



# **Advances in Microbiology**





### **Journal Editorial Board**

https://www.scirp.org/journal/aim

#### **Associate Editors-in-Chief**

Dr. Thaddeus Chukwuemeka Ezeji

The Ohio State University & OARDC, USA

Dr. Chang-Hui Shen

University of New York (CUNY), USA

#### **Editorial Board**

Dr. Zhe Zhang

**Prof. Iqbal Ahmad** Aligarh Muslim University, India

Prof. Roberto Arenas Chief of the Mycology Section at "Dr. Manuel Gea González" General Hospital, Mexico

Dr. Kayanush (Kai) J. Aryana Louisiana State University, USA

Prof. Andrei L. Barkovskii Georgia College & State University, USA

Dr. Payam Behzadi Islamic Azad University, Iran

Prof. Frans J. de Bruijn INRA/CNRS Laboratory of the Interaction Plant-Microorganisms, France

Prof. Sang Ho Choi Seoul National University, South Korea

Prof. Madhusudan Choudhary Department of Biological Sciences, Sam Houston State University, USA

Dr. Mohamed O. Elasri The University of Southern Mississippi, USA

Prof. Daniel Y. C. Fung

Prof. Gamil Sayed Gamil Zeedan

Prof. Elisabeth Grohmann

Dr. Kaisa Haukka

Prof. Ming-Liang He

Kansas State University, USA

National Research Centre, Egypt

University of Freiburg, Germany

University of Helsinki, Finland

City University of Hong Kong, China

Prof. Carlos A. Jerez University of Chile, Chile

Prof. Diniz Pereira Leite Junior Adolfo Lutz Institute, Center for Parasitology and Mycology, Brazil

Dr. Zvi KelmanUniversity of Maryland, USAProf. Mohiuddin Md. Taimur KhanUniversity of New Mexico, USAProf. Yanbin LiUniversity of Arkansas, USADr. Yingguang LiuLiberty University USA

Dr. Yingguang LiuLiberty University, USADr. Pamela A. MarshallArizona State University, USA

Prof. Abdul Matin Faculty of Natural and Health Sciences, University of Baltistan, Pakistan

Prof. James Gordon MitchellFlinders University, AustraliaDr. Xiaozhen MouKent State University, USAProf. Saleh A. NaserUniversity of Central Florida, USA

Dr. Masoumeh Navidinia Department of Laboratory Sciences, School of Allied Medical Sciences, Shahid Beheshti

University of Medical Sciences, Iran

**Prof. Michele K. Nishiguchi** New Mexico State University, USA

Prof. Heui-Dong Park Kyungpook National University, South Korea

Dr. Germán Eduardo PiñasUniversity of Utah, USAProf. Ales ProkopVanderbilt University, USAProf. Alexander RapoportUniversity of Latvia, LatviaDr. Jyotisna SaxenaThe Ohio State University, USA

Dr. Maulin Pramod Shah Industrial Waste Water Research Laboratory, India

Prof. Abdelaal Shamseldin Genetic Engineering and Biotechnology Research Institute, Egypt

Zhejiang University, China

Dr. Jun SunRush University, USAProf. Michael K. WattersValparaiso University, USADr. Jing XuNorthwestern University, USAProf. Zhongtang YuThe Ohio State University, USAProf. Olga ZaborinaUniversity of Chicago, USA



Volume 13 Number 7

ISSN Online: 2165-3410 ISSN Print: 2165-3402

**July 2023** 

## **Table of Contents**

Phenotypic and Genotypic Antibiotic Resistant Diarrheagenic <i>Escherichia coli</i> Isolated	
from Patients with Diarrhea in Ouagadougou, Burkina Faso	
H. Cissé, A. Kagambèga, S. C. Bouda, A. Sawadogo, N. Barro	.347

#### Advances in Microbiology (AiM)

#### Journal Information

#### SUBSCRIPTIONS

The *Advances in Microbiology* (Online at Scientific Research Publishing, <a href="https://www.scirp.org/">https://www.scirp.org/</a>) is published monthly by Scientific Research Publishing, Inc., USA.

#### Subscription rates:

Print: \$79 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

#### **SERVICES**

#### Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

#### Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

#### **COPYRIGHT**

#### Copyright and reuse rights for the front matter of the journal:

Copyright © 2023 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

http://creativecommons.org/licenses/by/4.0/

#### Copyright for individual papers of the journal:

Copyright © 2023 by author(s) and Scientific Research Publishing Inc.

#### Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

#### Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

#### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: aim@scirp.org

## Call for Papers



## Advances in Microbiology

https://www.scirp.org/journal/aim

**Advances in Microbiology** (AiM) is an international journal dedicated to the latest advancement of Microbiology. The goal of this journal is to provide a platform for scientists and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of Microbiology.

#### Associate Editors-in-Chief

Dr. Thaddeus Chukwuemeka Ezeji

Dr. Chang-Hui Shen

The Ohio State University & OARDC, USA University of New York (CUNY), USA

#### **Editorial Board**

Prof. Iqbal Ahmad

Prof. Roberto Arenas

Dr. Kayanush (Kai) J. Aryana

Prof. Andrei L. Barkovskii

Dr. Payam Behzadi

Prof. Frans J. de Bruijn

Prof. Sang Ho Choi

Prof. Madhusudan Choudhary

Dr. Mohamed O. Elasri

Prof. Daniel Y. C. Fung

Prof. Gamil Sayed Gamil Zeedan

Prof. Elisabeth Grohmann

Dr. Kaisa Haukka Prof. Ming-Liang He Prof. Carlos A. Jerez

Prof. Diniz Pereira Leite Junior

Dr. Zvi Kelman

Prof. Mohiuddin Md. Taimur Khan

Prof. Yanbin Li

Dr. Yingguang Liu

Dr. Pamela A. Marshall

Prof. Abdul Matin

Prof. James Gordon Mitchell

Dr. Xiaozhen Mou

Prof. Saleh A. Naser

Dr. Masoumeh Navidinia Prof. Michele K. Nishiguchi

Prof. Heui-Dong Park

Dr. Germán Eduardo Piñas

Prof. Ales Prokop

Prof. Alexander Rapoport

Dr. Jvotisna Saxena

Dr. Maulin Pramod Shah

Prof. Abdelaal Shamseldin

Dr. Jun Sun

Prof. Michael K. Watters

Dr. Jing Xu

Prof. Zhongtang Yu

Prof. Olga Zaborina

Dr. Zhe Zhang

All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

- Applied and Environmental Microbiology
- Bacteriology
- Microbial Taxonomy
- Microbiology and Biochemistry
- Microbiology and Ecology

- Microbiology and Genetics
- Microbiology and Immunology
- Microbiology and Physiology
- Mycology

E-mail: aim@scirp.org

Other Disciplines of Microbiology

We are also interested in: 1) Short Reports—2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2) Book Reviews—Comments and critiques.

Website and E-Mail

https://www.scirp.org/journal/aim