

3D assessment



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**Prediction
Center**

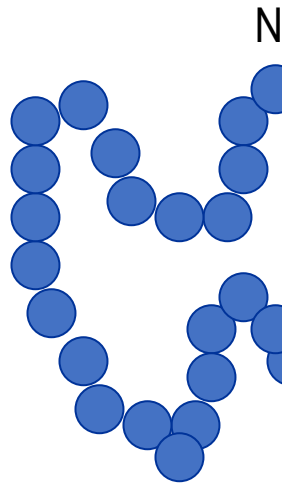
It took **26** years to “**solve**” the
folding problem

CASP1 (1994)

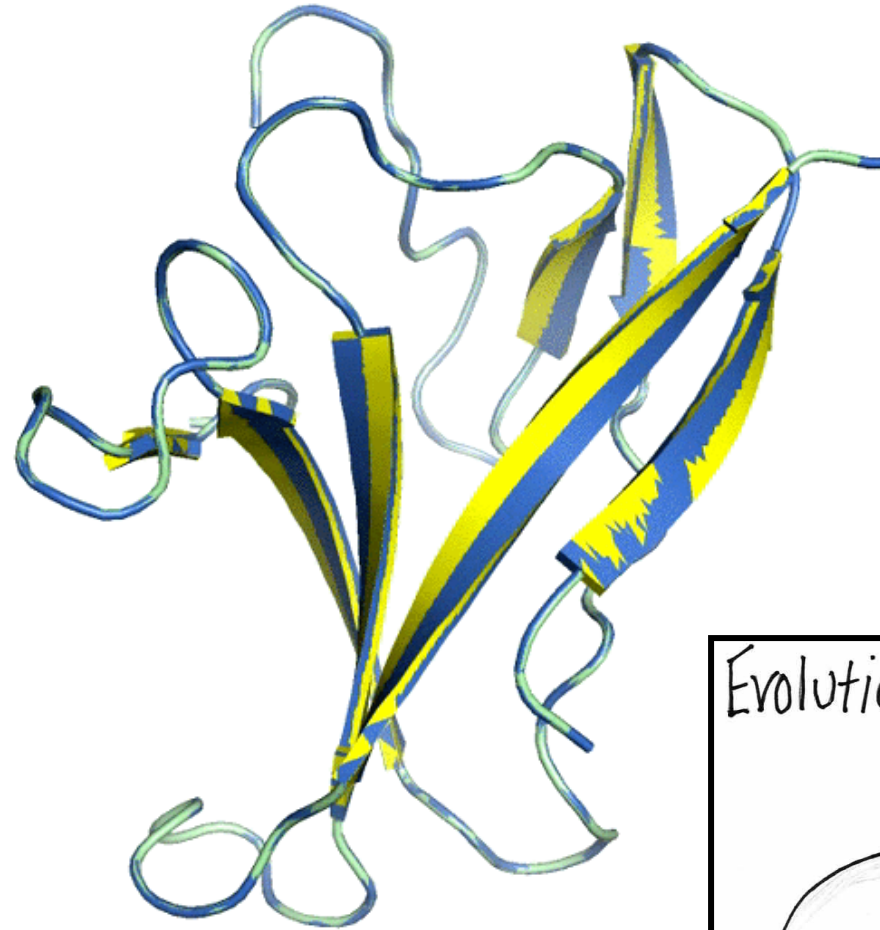
CASP14 (2020)



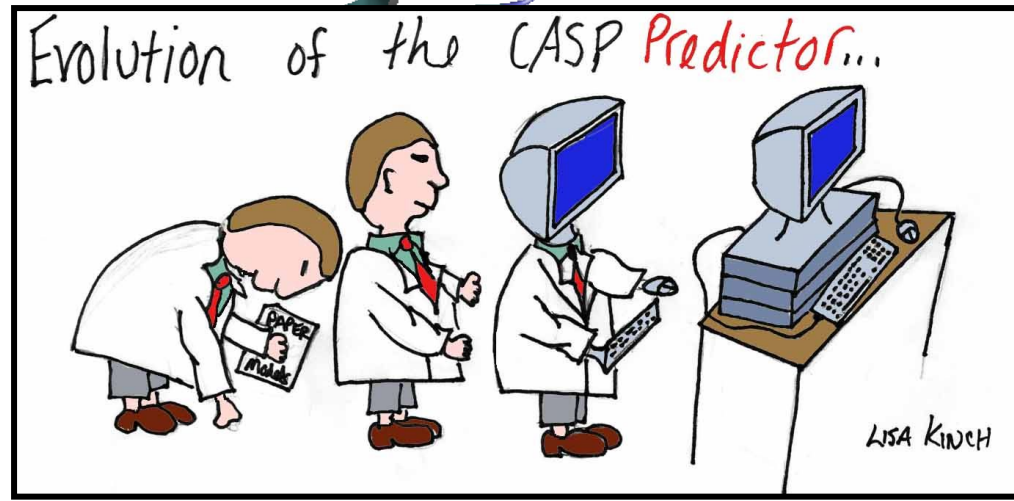
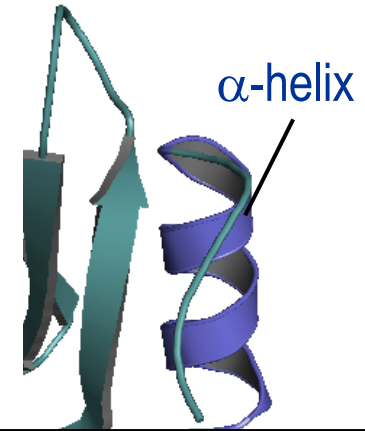
first class model



Protein



T1064 SARS CoV2 ORF8



How did it all happen?

Some previous CASP ranks

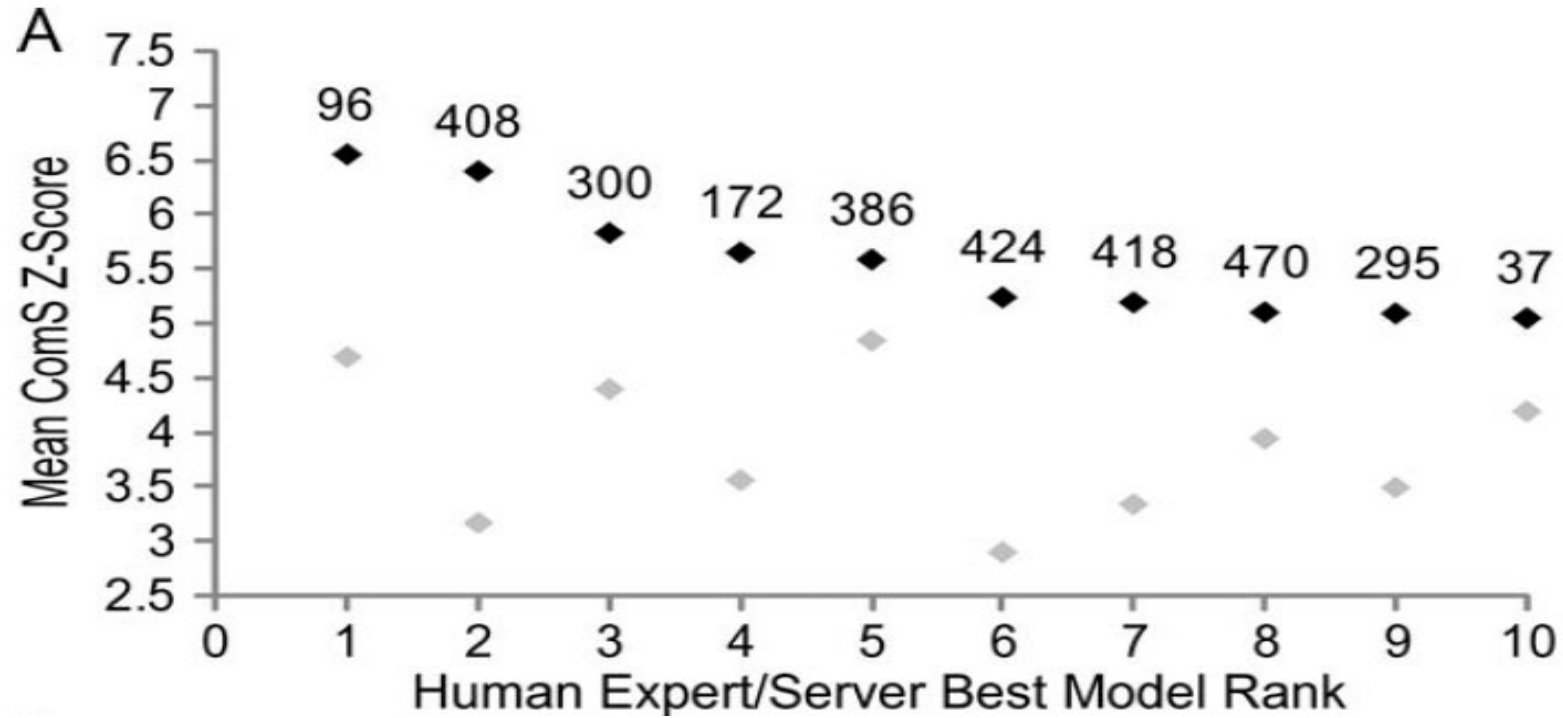
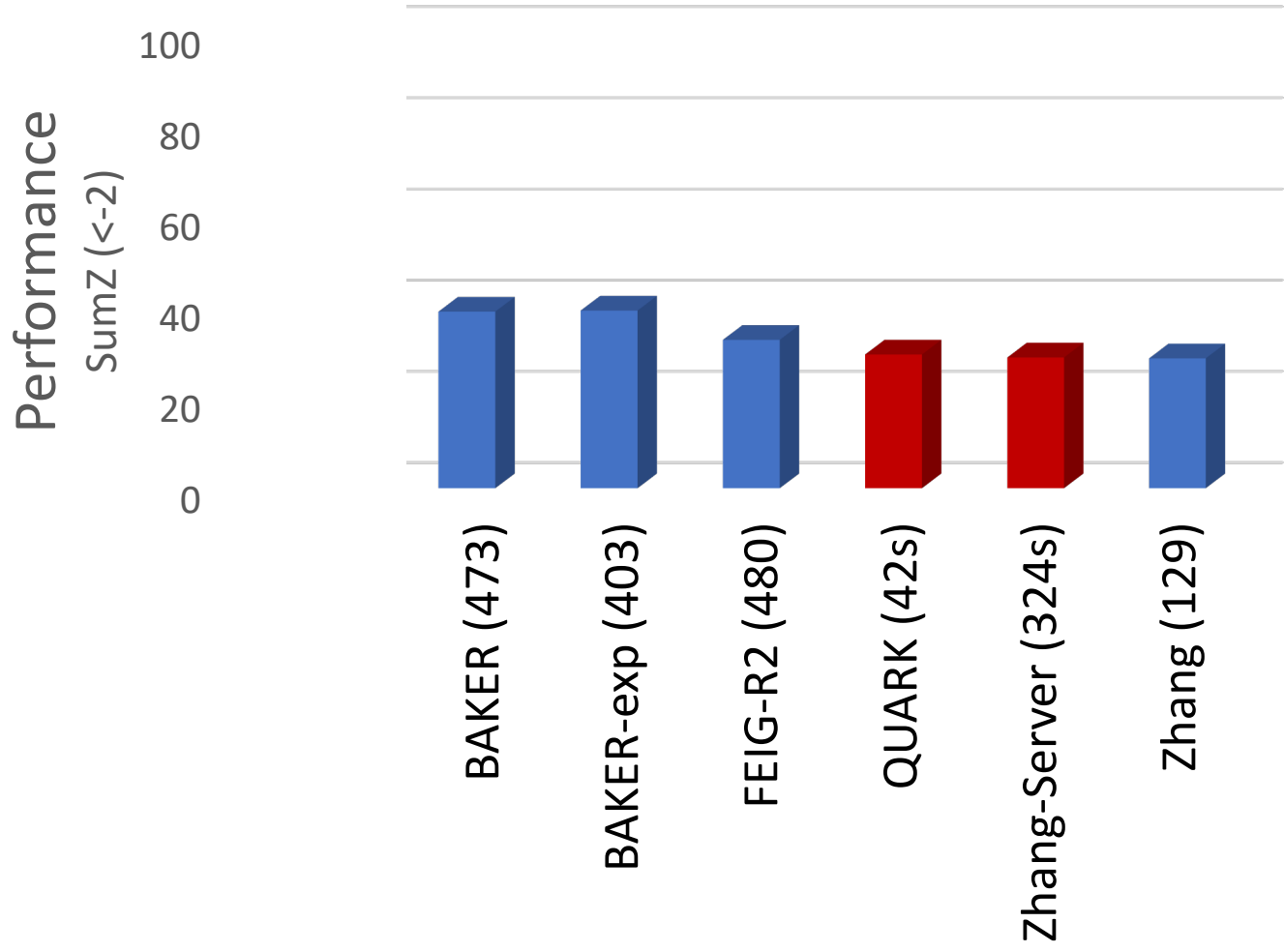


Table II

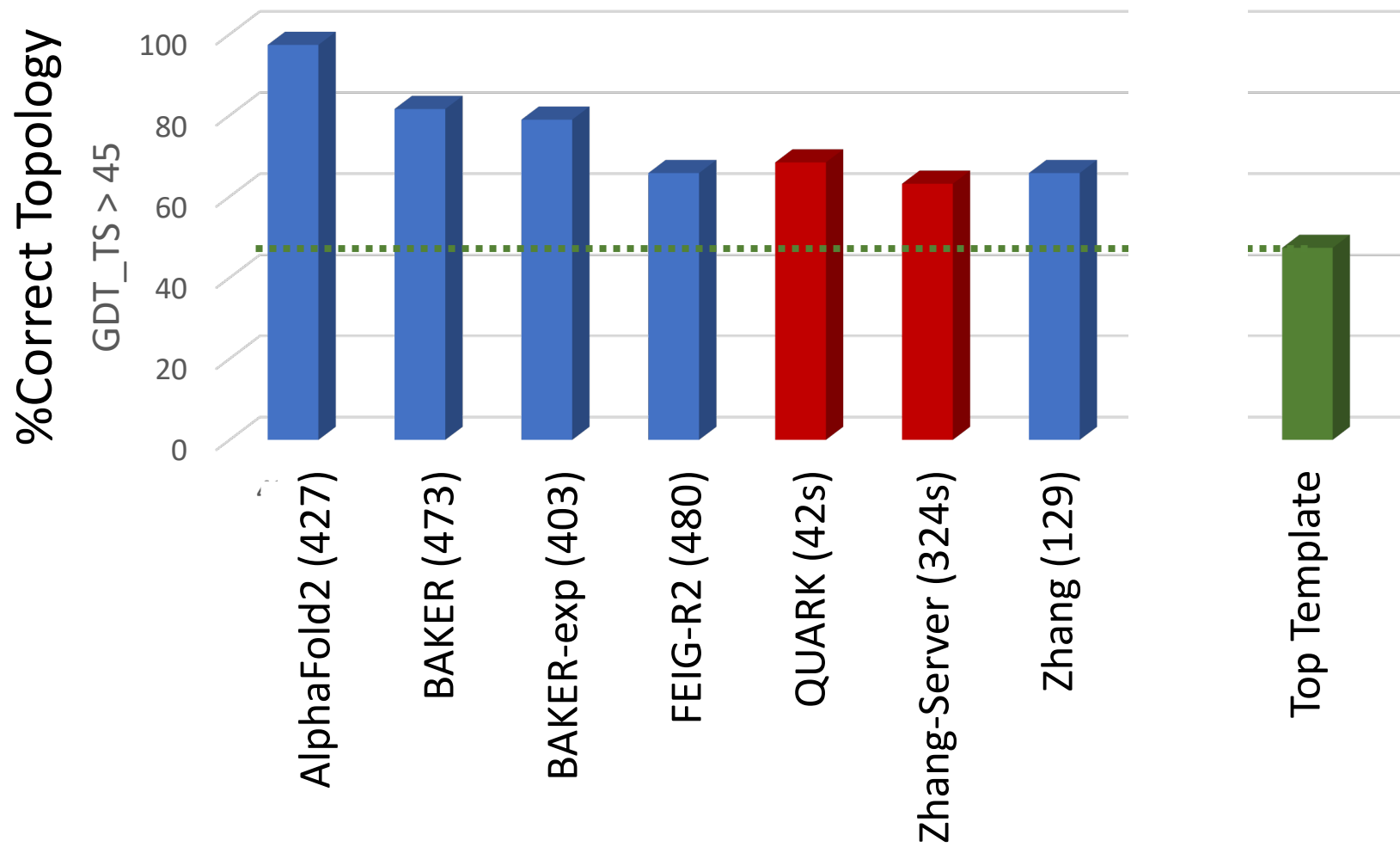
Significance

T-tests to compare the groups

	96	408	172	470	418	37	386	380	428	490
96	—	0.62	0.90	0.99	0.94	1	1	1	1	0.99
408	26	—	0.87	0.88	0.79	0.93	0.80	0.98	0.99	0.93
172	26	26	—	0.47	0.43	0.50	0.40	0.66	0.75	0.64
470	26	26	26	—	0.41	0.53	0.86	0.91	0.90	0.68
418	26	26	26	26	—	0.63	0.69	0.84	0.88	0.74
37	26	26	26	26	26	—	0.59	0.81	0.90	0.65
386	25	25	25	25	25	25	—	0.64	0.78	0.64
380	26	26	26	26	26	26	25	—	0.77	0.43
428	26	26	26	26	26	26	25	26	—	0.33
490	26	26	26	26	26	26	25	26	26	—



...Yet Other Groups Get the Topology Correct

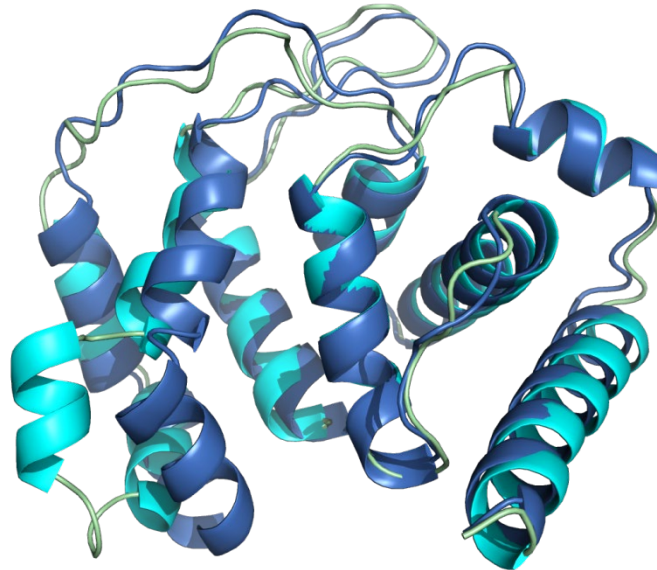


...Yet Other Groups Get the Topology Correct

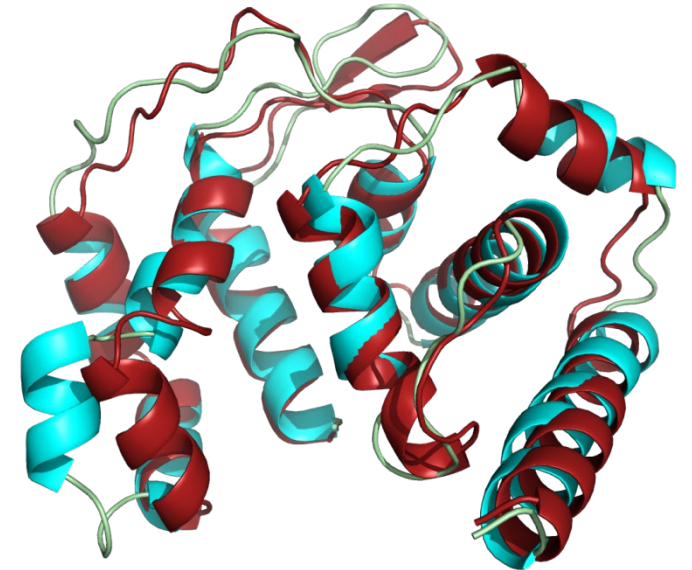
The over-performance seems to be all about the details



T1096-D2 Phage RNA Pol Subunit gp225



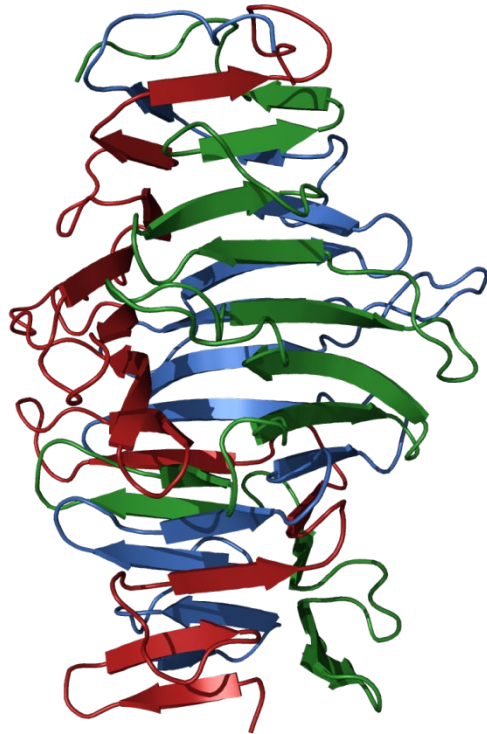
AlphaFold2 Model 1
GDT_TS 78.8



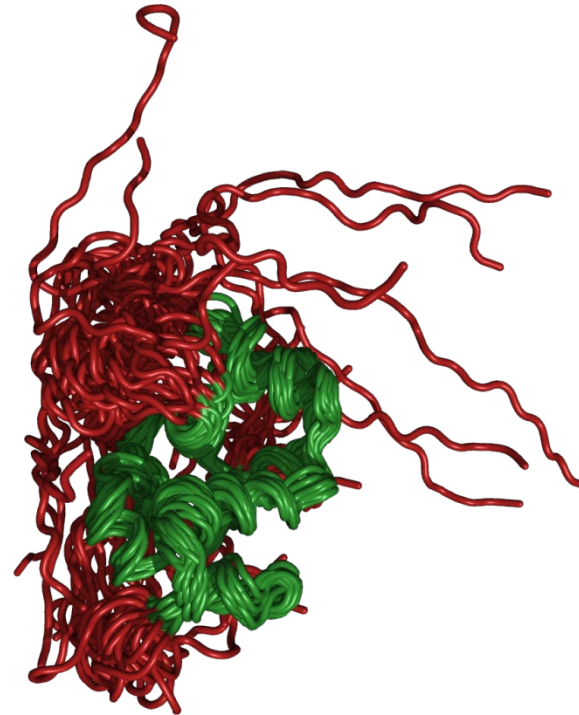
Zhang-Server Model 1
GDT_TS 70.76

But the Story is Not All Roses...

*Most
Groups have
difficulty
with distinct
types of
targets*



T1080 Tailspike Protein
(also T1070-D1, T1047)
Obligate Trimer



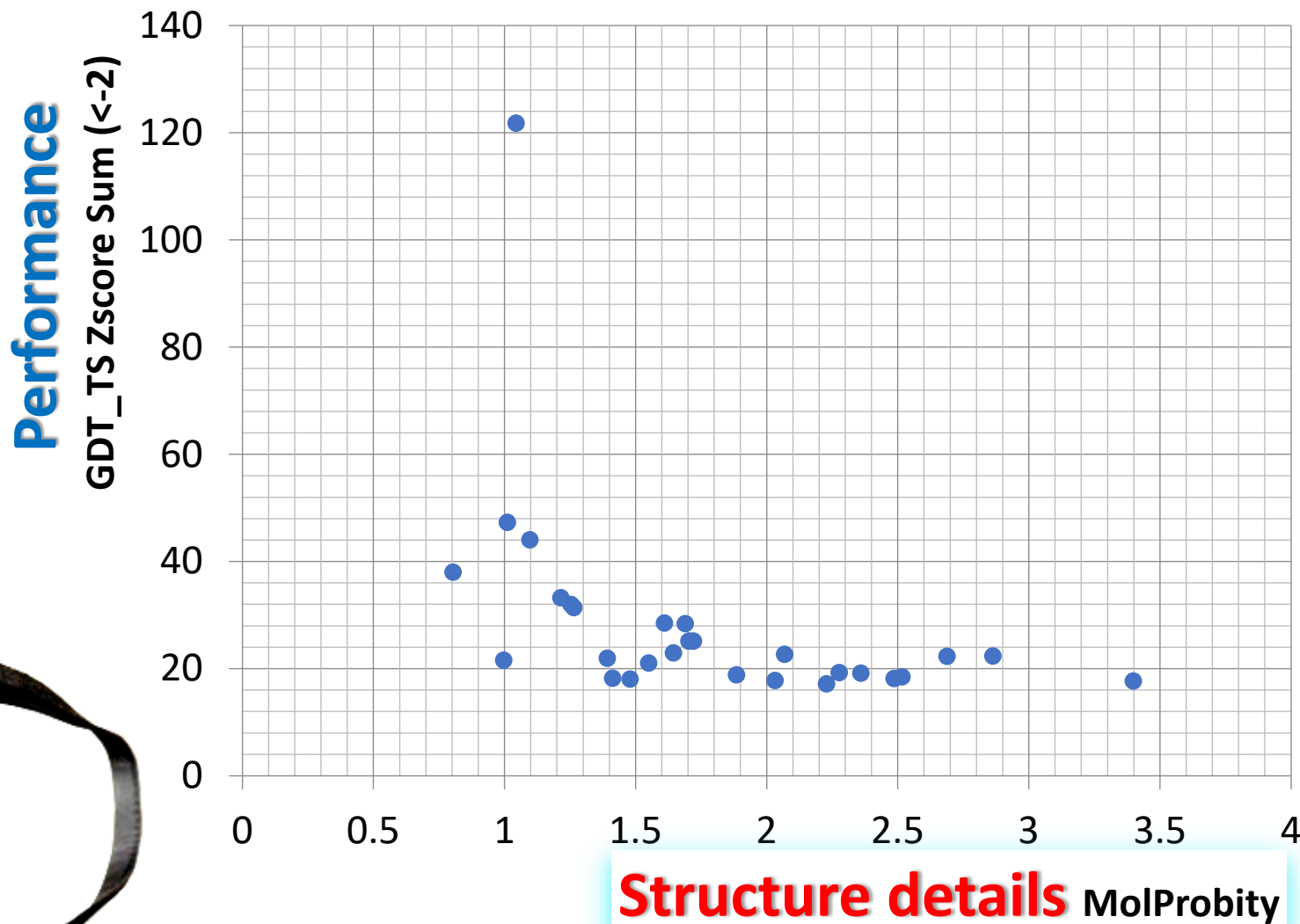
T1027 Luciferase
(also T1029)
Flexibility



T1038
(also T1061)
Multidomain

But the Story is Not All Roses...

*Many groups
need to
improve their
model quality*



THE
DEVIL
IS IN THE
DETAILS

...Get Your Details Right!

A paradigm shift?

We are approaching the times when

computational biology

will be used to **VALIDATE**

experimental structures

