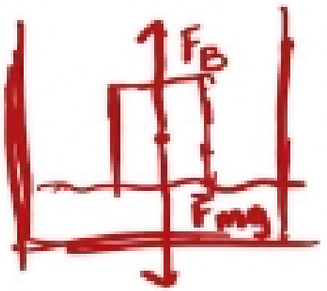
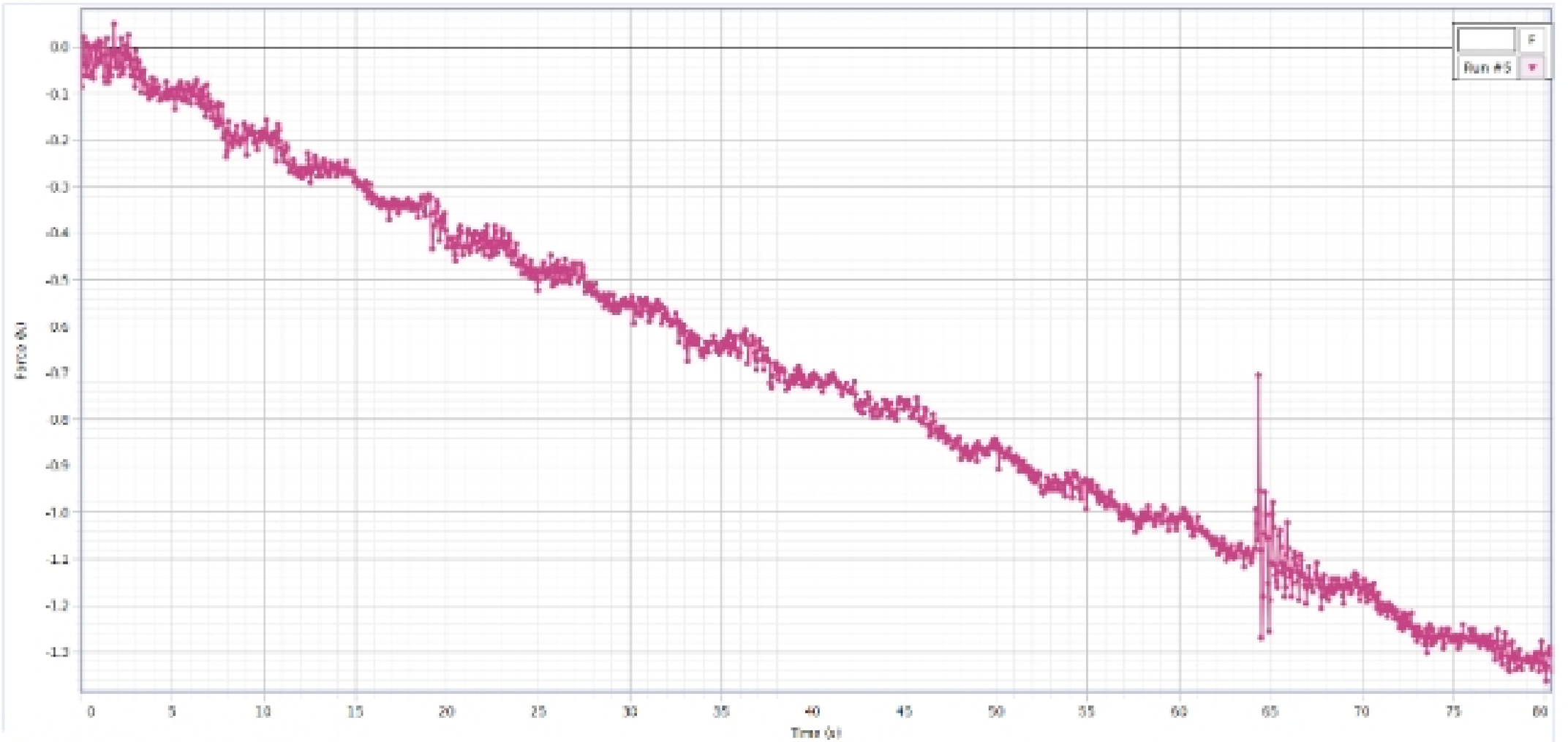
Lab 9 Data and Observation

By Taylor Rhodes and Ryan Oliveira

Independent Variables: Length Submerged and Density of Cylinder
Dependent Variables: Buoyancy Force and Weight of Water Dispersed

Buoyant Force on an Object More Dense than Water:





Submerging the Aluminum Cylinder

The section of the graph between 60-70 seconds demonstrates large amounts of systemic error due to the table being bumped by one of the other students in the class.

Calculating the weight of water dispersed in capstone

	Calculations	Units
1	W=ρ*g*A*L	N
2	ρ=1000	kg/m^3
3	g=9.81	m/s^2
4	A=π*R^2	m^2
5	R=1.5/100	m
6	L=[Length Submerged (m)]	m

Average Force for Length Submerged

	Set	Set
	Length Submerged (m)	Average Force (N)
1	0.01	0.10
2	0.02	0.19
3	0.03	0.26
4	0.04	0.34
5	0.05	0.42
6	0.06	0.49
7	0.07	0.56
8	0.08	0.64
9	0.09	0.72
10	0.10	0.77
11	0.11	0.87
12	0.12	0.91
13	0.13	1.01
14	0.14	1.08
15	0.15	1.16
16	0.16	1.27
17	0.17	1.32
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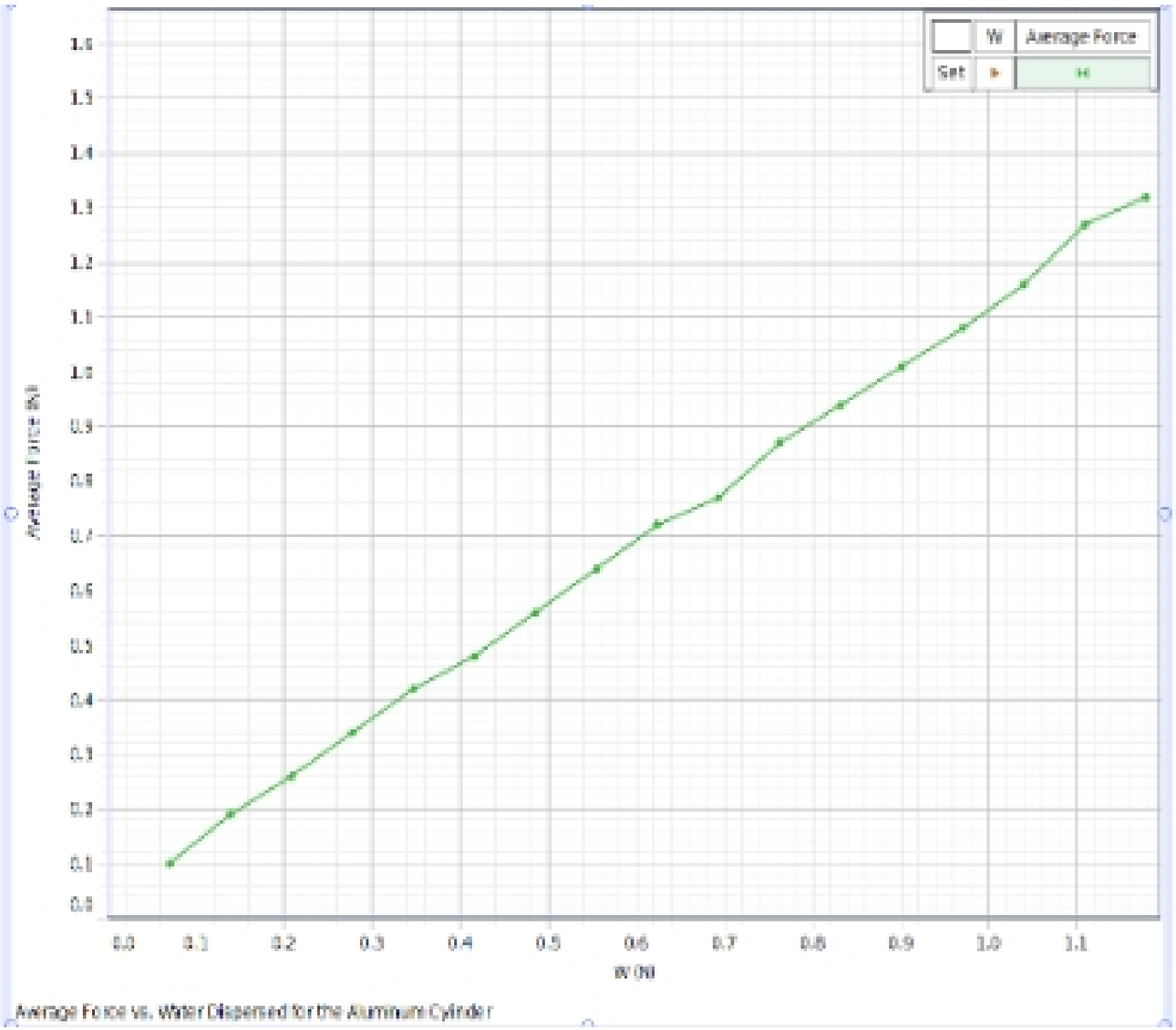

Average Force vs. Water Dispersed for the Aluminum Cylinder

Buoyant Force on an Object Less Dense than Water: