Microbiology and Molecular Genetics

Resources & Instruction Examples

**Cells Alive**: On-line educational resource site covers topics in Cell Biology, Microbiology, Immunology and Microscopy. The majority of the site is freely accessible and includes film and computer-enhanced images of living cells and organisms, interactive models, Cell Biology and Immunology quizzes, etc.

**Virology Journal**: A collection of virology related websites, an index to virus images on the web, other resources and collection including virology and microbiology course notes.
http://www.virology.net/garryfavweb.html [3]

**The Big Picture Book of Viruses**: An on-line resource of viral diseases and their etiologic agents.
http://www.virology.net/Big_Virology/BVDiseaseList.html [6]

**Medical Virology Lectures and Tutorials**: Examples of lectures and tutorials for medical student education can be found at this University of Cape Town site.

**Medical Microbiology & Infectious Diseases**: Computerized Teaching Materials and References: Examples of lectures, teaching materials, syllabi, objectives and a disease index can be found at the Kirksville College of Osteopathic Medicine website. Included are Clinical Cases; an Infectious Disease Laboratory Manual; Common Causes of Various Diseases; Notifiable Diseases; Skin Rashes-Diseases; etc.
http://www.atsu.edu/faculty/chamberlain/index.htm [8]

- **Medical Microbiology Lectures**: Lectures include educational objectives.
  http://www.atsu.edu/faculty/chamberlain/website/lects/content1.htm [9]
- **Infectious Diseases Course**: Example of course provided with a syllabus, educational objectives, course content, etc.
  http://www.atsu.edu/faculty/chamberlain/website/lectures/syllabi3.htm [10]
- **Infectious Diseases**: Index and Their Etiologies are learning tools that accompany the course information.

**Manual of Clinical Microbiology Human Diseases Caused by Viruses**: This section of The Universal Virus Database, developed for the International Committee on Taxonomy of Viruses (ICTVdB) focuses on human diseases caused by
viruses. Specifics include Virus Name/Taxonomic List; Transmission of Viruses; Signs and Symptoms, etc.
http://ICTVonline.org/ [12]

**Clinical Microbiology I**: An example of a Clinical Microbiology course can be found at this University of Hawaii site.

**Malaria, An On-Line Resource**: This Royal Perth Hospital, Western Australia, provides this educational resource which includes a teaching and test segment of helpful hints, case presentations plus a self test module.

**AIDS Images Library**: A searchable online library of AIDS-related images, illustrations and other information can be used for medical education. The left column provides an option of slides being accessed by category or at the top of the site, by disease, organ system or type of images.

Journals of Microbiology Education

**Journal of Microbiology and Biology Education** (sponsored by the American Society for Microbiology).
Publishes hypothesis-driven, outcomes-based research on teaching and learning; includes curriculum and teaching tools materials.
http://jmbe.asm.org/index.php/jmbe [16]

**CBE-Life Sciences Education** (sponsored by the American Society for Cell Biology).
Many of the articles published in this journal are applicable to microbiology courses.
http://www.lifescied.org/ [17]

Electronic Libraries & Information Portals

**American Society for Microbiology's MicrobeLibrary**: The MicrobeLibrary, provided by the American Society of Microbiology, is a peer-reviewed collection of teaching and learning materials. Excellence in teaching and learning is the primary focus of the library. The visual collection and atlas collection are free with a subscription needed for the journal, curriculum collection and reviews of educational materials.
http://www.microbelibrary.org/ [18]

**Microbiology Video Library**: In addition to an introduction to Microbiology, diagrams and short videos can be viewed in the areas of Virology and Infection and Immunity. Longer versions can be purchased.
https://microbiologybytes.wordpress.com/ [19]
Microbiology - Genomics Resources

National Genome Project: NIHs National Human Genome Research Institute provides a database of genomic information plus is a resource for education, health, policy, ethics and research. Click on Educational Resources for various materials including Understanding the Human Genome Project.

http://www.genome.gov/ [20]

Integrating Genomics into Medical Education: Articles and publications organized into areas of subject matter that are applicable to medical education and technologies.

http://www.etsu.edu/com/genomics/default.aspx [22]

Online Mendelian Inheritance in Man (OMIM): A compendium of human genes and genetic phenotypes with a focus on the relationship between phenotype and genotype.


Human Genome Project Information: In addition to information regarding the Human Genome Project, there is a comprehensive array of information. Multiple links can be found to a variety of sources such as the American Academy of Family Physicians (AAFP) Core Educational Guidelines for Medical Genetics and Core Competencies in Genetics for Health Professionals and others listed as links to the genetic world.


- Genetic Disorder Information on the Web: Educational materials, gene tests, and other info.

National Center for Biotechnology Information (NCBI): This national resource creates public databases, conducts research, develops software tools for analyzing genome data, and disseminates biomedical information in order to promote a better understanding of the molecular processes affecting human health and disease. In the left column click on Molecular Databases, Genomic Biology Education-Teaching Resources and On-Line Tutorials, etc. to access the various sections provided.


Microarrays Media Book: Innovative and interactive learning about the world of genomics.

http://gcat.davidson.edu/Pirelli/index.htm [28]

Smoking Induced Epithelial Gene Expression (SIEGE): Microarray data from the University of Boston experiments have been stored, preprocessed and analyzed so that individuals can access the information in this educational website.

http://nar.oxfordjournals.org/content/33/suppl_1/D573.full [29]

A CLassification of Mobile genetic Elements (ACLAME): BiGRe - Service de Bioinformatique des Gnomes et des Rseaux: A database dedicated to the collection and classification of mobile genetic elements (MGEs) while building a comprehensive classification of the functional modules of MGE's at the protein, gene, and higher levels.


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Michigan State University's Microbiology and Molecular Genetics Resources

**Department of Microbiology and Molecular Genetics:**
https://mmg.natsci.msu.edu/ [31]

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These resources were compiled and annotated by Lois Rosen, Ph.D., Instructional Consultant for the Office of Faculty and Organizational Development, Michigan State University.

Hannah Administration Building 426 Auditorium Road, Room 308 East Lansing, MI 48824-1024
Phone: (517) 432-1185 Fax: (517) 432-2069 Email: facdev@msu.edu | leaders@msu.edu MSU is an affirmative-action, equal-opportunity employer.

**Source URL:** http://www.fod.msu.edu/oir/microbiology-and-molecular-genetics

**Links**
[19] https://microbiologybytes.wordpress.com/
[31] https://mmg.natsci.msu.edu/