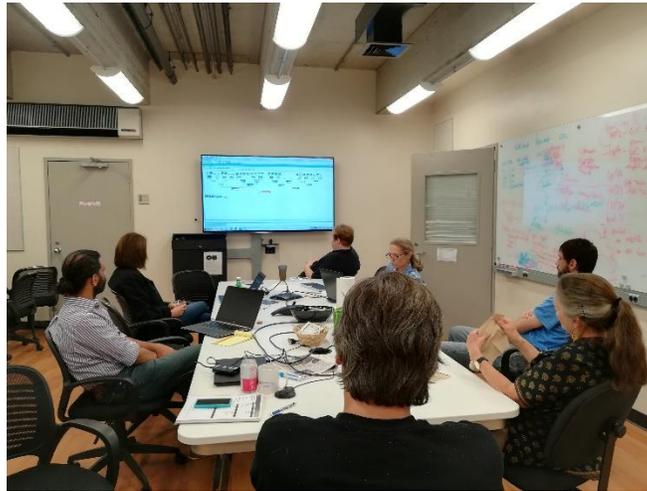### Ithaca

Edie Paul from GeneFlow visited Cornell University and the GOBii team for potential collaboration of decision support tools, Oct. 1-5.

***

At BTI, Liz spoke to a group of 15 students visiting in the IARD 4020 course from India with Dr. KV Ramen about the GOBii project and teams.


***

Prasad and Modi from ICRISAT visited Cornell University IT, bioinformatic facility, Biotechnology facility and GOBii team Oct. 8-13, reviewed deployment, backup, database architecture and technology, database management and system administration tools.

***

Josh Cobb, Favorable Environments breeding lead, International Rice Research Institute, invited by *International Agricultural Research Programs* to Cornell*,* gave a seminar entitled "Transforming rice breeding: influencing international development through sustainable innovation" at Emerson Hall, Cornell University, Oct. 11. He met with Susan McCouch, Lukas Muller, Liz and Star Oct 10-11 for rice molecular breeding application tools and user interface requirements. Josh joined Star and Liz's online meeting with Nick and Dima to review and prioritize application tool development.

***
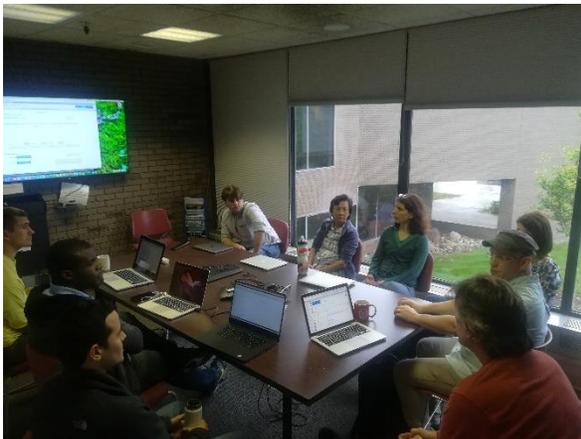
GOBii

Yaw was invited to give a talk on GOBii at Ghana University Oct. 4, 2017

***

IRRI participated in an all-night marathon, loading with the GOBII team

***

Liz attended 2017 ASA-CSSA-SSSA Annual Meeting

October 22-25 | Tampa, FL | and Liz presented

"The Genomic Open-Source Breeding Informatics Initiative (GOBii) - a Gates Foundation Initiative to Transform Breeding through the Use of Genomic Selection."

***

GOBii Africa meeting: EiB module 3, HTPG and GOBii joint workshop Speke resort Uganda, November 8-10, 2017, attended by 60 people.

Nov 8-10 East Africa workshop

GOBii/EiB cross-project workshop showcases integrated breeding resources and tools to African partners: https://btiscience.org/explore-bti/news/post/GOBii-eib-cross-project-workshop-showcases-integrated-breeding-resources-and-tools-to-african-partners/

by Marissa Zuckerman | Dec 12, 2017

"We are at a pivotal point in time where there are several open-source data systems and analysis tools being built that can be utilized for developing country breeding programs. By working together, we can have much greater impact and help train breeders in the latest and most efficient techniques," according to Liz Jones, Director of the Genomics and Open-source Breeding Informatics Initiative (GOBii) and one of the expert advisory group member of Excellence in Breeding (EiB).

Jones' words epitomize the theme of a recent GOBii/EiB-sponsored workshop held at the Speke Munyonyo Resort in Kampala, Uganda (November 8th-10th), with an additional day of field and lab tours at the National Crops Resources Research Institute (NaCRRI). Crop breeders, scientists, software

developers and vendors alike united to take part in the three-day series entitled "*Application of genotypic information in variety development: strategy and implementation*."
The workshop focused on providing overviews of breeding tools and technologies offered by GOBii and the Consultative Group for International Agricultural Research's (CGIAR's) Excellence in Breeding (EiB) Platform to African partners.

Participants took part in informational presentations, break-out discussions, field visits, lab tours, and hands-on demonstrations. The meeting covered essential elements of breeding from barcoding plants to genomic data management.

"The workshop represented the first cross-initiative coordinated outreach activity of the newly formed Excellence in Breeding platform," according to Michael Olsen, Upstream Research Coordinator at CGIAR's International Maize and Wheat Improvement Center (CIMMYT).
"It was an encouraging start to greater collaboration and capacity development of CGIAR and national program partner breeding teams."

The GOBii project seeks to create the architecture for a publicly accessible genomics database and decision support tools to accelerate the development of improved crop varieties. By hosting workshops, GOBii is able to learn more about the needs of their users and provide direct support and training.

"The workshop allowed us to better understand our international partners' needs and constraints, many of which are highly eager to adopt and embrace the modern data management systems and tools we are offering," said Star Gao, a GOBii breeding informatics and application specialist and one of the primary workshop planners.
"To fulfill and sustain our missions in transforming breeding in the under-resourced world, GOBii, as a global community, is committed to data management and application tools' development, training, and users' adoption and implementation tracking."

I am glad that our team had an opportunity to learn the new tools and seeing the versatility in them," said Joyce Maliga, Food Crops Institute Director at the Kenya Agriculture and Livestock Research Organization (KALRO). "I will definitely work with our Director on future training plans and collaboration opportunities to incorporate GOBii and EiB breeding tools into our breeding program."

In addition, the workshop had a more significant impact by allowing partners to interact and meet face-to-face. For Deb Weigand, a GOBii software quality assurance specialist, the workshop had a particularly impassioning effect.

"Being able to see the greater impact of our tools, visiting actual labs carrying out the hard science…that was the best part of the experience. Seeing how we all fit into the bigger picture was a great reminder of the value of everyone's work. GOBii is part of a truly innovative, global community."

Using feedback given after the workshop, GOBii plans to continue to coordinate and host regular meetings and additional workshops in 2018.

The workshop was sponsored by the Excellence in Breeding Platform of CGIAR in conjunction with GOBii and the High Throughput Genotyping platform (HTPG) of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).

***

GOBii talk at Boyce Thompson Institute's Monday Morning Seminar lecture series:
https://btiscience.org/event/monday-morning-seminar-star-gao-and-the-GOBii-project/

***

Hacking BrAPI calls for pedigree verification and sample tracking use cases

Marko Karkkainen's original casual visit to Casscabase team at Cornell evolved into an EiB-sponsored system Integration meeting Dec 11-15th.. Marko from B4R, Mariano Crimi from BMS, Kate Dreher from CIMMYT, Peter Selby, BrAPI coordinator, had a productive system integration meetings and visits with Philip Glaser, Liz Jones, Star Gao, Qi Sun, Kelly Robbins, Lukas Mueller, and developers from Lukas' group.
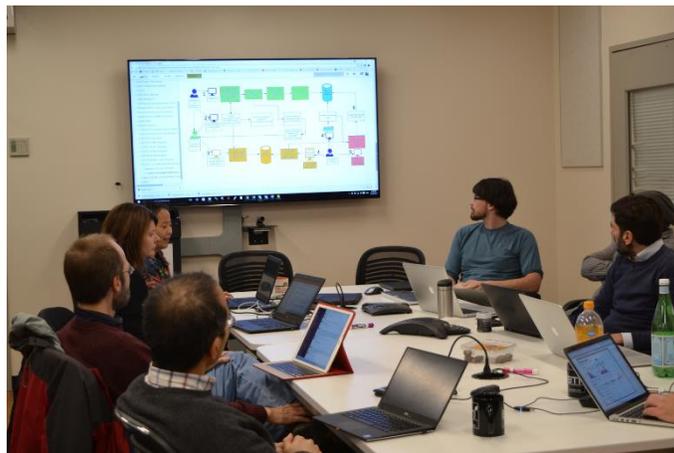
Some key achievement during this week include:

- BrAPI calls outlined for a pedigree verification use-case including extraction of phenotype, genotype and pedigree for a set of lines. Identified new calls that need to be developed to complete this use-case.
- Mapped out the ideal process for sample generation, sample tracking, genotyping project generation, submission of project to vendor, and collection of metadata and genotyping data in

GOBii. Came to a common understanding of the functionality required in BMS, B4R and Sample Tracker. Identified new functionality that could be developed to meet the ideal process and that will be prioritized through individual projects.

- Commitment from B4R, BMS and Sample Tracker to be UUIDs so that samples are uniquely identified across systems
- Mapped out existing BrAPI calls developed by Qi and Lukas onto the Sample Tracking vendor submission process
- Agreement to not develop tools with similar functionality was decided during meetings between B4R and Cassavabase – GOBii subsequently also agreed to this
    - Strong need for a community tool, show-and-tell, and what's being developed in each project, to be initiated through EiB.
    - Strive to have future tool development BrAPI compliant ie: tool should be able to pull data from any BrAPI compliant data management system.

The group celebrated the week with a GOBii update together with co-PIs and eventually a Christmas happy hour.

The GOBii team and Lukas's group at BTI, Cornell campus.

***

ICRISAT

Celebrating a decade of genomic advances in agriculture

The time taken to develop improved crop varieties has almost halved with the rapid strides made in genomics research and the last decade has seen the genomes of eight crops sequenced. This includes pearl millet and groundnut which are important for the nutrition and livelihoods of smallholder farmers in the drylands of sub-Saharan Africa and India. These achievements have emerged from the advanced genomics research being carried out at the Centre of Excellence in Genomics (CEG) at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).
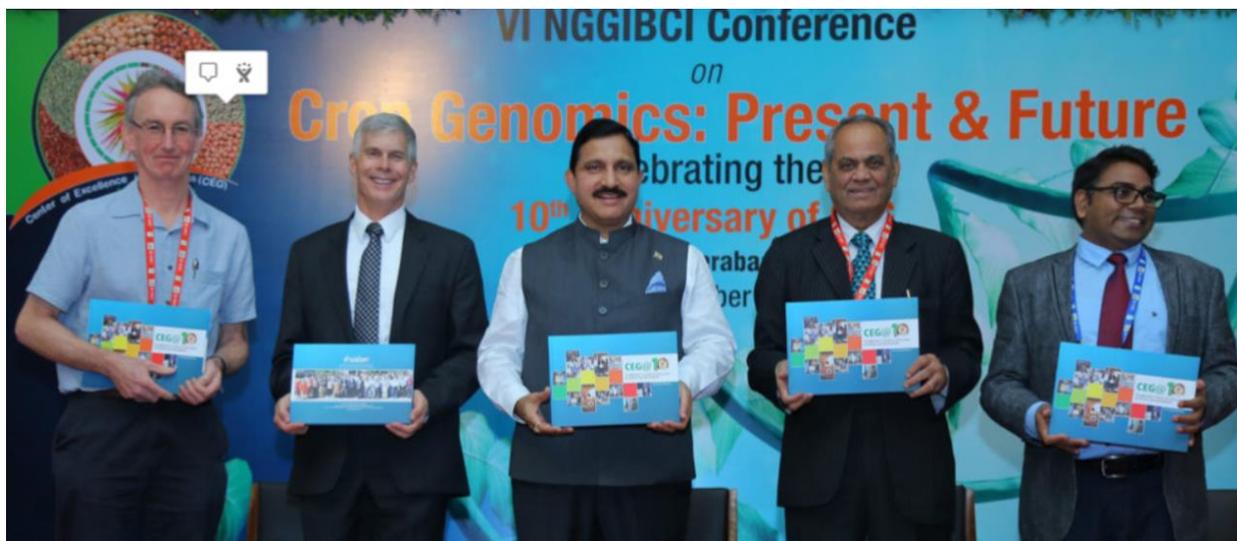
Presentation of the brochure celebrating ten years of the Centre of Excellence in Genomics (CEG) to Chief Guest Mr YS Chowdary, Minister of State for Science & Technology and Earth Sciences, Government of India, and other dignitaries, at ICRISAT, Patancheru

Established in 2007, CEG is celebrating a decade of using modern genome analysis methods with the goal of delivering crop varieties that are better adapted to poor soils, low rainfall, high climate variability, pest and diseases that will help improve the livelihoods of smallholder farmers. CEG was set up in collaboration with the Department of Biotechnology (DBT), Government of India.

The international conference "VI Next Generation Genomics & Integrated Breeding for Crop Improvement Conference" on 'Crop Genomics: Present and Future,' was organized to celebrate the anniversary. http://www.icrisat.org/celebrating-a-decade-of-genomic-advances-in-agriculture/

***

GOBii