A New Age of Bio-Business
Toward the Creation of New Industry Clusters

Create the future
via bio-innovation

Japan Bioindustry Association
Our mission at JBA is to address the imminent problems facing mankind such as those concerning climate change and biodiversity and to facilitate implementation of appropriate measures as necessary, particularly by utilizing the latest developments in biosciences in an effective manner. To that goal, one of the most important priorities of JBA is to formulate and advance specific public policies through science-based reviews of regulations as well as to craft strategies to strengthen collaboration between industry, academia and government. Furthermore, to encourage the exchange of vital data and information, we realize that cooperation and communication with like-minded organizations throughout the world is of paramount importance. We are keenly aware of the value of providing free and open access to information regarding new technologies and products to all those who are interested in opportunities for innovation. On a more local level, our mission will also be expanded to help organize and develop regional associations for bioindustries in Japan. As an example of such endeavors, we hold an annual fair called BioJapan that comprises exhibitions, seminars for academia and industry, and business to business matching.
New Study Groups Launched Out

Establishment of New Health Care Study Group

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<th>Social demands of human health</th>
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<td>Having a background of a declining birthrate and an increase in lifestyle-related diseases, health care initiatives to address pre-disease conditions and to support health are increasingly important from the perspective of societal demands for quality of life (QOL) improvement and medical cost constraint. With a large number of companies engaged in or oriented toward the health care business, JBA established this study group in fiscal 2014 to share information among members and respond to common issues. Members of the study group enriched its lectures and discussion sessions, conducting short presentations on topics close to business and exchanging information. Mr. Takeo Niga and Dr. Susumu Kajiwara presented talks titled “Concerning Health Care Industry Policy” and “Overview of the Organization for Life Design and Engineering, Tokyo Institute of Technology,” respectively. The study group also exhibited within the Open Innovation Zone at BioJapan 2014 and promoted business matching among companies.</td>
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Energizing the Research & Development Team on Functional Foods

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<th>Proactive proposals and communication regarding the new functional labeling system for foods</th>
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<td>In order for the functional foods-related industry to prosper, JBA organized relevant issues, held discussions on resolution of the issues, and in 2013 launched a new research and development team aimed at proposing solutions to the government. In order to enhance information communication functions related to foods and health foods, we are undertaking actions centered on (1) proposal of solutions regarding functional labeling, regulations, etc.; (2) drafting of projects aimed at scientific evaluation of the 3 functions of foods, rational demonstration of safety, etc.; and (3) cooperation among business, academia, regional clusters, etc. for the development and overseas expansion of the functional foods-related industry (27 member companies and organizations).</td>
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Communication of Opinions and Proposals to Society

With an eye toward the content of guidelines released in March 2015 regarding the new functional labeling of foods, we focused on the sharing of issues and aggregation of opinions by conducting seminars on the functional food labeling system that started on April 1, 2015, along with workshops and idea exchanges among members, and further communicated opinions and proposals (see box below).

JBA has established new study groups to meet the needs of corporate members. Going beyond collection and dissemination of information, we propose policies and projects, clarify objectives for the establishment of consortia, and take action with a sense of urgency.

Future Activities

- JBA conducts lectures and information collection on specific health care topics including nursing care robots, “medical towns” that reorganize urban areas around hospitals, and medical treatment and nursing care services offered through collaboration between regions and universities. We are also exploring collaboration among JBA members in these fields.

BioJapan Exibition in the Open Innovation Zone

(Health Care Study Group, Research & Development Team on Functional Foods)

JBA took part in a joint exhibition (12 exhibits) in the Open Innovation Zone at BioJapan 2014, where Zone exhibitors and related bio-clusters conducted 44 presentations on the food and health care sectors and engaged in active business discussions. At BioJapan 2015 (2015-10-14–16), we will further expand the event to cover health care, functional foods, diagnostics, regenerative medicine, biochemicals, plant biotechnology, the environment, and more.
JBA has established a new study group with the aim of conducting discussions across departments and specialties, selecting basic and mediating technologies that should be developed, and engaging in collaboration among industry, government, and academia to break through problems. The group welcomes participation.

Over several meetings of the study group, Mr. Takeshi Takeda discussed recent information on the new system and the necessity of an organization like the ODS (the U.S. NIH Office of Dietary Supplements), while Dr. Mari Maeda-Yamamoto spoke on the evidence-based development of processed products and functional agricultural, forestry, and fisheries products.

With specific products coming to market under the new functional labeling system, the study group will debate and issue opinions on issues and problems with the new system, including policy matters. It will also engage in consideration of topics including rational methods (i.e. standards) for verifying safety, assurance of first-mover benefits, and functional label patent claims. The study group will also cooperate closely with the “Development of Next-Generation Agriculture, Forestry, and Fisheries Products and Foods” strategic innovation program (SIP), which seeks to create technology in the industry and for which Ms. Abe serves as Sub-Program Director, and will further ramp up activity aimed at the prosperity of the functional foods-related industry.

At the 10th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP10) held in Nagoya in October 2010, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (hereinafter, the Nagoya Protocol) was adopted. This is an international agreement which aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way.

Although the Nagoya Protocol was adopted as a result of difficult international negotiations for many years, there are a number of ambiguous points in its major provisions with regard to their interpretation. While the Nagoya Protocol entered into force in October 2014, the government of Japan has been discussing the formulation of Japan’s domestic measures for the ratification of the Nagoya Protocol and its implementation in Japan.

Under these circumstances, JBA, Japan Association of Bioindustries Executives (JABEX) and four other industry groups submitted an opinion paper on the Nagoya Protocol to the Ministry of Foreign Affairs, the Ministry of Health, Labour and Welfare, the Ministry of Economy, Trade and Industry, and the Ministry of the Environment in October 2014. The opinion paper notes that, while the protocol bears the name of the Japanese city Nagoya, the government should not act too hastily but must carefully consider every issue in the Protocol through dialogues with the bioindustry sectors.

JBA will continue its activities to ensure that the implementation of the Nagoya Protocol facilitates the utilization of genetic resources in a fair and equitable way and contributes to the conservation of biological diversity and the sustainable use of its components.
Launched of the Bio-Business Seminar

JBA has assumed the Pharmaceutical and Other Companies Top Management Seminar that had been conducted as an activity of the Metropolitan Bio Network Japan until fiscal 2013. In 2014, we launched the Bio-Business Seminar as a venue at which executives and key persons from member companies can present information on research and development, business strategy, core technologies, case studies of external resource usage, and other topics, sharing this information with JBA members.

- **Seminar Content** (8 sessions)
  - Session 1: “FUJIFILM’s New Business Challenge” (2014-02-06)
  - Session 3: “TORAY’s Advanced Film Technology Creation and Innovation Strategy” (2014-05-20)
  - Session 4: “TEIJIN’s Technological Innovation and Green Chemistry & Health Care Business Strategy” (2014-08-07)

In fiscal 2015, too, we will make the seminars an opportunity for open innovation that crosses industries and sectors, and a valuable venue for more member companies.

Launch of International Partnership Seminars

In 2014, JBA launched the International Partnership Seminar for foreign embassies, regional and state government organizations, and overseas biotechnology organizations. The seminar is a venue to communicate the latest bio-related topics and selected information from overseas, and to provide up-to-date information to corporate members and opportunities for interaction among members.

- **Seminar Content** (6 sessions)
  - Session 3: “Europe’s Advance into the Life Sciences Sector: Why Scotland is an Option – Tips and Points for Making Use of Scotland” (2014-07-14)
  - Session 4: “Life Sciences in Canada” (2015-02-09)
  - Session 5: “Overview of the Pharmaceutical and Bio Industries of Catalonia, Spain” (2015-02-23)
  - Session 6: “Overview of Biomass Research Led by Queensland University of Technology (Australia) and the Potential for International Industry-Academia Partnerships” (2015-03-27)

JBA has 31 embassies and regional and state offices in Japan as public members. We will continue to plan and offer seminars in partnership with these members.
Policy Proposal and Dialog

JBA carries out policy proposals and dialog with government bodies on biotechnology and industrial issues in cooperation with member companies, universities.

In cooperation with the Japan Association of Bioindustry Executives (JABEX; Chairman Kouichirou Aramaki), JBA has been offering a variety of policy proposals and retains opportunities for dialog for the sound development of biotechnology and bioindustry.

Policy Proposal

JBA visited LDP Executive Acting Secretary-General Hiroyuki Hosoda (Chairman of the Diet Members’ Promotion Alliance for Life Sciences), Minister for Foreign Affairs Fumio Kishida (Secretary-General of the aforementioned Alliance), and Minister of the Environment Yoshio Mochizuki to present the industrial position on the Nagoya Protocol. We made suggestions to the Cabinet Secretariat, the Cabinet Office, and other relevant parties concerning the 5th Term of the Science and Technology Basic Plan, bio-ventures, functional foods labeling, and other topics.

Policy Dialog

An opinion on “Human derived biological sample usage promotion for drug discovery” was suggested at “Council for Genomic Medicine Promotion” of the Cabinet Secretariat Health and Medicine Strategy Office by our steering committee member Dr. Toshinori Agatsuma.

Expression of Qualified Opinions

JBA expressed opinions on National Strategic Economic Growth Areas, food labeling standards, the new functional labeling system for foods, and other topics. We supported the members’ activities on so-called the System to Removing Gray Zone Areas and the System of Special Arrangements for Corporate Field Tests.

Government policy seminars

JBA holds ongoing policy information seminars with presentations by ministry and agency officials in charge of drafting and promoting policy measures.

- Overview of the Center of Innovation S&T Radical Innovation and Entrepreneurship Program (COI STREAM) (Ministry of Education, Culture, Sports, Science and Technology) (2014-06-11)
- Overview of 2014 General Strategy for Science and Technology Innovation (Cabinet Office) (2014-09-02)
Expanding Lectures and Seminars

In fiscal 2014, JBA hosted a total of 71 workshops, seminars, lectures, symposiums, and study tours drawing 5,737 participants. Along with lectures and seminars on drugs, medical care, the environment and manufacturing, and the health care sector, JBA took up the topic of the plant biotechnology sector. In addition to targeting niche and compound domains, this combines biotechnology with basic technology that supports cutting-edge science, and will lead to the creation of new businesses. JBA’s lecture covered technological information from overseas, and plans that propose solutions for new industrial technologies.

Key words from advanced information seminars

- regenerative medicine, quality control for cultured cells, 3D printers, organ regeneration, culture mediums, sugar chain drug discovery, PAR and RTR, bone immunology, medical tourism, medical care in the Middle East, myocardial regeneration therapy, peptide drug discovery, omics analysis, space drug discovery, medical devices, reactive supramolecular hydrogels, single-use, PET-related technology, drug repositioning, biological three-dimensional tissue construction
- synthetic biology, artificial cell models, isolation and search for microorganism strains, compound microbial systems, biomas utilization, algae, metabolic pathway design, bottom-up genome design, evolution experiments, green phenol, photonic polymers, harmless raw materials, bio-cellulose, industrial lace, Antarctic-grown yeast, bio-surfactants, silicon biotechnology
- functional food labeling system, functional crops, zero* drinks, vitamin control, stress reduction effects, anti-obesity food ingredients, seeds and function, food secondary function analysis, drink-refreshment sensors, sarcopenic obesity, DNA chips
- pro-disease stage management, robot suits, needle-free syringes, bio-devices, cell chip, healthy society, blood biomarkers for expression, personal targeted health care, wearable biometric information sensor modules, biological interfaces

Advanced Themes and Leading Lecturers

Drawing on the results of questionnaires aimed at members, we selected themes appropriate to JBA lectures. We also proactively held seminars that are planned and proposed by corporate members, taking up themes that included brain science, space drug discovery, and plasma, with the aim of fusing different sectors and industries and creating new businesses.

Expanding Potential for New Business at Networking Events

With the formation of networks among participants a key objective, JBA strives holds seminars with the goal that these will lead to the creation of businesses and markets, proposals for policy, and business matching. Networking meetings and business card exchanges have taken root as activities following our lectures, with participants forming long lines to meet speakers every time.

Enhancement of member privileges

After the conclusion of events, JBA promptly posted reports on its website and made presentation slides available as PDF documents, limited to JBA members. JBA also enhanced its video streaming service for corporate members, with a total of 36 seminars and 85 presentations available. In total, viewing requests have come from 182 persons, for 461 seminar videos and 1,110 presentation videos. (fiscal 2014) JBA is enhancing its seminars for corporate members in order to deliver fresh information. Seminars proposed by corporate members have also taken root at JBA.
Hosting of comprehensive Symposium on Biopharmaceutical Manufacturing

JBA’s Bioengineering Study Group hosted a comprehensive symposium titled “New Developments in Biopharmaceutical Manufacturing.” The event discussed possibilities and issues related to manufacturing process monitoring and the real-time shipping of biopharmaceuticals, and further deepened understanding with an exhibition of manufacturing equipment.

Hosting of Local Study Tours

JBA held study tours of locations including the Shizuoka Cancer Center and the Asahi Breweries Kanagawa Brewery, collecting on-site information during each tour.

Cooperation and Strengthening of Activities in the Green Sector

In three green biotechnology-related study groups (the study group on fermentation and metabolism, the study group on alcohol fermentation & biomass utilization, and the study group on new resource bioconversion), JBA deepened cooperation aimed at strengthening structures and initiatives in the sector. In fiscal 2014, we planned seminars, lectures at BioJapan, and study tours that addressed the shared theme of algae. On December 12, JBA held a joint symposium by the three study groups, titled “The Future of Growth Strategies in Green Businesses with Algae.” Perspectives of elements spanning biomass raw materials to conversion, commercialization, and raw materials recycling, we are creating scenarios for green biotechnology regeneration that leverage the strengths of each study group, and are undertaking activities with a view toward making proposals for national projects.
Research & development project

To strengthen the development base and platform functions of bioindustry and improve the international competitiveness of Japan’s bioindustry, JBA is currently undertaking four entrusted research and development projects.

- **Biomass Energy Technology Development and the Project for Research and Development of Valuable Technology for Biofuel Manufacturing: NEDO FY 2013-2016**
  JBA is engaged in research and development projects on the following two themes adopted within the Project for Research and Development of Useful Elements for Biofuel Manufacturing, technological development of which is expected to reach commercial-scale practical application in 2020.

  1. **Manufacture of Innovative Saccharification Enzyme Industrial Production Microorganisms and Development of Production Technology for Saccharification Enzymes for the Creation of Bio-Fuel Business**
     This project is conducting studies to strengthen the activation of component enzymes and overcome the decline in the saccharification rate, in order to enhance the functionality of saccharification enzymes. With regard to optimal saccharification enzyme composition, the project has identified correlations among various substrate biomasses. The project also studied various production criteria using a mini jar fermenter, calculated the manufacturing cost and the scale and construction costs for manufacturing facilities, and conducted analyses from economic angles, with the aim of developing low-cost mass production technology for saccharifying enzymes.

  2. **Fermentation Production Technology Using Beneficial Microorganisms**
     This project studied 1) development of microorganisms for simultaneous fermentation of CS/CG sugars, 2) development of a simultaneous saccharification and parallel multiple fermentation process, and 3) process design packages, in order to achieve an ethanol production concentration of 5%/w/v or higher and an ethanol fermentation yield of 95% or higher at a pilot scale of several m3 or higher. The project also established standard evaluation systems for enzyme volume, inocula volume, ventilation level, etc. for the creation of standard substrate samples and for yeast efficiency, and selected optimal bred strains.

- **Development of Highly Functional Genome Design Technology for the Realization of Innovative Biomaterials: Survey of Innovative Biomaterial Marketability and Global Trends in Competing Technologies**
  Ministry of Economy, Trade and Industry (FY2013-2016) Highly Functional Gene Design Technology Research Association (contracted project)
  In addition to ongoing surveys of synthetic biology research and innovative biomaterials, this project conducted a detailed survey of the U.S. Department of Defense’s Living Foundries: 1000 Molecules Program, with the aim of creating breakthrough biomaterial manufacturing technology. The project also led a survey of marketability of analytical equipment born from the aforementioned Project’s long-chain DNA synthesis technology.

  **Destinations for overseas survey visits**
  2. 11th Annual World Congress on Biotechnology/Philadelphia
  3. International Conference on Natural Products /SanDiego

- **Development of Cell Manufacturing and Processing System for the Industrialization of Regenerative Medicine, for Regenerative Medicine Products Derived from Human Pluripotent Stem Cells (Cardiac, Nerve, Retinal Pigment Epithelium, Liver Cells) and for Regenerative Medicine Products Derived from Human Epithelium, Liver Cells) and for Regenerative Medicine**
  Ministry of Economy, Trade and Industry's SWOT analysis of industrialization trends in Japan and the current state of industries surrounding regenerative medicine, it determined strategic options (business opportunities) for new acquisition of regenerative medicine business markets. In addition, the project conducted a survey of recent trends in Japan and overseas involving the foundations for clinical application, the practical realization, and the industrialization of regenerative medicine and human stem cell technologies, and formulated an outline of a global market acquisition strategy for a regenerative medicine product manufacturing system. The project also proposed the catch phrase “KotoDukuri (Industrialization)” for regenerative medicine.

  **“Development of Basic Technology for the Creation of Next-Generation Pharmaceuticals for Individualized Medicine (Technology for the Manufacture of Next-Generation Therapeutic Antibodies Meeting International Standards)” Project: Survey of Trends Concerning Next-Generation Biopharmaceutical Production Technologies and Intellectual Property**
  METI (FY 2013-2017) / Manufacturing Technology Association of Biologics (MAB) (allotted research)
  Europe and the U.S. have taken a significant lead in biopharmaceutical manufacturing technology. JBA surveyed intellectual property that likely to become an obstacle in the development of manufacturing technology in this project, and continued analysis of threats in the area, such as the impacts of prior intellectual property. In existing biopharmaceutical manufacturing lines, the normalization and standardization of manufacturing lines through single-use technology is moving forward, and there are fears that the multiple guidelines and regulations that have been established may become obstacles. This project is collecting information on leading actions in Japan and overseas through intellectual property and academic information, corporate data available on the Internet, information from academic papers, and other sources, and is undertaking surveys for the purpose of providing information to strategic initiatives under this project in the future. In terms of intellectual property, the project has analyzed and summarized materials surveyed and collected from the previous fiscal year. It has also carried out organization of information focused on genetic modification technology aimed at genetic modification to improve conditions for cell culture, vectors, high expression of proteins, and productive cell screening systems, and has further performed analysis of production and culturing methods. It collected information centered on academic papers, and sorted findings into information related to antibodies overall, the drug efficacy of new structurally modified antibodies, side effect mechanisms, antibody screening, and genome editing.

  The project took part in international academic meetings and exhibitions rich in information related to antibodies, collected up-to-date information, and summarized the information with the chief purpose of manufacturing methods and technological development concerning cells, culturing methods, purification techniques, single-use, and more.
Open Innovation through Networking

JBA provides opportunities to help the development of biotechnology and industry.

JBA holds the partnering bio event BioJapan as an effective mean for creation of opportunities, promotion of alliances, and construction of business platforms. Moreover, functioning as a hub of All Japanese Bio Regions Committee, JBA aims to form networks among bio-related parties, and support development of bio-ventures through mutual cooperation.

BioJapan

A variety of companies and academic institutes focused on biotechnology participate in BioJapan to make open innovation a reality.

Opportunities for creating open innovation

- Collaborative research
- Licensing in and out of the technology
- Business collaboration
- Business Partnerships
- Creating innovation in fusional areas

Support for bio-venture companies and bio-clusters

Through networking with nationwide bio groups and clusters, JBA actively promotes interaction among industry, academia, and government to support and foster bio-venture companies and form bio-clusters.

Functioning as the hub for bioclusters through the Japanese Regional Clusters Forum, JBA seeks to form networks of cooperating industrial, academic, and government bodies, and to invigorate bio-ventures through collaboration on a nationwide scale. In recent years, we have strengthened our mutual communication activities with leading biotechnology organizations overseas, and are cooperating with corporate members, universities, and government to foster partnerships that will contribute to the development of biotechnology and industry.
All Japanese Bio Regions Committee

Support for the Formation of Bio-venture Alliances

JBA engages in activities to support the formation of bio-venture alliances. At BioJapan 2014 we operated the JBA BIOTECH SQUARE pavilion for bio-ventures, where we supported partnering activities. The coordinators of the pavilion stepped into business development on behalf of the bio-ventures by working to promote business matching with major medium-sized enterprises.

Preparation of a Bio-venture Directory

In conjunction with open innovation, JBA is collaborating with bio organizations nationwide to aggregate and release basic information online concerning the nation's increasingly-watched bio-ventures, with the aim of accelerating alliances among clusters and companies in Japan and overseas.

Preparation of statistical data on bio-venture business

In fiscal 2014, JBA conducted a questionnaire survey of bio-ventures across Japan and statistical analysis. In addition to statistical surveys, we conducted an ongoing original survey of topics including trends in joint research and licensing agreements between bio-ventures and large and medium-sized companies. The results were gathered in the 2014 Survey of Bioventure Statistics and Trends (with an overview available on the JBA website). Our look at the trends surrounding bio-ventures, joint research, licenses, and agreements between bio-ventures and medium-sized companies reveals that these remain stable, with an upward trend in results such as acceptance of milestones. A portion of the survey (“New Public Offerings and Fundraising by Bio Startups”) was posted on the website of the Hitotsubashi University Institute of Innovation Research as a result of the joint research.
International Network

JBA provides international information on biotechnology and bioindustry in cooperation with member companies, universities, and the government.

As one of our international activities, JBA offers overseas biotechnology information and related events to members, and also provides information on Japan’s biotechnology industry and opinions on international issues to parties overseas, speaking as the Japanese biotechnology organization. We also cooperate with overseas biotechnology groups to promote interaction with JBA members through their participation in BioJapan. Reflecting the situations of member companies, JBA builds networks which are difficult to achieve as an individual or a single company.

Overseas bio-organizations having agreements with JBA

- JBA members (31 organizations as of April 2015)
- Overseas biotechnology organizations with which JBA has written agreements (as of April 2015)

- Ireland
- UK
- Estonia
- the Netherlands
- Australia
- Sweden
- Spain
- Catalonia (Spain)
- the Czech Republic
- Denmark
- Germany
- France
- Lithuania
- Scotland (UK)
- Flanders (Belgium)
- Wallonia (Belgium)
- Medicon Valley Alliance (Denmark/Sweden)
- Russian Biotechnology Society (since 2009)
- CLIB2021 (Bioclusters of the Rhein Region)/Cluster Bioindustrielle Biotechnologie (since 2009)
- DEHEMA (since 2010)
- SwedenBIO (since 2013)
- Medicon Valley Alliance (Denmark/Sweden) (since 2012)
- Life Science Austria (since 2013)
- EuraSanTE (France) (since 2014)
- Alsace BioValley (France) (since 2014)
- Swiss Biotech Association (since 2005)

Europe

- Malaysia
- Shanghai Biopharmaceuticals Industries Association (since 2005)
- KoreanBio (since 2012)
- Medical and Pharmaceutical Commercial Association, All-China Federation of Industry and Commerce (since 2012)
- Taiwan Bio Industry Organization (Taiwan) (since 2012)
- Malaysia
- Shanghai Biopharmaceuticals Industries Association (since 2005)
- KoreanBio (since 2012)
- Medical and Pharmaceutical Commercial Association, All-China Federation of Industry and Commerce (since 2012)
- Taiwan Bio Industry Organization (Taiwan) (since 2012)

Asia

- Canada
- Alberta
- Ontario
- Quebec
- British Columbia
- Canada
- Alberta
- Ontario
- Quebec
- British Columbia

Oceania

- Australia
- Queensland (Australia)
- Victoria (Australia)
- AusBiotech (since 2013)
- Oceania
- Australia
- Queensland (Australia)
- Victoria (Australia)
- AusBiotech (since 2013)

United States

- U.S.
- Iowa
- Georgia
- Pennsylvania
- BIO (since 2004)
- Biocom (since 2014)
- U.S.
- Iowa
- Georgia
- Pennsylvania
- BIO (since 2004)
- Biocom (since 2014)

JBA events and activities for open innovation in 2014

- Participation in BIO International Convention 2014 (San Diego, June)
- Participation in Japan-Taiwan Biotechnology business meeting/BioTaiwan2014, Cooperation with interchange association (Taiwan, July)
- Participation in BIOPharm America 2014 (Boston, September)
- Participation in BIO-Europe2014 (Frankfurt, November)
- Participation in BIOTECH SHOWCASE 2015 (San Francisco, January)
- Participation in Biocom’s Global Life Science Partnering Conference (San Diego, February)
- Participation in BIO-Europe Spring2015 (Paris, March)
- Participation in BIOAsia2015 (Tokyo, March)

Meeting with overseas cluster (BioJapan 2014)

Exchange of MOU with BIOCOM (BIO SanDiego 2014)
Establishing the Infrastructure of Bioindustry

JBA is addressing the improvement of infrastructure for biotechnology and industrial development in cooperation with member companies, universities, and government.

Science/technology and laws/regulations

Explanatory meeting on the utilization of the Cartagena Act

Cartagena Act’s overall picture and application process were explained by Ministry of Education, Culture, Sports, Science, and Technology (MEXT), Ministry of Health, Labour, and Welfare (MHLW), Ministry of Economy, Trade, and Industry (METI) and National Institute of Technology and Evaluation (NITE) concerning simplifying and expediting the application process for the conduct of wide range R&D and industrialization. Following the explanatory sessions, individual consultations were arranged. (Tokyo 2015-01-21, Osaka 2015-01-27)

Activities Aimed at Operational Improvements for the Cartagena Act

JBA summarizes the requests of our members and engages in opinion exchanges and negotiations with supervising government bodies on simplified approval applications and other operational improvements of the Cartagena Act. These activities resulted in revisions to the Ministry of Economy, Trade and Industry manual for application for ministerial approval (2014-09-26), in significant revisions to the Ministry of Health, Labour and Welfare GILSP list, and in other relevant documents.

Support for the Japanese Government in International Negotiations at COP-MOP (Conference of the Parties serving as the Meeting of the Parties)

JBA attended COP-MOP7 (7th meeting of the Conference of the Parties to the Cartagena Protocol on Biosafety), held in PyeongChang, South Korea in October 2014, and attended COP12 (12th meeting of the Conference of the Parties to the Convention on Biological Diversity) as a scientific expert working with the Japanese government. JBA engaged in discussions on guideline revisions for genetically modified organisms at COP-MOP7, and provided expert knowledge-based counsel on a new candidate agenda item, synthetic biology.

Science Communication

Publication of “Future Society Pioneered through the Contributions of Biotechnology”

As a tool for communicating a future society visions built on biotechnology (technology, lifestyles, and industrial development trends), JBA is running a 10-part series by leading experts in their respective fields in the magazine B&I.

“Recent Advances in and Future Prospects for Plant Breed Improvement Technology” Ezura Hiroshi (Professor, University of Tsukuba)

“Toward a ‘Healthy & Happy’ Society: A Picture of Industry, Technology, and Services” Noboru Yumoto (Vice President, AIST), Toshihiko Ooie (Deputy Director, AIST)

(7 additional installments in past issues of B&I)
Establishing the Infrastructure of Bioindustry

Provision of Technical Information on Key interest to Industry

The new technological domains of NBT (new breeding techniques) and synthetic biology call for ongoing scrutiny in terms of both technological development trends and regulatory trends, as areas that will have major impacts on not only basic research but also commercial production. JBA provides up-to-date and accurate information through seminars and other means, for the members to make use of these technologies and respond aptly to regulations.

“Overview of New Breeding Techniques (NBT) and the State of Research and Development” (2014-08-29)
Yutaka Tabei (Senior Principal Researcher, National Institute of Agrobiological Sciences (NIAS))

This presentation discussed the potential for NBT which has attracted attention as a fast, efficient breeding technique that does not leave traces of genetic manipulation in successive generations along with related safety and necessary regulatory issues.

Synthetic Biology Seminar: “Recent Scientific and Technological Trends and Issues Surrounding Synthetic Biology” (2015-03-05)
Daisuke Kiga (Associate Professor, Tokyo Institute of Technology)
Kenji Tsuge (Project Assistant Professor, Keio University)
Masashi Tachikawa (Professor, Ibaraki University)

Among the recent fast moving areas of synthetic biology trend, artificial genetic circuits and synthetic metabolic engineering were talked by two of the experts in Japan. Also the regulatory aspect from the view of socioeconomic view point was introduced.

Intellectual property

Securing intellectual property issues on venture companies as well as on functional food ingredients were discussed by the working groups and issues were identified by face to face hearing and by questionnaires. Also we have submitted position papers in two separate occasions on “natural principle” which a guidance document was given from U.S. Supreme Court ruling by US Patent and Trademark Office.

Industry-academia communication and collaboration

Fostered Training for Young Company Employees: JBA Bio-Leaders Course 2014

JBA held a training course for 30 trainees (23 men, 7 women; average age 31) on September 2-4, 2014, at the Makuhari Seminar House in Chiba Prefecture. Through group work, the trainees experienced the creation of business plans based on technological seeds drawn from four themes and six patent applications provided by the Japan Science and Technology Agency. A diverse range of trainees from 21 companies to the program benefitted from this opportunity of inter-industry communication.

Conducted Training for Graduate Students: Short-term Internships at BioJapan

Taking advantage of the opportunity offered by BioJapan as an event that gathers much of the biotechnology industry, JBA also offered short-term internships to graduate students to learn about the biotechnology industry and better envision of future working in the industry. In addition to involvement in lectures and debates, practical training to let the students take part in seminar operation and involved in business matching events, provided exposure to business settings.
Access to Genetic Resources and Benefit-sharing

Awareness Raising Activities on Access to Genetic Resources and Benefit-Sharing (ABS)

JBA has continuously contributed to enhance public awareness and understanding of access to genetic resources and benefit-sharing (ABS). We organize public seminars in major cities nationwide to provide users of genetic resources with up-to-date information on ABS. We also conduct individual on-site seminars in response to requests from companies, universities and research institutes. As a tool for awareness raising activities, we translated the Nagoya Protocol into Japanese and developed the Guidelines on Access to Genetic Resources for Users.

Help Desk on ABS

JBA has established Help Desk, i.e. consultation service concerning ABS, to provide advice to potential users of genetic resources, free-of-charge and on a confidential basis. We conducted 34 consultations in fiscal 2014 and has handled more than 510 consultations since establishing Help Desk in 2005.

Support for International Negotiations on ABS

JBA has supported the Japanese government in international negotiations on ABS. When the Nagoya Protocol entered into force in October 2014, we participated in the first meeting of the Conference of the Parties serving as the meeting of the Parties to the Nagoya Protocol (COP-MOP1) held in Pyeongchang, Republic of Korea.

Awards

JBA promotes scientific research that contributes to the growth and development of bioindustry by offering awards.

**Japan Bioindustry Association Award**

- Hiroyuki Mizuguchi
  Osaka University
  - Generation of functional hepatocytes from human induced pluripotent stem cells and the application for drug toxicity testing

**Fermentation and Metabolism Research Award**

- Shigenobu Kishino
  Kyoto University
  - Development of functional fatty acids using gut microbial specific fatty acid metabolism

- Shin Kurihara
  Ishikawa Prefectural University
  - Discovery of novel polyamine metabolic and transport pathways and their application for human health

- Motoyuki Shimizu
  Meijo University
  - Epigenetic regulation of fungal metabolic genes by changes in intracellular redox balance

**Award for Researches on Chemical and Biological Materials**

- Masato Ikeda
  Gifu University
  - Development of hydrogels based on stimuli-responsive nanofibers for bio-applications

- Hiroshi Nonaka
  Kyoto University (currently University of Tokyo)
  - Development of a highly sensitive platform structure for hyperpolarized magnetic resonance probes

- Junji Fukuda
  Yokohama National University
  - Design of zwitterionic oligopeptides for electrochemical cell detachment and its use for regenerative medicine
JBA invites members to make use of the seminars, video streaming, the Biotechnology School, and other diverse contents offered by JBA to promote bio-innovation.

- **Subscription to JBA’s journal, Bioscience and Industry (B&I)**
  * Subscription to JBA’s bimonthly journal *Bioscience & Industry (B&I)* is free.
  * Other JBA publications are available at a discount.

- **Participation in JBA’s Board of Directors, committees, study groups, etc.**
  Members of JBA’s Board of Directors, committees, study groups, etc. are able to comment on JBA’s operations and activities. (Specifics may differ according to member category.)

- **Participation in policy measure recommendations, etc.**
  Members participating in committees, study groups, and other groups operated by JBA are able to deliberate, consider, and comment on government science and technology policy measures, national and local government regulations, etc.

- **Participation in events held by JBA**
  * Members are able to participate at no cost or discounted cost in lectures, seminars, training courses, consultations, networking events, and other events held by JBA, and thereby have early access to up-to-date information on research and development and policy measures.
  * Members are able to access members-only materials on the JBA website and freely browse the above information and other content on JBA’s activities.

- **Participation in planning and proposal for national research and development projects**
  Members are able to participate in committees, study groups, etc. operated by JBA, and participate in drafting government research and development projects, drafting survey research projects, and proposing plans to relevant government ministries and agencies.

- **Use of seminar video streaming**
  Members are able to view a portion of JBA’s lectures, packed with up-to-date information, via PC.

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**B&I** is a bimonthly journal that provides members with easy-to-understand overviews of new and advanced academic articles in the field of bioscience, bio-related industry and government trends in Japan and overseas, and more.

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**JBA website**

http://www.jba.or.jp/

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