

Global Microbial Identifier

Charter and Structure



September 2013
The interim GMI Steering Committee
The Executive Office at DTU Copenhagen

A provisional Charter and Structure of the Global Microbial Identifier Network

September 2013

CHARTER

The Global Microbial Identifier (GMI) is currently an informal global, visionary taskforce of scientists and other stakeholders who share the aim of making novel genomic technologies and informatics tools available for improved global patient diagnostics, surveillance, research and public health response. This will be achieved by promoting and facilitating needs- and end-user-based data exchange and analysis tools for characterization of genomic information from all microbial organisms and microbial communities.

Vision of GMI

GMI is committed to a world where high quality microbiological genomic information from human, animal and plant domains is freely shared among all nations for the use of research and to improve (public) health, healthcare and a healthy environment for all.

GMI mission

The GMI mission is to build a global platform linked to an open and interactive worldwide network of databases for standardized identification, characterization and comparison of microorganisms through the storing of whole genome sequences of microorganisms, the connected metadata, and the provision of analytical facilities and shared standards.

Meaning and Implications

As a consequence of this vision and mission, GMI stands for a fostering of analysis and sharing of genomic data in real time, that enables faster, cheaper and more accurate diagnosis and surveillance of infectious diseases, characterization and tracing of pathogens to their sources, control of the disease they cause and epidemiological and biological research; locally as well as globally. The use of new whole genome sequencing technology in combination with global sharing and analysis of data will complement and partially substitute traditional microbiology and enable a giant leap for health systems in all countries, especially developing countries. GMI will also open up a new avenue of collaboration between different sectors in health, agriculture and environmental research and management. Sequence-based technologies are also rapidly becoming state-of-the-art in response to a recognized or suspected Public Health Emergency of International Concern (PHEIC). This calls for instruments and procedures for the global sharing of molecular data. As long as they are lacking, countries at risk are actually deprived of timely information. How essential this information is, and the legal and moral obligation for researchers and their governments to share these findings promptly, is not yet commonly understood and practiced.

The foreseen global database network may be used by different end-users for the identification of all types of microorganisms, both for single clinical tasks (simple microbiological identification) as well as for national and international public health surveillance, and outbreak investigation and response. The databases will include all kinds of microorganisms i.e. bacteria, viruses, parasites and fungi, and be accessible through user-friendly interfaces for end-users in clinics, academia, industry and government (e.g. clinicians, veterinarians, epidemiologists, microbiologists). The use of the platform and linked databases is seen as a

public good and would significantly improve health systems, as well as systems aiming at a safe food supply, and environmental control systems.

Ethics, timeliness and protection of legitimate interests

GMI promotes equity between countries, independent discussion and a professional and fair management of global data. Equity, sharing, timeliness and fairness are core principles promoted by GMI, while fully conscious of the reality of economic, scientific and political interests.

The producers of data should be protected against unnecessary interference in their commercial or scientific interests, while at the same time, timeliness of sharing information for public health purposes is of the essence and should be guaranteed. The input of, and access to, metadata associated with whole genome sequence data is also of the essence for the usefulness of databases, but can result at the same time in sensitive information.

Others have faced these dilemmas before. GMI takes note of the discussions and developments that have been achieved since 1996 by the Wellcome Trust, NIH ¹ and DOE ² and their partners. The Platform fully supports the 1996 Bermuda Principles, the 2003 Fort Lauderdale confirmation of these, the 2009 Utrecht GESTURE position paper and the 2009 Toronto Statement, that all call for rapid, pre-publication data release of genome sequence data and underline the 2003 formulated conviction that this can only: *“promote the best interest of science and help to maximize the public benefit to be gained from research.”*³ Building on these principles and experiences, GMI will further investigate fair mechanisms to protect the interests of the data producers when openly sharing their knowledge with the global community.⁴

Who we are

The GMI visionary taskforce is currently composed of approximately 200 experts from 30 countries, including clinical-, food-, and public health microbiologists and virologists, bio-informaticians, epidemiologists, representatives from funding agencies, data hosting systems, and policy makers from academia, the public health sector, industry and governments. We share the conviction that whole genome sequencing will change laboratory diagnostics and public health epidemiology in a revolutionary and promising way. We share the conviction that as a principle the GMI platform and linked databases will be a public good, accessible and affordable to all professionals.

The Initiative started in September 2011 at the first meeting convened in Brussels. During the 4th meeting in Bethesda in September 2012, an interim steering committee (SC) was formed and it was decided to initiate a process leading to a more formalized way of moving forward. The 5th meeting in Copenhagen in February 2013 called for developing an organisational structure, appropriate to the diversity and network character of the GMI movement.

¹ National Institutes of Health, USA

² Department of Energy, USA

³ *Report of the meeting on large scale data sharing, P-2*, organised by The Wellcome Trust on 14-15 January 2003 at Fort Lauderdale, US.

⁴ In particular the experience and in-depth work that has already been done by The Sanger Institute / Wellcome Trust UK brings forward promising examples to work further on.

Recital

Towards a first structuring of GMI

Scientists and other stakeholders from all over the world and with a diversity of interests, are involved in the GMI movement in different ways. Some are representatives of organisations that already invest heavily in projects, hardware and databases. Others are professionals who either contribute on an individual basis, or are exploring the possible use of modern sequencing technologies for their work, acting as a bridgehead for the future benefit of their institution or country. Different industries and domains, research, public health, private care and commercial interests, are all represented in the network. What started as an informal GMI taskforce of around 30 actively involved persons, has already extended with 150 people signing up for the Copenhagen conference, to many more signing up for the conference in September 2013. The current status of the network is as a fast growing group of enthusiastic, future-oriented professionals from a great diversity of domains and interests. This is both a strength and a threat for the future of GMI - the steering of which requires some form of organisation.

Besides the attendees present at workshops and conferences of GMI, a large number of professionals who have neither the time or the means for active participation, want to stay informed and become involved. Many, if not most of them, are the future end-users of WGS-data for direct clinical, public health or research needs. Their insight and contribution is of essence when it comes to both the choice of which WGS-data and meta-data have to be stored and how they should be made available. The question remains: how to make optimal use of all this 'hidden' knowledge in the construction of a global microbial identifier.

The participation of global and regional supra-national organisations is of particular importance to the GMI movement. The WHO International Health Regulations provide a legally binding framework for all countries sharing information and data when public health emergencies are at hand. Regional treaties may also add specific provisions. GMI is, vice versa, of particular importance to supra-national organisations. As these organisations are technically and politically coordinating when it comes to cross-border outbreaks, the fast and real time availability of global WGS-data and meta-data out of the different domains is of utmost importance for their actual response policy.

The GMI Copenhagen conference 2013 articulated the necessity of informing and awareness-raising of those in the health politics arena about the fast changing world of laboratory research and diagnostics. Notably, governments and (still some of the) supranational health organisations should realize the benefits and opportunities of GMI for public health generally, particularly in low-capacity countries. This suggests a need for a group of leading GMI representatives, who would be accepted and trusted to speak on behalf of the movement.

GMI is a platform for professional discussion and standardization within different domains and on a large variety of subjects, including structures, ethical and technical issues - the sum of which is difficult to summarize in one word. What GMI actually performs is what will be referred to in this document as 'Developing Terms of Reference and Terms of Infrastructure for a Global Microbial Identifier'.

In short: through this Charter and Structure we want to explain what GMI stands for, who can participate, when and how. We want to complement existing and future initiatives, and we intend to safeguard true global and multidisciplinary scope by introducing consultation mechanisms for end-users who are otherwise unable to participate.

A first structuring of the GMI movement must aim to continue to minimize bureaucracy whilst maximizing the flexibility that has characterized GMI thus far.

STRUCTURE

The Global Microbial Identifier initiative consists of *the Platform* and *the Community Network*.

The Platform is the governing and organizing body that represents GMI in a formal way. The Community Network is built on all individuals and organisations that subscribe to the GMI Website by filling in a profile and thus show interest in being permanently informed and/or actively taking part in the initiative.

The GMI Platform consists of

- The Steering Committee
- The Executive Office of GMI and the GMI Website
- The Scientific Working Groups
- Associated Projects
- The Consultation Panels
- The Annual Conference: CGMI

The Steering Committee

The Steering Committee governs, coordinates and represents, both internally and externally, the GMI Platform. The Committee acts on the principle of collegial governance. Consensus and/or differences of opinion are transparently expressed, both internally and, if relevant, to third parties. The Chair of the Steering Committee coordinates as *primus inter pares* the representation of GMI, but need not necessarily be the actual spokesperson on every occasion.

The Steering Committee guards and advocates the vision, mission and principles of the GMI Charter. The Steering Committee protects and decides on the use of the name and Logo of GMI.

The Steering Committee consists of 10 to 15 members.

A member is appointed for 2 years. At the end of this period, a member is eligible for reappointment. Members of the Steering Committee do not participate on behalf of their organisation; they participate in their personal capacity, with consent of their organisation; the expression of their opinion, either written or oral, is non-binding to their organisation unless explicitly stated.

New members of the Committee are selected, invited and appointed (c.q. re-appointed) *through co-option by the incumbent members of the Steering Committee*, taking into account the following criteria:

- I. General:*
 - Members of the Committee are generally recognized as scientific or content managing authorities in (one or more domains of) the broad field of GMI
 - Members of the Committee are representative of a non-profit organisation (also indicated as: not-for-profit or non-commercial organisation) and do not, directly or indirectly, have a profitable relationship with a commercial organisation in the broad field of GMI
 - Members of the Steering Committee are appointed on the basis of their willingness to actively participate and advocate the vision, mission and principles of GMI and thus serve the general interest of health improvement for all.
- II. Representation of sectors and geographical spread:*
 - The composition of the Steering Committee reflects, as far as is feasible:
 - The global community of bioinformatics, microbiology and epidemiology

- The needs of data-producers and of end-users in both low capacity and high capacity countries on the different continents, in:
 - The domains of public health, clinical diagnostics and research
 - The domains of human, food/feed and veterinary microbiology
 - The domains of virology and bacteriology / parasitology

III. Special and ad hoc representations:

- The director of the GMI Executive Office is, *qualitate qua*, a member of the Steering Committee
- On the basis of their expertise and at the discretion of the Steering Committee, individual experts as well as (supra-national) organisations can be invited to participate in the Committee as a permanent or temporary advisor/observer
- Working group chairs are, *qualitate qua*, advisors/observers to the Steering Committee

The proposed appointment of a member is published on the GMI Website and only enters into force 6 weeks after publication; in the intervening period any objection to the election can be raised by registered members of the Community Network by addressing the Chair or Co-chair of the Committee.

A full background profile and a declaration of interest of each (proposed) member of the Steering Committee will be published on the GMI Website.

In conjunction with the annual GMI Conference the Steering Committee reports about any intervening changes and the current composition of the Committee and gives the floor to any registered member who wants to comment on it, to assess through discussion the level of acceptance and support for the Committee.

The Steering Committee elects a chairperson and one or more co-chairs.

The Steering Committee organises its own procedures and *modus operandi*. Guided by the agenda Chairs of the Working Groups are invited to the meetings as advisors/observers.

Committee members pay their own travel costs and other expenditure(s).

The Executive Office of GMI and the GMI Website

The GMI Platform is supported by an Executive Office. The GMI Website is the medium for publications on behalf of the Platform.

On guidance of the Steering Committee, the Executive Office is responsible for

- The general information and communication about GMI to the Network and the public
- The preservation and maintenance of the GMI Website
- The database of subscriptions and profiles of members of the Community Network
- The planning and preparation of the meetings of the Steering Committee
- The technical coordination of Working groups and Community Network

The database of members of the Community Network is not used or made available for commercial purposes and only serves the GMI structure and goals.

The costs of the Executive Office and GMI Website are borne on a voluntary basis by one or more host organisations participating in the GMI Network, gratefully approved by the Steering Committee.

The host organisation is free to raise funds for the Executive Office and Website of GMI, as well as for the good functioning of the Platform (e.g. meetings, website, travel costs for participants with limited means, etc.), provided that funding, and in particular commercial contributions, shall only be accepted as an unconditional grant; the latter on the discretion of the Steering Committee.

Since 2009, and at the time of the publication of this charter, the Executive Office and GMI Website are co-ordinated/maintained by the Technical University of Denmark (DTU) in Lyngby. The Logo of GMI is a registered trademark of DTU Lyngby. Decisions about the rightful use of the Logo by third parties are delegated by DTU to the Steering Committee of GMI.

The Scientific Working Groups

The actual work of the GMI Platform is primarily, but not solely, carried out in the Working Groups. Working Groups discuss, develop and propose the Terms of Reference and Terms of Infrastructure for the intended global microbial identifier. Working Groups can be split into subgroups and projects. Working Groups prepare, inter alia, discussions and proposals for the Annual Congress, CGMI.

The Steering Committee installs and discharges GMI Working Groups and appoints a chairperson. The mandate of the Working Group and expected background of its participants are clearly stated. Within this framework Working Groups are open for participation by those members of the network that are willing and able to play an active role. The Working Group chair-persons are ad hoc advisors to the Steering Committee.

Working Groups organise their own modus operandi and procedures, taking into account the following:

- Fostering of transparency: all discussion papers, propositions, (draft) proposals, products etc. are made visible for members of the Community Network.
- Fostering of legitimacy: as a standard procedure and to compensate for possible Working Group biases, proposals for Terms of Reference and Infrastructure are formulated after consultation with Panels of End-users of the Community Network.
- Fostering of equity: the data and results of Working Groups are open-source information and instruments, freely available for all.

Host organisations are invited to provide funding for travel costs and expenditures, with special attention for those Working Group members that are otherwise unable to participate in meetings. Contributions by third parties, and in particular commercial contributions, are made transparent in convocations and publications and shall only be accepted as an unconditional grant. If no other means are available Working Group members pay their own travel costs and expenditure(s).

Associated Projects

Institutions and professionals all over the world are involved in whole genome sequencing of pathogens and the building of databases including meta-data. Their knowledge, experience and participation is welcomed within the GMI Platform and Community. More directly, and under the umbrella of the GMI Community and Platform, Network participants will develop initiatives and projects on their own behalf and responsibility, that contribute to the further development of the GMI Terms of Reference and Terms of Infrastructure.

Independent initiatives and projects may show their association with the GMI Platform by using the GMI name and Logo in their publicity and fund raising activities, on the minimum conditions

- that the project leader is registered as a member of the Community Network
- that the project contributes to aspects of the GMI platform development

- that the project is willing to share real time its data and results within the GMI Platform; on the basis of scientific interest, a maximum of one year delay of publication after generation of data can be granted by the Steering Committee
- that the request to use the GMI Logo is submitted to the GMI Executive Office and no objection is raised by the Steering Committee.

By using the name and Logo it is understood that the user subscribes to the GMI Charter and acts according to its principles of global equity, sharing, timeliness and fairness.

Decisions in any dispute about the rightful use of the GMI Logo are at the discretion of the Steering Committee.

The Consultation Panels

Consultation Panels are virtual reference groups of members of the Community Network and other professionals formed ad hoc. They act as a source of information, needs and opinions at the request of the Steering Committee or Working Groups. Consultation Panels are a key instrument for legitimation and quality-of-decision assurance, through focused communication between the broader Community Network and the Platform.

The instrument of Consultation Panels is used for multiple purposes, such as

- Inventory of the needs of data providers and/or the needs of different groups of end-users
- Consultation of professionals who cannot otherwise participate through lack of time or means
- Compensation of possible biases caused by specific composition of participants in Working groups or projects
- Clarification of differences in requirements between domains and professional groups
- Checking and balancing of consensus seeking proposals in the global community
- Other purposes, as deemed necessary

As a consequence Consultation Panels have different forms and sizes, and can be created, either ad hoc or over a longer term. Consultation takes place through electronic questionnaires and feed-back mechanisms.

Each applicant to the Community Network fills in a profile through the Website, in which he/she has the opportunity to give information about background, domain of expertise, fields of interest, and other relevant details. The database of profiles is a main source from which Consultation Panels are formed. In addition panel members can be recruited from other groups and organisations such as scientific associations, at the discretion of the Working Groups.

The Working Groups, sub-groups and projects of GMI are fostered to make use of Consultation Panels as much as is needed for the best quality and legitimacy of their conclusions, proposals and advices.

Workings groups organise their own Panels and questionnaires according to their needs.

The Steering Committee, through its Executive Office, provides a web-based technical tool for electronic questionnaires. Social science support will be recruited from the Network, to form a permanent support unit for the development of methodologically adequate and valid questionnaires, and analytical tools.

The Annual GMI Conference: CGMI

At least once every year, the Steering Committee organises the Conference of GMI (CGMI). As GMI is an ongoing process, the main purpose of the conference is to present and evaluate results, and discuss and

develop next steps in plans, priorities and roadmaps for the period to come. It is the annual moment par excellence for cross-cultural discussion between the different professions and domains involved in GMI. Technical issues as well as civil and ethical issues are addressed. Within the principles of the GMI-Charter and on the proposal of the Steering Committee position papers can be discussed and adopted, reflecting the nuances of opinion and/or the general consensus of the conference.

The purpose of CGMI is:

- Stimulating and guiding the ongoing process of the development of GMI
- Providing a platform for global, interdisciplinary and inter-domain encounter and discussion
- Evaluation of results and developing new plans/roadmaps for future activities of the Platform
- Scientific presentations and discussions
- Building consensus on proposals with regard to the Terms of Reference and Terms of Infrastructure of GMI
- Confirmation of the composition of the Steering Committee

The Annual GMI Conference is open to participation by all members of the Community Network. The Steering Committee guards – if necessary actively stimulates - the interdisciplinary and inter-domain character of CGMI, as well as the balanced representation of different continents c.q. regions, needs and end-users.

Each CGMI is organised by a Network member, acting as host organisation.

The Steering Committee, through the Executive Office and in cooperation with the host organisation, is responsible for the preparation of the CGMI programme, procedures and agenda.

The host organisation is free to raise funds for the organisation of CGMI, as well as for the travel costs of participants with limited means, provided that funding, and in particular commercial contributions, are accepted as an unconditional grant; the latter at the discretion of the Steering Committee.

No financial contribution is requested from the participants to the conference.

Participants pay their own travel costs and other expenditure(s).

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Contact and Information

The GMI website: www.G-M-I.org

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