

## Council Approval

Note: This form is intended to track the progress of a proposal (whether from Academic Affairs or Health Sciences) through the Undergraduate and Graduate Councils.

Proposal: BS in Games

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This proposal needs to go through:

Undergraduate Council	<input checked="" type="checkbox"/>
Graduate Council	<input type="checkbox"/>
Both Approvals	<input type="checkbox"/>
Grad Approval/Undergrad Notification	<input type="checkbox"/>

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This proposal has been approved by:

Chair of Undergraduate Council



Date: 11.22.16

Chair of Graduate Council

\_\_\_\_\_

Date: \_\_\_\_\_

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Once the appropriate signature(s) have been obtained, please forward this completed form to the Office of the Senior Vice President for Academic Affairs. *(NOTE: The SVP-AA is the Chief Academic Officer for the University of Utah and reports to the Board of Regents in this capacity. When necessary, the CAO will get a signature from the SVP-HSC.)*

Chief Academic Officer



Date: 12-2-16

Once the Chief Academic Officer's signature has been obtained, this approval document will be forwarded to the **Office of the Academic Senate**.

**Utah System of Higher Education  
New Academic Program Proposal**

**Institution Submitting Request:** University of Utah  
**Proposed Program Title:** Bachelor of Science in Games  
**Sponsoring School, College, or Division:** College of Engineering  
**Sponsoring Academic Department(s) or Unit(s):** The Entertainment Arts and Engineering Program  
**Classification of Instructional Program Code:** 11.3899  
**Min/Max Credit Hours Required to Earn Degree:** 122 / 122  
**Proposed Beginning Term:** Fall 2017  
**Institutional Board of Trustees' Approval Date:**

**Program Type (check all that apply):**

(AAS)	Associate of Applied Science Degree
(AA)	Associate of Arts Degree
(AS)	Associate of Science Degree
	Specialized Associate Degree (specify award type <sup>3</sup> : )
	Other (specify award type <sup>3</sup> : )
(BA)	Bachelor of Arts Degree
X (BS)	Bachelor of Science Degree
	Professional Bachelor Degree (specify award type <sup>3</sup> : )
	Other (specify award type <sup>3</sup> : )
(MA)	Master of Arts Degree
(MS)	Master of Science Degree
	Professional Master Degree (specify award type <sup>3</sup> : )
	Other (specify award type <sup>3</sup> : )
	Doctoral Degree (specify award type <sup>3</sup> : )
	K-12 School Personnel Program

**Chief Academic Officer (or Designee) Signature:**

I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

\_\_\_\_\_ **Date:** \_\_\_\_\_

☐ I understand that checking this box constitutes my legal signature.

## **Utah System of Higher Education Program Description**

### **Section I: The Request**

**University of Utah requests approval to offer the following Baccalaureate degree(s): Bachelor of Science in Games, effective Fall 2017. This program was approved by the Institutional Board of Trustees on XX.**

### **Section II: Program Proposal**

#### **Program Description**

The Entertainment Arts and Engineering (EAE) Interdisciplinary Teaching Program, with support from the College of Engineering, requests approval for a new undergraduate Bachelor of Science in Games degree.

Ten years ago, faculty from the School of Computing and the Division of Film Studies formed the Entertainment Arts & Engineering program to address a growing student population that wanted to study games and game making. Students studying computer science and film came together in a handful of shared courses to learn the myriad facets of entertainment technology, as well as gain practice with new technical skills inside a rigorous academic experience. Over the intervening decade the EAE program and its course offerings have grown steadily, and has been successful by any measure (e.g. student interest, student placement, internationally recognized rankings, etc.). During this period, the professional and scholarly study of Games has become firmly established as a discrete academic discipline, and is now supported by a large body of knowledge, theories, research and research methodologies and is being taught at numerous Universities around the world (see Similar Programs section below). This is the driving impetus for the degree request.

The B.S. in Games (BSG) degree is thus intended specifically for students who aspire to hold careers within the professional games industry or a related field, such as simulation, edutainment, or visualization, and is designed to prepare our students to compete in an increasingly complex industry. The BSG prepares students with skills applicable to the development of entertainment software, games-based learning environments for K-12 students, professional task-training tools, serious games for health, and scientific collaboration or other contexts addressing compelling societal needs. This degree provides a technical grounding in mathematics and computational skills, core knowledge in the design and production of digital playable experiences, and specialization options that prepare students for technical supervision, tools development and overall game design.

The BSG is intended to attract full-time students who want to deeply engage in this unique discipline, while benefiting from the cross-disciplinary methodology integral to the EAE program. More specific information on the reasons and purposes for establishing a Games major can be found in the Program Rationale section below.

#### **Consistency with Institutional Mission**

The proposed Bachelor of Science in Games (BSG) directly supports the University of Utah's Institutional Mission by creating, innovating, and sharing knowledge in this new discipline. The BSG is designed to sustain the University's highest standard of professional and scholarly practice while also emphasizing the rigorous multi-disciplinary work that is an integral part of the academic field and industry. This degree is also consistent with the broader mission of the University of Utah and provides opportunities for students to participate in "deeply engaged learning opportunities," as well as the commitment to prepare students to be leaders in the field. This proposal will also allow students to excel by

formally articulating a plan of study for the numerous students currently choosing a Bachelor of University Studies (BUS) (see Program Rationale below) who are currently unable to access the formal support structures and systems a codified degree program affords. And finally, the BSG will attract a new group of students who may have turned to for-profit institutions who are focused solely on game making.

### **Section III: Needs Assessment**

#### **Program Rationale**

In 2007, faculty from the School of Computing and the Arts Technology Certificate Program in the College of Fine Arts (with support from the Division of Film Studies) began the process of creating game development emphases. This was the beginning of the Entertainment Arts & Engineering program, and today this affiliation still continues. Students pursuing an EAE emphasis from both disciplines take the same core game making classes where they develop and practice their own chosen skillsets. This cross-disciplinary collaboration culminates in a yearlong capstone course where students work in large teams creating a complex videogame project.

However, from the very beginning we engaged with students who didn't fit discretely into either of these two disciplines. These students wanted to study the game creation process directly, including many that wished to focus on the technical intersection between programming and production art and were unable to do so given the structured offerings at the University of Utah at the time. The number of students wishing to engage deeply in this new discipline is steadily growing, but they lack the infrastructure, advising, and support that is provided by a formal degree program.

Working with the Office of Undergraduate Studies, and under the supervision of EAE faculty, some of these students began to utilize the Bachelor of University Studies (BUS) degree to meet their academic goals. So far, 7 BUS students have graduated with this focus, and 100% of them have either found jobs in the games industry or have moved on to graduate school. Currently, the majority of BUS students on campus are pursuing this game-focused degree, and at least 10 more are in the process of filing paperwork for the BUS.

With these students in mind, we began the process of creating a degree using the vetted BUS programs of study, our faculty's professional and academic experience, as well as the advice obtained by consulting with our industry partners. In addition, we examined our existing classes to see where we could expand and improve content, as well as formulate a small number of new courses that would meet the needs of these students. Our teaching and curriculum design focuses on using a mixture of the critical theory of games and rigorous game production practice with these specific areas of study:

- Cooperative Learning, which includes concepts such as positive interdependence, individual accountability, and group processing.
- Problem-Based Learning, which includes problem definition, hypotheses formation, research and analysis, and critical reflection.
- Experimentation with iteration, innovation, and invention.
- Technical knowledge of current industry processes and skills.

The proposed curriculum consists of 7 required courses, 11 EAE classes (chosen from track specific and elective offerings), and then an additional four allied courses for a total of 70 credit hours. Coursework focuses on creating playable digital artifacts, teamwork and problem solving, critical and creative thinking, reflection and intentionality, and building excellent communication skills. All of these are practiced extensively with progressively complex challenges. Through the core coursework students develop a portfolio of work, as well as focus on the industry standard practices and methodologies necessary for careers in the interactive entertainment field. And finally, students take a yearlong senior project course where they will demonstrate the synthesis of their general and specific knowledge to create and publish a complex and substantial game project.

This degree will benefit the University of Utah and the USHE by attracting students to an area of study that is important to the roughly 24 billion dollar annual interactive entertainment industry (Entertainment Software Association 2016 Essential

Facts), has never been represented at the University before, and is only tangentially represented in the state. Currently, our graduate-level games students work with a variety of on campus scholars in a range of departments and units such as Psychology, School of Nursing, Population Health Sciences, the Center for Medical Innovation, the Utah Center for Excellence in ELSI Research, the Lassonde Entrepreneur Institute, and the Natural History Museum of Utah. This major will allow us to better extend these kinds of research and collaborative opportunities to our undergraduate students. The major will also allow us to create and strengthen relationships with local industry by providing graduates who can fill a growing need.

### **Labor Market Demand**

The game design and development market is growing fast in the United States, and particularly in Utah, where we have seen a jump in employment and revenue. It is anticipated that the BSG graduate will be sought after not only by game development companies, but also more conventional market sectors such as healthcare, defense, national security and K12 education as they seek to create new ways to teach, learn, research, and implement innovative ideas. A critical component of the EAE program is honing a student's ability to work with people from other disciplines. This creates graduates that can enter the workforce with valuable communication skills as well as technical proficiency, and are ready to function immediately on a team. Local and multinational companies including Electronic Arts (EA), Warner Bros., Intel, and Microsoft already actively recruit EAE's graduate students and, based on the strong letters of support from industry collaborators we have included in this request, we expect this to be the same for the BSG students. Additionally, we have created an industry advisory board of leading members of the videogame business and they have indicated that students who graduate with this degree will be sought after because they will have the specific skills employers desire. This idea is also borne out by the Bureau of Labor Statistics information in their pamphlets "Stem 101: Intro to tomorrow" (<http://www.bls.gov/careeroutlook/2014/spring/art01.pdf>) and "Work for Play: Careers in Videogame Development" (<http://www.bls.gov/careeroutlook/2011/fall/art01.pdf>).

These factors will also contribute to Governor Herbert's goal for 66% of Utahns to hold postsecondary certificates or degrees by 2020, specifically by expanding the private industry/public education partnerships in a designated Utah Cluster area.

### **Student Demand**

Based on proven demand for comparable degrees at other institutions, as well as historical demand for the EAE-focused BUS degrees, we anticipate steady interest in the new BSG program. First, we believe this degree will appeal strongly to students wanting to pursue an undergraduate education in games versus attending one of the various unaccredited for-profit schools who have game specific degrees. Second, since 2013, the BUS program has graduated seven students and currently there are 26 approved BUS students pursuing the EAE focused BUS degree. Additionally, we anticipate 10 students will request approval for the EAE-focused BUS degree in the next few months. If the BSG degree is approved, we believe that most of these students will switch over and a steady number will choose the BSG option in the future. Appendix D lists our estimates of the growth of this program.

EAE currently holds weekly information sessions for students interested in attending the University of Utah as undergraduate or graduate students in games. Several hundred students and their families visit each year from Utah and the rest of the United States. For those students seeking an undergraduate degree they will now have three choices for study: the game emphasis in Computer Science; the game emphasis in Film and Media Arts; and finally the proposed degree in Games. We believe that by having a third option will allow us to attract a higher percentage of these potential incoming students.

### **Similar Programs**

Currently, there isn't a Bachelor of Science Degree in Games in Utah or the Intermountain Region; although there is some slight overlap with other digital media focused programs. For example, Utah Valley University's Department of Digital Media includes an emphasis in Animation and Game Development in their degree, although they focus on creating animators who also understand the games pipeline. The BSG degree focuses directly on game creation.

Weber State University has a game development certificate for BS Computer Science students. This is somewhat similar to the EAE emphasis for the BS Computer Science degree, except it only includes roughly a third of the required classes that the EAE emphasis requires and does not include the interdisciplinary focus of the EAE emphasis.

BYU has an Animation BFA and their Computer Science Department also has an Animation Emphasis in their BS in Computer Science degree. Again, there are some similarities, but significant differences in what we are proposing. One additional point, we believe this new degree will complement both of our existing emphases and we do not anticipate any change to either at this time.

Internationally, there are many programs that offer some type of undergraduate education in games. These vary from a few classes in game development to entire degrees. The top 25 ranked games programs in the world according to the recently released 2016 Princeton Review are:

1. University of Utah (Salt Lake City, UT)
2. University of Southern California (Los Angeles, CA)
3. Rochester Institute of Technology (Rochester, NY)
4. DigiPen Institute of Technology (Redmond, WA)
5. Becker College (Worcester, MA)
6. The Art Institute of Vancouver (Vancouver, British Columbia)
7. Hampshire College (Amherst, MA)
8. Michigan State University (East Lansing, MI)
9. Drexel University (Philadelphia, PA)
10. New York University (Brooklyn, NY)
11. The University of Texas at Dallas (Richardson, TX)
12. Northeastern University (Boston, MA)
13. Champlain College (Burlington, VT)
14. Vancouver Film School (Vancouver, British Columbia)
15. Bradley University (Peoria, IL)
16. Ferris State University (Grand Rapids, MI)
17. Lawrence Technological University (Southfield, MI)
18. Rensselaer Polytechnic Institute (Troy, NY)
19. Cogswell College (San Jose, CA)
20. Shawnee State University (Portsmouth, OH)
21. University of Wisconsin-Stout (Menomonie, WI)
22. Abertay University (Dundee, Scotland)
23. University of California-Santa Cruz (Santa Cruz, CA)
24. Savannah College of Art and Design (Savannah, GA)
25. Massachusetts Institute of Technology (Cambridge, MA)

### **Collaboration with and Impact on Other USHE Institutions**

The proposed BSG degree will be inside the University of Utah's designated service area. It is not anticipated that the new program will have any adverse impact on existing programs in the USHE system. As we described above, the closest program within the USHE system is the Digital Media degree at UVU, which has some overlapping coursework, but our student's foci are different. Given the differences in focus of the new program, it is anticipated that students graduating will fill positions that are different from those filled by graduates of the UVU program. Additionally, we have a collegial relationship between the faculty at the University of Utah, UVU, and BYU and we will continue to foster this relationship to ensure minimal conflict.

### **External Review and Accreditation**

EAE currently has a number of practicing game industry professionals teaching one or two classes a year as Associate Instructors. We have consulted with them to discuss the design of this proposed degree.

Our current Associate Instructor list includes [number of years of experience in the game industry is listed in brackets]:

- Rory Aguilar: Gameplay Programmer at Eat Sleep Play [10 years]
- Matt Anderson: Lead Designer at React Games [13 years]
- Joe Barnes: Principal Programmer at Epic Games [24 years]
- Joe Bourrie: Project Lead/Game Designer at RED, former Lead Designer at EA Salt Lake [10 years]
- Scott Campbell: President and CEO at Eat Sleep Play [20+ years]
- Robin Conover: Owner of Animation Training Academy and LightStone Animation, former Animation Artist at Universal Cartoon Studios [19 years]
- Jon Dean: CEO at XacFaq, former VP at EA [Star fox... 33 years and over 250 titles!]
- Ian Gilmore: Sr. Technical Artist at Disney Interactive [15 years]
- Jamie King: Soft. Eng. at Datastax, Former Chair of Software Development and Games at Neumont University [13 years]
- Joe Olson: Art Director at Disney Interactive [15 years]
- John-Paul Ownby: Game Engine Architect at Disney Interactive [10+ years]
- Jeff Peters: SVP at WW Productions, former Studio Director/EP at EA [25+ years]
- Nathan Riddle: Animation Lead at WildWorks (formally known as Smart Bomb) [11 years]
- Shane Smit: Programmer at MX [17 years]
- Ryan Wood: Art Director at Disney Interactive [20 years]

As a relatively new field, there is no accreditation organization for this field of study.

## **Section IV: Program Details**

### **Graduation Standards and Number of Credits**

All courses taken to satisfy the BSG major requirements must be taken for a letter grade and must be passed with a "C" or better. To remain in good standing and graduate, a student must maintain a cumulative GPA at the University of 2.75 or higher while also maintaining a GPA of 2.75 or higher in EAE coursework.

### **Admission Requirements**

Students who are interested in the proposed degree program will first be required to take a series of prerequisite courses. The courses are structured to provide an understanding of game principles and build basic skills. These prerequisites comprise 25 credit hours of the program.

Additionally, the students will complete their studies with an intensive two-semester capstone experience.

### **Curriculum and Degree Map**

Please see tables in Appendix A for a list of courses and Appendix B for the Degree Map.

## **Section V: Institution, Faculty, and Staff Support**

### **Institutional Readiness**

The Entertainment Arts and Engineering program is a Qualified Interdisciplinary Teaching Program, approved in May 2013 under University Rule 6-310. EAE currently offers the Master of Entertainment Arts and Engineering degree and delivers EAE designated classes for the EAE undergraduate emphases in the School of Computing and the Department of Film and Media Arts. EAE also delivers dozens of other undergraduate classes that students use as electives. We also have recently collaborated with the David Eccles School of Business to create a joint MBA/MEAE degree and are accepting students for the first time for Fall 2016 admission. The faculty discussed the bachelor's degree in a faculty meeting on 1/13/2016 and a unanimous vote (6 faculty in attendance, one on sabbatical) was for going forward with the new program.

No new organizational structure is required for the delivery of the proposed degree and there will be no negative impact in the delivery of undergraduate education.

### **Faculty**

The Entertainment Arts & Engineering faculty are uniquely qualified to deliver the proposed B.S. in Games, and their combined academic and professional experience is significant. The 10 core faculty include seven PhDs and three MFAs, and a deep pool of associate instructors (primarily teaching in the master's program) have either a bachelor's or master's degree. Additionally, many of these instructors and full-time faculty have professional games background for a combined total of more than 200 years of industry experience brought to EAE's classrooms.

Our faculty include:

- Roger Altizer (joint Associate Professor with Population Health Sciences); Ph.D. Communication; game journalism and game development professional experience; academic foci: game design, game development process, and game production.
- Ryan Bown (Assistant Professor, Lecturer); MFA Game Arts; game development professional experience; academic focus: game art production.
- Ashley Brown (Assistant Professor, Lecturer); Ph.D. Social and Behavioral Science; no professional experience; academic foci: game user experience, game user research, sex and games.
- Craig Caldwell (joint USTAR Professor with Film and Media Arts); Ph.D. Art and Design; game development professional experience; academic foci: game production art and game narrative.
- Robert Kessler (joint Professor with School of Computing); Ph.D. Computer Science; software development and software engineering professional experience; academic foci: game development process, game engineering.
- Gabriel Olson (Assistant Professor, Lecturer); MFA Game Arts; game development professional experience; academic foci: game design, game production arts.
- Brian Salisbury (Associate Professor, Lecturer); MFA Game Arts; game development professional experience; academic focus: game production arts.
- Mark van Langeveld (Associate Professor, Lecturer); Ph.D. Computing; game development professional experience; academic foci: game engineering; technical arts.
- R. Michael Young (joint Professor with School of Computing); Ph.D. Computer Science; software development and game development professional experience; academic foci: computational narrative, game AI.
- Jose Zagal (Associate Professor, Lecturer); Ph.D. Computer Science; software development professional experience; academic foci: game design, game ethics, game studies, game education.



**Staff**

Current EAE staff provides administrative coverage, career counseling, and graduate advising for students pursuing the Master's of Entertainment Arts & Engineering. We plan to hire a dedicated undergraduate advisor to support the students in our proposed degree. EAE currently has sufficient financial resources to handle this hire.

**Student Advisement**

Students will be advised by the new undergraduate academic advisor, and will expect to see each student at minimum of once per year to ensure smooth progress toward graduation. This role will be critical given the anticipated "transfer" of BUS students into the new major, and the advisor may see this initial group of students more frequently. A new Director of Undergraduate Studies service position will also be created and a faculty member will be appointed to this role. Additionally, our career counselor is already helping both EAE graduate and EAE emphasizes undergraduate students find internships and employment. They will continue that work with the new BSG students as they explore professional opportunities.

**Library and Information Resources**

EAE has been working closely with the library to create a shared resource of games (and in the future game consoles) that students will be able to check out for study. The library also offers many important online resources (such as access to the Game Developer Conference Vault), which students in the proposed degree will frequently access. Finally, the library offers a large number of computing resources that our students will utilize. The library is an important partner in our delivery of this new degree.

**Projected Enrollment and Finance**

Please see Appendix D for projected enrollments and information on related operating expenses and funding sources.

## **Section VI: Program Evaluation**

**Program Assessment**

The Entertainment Arts & Engineering faculty have outlined the following goals for the proposed B.S. in Games degree:

- Students will acquire a breadth of knowledge in games and interactive entertainment through completion of core coursework.
  - Assessment of this goal will occur through course evaluations, exit surveys and personal interviews with a small subset of graduating students.
- Students will be able to demonstrate a professional level competency in a core area of games after successful completion of specialized coursework.
  - Assessment will be based on the final portfolio from the Senior Project II course.
- Students will possess the ability to combine experience with knowledge to develop or utilize methods to collaboratively create videogames.
  - This outcome can be measured through the final project in the Senior Project series, where students are required to publish a completed game project.
- B.S. in Games graduates will be prepared to thrive in industry or graduate level academic settings.
  - The first goal (preparation) will be assessed through graduate surveys conducted within the first year after graduation, and employer surveys where student's placement is known. Alumni will also be surveyed approx. 3-5 years after placement to ensure graduates are thriving in the field.

To ensure these outcomes, the Entertainment Arts & Engineering Program faculty will meet at the end of each spring semester to evaluate the degree. Evaluative information will consist of student portfolios, student exit interview data, and aggregate student feedback from course evaluations. This information will allow assessment opportunities to determine if and how the degree should be improved to better meet student needs. In the fifth year, the EAE Program will review how students with this major have fared. Assessment will be based on student grade point averages when they graduated, and statistical information related to job placement.

### **Student Standards of Performance**

The standards and competencies for the BS in Games curriculum were designed utilizing current game development and game studies scholarship. Specific game theories (e.g. play-centric design), technical skills, and professional practices are taught throughout the core and track-focused coursework. These technical skills, and core competencies are demonstrated during the final year in a two semester Senior Project course where students create a large game project as part of a 10-15 person team. Both the formative and summative assessments for BSG students utilize will ensure the following:

- Students will be able to identify, analyze, and hypothesize through legal and ethical challenges in the play, design, and production of games.
  - Assessment of this outcome will be carried out through completion of coursework in the required Ethics in Games course, as well as through specific exit interview questions at the conclusion of the Senior Project course.
- Students will be able to effectively collaborate on multidisciplinary game design and development teams.
  - Assessment of this outcome will be through evaluation of data collected every second sprint in the Senior Project series where each student evaluates their teammates and themselves. Data summarized for overview of effective team membership.
- Students will be able to communicate technical and design concepts through writing, speech, and formal presentations.
  - Assessment will be through review of the Senior Project assignments (which include creation, documentation, and presentation of game pitch concepts).
- Students will be able to apply technical knowledge of specific technologies, math, programming, and game design to the field of interactive game development.
  - Assessment will be through annual review of postmortem documents from Senior Capstone II course.
- Student will identify and solve production pipeline issues related to the game development process.
  - Assessment of this outcome will be carried out through completion of coursework and publishing of their final project in the Senior Project series of courses.

## Appendix A: Program Curriculum

Course Number	NEW Course	Course Title	Credit Hours
General Education Courses (list specific courses if recommended for this program on Degree Map)			
COMM 2110		Intro to Interpersonal Communication (BF)	3
MATH 1210		Calculus I (QR)	4
ENGL 2090		Videogames and Storytelling (HF)	3
WRTG 4030		Visual Rhetoric (CW; QB)	3
GNDR 1100		Gender & Social Change (DV,BF)	3
DES 2615		Intro to Design Thinking (FF)	3
		Additional General Education Courses	33-37
<b>General Education Credit Hour Sub-Total</b>			<b>48-52</b>
Required Courses			
EAE 1010	X	Survey of Game Technologies	4
CS 1XXX	X*	Computer Programming 1	4
CS 2XXX	X*	Computer Programming 2 (CP1 is a pre-req)	4
EAE 3010	X	Digital Content Creation (CP1 is a pre-req)	4
EAE 3020		Ethics in Games	3
EAE 4500		Senior Project I (CP1 and Digital Content are pre-reqs)	3
EAE 4510		Senior Project II (Senior Project I is a pre-req)	3
* This is part of a new sequence of courses being created by CS to replace the current computer science classes EAE students take.			
<b>Required Course Credit Hour Sub-Total</b>			<b>25</b>
Elective Courses			
Please see Program Curriculum Narrative section for elective information			
<b>Elective Credit Hour Sub-Total</b>			<b>33</b>
<b>Allied Hour Sub-Total</b>			<b>12</b>
<b>Core Curriculum Credit Hour Sub-Total</b>			<b>70</b>

### Program Curriculum Narrative

B.S. in Games students will complete the 7 courses listed above for a total of 25 required hours and then an additional 33 hours from EAE's course offerings. The majority of these courses must be upper division classes. Students will also take four allied courses across a minimum of two areas of interest (see list below) for a total of 70 hours for the degree.

**Example EAE courses:**

EAE 1350 – Intro to Game Design  
 EAE 2500 – Paper Prototyping  
 EAE 2600 – Game Pipeline in the Unreal Engine  
 EAE 2700 – Experimental Games  
 EAE 3350 – Advanced Game Design  
 EAE 3600 – 3D Modeling  
 EAE 3605 – Advanced 3D Character Production  
 EAE 3620 – Environmental Art for Games  
 EAE 3630 – Hard Surface Modeling  
 EAE 3640 – Digital Figure Sculpting  
 EAE 3650 – Motion Capture, Scanning, and Rigging  
 EAE 3660 – Interactive Machinima

EAE 3670 – Texturing for 3D  
 EAE 3680 – Digital Painting  
 EAE 3690 – Concept Art for Games  
 EAE 3700 – Assets Pipeline  
 EAE 3730 – Storycrafting for Games  
 EAE 4125 – Advanced Environmental Art for Games  
 EAE 4130 – Advanced Hard Surface Modeling  
 EAE 4170 – Advanced Texturing for 3D  
 EAE 4900-005 – Programming Sound Effects & Music  
 EAE 4900-017 – Animation for Games  
 EAE 4900-021 – Mobile Games Design

**Example Allied Hours:**

ANTH 2019 – What Makes us Human?  
 ANTH 2040 – Anthropology of Humor  
 ARCH 1615 – Introduction to Architecture  
 ARCH 1630 – Architectural Graphics  
 ART 1040 – Non-major Basic Design  
 ART 3600 – History of Graphic Design  
 ARTH 1010 – Masterpieces of World Art  
 ARTH 2500 – Intro to the History of Art and Visual Culture  
 BUS 2320 – Purposeful Leadership  
 BUS 2700 – Smart Decisions  
 CLCV 4550 – Ancient Myth and Religion  
 COMM 3020 – Media & Pop Culture  
 COMM 3040 – Communication and Relationships  
 CS 2050 – Making Noise: Sound Art and Digital Media  
 CS 3500 – Software Practice  
 DES 1630 – Rapid Visualization  
 DES 1631 – Digital Communication  
 DES 2615 – Intro to Design Thinking  
 ECON 2010 – Principles of Microeconomics  
 ECON 3150 – The Economics of Sex, Drugs, and Crime  
 ENGL 2090 – Videogames and Storytelling  
 ENTP 1020 – Entrepreneurship and the Startup Methods

ENTP 2010 – Entrepreneurial Marketing  
 FILM 3500 – Film Production I  
 FILM 3600 – Storyboarding/Visual Storytelling  
 FILM 3710 – Traditional Game Development  
 FILM 3720 – Alternative Game Development  
 GNDR 1100 – Gender and Social Change  
 GNDR 2250 – Popular Film & Television: Gender & Sexuality  
 HIST 2500 – The Olympic Games: Ancient and Modern  
 HIST 3100 – The Historian's Craft  
 MGT 3000 – Principles of Management  
 MKTG 2310 – Digital and Internet Marketing  
 PHIL 1001 – Philosophy & Ethical Dilemmas in Cntmp World  
 PHIL 4540 – Engineering, Ethics, and Society  
 PHYS 1010 – Elementary Physics: The Way Things Work  
 PHYS 3330 – Physics of Audio and Video (Analog to Digital)  
 PSY 2125 – Everyday Decision Making  
 PSY 2410 – Eat, Work, Play & Sleep: Psych in Everyday Life  
 THEA 1033 – Acting I for Non-majors  
 THEA 1050 – Intro to Visual Art of Theatre  
 WRTG 3018 – Writing Popular Culture  
 WRTG 3040 – Digital Storytelling  
 WRTG 4030 – Visual Rhetoric: Word/Image/Argument

**Sample Program of Study for Student Specializing in Game Design****EAE Hours:**

EAE 1350 – Intro to Game Design  
 EAE 2500 – Paper Prototyping  
 EAE 2600 – Game Pipeline in the Unreal Engine  
 EAE 2700 – Experimental Games  
 EAE 3600 – 3D Modeling  
 EAE 3660 – Interactive Machinima  
 EAE 3350 – Advanced Game Design  
 EAE 3730 – Storycrafting for Games

EAE 4900 – Mobile Games Design  
 Two EAE upper division electives

**Allied Hours:**

DES 1630 – Rapid Visualization  
 DES 1631 – Digital Communication  
 DES 4810 – Interaction Design  
 Choose 1: BUS 2700 – Smart Decisions or  
 PSY 2125 – Everyday Decision Making

## Appendix B: Degree Map

First Year Fall	Cr. Hr.	First Year Spring	Cr. Hr.
CS 1XXX (CP1)	4	CS 1XXX (CP2)	4
DES 2615 (FF)	3	Allied Course	3
EAE 1010	4	WRTG 2010	4
MATH 1210 - Calc 1 (QR)	4	General Ed (e.g. FF)	4
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>
Second Year Fall	Cr. Hr.	Second Year Spring	Cr. Hr.
EAE Course	3	Allied Course	3
EAE Course	3	EAE 3010	4
Allied Course	3	EAE Course	3
General Ed (e.g. QB)	3	Gen Ed (e.g. SF or AS)	3
American Institutions	3	GNDR 1100 (DV, BF)	3
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>16</b>
Third Year Fall	Cr. Hr.	Third Year Spring	Cr. Hr.
EAE Course	3	EAE Course	3
EAE Course	3	EAE Course	3
EAE 3020	3	WRTG 4030 (CW, QB)	3
COMM 2110 (BF)	3	ENGL 2090 (HF)	3
General Ed (e.g. SF)	3	General Ed (e.g. BF)	3
<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15</b>
Fourth Year Fall	Cr. Hr.	Fourth Year Spring	Cr. Hr.
EAE 4500	3	EAE 4510	3
EAE Course	3	General Ed (e.g. QI)	3
EAE Course	3	EAE Course	3
General Ed (e.g. QI)	4	EAE Course	3
General Ed (e.g. IR)	3	EAE Course	3
<b>Total</b>	<b>16</b>	<b>Total</b>	<b>15</b>

## Appendix C: Current and New Faculty / Staff Information

### Part I. Department Faculty / Staff

	# Tenured	# Tenure -Track	# Non - Tenure Track
Faculty: Full Time with Doctorate	2	1	3
Faculty: Part Time with Doctorate	1		
Faculty: Full Time with Masters			3
Faculty: Part Time with Masters			
Faculty: Full Time with Baccalaureate			
Faculty: Part Time with Baccalaureate			
Teaching / Graduate Assistants			15
Staff: Full Time			3
Staff: Part Time			3

### Part II. Proposed Program Faculty Profiles

	First Name	Last Name	Tenure (T) / Tenure Track (TT) /	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program	If "Other," describe
Full Time Faculty							
	Robert	Kessler	T	PhD	University of Utah	50%	
	Mark	van Langeveld	Other	PhD	University of Utah	90%	Lecturing
	Brian	Salisbury	Other	MFA	University of Central Florida	50%	Lecturing
	Ryan	Bown	Other	MFA	University of Utah	50%	Lecturing
	Ashley	Brown	Other	PhD	University of Manchester	25%	Lecturing
	Gabriel	Olson	Other	MFA	University of Utah	50%	Lecturing
	R. Michael	Young	T	PhD	Stanford University	10%	
	Roger	Altizer	TT	PhD	University of Utah	50%	
	Jose	Zagal	Other	PhD	Georgia Institute of Tech	25%	Lecturing
Part Time Faculty							
	Craig	Caldwell	T	PhD	The Ohio State University	25%	

**Part III: New Faculty / Staff Projections for Proposed Program**

	# Tenured	# Tenure Track	# Non Tenur	Academic or Industry Credentials	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate					
Faculty: Part Time with Doctorate					

	# Tenured	# Tenure Track	# Non Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time			1		100%
Staff: Part Time					

## Appendix D: Projected Program Participation and Finance

### Part I.

Three Year Projection: Program Participation and Department Budget						
	Year Preceding Implementation	New Program				
		Year 1	Year 2	Year 3	Year 4	Year 5
<b>Student Data</b>						
# of Majors in Department	0	20	40	70	120	160
# of Majors in Proposed Program(s)		20	40	70	120	160
# of Graduates from Department		0	10	15	20	30
# Graduates in New Program(s)		0	10	15	20	30
<b>Department Financial Data</b>						
		Department Budget				
		Year 1	Year 2	Year 3		
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in Appendix C, "Faculty Projections."	Year Preceding Implementation	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)		
<b>EXPENSES</b> – nature of additional costs required for proposed program(s)						
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.						
Personnel (Faculty & Staff Salary & Benefits)	\$0	\$29,480	\$30,070	\$30,671		
Operating Expenses (equipment, travel, resources)	\$0	\$0	\$0	\$0		
Other:	\$0	\$0	\$0	\$0		
<b>TOTAL PROGRAM EXPENSES</b>		\$29,480	\$30,070	\$30,671		
<b>TOTAL EXPENSES</b>	\$0	\$29,480	\$30,070	\$30,671		
<b>FUNDING</b> – source of funding to cover additional costs generated by proposed program(s)						
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.						
Internal Reallocation	\$0	\$29,480	\$30,070	\$30,671		
Appropriation						
Special Legislative Appropriation						
Grants and Contracts						
Special Fees						
Tuition						
Differential Tuition (requires Regents approval)						
<b>PROPOSED PROGRAM FUNDING</b>		\$29,480	\$30,070	\$30,671		
<b>TOTAL DEPARTMENT FUNDING</b>	\$0	\$29,480	\$30,070	\$30,671		
<b>Difference</b>						
Funding - Expense	\$0	\$0	\$0	\$0		



## **Part II: Expense explanation**

### **Expense Narrative**

As previously mentioned, we will only need to hire an undergraduate advisor for the proposed degree program. EAE currently has sufficient largess to handle the new undergraduate degree assuming a moderate number of students. Appendix D shows our current estimate on projected enrollment and related financial information. These numbers assume that most of the current BUS students will convert to the new degree. About half of them will graduate in the first year and half in the second. We also assume that we will be successful in attracting students who would have attended a for-profit University. That acceleration of the numbers of students is reflected in the table.

## **Part III: Describe funding sources**

### **Revenue Narrative 1**

The cost of the new undergraduate advisor can be absorbed by our budget simply by reducing our currently projected carry forward.

### **Revenue Narrative 2**

No new funding is required for this proposal.

## **Appendix E: Letters of Support**



**Richard B. Brown**

Dean of Engineering  
1692 Warnock Engineering Building  
72 S. Central Campus Drive  
Salt Lake City, Utah 84112  
PH: (801) 585-7498 FAX: (801) 581-8692  
brown@utah.edu  
<http://www.coe.utah.edu/~brown>

November 3, 2016

Professor Robert Kessler  
School of Computing, Entertainment Arts and Engineering  
University of Utah

Dear Professor Kessler:

I am writing to express my strong support for the Entertainment Arts and Engineering program's proposal to create a new Bachelor of Science in Games degree through the College of Engineering. I support this proposal for two primary reasons. First, the proposed degree aligns with the growing discipline of games and reflects student interest, industry need, and scholarly inquiry in that field. Across campus, the broader notions of computing are critical to many disciplines and the College of Engineering strongly supports programs, as exemplified by the BSG, that increase student's understanding of computation.

Second, as you well know, the interests of some students have not been met by either the School of Computing EAE emphasis or the Film EAE emphasis, which has resulted in a number of students getting Bachelor of University Studies degrees. Having these students pursue, instead, an EAE BS degree in Games will assure that they are receiving a quality education. As Director Barbanell points out in his letter of support, the number of BUS students that feel the existing EAE emphases do not meet their needs is growing, and the proposed BS in Games degree will provide this set of students with the full support of an academic program including strong student advising, vetted curriculum offerings, and of course EAE's internship and career counseling.

EAE has proven over the last 10 years that students are their number one priority. Their undergraduate and graduate students have benefited from this focus, as demonstrated in their top global rankings and increasing enrollments at both the undergraduate and graduate levels. The EAE faculty and staff have created a world-class organization that demonstrates the highest level of academic quality, a core value they share with all the programs in the College of Engineering. The proposed degree will extend this level of academic excellence to an underserved group of students.

For 10 years, the College of Engineering, School of Computing, and EAE have been partners, and this new degree -- a natural outgrowth of this partnership -- supports exciting educational efforts around the new discipline of games. We anticipate no negative impact on the SoC degrees and I strongly support the proposal for the BS in Games.

Sincerely,

Dean

November 3, 2016

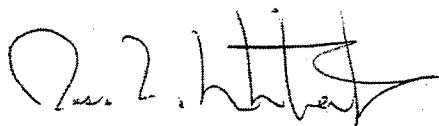
To whom it may concern:

I am writing to express my enthusiastic support for the proposed Bachelor of Science in Games (BSG). The BSG fills a demonstrated need among a group of students and potential employers that is not addressed by existing offerings of our Bachelor of Science in Computer Science (with or without the EAE emphasis). Furthermore, it provides a significant educational experience for students whose interests dovetail with the field of *computing*, which is itself broadening to touch a diverse set of social, cultural, and economic contests. Thus, the new degree will support a set of students for whom computing, through the lens of game creation, is a central motivation. Furthermore, there is evidence that scholarly work in games is emerging as a discrete discipline. This degree provides students with a set of computing-related concepts and their intersection with the basic human motivations of competition, play, achievement, enquiry, etc. that make games such important artifacts.

In support of the new degree, the School of Computing is committed to the creation of new computer programming classes, which are referred to in the BSG proposed program of study. These classes are designed to provide access to computing and software development concepts to BSG students, and will likely have an even broader appeal outside of the BSG degree or the School. Thus, the proposed plan could be a win/win for the School and the rest of the campus as we work to make the ubiquity of computing more accessible to students outside of computer science.

The EAE Program's past success in teaching classes for our students, its quality faculty (several of which have joint appointments with us), and its caring and talented staff make them well qualified to offer this new degree. I believe the proposed Bachelor of Science in Games is a very innovative and timely offering, and could be a great addition to the University of Utah. I look forward to working with you in making this new degree program a success.

Sincerely,



Ross Whitaker  
Professor, Director



July 29, 2016

TO: Ann Darling  
Chair, Undergraduate Council

FR: Ed Barbanell, Ph.D.   
Director, Bachelor of University Studies (B.U.S.) Program

RE: Support for B.S. in Games

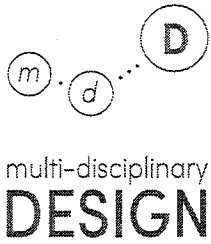
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I enthusiastically support the proposed B.S. in Games. As it is described, the new major would satisfy a recently emergent but rapidly growing demand among our students that we are simply not adequately addressing at the moment.

Beginning in 2012, an ever-increasing number of students who have found the existing EAE emphases in Film & Media Arts and the School of Computing insufficient for their needs, have been consistently utilizing the B.U.S. Program for exactly the kind of major outlined in the current document (I can corroborate the student numbers cited in the proposal, in Sec. III: Needs Assessment, Program Rationale, 2<sup>nd</sup> paragraph). However, the B.U.S. program is neither intended nor configured to deal with large numbers of students submitting almost identical programs of study over a relatively short period of time. Our approval process -- having students prepare individualized proposals in conjunction with their faculty advisor, and then having the student/faculty team present/defend their proposal before the University Studies Committee -- is simply not conducive here. Moreover, since students with identical interests tend to seek out the same faculty advisors, two EAE faculty are between them currently advising, largely unassisted, over twenty students, which is simply not a sustainable state of affairs. All things considered, this population of students would be much better served by the mechanisms and resources -- chief among them a physical space and a knowledgeable and dedicated advising staff -- of an academic department.

In terms of content, the required program curriculum outlined in Appendix A reflects what the most recent EAE B.U.S. proposals have all come to include, and the selection of elective courses adequately captures the range of courses current EAE B.U.S. are utilizing to address their individual interests. If this major is approved, all the current EAE B.U.S. students could, if they wished, switch over to it without increasing their time to graduation. In short, the B.S. in Games should amply meet the needs of those students whose interests in this area would otherwise cause them to utilize the B.U.S. program. For quite some time, in fact, I have been pressing the folks in the EAE program to bring something like this about, and I am both pleased and relieved to see it finally happening.

Office of Undergraduate Studies  
University of Utah  
195 S Central Campus Dr  
Salt Lake City, UT 84112-0511  
(801) 581-3811  
FAX (801) 585-3581



**COLLEGE OF ARCHITECTURE + PLANNING**

375 S. 1530 E., Rm. 235, Salt Lake City, UT 84112-0370

T (801) 585-5354

F (801) 581-8217

info@design.utah.edu

**Date:** Monday, August 1, 2016

**To:** Ann Darling, Chair, Undergraduate Council

**Re:** EAE Proposal for Bachelor of Science in Games

Professor Darling,

I am writing to offer our support for the proposed Bachelor of Science in Games degree within the Entertainment Arts and Engineering Program. After some vetting discussion and planning with Executive Director, Robert Kessler I believe this program would provide opportunities and bridges within the greater University of Utah system and more specifically our Multi-Disciplinary Design Program.

This new program would benefit our collaborative efforts campus wide and would in no way conflict with our mission or goals. In fact we see this as a promising resource within the Multi-Disciplinary Design Program and College of Architecture and Planning.

Again, please accept this letter as a statement of our full and promised support for this new endeavor.

Regards,

A handwritten signature in black ink, appearing to be 'Cord Bowen', with a long horizontal line extending to the right.

Cord Bowen

Director of Multi-Disciplinary Design

Associate Professor (Clinical)

713-882-7105



August 3, 2016

Subject: Letter of Support for Bachelor of Science in Games

To Whom It May Concern:

I am writing to offer my enthusiastic support for the proposed Bachelor of Science in Games. In the David Eccles School of Business, we have observed intense interest in digital media applications in both the Lassonde Institute and Sorenson Center for Discovery and Innovation. This interest is two-sided. There are a number of students looking to develop such skills, and there are a wide range of organizations that seek to employ games. Indeed, "gamification" is having a rapidly growing impact in business, education, and medicine among other sectors. Thus, I am convinced that there is robust demand for this degree both among prospective students as well as the companies and other institutions who are poised to hire the proposed program's future graduates. Moreover, the University of Utah is exceptionally well positioned to pursue the need for a BS in Games. The Entertainment Arts and Engineering (EAE) Interdisciplinary Teaching Program has established itself as, according to external rankings, the premier games program in the nation.

In summary, I strongly support the proposed BS in Games. There is a demand for such a program, and the University has an opportunity to expand the reach and impact of its outstanding EAE Program.

Sincerely,

Taylor Randall, PhD  
Dean



August 1, 2016

To whom it may concern:

It is my great pleasure to express support for the proposed Bachelor of Science in Games through the Entertainment Arts & Engineering program and the College of Engineering. As Executive Director of the Lassonde Entrepreneur Institute, and Assistant Dean in the David Eccles School of Business, I see a great need for such an innovative undergraduate program.

Over the past several years we have worked closely with EAE on a variety of projects, not least of which is the very successful Bench-to-Bedside competition. This competition combines business, engineering, and medical students to create "start-up" companies to solve unmet clinical needs. EAE students play an integral part in Bench-to-Bedside, and have been part of several teams who have offered impactful and commercially viable clinical innovations. Their areas of expertise are unique in a clinical or business setting, and that has proved to foster real out-of-the box thinking on these teams.

We look forward to extending this collaboration to BS in Games undergraduate students, where we hope to capture their enthusiasm and passion early in their academic careers. I am convinced that once in place, this degree will only continue and enhance the significant level of synergy already in place between EAE and the work we are doing in the Lassonde Studios and the Lassonde Institute.

Again, let me express my strongest support for this proposal.

Sincerely,

Troy D'Ambrosio  
Executive Director, Lassonde Entrepreneur Institute  
Assistant Dean, David Eccles School of Business  
Presidential Chair in Entrepreneurship  
[troy.dambrosio@eccles.utah.edu](mailto:troy.dambrosio@eccles.utah.edu)  
(801) 585-3844



August 3, 2016

To Whom It May Concern:

I write in support of the proposal put forth by the Entertainment Arts and Engineering (EAE) Program to create a BS degree targeting students who are not in Film Studies or Computer Studies, but who are “game” majors. Right now, this group of students (as I understand things) receive a Bachelor’s Degree in Undergraduate Studies (BUS). To achieve the development of this new major, the EAE proposal offers a set curriculum of 10 required and 10 elective courses and proposes hiring an Undergraduate advisor. It provides a stronger undergraduate presence to a program that is already internationally recognized as being among the very best—perhaps the best—program of its type.

Among this proposal’s strengths is the fact that it permits a more structured curriculum for students in EAE and an advisor embedded in the program, thereby enhancing the possibilities for student success. It includes an ambitious, two-semester-long capstone experience that allows majors to work in teams on a video game project. It is clear that the program’s leadership has thoughtfully developed the curriculum and this capstone, and they see it as allowing these majors to integrate the knowledge they have acquired and to further develop both creativity and problem-solving skills.

I believe this proposal is one that can be strongly supported by the College of Humanities’ various disciplines/departments and programs. Students engaged in this new EAE degree program can benefit from our faculty’s expertise in critical media studies, game theory, analysis of narrative and visual rhetorics, ethics, logic, history of science/technology, and creative writing (among others). This is an original major that does not compete with anything offered in the College of Humanities, but instead begs for collaboration with the humanities. I look forward to the opportunities this new major will create for partnerships with EAE, and offer my strong support for this proposal.

Sincerely,



Dianne Harris, Dean  
Professor of History  
*dianne.harris@utah.edu*

April 6, 2015

Robert Kessler, Ph.D  
Executive Director and Founder, Entertainment Arts & Engineering Program  
Professor, School of Computing  
Merrill Engineering Building 3146  
50 Central Campus Dr  
Salt Lake City, UT 84112

Dear Professor Kessler,

The J. Willard Marriott Library appreciates your request to comment on our ability to support students working toward a bachelor of science degree in Entertainment Arts & Engineering (EAE).

The Marriott Library already has extensive holdings to support undergraduate and graduate study in Film & Media Arts and Computer Science including monographs, databases, journals, and multimedia materials. Further, the Library has been coordinating with the current EAE interdisciplinary teaching program for four years to build collections in support of Game Design.

Through the Library's approval plan, we automatically acquire scholarly books at the core of these three disciplines. We are also able to purchase specific books and media materials upon request, and we encourage faculty and students to work with liaison librarians to build up any areas where the Library may need additional resources. Similarly, we maintain extensive subscriptions to scholarly journals, including *Game Studies: The International Journal of Computer Game Research*, *Game & Culture*, *Simulation & Gaming*, and *Transactions of the Digital Games Research Association*. Database and collection highlights include:

- GDC Vault, an archive of presentations from annual worldwide Game Developers Conferences
- Film and Television Literature Index
- IEEE Xplore Digital Library
- Communication & Mass Media Complete
- INSPEC
- Underground and Independent Comics, Comix, and Graphic Novels
- Anatomy.TV
- Safari Tech Books
- DVD-ROMs in The Gnomon Workshop training series
- 250 classic and contemporary video games, including different gaming system versions of the same title. (Plans are also in place to acquire corresponding game consoles.)

In addition to analog and electronic scholarly resources, Marriott Library has technology-rich spaces, software, and equipment that support study, production, and multimodal communication projects in Entertainment Arts & Engineering. These include:

- Professional-quality video production studio
- Professional-quality audio production studio
- 30 iMac 27" media editing stations, with 2.7 GHz Intel Quad Core i5 processors, 16Gb RAM, 480Gb SSD/1Tb 7200-rpm harddrive, and 512Mb AMD Radeon HD graphics
- 3D printers: zCorp zPrinter 450, 3D Systems ProJet 160, LuzBot TAZ 4, XYZ Printing daVinci Junior 1.0, Makerbot Replicator 5<sup>th</sup> Generation, and Formslab Form 1+
- Design software packages: Autodesk, Solidworks, Rhinoceros 3D, SketchUp Pro, Blender, OpenSCAD, and ZBrush
- Artec Spider 3D scanner
- US Cutter MH50 vinyl cutter
- Cintiq 13HD tablets
- Intuos Pro Small tablets
- Canon Vixia HF R300 video camera
- GoPro Hero3 White Edition video camera
- T-Mobile 4G Mobile Hotspot ZTE devices

Professional library staff offer training workshops, online tutorials, and one-on-one consultations to University of Utah students and faculty for all of those resources. Similarly, we offer class presentations and one-to-one consultations with library specialists who will suggest appropriate search strategies and help students to locate relevant resources for their course-related and independent research projects. Lastly, department faculty and graduate students who teach semester-long courses can schedule one of Marriott Library's 15 lecture and computer classrooms.

The Marriott Library is committed to continuing its support for the EAE program. We look forward to further engagement with the faculty and students in this new degree program.

Sincerely,



Rick Anderson, Associate Dean  
Collections and Scholarly Communication  
J. Willard Marriott Library



Catherine Soehner, Associate Dean  
Research and User Services  
J. Willard Marriott Library



UNIVERSITY OF UTAH  
HEALTH SCIENCES

August 4, 2016

Dean Y. Li, M.D., Ph.D.  
Associate Vice President  
for Research and  
Chief Scientific Officer,  
Health Sciences  
Vice Dean for Research,  
University of Utah  
School of Medicine

Ann Darling  
Chair, Undergraduate Council

Dear Ann Darling,

I am pleased to offer my support to the Entertainment Arts and Engineering program's new proposal for a Bachelor of Science in Games degree. Most of the School of Medicine's cross-campus interaction with EAE has been through their Therapeutic Games and Apps Lab (The Gapp Lab), run by Dr. Roger Altizer. This lab works in conjunction with the Center for Medical Innovation and many of our researchers have availed themselves of the innovative work being done there. The Gapp lab employs EAE students who work with our clinicians, researchers and others in the School of Medicine to create a wide variety of research oriented games and apps. The newly proposed BS in Games should allow broadening the pool to include talented undergraduate students as well. I am confident that the mixture of the fresh and creative talents of both undergraduate and graduate students will lead to exciting new research breakthroughs, and the School of Medicine looks forward to continuing this exciting collaboration between our units.

I strongly support the creation of this new degree.

Sincerely,

---

Dean Y. Li, M.D., Ph.D.

Associate Vice President for Research and Chief Scientific Officer, Health Sciences  
Vice Dean for Research, School of Medicine  
Director, University of Utah Molecular Medicine (U2M2) Program  
HA and Edna Benning Endowed Professor of Medicine and Cardiology



**To:** Whom it May Concern  
**From:** Randi Rost  
**Date:** November 1, 2016  
**Topic:** University of Utah Game Degree Program

This letter is to express my support for the creation of a new Bachelor of Science degree at the University of Utah focused directly on game development. It is my understanding that this new degree would fit in between two current programs, the computer science B.S. degree with an emphasis in games and the Film and Media Arts degree with an emphasis in games.

As a strategic planner for Intel in the graphics/gaming space, I see continued growth of the job market for professional game developers. Software sales for games are expected to reach nearly \$100 billion in annual revenues by 2020 according to DFC Intelligence (<http://venturebeat.com/2016/10/19/video-game-software-sales-estimated-to-hit-98-billion-by-2020/>). This industry depends on university-level game developer education programs to continue to find and train the talent that drives the industry forward.

I wholeheartedly support the recommendation to add a B.S. degree in game development that would offer tracks for technical directors, technical artists, and game design. As an academic leader in the field of game development, the University of Utah is perfectly positioned to help the game development industry by taking the step of establishing a more finely focused degree program in this area.

Sincerely,

A handwritten signature in black ink, appearing to read "Randi Rost", written in a cursive, flowing style.

Randi Rost  
Senior Strategic Planner, Graphics/Gaming

Andrew Hayes  
Designer castAR  
Andrew.Hayes@castAR.com

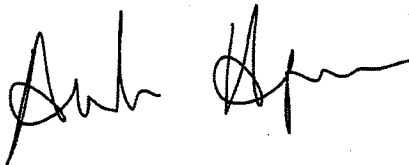
To whom it may Concern:

I am glad to have the opportunity to provide my thoughts on this new degree under consideration for the EAE program.

In my experience as an artist and designer with Disney Interactive and castAR one of the most difficult positions to fill in a game studio is that of the technical artist. It takes a certain type of individual with a certain type of background. Often the ideal candidates are self-taught because degrees offered in higher education institutions don't directly fit certain industry needs. The technical artist needs to have a foundation in programming or scripting, art, design, and management. It is a tough mix to find, and it is not always clear that a BCS or a BFA provide the needed skills. The industry needs more people who are prepared to take on this unique role.

In reviewing the proposed curriculum and tracks for the Bachelor of Science in Games I feel it answers the needs of the industry. I'm confident that providing a broad foundation in the cross-discipline subjects of programming, art, and design provide the needed skills for a competent technical artist. It is encouraging to me that multiple tracks are offered, allowing students to tailor their skills to the needs of specific positions and companies they are interested in. Adding this degree to the family of EAE programs strengthens the position of the school as a top tier provider of quality individuals to the game industry.

Best Regards,

A handwritten signature in black ink, appearing to read 'Andrew Hayes', with a stylized, cursive script.

Andrew Hayes

Corey Kruitbosch  
Sr 3D Artist  
corey@hivemind.com

To whom it may Concern:

Gabriel Olson asked me if I could contribute a paragraph on the relevance the B.S. in Games degree as it applies to the Technical Artist. I find it encouraging that the program is recognizing the need to highlight this area of game development.

Having filled many of the roles available to artists in game development, I feel that the role of Technical Artist most prepared me to be a well-rounded member of a development team. The Technical Artist gains a broader understanding of the roles of all members of game development teams they will be working on. This role is a great way to straddle programming and art by helping develop tools and procedures that enhance the productivity of fellow artists and team members. The roles that a technical artist can fill are represented by a broad range of skills that employers are looking for. Every company has a different idea of what the role and responsibility of a Technical Artist is, but exposure and understanding of these Technical Art skills will give the applicant a distinct advantage. Skills such as these will help the Technical Artist fill the need to bridge the gap between art and programming.

- Strong knowledge of 3D hardware, Shader, Scripting and Programming experience
- Experience with animation pipelines, mo-cap, rigging and skinning is a benefit
- Understanding of visual FX, Lighting, Level Building and Character Art techniques
- Be meticulous and organized in the approach to the tasks, files and storage, and help your team to be the same.
- Experience authoring shaders.
- Scripting tools/pipelines as needed to add features and/or improve efficiency and a knowledge of scripting languages like MEL / Python
- Creating rigs of 3D character models for animation
- Animating 3D objects and characters


Best Regards,

A handwritten signature in black ink, appearing to read 'Corey Kruitbosch', with a stylized, elongated horizontal stroke at the end.

Corey Kruitbosch



To: Richard Brown  
Dean – College of Engineering

From: Raymond Tymas-Jones   
Dean – College of Fine Arts

Date: April 14, 2017

Subject: Bachelor of Science in Games Program

This memorandum is in reference to the proposed Bachelor of Science in Games (BSG) program sponsored by the Entertainment Arts and Engineering Program in the College of Engineering. As indicated in the proposal, the Department of Film & Media Arts and the School of Computing currently offer an extremely successful interdisciplinary undergraduate degree program in game design. According to the BSG proposal, this proposed program will address aspects of game design that are not currently a part of the Bachelor of Arts in Film & Media Arts and Bachelor of Science in Computing (both with an EAE emphasis). Consequently, students have been required to pursue a Bachelor of University Studies degree, which is not the best solution.

Although my initial memorandum of November 16, 2016 to Assistant Vice President Ann Darling did not endorse the BSG proposal, based on a recent discussion with the faculty of the Department of Film & Media Arts, I have now reconsidered my position on the justification for creating a new program. Even though there is a risk of ultimately weakening the current BA degree, I feel that the BSG will serve a population of students who are not presently served with the existing program. I am pleased to support the BS in Games program proposal.

Cc: Kevin Hanson, Chair – Department of Film & Media Arts





To: Ann L. Darling  
Assistant Vice President for Undergraduate Studies

From: Raymond Tymas-Jones  
Dean, College of Fine Arts

Date: November 16, 2016

Subject: Bachelor of Science in Game Degree Proposal

This memorandum is in reference to the proposed Bachelor of Science in Games (BSG) program sponsored by the Entertainment Arts and Engineering Program in the College of Engineering. As indicated in the proposal, the Department of Film & Media Arts and the School of Computing currently offer an extremely successful interdisciplinary undergraduate degree program in game design . . . *Princeton Review* ranked the program #1 in the country. According to the BSG proposal, the proposed program is intended to address a small cohort of students whose academic goals do not fit the current program. It is my understanding, however, that the proposed program duplicates requirements of the current Bachelor of Arts in Film & Media Arts – EAE emphasis (BA). The curricular design of the BSG consists of nine required courses and 30 additional hours of electives. Of the nine required hours in the BGS program either the actual courses or versions of the newly proposed courses are presently required in the BA. In addition, many of the courses listed as electives for the BSG are also currently listed as allied or elective courses in the BA.

It appears that the BSG proposed has more in common with a BFA than with a BS degree.

Furthermore, the proposal has not explicitly explained the difference between the BSG and the EAE emphasis currently offered by the Department of Film & Media Arts and the School of Computing. With the exception of a University language requirement in the BA program, the basic curricular offerings and opportunities are the same. Thus the justification for creating a new program is not persuasive. My concern is that the proposed BSG program will ultimately weaken the current BA and subsequently negatively impact the College of Fine Arts, particularly in the context of the new incentive funding budgeting system.

Cc: Sarah Projansky  
Kevin Hanson  
Robert (Bob) Kessler  
R. Michael Young



ENTERTAINMENT ARTS & ENGINEERING

THE UNIVERSITY OF UTAH

EAE STUDIOS  
332 S. 1400 E. BLDG 72, RM 240  
SALT LAKE CITY, UT 84112  
eae.utah.edu

November 17, 2016

*Re: Response to CFA Letters*

Dear Assistant Vice President Darling:

EAE Director Kessler requested that our curriculum committee review and comment on the critique of our BS in Games (BSG) proposal from colleagues in the College of Fine Arts. This is the results of that review.

The primary concern raised from the CFA is their perception that there is significant overlap between the BA in Film with the EAE emphasis and our proposed BSG. As the architects of the BA in Film/EAE emphasis and all of the FILM videogame classes, I am very familiar with the degree and see minimal overlap. However, since this issue has been raised, we are happy to illustrate the differences between the two offerings, and where they overlap.

Overlap:

**EAE 4500 & EAE 4510 Capstone** - BSG students will enroll in the capstone class alongside the EAE emphasis CS and Film students. No impact on Film as this is currently taught by EAE and not Film.

Potential Overlap:

**Up to 9 hours of allied hours in Film** - Students in the BSG can take up to three film classes as their allied hours. The must take 12 allied hours from from a minimum of 2 units outside of EAE.

**EAE 3600 3D Modeling EAE 3660 Machinima** - These two classes are taught by EAE and required of Film EAE emphasis students. BSG students may opt to take them as part of their required BSG major classes.

There are only 6 credits of required overlap, the EAE capstone class, and they are taught by EAE, not Film. Our analysis shows that there is a maximum of 21 credit hours of shared classes classes, note that this is due to offering the option for students to take up to 9 credit hours of film courses. In our experience, most BUS students do NOT take those classes, but it is technically possible.

Thus between 6 and 21 of the approximately 78 non-general education/bachelor's required course hours could be common. This was in direct response to a request by the CFA Undergraduate Council representative's suggestions that there be more overlap with the arts. As mentioned in the letters from School of Computing Director Whitaker, the proposed BSG is highly computational, which is reflected in the fundamental differences between a BA and BS degree. Additionally, the increase of overlap is created in direct response to requests from the Fine Arts rep that there be more arts courses in the

degree, and the importance of which is illustrated by the letters from the Dean of the College of Fine Arts and the Chair of the Film Department.

Next, we wanted to highlight the differences in faculty between Film and EAE. Table 2 shows the games and non-games faculty in each unit. EAE has 10 full time academic faculty teaching videogame courses. The College of Fine Arts has zero full-time academic faculty teaching, thus, and zero videogames courses. Film has three adjuncts teaching three courses. All three of these courses were created by myself (I wrote the syllabi and taught them) and are now being taught by instructors who were my advisees and graduated from the EAE Master Games Studio. Thus, any overlap in content is not new.

EAE is well qualified to teach the games-related classes. Chair Hanson notes that there are several game production arts classes. These are not taught by Film faculty. Rather, they're taught by EAE's three, extremely well-qualified, full time, faculty. These faculty all hold MFAs, two of which graduated from the University of Utah. Thus the game arts classes are taught by EAE currently and there would be no impact on the course load of Film faculty.

Finally, Dean Tymas-Jones mentions the potential economic impact that the BSG degree may have on his college. First, if we take this argument at face value then this is a problem to be solved by administration. If this is the right degree for the students, the economic impact can and should be mitigated by means other than denying students a robust and contemporary education.

Additionally, the number of students that have decided that neither of the EAE emphases fit their needs and opted for the BUS is small compared to the number of Film/EAE majors. In last year's capstone class, there were 62 Film/EAE majors, 22 CS/EAE majors, and 8 BUS students (this year's cohort is similar with 57, 29 and 7 respectively). Also, we have experienced this already. When we started the EAE Master's Degree there were similar concerns. EAE now has 125 graduate students and Film has a full cohort. Film asked us to spin the EAE Master's Degree from their department as the numbers were too high, and those numbers have only continued to grow.

While economics is certainly important, the needs of students come first. We would be deeply saddened should the day arrive when we are told to curtail educational offerings due to potential negative economic impacts.

To summarize, the BSG is highly distinct from the existing Film/EAE emphasis. The EAE faculty are highly qualified to deliver the degree, and that the degree should have negligible impact on the College of Fine Arts. If it does have an impact, I am confident we can solve any economic problems faced collaboratively.

Sincerely,



Roger A. Altizer, Jr  
Chair, EAE Curriculum Committee  
Associate Professor, Population Health Sciences  
Associate Director, Entertainment Arts and Engineering  
Director, Therapeutic Games and Apps Lab, The GApp  
Director of Digital Medicine, Center For Medical Innovation

FILM/EAE ONLY	SCH	Common Required	SCH	Possible Overlap As Electives	SCH	BSG ONLY	SCH
FILM 1010 (2 semesters)	1	EAE 4500	3	EAE 3600	3	EAE 1010	4
FILM 2100 or FILM 2120 or FILM 2700	4	EAE 4510	3	EAE 3660	3	EAE 3010	4
FILM 3110	4			Film Allied	9	EAE 3020	3
FILM 3120	4					CS 1xxx	4
FILM 3420 or FILM 3500	4					CS 2xxx	4
EAE 1030 or EAE 1410	4						
EAE 1410 or EAE 2420	4						
FILM 2600 or FILM 2630 or ART 1020	4					33 hours from EAE	33
FILM 3610	4					4 allied courses from 2+ areas	12
FILM 3710	4						
FILM 3620 or FILM 3720	4						
ANY FILM Elective	3						
EAE 3600 (*)	3						
EAE 3660 (*)	3						
Foreign Language	16					QI Math Classes	8
Total	66	Total	6	Total	15	Total	72

Table 1: Comparison of BA Film/EAE with BS Games

		Film	EAE	
	Joint Film/EAE Faculty	1	1	
	Full time Games Faculty	0	9	
	Adjunct Games Faculty	3	15	
	Full time non-Games Faculty	9	0	
	Adjunct non-Games Faculty	2	0	
Table 2: Games vs Non-Games Faculty Comparison				

# BA – FILM & MEDIA ARTS

## ENTERTAINMENT ARTS & ENGINEERING EMPHASIS

2016-2017 catalog year  
(updated October 2016)

The information in this document will help you track requirements for the BA in Film & Media Arts (EAE). Each student is unique, and your degree should be unique to you. To maximize and tailor your degree to meet your needs and incorporate your interests, you should meet regularly with an academic advisor:

Emily Beard	<a href="mailto:emily.beard@utah.edu">emily.beard@utah.edu</a>	ART 161
Andrew Grace	<a href="mailto:andrew.grace@utah.edu">andrew.grace@utah.edu</a>	ART 270
Kira Jones	<a href="mailto:kjones@uc.utah.edu">kjones@uc.utah.edu</a>	MCD 126
Jennifer McLaurin	<a href="mailto:jennifer.mclaurin@utah.edu">jennifer.mclaurin@utah.edu</a>	PAB 216

You can also contact advisors with questions at: [advisor@finearts.utah.edu](mailto:advisor@finearts.utah.edu).

**To schedule an appointment** with one of these advisors, please visit <http://advising.utah.edu/scheduling>. If you have trouble making the appointment, please call the front desk the **College of Fine Arts (801-585-1416)**.

### GENERAL EDUCATION REQUIREMENTS

1 course	<b>AI</b> – American Institutions
1 course*	<b>WR2</b> – Lower Division Writing
1 course*	<b>QA</b> – Quantitative Reasoning A (college algebra/trigonometry)
1 course	<b>QB</b> – Quantitative Reasoning B (statistics/logic)
2 courses**	<b>HF</b> – Humanities
1 course	<b>SF</b> – Physical/Life Science
1 course	<b>SF/AS</b> – Physical/Life Science OR Applied Science
2 courses	<b>BF</b> – Behavioral Science

*\*Depending on your placement, you may be required to take prerequisite courses for the Writing and/or Math requirement(s).*

*\*\*FILM 2100 fulfills one HF requirement.*

### UNIVERSITY REQUIREMENTS

Minimum Cumulative GPA: **2.00**  
 Minimum Credit Hours: **122**  
 Minimum Upper-Division Credit Hours: **40**  
 Residency Credit Hours: **30 total, 20 of last 30 (taken at the U of U)**

### BACHELOR'S DEGREE REQUIREMENTS

1 course	<b>CW</b> – Upper Division Communication/Writing
1 course	<b>DV</b> – Diversity
1 course	<b>IR</b> – Upper Division International
4 <sup>th</sup> semester proficiency*	<b>Foreign Language</b> OR <b>ASL</b>

*\*2020 level or equivalent*

PLEASE NOTE: There are several courses that will fulfill a General Education requirement and a Bachelor's Degree requirement simultaneously. There are others that will fulfill a Bachelor's Degree requirement and a Film major requirement simultaneously. The College of Fine Arts academic advisors can help you select the best classes for your degree.



## **MAJOR REQUIREMENTS – FILM & MEDIA ARTS (EAE EMPHASIS)**

*Students must earn a grade of a "C" or better in all required major courses (including Allied Hours).*

*FA = Fall, SP = Spring, SU = Summer*

### **Film & Media Arts EAE Core (16-17 credits)**

*Complete 2 semesters:*

- ☐ FILM 1010 (.5) Intro to Undergraduate Studies – FA

*Complete 2 courses:*

- ☐ FILM 3110 (4) History of Film until 1952 (**FF**) – FA, SP
- ☐ FILM 3120 (4) History of Film from 1952 (**FF**) – FA, SP

*Complete 1 course:*

- ☐ FILM 3420 (4) Sound for Film – FA, SP  
**OR**
- ☐ FILM 3500 (4) Film Production I – FA, SP, SU

*Complete 1 course:*

- ☐ FILM 2100 (4) Intro to Film (**HF**) – FA, SP, SU  
**OR**
- ☐ FILM 2120 (4) Intro to Media Arts (**HF**) – FA, SP  
**OR**
- ☐ FILM 2700 (3) Intro to Videogames – FA, SP

### **Film Electives (18-19 credits)**

*Complete 1 course:*

- ☐ FILM 2600 (4) Intro to Animation Techniques – FA, SP, SU  
**OR**
- ☐ FILM 2630 (4) Traditional Animation I – FA  
**OR**
- ☐ ART 1020 (3) Non-major Basic Drawing – FA, SP, SU

*Complete 1 course:*

- ☐ FILM 3620 (4) Computer Animation II – SP  
(prerequisite: **FILM 3610**)  
**OR**
- ☐ FILM 3720 (4) Alternative Game Development – SP

*Complete 3 credits of (a) FILM course(s).*

- ☐ FILM \_\_\_\_\_ (3) (Film Elective)

*Complete 2 courses:*

- ☐ FILM 3610\* (4) Computer Animation I – FA
- ☐ FILM 3710 (4) Traditional Game Development – FA

### **Allied Hours (19-20 credits)**

- ☐ *Complete 1 set of courses. (Students must complete a proficiency exam before enrolling:  
[www.cs.utah.edu/~parker/instructions](http://www.cs.utah.edu/~parker/instructions).)*

EAE 1030 (3) Foundations of Computer Science – FA, SP **AND**

EAE 1410 (4) Intro to Object Oriented Programming – FA, SP (prerequisite: **EAE 1030** or placement)

**OR**

EAE 1410 (4) Intro to Object Oriented Programming – FA, SP (prerequisite: **EAE 1030** or placement) **AND**

EAE 2420 (4) Intro to Algorithms & Data Structures – SP (prerequisite: **EAE 1410**)

*Complete 2 courses:*

- ☐ EAE 3600 (3) 3D Modeling for Video Games & Machinima – FA, SP
- ☐ EAE 3660 (3) Interactive Machinima – FA, SP (prerequisite: **EAE 1410**)

*Complete 2 courses (EAE Capstone):*

- ☐ EAE 4500 (3) Senior Project I – FA (pre/corequisite: **FILM 3610** or **FILM 3710**)
- ☐ EAE 4510 (3) Senior Project II – SP (prerequisite: **EAE 4500**)

*\*requires knowledge of Photoshop, After Effects and Flash; students who do not have experience with these softwares should take **FILM 2600 (4) Introduction to Animation Techniques** first*



COLLEGE OF FINE ARTS | THE UNIVERSITY OF UTAH  
**DEPARTMENT OF FILM & MEDIA ARTS**

Wednesday, November 16, 2016

To: Ann Darling, Chair  
Undergraduate Council

Re: Proposed BS in Games

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My primary criticism of the Bachelor of Science in Games proposal is that it duplicates existing degree programs. Of the 25 hours of required courses in the proposed new degree, 8 hours appear to be more or less equivalent to courses already required and taught in the Film & Media Arts EAE emphasis as FILM numbered courses. Students in the Film & Media Arts based EAE emphasis take up to 20 more hours of allied courses now, all of those may be EAE numbered courses. The capstone course for the BSG is the same course current F&MA EAE emphasis students are required to take.

Would students be able to double major in the Film & Media Arts EAE emphasis and the new BSG degree using the same courses? Would they essentially be allowed to earn the same degree twice?

The rationale for creating this new degree hangs on the number of current EAE BUS students. I believe the current EAE emphases in the School of Computing and the Film & Media Arts Department could accommodate these EAE BUS students. I do not believe these students should have been encouraged to pursue the BUS in the first place. The Princeton Review currently rates the two existing undergraduate EAE emphases #1 in the US. I urge the undergraduate studies committee to consider carefully what advantage, if any, a third option gives our students.

Further, the curriculum of the proposed BS includes a fairly large number of courses that are clearly Art classes. The teaching of Art in higher education is usually informed by critical and historical studies associated with the practice of the artist. These elements are not present in the proposal nor are they appropriate in the College of Engineering. Institutions like our own have traditionally tried to foster, in their students and faculty, a desire to create at a level that is both informed by those studies and seeks to serve the needs of our culture in ways the commercial entertainment industry does not often aspire to. These are values we discussed when I wrote, with my partners Professor Kessler and Professor Altizer, the original undergraduate EAE emphasis. Our goal at the time was to expose students to both



technical expertise and aesthetic principles. Industry representatives had in fact asked for this approach.

I hope all concerned committees will take their charge very seriously as they consider this proposal. The Film & Media Arts Department intends to continue offering the current EAE emphasis within the BA in Film & Media Arts.

Sincerely yours,

Kevin Hanson, Chair  
Film & Media Arts

cc: Sarah Projansky  
Robert Kessler  
R. Michael Young