Barley Coordinated Agricultural Project Work Plan FY07 (4/1/07 – 3/31/08)
Rex Bernardo, University of Minnesota

1) Describe the research, education, and outreach activities you are planning for the next year (4/1/07 – 3/29/08)

Research Continue developing the graphical user interface and C++ program code for *QTL Miner*, and release the first working version of the software

Education None

Outreach None

2) List specific outcomes and deliverables that will be accomplished in the first 6 months (4/1 – 9/30). These will be used as benchmarks for your bi-annual progress report.

- Release a beta version of *QTL Miner*
- Continue to coordinate with THT developers on file format requirements for *QTL Miner*
- Prepare and distribute preliminary documentation for *QTL Miner*
- Work with breeders and geneticists on testing the functionality and performance of *QTL Miner* with several real data sets

3) List specific outcomes and deliverables that will be accomplished in the second 6 months (10/1 – 3/31). These will be used as benchmarks for the bi-annual progress report.

- Continue to work with breeders and geneticists on testing the functionality and performance of *QTL Miner* with several real data sets
- Make any needed modifications of *QTL Miner* based on the above testing, and release an official version of *QTL Miner*
- Prepare and distribute a user's manual for *QTL Miner*

Barley Coordinated Agricultural Project Biannual Progress Report
FY06 (4/1/06 – 3/31/07)

Rex Bernardo, University of Minnesota

1) Describe the research, education, and outreach activities you completed in FY06 (4/1/06 – 3/31/07)

Research

- Discussed (with Kevin Smith, Roger Wise, Julie Dickerson, Jean-Luc Jannick, and Peter Bradbury) database issues pertaining to pedigree, marker, and phenotypic data in THT, and how the needed data will be made available to *QTL Miner*
- Discussed, via email, different aspects of the required input files with Barley CAP collaborators
- Provided computer programmer (Srikanth Srinivasan) with technical background information on mixed-model QTL mapping
- Mr. Srinivasan began writing and testing the source code for different modules in *QTL Miner*
- Presented an update on QTL Miner at the 2007 BarleyCAP annual meeting. Responded to comments from advisory board

Education None
Outreach None

2) List specific outcomes and deliverables accomplished in FY06 (4/1/06 – 3/31/07).

- Hired a computer programmer, Srikanth Srinivasan, to write and develop *QTL Miner* software
- Identified specific formats for input files, and identified possible outputs of the software
- Identified software-development platform for *QTL Miner* (Visual C++)
- Identified three analysis options for QTL Miner: (i) without marker data, for calculating breeding values of lines; (ii) with all markers, for genome-wide selection; and (ii) with a subset markers found significant, for QTL discovery and selection
- Started writing program code
- Started testing the program code with small and large datasets
- Started interviewing candidates to replace Mr. Srinivasan, who is graduating in May 2007