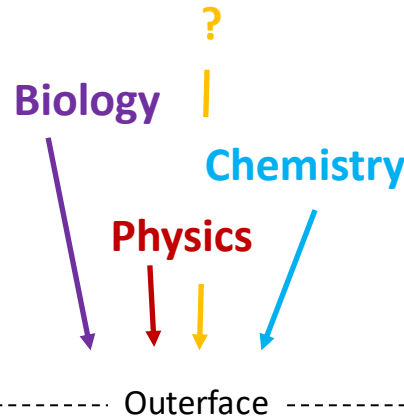


# The BLAS are Not Enough



But Maybe BLIS Is?



$$C_{ij} = \sum_k A_{ik} B_{kj} x_j?$$

High-level algorithm (FLAMEy part):  
Composable pieces, loops, whatever

$$\alpha = \sum_{ijk} A_{ik} B_{kj}?$$

Default  
matrix object  
(boring)

Custom user matrix object

$$C_{ij} = \sum_k A_{ik} x_{j+k}$$

$$D_{ij} = C_{ij} \sum_k A_{ik} B_{kj}?$$

$$z_i = \sum_j \exp(x_i^2 + y_j^2 - 2 \sum_k A_{ik} B_{kj})$$

High-performance kernels

User-supplied  
kernels

$$\alpha = \sum_{ijk} C_{ij} A_{ik} B_{kj} A_{jk} B_{ki}?$$