



"We're developing new biomass feedstocks, engineering microbes to produce fuels from biomass, and creating microorganisms to convert lignin into highly valued products."

Jerry Tuskan,  
Chief Executive Officer,  
Center for Bioenergy Innovation



## Center for Bioenergy Innovation



The Center for Bioenergy Innovation (CBI), led by Oak Ridge National Laboratory, is custom engineering feedstock plants and microbes for a sustainable bioeconomy. CBI builds on a robust legacy of scientific understanding to provide breakthroughs for a new generation of cost-effective, environmentally positive, and industrially relevant bioproducts and biofuels.

### Moving Toward Bioproducts from Biomass

The vision for CBI is to accelerate domestication of bioenergy-relevant plants and microbes to enable high-impact, value-added coproduct development at multiple points in the bioenergy supply chain.

**DEVELOPING** sustainable biomass feedstock crops using plant genomics and bioengineering.

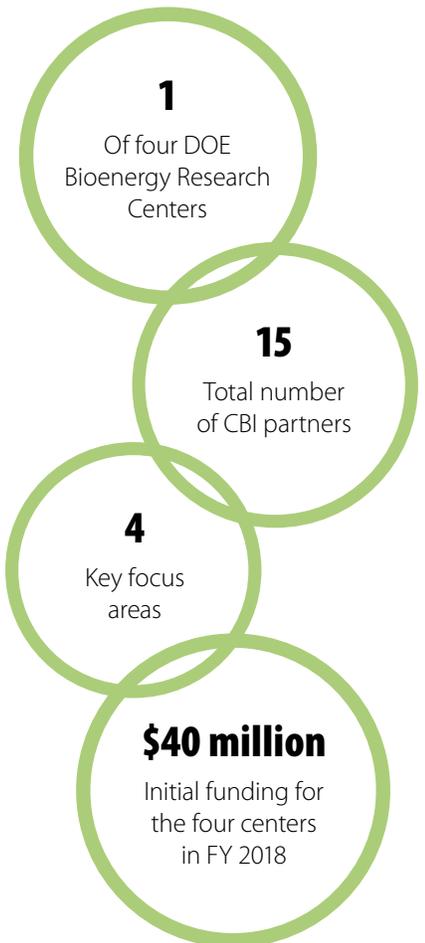
- Development of perennial nonfood crops that thrive in the harsh environment of marginal lands, require less fertilizer and pesticide, and are more easily broken down and converted to advanced biofuels and bioproducts.

**IMPROVING** processes to simultaneously break down and convert plants into advanced biofuels.

- More efficient, less costly biofuels production using an engineered microbe that will simultaneously break down and ferment plant biomass in a process called consolidated bioprocessing.
- Creation of drop-in fuel substitutes like butanol that have properties similar to gasoline and can use the existing fuel delivery infrastructure.

**CREATING** valuable products from the lignin residue remaining after bioprocessing.

- Use of new microbes and methods to convert leftover lignin into products such as chemical feedstocks that replace petrochemical feedstocks.



## Research and Development Focus Areas



**Sustainability**—Harness natural diversity and beneficial plant-microbe interactions to realize bioenergy crops that are drought-tolerant, use fertilizer more efficiently, and are resistant to pests and pathogens.



**Feedstock Development**—Use genomics to rationally design biomass feedstocks with high yield and uniformity for biofuel and bioproduct production.



**Deconstruction and Separation**—Eliminate the high cost of chemical pretreatment and enzymes by using engineered microbes to simultaneously break down, refine, and convert biomass.



**Conversion to Specialty Biofuels and Bioproducts**—Achieve advanced fuels from biomass and value-added coproducts from lignin residues by using improved microbial platforms.

## CBI Affiliate Program

CBI has among its goals an effective, coordinated path toward successful technology commercialization across the bioenergy supply chain through licensing to corporate entities pursuing biofuels development. The program is open to industry, academia, nonprofits, and individuals.

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### CBI Partners

