

# 15-213

*“The course that gives CMU its Zip!”*

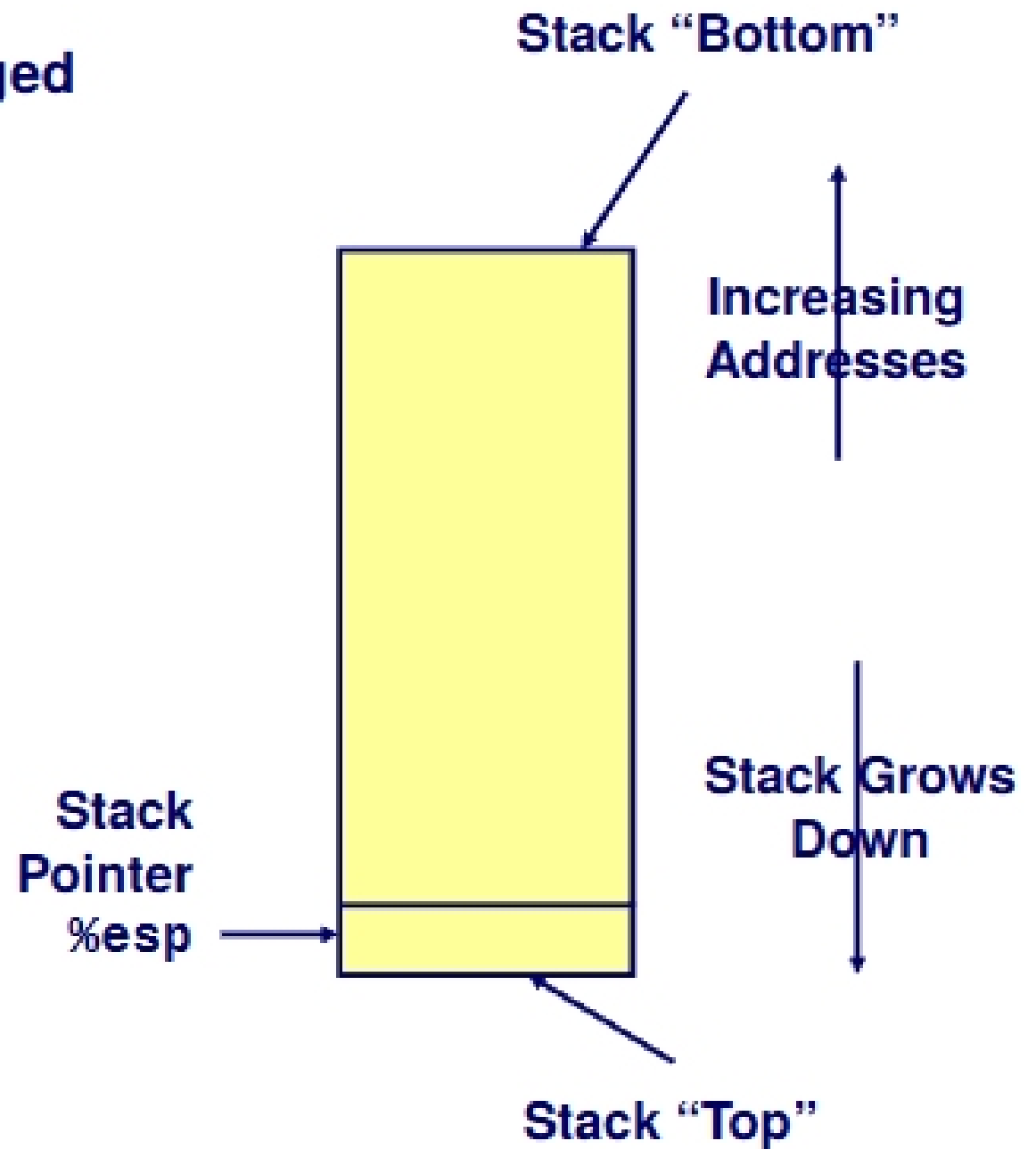
## **Machine-Level Programming III: Procedures Sept. 16, 2003**

### **Topics**

- IA32 stack discipline
- Register saving conventions
- Creating pointers to local variables

# IA32 Stack

- Region of memory managed with stack discipline
- Grows toward lower addresses
- Register `%esp` indicates lowest stack address
  - address of top element



# IA32 Stack Pushing

## Pushing

- `pushl Src`
- Fetch operand at `Src`
- Decrement `%esp` by 4
- Write operand at address given by `%esp`

