Research Plan

Kelli Bacon,

June 9, 2006

Participant Information
Name: Kelli Bacon
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Work Schedule: M - F, 9am to 7pm

Research Advisor
Name: Dr. Nancy Amato
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Lab Location: Bright 407

Research Topic: Generic Graph Generator Library

Research Goals: My goal in participating in a research program is to gain valuable experience in computer science. I have a somewhat limited experience in CS (lower division coding, one abstract data structures course, and one algorithm theory course). I would like to broaden my understanding of CS, which involves experiencing different ways to approach a computing problem. Researching here will also help me see if I would like to go into graduate school someday. My research goal in the Graph Generator group of the Parasol Lab is to set up the framework and get it fully functional for graph generation. Our group intends to implement the properties necessary to create and join graphs. We want to be able to test our graph generator on simple random graphs by the end of our summer project.

Tasks: As an undergraduate researcher, I will be working with Saransh and Harsh on a graph generator project. This project involves setting up an interface for the user to create and manipulate a graph datastructure. We want the user to be able to input how many vertices, if the graph is directed, etc, but we also want for the user to be able to mutate the graph (i.e., combine two preexisting graphs) and know the properties of the resulting graph. Examples of graph properties are the minimum or maximum degree of a vertex, the diameter of the graph, etc. The tasks of the Graph Generator group are shared. We will all be responsible for documenting, but I am in charge of setting up a template for documentation. Saransh, Harsh and I work together in the common development stage. We have set up a list of the properties we want accomplished and will pick which properties we want to work on. I will be working on the join_at_vertex and compose_no_join cases, and then work on the max_degree and min_degree properties for both directed and undirected graphs. One of my other tasks is to review the code of both Saransh and Harsh before they are allowed to commit it to the common files.

Deliverables:	**Dates**:
Website Updates	End of each week
Weekly Reports	End of each week
Documentation Template	June 16, 2006
compose_no_join	June 23, 2006
join_at_vertex	June 30, 2006
property_max_degree	July 7, 2006
property_max_in_degree	July 14, 2006
property_max_out_degree	July 14, 2006
property_min_degree	July 21, 2006
property_min_in degree	July 28, 2006
property_min_out degree	July 28, 2006
Poster Presentation	August 4, 2006
Code (with documentation)	August 11, 2006
Tech Report	August 11, 2006

Signature

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Student Researcher

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Faculty Mentor