

UNIVERSITY OF LOUISIANA
AT LAFAYETTE

STEP Committee

Technology Fee Application

Camera Technology for New Media and
Digital Art/Visual Arts Department

Professor Jamie Baldrige.

Name of Submitter

Daryl J. Moore, Dean,
College of the Arts

Title: Camera Technology for New Media and Digital Art/Visual Arts
Department
Date: July 10, 2023
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ABSTRACT

Student work at all levels of New Media and Digital Art require high-resolution digital video capture. This grant proposal seeks funding for the acquisition of three (3) Blackmagic digital cinema cameras to bolster our insufficient inventory and support cutting-edge instruction in a wide range of digital video applications and workflows. Students will learn how to use these cameras to their full potential, giving them a deeper understanding of the technology and its capabilities, which is key to excelling in the vast field of digital multi-media production. Experience with these Blackmagic cameras in particular will put students at a significant advantage in the job market, as they are widely used in professional, commercial, and independent production settings. Working with industry standard camera technology in the classroom ensures that students are confident, competent, and well-prepared for employment in this competitive and rapidly evolving industry. Ready access to this invaluable resource will expose 70+ Intermediate and Advanced New Media and Animation students per year to the latest industry techniques and provide practical hands-on experience with the very technology that they will be using in the future. This will enable them to hit the ground running when they enter the workforce and ensure their success in the region's competitive film and multi-media industries. As such, these cameras will represent a significant investment in the education and professional development of our students and help future-proof our camera inventory for the better part of the coming decade.

A. Purpose of Grant and Impact to Student Body as a Whole

The purpose of this grant is to expand our current insufficient camera inventory with up-to-date, industry standard Blackmagic digital cinema cameras. Every project in the New Media and Digital Art curriculum requires students to shoot and edit hours and hours of high-quality video footage for a wide variety of creative and practical applications. Students will utilize these camera systems for traditional and creative filmmaking, VR immersive development, video / CG

compositing, photogrammetry, background plate production, texture map extraction, green screen keying, match moving, and camera tracking. In fact, digital video cameras are the most utilized, most requested, and most desperately needed tool in New Media and Digital Art's hardware inventory alongside capable computer workstations. In the past 30 years, New Media and Digital Art has only received a single round of STEP grant funding in the Spring of 2018 and is in desperate need of this infusion of technology to continue building its curriculum and to meet the needs of our rapidly growing population. Currently, the area has only two (2) professional level cameras in its inventory which is woefully inadequate to meet the needs of the department's third largest and most technologically advanced concentration. Expanding our camera inventory with the addition of these three (3) Blackmagic cinema cameras will impact 50+ New Media and Digital Art and Animation students per year and fulfill four immediate curricular needs:

First, the film and multi-media production industries are rapidly advancing and utilization of digital cinema cameras like those from Blackmagic are now the norm. These cameras are necessary to teach students how to operate this complex hardware and how to work with industry standard UHD (ultra-high definition) digital video resolutions of 6K, 8K, and 12K. The footage produced by these cameras requires a unique workflow. Understanding how to edit, color grade, file manage, and encode this footage is an absolute necessity to prepare students for the technical rigors of working in the modern multi-media industry. Experience operating these cameras is essential for them to be competitive in the job market.

Second, these cameras are necessary for students to produce class work that is of the highest quality and create portfolios that meet or exceed the professional standards they will be measured against when seeking employment upon graduation. Blackmagic cameras are known for their exceptional image quality, color accuracy, and dynamic range, which makes them an ideal tool for creating high-quality visual content. Students at comparable institutions and in comparable digital media programs already utilize professional-grade UHD camera systems and similar technologies. Our students should enter the job market with the same competitive edge as their peers from Louisiana State University, University of Texas at Austin, Florida State University, Savannah College of Art and Design, and University of Georgia (just to name a few).

Third, these Blackmagic camera systems will support recent curricular innovations that utilize the Unreal Engine for creating cinematic and immersive content. UHD video provides great flexibility when creating immersive content in Unreal Engine 5 or when plate matching the engine's sequence output for cinematic clips. New Media and Digital Art's current compliment of Oculus S and HTC VR headsets will benefit greatly from the scalability of these camera systems. By receiving instruction in these immersive technologies supported by

these camera systems students will be able to explore more advanced creative work and develop broad marketable skill-sets.

Finally, these camera systems will support curriculum changes that update existing methodologies and maintain industry standard best practices in all aspects of digital cinematography. These include traditional and experimental film making, green screen compositing, texture extraction, and photogrammetry (a method of generating 3d models by utilizing data from video footage or sequence of images). Such innovations in student work and research are the hallmark of Carnegie R1 designated institutions and require periodic investments in technology such as this to maintain forward momentum and ensure instructional integrity.

For additional value, these camera systems will impact the entire population of ~300 students in the Department of Visual Arts by being employed for documentation of Senior Capstone work, lectures, and other departmental media needs with standardized and superior production quality. Students use these videos as part of their portfolios and the department employs them as media assets in our recruitment and retention efforts. Having these professional quality camera systems will allow us to produce professional quality video for the direct benefit of all in the department.

It is a great source of pride that New Media and Digital Art graduates currently enjoy real world success and fulfilling careers in a very competitive industry. They are currently employed in all facets of the multi-media industry as cinematographers, editors, colorists, VFX specialists, composers, camera technicians, directors of photography, production assistants, independent filmmakers, teachers, and producers. Graduates have gone on to work on big budget films such as *The Expendables*, *Clash of the Titans*, *Green Book* and *Oblivion* and television productions such as *Preacher*, Seasons 1, 2 & 3. They work as professional film editors and have contributed to national commercial campaigns for the likes of Ford and Buffalo Trace. At least two have had their work either short-listed or featured at Cannes Film Festival and one recently founded his own production company in Los Angeles. Others work for companies that specialize in immersive and interactive media. Recent graduates have also gone on to promising careers in academia currently working on MFA degrees in Film Studies at UC Berkeley, Multimedia Studies at University of Colorado Boulder, and in Film and Television at Columbia's prestigious School of the Arts. Every one of these student successes is a direct result of their access to professional industry standard equipment. The funding requested in this STEP grant will serve to provide the next generation of students with access to the same opportunities and is an investment in their future success.

Specifically, this grant will have significant and immediate impact on the following classes:

- VIAR 236 (Introduction to Digital Art)
- VIAR 335 (New Media & Digital Art I & II)
- VIAR 365 (Introduction to Animation)
- VIAR 366 (Intermediate Animation)
- VIAR 409 (Senior Capstone I)
- VIAR 410 (Senior Capstone II)
- VIAR 435 (New Media & Digital Art I, II & III)
- VIAR 465 (Advanced Animation)

In addition, the department's New Media and Digital Art classes are open to all students in the concentrations of Painting, Sculpture, Ceramics, Metals and Jewelry, Printmaking, Animation, Photography, Graphic Design and Art Education, as well as Computer Science and Informatics. As such, the equipment from this grant will directly impact 70+ students per year and have a contributing impact upon the entire ~300 student population of the Department of Visual Arts.

B. Projected Lifetime of Enhancement

The equipment requested in this grant will have projected service lives of 8-10+ years. The industry reputation, build quality, and industry support of these camera systems make them extremely valuable long-term investments which will serve many generations of students to come and future-proof our camera inventory. Personal experience using these same camera systems in extreme environments from atop the glaciers of Iceland to the deserts of the Sahara have proven them to be extremely robust, capable, and relatively maintenance free despite rigorous use.

Blackmagic Design URSA Mini Pro 12K (PL)	10+ years
Blackmagic Design Pocket Cinema Camera 6K Pro (Canon EF)	8+ years

C. Persons Responsible for Implementation, Installation, Maintenance

The requested equipment will be located in room 209I, Fletcher Hall in the Department of Visual Arts. This room is locked and is accessible during class times only. Professor Jamie Baldrige has extensive experience in operating and maintaining these camera systems and will oversee all equipment listed in this

grant with support provided by the College of the Arts Digital Media Resource Center.

D. Equipment Budget and Justification

Professional level camera systems such as these are expensive and not attainable through our limited lab fees or thinly stretched departmental budgets. They are certainly far beyond the grasp of the average student. This STEP grant has been written only after many years of pushing our current resources to their respective limits and exhausting their potential. In the end, it is my duty to serve my students' needs as capably as I can and to prepare them for the future with every resource at my disposal. The requested funding is a wise investment that will have a resounding and long-lasting impact while helping maintain this hard-won trajectory of impressive student successes.

1. Blackmagic Design URSA Mini Pro 12K (PL) Camera System

This UHD cinema camera system is necessary to increase camera inventory to meet population demands while meeting industry standards and supporting updated cinematography instruction in New Media and Digital Art. This 12K camera system will provide much needed quality improvements for filming in the green screen studio allowing for greater post-production VFX and compositing flexibility for creative and professional workflows. Though it will be primarily housed in the green screen studio, it will be available for limited field work when its superior resolution is justified and required. This industry standard 12K camera will give students hands-on experience operating a professional grade camera system as encountered on film and multi-media production sets across the industry.

Total Quantity: 1
Price: \$8,912.51*
Total: \$8,912.51*

* See itemization below

1a. Blackmagic Design URSA Mini Pro 12K (PL) Camera Body

This camera body is the nucleus of this camera system.

Quantity: 1
Price: \$5,516.64
Total: \$5,516.64

1b. Blackmagic Design URSA Mini Pro EF Mount

This lens adapter will forgo the need to purchase new PL mount lenses and allow us to utilize our current ecosystem of EF mount lenses.

Quantity: 1

Price: \$151.20

Total: \$151.20

1c. Blackmagic Design V-Mount Battery Plate for URSA

This item is necessary to mount the battery which powers the camera system.

Quantity: 1

Price: \$82.08

Total: \$82.08

1d. IndiPRO Tools Micro-Series V-Mount Li-Ion Battery (98Wh)

This item is necessary to power the camera system.

Quantity: 1

Price: \$178.20

Total: \$178.20

1e. Blackmagic Design URSA Mini Handgrip

This item is compatible with all versions of the URSA Mini and URSA Mini Pro cameras. It provides record start/stop, iris control, and focus control buttons in an ergonomic design and is necessary for using the camera without a tripod.

Quantity: 1

Price: \$171.94

Total: \$171.94

1f. Blackmagic Design URSA Viewfinder

This item is necessary to expand the useability of this camera in the field and to accommodate students with corrective vision needs.

Quantity: 1

Price: \$1,317.60

Total: \$1,317.60

1g. Kondor Camera Cage & Top Handle for URSA Mini

This item is necessary to expand the useability of this camera in the field and to accommodate audio recording microphones, external screen, and external hard drive accessories.

Quantity: 1
Price: \$206.25
Total: \$206.25

1h. SanDisk 256GB Extreme PRO CFast 2.0 Memory Card

This item is necessary to populate the memory card slots in the camera and are formatted specially for the robust needs of UHD video recording.

Quantity: 4
Price: \$208.94
Total: \$835.76

1i. Hard Case for Blackmagic Design URSA Mini Camera

This item is necessary to protect this camera during transport and storage.

Quantity: 1
Price: \$452.84
Total: \$452.84

2. Blackmagic Design Pocket Cinema Camera 6K Pro Camera System

This UHD cinema camera system is necessary to increase camera inventory to meet population needs while also maintaining industry standards and supporting updated cinematography instruction in New Media and Digital Art. This 6K camera system will provide massive quality improvements in a flexible and compact form factor for filming on location and on set. Students will utilize the camera for footage acquisition, background plate capture, texture extraction, photogrammetry surveys, and immersive VR content development. These industry standard 6K cameras will provide students hands-on experience operating a professional grade camera system as encountered in independent and professional film and multi-media productions across the industry.

Total Quantity: 2
Price: \$4,386.93*
Total: \$8,773.86*

* See itemization below

2a. Blackmagic Design Pocket Cinema Camera 6K Pro (Canon EF)

This camera body is the nucleus of this camera system and uses the same lens mounts as our existing lens ecosystem.

Quantity: 2

Price: \$2,190.24

Total: \$4,380.48

2b. Canon EF 24-105mm f/4L IS II USM Lens

This lens is an advanced one-lens solution which fits all requested camera mounts as well as those currently in inventory. Maintaining this lens ecosystem provides redundancy and flexibility in equipment usage maintenance, and repair.

Quantity: 2

Price: \$1,292.51

Total: \$2,585.02

2c. Blackmagic Design Pocket Cinema Camera Battery Grip for 6K Pro

This item is necessary to extend filming times from 30 minutes to ~3 hours by providing more battery capacity. This will create more useability in the field where students will not have access to power outlets for charging.

Quantity: 2

Price: \$128.74

Total: \$257.48

2d. Blackmagic Design 3500mAh Li-Ion NP-F570 Compatible Battery

This item is necessary to populate the requested battery grip for extending filming times from 30 minutes to ~3 hours in the field.

Quantity: 4

Price: \$43.03

Total: \$172.12

2e. Watson Duo LCD Charger for L & M Series Rechargeable Batteries

This item is necessary to recharge the requested batteries.

Quantity: 2

Price: \$59.25

Total: \$118.50

2f. SanDisk 256GB Extreme PRO UHS-II SDXC Memory Card

This item is necessary to populate the memory card slots in the camera and are formatted specially for the robust needs of UHD video recording.

Quantity: 2

Price: \$278.59

Total: \$557.18

2g. SmallRig Handheld Kit for Blackmagic Pocket Cinema Camera 6K Pro

This item is necessary to make the entire camera system suitable for handheld use without need of support equipment such as a tripod. The kit also includes mounting points for necessary audio microphones and external monitors.

Quantity: 2

Price: \$220.30

Total: \$440.60

2h. Hard Case for Blackmagic Design Pocket Cinema Camera 6K Pro

This item is necessary to protect this camera during transport and storage.

Quantity: 2

Price: \$131.24

Total: \$262.48

Quantity	Item Description	Cost Per Unit	Total Cost
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Equipment:

1	Blackmagic Design URSA Mini Pro 12K (PL) Camera Body	\$5,516.64	\$5,516.64
1	Blackmagic Design URSA Mini Pro EF Mount	\$151.20	\$151.20
1	Blackmagic Design V-Mount Battery Plate for URSA	\$82.08	\$82.08
1	IndiPRO Tools Micro-Series V-Mount Li-Ion Battery (98Wh)	\$178.20	\$178.20
1	Blackmagic Design URSA Mini Handgrip	\$171.94	\$171.94
1	Blackmagic Design URSA Viewfinder	\$1,317.60	\$1,317.60
1	Kondor Camera Cage & Top Handle for URSA Mini	\$206.25	\$206.25
4	SanDisk 256GB Extreme PRO CFast 2.0 Memory Card	\$208.94	\$835.76
1	Jason Cases Hard Case with Custom Foam for Blackmagic Design URSA Mini Camera	\$452.84	\$452.84
2	Blackmagic Design Pocket Cinema Camera 6K Pro (Canon EF)	\$2,190.24	\$4,380.48
2	Canon EF 24-105mm f/4L IS II USM Lens	\$1,292.51	\$2,585.02
2	Blackmagic Design Pocket Cinema Camera Battery Grip for 6K Pro	\$128.74	\$257.48
4	Blackmagic Design 3500mAh Li-Ion NP-F570 Compatible Battery	\$43.03	\$172.12
2	Watson Duo LCD Charger for L & M Series Rechargeable Batteries	\$59.25	\$118.50
2	SanDisk 256GB Extreme PRO UHS-II SDXC Memory Card	\$278.59	\$557.18
2	SmallRig Handheld Kit for Blackmagic Pocket Cinema Camera 6K Pro	\$220.30	\$440.60
2	Hard Case for Blackmagic Design Pocket Cinema Camera 6K Pro	\$131.24	\$262.48

Personnel

0	N/A	\$0	\$0
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Shipping

0	N/A	\$0	\$0
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Grand Total (Requested Funds): **\$17,686.37**

Previous STEP Funding:

Professor Jamie Baldrige has received seven (7) previous STEP grants in support of the modernization of the Photography, Animation, New Media and Digital Art concentrations, and the Visual Art department's Digifab Lab. All grants were completed and met all the outlined goals and objectives with the majority of equipment still in use beyond their projected lifespans.