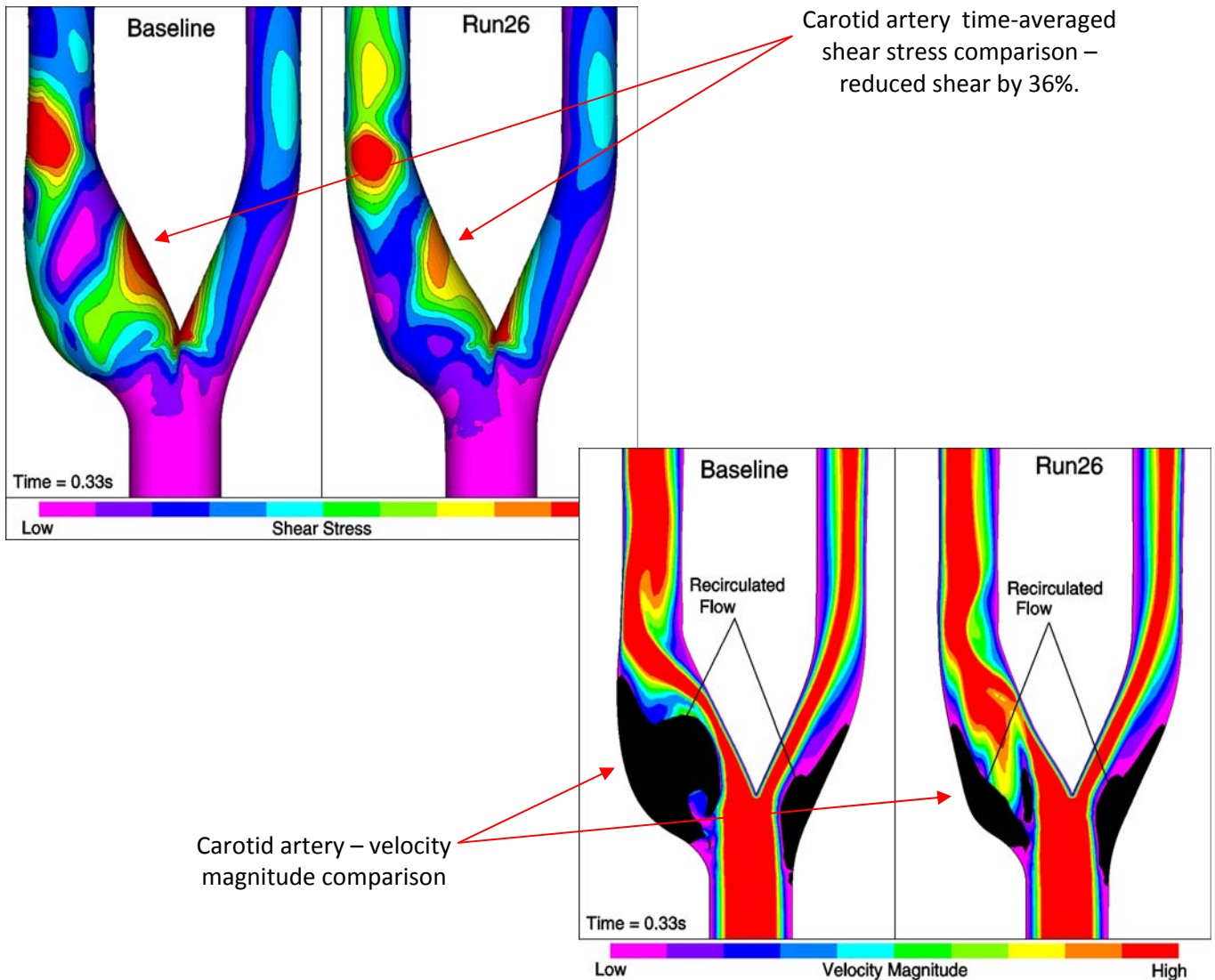


## OPTIMAL SOLUTIONS SOFTWARE ASSISTS ACADEMIA

Teamed with the University of Southampton, former Optimal Solutions' distributor Advantage CFD, now TotalSim, and OSS coordinated a study to investigate the shape of the human carotid artery bifurcation and the role it has on the local haemodynamic conditions.

The project team assessed the time-averaged shear stress metrics on the arterial walls for a generic carotid artery bifurcation (CAB) geometry, the results from which can be used to understand the relationships between geometry, haemodynamics, stenosis formation, and rupture.



Traditionally, such a study would require the time-consuming process of regenerating a new CFD “model” for each new shape. Employing the **Sculptor** technology to deform the shape of the CAB parametrically, however, meant the team was able to reduce the shear by 36% in an astounding two man-days.