



WORLD FEDERATION FOR CULTURE COLLECTIONS Newsletter (No. 53)–DECEMBER 2014

NEWS FROM THE PRESIDENT

Second Term in the Office



Dear Colleagues,

It is a pleasure and a privilege for me to introduce the latest issue of the WFCC Newsletter. Thanks to Dr. Ipek Kurtböke and the many contributors this issue is our postcard for the 2015 New Year greetings.

The WFCC executive board members and the World Data Center for Microorganisms have worked hard to improve the membership management as well as to update the directory of culture collections. The Federation's membership is increasing readily; we are now 678 in 71 countries. Furthermore the Global Catalogue of Microorganisms counts 68 collections in 34 countries. The Global Catalogue is not only a pioneering effort in global data management of microbial diversity but also a great capacity building program. Do not hesitate to contact us to join this endeavor. More developments will be advertised during 2015 as we want to make the website more supportive to the community and answering better your expectations.

Last year the Nagoya Protocol entered into force on October 12th. This international agreement will bring changes in the operations of collections; moreover it will induce necessary changes in behavior of all microbiologists, attached or not to collection. Accordingly, we will open a webpage specially dedicated to the Nagoya Protocol to help you dealing with this additional regulation. WDCM and the Executive Board have also other web-pages in the making. Therefore joining the Federation and the Global Catalogue of Microorganisms will become more and more attractive and useful for you and your scientific partners.

We encourage you to visit regularly the website, send us your comments and your contribution, articles and pictures. Also check the website from time to time for the Skerman Award announcement as well as other Award that will be readily available in the WFCC community.

Help yourself; help your Federation to meet your needs. Do not hesitate to contribute yourself to the news of the Culture Collections global community.

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MICROBIAL COLLECTIONS WORK OUT THE NAGOYA PROTOCOL

**Access and study of microbial diversity is
subject to a new regulation**

Philippe Desmeth

The Nagoya Protocol [1] (NP) has entered into force on 12 October 2014 in the wake of the first Meeting of the Parties of this international Protocol under the Convention on Biological Diversity. The Nagoya Protocol set new rules on access and utilization of biological diversity, including micro-organisms. To fulfill their role of resources centers providing microbiological material, related information and expertise Culture Collections (CC) face primarily scientific and technical challenges, but they are also under growing pressure of socio-economic constraints, legal and political developments in knowledge based bio-economy [2]

The Nagoya Protocol is another regulation that could heavily impact the operations of CC and their partners if not correctly translated by national lawmakers or



inefficiently apprehended by the collections and microbiologists. The challenge is to organize efficiently the access and the conveyance of transfer and utilization of the microorganisms at affordable cost and combined with the other international, supra-national, and national legal requirements. CCs could be confronted to different and changing national regulatory frameworks that make difficult the supply of microbiological material to the users. Like for other evolutions of their operational environment, CCs have anticipated these legal developments and have presented their solutions during three coordinated side-events organized during the 1st meeting of the Parties in Pyeongchang, Republic of Korea.

Access

The Access and Benefit Sharing concept (ABS) has been drawn out of the blueprint of Article 15 [3] of the Convention on Biological Diversity (CBD) [4] entered into force in 1993 [5]. Article 15 focuses on the sovereign rights of nations to administer their natural resources and rule the access to these natural resources under specific circumstances.

This approach considering that benefit sharing is the reward for facilitated access has been further developed in the Bonn Guidelines issued in 2002 [6]. Negotiations went on for eight more years and ended with an agreement signed in October 2010 during the 10th CBD Conference of the Parties in Nagoya, Japan.

Use and benefit-sharing

The Nagoya protocol covers the use of biological diversity in Research and Development activities, not as commodities. Development of biotech services and products in agro-, food, medical, environmental industries can generate profits subordinated to the Nagoya Protocol Benefit Sharing model.

On the other hand, other benefit-sharing mechanisms such as agreements ruling Intellectual Property Rights need also to be taken into consideration, such as the WTO Trade-Related Aspects of Intellectual Property Rights (TRIPS) [7] stating that microbiological inventions can be patented. In addition to these considerations biosafety, biosecurity, quality, reliability issues remain integrated in the operative processes of CC.

Handling and transfer

Societal concerns about biosafety [9] and biosecurity [10] have highlighted the role of BRCs as safe, secured and reliable sources of microbiological material. BRCs could be regarded as ultimately responsible, and thus accountable for unintentional or wilful release of harmful microbiological material in the environment.

Biosafety is partly ruled by the Cartagena Protocol [11] for GMO, mainly by national and supra-national regulations preventing unintentional exposure to pathogens and toxins, or their accidental release. Biosafety is also of concern for the World Organization for Animal Health (OIE) [12] because animal and human health are closely interlinked. Economic impact of plant pathogens must not be underestimated; the International Plant Protection Convention (IPPC) [13] works to protect the cultivated and natural plant resources from the spread and introduction of pests of plants.

CCs are very much concerned by **biosecurity** because they must prevent wilful misappropriation and misuse of microbes by their personnel or others, for terrorist, strategic or economic aggressions against the environment, animals, plants, or humans. The Biological and Toxin Weapons Convention (BTWC) [14] is the major international legal framework concerning dual-use biological items, The UN Office for Disarmament Affairs [15] is in charge of the discussions concerning prevention of biological warfare and bioterrorism.

Necessary policy of accession and distribution of microorganisms

In summary, many international conventions rule different aspects of socio-economic uses of (micro-) biological diversity; these conventions are implemented by national laws but sometimes in different ways and not always in due time. That means that in some cases, CCs can face either complex or no legal requirements. So CCs operate in an increasingly complex legal environment and they must adjust their legal policy to guarantee safe and legally fit-for-use microbiological material and data. These acquisition and distribution policies are translated respectively into so-called Material Accession Agreements (MAA) and Material Transfer Agreements (MTA). The drafting of such agreements requires special care because they contractually bind suppliers and users. In addition to these contracts, other technical and administrative measures as well as the workload and costs implementing the legal policy can be expensive.

It is recommended that CCs design compatible legal provisions and contracts to facilitate cooperation among them and with microbiologists in general. They must collaborate with each other and with international organizations; improve their communication, cooperation and capacity building also in legal matters.

The new EU Regulation on ABS [16] recognizes the important role of culture collections, as well as other *ex situ* conservation facilities such as botanical gardens and museums. It does this through its inclusion of the concept of "registered collections". These are collections accredited against specified criteria and thus



trusted sources for legally sound biological raw material for Research and Innovation.

Initiatives of WFCC members

MOSAICC [17] was the first effort made by collections members of WFCC to face the challenge posed by the Convention on Biological Diversity. MOSAICC is a precursor code still relevant to this day. It has inspired the Bonn Guidelines. Concerning the implementation of the Access and Benefit Sharing concept ruled by the Nagoya Protocol, the MOSAICC code of conduct pleaded already in 1999 for simple, efficient rules. For instance, it proposes a facilitated access to pathogens in case of emergencies [18].

Rapid access to genetic material of pathogens was heavily debated in the World Health Organization (WHO) in 2008. Access to virus samples was denied for several months during the avian influenza epidemic in 2007 although it is vital to allow the international community to respond to emerging threats. Therefore WHO decided to organize the access and exchanges of human pathogenic material by setting up the PIP-framework [19], designed for exchange of influenza strains after the crisis of 2007-2008 [20]. These kinds of events have now been taken into consideration in article 8 of the Nagoya Protocol which specifies that such emergencies require special considerations.

MOSAICC and its complementary coordinated action MOSAICS [21], both funded by Directorate General of Research of the European Commission, are the basis for the new initiative called TRUST launched by several collections.

Gaining trust, building TRUST

Trust is a prerequisite for lasting cooperation in science and for socio-economic development. Trust can be attained partly through a transparent system of transfer of microbial material. Several institutions specialized in microbiology, including CC, have decided to coordinate their efforts, to build TRUST, literally and practically. They are aiming at adjusting their tools to each other and at providing a cost-efficient, simple, fast multiple users, and multiple purposes global system.

TRUST stands for Transparent User-friendly System of Transfer. It aims at managing the incidence of the CBD and Nagoya Protocol on the scientific, technical and administrative activities of CC and, more generally, at incorporating the Nagoya Protocol into the daily life of microbiologists.

TRUST is the convergence of several initiatives made by CCs to translate the ABS principles into practice. The

outcomes of these initiatives comprise a set of coherent and complementary tools to implement the ABS concept.

TRUST is a modular system having as backbone the Global Catalogue of Microorganisms and making use of the expertise gained by MOSAICC, MOSAICS, and other initiatives. The TRUST system comprises four elements:

I. The TRUST guidelines [22] providing for administrative and technical procedures. It set the principles of facilitated access to microbial genetic resources. TRUST combines updated features of the Code of Conduct MOSAICC and administrative workflows of the MOSAICS Integrated Conveyance System adjusted to the Nagoya Protocol and improved in light of past experience.

Complementary elements of the guidelines are the concept of "bundle of rights" [23] innovatively applied to biological material and the design of "microbial commons" [24] which provides basic common use principles for access to biological material and related information. An example of "microbial commons" implementation is the NIEMA system set within the Asian Consortium for the Conservation and Sustainable Use of Microbial Resources (ACM).

II. Material Accession Agreement (MAA) and Material Transfer Agreement (MTA) models with standardized definitions.

Considering the concept of "registered collections" as defined by the EU regulation implementing the Nagoya Protocol, the CCs community has developed an efficient information and material handling strategy to deal with the compulsory Prior Informed Consent (PIC). The concept of registered collections as future trusted sources for ABS-compliant genetic resources is thus imbedded into the CCs community at the outset. Consequently it is of primary importance that:

- a. Every microbial genetic resource "entering" a collection is covered by a PIC obtained at the time of its isolation from *in situ* conditions or after corrective administrative action;
- b. Every microbial genetic resource having entered a collection with the appropriate initial PIC may be distributed, accompanied by the original PIC, without any additional PIC procedure set by the country of origin or the country of use.

III. A powerful automatic integrated data management and processing system able to provide for any information related to microbial material: the ground breaking **Global Catalogue of Microorganisms (GCM)** [25].



GCM is the backbone of the global system linking the microbial genetic resources to all kind of related data. The flow of information will be connected to the ABS Clearing House Mechanism [26] via a machine-processed link from a defined IRCC [27]-CHM field to a defined IRCC-GCM field. GCM is a major program launched by the World Data Centre for Micro-organisms (WDCM) [28] under the aegis of WFCC. GCM is a powerful scientific tool as well as a way to build safe, ethical and socio-economically balanced ABS processes at global level.

The CGM enables users to trace the possession, location, transmission and use of uniquely identified microbial strains, including country of origin, existence of Prior Informed Consent (PIC), the creation of derived patents and associated scientific publications. This system already includes more than 60 collections from 30 countries and information on more than 290.000 strains from 42.000 species. With the assignment of Globally Unique Identifiers (GUIDs) specific to microbial items and the GCM managed by WDCM, WFCC contributes to building a transparent, safe and sustainable handling system of *ex situ* microbial diversity worldwide.

IV. Cooperative structures wherein culture collections

- a. Make use of the latest ICT technology to develop the necessary identification and tracking system, primarily for scientific purposes but also for any other bona fide ends; conduct and facilitate research in genomics and functional genomics, thus develop capacities of storage and processing of genomic, transcriptomic and metabolomic information. These compiled data improve definite characterization of microbial resources;
- b. Conduct their efforts in networks, in conformity with NP provisions on Technology Transfer, collaboration and cooperation.

Although most have been developed before the Nagoya Protocol, these tools have been reviewed and refined to be relevant solutions for microbiologists implementing the Access and Benefit Sharing concept. The World Federation for Culture Collections and its members work towards the development of a global system incorporating these developments, combining adapted legal concepts and bioinformatics.

Conclusion

The best way to achieve ABS with effective socio-economic benefits is to build on existing procedures, to make the appropriate linkages between the various actors and systems, and provide for the necessary incentives to the users so that ABS is effectively more

beneficial to all and does not require coercive measures or penalties. The TRUST initiative is open to all culture collections and microbiologists.

References

1. Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity. (<http://www.cbd.int/abs/>)
2. KBBE can be concisely defined as "transforming life sciences knowledge into new, sustainable, eco-efficient and competitive products". "Knowledge based" refers to the increasing amount of data on biological material produced as research outputs, and processed by analytical tools, which themselves generate even more data and metadata to be managed and analyzed by powerful computational tools. The term "bio-economy" includes all industries and economic sectors that produce, manage and exploit biological resources (agriculture, food, pharmaceutical, cosmetic, and other bio-based industries). Advanced biotechnology is breaking new ground in understanding microbial diversity and bio-processes that could lead to valuable bio-products and bio-materials. Applying such new knowledge to the production and conversion of bio-resources can boost bio-economy and create new industries.
3. See New Perspectives on the Knowledge-Based Bio-Economy, Conference Report, European Commission, Brussels, 2005. See also http://ec.europa.eu/research/biosociety/kbbe/basics_en.htm
4. <http://www.cbd.int/convention/articles/default.shtml?a=cbd-15>
5. <http://www.cbd.int>
6. 29 December 1993
7. COP Decision 6/24 Access and benefit-sharing as related to genetic resources. A. Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization <http://www.cbd.int/decision/cop/default.shtml?id=7198>
8. TRIPS Agreement is Annex 1C of the Marrakesh Agreement Establishing the World Trade Organization, signed in Marrakesh, Morocco on 15 April 1994. Article 27.3.b) states that micro-organisms cannot be excluded from patentability.
9. Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure. Combined with the Regulations Under the Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure. <http://www.wipo.int/treaties/en/registration/budapest/>
10. "Biosafety" refers to the containment principles, technologies and practices that are implemented to prevent unintentional exposure to pathogens and toxins, or their accidental release.
11. "Biosecurity" refers to institutional and personal security measures designed to prevent the loss, theft, misuse, diversion or intentional release of pathogens, or part of them, and toxin-producing organisms, as well as such toxins that are held, transferred and/or supplied by BRCs (OECD definition page 44 in OECD (2007) Best Practice Guidelines for Biological Resources Centers. OECD Directorate for Science, technology and Industry.
12. Cartagena Protocol on Biosafety to the Convention on Biological Diversity, adopted in Montreal on 29 January 2000. The objective is "to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms,...." As specified in article 5, the Protocol does not apply to the trans-boundary movement of living modified organisms which are pharmaceuticals for humans, ... , "
13. Of the approximately 1,400 diseases now recognized in humans, about 60% are due to multi-host pathogens;



whereas 75% of newly emerging diseases (over the past three decades) have been zoonotic. See <http://www.oie.int>

14. <https://www.ipcc.int/>
15. BWTC at <http://www.opbw.org/>
16. UNODA at <http://www.un.org/disarmament/WMD/Bio/>
17. Regulation (EU) No 511/2014 of the European Parliament and of the Council of 16 April 2014 on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization in the Union Text with EEA relevance at <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014R0511&from=EN>
18. MOSAICC - Micro-Organisms Sustainable use and Access regulation International Code of Conduct (<http://bccm.belspo.be/projects/mosaicc>)
19. "A fast-track procedure should be available in cases of emergency such as epidemic,....," MOSAICC Version June 2011 page 5.
20. Pandemic Influenza Preparedness framework (<http://www.who.int/influenza/pip/en/>)
21. Fidler, D.P. (2008). Influenza Virus Samples, International Law and Global Health Diplomacy. *Emerg. Infect Dis* Jan 2008 14(1): 88-94.
22. MOSAICS - Micro-Organisms Sustainable use and Access regulation Integrated Conveyance System (<http://bccm.belspo.be/projects/mosaics>)
23. <http://bccm.belspo.be/projects/trust>
24. The innovative concept of "bundle of rights" is a dynamic model of ownership management moving away from the static concept of ownership towards a flexible allotment of rights. Ownership constitutes a "bundle" of use and decision rights that are attributed to a number of stakeholders / economic agents. It is a set of operational and collective choice rights defining respectively who decides upon the use that one can make of a resource, and who decides upon the future exercise of the rights on the resource. Such scheme allows multi-ownership of a gradual level of use and decision rights. These rights can begin with basic access rights, encompassing research delivering outputs to the public domain, distribution on to third parties, exploitation rights to develop intellectual property and its ownership which may include reach through rights. The application of the "bundle of rights" makes possible the enforcement of the "sovereign rights of States over their natural resources" without prejudice to private rights. Unambiguous allotment of rights in advance will facilitate rightful benefit sharing "at the end of the pipe". Dedeurwaerdere Tom. *Understanding ownership in the knowledge economy: the concept of the bundle of rights*. BCCM News Edition 18 - Autumn 2005.
25. This development is complementary to national regulations on ABS and to existing IPR laws, as it will constitute a demarcated space where material and information are relatively freely accessible provided that the outputs are injected back into this open space, to be shared again. Inside this space access and benefit-sharing are "commonly shared". Outside this demarcated space, access and benefit-sharing will be ruled through ordinary national and international laws, including IPR and specific CBD inspired regulations. A practical development similar to this model is the NIEMA system. See <http://www.thecommonsjournal.org/index.php/ijc/article/view/215/144>
26. <http://gcm.wfcc.info/>
27. <http://absch.cbd.int>
28. Internationally Recognized Certificate of Compliance
29. WFCC has developed a pioneering database system by registering its members through a unique acronym and numerical identifier in its official directory. It also helps its members to catalogue their microbiological resources. This system is managed by the World Data Centre for Micro-organisms (WDCM). Combining the WDCM system and the use of electronic markers called "Globally Unique Identifiers (GUIDs)" set up a robust system to organize transfers of

(micro) biological items, tracking the flow of resources and related information. This system also facilitates the application of ABS since it can potentially retrieve all kinds of information about microbiological resources, including information related to the location and movements of the resource. The WDCM portal acts as an information broker between all online catalogue entries of the culture collections. See <http://www.wdcm.org> and http://bccm.belspo.be/documents/files/projects/mosaics/ics_report.pdf

NEWS FROM MEMBERS

The Fungal Genetics Stock Center

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It has relocated from the University of Missouri-Kansas City to the Kansas State University where it will be part of the Department of Plant Pathology. Originally founded in 1960 and supported continuously by the US National Science Foundation, the FGSC has moved several times when the Director retired that required relocation. The most recent move comes upon the heels of changes at the USNSF which is switching all living collections from sustenance to project-based grant competitions. Taking place in freezing cold weather, the FGSC move included over 6200kg of strains, equipment, and documentation. Minimal disruption to service was encountered and the FGSC is busy shipping strains around the world.

The FGSC will have tremendous opportunities as part of the Department of Plant Pathology at KSU and anticipates increasing levels of service to the research community. Curator Kevin McCluskey has taken a position at Kansas State and says "the opportunities at K- State, including the availability of several private research collections, make this move the beginning of a new era for the FGSC."

<https://twitter.com/TheFGSC>



The Phaff Yeast Culture Collection at the University of California Davis

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Tapping Biodiversity for Discovery

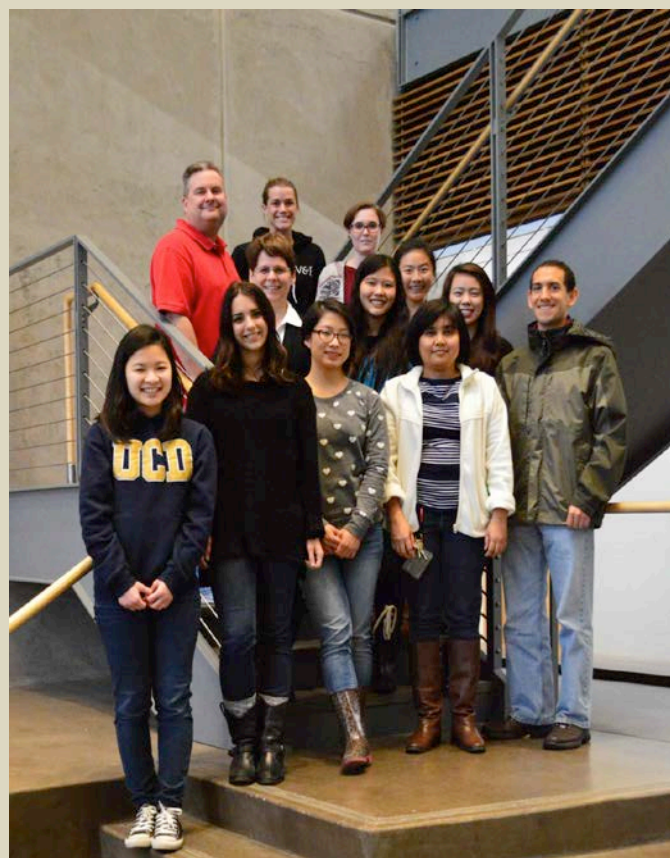
Long before genetic modification methods were developed in the laboratory, Nature honed methods for generating and optimizing genetic diversity. The Phaff collection has captured a large slice of known yeast species diversity. The tremendous diversity of species, and of strains within a species, allow comparative research approaches that are possible at very few institutions in the world. Phaff collection yeasts are used at UC Davis in research projects including ionic liquid, glycolipid secretion, and many other projects.

It is the fourth largest public collection of wild yeasts in the world. Yeasts are distributed worldwide to academic, government agency and industry researchers for use in a broad range of applications such as biofuels, validation of clinical diagnostic kits, discovery of new yeast species, hosts for heterologous protein expression, studies of stress tolerance, and much more. These discoveries have been possible at UC Davis because thousands of yeasts, representing hundreds of species, have been gathered and preserved at the Collection.

You can access the online catalogue and ordering system at www.phaffcollection.ucdavis.edu

The Phaff Collection also hosted the **Fall 2014 meeting of the US Culture Collection Network**, and brought together curators of 13 biodiversity and genetic stock collections of algae, bacteria, fungi, and yeasts. In addition, a targeted group of users of microbial collections participated in the meeting, which focused on

uses of microbial culture collections for genome sequencing projects. Discussions and visions for the future were summarized in a meeting report that will be submitted for publication soon. Contact curator Kyria Boundy-Mills to obtain a copy.



Front row: Shanny Krisna (Food Science undergrad), Lauren Enriquez (Microbiology undergrad), Ting Lin (Food Science undergrad), Imayuli Sitepu (postdoc), Tonio Garay (Food Science PhD student). Second row: Kyria Boundy-Mills (Specialist), Christie Hartanto (Food Science undergrad), Florencia Chua (Food Science undergrad). Back row: John Butler (Food Science undergrad), Jen Lincoln (Viticulture & Enology undergrad), Erin Cathcart (technician), Vania Rahardjo (Food Science undergrad)

Moroccan Coordinated Collections of Microorganisms CCMM WDCM 883

Ouadghiri Mouna and Amar Mohamed

The Moroccan Coordinated Collections of Microorganisms (CCMM), a holding of Microorganisms within National Centre for Scientific and Technical Research (CNRST) - Rabat, Morocco, were set up in 1998 in collaboration with Belgian Coordinated Collections of Microorganisms (BCCM). The CCMM took into account the Convention on Biological Diversity (Rio



de Janeiro, 5 June, 1992). They were and still up to now, the unique collections in North Africa and the second in Africa.

In 2005, CCMM were registered at World Data Center for Microorganism-WDCM under the number "WDCM 883". In 2013, they acquired visibility on the international scene by becoming a member of WFCC (World Federation for Culture Collections) and the first African collections joining the Global Catalogue of Microorganisms - GCM (<http://gcm.wfcc.info/cclist>).

In 2014, CCMM published the second printed catalogue containing 1451 strains belonging to 220 species (135 bacteria species, 51 fungi species and 34 yeast species). The holding is kept in the right conditions to remain viable. It is made available for all users and will eventually serve future generations of researchers, industrialists and their users.

According to Prof. Jean Swings (Former President of WFCC), the development of CCMM has been a sound project from the beginning, it aimed to realize a durable structure for the conservation of microorganisms while also being a node of up to date knowledge in genomics and bioinformatics in Morocco.

CNRST has been the main supporter of the CCMM, providing them with the main necessary funds for personnel, housing and operational costs. CNRST is not only the proud owner of CCMM; it housed and organized diverse workshops on collection management, bioinformatics, modern molecular methods and quality management. Actually, the CCMM dispose of permanent infrastructure not only for preservation and management of Microorganisms of Moroccan origin but also for doing high scientific research, accurate and reliable characterization and identification of microorganisms.

For more details see www.cmm.ma.



Infrastructure for preservation of CCMM holding



CCMM infrastructure for research

In the framework of Budapest Treaty ratified by Morocco in 2011, it is foreseen that CCMM will acquire the legal status to accept patent strain deposits in a legal framework for Morocco.

In the future, CCMM will continue to:

- Prospect more Moroccan ecosystems,
- Valorize CCMM holding by screening microorganisms harboring potential biotechnological applications,
- Create new databases based on genomes sequencing of relevant microorganisms,
- Improve the management of CCMM using new informatics and bioinformatics tools (software and hardware),
- Disseminate and share information related to the CCMM holding.
- Exchange of know-how with other culture collections via WDCM,
- Transfer of technology and development of capacity building by participating in national and international trainings,
- Organize workshops and courses for African benefit in collaboration with WFCC.

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Culture Collection of Agricultural Microbiology - UFLA, Brazil, is implementing a QMS based on ISO 9001:2008

Cledir Santos, Juliana Tensol, Ivani Gervais, Nelson Lima and Rosane Schwan

The Culture Collection of Agricultural Microbiology (CCMA-UFLA) is a Culture Collection of Microorganisms in Brazil, which belongs to the Federal University of Lavras-UFLA. It is headquartered at the Agricultural Microbiology Unit at the Department of Biology of UFLA. CCMA-UFLA is a public service collection that holds more than 4,000 yeasts, filamentous fungi and bacteria isolated mainly from fermentation processes involving coffee, cocoa, silage, fruits from Cerrado's biome and indigenous beverages.

CCMA-UFLA is now registered at World Data Centre for Microorganism-WDCM under the number "WDCM 1083" CCMA-UFLA has also been approved as WFCC affiliate member and its WFCC number is: 1244. CCMA-UFLA operates at national and international level for nearly two decades, it acts as an university infrastructure with the mission of accept deposits, preserve and provide microbial strains and its associated information for research and educational purposes in agricultural microbiology and related fields.

Moreover, in order to go further and have a harmonised procedures with its national and international partners, CCMA-UFLA is implementing a Quality Management System (QMS) based on ISO 9001:2008. This process has been developed in collaboration with the Portuguese Fungal Culture Collection *Micoteca da Universidade do Minho* (MUM, Portugal), which is an international fungal culture collection of reference.

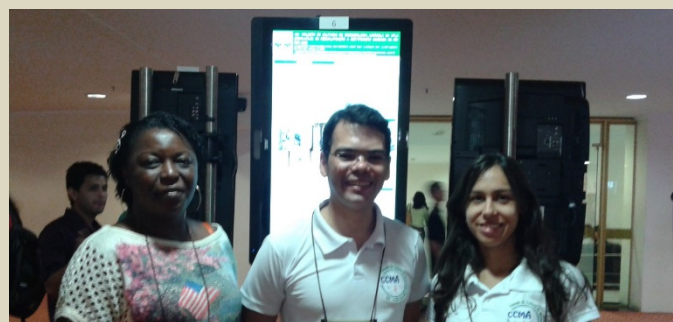
According to Dr. Cledir Santos, Visiting Assistant Professor at the Post-Graduate Programme of Microbial Agriculture of UFLA and QMS Quality Manager for ISO 9001:2008 of CCMA-UFLA, the collection already operates globally under national and international regulations. "In a short time but with hard work and great effort we have managed to bring CCMA-UFLA to the national hall of Biological Resource Centres (BRC) Network", Dr. Santos said.

Concerning BRCs establishment in Brazil, the country is following the policy where a BRC will be one collection with a recognised label by Brazilian Minister of Science, Technology and Innovation (MCTI, Brazil), with the accreditation system put in place by the Brazilian Institute of Metrology (INMETRO, Brazil). Although Brazil

has no recognised BRCs yet by the government rules, CCMA-UFLA is working throughout to be first certified under the ISO 9001:2008 standard and then, as a next wise approach step will establish the Brazilian Standard NIT-DICLA-061 (Requirements for accreditation of testing activities and production of reference materials performed by BRCs), to fully become a BRC in Brazil.

For Dr. Cledir Santos, based on the effort and positive results that have been succeed in place, very soon CCMA-UFLA will be working full steam ahead as an international reference in the microbiological resources in the area of agricultural microbiology.

As a result of this effort, last November 2014 members of the Culture Collection of Agricultural Microbiology - Federal University of Lavras (CCMA-UFLA, Brazil) presented in the 3rd Brazilian Congress of Genetic Resources – III CBRG, <http://www.cbrg.net.br> - in the city of Santos (Brazil), the communication entitled "**Culture Collection of Agricultural Microbiology of UFLA (CCMA-UFLA): from the requalification to the certification based on ISO 9001:2008**". In the communication during the congress, members of CCMA-UFLA's team presented the ongoing process for the implementation of the QMS.



Some of the members of CCMA-UFLA's team during the III CBRG. From left to right: Ivani Gervais (Technician), Prof. Cledir Santos (Quality Manager) and Juliana Tensol (Curator).

According to Professor Rosane Schwan, Full Professor at UFLA and Director of CCMA-UFLA, the main aim of presenting this work was to disseminate the latest advances in planning and actions undertaken at CCMA-UFLA for its certification under the ISO 9001:2008 standard. "A PhD student has already been selected to develop the thesis on the certification process. This thesis is supervised by Professor Nelson Lima, who is Full Professor at University of Minho (Portugal), Professor Schwan said. Currently Professor Lima is living in Brazil as an International Visiting Professor at the Post-Graduate Programme of Microbial Agriculture of UFLA, which has a label of "Excellent", according the Brazilian Minister of Education based on international ranking scores.



Professor Nelson Lima during his conference entitled "Fungal taxonomy and the next generation of omics" at the III CBRG.

During the III CBRG, Professor Nelson Lima, President of European Culture Collection's Organisation/ECCO, presented two conferences as invited speaker, namely: **"Fungal taxonomy and the next generation of omics"**, and **"Innovation and Business Plan for Microbial Cultures Collections"**. Professor Lima, Director of MUM (Portugal), has also acts as Head of the International Advise Committee of CCMA-UFLA and is working close to WFCC to help the collection to be engaged in the future in the global BRC network, taking into consideration the international and the Brazilian regulations for BRCs.

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<http://www.prgp.ufla.br/microbiologia/2014/11/12/colecao-de-culturas-da-microbiologia-agricola-ccma-ufla/>

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BRAZIL

Merge of the Japan Society for Culture Collections (JSCC) and the Japan Society for Microbial Systematics (JSMS)

Takashi Itoh and Ken-Ichiro Suzuki

A society devoted to microbial systematics for more than 30 years in Japan, Japan Society for Microbial Systematics (JSMS), was dissolved as of 31 December,

2014, and joined in Japan Society for Culture Collections (JSCC) which has developed into a new society: Japan Society for Microbial Resources and Systematics (JSMRS).

JSMS was originally started as a study group organized by Prof. Kazuo Komagata's Laboratory of the University of Tokyo in 1980 to provide an opportunity for free and active exchange of views and opinions on the field of microbial chemotaxonomy. Since then, a series of workshops were held annually. In 1985, it was established as Society for Chemotaxonomy and it was reorganized as JSMS in 2002 with the assignment of the president and the board members. In the early years, the annual workshops were focused mainly on the chemotaxonomic studies on various groups of microorganisms including bacteria, yeasts, fungi and microalgae. Consequently, the society members have achieved great contributions to development of the methodologies and application of chemotaxonomic criteria, such as cellular fatty acid profiles, isoprenoid quinones whole cell-protein and enzyme profiles, cell wall constituents, etc. as well as the DNA G+C content and DNA-DNA hybridization. Subsequently, since the early 1990's, phylogenetic approaches and their applications in microbial systematics have increasingly drawn attention in the society. In 2004, the JSMS co-organized a symposium with JSCC in the 10th ICC meeting held at Tsukuba, Japan, entitled "Current advances in the species concept problems of microorganisms: definitions, methodologies and practical applications".

In the meantime, JSCC has been acting as a culture collection network in Japan for the last six decades. The articles on the outlines of the previous activities have been posted on the WFCC Newsletter No. 33 (2001) (1) and No. 51 (2011) (2). The merging JSMS into JSCC would bring certain advantages to the society. Needless to say, microbial taxonomy is essential for day-to-day workflow of culture collections and microbial resource centres (CCs/MRCs), particularly in maintaining quality of the holding microbial strains. Furthermore, CCs/MRCs have a role of depository of the taxonomic type strains and issue the certificate of availability for proposal of new species and indispensable for microbial taxonomy. In addition, exciting microbial taxonomic topics introduced in the society will attract microbiologists and students in wider fields studying in research institutes and universities. Thus, the consolidation of the two societies will produce the synergistic effect for the activities.

The JSCC have issued biannually its official journal, "Microbiology and Culture Collections", of which articles



were for preservation, identification and classification of microorganisms and cultured living organisms as well as the management of culture collections and the related informatics. On this occasion, the journal will be turned into a new name "Microbial Resources and Systematics" to strengthen the research interest on microbial taxonomy. We believe that these changes arouse interest of young researchers and students. As the previous editorial policy of journal, the new journal also accepts submission from oversea non-members through recommendation of the members. If you are interested in the activity of JSMRS, please visit the webpage of JSMRS (<http://www.jfcc-home.jp/>). We would like to share the activities with other regional networks for CCs/MRCs.

1. K. Komagata (2001). The 50th anniversary of the Japan Society for Culture Collections. WFCC Newsletter 33, 1-7.
2. T. Itoh and K. Suzuki (2011). Japan Society for Culture Collections (JSCC) 60th anniversary symposia at IUMS2011 Sapporo. WFCC Newsletter 51, 5-7.

Celebrating 60 Years of Mycology and the URM Culture Collection in the Federal University of Pernambuco, Brazil

Cristina Souza-Motta, Rejane Neves, André Santiago, Eliane Silva, Ana Cristina Correia, Susana Carvalho, Luan Amin, Jadson Bezerra, Oliane Magalhães, Bruno Gomes
URM Culture Collection, Department of Mycology, Federal University of Pernambuco – UFPE

The Federal University of Pernambuco (UFPE), Recife, Brazil has hosted a fungal culture collection since 1954 as part of University of Recife Mycology (URM) (<http://www.ufpe.br/micoteca/>). URM was established by the late Prof. Augusto Chaves Batista in 1954 with 297 well characterised fungal strains at the former Institute of Mycology, and was register later in WDCM as number 604. URM was recognized as a legal entity of the Brazilian Union for the deposit of genetic resources by the Genetic Patrimony Council of the Ministry of Environment in 2010. The collection now holds approximately 25000 named strains of yeasts (25%) and filamentous fungi (75%) to species level. All major taxonomic groups are represented. Each strain is preserved by at least two techniques: water and mineral oil storage were used initially, while freeze-drying and freezing at -80 °C have become the preferred techniques

for recent acquisitions. Special care is taken to ensure that cultures recovered from preservation conform to the characteristics of original deposit.

This collection offers a range of services including: acceptance of free and confidential deposits; supply of strains for academia, industry and other services; support of research and education (graduate and post-graduate students, and advanced training courses); and identification services and confidential contracts (e.g., fungal medical diagnosis, cultures for agro-industry companies, etc.).

The OECD initiative related to guidance for the operation of Biological Resource Centres (BRC) is now key for this collection. The correct quality management system for biological resources and associated information is employed and it is certified under ISO 9001:2008 for Preservation, Identification and Fungal Cultures Supply since January 2014. URM is the first culture collection in Brazil and Latin America, and the 22nd collection of the 673 registered at the WDCM, to be certified to this level.

The expansion in 15 m² of a total 124 m² floor space and refurbishment of the URM premises, creates new opportunities and capabilities for the collection which was funded by the (a) national project ref. 2083/07FINEP (the Financier of Studies and Projects Public Company), (b) Pernambuco State Research Agency (FACEPE) and (c) central UFPE Rectorate. The UFPE Rectorate has demonstrated its high commitment to the collection and URM is now much closer to accomplishing the minimum international requirements for the accreditation processes of BRC under ISO 17025 or the Brazilian norm NIT-DICLA-061 "Requirements for BRC accreditation of testing laboratories and producers of reference materials" alongside with the OECD Best Practices Guidelines for BRC. This initiative means that that URM will soon become a fungal reference material supplier and participate in the Brazilian Biological Resources Centre Network currently under the coordination of the Ministry of Science, Technology and Innovation.

Furthermore, the Department of Mycology, UFPE, held an event celebrating 60 years of Mycology and the URM Culture Collection on last October 7 in Recife, to evoke the scientific contributions made to Mycology by Prof. Chaves Batista by colleagues who knew him and the many other admirers of his work. The first years of the Institute of Mycology, University of Recife, were remarkable in that they brought scientists from around the world to the institute and the scientific contributions that Prof. Chaves Batista made are recognised internationally.

Prof. Anísio Brasileiro (UFPE Rector), the Vice- and Pro-Rectors, the Head and Deputy of the Biological Sciences



Centre, and Prof. Cristina Motta (Director of the Department of Mycology and URM Curator), paid tribute to various Professors and Staff-Members, involved over the last years in the departmental and collection activities, during the ceremony marking the 60 years of the Department of Mycology and URM Culture Collection.



Figure 1: Representatives from the Federal University of Pernambuco on ceremony of celebration of the 60 years of Mycology and the URM Culture Collection, Brazil.



Figure 2: Tribute to various Professors and Staff-Members, involved over the last years in the departmental and collection activities.



Figure 3: Inauguration of the new installations of the URM Culture Collection in the Federal University of Pernambuco, Brazil.



Figure 4: Left to right: Prof. Silvio R. B. Marques (UFPE Vice-Rector); Prof. Cristina Motta (Director of the Department of Mycology and URM Curator) and Prof. Maria Auxiliadora Q. Cavalcanti (Professor Honoured by URM Culture Collection) with the certificate ISO 9001:2008 URM Culture Collection in the hands; Prof. Maria Eduarda L. Larrazabal (Head of the Biological Sciences Centre) and Prof. Anísio Brasileiro (UFPE Rector) in the new dependencies of the URM Culture Collection.

In addition, tributes were also paid to Profs. João Lúcio de Azevedo (São Paulo University, Brazil), Nelson Lima (Director of Micoteca of the Universidade do Minho, Portugal; President of the European Culture Collections' Organisation and currently visiting professor in the post-graduate programme on Agricultural Microbiology, Federal University of Lavras (Brazil) and José Luiz Bezerra (Federal University of Recôncavo da Bahia, Brazil), in recognition of their dedication to developing Mycology and *ex situ* preservation of fungal genetic resources.

Prof. Cledir Santos, (Researcher level-A from CNPq-Brazil, lecturer in the postgraduate programme on Agricultural Microbiology at Federal University of Lavras, Brazil and Quality Manager at Micoteca da Universidade do Minho, Portugal) was awarded with a "Certificate of Gratitude" for his dedication to Mycological Studies in Pernambuco State, Brazil.

By maximising the benefits of the UFPE institutional support through the ISO 9001:2008 accreditation, and the larger and refurbished premises, URM is now available for new scientific exploration, while encouraging national and international collaborations to improve the quality of its holdings and services to achieve BRC status in the near future.



WFCC SKERMAN AWARD FOR MICROBIAL TAXONOMY

2016



Prof. Victor Bruce Darlington Skerman (1921-1993)

The Skerman Award was established to honour the contribution made by Professor Victor Bruce Darlington Skerman to bacterial taxonomy, to the establishment of the WFCC World Data Centre on Microorganisms, and to the development of the WFCC.

Professor Skerman made major contributions to the reform of bacterial systematics. He was the catalyst and a driving force for a series of reforms which led to the clarification of bacterial nomenclature (1). He reorganized the International Committee on Systematic Bacteriology. He developed a database on culture collections which would become the WFCC World Data Centre for Microorganisms (WDCM). He published the first edition of the World directory of collections of cultures of microorganisms (2).

WFCC Skerman Award

The aim of the Award is to encourage taxonomic research by young microbiologists and to reward excellence in taxonomic research and significant contributions to the discipline.

The successful recipient of the Award will receive a prize of \$2000 together with a return economy class airfare and registration costs to attend the Fourteenth International Congress for Culture Collections (ICCC 14) to be held in Antalya, Turkey in fall 2016. The recipient will be invited to deliver the Skerman Award Lecture on his/her research. The recipient will also receive a certificate of the Award.

Application:

The World Federation for Culture Collections invites applications from young microbial taxonomists for the WFCC Skerman Award for Taxonomy.

Applicants should be less than 40 years of age at the time of application. Applicants should provide a CV, a list of research publications, the names and addresses of two referees familiar with their research who have agreed to act as referees, and copies of their three most significant research publications.

For questions related to the application please contact:

Ms Anne Depauw, at depa@belspo.be, Belgian Coordinated Collections of Microorganisms, BelSPO, avenue Louise 231, 1050 Brussels, Belgium.

Applications should be submitted to the WFCC President, Philippe Desmeth, preferably by Email at desp@belspo.be, or by mail at Philippe Desmeth c/o Belgian Coordinated Collections of Microorganisms, BelSPO, Avenue Louise 231, 1050 Brussels, Belgium.

The deadline for applications is **31 December 2015**.

(1) Sly, L.I. 1995. *Taxonomic Note: V. B. D. Skerman (1921-1993), a Reforming Force in Bacterial Systematics and Nomenclature*. *Int. J. Syst. Bacteriol.* **45**: 412-413.

(2) Martin, S. M., and V. B. D. Skerman, 1970. *World directory of collections of cultures of microorganisms*. Wiley Interscience, New York.

OBITUARY



This is the sad news that Dr. Dieter Claus, former Director of DSMZ, Braunschweig, Germany, has passed away in the night of 15th to 16th of April 2014 after a long and severe illness.

Dieter Claus had been the head of the nucleus of today's DSMZ, the SMG-Sammlung von Mikroorganismen Göttingen (founded 1969), which under his guidance turned into the DSM-Deutsche Sammlung von Mikroorganismen, and, after moving to Braunschweig, was enlarged into the present DSMZ. He acted as DSMZ's first Director until his retirement in 1991. His far-sightedness made him develop the university in-house collection into an internationally acting scientific service collection. He drove the development of a loose network of collections to the final efficiently working and



worldwide renowned centralized institution that it is today.

From the very beginning, he had been involved in international cooperation such as the development of the WFCC-World Federation for Culture Collections, which held its first International Congress in 1969 in Japan. He was elected as President for this organization in the years 1981 to 1984 and was involved in the organization of congresses and training courses worldwide. He had the strong vision that collections ideally should render the necessary underlying service for science, research and development. Thus, he clearly set the route for the DSM towards being a service organization in which the scientists should also be enabled to do their own research. He never forgot that good science needs good technical skills and that the so-called 'basic' techniques in the lab, which ascertain purity, viability and authenticity of a given strain, are indeed the basis on which good science depends. The WFCC awarded Honorary Membership to him in 1996 to thank him for the example he had been to all in terms of scientific development, business management and political wisdom.

From early on, he also understood that international cooperation is fundamental to strengthen science and technological development. He was one of the 'founding fathers and mothers' of ECCO - The European Culture Collections' Organization. One of the reasons to set up this organization was to offer a platform for transboundary exchange and discussion – even across the then existing 'iron curtain' which made scientific cooperation so difficult between the east and the west of Europe. The inaugural meeting was hosted 1982 by the DSM in Göttingen and together with Barbara Kirsop, UK, Yvonne Cerisier, F, Riet Schippers, NL, Milos Kocur, CZ and Enevold Falsen, S, Dieter Claus laid the foundations for this successful institution which today embraces over 65 member collections in over 26 countries.

In 1991 he received the Winogradsky Medal from the Society for General Microbiology of the former USSR in recognition of his outstanding services to microbiological science, culture collections development and international cooperation in the field.

He initiated the long been required ICECC-Information Centre for European Culture Collections in 1989, which he presided over after his retirement until 1993. He also had been one of the driving persons behind EU funded projects such as the Joint Catalogue of the DSM and the NCTC and the MINE Project, which triggered a series of other cooperation projects.

In the early days of the DSM/DSMZ he was not only the head of the collection but also built up and was responsible for the main service areas of patent and

safe deposit, as well as the identification service, besides being curator for the aerobic endospore forming bacteria (AEFB). Early research interest focused on the degradation of toluene (laboratories in Rothampstead, England) and later was mainly in the aerobic endospore forming *Bacillus* and related genera, their taxonomy and systematics as well as the environmental impact which these organisms exert. Applied aspects of this group of organisms such as in the canning industry, in agriculture, hygiene, cosmetics or biotechnology triggered his interest and resulted in lectures and publications. He contributed to the "Approved lists of bacterial names" and was active in the official risk assessments for bacteria and subsequent allocation to risk groups in Germany.

He was co-author to both of the paramount publications in the bacterial world: Bergey's Manual and The Prokaryotes in several issues. One of the alkalitolerant *Bacillus* species validly published in the 1990ies was named after him: *Bacillus clausii* – and it is certainly not pure chance that this species has been proven to be a benign organism which is being used in probiotic formulations. Being dedicated to the practical side of science his interests also spanned the areas of technical problems, management, organization, and day-to-day procedures in the collection laboratory which have been adopted by many of the younger collections in the world.

He supervised numerous Diploma and PhD students from Germany, Europe and all over the world and generously contributed to the enlargement of existing or building up of new collections in other places in the world.

Long after his retirement he continued to work in the laboratories of the Microbiological Institute of the University of Göttingen on biotechnological questions. In 2008, he received Honorary Membership to the German Society for General and Applied Microbiology (VAAM) in recognition for his responsible commitment over decades for building up of a microbial collection of national and international high reputation rendering authentic services to science and to honor his lifetime achievement.

Dieter has been known to us as a real humanistic and integrative personality. He was able to listen and never felt like competing with but rather gave support to others, especially young scientists. He was willing and loved to see them growing. He was the quiet, steady, reliable and dedicated worker in the background; a friend, a human being with a strong sense for scientific duties and missions, which he performed with an intrinsic ethical incorruptibility. He never liked to be in the centre of public interest though some of the conference pictures show him happily dancing with young Thai ceremonial dancers or with the former WFCC President Barbara



Kirsop. We lose a good friend, true mentor, and upright scientist, who always had also a clear position towards the social and political background that shapes the conditions for our scientific lives. We will miss his open, warm and altruistic personality.

Should you wish to condole personally, please write to
Frau Astrid Claus
Chemnitzer Str. 3
37085 Göttingen, Germany
E-Mail: svenclaus@gmx.de

CONFERENCES AND WORKSHOPS

ICCC-14

2016, ANTALYA-TURKEY

**Culture Collections will bridge where continents
bridge**
www.iccc14.wfcc.info

First meeting of planning for the organization of ICC-14 took place in November 2014 in Antalya, Turkey.

WFCC President and Executive Board together with the Turkish Organizers (Chair: Prof. Bülent Gürler, Director of Turkish Culture Collections, KUKENS) invite all WFCC members to actively participate in the conference planning and program.



Dr Ipek Kurtböke, Dr Philippe Desmeth and Prof. Bülent Gürler in Antalya, Turkey, November 2014.

Congress Secretariat: SymCon MICE
iccc14@symcon.com.tr

**4th International Conference
MICROBIAL DIVERSITY: current
situation, conservation strategy, and
biotechnological potentialities –
ICOMID' 2016**

Inventory and monitoring of microbial diversity

1. Characterization of novel forms of microorganisms
2. Interaction mechanisms of higher living forms and microorganisms
3. Application of microorganisms in new and conventional fields of biotechnology, industry, health and environmental protection
4. Microbial culture collections and methods for secured conservation of microbial genetic resources *in/ex situ*
5. Biosafety and bioterrorism

**ICOMID will run concurrently with the
ICCC14 in 2016, Antalya, Turkey**

**Convener and Program Chair: Prof. Irina
Ivshina at The Institute of Ecology and
Genetics of Microorganisms, Ural Branch of
the Russian Academy of Sciences, Russia**

XXXIV ECCO MEETING

The annual European Culture Collections' Organisation Meeting is the leading meeting in Europe of its kind and connects microbiologists and curators from microbial culture collections.

The theme of the 34th annual ECCO meeting (XXXIV ECCO 2015) is **European Culture Collections as tools in research and biotechnology** and it will be organised by Institut Pasteur (Paris, France). A very exciting scientific programme is being put in place alongside with a nice social programme.

Participants to XXXIV ECCO 2015 are invited to present the outcome of their research at the meeting that will be held in Paris from 27th to 29th May.

For more information visit the ECCO page (www.eccosite.org) or contact the Local Organiser: Dr Dominique Clermont. Collection de l'Institut Pasteur, Institut Pasteur 28 rue Docteur Roux 75724 Paris cedex 15, France.

Email: dclermon@pasteur.fr



ECCO XXXIV
European Culture
Collections
as tools
in research
and
biotechnology
May, 27th - 29th 2015
INSTITUT PASTEUR, PARIS, FRANCE

Scientific committee
BIZET Chantal
Institut Pasteur, France
BRISSE Sylvain
Institut Pasteur, France
CASAREGOLA Serge
INRA-AgroParisTech, France
CLERMONT Dominique
Institut Pasteur, France
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Website
www.ecco2015.org

Deadlines
Abstract submission (poster only) :
March, 27th 2015
Early registration : March, 27th 2015

Contact
Local secretariat
(registration, abstract,
sponsorship)
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