

## Mamoon M.D. Al-Rshaidat, Molecular & Microbial Ecology

### Education/Professional Preparation

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Bowling Green State University, Bowling Green, Ohio, USA.

- **Doctor of Philosophy in Biological Sciences**, Aug 2001 - Dec 2006.

Agouron Institute & University of Hawaii, Honolulu, HI, USA

- **Summer School “Microbial Oceanography: Genomes to Biomes”**, Summer 2006.

Bowling Green State University, Bowling Green, Ohio, USA

- **Summer School “Bioinformatics: Structural Biology”**, Summer 2005.

University of Toledo, College of Medicine, Toledo, Ohio, USA.

- **Certificate in Bioinformatics and Proteomics/Genomics**, Aug 2004 - Jun 2006.

Jordan University of Science and Technology, Irbid, Jordan.

- **Bachelors of Science in Applied Biological Sciences, Major: Genetics and Molecular Biology**, Aug 1991 - Jun 1995

Jordan University of Science and Technology, Irbid, Jordan.

- **Undergraduate Research**, Sep 1993 - Jun 1995

### Thesis

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**Mamoon M D Al-Rshaidat: Iron Physiological Autecology of the Vertically Migrating Diatoms *Ethmodiscus* spp. and *Rhizosolenia* spp. in the Central North Pacific (CNP) Gyre. 12/2006, Degree: Ph.D., Supervisor: R. Michael L. McKay**

### Google Scholar Statistics (March 2019)

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Citations 260

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### Teaching & Research Experience

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*Sep 2015 – present* **Assistant Professor**  
University of Jordan, Department of Biological Sciences  
Amman, Jordan

*Nov 2010 – Sep 2011* **Department Chair**, Department of Coastal Environment  
University of Jordan, Department of Biological Sciences  
Aqaba, Jordan

- Mar 2010 – Aug 2016* **Group Leader**, Laboratory for Molecular and Microbial Ecology (LaMME)  
University of Jordan, Marine Science Station  
Aqaba, Jordan
- Mar 2010 – Aug 2015* **Assistant Professor**  
University of Jordan, Department of Marine Biology  
Aqaba, Jordan
- May 2008 – Feb 2010* **Postdoctoral Research Associate**  
Old Dominion University, Department of Ocean, Earth and Atmospheric Sciences  
Norfolk, United States
- Nov 2006 – July 2007* **Postdoctoral Research Associate**  
Bowling Green State University, Department of Biological Sciences  
Bowling Green, United States
- Aug 2001 – Oct 2006* **Research and Teaching Assistant**  
Bowling Green State University, Department of Biological Sciences  
Bowling Green, United States
- Oct 1995 – July 2001* **Teaching and Research Laboratory Technician**  
Jordan University of Science and Technology, Department of Natural Resources and the  
Environment  
Irbid, Jordan

### Supervision (Graduate and Undergraduate Students)

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- Co-Supervisor, Ph.D. Candidate; Bednarz, Vanessa. Leibniz Center for Tropical Marine Ecology (ZMT), Bremen, Germany (2012-2014)
- Co-Supervisor, Ph.D. Candidate; Cardini, Ulisse, Leibniz Center for Tropical Marine Ecology (ZMT), Bremen, Germany (2012-2014)
- Supervisor, Undergraduate Research; Waed Al-Momani, The University of Jordan Aqaba Branch, Aqaba, Jordan (2012-2013)

### Teaching Assignments

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The University of Jordan, Jordan

- 2010-present General Biology I (5501101) and (0304101) Marine Sciences (5502221)  
Cell Biology (5501232) Marine Microbiology (5501333)  
Marine Biotechnology (5501423) Molecular Biology (5501421)  
Biotechnology (0304383) Seminar (0304491)  
Environmental Microbiology (0604710) Microbial Ecology (0304742)  
Marine Molecular Biology and Biotechnology (5501715)

Ohio Northern University, Ada, Ohio, USA

- Spring 2007 Lecturer (Part-Time): BioSciences Laboratory II (BIOL 323): 3rd year pharmacy students' class.

Bowling Green State University, Bowling Green, Ohio, USA

- 2005-2007 Guest Lecturer: Marine Biology (BIOL 374), Environmental Microbiology (BIOL 400)
- 2003-2006 Graduate Teaching Assistant: Concepts of Biology II (BIOL 205)
- 2003-2006 Teaching Honors classes: Training Biology honors undergraduate students in laboratory research and helping them in conducting laboratory experiments

### Workshops and Professional Training

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- 2019 International Twinning Project Round VIII, establish partnerships between Eastern and Western Biorisk Management Associates (BRMA), Provided by Sandia National Labs, USA
- 2018 *Biorisk Management (BRM) Curriculum Development*, Provided by Sandia National Labs, Amman, Jordan

- 2018 Regional Workshop on Science and Technology Developments Relevant to the Biological Weapons Convention (BWC) for the Middle East and North Africa. Provided by United Nations Office for Disarmament Affairs (UNODA), at Royal Scientific Society, Amman, Jordan
- 2018 *Conducting a Quiz in Moodle*, The University of Jordan, Amman, Jordan
- 2018 *Supervision of Dissertations*, The University of Jordan, Amman, Jordan
- 2018 *Smart Plus Research by Data Science & Big Data Analysis Techniques*, The University of Jordan, Amman, Jordan
- 2017 *Data Analysis using SPSS*, The University of Jordan, Amman, Jordan
- 2017 *Evaluating Students' Performance using Student's Portfolio*, The University of Jordan, Amman, Jordan
- 2017 *National Inception Workshop: Strengthening Human Resources, Legal Frameworks and Institutional Capacities to Implement The Nagoya Protocol*, GLOBAL ABS PROJECT, UNDP & Ministry of Environment, Amman, Jordan
- 2017 *Open Educational Resources (OER) Applications in Teaching*, The University of Jordan, Amman, Jordan
- 2017 *Introduction to High Throughput Sequence Analysis with SeqMonk*, Babraham Institute, Cambridge, UK
- 2016 *Second National Workshop on Invasive Alien Species in Jordan*, Ministry of Environment and GIZ, Amman, Jordan
- 2016 *A National Dialogue towards a Regulatory Framework on Invasive Species*, Ministry of Environment and GIZ, Amman, Jordan
- 2015 *Training of Trainers: Integrating Ecosystem Services into Development Planning*, Ministry of Environment and GIZ, Amman, Jordan
- 2014 *gnSIG certification Program*, Valencia, Italy
- 2014 *National Workshop on Compliance Monitoring and Enforcement of the BWM Convention, with Emphasis on Sampling and Analysis*. PERSGA, Project No. (XB/0102-02-19-05-2270), Aqaba, Jordan
- 2012 *IMO OPRC LEVEL 2, National Training Workshop on Preparedness and Response to Oil Spills*, PERSGA, Aqaba, Jordan
- 2010 *Cost-effective shoreline management*, Marine and Coastal Engineering Middle East Summit, Aqaba, Jordan
- 2007 *International and interdisciplinary collaboration*, PICES/ICES Early Career Scientists Conference, Baltimore, Maryland, USA
- 2006 *Laboratory Safety Training as required by the Chemical Hygiene Program OSHA*, University of Hawai'i, Manoa, Hawai'i, USA
- 2005 *Leadership Academy*, Bowling Green State University, Bowling Green, Ohio, USA
- 1999 *Molecular Tools for Biodiversity Studies*, International Center for Agricultural Research in Dry Areas (ICARDA), Aleppo – Syria
- 1999 *Communication, Mediation and Conflict Management*, World Organization of Scout Movement, Geneva – Switzerland

## Memberships

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- 17/-- International Society for Development and Sustainability (ISDS), membership ID: M173398

## Service/Volunteering Activities

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- 18/-- **Editorial Board Member:** Biological Life Sciences: Current Trends Journal
- 18/-- **Reviewer:** Frontier in Microbiology
- 17/-- **Scientific Expert Reviewer:** ANR - Agence Nationale de la Recherche, Paris, France
- 14/-- **Reviewer:** The Open Biotechnology Journal
- 14/-- **Reviewer:** The Mediterranean Journal of Biosciences, Jordan Journal of Biological Sciences
- 14/-- **Reviewer:** Jordan Journal of Biological Sciences
- 14/-- **Reviewer:** The Open Ecology Journal
- 17/18 **Parent/Teacher Council:** Omareyah Schools, Amman, Jordan
- 10/-- **Coordinator/Member:** several scientific, educational, technical, and social committees at the department, college, university, and community levels.
- 14/14 **National Expert (Project Team Member):** writing and reviewing the Fifth National Report for the *Convention on Biodiversity*, for country Jordan (5th Convention CBD NR for Jordan)
- 14/14 **Advisory Panel:** for evaluating and promoting student projects submitted to *Intel International Science and Engineering Fair (Intel ISEF)*, King Abdullah II School for Excellence, Aqaba, Jordan
- 14/14 **Organizing Committee:** Aqaba International Conference on Marine and Coastal Environment, Aqaba, Jordan

- 13/15 **Parent Council:** King Abdullah II School for Excellence, Aqaba.
- 13/14 **Coordinator/Chair:** committee for the private accreditation of the “Marine Transport Technology” B.Sc. program at Al-Balqa’ Applied University in Aqaba. *Jordanian Education Accreditation Commission*
- 11/12 **EACEA-TEMPUS-Expert.** Education, Audiovisual and Culture Executive Agency (EACEA), EU
- 08/09 **Member:** Old Dominion University Chaplains Association
- 06/07 **Judge:** Judging high school research projects for the Ohio Academy of Science (OAS)
- 05/06 **Senator:** Graduate Student Senate (GSS) at Bowling Green State University (BGSU)
- 05/06 **Chair:** Webpage Committee, Biology Graduate Student Association at BGSU
- 2005 **Orientation Leader:** Center for International Programs, BGSU (Summer)
- 05/06 **Member:** Graduate Students Senate (GSS) representative to Faculty Senate’s Information Technology Committee at BGSU
- 04/06 **Member:** Technology Committee, Biology Graduate Student Association (BGSA) at BGSU
- 2003 **Volunteer:** ASLO Aquatic Sciences Meeting

## Research Grants

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- PI, (Submitted)** Microbial and Chemical characterization of the microbial communities associated with extremely salty micro-environments near the Dead Sea. A search for unique microbes and novel genes able to ameliorate salt stress and promote plant growth. Scientific Research Support Fund (SRSF)-First Research Cycle 2018
- PI, (awarded)** Detection of Harmful Bacteria Discharged From Ships’ Ballast Water Into the Gulf of Aqaba, a Metagenomic Approach, 1/2015-7/2016, JOD 15,000.00, Abdul Hameed Shoman Fund For Supporting Scientific Research. Amman, Jordan
- PI, (awarded)** Detection of Harmful Microbes Discharged From Ships’ Ballast Water Into the Gulf of Aqaba, a Metagenomic Approach, 9/2014-3/2016, JOD 10,000.00, Deanship of Scientific Research, The University of Jordan. Amman, Jordan
- Co-I, (awarded – Withdrew from the project)** Understanding the Bacterial Community Shift Associated with Coral Reefs in Gulf of Aqaba. 2/2014-1-2016, JOD 131,000.00. Scientific Research Support Fund (SRSF), Amman, Jordan
- PI, and Ayman Hammoudeh, Ziad Al-Taani (rejected)** Isolation of Microalgae from Wastewater and Characterization Using Molecular Biology and Flow Cytometry Techniques for Biofuel production. Scientific Research Support Fund (SRSF), Amman, Jordan
- PI, and Ibraheem Yousef (awarded)** The role of coral reef sponges in organic carbon cycling on Red Sea coral reefs: an FTIR approach. August 2014, (Beam-line time) allocated machine time for sample measurements using FTIR connected to Infrared Beamline (EMIRA) at SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East), Amman, Jordan.
- PI, and Mohamad Wahsha (awarded)** Isolation and molecular identification of toxin producing cyanobacteria (Algae) from King Talal Dam and testing their toxin’s virulence against dominant fresh-water fish species, 1/2013-7/2014, JOD 17,400.00, Deanship of Scientific Research, The University of Jordan. Amman, Jordan
- Co-I (awarded)** Development of a MODIS image product for mapping phycocyanin pigment in blue-green algal blooms (Toxic Algae), 4/1/2005-6/30/2006, \$13,253.00, NOAA Ohio Sea Grant. USA

## Journal Publication

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- Al-Rshaidat MMD**, Segonds-Pichon A, Salem M. (Submitted) *Chlorophyll-nutrient relationships of an artificial inland lagoon inspire a unique mega chemostat.*
- Bednarz V., Naumann MS., Cardini U., van Hoytema N., **Al-Rshaidat MMD**, Wild C. (2018) *Contrasting seasonal responses in dinitrogen fixation between shallow and deep-water colonies of the model coral Stylophora pistillata in the northern Red Sea.* PLOS ONE 13(6): e0199022. <https://doi.org/10.1371/journal.pone.0199022>
- Cardini, U., van Hoytema, N., Bednarz, V.N., **Al-Rshaidat, M.M.D.**, and Wild, C. 2018. *N<sub>2</sub> fixation and primary productivity in a red sea Halophila stipulacea meadow exposed to seasonality.* Limnol. Oceanogr. 63(2): 786-798. doi: 10.1002/lno.10669.
- Tilstra, A., Bednarz, V.N., Cardini, U., van Hoytema, N., **Al-Rshaidat, M.M.D.**, and Wild, C. 2017. *Seasonality affects dinitrogen fixation associated with two common macroalgae from a coral reef in the northern Red Sea.* Marine Ecology Progress Series 575: 69-80.
- Mamoon M D Al-Rshaidat**, Matthieu Leray, Nancy Knowlton: *Exploring the Cryptic Diversity of the Jordanian Coral Reefs.* Barcode Bulletin 09/2016; 7(3):11-12
- Mamoon M D Al-Rshaidat**, Allison Snider, Sydney Rosebraugh, Amanda M. Devine, Thomas D. Devine, Laetitia Plaisance, Nancy Knowlton, Matthieu Leray: *Deep COI sequencing of standardized benthic samples unveils overlooked diversity of Jordanian coral reefs in the Northern Red Sea.* Genome 07/2016; 59(9): 724-737. DOI:10.1139/gen-2015-0208

- Ulisse Cardini, Nanne van Hoytema, Vanessa N. Bednarz, Laura Rix, Rachel A. Foster, **Mamoon M. D. Al-Rshaidat**, Christian Wild: *Microbial dinitrogen fixation in coral holobionts exposed to thermal stress and bleaching*. Environmental Microbiology 05/2016; 18(8): 2620–2633. DOI:10.1111/1462-2920.13385
- Ulisse Cardini, Vanessa N. Bednarz, Nanne van Hoytema, Alessio Rovere, Malik S. Naumann, **Mamoon M. D. Al-Rshaidat**, Christian Wild: *Budget of Primary Production and Dinitrogen Fixation in a Highly Seasonal Red Sea Coral Reef*. Ecosystems 03/2016; 19: 771. DOI:10.1007/s10021-016-9966-1
- Ulisse Cardini, Vanessa N. Bednarz, Malik S. Naumann, Nanne van Hoytema, Laura Rix, Rachel A. Foster, **Mamoon M. D. Al-Rshaidat**, Christian Wild: *Functional significance of dinitrogen fixation in sustaining coral productivity under oligotrophic conditions*. Proceedings of the Royal Society B: Biological Sciences 10/2015; 282(1818). DOI:10.1098/rspb.2015.2257
- Ulisse Cardini, Nanne van Hoytema, **Mamoon Al-Rshaidat**, Helmut Schuhmacher, Christian Wild, Malik Naumann: *37 Years later: revisiting a Red Sea long-term monitoring site*. Coral Reefs 07/2015; 34(4). DOI:10.1007/s00338-015-1321-z
- Vanessa Bednarz, Nanne van Hoytema, Ulisse Cardini, MS Naumann, **MMD Al-Rshaidat**, Christian Wild: *Dinitrogen fixation and primary productivity by carbonate and silicate reef sand communities of the Northern Red Sea*. Marine Ecology Progress Series 05/2015; 527:47-57. DOI:10.3354/meps11224
- Vanessa Bednarz, Ulisse Cardini, Nanne van Hoytema, **Mamoon M. D. Al-Rshaidat**, Christian Wild: *Seasonal variation in dinitrogen fixation and oxygen fluxes associated with two dominant zooxanthellate soft corals from the northern Red Sea*. Marine Ecology Progress Series 01/2015; 519:141-152. DOI:10.3354/meps11091
- Amal Jayakumar, **Mamoon M D Al-Rshaidat**, Bess B Ward, Margaret R Mulholland: *Diversity, distribution, and expression of diazotroph *nifH* genes in oxygen-deficient waters of the Arabian Sea*. FEMS Microbiology Ecology 06/2012; 82(3):597–606. DOI:10.1111/j.1574-6941.2012.01430.x
- Tracy A. Villareal, R.M.L. McKay, **MMD Al-Rshaidat**, R. Boyanapalli, R.M. Sherrell: *Corrigendum to “Compositional and fluorescence characteristics of the giant diatom *Ethmodiscus* along a 3000km transect (28°N) in the central North Pacific gyre”*. Deep Sea Research Part I Oceanographic Research Papers 10/2007; 54(8-54). DOI:10.1016/j.dsr.2007.04.018
- R. M. L. McKay, S. W. Wilhelm, J. Hall, DA Hutchins, **M. M. D. Al-Rshaidat**, C. E. Mioni, S Pickmere, D Porta, P. W. Boyd: *Impact of phytoplankton on the biogeochemical cycling of iron in subantarctic waters southeast of New Zealand during FeCycle*. Global Biogeochemical Cycles 12/2005; 19(4). DOI:10.1029/2005GB002482
- R. M. L. Mckay, David Porta, George S Bullerjahn, **Mamoon M. D. Al-Rshaidat**, Jeffrey A. Klimowicz, Robert W. Sterner, Tanya M. Smutka, Erik T. Brown, Robert M. Sherrell: *Bioavailable Fe in oligotrophic Lake Superior assessed using biological reporters*. Journal of Plankton Research 10/2005; 27(10). DOI:10.1093/plankt/fbi070
- Robert K. Vincent, R. Michael McKay, **Mamoon M. D. Al-Rshaidat**, Kevin Czajkowski, Thomas Bridgeman, Jeffrey Savino: *Mapping the Bacterial Content of Surface Waters with LANDSAT TM Data: Importance for Monitoring Global Surface Sources of Potable Water*. Proceedings of the 16th Pecora Conference on Global Priorities in Land Remote Sensing, Sioux Falls, SD, October 23-27, 2005, pp83-86.

## Technical Reports

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- FAO/NCARE. 2015. *The State of the World's Biodiversity for Food and Agriculture, Report for Jordan*, Amman, Jordan
- UNDP/ASEZA. 2015. *State of the Coastal Environment, Report for Aqaba*, Gulf of Aqaba, Red Sea, ASEZA, Aqaba, Jordan.
- UN/Ministry of Environment. 2014: *Jordanian Fifth National Report on the Implementation of the Convention on Biological Diversity*, Amman, Jordan.

## Presentations and Conference Proceedings (\*Invited Speaker, \*\*Oral Communication, \*\*\*Poster)

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- 2017 International Conference on Ecosystem Services (ES) and Integrated Coastal Zone Management (ICZM), The Euro-Arab Organization for Environment, Water, and Desert Research, Aqaba, Jordan\*
- 2016 1st Conference on the Sustainable Use of Ecosystem Services in the MENA region, Dead Sea, Jordan\*\*
- 2015 Annual Conference of the Society for Tropical Ecology, ETH Zurich, Switzerland \*\*
- 2015 5th Coral Reef Ecology (CORE) Symposium, Bremen, Germany \*\*
- 2014 12th SESAME Users Meeting, Amman, Jordan\*
- 2014 Aqaba International Conference on Marine and Coastal Environment, Aqaba, Jordan\*\*
- 2013 European Geosciences Union General Assembly, Vienna, Austria\*\*\*
- 2012 Leibniz Center for Tropical Marine Ecology (ZMT), Bremen, Germany\*

- 2010 The American Society of Limnology and Oceanography Aquatic Sciences Meeting, Portland, OR, USA\*\*\*
- 2007 PICES/ICES ECSC on “New Frontiers in Marine Science”, Baltimore, MD, USA\*\*
- 2007 The American Society of Limnology and Oceanography Aquatic Sciences Meeting, Santa Fe, NM, USA\*\*\*
- 2006 “Microbial Oceanography: Genomes to Biomes”, University of Hawaii, Honolulu, HI\*\*
- 2006 Biological Sciences Seminar, University of Jordan, Amman, Jordan\*
- 2006 The Fourth Biennial Lake Erie Millennium Network Conference, Canada\*\*\*
- 2005 9th Conference of the International Society for Salt Lake Research, Australia\*\*\*
- 2005 The American Society of Limnology and Oceanography Summer Meeting, Spain (*Best Student Poster Award*) \*\*\*
- 2005 Annual Meeting of the Ohio Academy of Science. Bowling Green, OH, USA\*\*\*
- 2004 Third Annual BGSU Research Conference. Bowling Green, OH, USA\*\*\*

## Awards and Honors

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- 2007 Participant, PICES/ICES Early Career Scientists Conference (ECSC) on “New Frontiers in Marine Science”
- 2007 Travel award, International Council for the Exploration of the Sea (ICES)
- 2007 Travel award, US Delegation to ICES
- 2006 Participant, Agouron Institute/University of Hawaii, Manoa Summer School “*Microbial Oceanography: Genomes to Biomes*”
- 2006 Katzner and University Bookstore Graduate Student Research and Professional Development Funds, Bowling Green State University
- 2006 Winifred O. Stone Graduate Student Development Award, Bowling Green State University
- 2006 KEY Yearbook Famous Faces, Bowling Green State University
- 2005 Outstanding Student Poster Award, American Society of Limnology and Oceanography
- 2005 Travel Award, American Society of Limnology and Oceanography
- 2001 Research Assistant Fellowship, US National Science Foundation.

## Seagoing Cruise Experience

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- 2006 Six day cruise aboard the RV *Kilo Moana*. Around the Hawaiian Islands, USA.
- 2006 Six day cruise aboard the RV *Kilo Moana*. Mapping Cyclonic Eddies South of Hawaiian Islands, USA.
- 2003 Twenty eight days cruise aboard the RV *New Horizon*. 30°N Hawaii-San Diego transect, USA.
- 2002 Twenty seven days cruise aboard the RV *Melville*. 30°N Transect NW of Hawaii, USA

## Skills & Activities

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*Skills & Interests* Environmental Genomics, Metagenomics, DNA Barcode, Metabarcoding, Biodiversity, Molecular Ecology, Microbiota, Water Quality & Monitoring, Environmental Pollution, Harmful Algal Blooms (HABs), Algal Biotechnology (Algal biomass for Food, Feed, and Biofuel), Biogeochemistry, Climate Change Studies and Mitigation, Integrated Ecosystem Services (Valuation & Management).

*Languages* Arabic, English