

# **AERODYNAMICS AND FITTING**

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Aerodynamics R&D Lead  
Specialized Bicycle Components*



# **INTRODUCTION**

**TOOLS AND  
ATHLETE TESTING**



BEVAN DOCHERTY  
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TIFFANY CROMWELL  
LAUREN ROWNEY  
LISA BRENNAUER  
GWEN JØRGENSEN  
CONRAD STOLTZ  
PAULA FINDLAY  
PETER SAGAN

**MOTIVATION**  
**WHY DOES AERO**  
**MATTER?**



## CYCLING AERO

*Equation of Motion:*

$$P_{\text{rider}} = P_{\text{drag}} + P_{\text{Crr}} + P_{\text{g}} + P_{\text{accel}} + P_{\text{fric}}$$

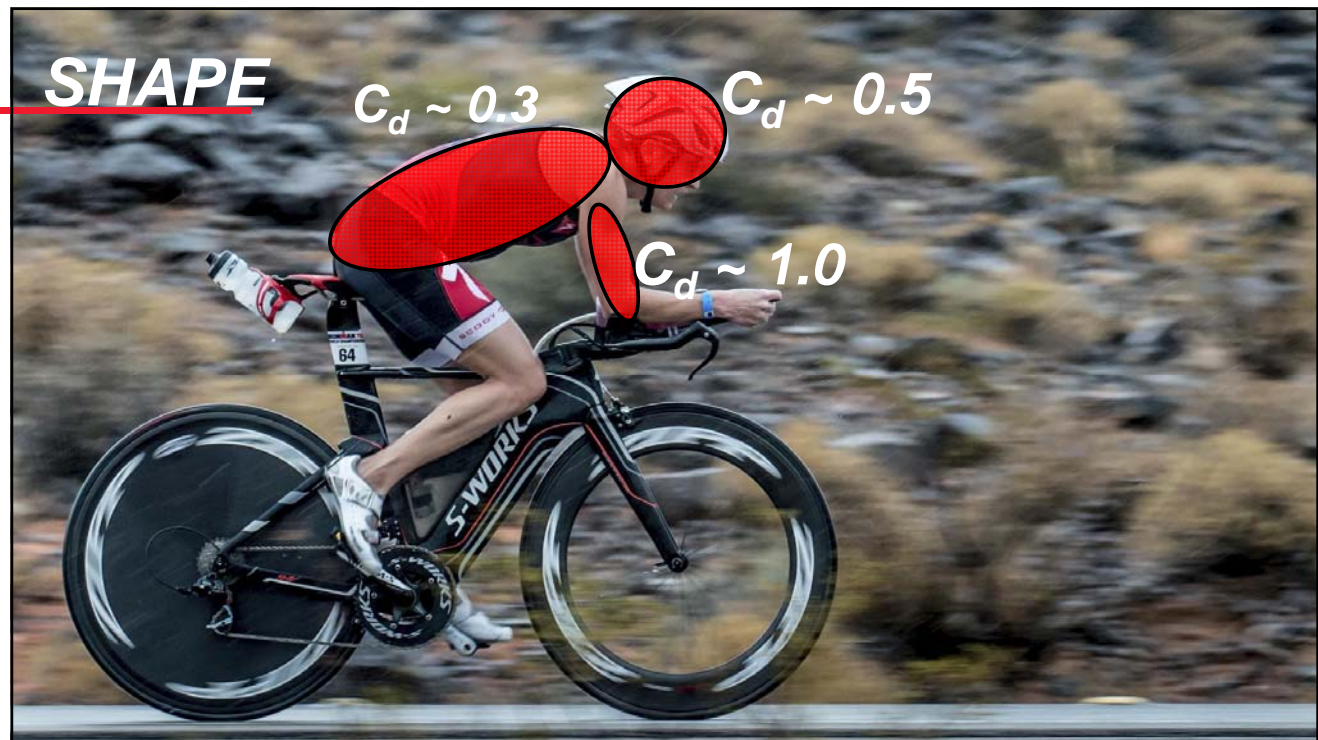


## CYCLING AERO

*Aero Drag Power:*

$$P_{\text{drag}} = \frac{\text{Air Density}}{2} \cdot \text{Speed}^3 \cdot \text{Shape} \cdot \text{Frontal Area}$$





**CHALLENGES**  
**WORKING WITH**  
**HUMANS**



**NO GENERALIZATIONS**  
**SOME**  
**TRADITIONAL**  
**“RULES” FOR**  
**AERO**  
**POSITIONING**



**LOWER IS MORE AERO**

**IS IT EVEN  
ACTUALLY  
LOWER?**



**NARROWER IS MORE AERO**

**...SOMETIMES,  
AND OTHER  
CONSEQUENCES**



**UNINTENDED CONSEQUENCES**  
**IS LOWER AND NARROWER**  
**JUST LOWER AND**  
**NARROWER?**

