

BEIJING September 6-8  
BEIJING 2019

# The 50th Anniversary of World Data Center for Microorganisms



# **Session 1: Welcome Remarks**

# **Welcome Remarks**

**Chaired by Shuangjiang Liu**

**Director**

**Institute of Microbiology, Chinese Academy of Sciences**

# Session 1: Welcome Remarks

**Dr. Philippe DESMETH**

**President**

**World Federation of Culture Collections (WFCC)**

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**Prof. Ziyuan DUAN**

**Deputy Director**

**Bureau of Science & Technology for Development,  
Chinese Academy of Sciences**

# Session 1: Welcome Remarks

**Prof. Ruidan WANG**

**Deputy Director**

**National Science and Technology Infrastructure Center,  
Ministry of Science and Technology**

# Session 1: Welcome Remarks

**Prof. Chengshou BAI**

**Deputy Director**

**Department of Nature and Ecology Conservation**

**Ministry of Environmental Protection**

# Session 1: Welcome Remarks

**Congratulations from**

**Mr. Braulio Dias**

**Executive Secretary**

**Convention on Biological Diversity (CBD)**



**Session 2:**

**Keynote Speech**



# Session 2: Keynote Speech

## *Big Data-driven Discovery and Improvement of Pharmaceutical and Nutritional Natural Products*

**Zi xin Deng**

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*State Key Laboratory of Microbial Metabolism, School of Life Sciences & Biotechnology, Shanghai Jiao Tong University, Shanghai, China*

*Key Laboratory of Combinatorial Biosynthesis and Drug Discovery, Wuhan University School of Pharmaceutical Sciences, Wuhan, China*

*Wuhan Institute of Biotechnology, Wuhan, China*

# Session 2: Keynote Speech

***WDCM, past and another 50  
years to come***

**Sugawara Hideaki**

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*Professor of National institute of  
Genetics, Japan*

# Session 2: Keynote Speech

## ***WDCM in new era***

**Juncai Ma**

*Director, World Data Center for Microorganisms*

*Institute of Microbiology, Chinese Academy of Sciences,  
China*

# Session 2: Keynote Speech

***WDCM: the sum of all efforts and  
much more Get the right  
information at any time***

**Philippe Desmeth**

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*President*

*World Federation for Culture Collections (WFCC)*



**Beijing Declaration on  
Microbial Resources  
Information sharing**

## **Thank for the great contributions from experts:**

- **Dr. Philippe Desmeth, BCCM, Belgium**
- **Dr. Jörg Overmann, DSMZ, Germany**
- **Dr. Kevin McCluskey, Kansas State University, USA**
- **Prof. Hideaki Sugawara, NIG, Japan**

# Thank for the great cooperation from collections:

environmental remediation, agriculture and food security, water resources management, as well as environmentally-sustainable resources development;

- e) Cooperation on organize training courses, workshops and conferences focused on IT, data and information management, intellectual property and other relevant issues to help promote data activities in various sectors of research and applications.

## Call for

- a) the implementation of the 'Network of Microbial Resources Data Sharing'(NMRDS) initiative, a science and technology partnership for optimal use of microbial resources data for the sustainable development of both the developed and developing countries.
- b) decision-makers to be involved at all levels in the development of strategies, plans, policies, regulations, standards and criteria related to microbial resources data sharing, to provide support on the cooperation and its development;
- c) decision-makers to provide appropriate funding in order to enable joint scientific research, technology transfer and education for promoting the benefits of microbial resources data sharing in order to address the common challenges;

Signatory:



Culture Collection/Organization: Fungal Genetics Stock Center

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Signatory: Dr. Cha Young Kim



Culture Collection/Organization: Korean Collection for Type Cultures (KCTC)

- **FGSC, USA**
- **KCTC, Japan**
- **UNiCC, Malaysia**
- **CCCT/UFRO, Chile**

# Session 2: WDCM

## Beijing Declaration on Microbial resources information sharing

September 6<sup>th</sup> , 2016

### Introduction

Scientists, managers, representatives of public and private institutions from more than 20 countries and international organizations meet in Beijing, China, on the occasion of the Jubilee of the World Data Centre for Microorganisms (WDCM) celebrated during the 50th Anniversary of World Data Center for Microorganisms.



# Session 2: WDCM

The 50th Anniversary of World Data Center for Microorganisms is hosted by the WFCC-MIRCEN (WDCM) and the Center for Microbial Resource and Big Data, IMCAS. It is co-organized by the World Federation for Culture Collections (WFCC), the Institute of Microbiology, Chinese Academy of Sciences(IMCAS) and CODATA Task Group on Advancing Informatics for Microbiology (TG-AIM) from September 6<sup>th</sup> to 8<sup>th</sup>, 2016.

**Beijing Declaration on Microbial resources information sharing**

September 6<sup>th</sup>, 2016

# Session 2: WDCM

Life on earth depends on micro-organisms and their sustainable utilization is essential for human civilization. Microorganisms play a key role in the biogeochemical cycles.

Many industries—medical, agricultural, food, environmental and more recently, energy—exploit the multiple features of micro-organisms for the benefit of humankind. As a result of this long history of research and innovation, many microorganisms have been isolated, characterized and preserved in culture collections.

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September 6<sup>th</sup>, 2016

# Session 2: WDCM

The vast majority of micro-organisms existing within ecosystem have been studied by meta-technologies. With rapid development of high-throughput sequencing technologies, microbiology has also become a data science.

Bio-Resource Centers (BRCs) function also as data and information repositories to serve the socio-economic canvas of academia, industry and general public.

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## Declaration

**To mark the WDCM jubilee we, scientists, managers, representatives of public and private institutions, gathered to celebrate this anniversary, underscore the importance of optimal data exploitation.**

- a) Significant global-scale developments on microbiological (both micro-organisms and microbiomes) resources have been achieved over the past decades: the observational data of microbial diversity have increased steadily, and sequence data have even increased explosively. The capacity and versatility of Information Technologies have expanded greatly.

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- b)** Big data related to microbiological resources for research and development are now accessible online, enhancing both the productivity and well-being of human societies.
  
- c)** Data sharing is a prerequisite to sustain progress and to bridge activities within and outside the microbiology communities in the age of data diversification and increase.

# Session 2: WDCM

- d) Optimal use of microbiological resources data for international cooperation is essential to face the increasing complexity of the international socio-economic setting and the environmental stresses endangering our world.
- e) The microbiology community is eager to join forces and address challenges (data receiving/collection and information infrastructure, big data needs, sustainability), in close cooperation with other scientific disciplines, industrial developers and financial institutions.

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**To meet the socio-economic challenges ahead of us, in conformity with the recommendations of the UN organizations involved in science, education, environment, health, food, industry and human welfare, we encourage:**

- 1) the development of bilateral and multilateral cooperation mechanisms, to coordinate the optimal use of data on microbial resources, to address sustainable development challenges;**

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September 6<sup>th</sup>, 2016

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- 2) further strengthening and expanding the cooperation between government departments, international scientific organizations, educational and scientific research communities, as well as business and private sector partners engaged in the development and application of microbial resources data;
- 3) joint efforts for improved interoperability of data on microbial resources between research groups and BRCs, microbiologists and genome researchers to promote the access and use of data and information;

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## Session 2: WDCM

- 4) joint efforts for promoting application of cutting-edge Information Technology (IT) for microbiological resource information systems, data platforms, and knowledge bases, to underpin data exploitation in the fields of health, climate change, environmental remediation, agriculture and food security, water resources management, as well as sustainable resources development;
- 5) cooperation in organizing training courses, workshops and conferences focused on IT, data and information management, intellectual property rights and other relevant issues to help promote data activities in research and innovation

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## Call

At the initiative of the World Data Center of Microorganisms (WDCM), World Federation for Culture Collections and the Institute of Microbiology, Chinese Academy of Sciences (IMCAS), we propose to crystallize these efforts via the setup of the ‘Network of Microbial Resources Data Sharing’(NMRDS) initiative, a science and technology partnership for the optimal use of data on microbial resources for the sustainable future development of both the developed and developing countries where efforts are involved at all levels in the development of strategies, plans, policies, regulations, standards and criteria related to microbial resources data sharing, to provide support on the cooperation and its development.

**Beijing Declaration on Microbial resources information sharing**

September 6<sup>th</sup> , 2016

## Session 3: Welcome Remarks

**WDCM MoU**

**Signing Ceremony**

# **WDCM MoU Signing Ceremony**

- 1. The European Culture Collections Organization(ECCO)**
- 2. Korea National Research Resource Center (KNRRC), Korea**
- 3. Fungal Genetics Stock Center, Kansas State University, USA**
- 4. National Center for Genetic Engineering and Biotechnology,  
National Science and Technology Development Agency, Thailand**
- 5. Universidad de La Frontera, Chile**

# WDCM MoU Signing ceremony

The MoU between  
**Belgian Science Policy Office(BELSPO)**

And

**The Institute of Microbiology, Chinese Academy of  
Sciences (IMCAS)**

Signed by

**Dr. Elke Sleurs**

(The Belgian State Secretary of Science Policy)

And

**Prof. Shuang-Jiang LIU**

(Director-General, Institute of Microbiology, CAS)

# WDCM MoU Signing Ceremony

1. **The European Culture Collections Organization(ECCO)**  
**Dr. Nelson Lima, President of ECCO**
2. **Korea National Research Resource Center (KNRRC), Korea**  
**Dr. Ki Hyun Ryu, Director-General of KNRRC**
3. **Fungal Genetics Stock Center, Kansas State University, USA**  
**Dr. Kevin McCluskey, Curator, FGSC**
4. **National Center for Genetic Engineering and Biotechnology, National Science and Technology Development Agency, Thailand**  
**Dr. Lily Eurwilaichitr, Deputy Executive Director of BIOTEC**
5. **Universidad de La Frontera, Chile**  
**Dr. Cledir Santos, Interim Representative of the Chilean Network of Microbial Culture Collections**

## **WITNESS:**

1. **Dr. Philippe Desmeth, President of WFCC**
2. **Prof. Shuang-Jiang LIU, Director-General, Institute of Microbiology, CAS**

## Session 3: Welcome Remarks

# Group Photo & Coffee Break



**Session 3:**

**Keynote Speech**



## Session 3: Keynote Speech & WDCM MOUs

# *Dynamic Changes of Marine Microbial Communities over Time*

**Takashi Gojobori**

*Vice President of CODATA,*

*King Abdullah University of Science and  
Technology, Japan*

## Session 3: Keynote Speech & WDCM MOUs

*Identifying the micro from the peta:  
tales of big data in the micro world*

**Nikos C. Kyrpides**

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*Prokaryote Super Program Head,*

*Department of Energy Joint Genome Institute  
(DOE JGI), USA*

# Session 3: Keynote Speech & WDCM MOUs

## *Beyond sequencing*

Ye Yin

*CEO of BGI Genomics Co. Ltd., China*



THANKS