



Predictive Biology for Sustainable Bioenergy Feedstocks

Funding Opportunity Announcement DE-FOA-0003291 · Biological and Environmental Research

Pre-Application	Encouraged, not required — January 14, 2026
Full Application Deadline	March 26, 2026, 5:00 p.m. ET
Award Size	\$500,000 – \$900,000 per year, up to 3 years
Anticipated Awards	6 to 9
Cost Sharing	Not required

Objective

The Office of Biological and Environmental Research seeks applications developing **predictive understanding** of feedstock plant systems, with emphasis on translating measurement into mechanistic and statistical models that forecast performance under field conditions. Of particular interest is work connecting molecular-scale regulation to whole-plant and canopy-scale outcomes in perennial and annual bioenergy feedstocks.

Areas of Interest

AOI 1 — Regulatory control of feedstock traits

Determining how regulatory sequence governs tissue-specific and stress-responsive expression in feedstock species, and building models that predict expression from sequence in genotypes for which no measurement exists. Applications proposing to transfer models trained in reference species to feedstock genomes are encouraged to address the generalisation problem explicitly.

AOI 2 — Measurement to model at canopy scale

Non-destructive measurement of plant status across a growing season, and the inference pipelines that turn such measurement into trait estimates. Reflectance, thermal and three-dimensional structural measurement are all in scope, as are the calibration and drift problems that arise when instruments are deployed across seasons and sites.

AOI 3 — Benchmarks and shared evaluation

Community resources that make predictive claims checkable: held-out evaluation sets, reporting standards, and the infrastructure to compare methods on common data.

Feedstocks of Interest

Perennial grasses, **sorghum**, poplar, and other dedicated bioenergy species.

Eligibility

Open to IHEs, national laboratories, non-profits and for-profit entities. No submission limits. Collaborative applications across institutions are encouraged and are submitted as a single application with subawards.