fields and interdisciplinary intersections within the broad study of life sciences education at all levels K to graduate.
http://www.lifescied.org/ [22]

**The American Biology Teacher** (National Association of Biology Teachers).
Publishes articles on teaching all areas of the biological sciences from K to 16. Full text available online of selected pieces from the archives, 2006 to the present. Subscription required.

**Advances in Physiology Education** (The American Physiological Society).
Publishes peer-reviewed articles on enhancing teaching and learning in physiology, neuroscience and pathophysiology.
Subscription required.
http://www.the-aps.org/mm/Publications/Journals/Advances [24]

**Journal of Biological Education** (Society of Biology).
This United Kingdom journal covers policy and curriculum in the teaching, learning, and assessment of biology.
Subscription required, but some materials that may be useful for teaching are downloadable.
https://www.societyofbiology.org/education/jbe [25]

**Journal of Microbiology and Biology Education** (American Society for Microbiology).
Presently in the process of becoming an open access journal, this publication focuses on hypothesis-driven, outcomes-based research on teaching and learning. Coverage will include Perspectives, Curriculum, Tips and Tools, Reviews, News, and Research.
http://jmbe.asm.org/index.php/jmbe [26]

[26]**Biochemistry and Molecular Biology Education** (International Union of Biochemistry and Molecular Biology).
This publication aims to enhance the teaching of biochemistry, molecular biology, and related fields such as cell biology in higher education, including medical schools.
http://www.iubmb.org/index.php?id=30 [27]

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Michigan State University Resources in Biology

**MSU Human Biology Program.**
https://natsci.msu.edu/academics/units/human-biology-program/ [28]

**MSU Cognitive Science Program.**
http://www.cogsci.msu.edu/ [29]
Michigan State University Graduate Programs & Centers in the Biological Sciences

Click on URLs below for descriptions of programs, faculty, and resources in the specific field, both internal and external to MSU.

**MSU Cell and Molecular Biology Graduate Program.**
http://cmb.natsci.msu.edu/ [37]

**MSU Ecology, Evolutionary Biology, and Behavior Graduate Program.**
http://eebb.msu.edu/ [38]

**MSU Environmental Science & Policy Graduate Program.**
http://www.espp.msu.edu/index.php [39]

**MSU Genetics Graduate Program.**
http://www.genetics.msu.edu/ [13]

**MSU Neuroscience Graduate Program.**
http://neuroscience.natsci.msu.edu/ [40]

**MSU Center for Microbial Ecology.**
http://cme.msu.edu/ [41]

**Center for Integrative Toxicology at MSU.**
http://iit.msu.edu/ [42]
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Phone: (517) 432-1185 Fax: (517) 432-2069 Email: facdevel@msu.edu | leaders@msu.edu MSU is an affirmative-action, equal-opportunity employer.

Source URL: http://fod.msu.edu/oir/biology-resources

Links
[1] https://www.mcb.harvard.edu/mcb/p/library-links/
[3] https://nsdl.oercommons.org/browse
[4] http://sherlock.strath.ac.uk/search?q=Life+sciences%2C+biology&amp;x=0&amp;y=0&amp;site=All&amp;output=xml_no_dtd&amp;client=StrathPublic&amp;proxystylesheet=StrathPublic
[17] https://www.dnalc.org/
[25] https://www.societyofbiology.org/education/jbe
[28] https://natsci.msu.edu/academics/units/human-biology-program/