

 OPEN ACCESS  PEER-REVIEWED

RESEARCH ARTICLE

## MetaStorm: A Public Resource for Customizable Metagenomics Annotation

Gustavo Arango-Argoty, Gargi Singh, Lenwood S. Heath, Amy Pruden, Weidong Xiao, Liqing Zhang 

Published: September 15, 2016 • <https://doi.org/10.1371/journal.pone.0162442>

**Citation:** Arango-Argoty G, Singh G, Heath LS, Pruden A, Xiao W, Zhang L (2016) MetaStorm: A Public Resource for Customizable Metagenomics Annotation. PLoS ONE 11(9): e0162442. <https://doi.org/10.1371/journal.pone.0162442>

**Editor:** Zhang Zhang, Beijing Institute of Genomics Chinese Academy of Sciences, CHINA

**Received:** April 26, 2016; **Accepted:** August 23, 2016; **Published:** September 15, 2016

**Copyright:** © 2016 Arango-Argoty et al. This is an open access article distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Data Availability:** All relevant data are contained within the paper. MetaStorm metagenomic analysis server can be accessed at this URL: <http://bench.cs.vt.edu/MetaStorm/login>. Synthetic Dataset that can be used to test the functionality of MetaStorm can be found here: <https://figshare.com/s/967001798b5c8b28160d>.

**Funding:** This work is supported by the Interdisciplinary Graduate Education Program (IGEP) at Virginia Tech, National Science Foundation (NSF) awards 1402651, 1545756, 1236005, and 1438328, US Department of Agriculture NIFA award #2014-05280, and the Alfred P. Sloan Foundation Microbiology of the Built Environment program. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

**Competing interests:** The authors have declared that no competing interests exist.

# Plos One - Why Open Access Matters

Most publishers own the rights to the articles in their journals. Anyone who wants to read the articles must pay to access them. **Anyone who wants to use the articles in any way must obtain permission from the publisher and is often required to pay an additional fee.**

Although many researchers can access the journals they need via their institution and think that access is free, in reality it is not. The institution has often been involved in lengthy negotiations around the price of their site license and reuse of this content is limited.

Paying for access to journals makes sense in the world of print publishing, where providing articles to each reader requires the production of physical copies of articles, **but in the online world, with distribution as wide as the internet's reach, it makes much less sense.**

## How It Works at PLOS

PLOS applies the [Creative Commons Attribution \(CC BY\) license](#) to works we publish. This license was developed to facilitate Open Access—namely, free immediate access to, and unrestricted reuse of, original works of all types. Under this license, authors agree to make articles legally available for reuse, without permission or fees, for virtually any purpose. Anyone may copy, distribute or reuse these articles, as long as the author and original source are properly cited. Additionally, the journal platform that PLOS uses to publish research articles is [Open Source](#).

## Additional Open Access Resources

There are many other organizations, such as [SPARC](#) (the Scholarly Publishing and Academic Resources Institute) and the [Open Society Foundations](#) that work tirelessly for progress in Open Access. You can find additional [free resources](#) to help you learn more or to advocate for Open Access journals at your institution.

Chapter 3: IMPROVING ANTIBIOTIC RESISTANCE ANNOTATION was published on microbiome an Open Access journal. Authors have the copyright of the papers.

Software | Open Access

# DeepARG: a deep learning approach for predicting antibiotic resistance genes from metagenomic data

Gustavo Arango-Argoty, Emily Garner, Amy Pruden, Lenwood S. Heath, Peter Vikesland and Liqing Zhang 

*Microbiome* 2018 6:23

<https://doi.org/10.1186/s40168-018-0401-z> | © The Author(s). 2018

Received: 29 June 2017 | Accepted: 10 January 2018 | Published: 1 February 2018

## Copyright

© The Author(s). 2018

## Microbiome Journal - About

### Aims and scope

The central purpose of *Microbiome* is to unite investigators conducting microbiome research in environmental, agricultural, and biomedical arenas.

Topics broadly addressing the study of microbial communities, such as, microbial surveys, bioinformatics, meta-omics approaches and community/host interaction modeling will be considered for publication. Through this collection of literature

*Microbiome* hopes to integrate researchers with common scientific objectives across a broad cross-section of sub-disciplines within microbial ecology.

### **Additional Instructions for Authors for *Microbiome***

Nomenclature of organisms: Bacterial names should be written according to the guidelines of the American Society for Microbiology and the *Journal of Bacteriology*. Essentially, the names of all microbial taxa (kingdom, phyla, class, order, family, genus, species, and subspecies) should be italicized in the manuscript and the figures. Do not italicize strain designations or numbers.

## **Open access**

All articles published by *Microbiome* are made freely and permanently accessible online immediately upon publication, without subscription charges or registration barriers. Further information about open access can be found [here](#).

As authors of articles published in *Microbiome* you are the [copyright holders](#) of your article and have granted to any third party, in advance and in perpetuity, the right to use, reproduce or disseminate your article, according to the [BioMed Central license agreement](#).

For those of you who are US government employees or are prevented from being copyright holders for similar reasons, BioMed Central can accommodate non-standard copyright lines. Please [contact us](#) if further information is needed.

## **Article-processing charges**

Open access publishing is not without costs. *Microbiome* therefore levies an article-processing charge of £1870.00/\$2790.00/€2290.00 for each article accepted for publication, plus VAT or local taxes where applicable.

If the corresponding author's institution participates in our open access membership program, some or all of the publication cost may be covered (more details available on the [membership page](#)). We routinely waive charges for authors from [low-income countries](#). For other countries, article-processing charge waivers or discounts are granted on a case-by-case basis to authors with insufficient funds. Authors can request a waiver or discount during the submission process. For further details, see our [article-processing charge page](#).

BMC provides a free open access funding support service to help authors discover and apply for article processing charge funding. Visit our [OA funding and policy support page](#) to view our list of research funders and institutions that provide funding for APCs, and to learn more about our email support service.