

2023 Biological Informatics MiniGuide

By

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<http://www.2023BiologicalInformaticsMiniGuide.com/>

The **2023 Biological Informatics MiniGuide** is a comprehensive list of biological informatics resources and sources that are currently available on the Internet. The below list of sources is partially taken from my Subject Tracer™ and white paper titled Biological Informatics 2023 and is constantly updated with Subject Tracer™ bots at the following URL:

<http://www.BiologicalInformatics.info/>

These resources and sources will help you to discover the many pathways available to you through the Internet to find the latest competent biological informatics resources and sites.

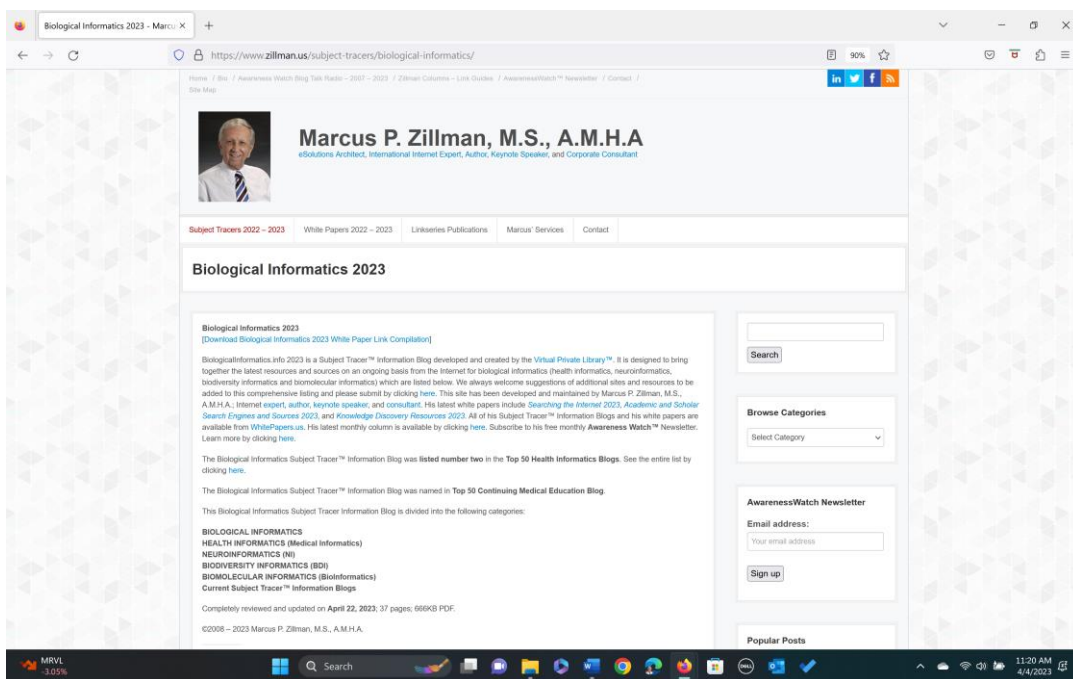


Figure 1: Biological Informatics 2023

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2023 Biological Informatics MiniGuide

<http://www.2023BiologicalInformaticsMiniGuide.com/>

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2023 Biological Informatics MiniGuide::

BIOLOGICAL INFORMATICS

HEALTH INFORMATICS (Medical Informatics)

NEUROINFORMATICS (NI)

BIODIVERSITY INFORMATICS (BDI)

BIOMOLECULAR INFORMATICS (BioInformatics)

Current Subject Tracer™ Information Blogs

Biological Informatics:

1000 Genomes Project

<http://www.1000genomes.org/>

About Bioscience

<http://www.aboutbioscience.org/>

Academic and Scholar Search Engines and Sources 2024

<http://www.ScholarSearchEngines.com/>

A Genetic Atlas of Human Admixture History

<http://admixturemap.paintmychromosomes.com/>

Agriculture and Biology Journal of North America (ABJNA)

<http://scihub.org/ABJNA/index.html>

AlphaFold: A Solution to a 50 Year Old Grand Challenge in Biology

<https://deepmind.com/blog/article/alphafold-a-solution-to-a-50-year-old-grand-challenge-in-biology>

Antibody Registry

<http://antibodyregistry.org/>

arXiv.org - Open Access e-Prints

<https://arxiv.org/>



Bento Lab – The Whole DNA Analysis Lab in Your Hands

<https://www.bento.bio/>

bioCURIOUS – World’s Largest Community Lab Space for Biology

<http://biocurious.org/>

BioEd Online - Biology Teacher Resources from Baylor College of Medicine

<http://www.bioedonline.org/>

Biohealthmatics.com - Career Portal for Biotechnology and Healthcare IT

<http://www.biohealthmatics.com/>

Bioinformatics Journal

<http://bioinformatics.oxfordjournals.org/>

Bioinformatics Organization

<http://bioinformatics.org/>

Bioinformation

<http://www.bioinformation.net/>

BioLINCC

<https://biolincc.nhlbi.nih.gov/>

Biological and Chemical Terrorism Information for Healthcare Professionals

<http://www.istl.org/04-winter/internet.html>

Biological and Environmental Research (BER)

<https://science.osti.gov/ber/>

Biology and Medicine

<http://www.biolmedonline.com/>

Biology News Net

<http://www.biologynews.net/>

Biomat.net - The Biomaterials Network

<http://www.biomat.net/>

Biomechanics and Modeling in Mechanobiology

<http://www.springer.com/materials/mechanics/journal/10237>

BioMedCentral (BMC) Research in Progress

<https://www.biomedcentral.com/>

Biomedical Informatics

<http://www.biomedical-informatics.net/>

BioNews

<http://www.bionews.org.uk>

Biopharmaceutical Glossaries & Taxonomies

<http://www.genomicglossaries.com/>

bioRxiv - The Preprint Server for Biology

<http://biorxiv.org/>

BioText Search Engine

<http://biosearch.berkeley.edu/>

Biowebspin - Academia-Industry Partnering Network in Life Sciences – Part of Inospin

<https://www.inospin.com/>

BIOZ - Best Way To Find Scientific Data – AI Search Engine for Scientific Experimentation

<https://www.bioz.com/>

Briefings in Bioinformatics

<http://bib.oxfordjournals.org/>

Centre for Agricultural Bioscience International (CABI)

<http://www.cabi.org/>

ChemSpider

<http://www.chemspider.com/>

Cytoscape - Open Source Bioinformatics Platform for Network Analysis and Visualization

<http://cytoscape.org/>

DAO Resources 2023 Including Generative AI and ChatGPT Resources

<http://www.DAOResources.com/>

DIRECT2Experts – Distributed Interoperable Biomedical Research Experts Collaboration Tool

<http://direct2experts.org/>

DNA Barcoding 101

<http://www.dnabarcoding101.org/>

DNA From the Beginning

<http://dnaftb.org/>

eBiostatistics.com - Comprehensive, Open Access, Web Based Biostatistical Package

<http://www.draptis.com/ebiostat/>

EdX: The Extremes of Life: Microbes and their Diversity

<https://www.edx.org/course/extremes-life-microbes-diversity-kyotoux-003x-0>

eHealthcareBot 2024 Search Engine

<http://www.eHealthcareBot.com/>

Electronioc Laboratory Notebook (ELN) and Laboratory Information Management System (LIMS)

<http://www.labii.com/>

eLabFTW – Free and Open Source Electronic Lab Notebook

<https://www.elabftw.net/>

eLIFE - Open-access Journal That Publishes Promising Research in the Life and Biomedical Sciences

<https://elifesciences.org/>

ePosters.net: The Online Journal of Scientific Posters

<http://www.eposters.net/>

European Bioinformatics Institute (EBI)

<http://www.ebi.ac.uk/about>

FAIRsharing – Curated, Informative and Educational Resource On Data and Metadata Standards, Interrelated To Databases and Data Policies

<https://fairsharing.org/>

Forward Thinking on the Bio Revolution with Jason Kelly and Dr. Michelle McMurry-Heath

<https://www.mckinsey.com/industries/life-sciences/our-insights/forward-thinking-on-the-bio-revolution-with-jason-kelly-and-dr-michelle-mcmurry-heath>

Frontiers in BioScience- Discover A World of Collaboration

<http://www.bioscience.org/>

Generative AI Resources 2024

<http://www.GenerativeAIResources.com/>

GigaScience Journal

<https://academic.oup.com/gigascience>

GenBank ®

<https://www.ncbi.nlm.nih.gov/genbank/>

Gene Ontology™ (GO) Consortium

<http://www.geneontology.org/>

Genes – Open Access Journal

<http://www.mdpi.com/journal/genes>

Genetics and Genomics From the U.S. Library of Medicine

<https://vsearch.nlm.nih.gov/vivisimo/cgi-bin/query-meta?query=Genetics+and+Genomics+&v%3Aproject.nlm-main-website>

Genomics Glossaries & Taxonomies

<http://www.genomicglossaries.com/>

Grant Forward - Start Moving Your Research Forward

<https://www.grantforward.com/>

International Cancer Genome Consortium (ICGC)

<http://www.icgc.org/>

International Journal of Agricultural and Biological Engineering (IJABE)

<http://www.ijabe.org/index.php/ijabe>

International Journal of Bioinformatics Research and Applications (IJBRA)

<http://www.inderscience.com/jhome.php?jcode=ijbra>

International Journal of Biological Sciences and Technology (IJBLST)

<http://www.ijblst.org/>

International Journal of Biomedical Science (IJBS)

<http://www.ijbs.org/HomePage.aspx>

International Journal of Healthcare Information Systems and Informatics (IJHISI)

<http://www.igi-global.com/journal/international-journal-healthcare-information-systems/1094>

isainfrastructure - Investigation/Study/Assay – Open Source ISA Framework

<http://isa-tools.org/>

Journal of Biomedical Sciences and Research (JBSR) [Archives available till 2011 issue]

<http://www.jbsr.pharmainfo.in/>

Journal of Biomedical Semantics

<http://www.jbiomedsem.com/>

Journal of Biomedicine and Biotechnology [now called BioMed Research International]

<http://www.hindawi.com/journals/bmri/>

Journal of Visualized Experiments (JoVE) - Biological Research in a Video Format

<http://www.jove.com/>

LabGuru - Research Management Resource – Your All-In-One Electronic Lab Notebook (ELN)

<http://www.labguru.com/>

Labroots - Scientific Social Networking Website

<https://www.labroots.com/>

LabWorm - Aggregator of Scientific Online Tools

<https://labworm.com/>

LeadDiscovery - Dedicated to Drug Discovery

<http://www.leaddiscovery.co.uk/>

LIMSwiki - Laboratory, Health, and Science Informatics Encyclopedia

https://www.limswiki.org/index.php/Main_Page

Mastodon Resources 2024

<http://www.MastodonResources.com/>

mBio – Open Access Journal

<http://mbio.asm.org/>

nanoHUB - Simulation, Education and Community for Nanotechnology

<https://www.nanohub.org/>

NLM Medical Text Indexer (MTI)

<http://ii.nlm.nih.gov/MTI/index.shtml>

NuGO Bioethics Guidelines Tool

<http://nugo.dife.de/bot/index.php>

Open Biological and Biomedical Ontologies (OBO)

<http://www.obofoundry.org/>

Open-i Project - An Open Access Biomedical Image Search Engine

<http://openi.nlm.nih.gov/>

Open MetaVerse Resources 2024

<http://www.OpenMetaVerse.us/>

OReFiL: Online Resource Finder for Lifesciences

<http://orefil.dbcls.jp/en/search/top>

PeerJ - Award Winning Biological, Medical, and Environmental Sciences Journal

<https://peerj.com/>

Peptides Guide

<http://www.peptidesguide.com/>

Personal Genome Project (PGP)

<http://www.personalgenomes.org/>

PhysioNet - Research Resource for Complex Physiologic Signals

<http://www.physionet.org/>

Plant Products Research Journal

<http://www.ajol.info/index.php/ppri>

Protocol Exchange

<https://protocolexchange.researchsquare.com/>

Protocol Online - Your Lab's Reference Book

<http://www.protocol-online.org/>

Public Data Sets on AWS

<http://aws.amazon.com/publicdatasets/>

PubMed - 30 million citations for biomedical literature from MEDLINE, life science journals, and online books

<https://pubmed.ncbi.nlm.nih.gov/>

R&D Chemicals - Chemical Compounds Database

<http://www.rdchemicals.com/>

Reflect: Automated Annotation of Scientific Terms of Proteins and Small Molecules

<http://reflect.ws/>

ResearchGATE - Professional Network for Scientists

<https://www.researchgate.net/>



Resource Identification Initiative

<https://www.force11.org/group/resource-identification-initiative>

Resource Informagen™ - Biotech Company Directories

<http://informagen.com/Directories/Biotech.php>

Resources for Bioinformatics

<http://guides.lib.udel.edu/content.php?pid=163662>

RNAMiner - A Bioinformatics Protocol for Mining Large RNA-Seq Transcriptomics Data

<http://calla.rnet.missouri.edu/rnaminer/>

Scientific Protocols

<https://protocols.scienceexchange.com>

Scitable - A Collaborative Learning Space for Life Sciences

<http://www.nature.com/scitable>

SHIRAZ Project – Acquine – Aesthetic Quality Inference Engine

<http://shiraz.ist.psu.edu/>

South African National Bioinformatics Institute

<http://www.sanbi.ac.za/>

The Biology Project

<http://www.biology.arizona.edu/>

The Cell Image Library™

<http://www.cellimagelibrary.org/>

The International Genome Sample Resource

<https://www.internationalgenome.org/>

The Kepler Project

<https://kepler-project.org/>

The National Human Genome Research Institute: Fact Sheets About Genomics

<http://www.genome.gov/10000202>



The TAMBIS Project

<http://www.cs.man.ac.uk/~stevensr/tambis/>

The Winnower - Open Access Online Scholarly Publishing Platform

<https://thewinnower.com/>

Transcriptic – Powering On-DEMAND Discovery Biology - Strateos

<https://www.transcriptic.com/>

<https://strateos.com/>

uBio - Indexing and Organizing 11,106,374 Biological Names

<http://www.ubio.org/>

UK Biobank - Improving the Health of Future Generations

<http://www.ukbiobank.ac.uk/>

VADLO - BioMedical and Life Sciences Search Engine

<http://vadlo.com/>

Visual Medical Dictionary

<http://www.curehunter.com/public/dictionary.do>

HEALTH INFORMATICS: (Medical Informatics)

American Medical Informatics Association (AMIA)

<http://www.amia.org/>

Authoratory - Database of Leading PubMed Scientists

<http://www.authoratory.com/>

CureHunter - Medical Search and Discovery

<http://www.CureHunter.com/>

**DIRECT2Experts - Distributed Interoperable Biomedical Research Experts
Collaboration Tool**

<http://direct2experts.org/>



EAGLE-I - Search Top Categories From 100,800 Biomedical Resources

<https://www.eagle-i.net/>

Encyclopedia of Biomaterials and Biomedical Engineering

<http://www.tandfonline.com/doi/book/10.1081/E-EBBE>

Framingham SNP Health Association Resource (SHARe)

http://www.ncbi.nlm.nih.gov/projects/gap/cgi-bin/study.cgi?study_id=phs000007.v20.p8

Health Informatics Forum - Discussion Forum for Health Informatics Professionals and Students

<http://www.healthinformaticsforum.com/>

International Journal of Biomedical Sciences (IJBS)

<http://www.ijbs.org/>

International Journal of Medical Microbiology

<http://www.sciencedirect.com/science/journal/14384221>

JMIR : Journal of Medical Internet Research

<http://www.jmir.org/>

OpenClinica – Largest Open Source Community Powering Better Clinical Research

<https://community.openclinica.com/>

openEHR – Open Industry Specifications, Models, and Software for e-health

<http://www.openehr.org/>

NEUROINFORMATICS: (NI)

International Neuroinformatics Coordinating Facility (INCF)

<http://www.incf.org/>

National Ecological Observatory Network (NEON)

<http://www.neoninc.org/>

NIH Guide: The Human Brain Project (Neuroinformatics): Phase I - Feasibility; Phase II - Refinements, Maintenance and Integration [Archives]

<http://grants1.nih.gov/grants/guide/pa-files/PAR-03-035.html>

SenseLab – National Databases – Olfactory Databases – Disease Database

<http://senselab.med.yale.edu/>

BIODIVERSITY INFORMATICS: (BDI)

Biodiversity Informatics Peer Reviewed Open Access Journal

<https://journals.ku.edu/index.php/jbi>

Chemistry & Biodiversity

<http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291612-1880>

Global Biodiversity Information Facility

<http://www.gbif.org/>

GRAIN - Agricultural Biodiversity

<http://www.grain.org/>

Overview of Biodiversity Informatics

<http://research.calacademy.org/>

BIOMOLECULAR INFORMATICS: (BioInformatics)

AddGene - Better Way to Share Plasmids

<http://www.addgene.org/>

Algorithms for Molecular Biology

<http://www.almob.org/>

AlphaFold Protein Structure Database

<https://alphafold.ebi.ac.uk/>

American Journal of Medical Genetics Part B: Neuropsychiatric Genetics

<http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291552-485X>

A New CRISPR Tool Flips Genes On and Off Like a Light Switch

<https://singularityhub.com/2021/04/27/a-new-crispr-tool-flips-genes-on-and-off-like-a-light-switch/>

Ares Lab Yeast Intron Database

http://compbio.soe.ucsc.edu/yeast_introns.html

arXiv.org – Open Access e-Prints

<https://arxiv.org/>

ASC: Active Sequence Collection

<http://bioinformatica.isa.cnr.it/ASC/>

BELIT - Bioethics Literature Database

http://www.drze.de/belit-1/search-2/quick-search/recherche.html?set_language=en

Bento Lab – The Whole DNA Analysis Lab In Your Hands

<https://www.bento.bio/>

Biocompare - Buyer's Guide for Life Scientists

<http://www.biocompare.com/>

BioForge - Community for Biological Innovation

<http://www.cambia.org/daisy/cambia/4272>

BioGRID

<http://www.thebiogrid.org/>

Bioinformatics

<http://informagen.com/Bioinformatics.php>

Bioinformatics.Net

<http://www.technologynetworks.com/Informatics/>

BioInformatics.org

<http://www.BioInformatics.org/>

BioInformatics Links

<http://www.iu.uib.no/~inge/list.html>

BioInformatics Tools

http://web.ornl.gov/sci/techresources/Human_Genome/index.shtml

<http://www.ncbi.nlm.nih.gov/guide/all/#tools>

Bioinformatic Workflow Builder Interface

<https://www.ibm.com/developerworks/community/groups/service/html/communityview>

Bioinformation

<http://www.bioinformation.net/>

BioLINCC – Biologic Specimen and Data Repository Coordinating Center

<https://biolincc.nhlbi.nih.gov/>

Biology Direct

<http://www.biologydirect.com/>

Biomacromolecules

<http://pubs.acs.org/journal/bomaf6>

Bio Mapping / Emotion Mapping

<http://biomapping.net/>

BioMed Central

<http://www.biomedcentral.com/>

Biometric Technology Today

<http://www.sciencedirect.com/science/journal/09694765>

BioMolecular Engineering Research Institute (BMERC)

<http://www.bu.edu/bmerc/>

BIONLP.ORG - Natural Language Processing of Biology Text

<http://www.ccs.neu.edu/home/futrelle/bionlp/>

BioRuby [Open source bioinformatics library for Ruby]

<http://bioruby.org/>



bioRxiv – The Preprint Server for Biology

<http://biorxiv.org/>

Biotechnology Journal (BTJ)

<http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291860-7314>

Biotechnology Resources

<http://www.BiotechnologyResources.info/>

BIOZ – Best Way To Find Scientific Data

<https://www.bioz.com/>

BLAST UTR db: Untranslated Regions Database

<http://www.ba.itb.cnr.it/BIG/Blast/BlastUTR.html>

Briefings in Functional Genomics and Proteomics

<http://bfg.oxfordjournals.org/>

BSML - Bioinformatics Sequence Markup Language

<http://xml.coverpages.org/bsml.html>

Cambridge Crystallographic Data Centre

<http://www.ccdc.cam.ac.uk/>

Cancer Genome Atlas

<http://cancergenome.nih.gov/>

Cell Biochemistry and Biophysics (CBB)

<http://www.springer.com/life+sciences/biochemistry+%26+biophysics/journal/12013>

Cell Division

<http://www.celldiv.com/>

Certara – Advancing Modern, Efficient Drug Development

<https://www.certara.com/>

Chemical Biology & Drug Design

<http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291747-0285>

Clarivate – Changing the Way the World’s Risk-Takers and Trailblazers Create Life-Changing Innovations

<https://clarivate.com/>

Computational Biology and Chemistry

<http://www.sciencedirect.com/science/journal/14769271>

Connectivity Map - Connecting Diseases, Genes and Drugs (CMAP)

http://www.broadinstitute.org/genome_bio/connectivitymap.html

CorePsych - Brain and Body Connections

<http://www.corepsych.com/>

CRISPR – Clustered Regularly Interspaced Short Palindromic Repeats

<https://www.cbinsights.com/research/what-is-crispr>

CRISPROff – Programmable Epigenetic Memory Writer

[https://www.cell.com/cell/fulltext/S0092-8674\(21\)00353-6?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0092867421003536%3Fshowall%3Dtrue](https://www.cell.com/cell/fulltext/S0092-8674(21)00353-6?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0092867421003536%3Fshowall%3Dtrue)

CRISPR On-Off Switch Will Help Unlock the Secrets of Our Immune System

<https://singularityhub.com/2022/03/08/crispr-on-off-switch-will-help-uncover-mysteries-of-our-immune-system/>

CRISPR Therapy Cure First Genetic Disorder Inside the Body

<https://bigthink.com/health/crispr-therapy-cures-genetic-disorder/>

CSH Protocols

<http://cshprotocols.cshlp.org/>

CUTG : Codon Usage Tabulated from GenBank

<http://www.kazusa.or.jp/codon>

Data Mining Resources 2022/2023

<http://www.DataMiningResources.info/>

dbGaP - Database of Genotype and Phenotype

<http://www.ncbi.nlm.nih.gov/gap>

DNA Research

<http://dnaresearch.oxfordjournals.org/>

DrugBank Database

<http://www.drugbank.ca/>

EBI and Ghent University Launch PRIDE: An Open Source Database Of Protein Identifications

http://www.innovations-report.com/html/reports/life_sciences/report-48290.html

EdX: The Extremes of Life: Microbes and their Diversity

<https://www.edx.org/course/extremes-life-microbes-diversity-kyotoux-003x-0>

eLabFTW - Free and Open Source Electronic Lab Notebook

<https://www.elabftw.net/>

Electronic Laboratory Notebook (ELN) and Laboratory Information Management System (LIMS)

<http://www.labii.com/>

eLife – Open Science and Open Technology Innovation

<https://elifesciences.org/>

EMBL SMART : Simple Modular Architecture Research Tool (for Proteins)

<http://smart.embl.de/>

Encyclopedia of DNA Elements (ENCODE)

<http://www.encodeproject.org/ENCODE/>

Ensembl Genome Browser

<http://www.ensembl.org/>

Environmental Bioindicators

<http://www.tandfonline.com/toc/uebi20/current>

European Bioinformatics Institute – The Home for Big Data in Biology – EMBL-EBI

<http://www.ebi.ac.uk/>



European Bioinformatics Institute: Research Groups

<http://www.ebi.ac.uk/research>

Evolutionary Intelligence – Create Intelligent Algorithms

<http://www.neuroblast.net/>

ExploreProtocols.io - Share and Discover Life Science Methods

<https://www.protocols.io/>

Functional Glycomics Gateway

<http://www.functionalglycomics.org/>

Genamics SoftwareSeek

<http://genamics.com/software/>

Genome Bioinformatics – Genome Browser - UCSC

<http://genome.ucsc.edu/>

Genome Biology and Evolution

<http://gbe.oxfordjournals.org/>

Genome-Tools

http://freecode.com/projects/genome-tools?branch_id=46085&release_id=183048

Genomics, Proteomics & Bioinformatics

<http://www.sciencedirect.com/science/journal/16720229>

GenScript - Your One Stop Wet Lab for Biology

<http://www.genscript.com/>

Guide to Selected Bioinformatics Internet Resources

<http://www.istl.org/02-winter/internet.html>

GUS - The Genomics Unified Schema [Site Last Updated 2005]

<http://www.gusdb.org/>

How the Bio Revolution Could Transform the Competitive Landscape

<https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/how-the-bio-revolution-could-transform-the-competitive-landscape>



HS3D - Homo Sapiens Splice Sites Dataset

<http://www.sci.unisannio.it/docenti/rampone>

International Journal of Data Mining and Bioinformatics (IJDMB)

<http://www.inderscience.com/jhome.php?jcode=ijdmb>

Internet Resources for Bioinformatics

<http://guides.lib.udel.edu/content.php?pid=163662>

Invertebrate Biology

<http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291744-7410>

Journal of Biological Chemistry

<http://www.jbc.org/>

Journal of Biomaterials Science, Polymer Edition

<http://www.ingentaconnect.com/content/tandf/bsp>

Journal of Genetics

<http://www.ias.ac.in/jgenet/>

Journal of Molecular Histology

<http://link.springer.com/journal/10735>

Journal of Molecular Signaling

<http://www.jmolecularsignaling.com/>

Journal of Proteome Research

<http://pubs.acs.org/journal/jprobs>

Kaggle - Data Mining, Forecasting and BioInformatics Competitions

<http://kaggle.com/>

KEGG: Kyoto Encyclopedia of Genes and Genomes

<http://www.genome.jp/kegg/>

Lawrence Berkeley National Laboratory: VISTA – Tools for Comparative Genomics

<http://genome.lbl.gov/vista/index.shtml>

MethDB : DNA Methylation Database

<http://www.methdb.de/>

Microbiology [Particular coverage for Russian microbiology-related developments]

<http://link.springer.com/journal/11021>

MIX 2.0 - Meta-analysis with Interactive eXplanations in Excel

<http://www.meta-analysis-made-easy.com/>

Molecular and Cellular Proteomics (MCP)

<http://www.mcponline.org/>

Molecular BioSystems

<http://pubs.rsc.org/en/journals/journalissues/mb#!recentarticles&all>

Molecular Cytogenetics

<http://www.molecularcytogenetics.org/>

Molecular Genetics, Microbiology and Virology

<http://link.springer.com/journal/11965>

Molecular Plant-Microbe Interactions (MPMI)

<http://www.apsnet.org/publications/mpmi/Pages/default.aspx>

Multi-Purpose Mini-CRISPR Is Like a Tiny Swiss Army Knife

<https://www.futurity.org/crispr-genetic-engineering-2622802-2/>

National Center for BioTechnology Information (NCBI)

<http://www.ncbi.nlm.nih.gov/>

National Information Center on Health Services Research and Health Care Technology (NICHSR)

https://hsric.nlm.nih.gov/hsric_public/

Nature Methods

<http://www.nature.com/nmeth/index.html>

Nature Nanotechnology

<http://www.nature.com/nnano/index.html>

Neurochemical Journal

<http://link.springer.com/journal/11710>

Neuroblast – Artificial Minds

<http://www.neuroblast.net/>

Neuron Glia Biology

<http://journals.cambridge.org/action/displayJournal?jid=NGB>

Neurotransmitter - Biomedical Information in Neuroscience, Pharmacology and Psychology

<http://www.neurotransmitter.net/>

New CRISPR Tool Protects Against Viruses Without Making Any DNA Cuts

<https://singularityhub.com/2022/06/06/new-crispr-tool-protects-against-viruses-without-making-any-dna-cuts/>

New Database of 660,000 Assembled Bacterial Genomes Sheds Light on the Evolution of Bacteria

<https://phys.org/news/2021-11-database-bacterial-genomes-evolution-bacteria.html>

New Mini-CRISPR Systems Could Dramatically Expand the Scope of Gene Therapy

<https://singularityhub.com/2021/09/05/new-mini-crispr-systems-could-dramatically-expand-the-scope-of-gene-therapy/>

New Open-Source Software Automates RNA Analysis to Speed Up Research and Drug Development

<https://phys.org/news/2022-05-open-source-software-automates-rna-analysis.html>

New Virus-Like Particles Can Deliver CRISPR to Any Cell in the Body

<https://singularityhub.com/2022/01/18/new-ultra-efficient-engineered-carriers-could-overhaul-genetic-therapies/>

NHGRI Statute and Legislation Database

<http://www.genome.gov/PolicyEthics/LegDatabase/pubsearch.cfm>

Oligonucleotides – now known as Nucleic Acid Therapeutics

<http://online.liebertpub.com/loi/oli>

OMIM - Online Mendelian Inheritance in Man

<http://www.ncbi.nlm.nih.gov/omim>

PeerJ – Award Winning Biological, Medical, and Environmental Sciences Journal

<https://peerj.com/>

PharmGKB: The Pharmacogenetics and Pharmacogenomics Knowledge Base

<http://www.pharmgkb.org/>

PhenX Toolkit

<https://www.phenxtoolkit.org/>

PLOS: Pathogens

<http://journals.plos.org/plospathogens/>

PPAR Research

<http://www.hindawi.com/journals/ppar/>

Programming Life: An Interview with Jennifer Doudna – Co-Discoverer of CRISPR-Cas9

<https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/programming-life-an-interview-with-jennifer-doudna>

Project Ensembl

<http://asia.ensembl.org>

Protein Journal

<http://link.springer.com/journal/10930>

Protocol Exchange

<https://www.nature.com/protocolexchange>

Protocol Online - Your Lab's Reference Book

<http://www.protocol-online.org/>

Proteomics

<http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291615-9861>

PSI-Nature Structural Biology Knowledgebase (PSI SBKB)

<http://sbkb.org/>

RECAP – Informing Key Biopharmaceutical Decisions - Clarivate
<http://www.recap.com/>

Registry of Standard Biological Parts
http://parts.igem.org/Main_Page

Russian Journal of Genetics
<http://link.springer.com/journal/11177>

Scalable Molecular Dynamics (NAMD)
<http://www.ks.uiuc.edu/Research/namd/>

Scientific Protocols - Free and Easy Way To Share Scientific Protocols
<https://protocols.scienceexchange.com/>

Search NCBI
<https://www.ncbi.nlm.nih.gov/search/>

S/MARt DB
<http://smartdb.bioinf.med.uni-goettingen.de/>

SmidgION - Nanopore Sensing for Use With Mobile Devices
<https://nanoporetech.com/products/smidgion>

Source Code for Biology and Medicine
<http://www.scfbm.org/>

STRBase : Short Tandem Repeat DNA Internet Database
<http://www.cstl.nist.gov/div831/strbase>

StructuralBiology KnowledgeBase
<http://sbkb.org/>

Super-Precise CRISPR Gene Editing Tool Is Set to Tackle Tough Genetic Diseases
<https://singularityhub.com/2021/10/19/super-precise-crispr-tool-set-to-tackle-tough-genetic-disorders/>

Synapse
<http://onlinelibrary.wiley.com/journal/10.1002/%28ISSN%291098-2396>



Talking Glossary of Genetic Terms

<http://www.genome.gov/glossary/>

Textpresso – Knowledge Discovery Through Full Text Mining, Classification and Searching

<http://www.textpresso.org/>

The Bio Revolution: Innovations Transforming Economies, Societies, and Our Lives

<https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/the-bio-revolution-innovations-transforming-economies-societies-and-our-lives>

The CIPRES Science Gateway V. 3.3

<https://www.phylo.org/>

The CRISPR Family Tree Holds a Multitude of Untapped Gene Editing Tools

<https://singularityhub.com/2021/09/14/the-crispr-family-tree-holds-a-multitude-of-untapped-gene-editing-tools/>

The Genetic Codes

<http://www.ncbi.nlm.nih.gov/Taxonomy/Utils/wprintgc.cgi?mode=c>

The Kepler Project

<https://kepler-project.org/>

The PubChem Project – Explore Chemistry

<http://pubchem.ncbi.nlm.nih.gov/>

The TAMBIS Project

<http://www.cs.man.ac.uk/~stevensr/tambis/>

The Wellcome Trust Sanger Institute

<http://www.sanger.ac.uk/>

The Winnower – Open Access Online Scholarly Publishing Platform

<https://thewinnower.com/>

ToPNet (Protein Topology Calculation Software)

<http://networks.gersteinlab.org/>

Transcriptic - Discovery Biology On Demand - Strateos

<https://www.transcriptic.com/>

Transinsight - Intelligent Search Technologies for the Life Sciences

<http://transinsight.com/>

Transmembrane Structure Prediction Servers

<http://split.pmfst.hr/split/4/others.html>

Tree of Life Web Project (ToL)

<http://tolweb.org/tree/>

UCLA Bioinformatics Program

<http://www.bioinformatics.ucla.edu/>

UK Biobank – Improving the Health of Future Generations

<http://www.ukbiobank.ac.uk/>

VADLO - Life Sciences Search Engine

<http://www.vadlo.com/>

Visual Complexity

<http://www.visualcomplexity.com/>

World's Knowledge at Your Fingertips

<https://mindzilla.com/>

ZBIT Bioinformatics Toolbox: A Web-Platform for Systems Biology and Expression Data Analysis

<http://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0149263>

Subject Tracer™ Information Blogs

Subject Tracer™ Information Blogs created and developed by the Virtual Private Library™ combine the best of the latest tools on the Internet. Using bots, blogs and news aggregators the Subject Tracer™ Information blogs generate RSS feeds with the latest resources to create a current information resource flow through niched subject tracers. I am proud to be the creator of the Internet's first Subject Tracer™ Information Blogs:

Virtual Private Library™

<http://www.VirtualPrivateLibrary.com/>

Accessibility Resources

<http://www.AccessibilityResources.info/>

Agriculture Resources

<http://www.AgricultureResources.info/>

AnswerSpot

<http://www.AnswerSpot.co/>

Artificial Intelligence Resources

<http://www.AIResources.info/>

Astronomy Resources

<http://www.AstronomyResources.info/>

Auction Resources

<http://www.AuctionResources.info/>

Biological Informatics

<http://www.BiologicalInformatics.info/>

Biotechnology Resources

<http://www.BiotechnologyResources.info/>

Bot Research

<http://www.BotResearch.info/>

Business Intelligence Resources

<http://www.BIResources.com/>



ChatterBots

<http://www.ChatterBots.info/>

Data Mining Resources

<http://www.DataMiningResources.info/>

Deep Web Research

<http://www.DeepWebResearch.info/>

Directory Resources

<http://www.DirectoryResources.info/>

eCommerce Resources

<http://eCommerceResources.info/>

Education and Academic Resources

<http://www.EducationResources.info/>

Elder Resources

<http://www.ElderResources.info/>

Employment Resources

<http://www.EmploymentResources.info/>

Entrepreneurial Resources

<http://www.EntrepreneurialResources.info/>

Fact Checkers Directory

<http://www.FactCheckers.us/>

Financial Sources

<http://www.FinancialSources.info/>

Finding People

<http://www.FindingPeople.info/>

Games Resources

<http://www.GamesResources.info/>



Genealogy Resources

<http://www.GenealogyResources.info/>

Grant Resources

<http://www.GrantResources.info/>

Green Files

<http://www.GreenFiles.info/>

Grid, Distributed and Cloud Computing Resources

<http://www.GridResources.info/>

Healthcare Resources

<http://www.HealthcareResources.info/>

Information Futures Markets

<http://www.InformationFuturesMarkets.com/>

Information Quality Resources

<http://www.InformationQualityResources.info/>

International Trade Resources

<http://www.InternationalTradeResources.info/>

Internet Alerts

<http://www.InternetAlerts.info/>

Internet Demographics

<http://www.InternetDemographics.info/>

Internet Experts

<http://www.InternetExperts.info/>

Internet Hoaxes

<http://www.InternetHoaxes.info/>

Intrapreneurial Resources

<http://www.IntrapreneurialResources.info/>

Journalism Resources

<http://www.JournalismResources.info/>

Knowledge Discovery

<http://www.KnowledgeDiscovery.info/>

Military Resources

<http://www.MilitaryResources.info/>

New Economy Analytics, Resources and Alerts

<http://www.NewEconomyAnalytics.com/>

Outsourcing/Offshoring Information and Resources

<http://www.OutsourcingOffshore.us/>

Predictions Markets

<http://www.PredictionMarkets.com/>

Privacy Resources

<http://www.PrivacyResources.info/>

Reference Resources

<http://www.ReferenceResources.info/>

Research Resources

<http://www.ResearchResources.info/>

RestStress™

<http://www.RestStress.com/>

Script Resources

<http://www.ScriptResources.info/>

ShoppingBots

<http://www.ShoppingBots.info/>

Social Informatics

<http://www.SocialInformatics.info/>

Statistics Resources and Big Data
<http://www.StatisticsResources.info/>

Student Research Resources
<http://www.StudentResearch.info/>

Theology Resources
<http://www.TheologyResources.info/>

Tutorial Resources
<http://www.TutorialResources.info/>

World Wide Web Reference
<http://www.WWWReference.info/>

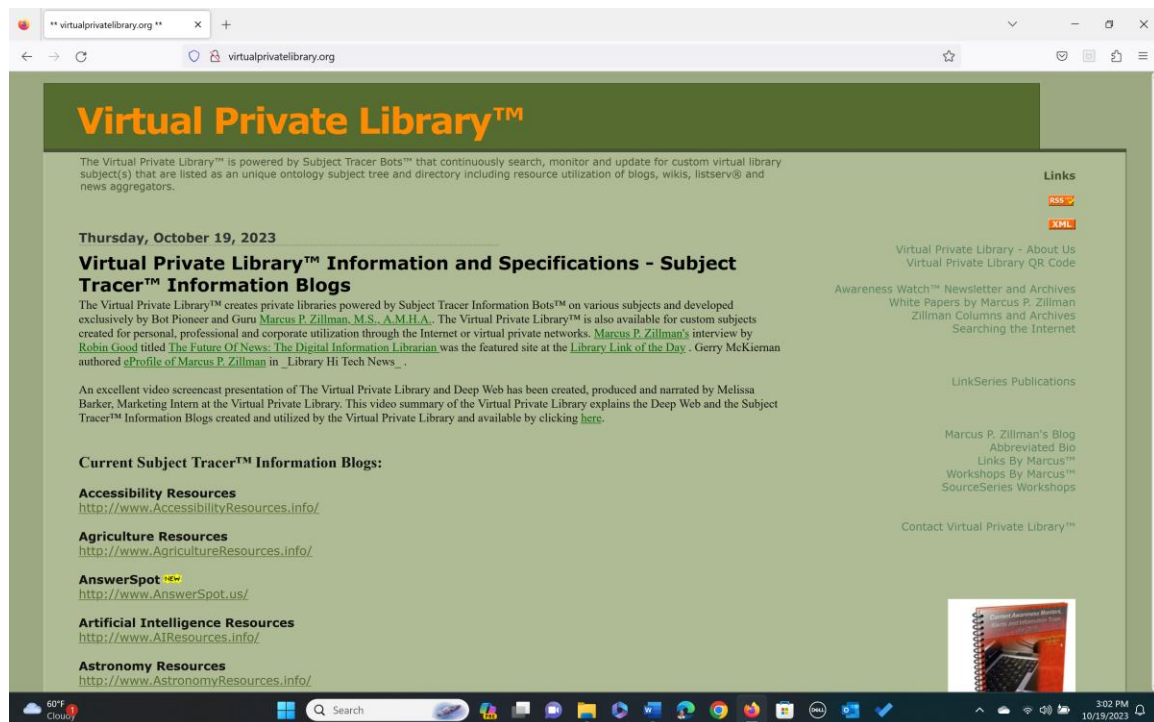


Figure 2: Virtual Private Library™

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2023 Biological Informatics MiniGuide

[http://www.2023BiologicalInformaticsMiniGuide.com/
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knowledge harvesting, artificial intelligence and bots/intelligent agents. He has created numerous world wide web sites including 54 Subject Tracer™ Information Portals and Blogs; written a number of internet miniguides, white papers, manuals and books; hosted over 160 weekly Internet television shows, writes a weekly and monthly column on Current Awareness on the Internet; writes a monthly newsletter Awareness Watch and delivers keynote presentations throughout the international marketplace. He also actively delivers one and two day workshops for key industry sectors displaying how the Internet can be used as a tool to maintain current awareness and professional competencies. Additional websites by Marcus P. Zillman, M.S., A.M.H.A.:

Marcus P. Zillman's Blog (26,000+ Postings)

<http://www.zillman.us/>

Marcus P. Zillman Abbreviated Bio

<http://www.zillman.info/>

Awareness Watch™ Newsletter

<http://www.AwarenessWatch.com/>

Marcus P. Zillman's Columns

<http://www.ZillmanColumns.com>

LinkSeries Publications

<http://www.LinkSeries.com/>

Links By Marcus™

<http://www.LinksByMarcus.com/>

Workshops By Marcus™

<http://www.WorkshopsByMarcus.com/>

SourceSeries Internet Research Workshops

<http://www.SourceSeries.com/>

Watch Marcus™

<http://www.WatchMarcus.com/>

listen to marcus™

<http://www.ListenToMarcus.com>



Research White Papers, Articles, Lectures and Speeches by Marcus P. Zillman, M.S., A.M.H.A.:

2022 Guide to Finding Experts by Using the Internet

<http://www.FindingExperts.info/>

2022 Guide to Finding People Resources and Sites

<http://www.FindingPeople.info/>

2022 Guide to Internet Privacy Resources and Tools

<http://www.2022InternetPrivacy.com/>

2023 Directory of Directories

<http://www.2023DirectoryOfDirectories.com/>

2023 Guide to Searching the Internet

<http://www.SearchingTheInternet.info/>

2023 MiniGuides Series by Marcus P. Zillman, M.S., A.M.H.A.

<http://www.2023MiniGuides.com/>

2023 New Economy Resources

<http://www.2023NewEconomy.com/>

Academic and Scholar Search Engines and Sources 2024

<http://www.ScholarSearchEngines.com/>

Bots, Blogs and News Aggregators 2024

<http://www.BotsBlogs.com/>

Business Intelligence Online Resources 2022/2023

<http://www.BIOnlineResources.com/>

Cloud Computing Resources Primer 2024

<http://www.zillman.us/white-papers/grid-distributed-and-cloud-computing-resources-primer/>

Current Awareness Tools 2024

<http://www.CurrentAwarenessTools.com/>



Deep Web Research and Discovery Resources 2024 Online White Paper
<http://DeepWeb.us/>

eMarketing MiniGuide 2024
<http://www.eMarketingMiniGuide.com/>

eReference Library Link Toolkit 2022/2023
<http://www.eReferenceLibrary.com/>

Fact Check Resources Miniguide 2024
<http://www.FactCheckMiniguide.com/>

Finding Experts By Using the Internet 2022/2023
<http://www.FindingExperts.info/>

Finding People Resources and Sites 2022/2023
<http://www.FindingPeople.info/>

Healthcare Bots and Subject Directories 2022/2023
<http://www.HealthcareBots.info/>

Knowledge Discovery Resources 2023
<http://www.KDResources.info/>

New Economy Resources 2023
<http://www.NewEconomyResources.com/>

New Normal StartUp Resources 2024
<http://www.NewNormalStartUpResources.com/>

Online Research Browsers and Data Visualization Tools 2023
<http://www.zillman.us/white-papers/online-research-browsers/>

Online Research Tools 2023
<http://www.OnlineResearchTools.info/>

Online Social Networking 2022/2023
<http://www.OnlineSocialNetworking.info/>



Open Educational Resources (OER) Sources 2024

<http://www.OERSources.com/>

Open Source Intelligence (OSINT) Miniguide 2024

<http://www.OSINTminiguide.com>

Searching the Internet 2023

<http://www.SearchingTheInternet.info/>

Social Informatics 2022/2023

<http://www.SocialInformatics.net/>

Subject Tracers 2022/2023

<http://www.SubjectTracers.com/>

Using the Internet As a Dynamic Resource Tool for Knowledge Discovery 2023

<http://www.zillman.us/white-papers/using-the-internet-as-a-dynamic-resource-tool-for-knowledge-discovery/>

Web Data Extractors 2023

<http://www.WebDataExtractors.com/>

Web Guide for the New Economy 2023

<http://www.WebGuideNewEconomy.com/>

White Papers 2022/2023 by Marcus P. Zillman, M.S., A.M.H.A.

<http://www.WhitePapers.us>

Internet Tutor by Marcus P. Zillman, M.S., A.M.H.A.

<http://www.InternetTutor.info/>

Visit this site to learn about the availability of Marcus P. Zillman to tutor you or your associate one on one in the privacy of your residence or office on the latest happenings of the Internet including Internet basics to advanced Internet searching using bots and creating your own personal blog.

Internet Speaking by Marcus P. Zillman, M.S., A.M.H.A.

<http://www.InternetSpeaker.net>

Visit this site to learn about Marcus P. Zillman's speaking engagements for your



organization meetings and events. View and listen to his previous presentations as well as his weekly television shows.

Internet Consulting by Marcus P. Zillman, M.S., A.M.H.A.

<http://InternetConsultant.BlogSpot.com/>

Visit this site to obtain information about obtaining the consultation services of Marcus P. Zillman for your company including eCommerce audits, utilization of bots, blogs and news aggregators or the creation of your own personal virtual private library powered by Subject Tracer™ Information bots!

Current Awareness Monitors, Alerts and Information Traps

<http://www.ecurrentAwareness.com/>

Marcus P. Zillman's latest report Current Awareness Monitors, Alerts and Information Traps for is available for purchase online and for immediate download. This report is a comprehensive listing of the latest resources, sources and sites for current awareness on the Internet. This is a must read for anyone who must stay current in their profession and/or business activity as the list of URLs will keep you at the leading edge of your career.

Market Intelligence Resources

<http://www.MarketIntelligenceResources.com/>

Marcus P. Zillman's just released professional Internet MiniGuide is titled Market Intelligence Resources and is available for purchase online and immediate download. This 193 page digital miniguide represents a comprehensive listing of the latest resources, sources and sites to discover the latest Market Intelligence sources available on the Internet with many of them freely available! Designed specifically for today's entrepreneur, professional and/or investor.

Entrepreneurial Links 101

<http://www.EntrepreneurialLinks.com/>

Marcus P. Zillman's newly released 231 page eReference digital book for the up and coming entrepreneur. Entrepreneurial Links 101 gives an alphabetical listing of the very best Internet and World Wide Web sites covering Entrepreneur Resources, Business Intelligence Resources and an extremely comprehensive list of Online Research Tools. This is considered by many to be the entrepreneur's bible for finding relevant and competent online resources!



Internet Privacy and Security Resources

<http://www.InternetPrivacySecurity.net/>

Marcus P. Zillman's latest eReference digital publication is a selected comprehensive alphabetical listing of the latest resources and sites covering all aspects of privacy and security currently available over the Internet. From the board room to the family room, these resources and sites give you the information you need to maintain your privacy and security as you use the Internet in your business and personal life.

Research Resources Online Guide

<http://www.ResearchResourcesOnline.net/>

Marcus P. Zillman's latest [LinkSeries Publication](#) is a 340 page digital guide of a selected comprehensive alphabetical listing of the latest and greatest resources and sites covering all areas of research that is currently available over the Internet. The guide covers online research resources and tools for the Newbie to research as well as the Seasoned researcher. Contents include: a) Research Resources, b) Research Tools, c) Student Research Resources Toolkit, d) Knowledge Discovery/Management and Data Mining Resources, e) Knowledge Discovery/Retrieval and the World Wide Web Resources, f) Business Intelligence Resources, g) Reference Resources, and h) Subject Tracer™ Information Blogs.

The Survivor's Manual for The New Economy.

<http://www.NewEconomyManual.com/>

Marcus P. Zillman's latest LinkSeries Publication is a 239 page digital read that gives excellent resources and annotated sources for the new economy analytics, alerts, ecommerce, financial sources, invisible and deep web resources, social and business networking sources along with new economy competitive and business intelligence resources and an extremely comprehensive listing of new economy online tools.

