

# Bio113 Synthetic Biology

## DNA Control Element Discovery

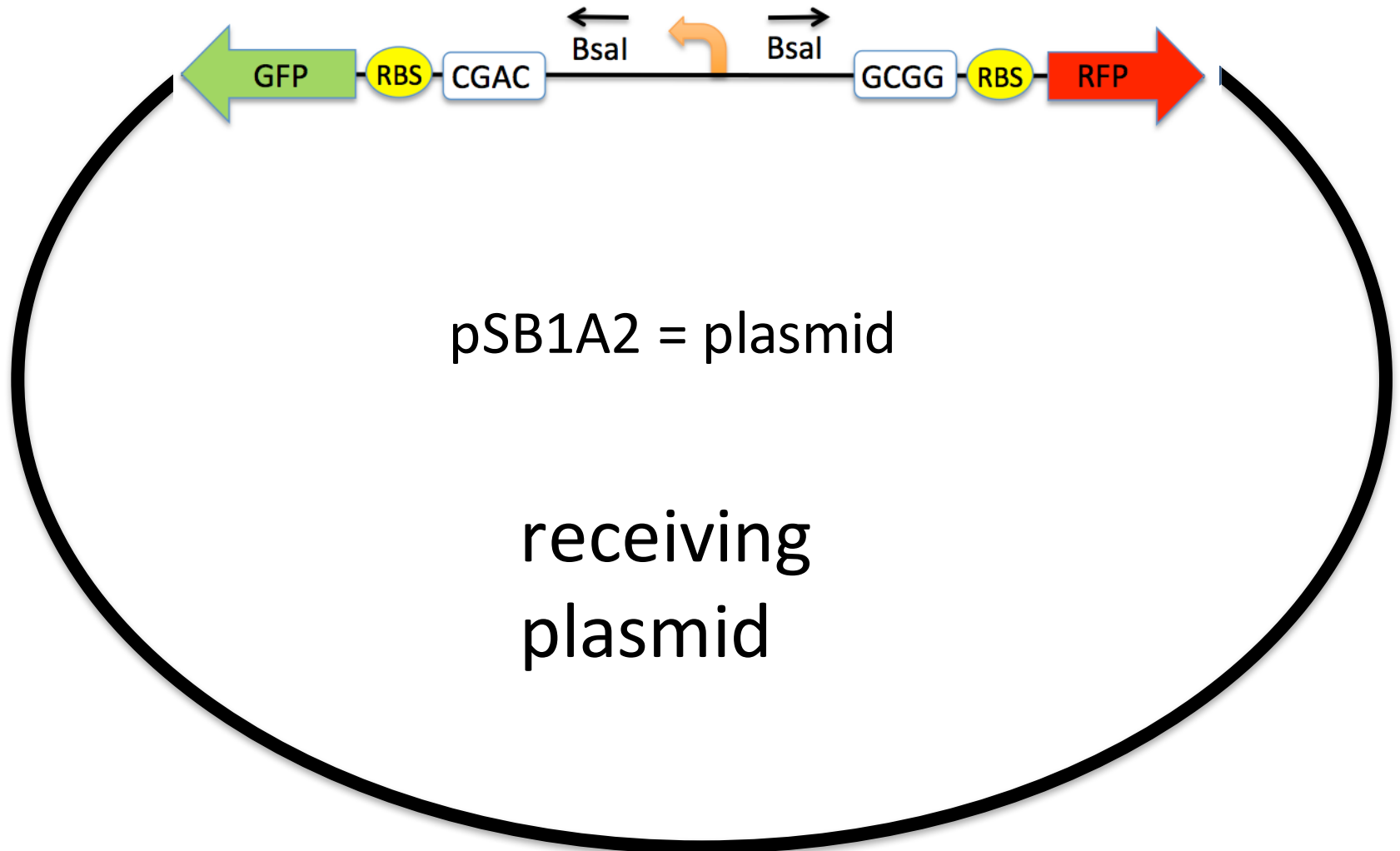
developed by Todd Eckdahl and A. Malcolm Campbell

**Goal:** Clone a new control element  
and test its effectiveness.

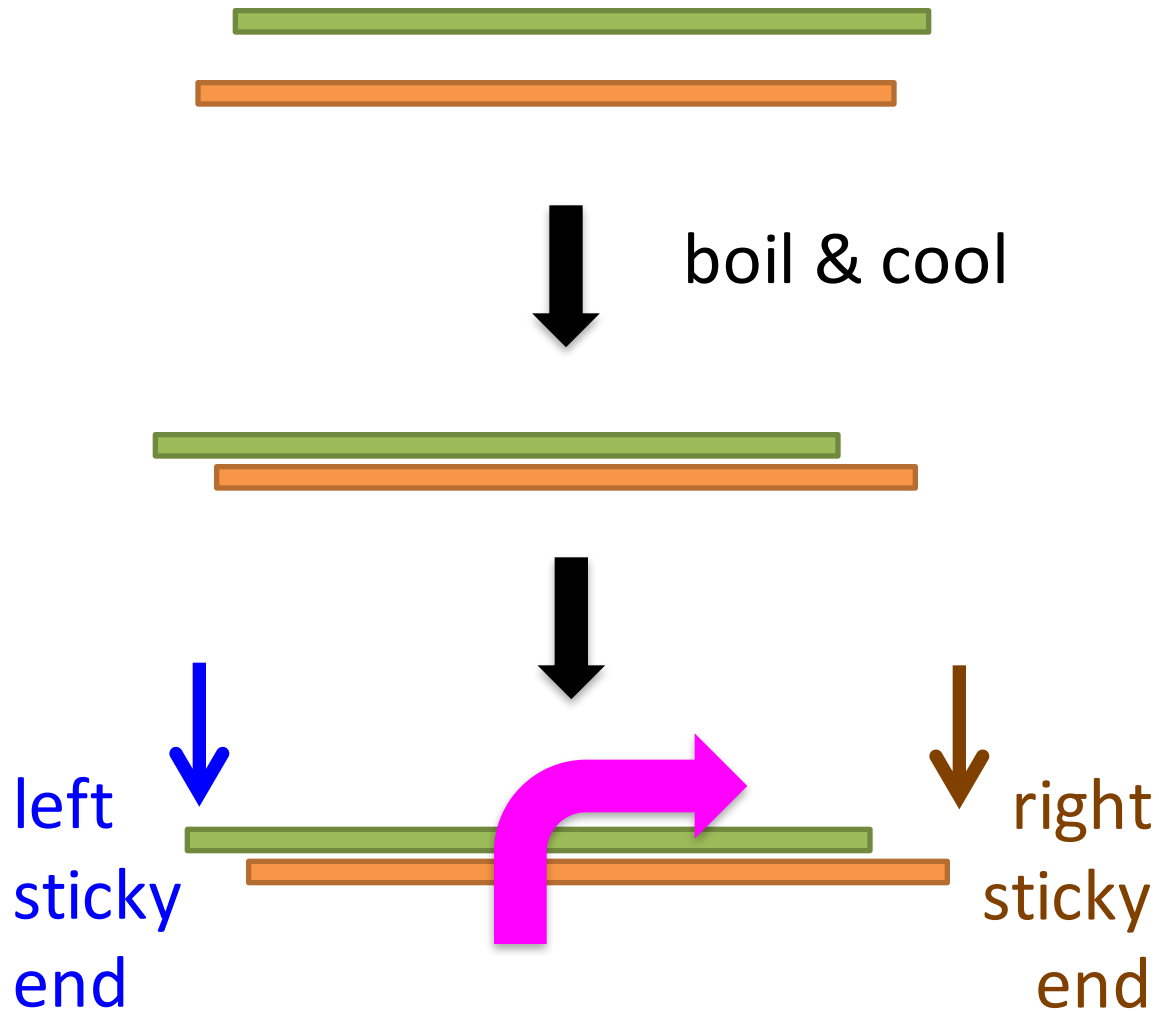
# Golden Gate Assembly Method

- DNA: control element + receiving plasmid
- Ligation Protocol
  - Bsa I + ligase simultaneously
  - 37° C for 1 minute (optimal for Bsa I)
  - 16° C for 1 minute (optimal for ligase)
  - Total of 5, 10, 20, or 30 cycles
  - 37° C for 15 minutes (optimal for Bsa I)

# pClone Red= J119137



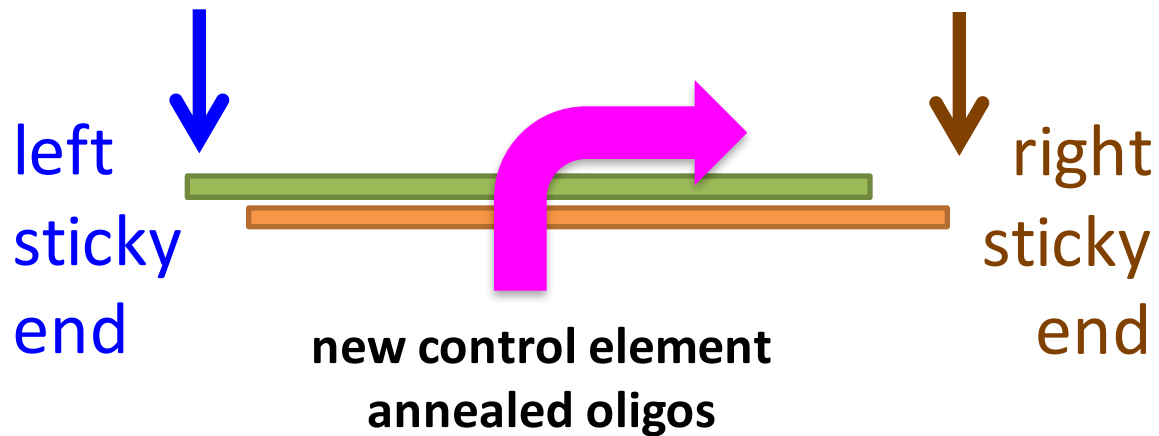
# Control Element Made of Self-Assembled Oligos



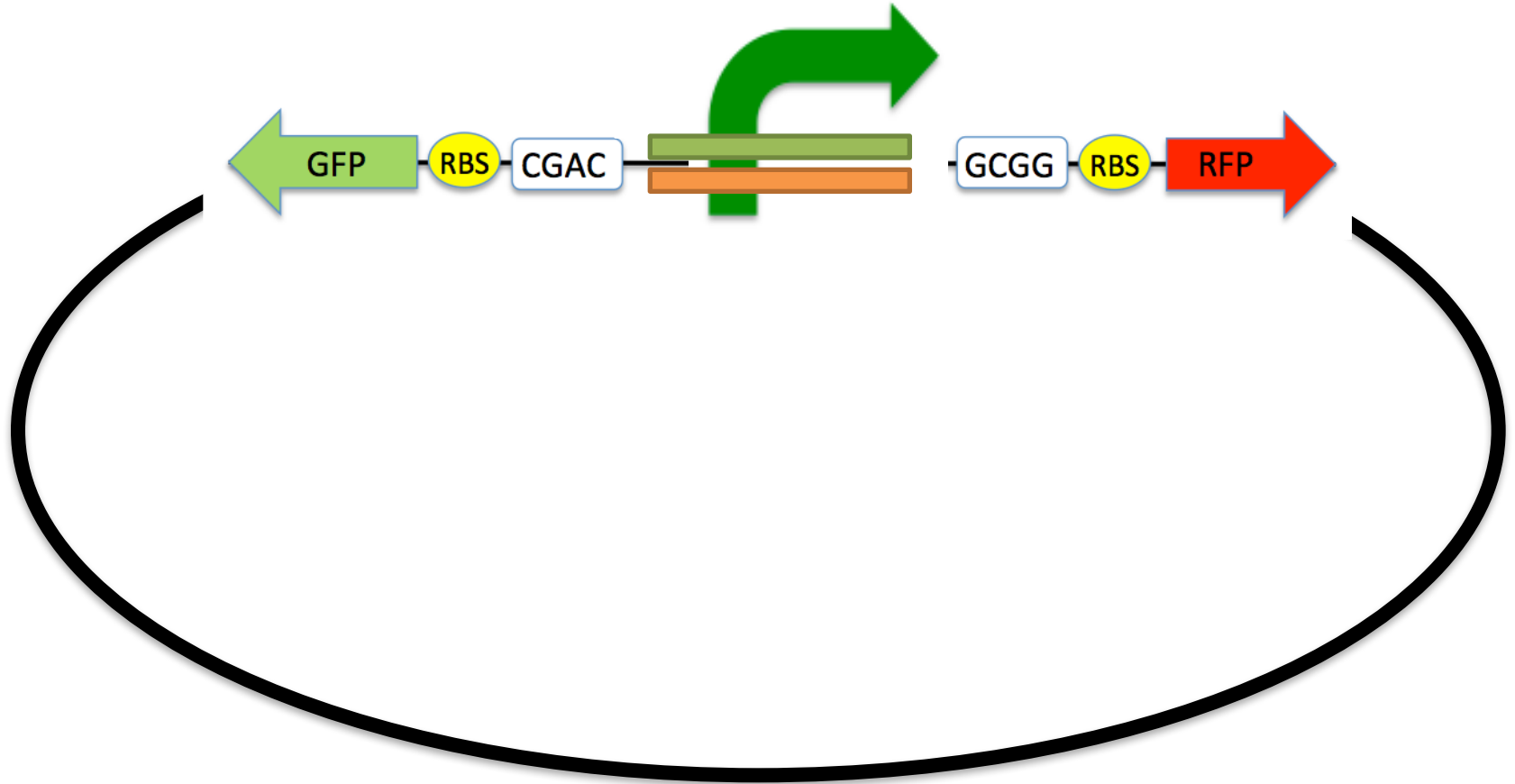
# Golden Gate Assembly



+ Bsa I and ligase



# Control Element Ready for Transformation



# Control Element Ready for Transformation

