**LEC 11 Compiler Optimization**

* Constant folding – don’t need to wait until runtime to compute constants
  + Ex: 11 + 2
  + Following all the rules:

lis $3

.word 11

sw $3, -4($30)

sub $30, $30, $4

lis $3

.word 2

lw $5, 0($30)

add $30, $30, $4

add $3, $5, $3

* + Using constant folding:

lis $3

.word 13

* Constant propagation
  + Ex:

int x = 1;

x + x;

* + Using constant propagation:

push x to stack ; x might still be used elsewhere

lis $3 ; load constant value instead of calculating x + x at runtime

.word 2