

Herbie Hancock
Improving the Growth of Corn
Budget Justification

Salaries and Wages

Principal Investigators

Principal Investigators are responsible for overall project management and includes development of econometric and other quantitative models. Also includes the supervision of the research at seven biomass plot locations

Post Docs

(4) of the Post Docs will be doing research on

- economics of reducing greenhouse gas emissions on Northern Plains agricultural economy and food supply
- economics of producing corn based and cellulose ethanol in North Dakota
- analyzing the impact of bio-energy production and climate change policies on the U.S. food production, agricultural competitiveness and farm income.

(3) of the Post Docs will be doing research on

- plant species commonly found in mixed species ecosystems
- weed species with potential impacts on downstream processing

Graduate students

(2) of the graduate students will be analyzing

- the impact of alternative biomass transportation systems on carbon emissions
- transportation costs in shipping biomass from farms to processing plants

(1) of the graduate students will be

- potting, seeding, and treating in the greenhouse for perennial crops
- conducting field work including planting, maintaining and harvesting

Undergraduate students

(8) will perform a variety of tasks including planting, plot maintenance, harvest and data entry. Their hourly wage ranges from \$8.50 - \$10.50.

Research Technicians

(2) of the research technicians will be

- analyzing the representative farm model for North Dakota to evaluate the impact of macro and agricultural policy changes in North Dakota Income
- revising and updating the global econometric simulation model for corn and soybeans to analyze the impact of agricultural policy changes on U.S. production, consumption and exports of the two crops.

(2) of the research technicians will work on field plot maintenance, harvesting and compilation of data from the 7 study sites.

Fringe Benefits

Fringe benefits are calculated at 30% for faculty, 3% for graduate students, and 10% for undergraduate salaries.

Please see Sponsored Programs website for full time staff salaries, Postdoc and research techs estimated fringe benefit rate.

https://www.ndsu.edu/research/sponsored_programs_admin/institutional_information/

Equipment

Drill - \$17,000 - an eight row plot seeder drill is needed for seeding cool season grasses.

Sprayer - \$9,200 - a greenhouse hood sprayer is needed for screening herbicides on various bio-fuel and weed species.

Travel

Travel to Research Plots to include travel to the six plots for plot preparation, planting, maintenance, and harvest. A total of 30 trips to plots is planned and the average distance is 250 miles.

- 250miles x \$0.50/mile = \$125
- 3 nights hotel x \$69 per night = \$207
- 4 days food x \$25 per day = \$100
- Total = \$15,300

Travel to Regional Meetings to include travel expenses for one PI and one Graduate student each year.

- 700 miles x \$0.50/mile = \$350 mileage
- (2)2 nights hotel x \$75 per night = \$150
- (2) 3 days food x \$40 per day = \$120
- Total = \$890

Travel to National Meetings includes travel expenses for two PI's and one graduate student to attend the annual National convention for Biomass Production in San Diego, CA.

- (3)Airfare = \$450
- Ground Transportation = \$150
- (3) 4 nights hotel x \$75 per night = \$300
- (3) 5 days food x \$50 per day = \$250
- Total = \$3,150

Materials and Supplies

Field Research Supplies

Bags, stakes, filter paper, fertilizers, herbicides, fungicides, pots, burlap sacks, envelopes and foliage clipping scissors.

Lab Research Supplies

Small laboratory scale, pellet mill, HPLC columns, guard columns, chemicals and glassware.

Greenhouse Supplies

Fertilizers, containers and labels

Publications

There will be approximately seven refereed journal articles expected from this project at an average cost of \$300 each.

There will be 4 extension publications produced at an average cost of \$700 each.

Fees

Lab Analysis Fees

Analysis on quality of biomass crops for NDF, ADF, ADL and CP. Will be completed by a private company yet to be determined.

300 samples x \$20 ea = \$6,000

Analysis on Foliar N and Soil analysis. Will be completed by the USDA.

75 samples x \$15 ea = \$1,125

Analysis on Soil C, N total and C: N lab analysis. Will be completed by the soil science department at NDSU.

530 samples x \$25 = \$13,250

Greenhouse Fees

\$0.77 per square foot of bench space per month is charged for use of the greenhouse. This includes Supplies including but not limited to growing media, fertilizers, containers, and labels, Supplies including but not limited to growing media, fertilizers, containers, labels, and Salaries for student and contracted labor.

Subaward(s)

Subaward to University of Minnesota (\$30,475)

Subaward to Montana State University (\$55,470)

Indirect Costs

Indirect costs calculate at 30% of Total Federal Funds