

WEEF ALLOCATIONS

F2021

Contact: weef@uwaterloo.ca

Academic Equipment & Resources							
Item	Option 1	Option 2	Option 3	Option 4	Final		
TB60 Intelligent Flight Batteries (in pairs, tax included)	7376.64	4917.8	2458.9	2458.9	2458.88	Proposal	F-237
						Dan Jessel - Additional Drone Batteries	
					2458.88		

Item	Option 1	Option 2	Option 3	Option 4	Final		
HOMER Pro® microgrid software by HOMER Energy	-	-	-	-	-	Proposal	F-193
						Chemical Engineering - Homer Pro Software	
Total					0		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Keysight 34450A and Keithley 2110 Series DMMs (Multimeters)	17500	-	-	-	17500	Proposal	F-194
BNC to banana cables, Digikey 501-1117-ND, product number #3073						Manisha Shah - Multimeters and cables for the semiconductor and circuits lab	
Total	17500	0	0	0	17500		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Mechanical components for machine \$250 each x 25 devices (Model 960)	6250	-	-	-	6250	Proposal	F-196
						Chris Rennick - Ideas Clinic (Materials Testing)	
Total	6250	0	0	0	6250		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Formlabs Form 3L	15000	0	15000	0	0	Proposal	F-197
Formlabs Form 3	0	5000	0	0	5000	Eugene Li - New WATIMake Equipment	
Roland ZCL-40A	4000	4000	0	4000	4000		
Total	19000	9000	15000	4000	9000		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Equipment and PPE	3000	3000	3000	3000	2000	Proposal	F-198
						Brian Shillingford - ME 340 - Foundry Lab Activity	
Total	3000	3000	3000	3000	2000		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Titration	12543	15345	15345	19990	15345	Proposal	F-200
Solvent Manager	1429	1429	1429	0	1429	Cheryl Newton - Titration for Residual	
LabX Software	0	0	4095	0	0		

Total	7500	5625	3750	1875	5625	Computational
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Item	Option 1	Option 2	Option 3	Option 4	Final		
Bench top DMM purchase for 24 wkstations in ECE FYDP Lab	36000	25680	25824	17424	17424	Proposal	F-216
Total	36000	25680	25824	17424	17424		

**Charles K. Pope - FYDP
Lab Benchtop DMM
Replacement**

Item	Option 1	Option 2	Option 3	Option 4	Final		
3D Printer	3250	1000	0	0	1500	Proposal	F-217
Total	3250	1000	0	0	1500		

**Jason Grove - Capstone
Lab 3D Printer**

Item	Option 1	Option 2	Option 3	Option 4	Final		
Router Table with Router Kit	1469	0			1469	Proposal	F-218
Router only	0	379.99			0		
Total	1469	379.99	0	0	1469		

**Abeer Ali - Router
Table**

Item	Option 1	Option 2	Option 3	Option 4	Final		
Excel List (in presentation)	1040	990	940	880	880	Proposal	F-229
Total	1040	990	940	880	880		

**Quinlin Wu -
Automated Linear
Induction Coil
Manufacturing
Machine**

Item	Option 1	Option 2	Option 3	Option 4	Final		
Microscopes (with digital cameras/viewscreens \$3K- 6K ea or traditional style \$800-\$2K ea, price depends on quality of optics)	9000	6000	3000	2000	4078.25	Proposal	F-236
Total	9000	6000	3000	2000	4078.25		

**Jennifer Moll - New
Microscopes for CHE UG
Labs**

	ALLOCATED					
TOTAL	128003.61					

Student Teams							
Item	Option 1	Option 2	Option 3	Option 4	Final		
45,000, divided into equal allocations over 1, 2 or 3 years	15000	7500	5000	5000	7500	Proposal	F-199
						SSDC - Pickup Truck for Student Team Use	
Total	15000	7500	5000	5000	7500		
Item	Option 1	Option 2	Option 3	Option 4	Final		
Safety Equipment - Improved Neck Braces & Mouthguards	1280	1280	1280	0	1280	Proposal	F-211
Handheld Grout Mixer	250	0	0	0	250	W21 WEEF Funding Proposal	
Measuring Equipment (0.1g Scale and Graduated Cylinders)	90	90	90	0	90		
HEPA Shopvac	400	400	0	0	400		
6pk Large Storage Bins	200	200	0	0	200		
Total	2220	1970	1370	0	2220		
Item	Option 1	Option 2	Option 3	Option 4	Final		
Motec M150 & Development License	5000	0	0	0	0	Proposal	F-213
McMaster Carr Raw Materials and Unique Fasteners	1000	1000	0	0	1000	UWFM Fall 2021 for 2022 Season	
Keizer Wheel Shells	2500	2500	2500	2500	2500		
Pneumatics, Powertrain & Electronical Components	3500	3500	3500	2500	3500		
Brake Calipers and Pads	1500	1500	1500	1500	1500		
Total	13500	8500	7500	6500	8500		
Item	Option 1	Option 2	Option 3	Option 4	Final		
Regenerative Power Supply, Model RP7963A, computer controlled variable output high voltage power supply	28379	28379	28379	28379	18033	Proposal	F-214
Software license: BenchVue Advanced Power Control and Analysis - single instrument connection. Perpetual transportable	3202.3					SSDC High-Voltage Test Room Proposal	
Incidental installation costs	300						
Total	31881	28379	28379	28379	18033		
Item	Option 1	Option 2	Option 3	Option 4	Final		
Mechanical Components	4882	4807	3357	2780	4807	Proposal	F-215
Electrical Components	2539	2266	2266	2026	2266	Waterloo Formula Electric Fall 2021 Funding Proposal	
Tractice Components	3150	500	500	500	500		
Firmware Equipment	1620	1620	1240	1240	1620		
Total	12191	9193	7363	6546	9193		
Item	Option 1	Option 2	Option 3	Option 4	Final		
Total (Please refer to "Additional Information" section for details by category)	18650	15800	13200	10690	13200	Proposal	F-219
						Waterloo Rocketry - WEEF F21 Proposal	
Total	18650	15800	13200	10690	13200		
Item	Option 1	Option 2	Option 3	Option 4	Final		
A 12 inch slow speed cold saw (CX110) with a stand.	3500	3150	2625	1750	3500	Proposal	F-220
						University of Waterloo's Steel Bridge Team	
Total	3500	3150	2625	1750	3500		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Process Chemicals, such as NaOH, pure Vit. C, Tincture of Iodine, Ascorbic Acid. These are for the chemical reaction for our car	900	0	0	0	900	Proposal	F-221
Chemistry Lab Equipments, specifically speaking, Beakers, Test Tubes, Weighing Scales. These are needed for testing purposes	500	0	0	0	110	WATCHEM Equipment Funding Proposal	
Arduino, specifically the arduino kit, which is used to build the controls system, currently relying on Prof. Gostick for now.	90	0	0	0	0		
Filament (PLA), required for testing and building the controls system	240	0	0	0	0		
Motor and wheels, which are crucial components for our test vehicle	90	0	0	0	90		
Total	1820	0	0	0	1100		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Electrical Components/Tools	2900	2150	1500	1000	1000	Proposal	F-222
Mechanical Components/Tools	9000	7300	5500	3950	3950	UWaterloo Robotics Team F2021 WEEF Proposal	
Software Components/Tools	1000	750	600	400	400		
Firmware Components/Tools	5000	3750	3000	1500	1500		
Total	17900	13950	10600	6850	6850		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Mechanical Components for Airframe	4000	2955	1910	955	1910	Proposal	F-224
Electrical PCB and PCB Components	4000	2745	1490	745	1490	UWARG Fall 2021	
Firmware Components and CPU Processors	1000	650	300	150	300		
CV System Components	1000	750	500	250	500		
Training Drone	800	500	300	0	300		
Total	10800	7600	4500	2100	4500		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Reverse Osmosis Membrane (1)	76	123	0	0	0	Proposal	F-225
Sediment Filters (2) and housing (2)	156	0	0	0	0	Desalination Unit Capstone	
RO Booster Pumps (2)	280	394.99	0	0	0		
Pressure Transmitters (3)	127	0	0	0	0		
Automatic Valves (2)	67	0	0	0	0		
Total	706	517.99	0	0	0		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Prototyping Materials	700	660	600	330	0	Proposal	F-226
						Economic Vaccine Refrigerator Prototyping	
Total	700	660	600	330	0		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Magazine Funding	1519	0	0	0	0	Proposal	F-227
						DARE - Breaking into Entrepreneurship	
Total	1519	0	0	0	0		

Item	Option 1	Option 2	Option 3	Option 4	Final		
CubeSat Frame	5446.7	4567.5	4567.5	3996.6	0	Proposal	F-228
Mechanical Testing and Work Tools	860	688	0	344	344	UW Orbital - CSDC	
Dev Boards and Microcontrollers	1475.9	1180.7	0	590.36	590.36		
Printed Circuit Boards (PCBs)	1100	880	0	440	440		
Dev Cameras	92.48	73.98	0	36.99	36.99		
Total	8975.1	7390.2	4567.5	5407.9	1411.4		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Mechanical and Electrical Components	6000	5000	4300	3600	3600	Proposal	F-230
Thermal components	1200	1000	800	600	600		

Aerostructures	1200	1000	800	600	600	Waterloop WEEF Proposal F21
New Core and Coil	4600	4000	3700	3100	3100	
Total	13000	11000	9600	7900	7900	

Item	Option 1	Option 2	Option 3	Option 4	Final		
Networking Equipment	1510	1132.5	755	377.5	1510	Proposal	F -231
Car Battery Maintenance Items	500	375	250	125	500	F21 WATonomous WEEF Proposal	
Server Ram	650	487.5	325	162.5	650		
CarSim HPC Licenses	11626	8719.5	5813	2906.5	447		
Mini Vehicle Platform	1483	1112.3	741.52	370.76	0		
Total	15769	11827	7884.5	3942.3	3107		

Item	Option 1	Option 2	Option 3	Option 4	Final		
OpenBCI Hardware (16 channel BCI)	4506.2	2911.5	2911.5	2911.5	4506.2	Proposal	F -232
Development Workstation Server	4650	3200	3200	3200		WATOLINK Fall 2021	
Team T-Shirts	550	0	0	0			
Total	9706.2	6111.5	6111.5	6111.5	4506.2		

Item	Option 1	Option 2	Option 3	Option 4	Final		
Pneumatics	350	300	250	200	350	Proposal	F -233
Bearing, wheels	400	350	300	250	400	VEX U Robotics 2021 Fall	
Sensors	800	700	600	500	800		
Tools/Storage/Field Riser	2500	2200	1800	1500	2500		
Total	4050	3550	2950	2450	4050		

Item	Option 1	Option 2	Option 3	Option 4	Final		
12x Bipolar Stepper Motor	176.28	243.94	257.64	157.16	257.64	Proposal	F -234
12x Motor Control Board	52.77	61.56	103.46	149.02	103.46	(murmur), DesignTO 2022	
12x Ultrasonic Sensor	67.12	47.42	68.61	67.66	68.61		
Total	296.17	352.92	429.71	373.84	429.71		

TOTAL						ALLOCATED
						96000

Academic Equipment and Resources			
Department/Team	Proposal Number	Proposal Title	Requested
Civil and Environmental Engineering	237	Additional Drone Batteries	\$7,376.64
ECE	194	Multimeters and cables for the semiconductor and circuits lab	\$47,500.00
ME	196	Ideas Clinic - Materials testing	\$6,250.00
MME	197	New WATIMake Equipment	\$19,000.00
MME	198	ME 340 - Foundry Lab Activity	\$3,000.00
Chemical Engineering	200	Titrator for Residual Water Content	\$20,869.00
CEE	201	EXO NitraLED Sensor	\$8,910.00
Nano	202	MA-8005 Manipulators (DC Probes) for Nano Undergrad labs	\$30,000.00
Sadra Student Design Centre	203	Tools for engineering student shops	\$6,649.48
Chemical Engineering	204	ChE CAPSTONE LAB- STUDENT REQUESTED EQUIPMENT	\$9,160.00
MME	205	Keychain Activity	\$850.00
ME	207	Ideas Clinic - Electric Vehicles	\$10,500.00
Chemical Engineering	208	Computer Teaching Classroom and 4th Year Study Room Workstation Replacements	\$22,500.00
Chemical Engineering	209	Chemical Engineering 4th Year Projects and Course Work Computational Server Chetern2 Replacement	\$7,500.00
ECE	216	FYDP Lab Benchtop DMM Replacement	\$36,000.00
Chemical Engineering	217	Capstone Lab 3D Printer	\$3,250.00
School of Architecture	218	Router Table	\$1,848.99
Chemical Engineering	236	New Microscopes for ChE UG Labs	\$9,000.00
Total			\$ 1,59,565.12

Miscellaneous			
Architecture	236	Battery Powered / Bluetooth PA	\$810.00
Architecture	206	Smart phone gimbal and or gimbal / camera combination for video content creation	\$1,899.97
Engineering Outreach	210	Indigenous spaces	\$11,500.00
FYDP MME Group 41	223	Modular Composites Curing Oven for Student Teams	\$5,500.00
Engineering Undergrad Office	235	Furniture for CPH nooks (first, second & third floors)	\$11,500.00
Total			\$ 31,209.97

Student Teams			
SSDC	199	Pickup Truck for Student Team Use	\$15,000.00
Concrete Toboggan	211	W21 WEEF Funding Proposal	\$2,220.00
UWFM	213	UWFM Fall 2021 for 2022 Season	\$13,500.00
UWAFI	214	SSDC High-Voltage Test Room Proposal	\$31,881.00
Formula Electric	215	Waterloo Formula Electric Fall 2021 Funding Proposal	\$12,191.00
Rocketry	219	Waterloo Rocketry - WEEF F21 Proposal	\$18,650.00
Steel Bridge	220	University of Waterloo's Steel Bridge Team	\$3,500.00
WatCHEM	221	WATCHEM Equipment Funding Proposal	\$1,820.00
UW Robotics	222	UWaterloo Robotics Team F2021 WEEF Proposal	\$17,900.00
WARG	224	UWARG Fall 2021	\$10,800.00
Capstone	225	Desalination Unit Capstone	
Capstone	226	Economic Vaccine Refrigerator Prototyping	
EntSoc x SoGal	227	DARE - Breaking into Entrepreneurship	
UW Orbital	228	UW Orbital - CSDC	\$8,975.00
Waterloop	230	Waterloop WEEF Proposal F21	\$13,000.00
WATonomous	231	F21 WATonomous WEEF Proposal	\$15,769.04
Watolink	232	WATOLINK Fall 2021	\$9,706.20
VE XU	233	VEX U Robotics 2021 Fall	\$4,050.00
Architecture	234	(murmur), DesignTO 2022	\$429.71
Total			\$1,79,391.95

TOTAL			\$3,70,167.04
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Allocated	2458.88
	17500
	6250
	9000
	2000
	16774
	4455
	15000
	6649.48
	4580
	850
	3500
	8010
	5625
	17424
	1500
	1469
	4958.25
	128003.61

Allocated	626.41
	1369.98
	5500
	3000
	5500
	12996.39

Allocated	7500
	2220
	8500
	18032.74
	9193
	13200
	3500
	1100
	6850
	4500
	1411.35
	7900
	3107
	4506.2
	4050
	429.71
	96000

	237000
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	Total	AE&R + Misc.	Student Teams
Requested	\$ 3,70,167.04	\$ 1,90,775.09	\$96,000.00
Allocated	\$ 2,37,000.00	60%	40%
	Faculty & Misc.		Student Teams
	\$1,41,000.00		\$96,000.00