PHYS 483 Problem Set 6

Date: Tuesday, April 15th, 2003
Due date: Tuesday, April 22nd, 2003

• **Problem 1** (30 points) *Introduction to Algorithms, page 208, exercise 11.2-2*
Implement a stack using a singly linked list L. The operations PUSH and POP should still take $\Theta(1)$ time.

• **Problem 2** (30 points) *Introduction to Algorithms, page 208, exercise 11.2-3*
Implement a queue using a singly linked list L. The operations ENQUEUE and DEQUEUE should still take $\Theta(1)$ time.

• **Problem 3** (40 points) *Introduction to Algorithms, page 208, exercise 11.2-7*
Give a $\Theta(n)$-time nonrecursive procedure that reverses a singly linked list of n elements. The procedure should use no more than constant storage beyond that needed for the list itself.