

Application: TPF-FY22-3044622323

Dylan Lathrum - dlathru1@asu.edu
Thesis and Honors Project Funding

Summary

ID: TPF-FY22-3044622323

Status: Pending Student Action - TOA/BR

Last submitted: Jul 16 2021 03:42 AM (MST)

Select Application Type

Completed - Jul 5 2021

TPF: Select Thesis/Project Funding Reimbursement Type

Thesis and Project Funding

Barrett, The Honors College provides several types of reimbursement applications:

- **Thesis Funding:** While many students do not have a need for funding, some theses may be costly. Students may receive up to \$1000 to complete their thesis. This funding may cover items such as travel (not being approved), books, copying, equipment (\$100 max) and other materials as needed throughout the project. Please review the Thesis Reimbursement Application for more details. The application should be submitted early, prior to making any purchases.
- **Honors Project Funding:** Typically used for non-thesis related expenses. This funding may be used to cover expenses related to special projects (i.e. presenting a paper at a conference or attending an annual meeting related to your major). The funds may be used to cover such costs as travel (not being approved), hotel, conference registration, and supplies. All purchases must be pre-approved, and travel must occur before the final receipt deadline.

Funding for each reimbursement type is one-time only. ***If requesting travel, please review**

<https://cfo.asu.edu/domestic-travel-guidance> before submitting.* Final approved expenses are at the discretion of Barrett, The Honors College

What type of funding request are you submitting?

Responses Selected:

Thesis/Creative Funding

Submit Project Summary

Completed - Jul 5 2021

TPF: Project Summary

Project Summary

My plan for the thesis project is to develop the hardware and software components of a small portable computer with just enough power to connect to a desktop computer and run all computation there while using the portable device as just an interface. This way, someone who already has a powerful desktop PC doesn't need to also purchase a laptop to continue working remotely. The ultimate goal is to be able to run intensive programs remotely, such as compiling code, training an AI model, rendering images/video, running CAD software, or developing video games without needing to invest in a powerful laptop on top of a preexisting desktop.

Submit Cost Estimation Report

Completed - Jul 5 2021

Please provide screenshots, PDFs, or other documentation of the estimated expenses.

Please Note: Links will not be accepted.

TPF: Cost Estimation Report & Quotes

Cost Estimation Report

Be as detailed as possible in the item description area below. Follow the instructions by expense type, if listed below. Otherwise, just list and describe items.

1. **Travel:** include a printout showing the approximate airfare and hotel charges.
If requesting travel, please review <https://cfo.asu.edu/domestic-travel-guidance> before submitting.
2. **Per Diem:** consult the ASU Per Diem Rates for lodging or meals and use approved rates.
3. **Virtual Conferences:** include the conference program or brochure.
4. **Equipment:** if purchasing a piece of equipment exceeding \$100, only up to \$100 is reimbursable.

5. **Research Incentives:** should be used to encourage reasonable participation in a study. Include an explanation for cash payments/gift cards that describes why incentives are necessary. If approved, you will need original receipt and a signed, dated document that includes your name, the name of your participant, participant signature and date, a summary, and what was given as the incentive. For participants who need to remain anonymous, include a note explaining why and request the recipient initial the note. If these items are not included, a reimbursement cannot be processed, per ASU policy.

For more information on these categories refer to the Appendix online:

<https://barretthonors.asu.edu/academics/thesis-and-creative-project/funding>

	Item Type	Description	Estimated Cost
1	Equipment	Sum of all equipment, detailed below. No single item is expected to be over \$100	998.92
2			
3			
4			
5			
6			
7			
8			
9			
10			
Total			998.92

Quotes of Estimates

Please provide screenshots, PDFs, or other documentation of the estimated expenses.

Please Note: Links will not be accepted.

[dlathru1-bill-of-materials.pdf](#)

Overestimated bill of materials that accounts for changes in direction and reevaluation of parts as the project progresses. Since I don't have much experience with working with PCBs, I am expecting to need to tweak and rework my plan before finishing.

Filename: dlathru1-bill-of-materials.pdf **Size:** 193.6 kB

Thesis Director Approval

Completed - Jul 16 2021

IMPORTANT - PLEASE READ

Please reach out to your Thesis Director and ask for their e-mail address in the format of asurite@asu.edu. Once you receive this information from them, please use this e-mail address for this form (**please do not use** their first.last@asu.edu e-mail address). If you do not follow these directions, your application may be denied.

Please enter your Thesis Director's information as they need to read your application and certify that the expenses you listed are reasonable and essential for the Thesis/Creative Project and not otherwise available. Please only insert your Thesis Director's information as listed on your Thesis Prospectus.

Your application will remain incomplete until your thesis director submits their recommendation. Upon completion, your application will automatically be submitted & you will receive an e-mail notification.

Recommenders

Recommender:

Robert Reimar Heinrichs <rheinri1@asu.edu>

Recommender Custom Fields:

Recommender_Department:

Request Date:

Jul 5 2021 05:26 PM (MST)

2021-2022:Thesis/Project Fund Reimbursement Terms of Agreement

Incomplete

2021-2022: Thesis/Project Fund Reimbursement Terms of Agreement

Thesis/Project Fund Reimbursement Terms of Agreement

2021-2022 Terms of Agreement

The following information is provided because you have been approved for the Thesis/Creative Funding. The application is a one time only application. Barrett reserves the right to revoke the approved funds if the terms and conditions are not met throughout the duration of the 2021-22 academic year. Each student will:

- Personally pay for expenses that I have requested reimbursement for unless it will be a transfer into an ASU account.
- Financial Aid must grant approval to post to student account. Read below.
- Maintain enrollment at Barrett, The Honors College.
- Remain in good standing with the university. Suspension, dismissal, or withdrawal from ASU prior to the end of a semester will automatically revoke this scholarship, and the student may be liable to repay all funds disbursed from this scholarship for that semester.
- If receiving funds from another department, must let Barrett know before any reimbursement can be issued.
- Must turn in proper payment receipts in order to be reimbursed the full amount that you were approved for.
- **Deadlines will NOT be extended even if your Thesis deadline is.**

Term of Thesis Completion

Fall 2020

Spring 2021

Final Receipt Deadline

November 12th, 2021

April 8th, 2022

If the costs associated with your project puts you above your financial need and/or cost of attendance that is part of your Free Application for Federal Student Aid (FAFSA)*, you may be asked to submit a student budget review form once all your expenses, that you requested per your application, have been completely paid for. It is a federal regulation that we account for this educational resource in a student's financial aid package.

IMPORTANT: Even though Barrett has approved your application(s), Financial Aid has to approve the posting of the funding to your student account if a budget review is needed.

**Only applies to individuals that submitted a FAFSA. This does not apply to those who did not fill out the federal application for funding.*

Consent to Release Records and Terms of Agreement

I hereby agree upon the acceptance of this scholarship to the terms specified above. However, should my status change whereby I no longer meet the criteria, I will notify Barrett and understand that the scholarship will be revoked and I may be liable to repay all funds disbursed from this scholarship.

In accepting, I understand it is my responsibility to respond in a timely manner to requests for additional information, paperwork or payment receipts.

The federal Family Educational Rights and Privacy Act (FERPA) protects the privacy of educational records that the university maintains about me. By signing below, I give permission for ASU or the ASU Foundation to disclose to the donor and any review committee the information provided in connection with this scholarship. This may include information from my educational records, such as my official transcript, letters of recommendation, and financial aid information.

In accepting this award, I agree that my name may be published on: (please click indicating permission given):

No Responses Selected

Select Choice below:

_____ the \$998.92 from the Honors Thesis Reimbursement application for the 2020-2021 academic year. The funds will be posted to your student account upon review of all receipts, completion of travel, if applicable, acceptance of this agreement, and Financial Aid approval. All receipts may need to meet Financial Aid specifications for their Aid year.

(No response)

Date of Acceptance

(No response)

Student Signature

SUMMARY

Category	Amount
Hardware	\$ 422.40
PCB	\$ 254.05
Tools	\$ 93.81
Materials	\$ 84.98
Subtotal	\$ 855.24
Tax Estimate	\$ 70.98
Shipping Estimate	\$ 72.70
TOTAL	\$ 998.92

Hardware	Subtotal: \$ 422.40			
Item	Quantity	Cost	Amount	Link
Raspberry Pi 4 2 GB	0	\$ 35.00	\$ -	
Raspberry Pi 4 8 GB	1	\$ 75.00	\$ 75.00	
CM4108000	1	\$ 75.00	\$ 75.00	
CM4104000	1	\$ 50.00	\$ 50.00	
CM4102000	0	\$ 35.00	\$ -	
CM4101000	0	\$ 30.00	\$ -	
Waveshare 7inch DSI screen	1	\$ 59.99	\$ 59.99	https://www.waveshare.com/7inch-dsi-screen/
Waveshare 7inch HDMI screen (C)	1	\$ 62.99	\$ 62.99	https://www.waveshare.com/7inch-hdmi-screen-c/
Wireless Thin Mouse	1	\$ 11.99	\$ 11.99	https://www.amazon.com/Belkin-Clever-BK05-Foldable-Bluetooth-Keyboa/dp/B00PQF98K4/
Clever BK05 Foldable Bluetooth Keyboard	1	\$ 48.99	\$ 48.99	https://www.amazon.com/gp/product/B00PQF98K4/
10000mAh DC 3.7V Rechargeable Battery	1	\$ 18.49	\$ 18.49	https://www.adafruit.com/products/1000
PowerBoost 1000 Charger	1	\$ 19.95	\$ 19.95	https://www.adafruit.com/products/1000

					Subtotal:	\$ 254.05
Item	Manufacturer Number	#/Board	Quantity	Cost	Amount	
Battery Port JST-2PH		1769	1	\$ 0.75	\$ 3.75	
Voltage Regulator	TPS61090NAR		1	\$ 2.48	\$ 12.40	
Battery Charger	MCP73871T-2C/ML		1	\$ 1.88	\$ 9.40	
USB-C Connector	USB-C31-S-RA-CS10-BK-T/R		1	\$ 0.161	\$ -	
USB-C Connector (power & data)	USB4125-GF-A		1	\$ 0.67	\$ 3.35	
LED charging	CSSMF-AJE-CUOV0342		1	\$ 0.15	\$ 0.75	
LED charged	CSSMF-GIF-CVOY0791		1	\$ 0.19	\$ 0.95	
LED power	CSSMF-BIE-CROU0451		1	\$ 0.19	\$ 0.95	
LED	CSSMF-BUF-CROU0801		1	\$ 0.16	\$ 0.80	
Inductor 6.8uH (>2A)	BWVS05005040698R00		1	\$ 0.35	\$ 1.75	
Transistor	MMUNJ2131LT1G		1	\$ 0.13	\$ 0.65	
Thermistor 15k	NTCLE10E3153I80		1	\$ 0.69	\$ 3.45	
Cap 10uF	CL31A106KPHNNNE		3	\$ 0.23	\$ 6.90	
Cap 2.2uF	CL31B225KOHNNWE		1	\$ 0.19	\$ 1.90	
Cap 0.1uF	CL206C104KSRAC7800		1	\$ 0.11	\$ 1.10	
Cap 100uF	CL32A107MQVNNNE		1	\$ 0.71	\$ 7.10	
Res 1.87M	CMF551M8700FHEB		2	\$ 0.173	\$ 34.60	
Res 5.1k	RNMF14FAD5K10		2	\$ 0.10	\$ 2.00	
Res 340k	MFR-25FBF52-340K		1	\$ 0.10	\$ 1.00	
Res 200k	MFR-25FBF52-200K		1	\$ 0.10	\$ 1.00	
Res 1k	RNMF14FTD1K00		5	\$ 0.10	\$ 5.00	
Res 270k	RNMF14FTC270K		1	\$ 0.10	\$ 1.00	
Res 100k	RNMF14FTC100K		2	\$ 0.10	\$ 2.00	
SD card reader	MEM2051-00-195-00-A		1	\$ 1.20	\$ 6.00	
Cap 10uF	CL31A106KPHNNNE		1	\$ 0.23	\$ 2.30	
Power Switch/Driver	RT9742CNGJ5		1	\$ 1.60	\$ 8.00	
Res 12k	RNMF14FTC12K0		1	\$ 0.10	\$ 1.00	
Ethernet port	ARJ11B1-502-AB-ER2-T		1	\$ 3.94	\$ 19.70	
ESD protection diode	TPD4EUS30DOQAR		2	\$ 0.83	\$ 8.30	
Cap 0.1uF	CL206C104KSRAC7800		1	\$ 0.11	\$ 1.10	
Res 470R	RNF14FTD470R		2	\$ 0.10	\$ 2.00	
USB receptical	USB-A-5-RA		3	\$ 0.55	\$ 8.25	
FFC 20pin connector	PCA-6-IA-20-HL-3		1	\$ 0.42	\$ 2.10	
USB controller	USB204A-IT		1	\$ 3.83	\$ 19.15	
Res 12k	RNMF14FTC12K0		1	\$ 0.10	\$ 1.00	
Res 36k	RNMF14FTC36K0		4	\$ 0.10	\$ 4.00	
Crystal	J495MH-F-G-G-K-24M0		1	\$ 0.21	\$ 2.10	
Cap 27pf	CL31C270BCNNNC		2	\$ 0.18	\$ 3.60	
Cap 10uF	CL31A106KPHNNNE		2	\$ 0.23	\$ 4.60	
Cap 0.1uF	CL206C104KSRAC7800		6	\$ 0.11	\$ 6.60	
Current Limit Switch	AP22653AW6-7		1	\$ 0.44	\$ 2.20	
Cap 10uF	CL31A106KPHNNNE		1	\$ 0.23	\$ 2.30	
Res 15k	RNF18FTD15K0		1	\$ 0.10	\$ 1.00	
Cap 100uF	CL32A107MQVNNNE		1	\$ 0.71	\$ 7.10	
Cap 10uF	CL31A106KPHNNNE		4	\$ 0.23	\$ 9.20	
HDMI port	SS-53000-001		1	\$ 0.88	\$ 4.40	
FFC 20pin connector	PCA-6-IA-20-HL-3		1	\$ 0.42	\$ 2.10	
Power Switch/Driver	RT9742CNGJ5		1	\$ 1.60	\$ 8.00	
Cap 0.1uF	CL206C104KSRAC7800		2	\$ 0.11	\$ 2.20	
LED cm4 Activity	WP7113ND		1	\$ 0.32	\$ 1.60	
Res 1k	RNF14FTD1K00		5	\$ 0.10	\$ 5.00	
LED cm4 Power	CSSMF-GIF-CVOY0791		1	\$ 0.19	\$ 0.95	
Power diode	74LVC1G075E-7		1	\$ 0.28	\$ 1.40	
Res 1k	RNF14FTD1K00		5	\$ 0.10	\$ 5.00	

Items	Quantity	Subtotal: \$ 93.81	Cost	Amount	Link
Pinecil	1	\$ 24.99	\$ 24.99		https://pinet64.com/pinecil-mini-stem
Solder cleaning s	1	\$ 9.99	\$ 9.99		https://www.amazon.com/gp/product/B07DGV17H/
Wire cutters	1	\$ 4.97	\$ 4.97		https://www.amazon.com/Pliers-Electrical-Cutters-Cutting-Dia
Solder sucker an	1	\$ 9.99	\$ 9.99		https://www.amazon.com/Desoldering-Solder-Sucker-Length-1
Antistatic twee	1	\$ 11.95	\$ 11.95		https://www.amazon.com/Precision-Anti-static-Non-magnetic-Multi-standard-Electronics/dp/B06XXXXH8/
Wire holder	1	\$ 9.99	\$ 9.99		https://www.amazon.com/Neiko-01502-Adjustable-Magnifying-Alligator/dp/B000P4Z03C/
Solder mat	1	\$ 6.99	\$ 6.99		https://www.amazon.com/gp/product/B07DGV17H/
Solder reel	1	\$ 12.95	\$ 12.95		https://www.amazon.com/Delcast-SL-RH-Solder-Dispenser-Reel/dp/B00PQF98K4/
om/en/products/detail/citric-uk-usa-electronics-inc/RNMF14FTC120K76206/156826					
om/en/products/detail/semi-conductors					
om/en/products/detail/Vishay-beychlag-drloric-b-components/NTC					
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Materials	Subtotal: \$ 84.98			
Item	Quantity	Cost	Amount	Link
3d printer filame	1	\$ 24.99	\$ 24.99	https://www.amazon.com/HATCHBOX-3D-Filament-Dime
Solder 0.031"	1	\$ 25.90	\$ 25.90	https://www.amazon.com/Kester-24-6337-0027-Solder-A
Solder 0.020"	1	\$ 34.09	\$ 34.09	https://www.amazon.com/dp/B00068JWC/
/com/Pliers-Electrical-Cutters-Cutting-Dia				
/com/Precision-Anti-static-Non-magnetic-Multi-standard-Electronics/dp/B06XXXXQH58/				
/com/Neiko-01007-Adjustable-Magnifying-Alligator/dp/B000P42O3C/				
/com/gp/product/B07DGV17H/				
/com/Delcast-SI-RL-Solder-Dispenser-Reset/dp/B00PQF98X4/				
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