A Word from Our Chairman

It’s been a busy time with conferences in Australia, Brazil, Canada, China, Nigeria, Taiwan, and the US; biochar workshops in many countries; the IBI Study Tour to Stockholm; a new IBI Science Committee; evolution of the African Biochar Partnership; and a stimulating series of webinars including the Stockholm biochar project, biochar analysis, markets, feed, and anaerobic digestion. In November Dr. Johannes Lehmann will represent IBI at the UNFCCC Conference of the Partners (COP23) in Bonn. The IBI board will participate in a biochar workshop in China courtesy of Nanjing Agricultural University. In December Biomass Magazine will host a webinar “Boosting Bottom Lines with Biochar” with presentations by IBI members.

IBI is supported by volunteers and members. We especially appreciate the contributions by Bob Gillett, who puts together the newsletter, Kathleen Draper, who organizes the webinars and programs, and members from around the world. We welcome new and existing members to extend your support as we begin a campaign to raise funds to improve our website, information, and member services. Join, donate, sponsor, and engage with IBI so that we can provide the information exchange to help expand the use of biochar. - Tom Miles

Biochar related jobs, scholarships, and volunteer opportunities

**IBI Volunteer Opportunity: Fundraiser on the IBI Board of Directors**

IBI is looking to appoint an experienced Board Member at Large that is interested in spearheading IBI’s Fundraising efforts. This person should have experience with identifying and obtaining grants related to agriculture, renewable energy and/or climate change on behalf of either non-profit or academic institutions. No geographic preference is required, although a very strong capability in verbal and written English is necessary. For those interested, please send a letter of interest as well as an outline of relevant experience to info@biochar-international.org.

The University of Texas at Austin Department of Civil, Architectural and Environmental Engineering (CAEE) invites applications for a tenured-track assistant professor position in environmental engineering with a focus on “wastewater engineering in the 21st century.” Included in research areas of interest is biochar production from waste. Applicants must have an earned PhD degree in civil, environmental, or chemical engineering, or equivalent.
Kadoorie Farm and Botanic Garden in Hong Kong is looking for a tree climber who will also operate biochar production machinery. Must have 3 years post-qualification experience in tree work and be fluent in spoken and written Cantonese.

T.E. Laboratories, Ltd. of Tullow, County Carlow, Ireland is offering a young scientist an opportunity to enter a PhD program through a fellowship that will involve evaluation of the performance of biochar and other potential media in mitigating soil and groundwater impacts from agriculture. Candidates must have only limited research experience and must have resided principally outside Ireland for the past three years.

**Photo Contest on Black Soils**

The Food and Agricultural Organization (FAO) of the United Nations is conducting a contest in conjunction with World Soil Day (December 5). Photos of extraordinary Black Soils and accompanying information must be submitted by November 13, 2017 to be eligible to win prizes (soil gadgets). Among other criteria, winning soils should have a well-structured, dark coloured surface horizon due to their enrichment of high-quality humus down to a depth of more than 40 cm - mostly 60 to 80 cm.

**Recap of IBI’s inaugural biochar study tour in Stockholm, Sweden**

By Kathleen Draper

The Stockholm Biochar Project hosted 44 participants from 12 countries for 2.5 days earlier this month. Attendees visited the biochar production pilot site to see how the city’s green waste is turned into biochar while feeding heat into the district heating system. In addition, participants toured various urban tree and perennial planting sites to see how the use of structured soils and biochar is being implemented and saving the city money on storm water management.

Prior to nearly a full day of tours, participants heard from the project manager Mattias Gustafsson, and Stockholm’s Tree Officer Bjorn Embren, about the history of the project and the successful use of biochar in urban landscaping projects since 2009. Kare Gustafsson from Fortum Varme, spoke about the integration of heat produced during pyrolysis into the city’s district heating system. A discussion on Life Cycle Assessment and Climate Change as it relates to the use of biochar was reviewed by Cecilia Sundberg of KTH University.

We heard from another recently funded project in southern Sweden which will be converting agricultural residues into biochar and heat for the local district heating system.

To leverage the high caliber of various participants, many of whom have substantial experience with biochar production and/or sales, presentations on the following topics were provided. (Many of these presentations have been uploaded onto the IBI Members Only Page.)

**Biochar in Biowaste Management**  
Aino Kainulainen, Finland, HSY

**Carbon+ Project - a dawn for biochar in Norway**  
Eric Joner, Norway, NIBIO

**Carbon Gold’s Experiences in the Biochar Industry**  
James MacPhail, United Kingdom, Carbon Gold
Feedback from participants has been very positive with many expressing an interest in replicating the Stockholm model in their home cities. Based on the success of IBI’s inaugural biochar study tour, plans are in the works to host more in the future. Stay tuned for more details on 2018 tours!

New and Renewing IBI Corporate Members

Note: bios below were provided by members (or from websites) and not authored by IBI

**New: Masonry Heater Association of North America (MHA)**

The Masonry Heater Association of North America is a non-profit organization formed more than 30 years ago. Its current membership includes, but is not limited to: masons of all skill levels, chimney and hearth professionals, manufacturers, retailers, bakers, homeowners, and curious craftsmen. The Masonry Heater Association of North America has had members in every continent except for Africa and Antarctica.

The association's core mission goals, in no particular order, are to promote the industry, sponsor research and development, shape regulations and codes, inform and educate the public, and to further the expertise and professionalism of the membership. These goals are pursued primarily through the designing, building, and testing of wood fueled heating, cooking, and baking appliances. Many of these designs and their firing protocols can be adapted to maximize the production of charcoal, albeit on a small scale.

Producing charcoal and promoting its use as biochar from masonry heaters and wood fired cooking appliances offer a very good opportunity for the MHA to complement its core values and future objectives, not the least of which is to be relevant as a leader in the responsible use of wood as an energy source.

Website: [www.mha-net.org](http://www.mha-net.org)

**Renewing: Earth Systems Consulting**

Earth Systems is a multidisciplinary science and engineering company, which develops and implements effective environment, water, bio-energy and sustainability solutions throughout the world. Established in 1993, we have successfully completed over 600 major projects in Australia, Asia, Africa, South America, North America, and the Pacific.

Earth Systems initially developed the CharMaker pyrolysis technology in 2000 and has over many years developed and refined this technology suite for large and commercial biochar solutions. Our goal was to produce high quality biochar using a cost-effective process with minimal smoke emissions. Today we have machines operating in Australia & Asia, and with support from Cyclic Carbon and Green Man Char, we are one of the largest biochar producers in the Southern Hemisphere.
Our team is actively refining the technology to improve commercial and product outcomes while supporting research institutions in identifying uses and applications for biochar. The benefits of this product have not yet been fully recognized in Australia, but we hope to introduce a number of industries to its potential.

We are very interested in collaborations with like-minded groups or individuals for further develop the biochar sector.

www.earthsystems.com.au

**Regional Updates**

**Europe:** A Conference entitled “Biochar: Production, Characterization and Applications” was successfully held in Alba, Italy (August 20-25, 2017). The conference, organized by Engineering Conferences International (ECI) and co-chaired by Franco Berruti, Raffaella Ocone and Ondrej Masek, attracted over 80 participants from 16 different countries and 4 continents. Details about the conference and the program are available [here](#). Most presentations will be published in the ECI Digital Archives (Open Access) while selected papers will be published in a special issue of Biomass & BioEnergy (Elsevier).

[Skjærgaarden Nursery](#) is an early adopter of biochar in Norway as the demonstration site for a 300 kg/hr biochar unit which has been installed in collaboration with the cross-disciplinary research project [CAPTURE+](#). The [Norwegian Institute of Bioeconomy Research (NIBIO)](#) is one of the partners in the CAPTURE+ project, and is the organization with the longest track record in biochar research in Norway.

**People’s Republic of China:** 2nd Global Soil Biodiversity Conference 2017 Biochar Session

The 2nd Global Soil Biodiversity Conference was held in Nanjing, China on October 15-19, 2017. The 3-day conference included a plenary morning session with keynote speeches mostly from well-known soil biologists and concurrent afternoon sessions dedicated to modern issues of soil biodiversity. Biochar for Soil Biota and Biodiversity was the one of 15 oral sessions held on October 18. The biochar session took place in line with Soil Biogeography and cutting-edge methodology sessions. Over 80 people, mostly young scientists from China filled the meeting room.

The session was co-chaired by professor Genxing Pan from Nanjing Agricultural University and Professor Yakov Kuzayakov from Rudn University of Russia. The session included 9 oral presentations; 4 from Germany, 5 from China and one each from Israel, Brazil and Korea. The main issues addressed include biochar stability versus priming effect by soil microbes, short term effects of biochar on soil fauna and microbial communities, particularly soil nodular rhizobacter, decomposers, nitrifiers and pathogen and soil-borne diseases, as well as soil enzymes and plant disease tolerance. Dr. Kuzayakov provided a deep examination of C stability from biochar with special relevance to priming effect by soil microbes exploring C sources under different nutrition conditions. Genxing Pan, on behalf of an Australian-Chinese cooperative team, highlighted biochar’s effect on soil organic-mineral association which may create novel micro-habitat for hot spots with redox regulation and biogeochemical manipulation in rooted soils. Most of the presentations introduced some new insights on biological improvements of soil-plant systems by biochar, mostly from crop residues. There were friendly but active exchanges between senior and junior biochar scientists and between Chinese scientists and those from abroad.
With the growing interests in biochar and soil biology, *Pedosphere*, a China-based SCI-indexed journal would like to publish a special issue on biochar in relation to soil biology or on the bio-effects of soil-plant systems. This will be discussed further in an IBI board meeting. Contributions related to this theme would be welcome. Contact Dr. Genxing Pan via email at: pangenxing@aliyun.com.

**Taiwan:** John Liu, *Biochar Initiative of Taiwan*, demonstrated small scale biochar production and use to groups of farmers throughout Taiwan. Tom Miles, IBI, met John during a tour of workshops at universities where he discussed biochar and bioenergy. The tour, courtesy of Top Recycle Electricity & Energy and the government of Taiwan, included a bioenergy workshop at the Department of Forestry, National Chung Hsing University, the Department of Civil and Environmental Engineering at the National University of Kaohsiung, the Green Energy Development Center at Feng Chia University, Taichung, the Industrial Technology Research Institute, Hsinchu, a wastewater treatment plant and pig and chicken farms.

**Canada:** CRIBIQ, a research consortium focused on industrial bio-processes innovation in Quebec, Canada, held the first biochar conference in Quebec on October 16 – 17 drawing nearly 80 participants from across the province and beyond. Attendees heard from three international speakers; Mattias Gustafsson spoke about the Stockholm Biochar Project, Kathleen Draper spoke about how biochar can revitalize regional economies and the environment, and Olivier Lepez spoke about the BioGreen thermochemical process and technology. Many regional biochar experts shared their experiences in the biochar industry and IBI Business member, AirEx Energie toured participants through their impressive pyrolysis demonstration plant in Nicolet, Quebec. The conference showed that the level of biochar interest and activity in Quebec is ramping up quickly.
**Xylo-Carbone** is receiving $1.5 million in funding from the Quebec Government to build a charcoal production plant that will co-produce biochar. The $6.6 million plant is being constructed in the town of Saint-Tite, Quebec. The company is looking for distributors for the North American and overseas markets.

**Africa:** *This could be the start of something big.* Starting in the smallest country on the continent, the African Biochar Partnership (ABP), currently under the leadership of IBI Board Member Bah Saho, has spawned its first national biochar network in The Gambia. Consisting of stakeholders in energy, health, agriculture, forestry and environmental protection, among others, establishment of Biochar Network Gambia (BNG) implements a recommendation of the ABP set forth during its founding in March 2016 in Nairobi, Kenya. Because of the efforts of leaders involved in this initiative, Gambians can look forward to more government and NGO support for cleaner and sustainable energy, healthier and safer cook stoves, reduced demand on wood for cooking, and enhanced agricultural productivity.

Working with scientists at Kenya’s Egerton University, the Nakuru Water and Sanitation Service Company (Nawassco) in Nakuru, Kenya is using sewage sludge as feedstock and applying the resultant biochar successfully in agricultural field trials as an organic fertilizer. The company is seeking funds to scale up the production.

A new report from Black Earth Tanzania project partner Tembo Coffee Company, based in Mbeya, suggests plots treated with biochar displayed superior quality attributes to those that were not, while even demonstrating characteristics not typically found in the region. Using the SCA scoring system, Tembo found that the coffees treated with biochar, on average, scored two points higher (83) than those that were not (81).

Biochar Initiative of Nigeria (BIN) held its third annual conference at the University of Ibadan with the theme “Biochar for Climate Change Mitigation, Crop Protection and Soil remediation for Sustainable Agriculture”.

Former IBI board member John Van D Lewis, Terra Global Capital LLC, spoke at the Global Green Growth Institute’s Green Growth Week 2017 in Addis Ababa. Delegates toured farms that use biochar aided by Jimma University #GGWeek2017 #GreenGrowthInAfrica.

**United States:** Scott Bros. Dairy of Moreno Valley, California and partner Steve McCorkle of Ag Waste Solutions won a prestigious Nutrient Recycling Challenge Award from the Environmental Protection Agency in 2016 for a state-of-the-art manure gasification system that co-produces diesel fuel and biochar. The project made use of interim National Resource Conservation Service (NRCS) standard 735 for ag waste gasification. NRCS featured the project on a recent #FridaysontheFarm.

Redwood City, California-based Bioforcetech, a member company of Italy’s PE Group, is preparing to produce 600 tons/year of biochar from biosolids.

**US Forest Service to award $7 million in grant applications for projects that expand wood products and wood energy markets.** The U.S. Forest Service website has the applications and all instructions to apply for two categories of grants (wood energy and wood products, e.g. biochar). No basic research funding, but many other types of projects are allowed. Applications may be submitted through Jan. 22, 2018.

Did the Umpqua Biochar Education Team make char, out of all those 40 slash piles? **U BET they did!**

American BioChar of Niles, Michigan has furnished Starfysh Mission with 8,000 pounds of a soil amendment that combines activated biochar with freshwater-sourced humates for work being done to improve agricultural outcomes in Haiti.
Resource Environmental Group Services (REGs), a subsidiary of Strategic Environmental & Energy Resources (SEER) has entered into an exclusive service contract with Biochar Now of Berthoud, Colorado in the water remediation market. According to Biochar Now’s CEO, James Gaspard, “in just a few weeks of joint marketing with SEER, Biochar Now has been able to identify and add millions of dollars to our product sales pipeline with companies that had already expressed interest in using our product after successful testing, but needed the full-service solution offered by REGS to implement our product in their processes.”

Clearing a forest to start a farm on an island in the San Juans of Washington, Kai Hoffman-Krull was led by Dr. Tom DeLuca of the University of Washington to try biochar. After three years of trials, Kai has many good results to report, as he did in the latest issue of the Growing for Market newsletter. Restore Char offers more information and high-quality videos on their website.

The California Energy Commission (CEC) is supplying a grant to the Fall River Resource Conservation District’s 2.8-MW Burney-Hat Creek Bioenergy Project is a proposed biomass energy plant in Shasta County, California that will utilize material from CalFire-designated high-hazard zones. The modular plant will produce electricity, heat and biochar using gasification. West Biofuels is the system integrator and project developer. The project is one of a cluster of three being planned for the intermountain region.

The CEC also recently awarded more than $1 million to the University of California, Davis for a project that will involve development of a forest waste-to-energy plant siting tool. It will allow project managers to look at several factors, such as environmental impacts, transportation costs, and location of fire hazard severity zones when deciding on where and how to develop a bioenergy power plant that converts woody biomass into electricity. The tool is expected to decrease the predevelopment costs associated with siting bioenergy facilities.

Start-up company Green State Biochar of Barton, Vermont has been winning awards with their pitch for use of biochar in agriculture. They manufacture, install, and monitor filtration systems that diminish nutrient runoff from identified sources and remove odors and algae from waterways.

The major fires in Northern California may have left behind some biochar, but along with it, heavy doses of combustion products that may harm the environment.
# Upcoming Calendar Events

## November

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<td>The 2nd China - Asian Biochar Workshop</td>
<td>November 18-21, 2017. The theme of the workshop will be Biochar Production and Application for Green Agriculture-from Technology to Viable Systems. The workshop is aimed to enhance a joint exchange and sharing of the biochar developments between China and Asian countries and beyond, and an access to novel biochar technologies and viable systems for safe recycling of bio-waste for green development. The venue of this workshop will be the Hanyuan Hotel, Nanjing, China. Further details on the workshop can be found <a href="#">here</a>.</td>
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## December

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<td>8th International Conference on Biofuels, Bioenergy &amp; Bioeconomy</td>
<td>Dec 4 – 5, 2017, Sao Paulo, Brazil. Presentations from more than 30 countries and 100 organizations.</td>
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<tr>
<td>Free Webinar: Boosting the Bottom Line with Biochar</td>
<td><a href="#">Biomass Magazine</a>, December 7 2:30-4:30 EDT Presentations by IBI biochar technology providers, and producers: Jim Brown, Karr Group; Jonah Levine, Confluence Energy; Tom Miles, IBI</td>
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## January +

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**SAVE THE DATE:** USBI’s Biochar 2018 has been scheduled for August 20 – 23, 2018 and will be hosted at the Chase Center in Wilmington, DE. The proposed theme of the conference is “The Carbon Link in Watershed Ecosystem Services.” Further details are forthcoming.

If you are looking for the published papers listing that used to appear at the end of each newsletter, we are now sending an enhanced version out to members via separate email each month. The number of published papers has outgrown our newsletter, but we still want to offer IBI members the benefit of receiving a list each month. We hope this does not discourage any non-members from following the rapid progress of biochar research, but also feel it gives everyone one more reason to [join and support the IBI](#).