

## Elijah - Fire Poi Robot - Detailed Budget

### Elijah Detailed Budget

Item	Description	Quantity	Price	Total Cost
<b>Frame</b>				
square tubing	2" x 1/8	40'	1.5	60
bolts	1/2" x 3"	35	0.5	15
nuts	1/2"	35	0.25	8
mounts	custom fabricated	8	5	35
.035 flux core mig wire	<a href="http://www.jcwhitney.com/jcwhitney/product.jcw?nval=110">http://www.jcwhitney.com/jcwhitney/product.jcw?nval=110</a>	2	20	40
grinding disks	10 pack	1	15	15
paint	black high heat	10	8	80
LED Fixtures	rental	2	30	60
Plexiglas	1'x2'	1	15	15
angle iron	1"x1"	40'	1	40
drill bits			20	20
beveled tap for exterior steel			8	8
Steel panels .124", 4',8'	<a href="http://www.metalsdepot.com/Cart3/viewCart1.phtml?LimA">http://www.metalsdepot.com/Cart3/viewCart1.phtml?LimA</a>	10	192.96	1930
laser cutting			500	500
polyurethane			40	40
Head piece cutting	included			
<b>Robotics</b>				
arm steel pieces	8" square tubing 3' long	1	10	10
Hand servo Motors	~ 10 lb/in <a href="http://www.applied-motion.com/products/">http://www.applied-motion.com/products/</a>	2	750	1500
Servo power Cables	<a href="http://www.applied-motion.com/products/">http://www.applied-motion.com/products/</a>	10	75	750
Servo encoder cable	<a href="http://www.applied-motion.com/products/">http://www.applied-motion.com/products/</a>	10	185	1850
Hand Tiit Servo Motors	~ 10 lb/in	2	750	1500
Elbow Servo Motors	~ 20 lb/in	2	900	1800
Shoulder Servo Motors	~ 20 lb/in	2	900	1800
Chest Servo Motors	~ 30 lb/in	2	1250	2500
8 port serial hub	8 axis serial distribution	1	349	349
servo controllers and power supplies	line powered 110 single phase 5A continuous with serial i	10	1000	10000
wiring			35	35
microcontrollers	Basic Stamp micro controllers	4	80	340
Reduction gears	heavy duty reduction gears for shoulders and chest	4	75	300
rods	1/2" steel rod for motion control	4	30	120
motor mounts	custom fabricated	8	10	80
bearings	Pillow block	12	30	360
stop rings	for rod ends	12	15	180
elemental protection	custom fabricated plates or bicycle chain guards	8	20	160
<b>Perimeter Fence</b>				
steel	Steel panels .124", 4',8'	10	192.96	1930
grinding disks	to put texture on steel	8	10	80
welding wire	included			
machine screws	various screws, nuts, and washers for flush mounted exterior		50	50
laser cutting			500	500
bending	Rebecca low metal gallery donated equipment			
brackets	tapped flat steel stock	15'	15	15
<b>Drums</b>				
steel	Steel panels .124", 4',8'	3	192.6	577.8
laser cutting			250	250
grinding disks	For Texture	3	15	45
drum heads	<a href="http://band-orchestra.musiciansfriend.com/product/Ludwię">http://band-orchestra.musiciansfriend.com/product/Ludwię</a>	6	30	180
LED lighting	rental	6	30	180
<b>Interactive Electronics</b>				
Sound detection hardware	salvaged from lighting equipment	0	0	0
Mixer	rental	1	50	50
microphones with windscreen	Radio Shack	6	45	270
XLR Cables	rental	0		
monitor speaker	JBL 15" rental	1	75	75
microcontroller	Basic Stamp micro controllers	1	80	80

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### Fuel Delivery System / hand assembly

90 degree propane swivel 1/2" 003 Series Part # 003-13210	<a href="http://www.rotarysystems.com/single-passage-unions">http://www.rotarysystems.com/single-passage-unions</a>	2	313.11	626.22
	<a href="http://www.deublin.com/products/union.asp">http://www.deublin.com/products/union.asp</a>			
6' propane tubing w/ steel overbraid High Heat poly tubing 1/2"	<a href="http://www.gashosesandregulators.com/lowpressurehose">http://www.gashosesandregulators.com/lowpressurehose</a>	4	76.95	307.8
20' propane tubing w/ steel overbraid High Heat poly tubing 1/2"	<a href="http://www.gashosesandregulators.com/lowpressurehose">http://www.gashosesandregulators.com/lowpressurehose</a>	4	154.95	619.8
1/2" Three way propane Tee fitting		2	30	60
emergency stop system / Ball Valve, 1/2 In Flared, Forged B	<a href="http://www.amazon.com/Industrial-Grade-1WME2-Flared-">http://www.amazon.com/Industrial-Grade-1WME2-Flared-</a>	2	12.2	24.4
Lighting rod to manually light the mantles	Kerosene dipped kevlar wick on a long metal pipe	1	15	15
Heat Shield	cone shaped piece of steel secured with nuts to the all thr	2	20	40
Propane torch heating tip	<a href="http://www.grainger.com/Grainger/items/6XR52?cm_mmc">http://www.grainger.com/Grainger/items/6XR52?cm_mmc</a>	4	98.45	189.7
Davies Mining lamp style burners. Will be a thin wire mesh	<a href="http://www.popsci.com/diy/article/2009-12/gray-matter-built-lamp-doesnt-explode">http://www.popsci.com/diy/article/2009-12/gray-matter-built-lamp-doesnt-explode</a>			
	<a href="http://www.fencingmesh.com/wire_mesh_panel/filter_wire">http://www.fencingmesh.com/wire_mesh_panel/filter_wire</a>	4	80	320
2 100# propane tanks 30" diameter 4' tall	rental from airgas fort worth 8176242131	2	130	260
Ready Box – Fuel Storage and Padlock	Plywood / sheet metal pre construction for assembly on p	1	250	250
Caution signs for storage unit		4	5	20
couplers	Misc Tee and straight adapter couplers		50	50
chain	light weight 200# limit chain 12'		15	15
Medium Duty Pressure Regulator	<a href="http://www.grainger.com/Grainger/items/5KJ65?Pid=search">http://www.grainger.com/Grainger/items/5KJ65?Pid=search</a>	1	272	272
Steel Tube for outer shell of bearings	2.5" inner diameter pipe	1	10	10
Bearings for interior of tube 1.25" inner 2.5" outter	<a href="http://www.vxb.com/page/bearings/PROD/Kit8473">http://www.vxb.com/page/bearings/PROD/Kit8473</a>	8	16	128
1.25 Outer diameter pipe for interior of bearings		1	8	8
Motor Mount Bracket	Square stock welded and steel tightening clamps	2	10	20
All thread .5" outer diameter 6" long		2	5	10
Kevlar felt for interior of wicks			10	10
bicycle chain and gears	recycled from old bicycles	2	15	30
Steel plate for counterweight construction	recycled junk yard material	2	0	0

### Power

Generator	5000 Watt generator Lowes.com	1	600	600
Gasoline	70 gallons	70	3.25	180
12 gallon gas can from walmart	<a href="http://www.walmart.com/catalog/product.do?product_id=1">http://www.walmart.com/catalog/product.do?product_id=1</a>	8	49.96	400
Power Cords	have these			
Muffling system				

### Assembly

scaffolding	rental 30'		250	250
winch	harbor freight 1 ton 16' chain hoist	1	64.99	64.99
Fork Lift	BM heavy machinery borrow			

### Transportation

Box Truck fuel	3400 miles round trip @ 3.25/12		850	850
Open Truck for transporting cylinders Fuel	3400 miles round trip @ 3.25/16		690	690
truck rental			1067	1067
packing material	plywood and 2x4 box construction, casters, and foam		500	500
ratchet straps			50	50

### Safety

Wet Fire Blanket				0
Fire Extinguisher			20	20
wind detection	<a href="http://www.texaselectronics.com/detail_tv4.htm">http://www.texaselectronics.com/detail_tv4.htm</a>	1	375	375

### Total Project cost

**39115.71**

### Funding Entities

NSF & Fort Worth Museum of Sci & History	CommuniTy Studios grant materials through helping kids learn about and work on r			-1200
UTA Robotics Department	Design assistance, robotics lab, parts donations			-1200
Rebecca Low Sculptural Metal Gallery	materials, fabrication shop, and tools			-450
Massage Peddler Recycled Bicycles	Gears, chain, other fab help			-400
Dallas Personal Robotics Group	materials funding			-200
Oink Art Ltd.	misc materials and spray paint			-500
White Light Productions	steel for frame			-700
Inside Image Design	Gears, rods, pillow block bushings, stops, and misc other parts / LED lighting fixture			-500
Showtech Audio Visual	Transportation help			-2000
Renaissance Audio Visual Equipment	microphones, jbl, mixer, misc a/v cables			-300

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Sam Hatcher ETI	flame effects consultation	
WC Services	donation	-800
Don Gentry Scrapyard materials	steel plate and misc sheet steel/ car hoods	-900

### **Burning Man art grant requested amount**

**29965.71**

Elijah – Fire Poi Robot  
Mike Cocanower  
Inside Image Design  
[mcocanower@gmail.com](mailto:mcocanower@gmail.com)  
817-239-7008

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