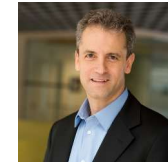
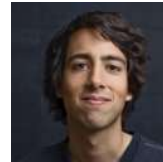


# Wiring Up Vision: Minimizing Supervised Synaptic Updates Needed to Produce a Primate Ventral Stream

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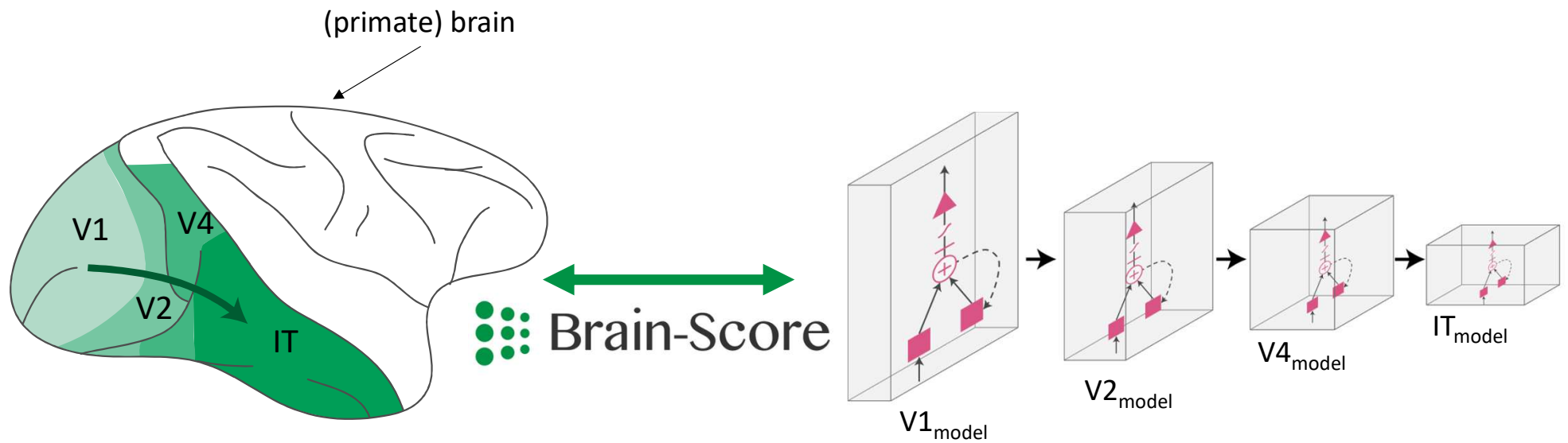
MARTIN SCHRIMPF, FRANZISKA GEIGER, TIAGO MARQUES, JAMES DICARLO  
MIT

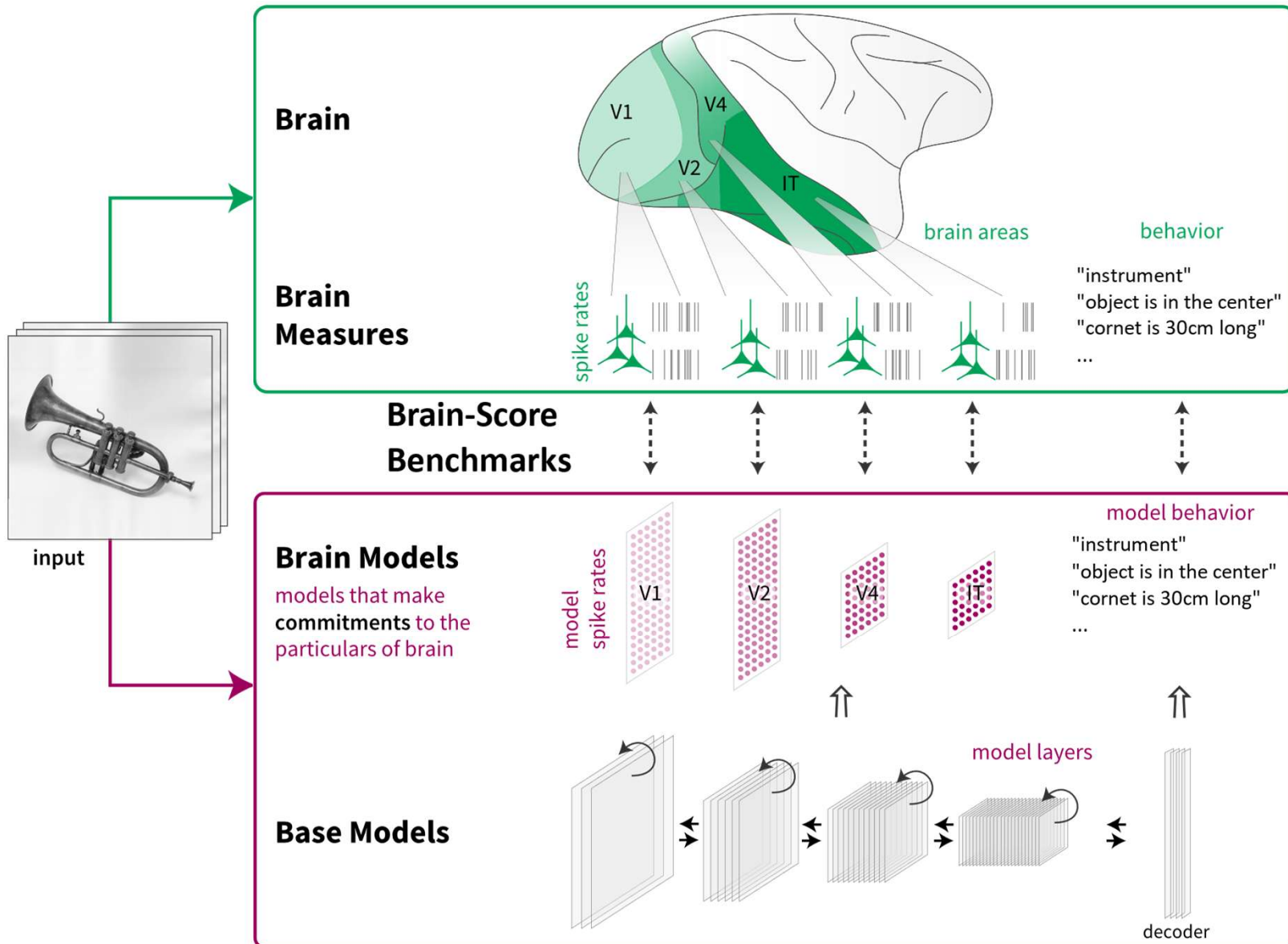


C-BRIC Annual Review  
October 6-8, 2020  
**Poster No. 2**

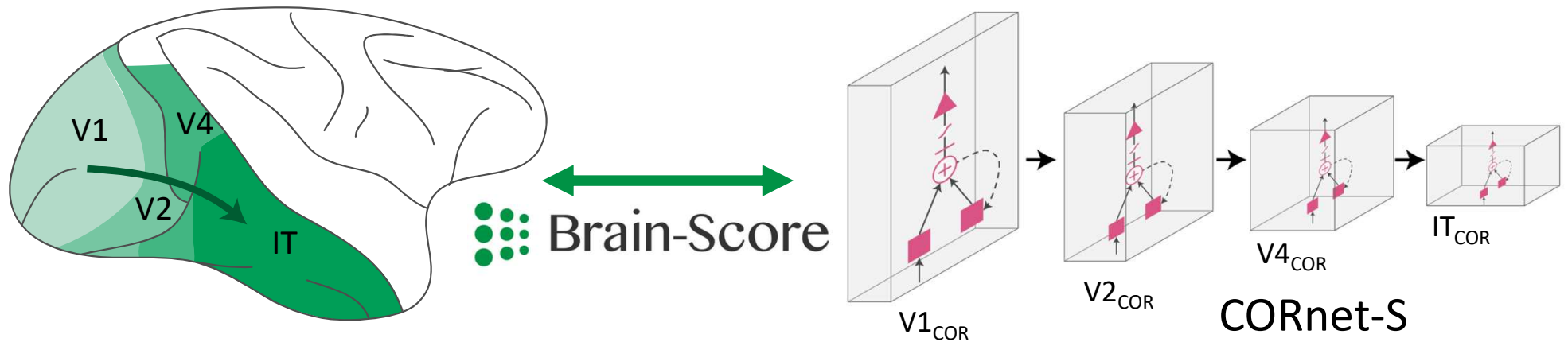


# Modeling Visual Object Recognition in the Brain





# Modeling Visual Object Recognition in the Brain

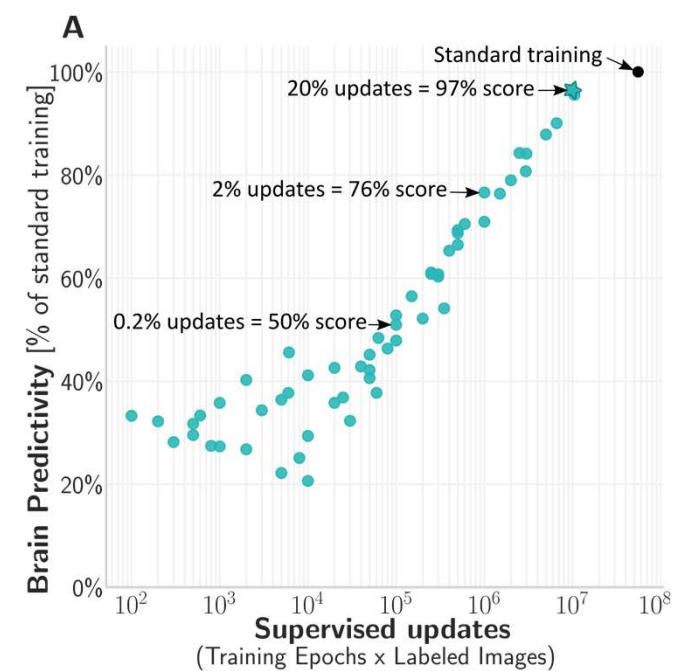
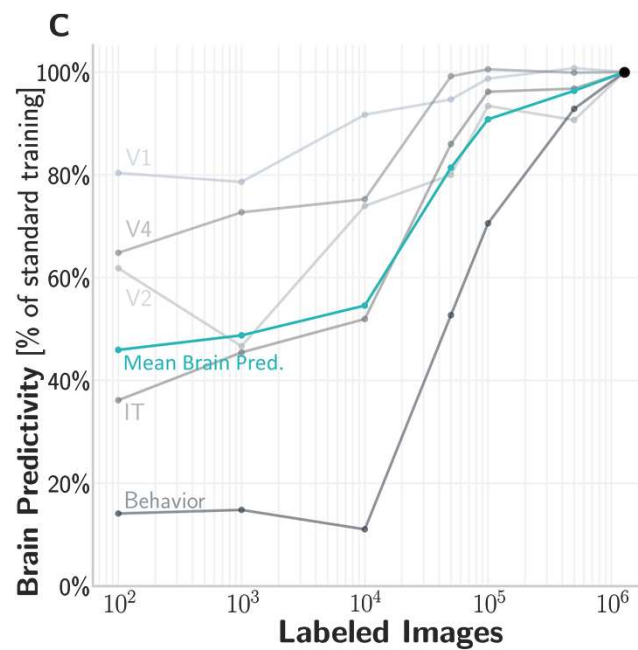
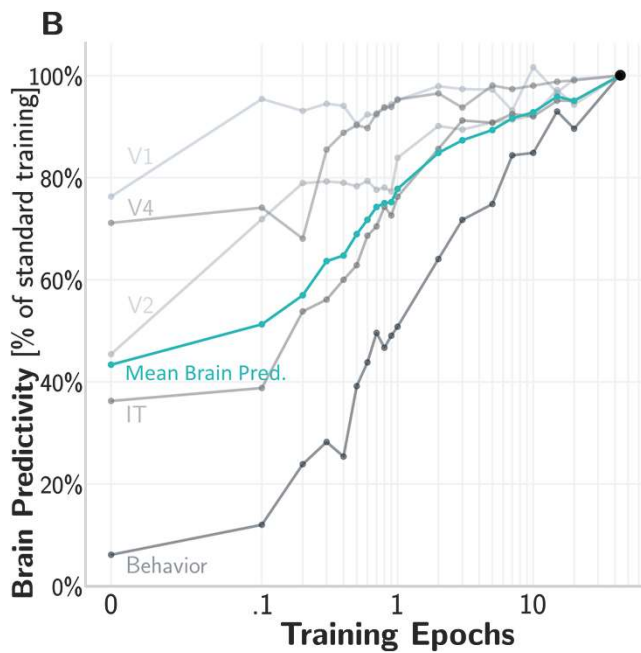


Inference: fairly accurate

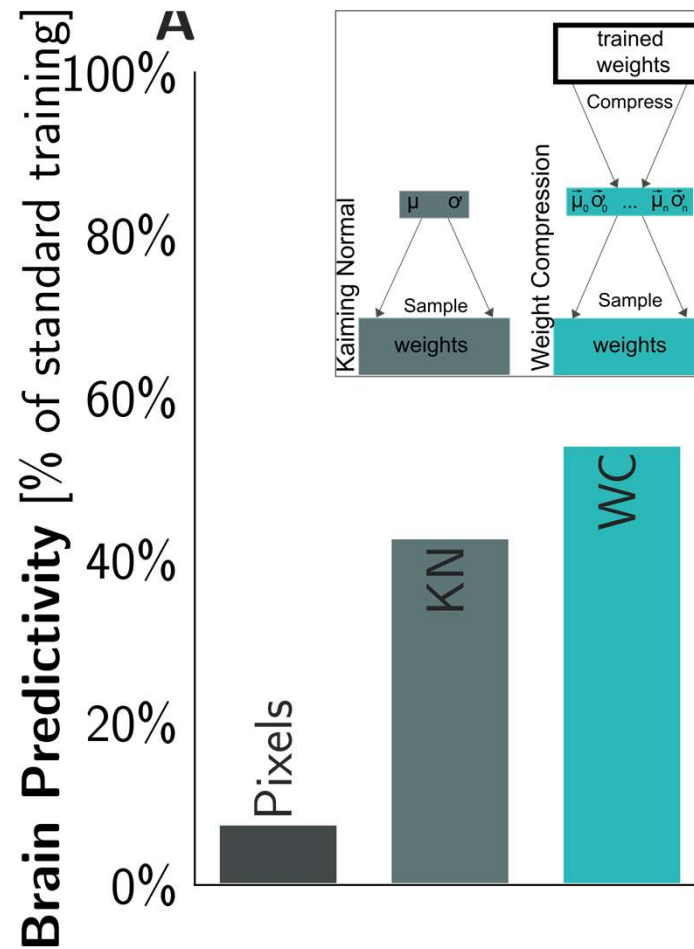
Development: implausible

1. too many labeled images
2. biological systems are fairly proficient at birth
3. each update changes all weights

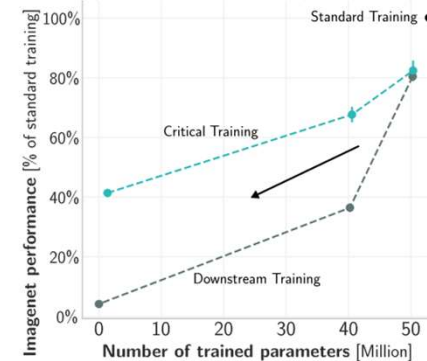
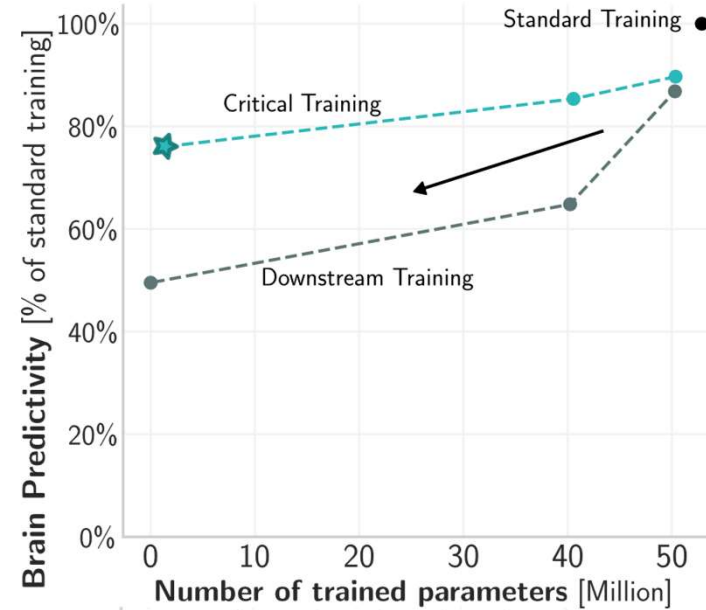
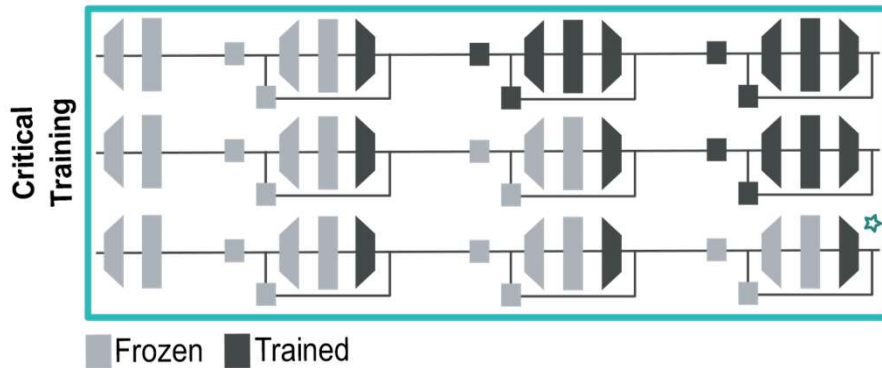
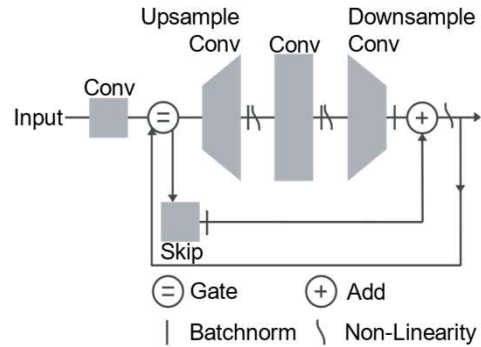
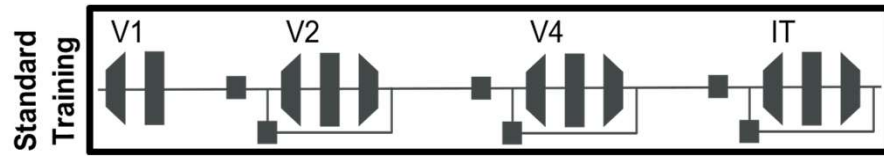
# 1 High brain predictivity can be achieved with few supervised updates



## 2 “At-birth” synaptic connectivity yields reasonable brain predictivity



### 3 Training thin down-sampling layers reduces the numbers of updated synapses while maintaining high brain predictivity



1+2+3 High brain predictivity with few supervised synaptic updates

