Fluids Basics

Image from: https://www.flowvis.org/2016/10/01/team-first-joseph-hall/

Some references for nice photos and videos of fluid mechanics phenomena:

- Van Dyke, M., 1982, *An Album of Fluid Motion*, Parabolic Press. (a classic)
- National Committee for Fluid Mechanics Films (http://web.mit.edu/hml/ncfmf.html) (another classic)
- Gallery of Fluid Motion (https://gfm.aps.org/)
- Flow Visualization (https://www.flowvis.org/)

Fluids Basics

What is a fluid?

Continuum

Governing Equations

- Conservation of Mass
- Newton's Second Law
- First Law of Thermodynamics
- Second Law of Thermodynamics
- (Constitutive Relations)

Systems and Control Volumes

Differential vs. Integral Control Volumes

Fluids Basics

Types of Flows

Steady vs. Unsteady

Flow Dimensions

Inviscid vs. Viscous

Laminar vs. Transitional vs. Turbulent

Incompressible vs. Compressible

Internal vs. External