

Strategic Plan
Department of Interactive Multimedia
February 20, 2019

Summary

This report details the current status and strategic priorities of the Department of Interactive Multimedia (IMM) at The College of New Jersey. The reflections contained within this document represent a collaborative response to our Fall 2017 External Review. During the past year, the full-time and affiliate faculty in IMM held frequent meetings during which we discussed the reviewer's recommendations. As a result of those substantive conversations, we have developed a general consensus around the strategic adjustments we wish to undertake in the short- to medium-term. We are grateful to Dean Maurice Hall and Associate Provost Mosen Auryan for their thoughtful guidance and input during this important phase of our development.

IMM is an important driver of growth and innovation within the School of the Arts & Communication. Our student enrollment numbers have increased steadily over 15 years, with an average yearly growth rate of nearly 13%. Following IMM's founding as a program in 2003, we secured our first full-time faculty hire in 2005 and undertook a program review in 2011 that ultimately led to our reclassification as a Department in 2012. By all quantitative measures, IMM is now firmly established and flourishing. As of February 2019, we have five full-time faculty, 151 majors, and 47 minors.¹ Perhaps more significantly, we attained high yield numbers for freshman admissions of 39% in 2017 and 37% in 2018. We have also demonstrated strong student outcomes, including placements at prestigious graduate programs (Carnegie Mellon, Columbia, NYU, Georgia Tech, Temple). In 2018, we were selected as the #3 institution in New Jersey for both Animation & Game Design by Animation Career Review. We are proud of these internal and external validations of our programmatic excellence.

Our December 2017 External Review, however, painted a more nuanced picture of our health and viability. The report made 155 concrete recommendations and identified significant structural issues for us to remedy. In particular, academic rigor was identified as an area of weakness. We have faced this charge directly by investigating the quality of our offerings and adjusting our teaching practices, outlined in the Curriculum section below. Rather than interpret these recommendations as terminal judgements, we instead accept them as constructive feedback that will improve our competitiveness in the rapidly-changing higher education market. We are grateful for the many recommendations we have received and

¹ see Appendix I (source: BBA/Pyramid Student Enrollment data provided by the Center for Institutional Effectiveness, February 13, 2019)

actively incorporated into our strategic planning processes. Ultimately, it is one of our top priorities to ensure that the learning experiences we deliver are of uniformly high value and quality.

Moving forward, IMM is focused on long-term objectives: refining our curriculum and identity, articulating standards for rigor, and ensuring innovative and industry-connected learning experiences for our students. We seek to demonstrate external evidence of the excellence of our programs and resolve the longstanding lack of accrediting bodies for new media disciplines.² We have ranked the External Reviewer's 155 recommendations and identified the ones that we believe are most urgent in Appendix II. This list of priorities will serve as the foundation of our forthcoming strategic plan. Most importantly, this process has helped us to focus on leveraging our strengths, especially our skills in connecting component disciplines, incorporating novel approaches, and modeling excellent professional practices for our students. We are excited about the years ahead and look forward to strengthening our core teaching, scholarly, and creative activities.

I. Identity

Describing IMM consistently and concisely has been a challenge since the founding of the program. Because the intellectual interests in the Department are diverse, frequently mixed together, and always evolving with new technology, multiple students might describe IMM in different ways. They might each be correct. A nutshell definition of IMM is made even more elusive by the fact that a successful IMM student must develop at least a baseline competency in areas that bridge to other academic Departments at TCNJ and elsewhere -- such as Creative Coding and Computer Science, for example, or Visual Communication and Graphic Design, or Audio Recording and Music. Our major engages students in a dynamic conversation between *breadth* and *depth*, emphasizing baseline competencies across many interrelated skills, combined with deep engagement within one or two primary areas of focus.

Individual IMM students tend to define the program in relation to their own particular interests, skills, and products — we design video games, we create digital art, we make electronic music, for example. The IMM faculty, however, are mindful of the fact that a properly equipped digital artist also has deep reserves of knowledge acquired from specialized courses in studio art and art history, just as game designers benefit from courses in artificial intelligence and procedural graphics. IMM faculty do purposefully caution students against describing themselves as specialists in fields such as graphic design,

² This issue is significant – we want to secure a relevant accrediting body in order to establish both the quality and rigor of our offerings. Future resolution depends on the maturation of our field as an academic discipline and is not something we can directly control. This issue could remain a high priority for us for some time.

knowing fully well the expertise such a title implies. Although we cannot control what our alumni say about themselves, we do our best to inform them about the risk of inflating their skills and experience. Above all, we model respect for other fields and value the deep forms of disciplinary expertise that so clearly enrich the media outcomes we create.

For all the reasons stated above, IMM faculty tend to describe our shared identity by emphasizing the multidisciplinary mix (we're the intersection of programming, art, and storytelling) or with broader strokes that endeavor to cover everything (we're a creative technology program). And although this language is harder to grab hold of — and harder to describe via clear professional pathways — it is, in the end, more accurate and more true to our mission and learning goals. It's also consistent with our respective interests as teacher-scholars. Although we have each gravitated toward a particular corner of IMM, we're consistently intrigued by possibilities for connection and collaboration. And we're all inspired by the ever-changing and often unpredictable nature of the field.

A challenge to the IMM faculty and staff moving forward is to better model this mindset for our current students and to articulate this vision of IMM clearly and consistently, not only to prospective students and their parents, but also to our colleagues across campus. Our first foray is a revision of the language we use on our website and in other promotional media, at recruiting events, and in advising current and prospective students. The new language seeks to emphasize the multidisciplinary, exploratory nature of IMM, while more clearly articulating the two-way bridges between IMM and related majors and minors on campus. A draft of this language follows:

Interactive Multimedia is an undergraduate Bachelor of Arts program that embraces technology as a creative tool to express, communicate, empower, and entertain. Our core curriculum provides a foundation of skills and knowledge in digital media production, creative coding, and interactive design, coupled with an awareness of the historical and cultural forces that shape our attitudes toward technology. Our ever-evolving mix of intermediate and advanced courses allows students to explore opportunities where established disciplines intersect — such as the art, storytelling, sound, and programming that weave into video games — as well as the possibilities presented by new technology, such as digital fabrication and augmented reality.

The IMM major is designed to articulate with other programs of study at TCNJ, so that students who are inspired to dig deeper into a particular subject can pursue minors or even second majors in related areas such as Graphic Design, Art, Music, Computer Science, Communication Studies, or Business. Our graduates have built successful careers as web and mobile developers, video game artists, animators and filmmakers, exhibit designers, project managers, teachers, user experience designers, and related professions. They've gone on to graduate study in a range of fields including animation, computer science, education, business, theater technology, and music technology.

Our diverse and dynamic curriculum encourages current students to be alert to new opportunities and pursue new interests while they're at TCNJ; likewise, our graduates leave the College confident in the mindset of lifelong learning, equipped to adapt to a professional landscape that's always shifting.

Having refined this multifaceted way of expressing of what we *are*, we are also keenly aware of what we *are not*. In response to our External Review, we have decided on and defined the exact set of disciplines that we encompass. These are the six **Primary Areas** of study in IMM³:

1. **Visual Storytelling and Animation** (including media production, imaging, visualization, web, video, modeling, rendering, fx, compositing, and post production)
2. **Game Design and Playable Media** (including VR & AR – Virtual Reality and Augmented Reality)
3. **Creative Coding** (including computational thinking, interaction design, simulation, software design principles, APIs, IDEs, data manipulation, and physical+digital interactions)
4. **Digital Fabrication** (including rapid prototyping, physical computing, product design, IoT, and the incorporation of software into physical objects)
5. **Music Technology** (including electronic music, sound design, composition, audio recording and production, signal processing, scoring for interactive media, interactive music systems, and New Interfaces for Musical Expression)
6. **Technology and Culture** (ethics, social awareness, social justice, the social/cultural impact of tech & design, community engagement, how design choices convey meaning, the cultural construction of media and its power to shape society)

There are several other areas of study that we do not claim exclusively but are nonetheless infused throughout our curriculum. We call these **Shared Competencies**, and continue to teach them because they are necessary, supporting components for our primary areas. In order for our curriculum to have integrity, our students must have some facility with or exposure to these topics⁴:

1. **Web Design and Development**
2. **Human-Centered Design** (including User Experience, UI/UX, Interaction Design, Interface Design, Design Thinking)

³ In addition to serving as areas of emphasis within our curriculum (not tracks or concentrations), it should be emphasized that each of these areas serves as an interdisciplinary bridge to another unit at the college -- Art, Computer Science, Engineering, Music, Humanities, etc. By defining our structure in this way, we are actively articulating our implicit connections to other Departments that we hope will be mutually beneficial and synergistic.

⁴ These are areas in which we are not able to consistently offer in-depth learning opportunities because we do not have full-time faculty representation. In the future, *Shared Competencies* could be upgraded to *Primary Areas* by cross-listing courses with adjacent departments or by further developing our faculty. We should continue to offer individual courses and thesis opportunities in these supplementary areas, but not claim that they are primary areas. We are currently preparing revised text descriptions for our website and outreach materials so that they accurately reflect our areas of emphasis and shared competencies.

3. **Professional Positioning** (including communication, social media, marketing, public speaking, the articulation of ideas in written form, public presentation and demonstration skills)
4. **Innovation and Entrepreneurship** (key workforce skills)
5. **Interactive Storytelling** (long a popular staple course in our curriculum, related to storyboarding and creative writing)
6. **Cultural Engagement** (study abroad, community engaged learning, global education, etc.)

II. Curriculum

The B.A. in Interactive Multimedia degree program is currently structured as follows: students take 4 introductory core courses, 1 integrative core course at the intermediate level, 4 intermediate options, 2 advanced options, and 2 thesis courses. These 13 required units represent 40% of IMM majors' total units. This is in line with accredited Bachelor of Arts degrees, which typically require 30-45% total requirements within the primary Department.

IMM requirements	General Studies	Electives (including second major or minor)	Total units
13 units	7 units (+1 taken among IMM requirements)	12 units	32
40%	22%	38%	100%

Table 1: current structure of IMM curriculum

We are currently engaged in the process of re-evaluating the core curriculum and structure of our major. Of the twenty-six recommendations from the External Reviewer's Report that we ranked and prioritized (see Appendix II), eleven were related to curriculum. This section will outline a new curriculum for IMM that incorporates these recommendations in a manner consistent with the identity articulated above. This proposed structure and any new courses in it should be considered a draft. Pending administrative approval, our next step will be to draft course proposals and Bulletin updates to begin the process of implementing this new curriculum with a goal of launching in Fall 2020.

The table below addresses the reviewer's recommendations (Appendix II, numbers 3, 9, 10, and 15) by clarifying our primary areas of study and deepening each area uniformly with new four-course sequences. Courses in bold are entirely new. Courses to be eliminated are not included here but will be discussed as

we prepare our curricular proposals. Students will be required to take a substantial majority of the 100-level courses, and some courses in one area may have prerequisites from another. For example, Physical Computing (IMM 330) is likely to require Beginning Creative Coding (IMM 120) as well as Intermediate Digital Fabrication (IMM 230). Game Development may also require a certain level of depth in one out of a few areas (Music Technology, Creative Coding, or Visual Storytelling and Animation, for example). Finally, we plan to retain our two-semester Senior Thesis requirement.

Based on current staffing, we may need to explore non-traditional models of delivery for certain courses. We have already established an innovative mini-course model that has been adopted by other campus entities. Our experience with this approach puts us in a good position to offer other non-traditional options such as half-semester courses, blended courses, and cross-listings. We also believe that these new 4-course sequences will enable new minors, certificates, and possibly future graduate-level options in our *Primary Areas* of study.

Several recommendations suggested that the rigor and academic standards of the program need to be improved. The structure proposed below addresses this by deepening some of our shallower curricular areas. In addition to this, one concrete step that we have already taken is to institute a Sophomore Review process, which students must pass to remain in the major. This review requires students to present a portfolio of their work from a range of IMM courses for summative assessment and interview by faculty. Another step we plan to take is to decide on a grading philosophy that is shared across the Department and codified in our Bulletin.

Visual Storytelling and Animation	Game Design and Playable Media	Creative Coding	Digital Fabrication	Music Technology	Technology and Culture
IMM 110: Visual Styles and Techniques	IMM 160: Game Studies and Design Literacy	IMM 120: Creative Coding for the Web	IMM 130: Beginning Digital Fabrication	IMM 150: Exploring Digital Sound and Music	IMM 180: History of Innovation
IMM 210: Animation 1	IMM 260: Game Development 1	IMM 220: Creative Coding for Mobile Applications	IMM 230: Intermediate Digital Fabrication	IMM 250: Scoring for Interactive Media	IMM 280: Human Centered Design
IMM 310: 3D Animation 2	IMM 360: Game Development 2 (individual)	IMM 320: cross-listed with IMM 330	IMM 330: Physical Computing	IMM 350: Audio Recording & Production	IMM 380: Design for the Developing World
IMM 410: Media Production, Special Effects, and Compositing	IMM 460: Game Development 3 (team w/ area-specific prereqs)	IMM 420: Data Visualization	IMM 430: Product Design	IMM 450: Interactive Music Systems	IMM 480: Technology and Human Experience (Philosophy & Psychology)

Table 2: Draft structure of proposed IMM curriculum

Another theme that emerged from the recommendations is IMM’s relationship to other Departments and programs on campus. IMM is interdisciplinary, and each faculty member embodies this interdisciplinarity in their own practice. But there is confusion among students and other Departments surrounding our identity, concern that we are suggesting in our written materials that exposure to a practice implies that we are training experts in that practice, and situations where Departments have raised objections to our course offerings in overlapping disciplinary areas. We understand these challenges and appreciate the tension that comes from our identity as a young, “antidisciplinary”⁵ department coexisting alongside established disciplines with long histories. We also understand that much of the existing tension can be addressed by clarifying our identity, providing more complete information on our public-facing materials (website, brochures), and strengthening strategic interdisciplinary partnerships. In curricular matters, we have begun to address these challenges by implementing a courtesy review process for all IMM mini-

⁵ <https://joi.ito.com/weblog/2014/10/02/antidisciplinar.html>

courses within the School of the Arts and Communication. Our faculty are also working directly with Dean Maurice Hall and Graphic Design faculty to address overlapping learning goals and outcomes in our courses.⁶ Finally, we have responded to faculty demand from neighbor Departments and created a process to allow non-IMM faculty to undertake scholarly/creative work in our Makerspace. (We are developing a similar process to approve non-IMM curricular uses.) In addition to these efforts, we continue to seek strategic, innovative partnerships with other Departments and programs on campus for certificates, minors, mini-courses, and other traditional and non-traditional curricula.

One area where we are deviating significantly from the Reviewer's recommendation is in the content area of Web Design and Development. The External Reviewer recommended strengthening this as a primary area in our curriculum, but we see it instead as a *Shared Competency* that can be addressed in multiple courses. It is also an area where the Graphic Design program has added courses that somewhat duplicate efforts in IMM. Students interested in Web Development careers benefit from the skills learned in IMM courses in combination with Computer Science and/or Graphic Design. There is currently no single Department on campus that offers a full Web Design and Development curriculum, so students who are interested in pursuing it as a career are, as they have been for several years, taking majors and minors that are adjacent to Web Design and simultaneously learning skills on their own, through internships and on-campus employment.

Finally, although it is not explicitly related to curriculum, the External Review recommended greater attention to **diversity and inclusion**. This must permeate all of our activities; it is not simply a staffing issue. As we write new courses, increase rigor in our primary areas, and implement the Sophomore Review, we must also be critical about our source texts and media, our uses of technology, and the biases and assumptions that influence our practices. IMM has an opportunity to lead campus-wide initiatives in ethics, accessibility, universal design and inclusion, open educational resources, and other such guiding principles.

In summary, the table below lists the eleven curricular recommendations and summarizes our responses:

⁶ This process includes reviewing syllabi and more accurately defining our usage of terms such as “design” and “user interaction.” This effort is helping us articulate synergistic opportunities and allowing us to better coordinate and reduce competition with our neighbors.

Curricular Recommendation	How We Plan to Address It
#2 - Increase rigor and academic standards; course content is remedial/repetitive, expectations are low	deepen each curricular area; draft clear, shared assessment standards, implement Sophomore Review process
#3 - Detailed restructuring of our curriculum needed	see Table 1
#8 - Ensure that an applied coding component runs through the curriculum and is integrated into the appropriate courses. It is more effective to cover the fundamentals of HTML, CSS, and Javascript in IMM 130 and provide semester full of a wide variety of technologies that the students are not given enough time to learn	Creative Coding primary area outlined in Table 1, include a student-focused/friendly applied coding "thread" in our planning and language in the new curriculum. (IMM 450, offered since 2011, is an example of applied coding in the Music Technology area.)
#9 - Ensure that there is an academically rigorous introduction to digital audio, including the basic elements and principles, in at least one of the Core classes (the new Intro. to Time-Based Media class proposed)	IMM 150: Exploring Digital Sound and Music will address this
#10 - Digital Fabrication should be introduced at the Core level to provide basic concepts and skills.	IMM 130: Beginning Digital Fabrication will address this
#15 - course offerings too diverse; need focused progression of courses in areas of study (once areas are decided, we can improve productive relationships with other Departments) add a progression of courses that adds depth to content areas in the curriculum	While still diverse, our draft curriculum defines the areas and offers more depth than currently offered in those areas. We believe that it strikes a good balance between addressing the recommendation and remains consistent with our identity.
#18 - Diversity and Inclusion	draft shared standards on choices of media, topics, experts, and technologies with diversity and inclusion in mind
#20 - IMM often irritates its neighbors, esp. Art, Communication Studies/RTF, CS...(because it is growing?)	Mini-course review process; Art/IMM overlap discussion process; planned revisions to language on website to clarify identity and recommended pairing of majors/minors with IMM; new draft curriculum; plans to seek strategic partnerships with Departments for minors, certificates, etc.
#23 - Antidisciplinarity (disruptive interdisciplinarity) -- faculty don't necessarily want to be focused -- breadth vs. depth -- IMM intends to be general vs. specified -- the intent is to give students elements of animation, graphic design, game design, etc. not for proficiency in any one, but because creativity and innovation are the	see response to #15, above

goal.	
#25 - Eliminate legacy courses where they are not in line with our mission	will be done as part of the new course/curriculum proposals
#26 - With the establishment of the MakerSpace, Digital Fabrication should be a permanent part of the curriculum	see Table 1

Table 3: Curricular recommendations and our plans to address them

III. Students

Throughout our 15-year history, IMM student enrollment numbers have continuously increased at an average rate of approximately 13% per year. In 2010, there were 60 majors, 12 minors, and 2 students with a second major in IMM. Within four years enrollment in the program doubled, resulting in 127 majors with 46 minors and 12 double majors. By the Fall of 2018 there was another increase to 147 majors and 50 minors; as of February 2019, we are at 151 majors and 47 minors.⁷ Given that our enrollment (and yield) trends have been consistently positive over many years, we believe that we have some margin within which to increase the quality of our program by gently tapering our rate of growth. As we are bumping up against capacity constraints in both faculty numbers and facilities, it would be wise to thoughtfully control our growth. By continuing to grow at a more modest rate, we aim to be more selective in the students that we elect to accept while also not exhausting our resources and personnel.

Internal Transfers (Change of Major)

Since our inception, we have welcomed a large number of students who have transferred into IMM from other majors on campus. On average, approximately 20 students apply each year to change their major to IMM. In January 2018, IMM revised its internal transfer process to conform to the new College-wide Change of Major policy and more purposefully manage our growth. The details of our new entrance policy are described in the 2018 Undergraduate Bulletin. Students applying for entrance into the program must receive a grade of “B” or higher in one of four 100-level foundation courses and complete an interview with a faculty committee (or chair designee). The interview is evaluated on the following criteria: demonstration of media production skills or other outcomes from IMM courses; clarity of future goals, citing curricular or co-curricular experiences; self-reflection on the design and development process, describing what was learned in creating specific projects; and establishing whether there is a good fit between the student’s learning goals and the IMM curriculum.

⁷ see Appendix I (source: BBA/Pyramid Student Enrollment data provided by the Center for Institutional Effectiveness, February 13, 2019)

Following the updated policy, a faculty committee interviewed prospective students in January and June of 2018, accepting 17 out of 22 applicants. In January 2019, eight students applied and interviewed as prospective internal transfers; six were accepted and enrolled. (We will hold the next round of interviews in June 2019, and are currently keeping track of 11 students who have declared their interest to be considered at that time.) We are keenly aware of the role that we play in relation to other Departments in this regard. Since implementing the new policy in January 2018, we have paid careful attention to how we handle the internal Change of Major process, as our acceptance decisions impact other units on campus (including the Center for Student Success, with which we communicate frequently). The below image presents the data about the original Departments for all of our internal transfer students since 2013:

Internal transfers

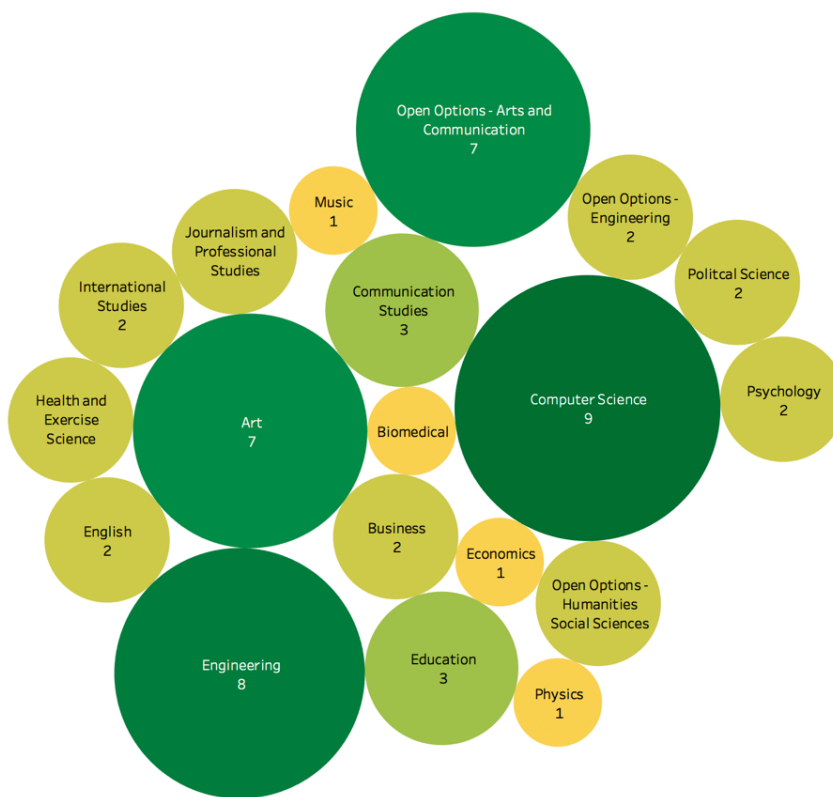


Image 1: Original majors for internal transfer students to IMM, 2013-2018

External Transfers

Historically, External Transfer students from Community Colleges have also provided a large source of enrollment growth within our major. Over the past several years, class cohorts have increased measurably between matriculation and graduation, due to both internal and external transfer enrollments. For example, the incoming freshman class in Fall 2012 began with 19 students and graduated in 2016 with

44; the incoming freshman class in Fall 2013 began with 24 students and graduated in 2017 with 38; the incoming freshman class in Fall 2014 began with 27 students and graduated in 2018 with 43.

This large number of incoming transfer students challenges our faculty in many ways. Many of these students expect to graduate from TCNJ within two years. However, in actual practice, External Transfer students generally take 5 or 6 semesters to complete all in-Major IMM requirements and Liberal Learning courses. (Transfer students who arrive in the Fall tend to take 6 semesters to graduate, due to the way that our major is structured. We have discovered that those who arrive in January can often finish in 5 semesters.) Although students with AS and AA degrees are waived from Liberal Learning requirements, many transfer students hold alternate degrees. In some cases, it is a shock to them that they will not be able to complete degree requirements in the two years that they were expecting. We are starting to look at ways to address deficiencies that these students sometimes present in their preparation for college-level study at our institution. We are looking into the possibility of creating articulation agreements with specific community colleges that have established media production or game design programs, including County College of Morris and Brookdale Community College.

Moving forward, we would like to adjust our incoming External Transfer student numbers in two ways:

1. reduce External Transfer numbers slightly, to manage capacity and quality
2. prioritize Spring enrollments, to maximize students' opportunities to complete their graduation requirements in 5 semesters

Makeup and Diversity of Students

As the program has gained appeal, the makeup of our students has changed. While male students currently outnumber female students 90 to 48, we have seen a recent uptick in females applying to and being accepted into the program. Male students are currently the majority in programs such as Engineering, Science, and Business. Of 140 IMM majors in the data we accessed, almost 56% are white, 16% are Hispanic, 13.5% are Asian, and nearly 11% are African American. Our major draws students from outside of New Jersey including past and present students from Pennsylvania, New York, Rhode Island, and Massachusetts.

Advising

Students are encouraged to meet with their advisors once each semester to get assistance with course selection and career advice. Students can also attend group advising sessions; several of these are scheduled and publicized in the weeks leading up to each Registration window. As students progress in

the major, faculty also informally advise them on career planning and provide mock interviews to prep for job or internship interviews. Each of the 5 full-time IMM faculty works with approximately 30 advisees.

Student Activities and Clubs

IMM students participate in several clubs that help them enhance and supplement the skills they learn in the classroom. Many of these clubs present tutorials by students and visiting experts, as well as peer mentoring and collaboration in teams – modeling our curriculum and covering supplementary course topics in greater depth. Active IMM clubs include:

1. **TCNJ Game Design Club** (formerly Magic Circle; Josh Fishburn, advisor) The club is for students interested in game design “to meet, share ideas, learn, and work on projects with their peers”. The club members meet regularly to discuss game design and development, collaborate with other student organizations like SIGGRAPH and AMPD for events like the October Haunted Hallway, and offer tutorials open to anyone on the Unity Game Engine and other related technologies. https://twitter.com/tcnj_gamedesign?lang=en
2. **ACM SIGGRAPH**, or the Association for Computing Machinery’s Special Interest Group on Computer GRAPHics and Interactive Techniques (Phil Sanders, advisor), meets weekly and includes majors outside of IMM (typically, Art). SIGGRAPH is an international organization “dedicated to the generation and dissemination of information on computer graphics and interactive techniques.” TCNJ SIGGRAPH members discuss and collaborate on animation, video, games, etc. Weekly meetings include student-run tutorials on a wide range of topics such as 2D and 3D animation, compositing, and applications such as Maya and the Adobe Creative Suite. SIGGRAPH members participated in AIMM after dark this fall with a video contest.
3. **AMPD**, or the [Association for Music Production and Discussion](http://tcnj-ampd.github.io/) (Teresa Nakra, advisor), is a group of students enthusiastic about music -- playing and producing it. AMPD has access to recording studios on campus and hosts a concert every semester, showcasing TCNJ’s very own musical talent. MORE??<http://tcnj-ampd.github.io/>
4. **CGC - Competitive Gaming Club** (Josh Fishburn, advisor) organizes regular tournament that attract regional competitors for popular competitive games like Overwatch and Super Smash Bros.

One of the Signature Experiences of a TCNJ education includes Undergraduate Research, Mentored Internships, and Field Experiences. Our faculty and staff help students experience all three types:

Internships

Although not required, internships are pivotal in enhancing the skills learned in the classroom and in helping to fine tuning a student’s focus within the major. The Department has a dedicated page on our website (imm.tcnj.edu) for both internship and job opportunities. Our Program Assistant, Rachel Lichtenberg, shares new opportunities with students via group emails to our majors and minors and also through social media channels when applicable.

Typically, local companies will contact us with internship opportunities and the employer will send a detailed job listing or a link to the position on their website. We are also fortunate to have a network of alumni who reach out to recruit interns. Students have also gotten internships from attending special hosted IMM events (i.e. guest lectures and Senior Showcase) with industry leaders who have come to campus. One recent example happened in Fall 2018 after a featured lecture given by Jesse Schell, video game designer, CEO of Schell games, and Professor at Carnegie Mellon University. An IMM student spoke to one of the industry panelists afterwards at the tea hosted in our “U-Lab” space; he was offered a summer internship on the spot on the West Coast with entrepreneur Jim Marggraff.

In the past five years, students have completed internships at a number of prestigious local and national companies. They include DreamWorks (3 students, 1 of whom now works for the company); Amazon, Nickelodeon, CBS, Game-U, Dream But Don’t Sleep, and National Sawdust (a professional music venue in Brooklyn). Local companies include: Critical Response Group, Oxford Communications, Princeton Partners, and Trip Advisor.

Participation in Mentored Research

TCNJ offers faculty and students opportunities to collaborate on research projects. One such opportunity is through the MUSE (Mentored Undergraduate Summer Experience) program. In the Summer of 2018, Assistant Professor Josh Fishburn worked with two students and a colleague from the Department of Communication Studies on a project entitled “Innovative Interdisciplinary Faculty-Student Collaboration on Game-Based Alcohol Intervention.”⁸ In summer 2017, he worked with two majors on the “Technological Foundation for Prototyping Lightweight Networked Art Games” project. His team created three lightweight multiplayer game prototypes that were focused on poetic player interactions in a real-time online environment and that addressed the following design questions:

1. What is an appropriate level of communication, both diegetic (or in-game) and nondiegetic (external to the operating game mechanism, e.g. an instructions screen), to design into the play experience?
2. How do we balance the creation of collaborative play experiences with the desire for individual players to feel that they have a meaningful play experience?
3. Because we were not implementing adaptive networking techniques (which handle latency), how can we design around the fact of network latency? (And what is an acceptable level of latency?)

⁸ see article on Communication Studies website: <https://communicationstudies.tcnj.edu/2018/12/14/innovative-interdisciplinary-faculty-student-collaboration-on-game-based-alcohol-intervention/>

Field Experiences

Our faculty have invested significant effort in providing high-quality field trips and study-abroad experiences for our students. Here are some memorable examples from the past several years:

1. **IMM Faculty-led Study Abroad in Peru** (Winter 2019) examined Peru's history, politics, art, religion, and social movements through the lens of concurrent technology. Students visited historical sites ranging from pre-Incan to colonial and considered how the technology of the time embodied the practical and spiritual values of the people. Through visits to local businesses, discussions with entrepreneurs, and lectures from university faculty, students gained insight into current uses and attitudes toward technology unique to modern-day Peru.
2. **CUNY Games Conference** (January 2019) Josh Fishburn took former MUSE students to NYC to present a project that he worked on jointly with Yifeng Hu in Communication Studies.
3. **Fred Rogers Center** (October 2018) Warren Buckleitner and Josh Fishburn and a group of adventurous students from IMM 470 – The Methods of Fred Rogers – made a field trip to Fred Rogers' childhood home in Latrobe, PA for a first-person look at the original Mr. Rogers' neighborhood. The visit was made with the cooperation with the Fred Rogers Center at St. Vincent College, where Professor Buckleitner serves as a Senior Fellow. After a tour of the Fred Rogers Archive by archivist Emily Uhrin, students had a chance to present their projects to the staff, and a lucky few were able to play some of the instruments used on the program.
4. **Dust or Magic** (annually in November) Warren Buckleitner routinely invites his classes to attend the *Dust or Magic* conference that he organizes in Lambertville, NJ. This conference hosts international industry leaders from diverse tech fields; IMM students in his classes have been allowed to attend for free.
5. **Escape Room** (Summer 2018) John Kuiphoff took a group of Independent Study students to a local Escape Room to do research for their collaborative project.
6. **Nintendo's Launch of Labo Switch** (Feb 2018) Warren Buckleitner and three IMM Seniors were among the first people in the world to test Nintendo Labo, a new line of interactive build-and-play experiences designed for Nintendo Switch. During the NYC press event they built several of the "toy con" inventions, took pictures and videos for their classmates, and quizzed to the Nintendo staff, including Nintendo's Vice President of Corporate Affairs. Highlights of the trip included talking with the Nintendo programmers who helped to design the kits and interacting with the members of the press who attended the event.
7. **New York Toy Fair** (Feb 2018) Three IMM Seniors attended the 115th Annual American International Toy Fair in NYC. The three spent the day exploring the show floor and participating in product briefings. Highlights of the trip included a behind closed doors tour of Hasbro's Holiday 2018 toy and app lineup, an interview with Merge VR designers, and a booth tour of LEGO. At the end of the day they shared their findings with reporters and Toy Association staff.
8. **Etsy and Red Nucleus** (Fall 2017) Chris Ault took his IMM 470 (Creative Spaces) students to Etsy's NYC headquarters and Red Nucleus in Yardley, PA to study office design.
9. **Boston Pops** (May 2017) IMM student Jillian Festa ('18) was invited to serve as a technical assistant to Teresa Nakra as she presented her work in rehearsal and concert with the Boston Pops. The student had an opportunity to connect with several industry leaders on trip.

10. **NYU Game Center Playtesting** (Spring 2016) Josh Fishburn took Games II class to playtest center to provide user feedback for games in development.
11. **Spotify Hackathon** (Fall 2015) Teresa Nakra took the Audio Signal Processing class to Spotify NYC headquarters to attend the Monthly Music Hackathon.
12. **Trenton clients** (every semester) In Chris Ault's IMM 280 course, students routinely meet with clients in Trenton to design solutions that address real-world needs in the local community.
13. **IMM Faculty-led study abroad to Alcalá, Spain** (Spring 2015) The Department of World Languages and Cultures and the TCNJ Center for Global Engagement joined IMM in developing a semester study abroad program at the Universidad de Alcalá de Henares, hosted by the Instituto Franklin, an academic meeting place for Spaniards and Americans.

Intellectual Community and Community-Building

IMM faculty purposefully structure our program to ensure that our students understand how to function well within teams and larger community groups. We have been conscious of this since our founding; it has been a guiding principle in our design of curricula and facilities, going back to the original design of the Ubiquitous Computing Lab (U-Lab, AIMM Room 206) and Chris Ault's recent upgrades to that space in Summer 2018. It is also the reason why we instituted a successful weekly IMM Tea, to which all TCNJ students and faculty are welcome. We see community-building as extremely important to recruitment in the changing landscape of higher education. We believe that it is a key factor not only in our enrollment growth trends, but also in our students' career successes after TCNJ. (Data provided by the TCNJ Career Center in 2016 demonstrated that IMM alumni reported the eighth highest average starting salary compared with other programs the College.⁹) Ultimately, we aim to find synergies between classroom learning and the community because we believe that this approach benefits our students in the long term.

While for some time we have enjoyed privileged status as one of the only Interactive/Emerging Media and Game Design programs in our region, there are now several peer and competitor programs at nearby institutions, including a B.A. in Interactive Media Arts program at NYU, a B.A. in Communication and Media at NJIT, a B.A. in Media Studies and Production at Marist College, and a Game & Interactive Media Design program launching this Fall at Rider University. It is our intention to keep ahead of these alternative choices by continuing to develop our vibrant intellectual and social environment.

One of the ways in which we develop community is by inviting eminent speakers with whom we maintain ongoing relationships, including Douglas Rushkoff, Marvin Minsky, Jesse Schell, Dust or Magic panelists, Ken Perlin, Daniel Schiffman, Lon Van Eaton, et al. We strongly encourage our students to meet and talk with these visiting scholars and actively organize luncheons and teas with the speakers.

⁹ Class of 2016 First Year Out Survey Report (<https://career.tcnj.edu/files/2017/08/ArtsComm16-report.pdf>), page 4.

We also maintain strong articulations with outside entities and stakeholders, including alumni (365 of whom actively participate in our LinkedIn group), industry partners (including local companies Critical Response Group, Oxford Communications, Princeton Partners), and ongoing relationships with graduate programs at MIT, New York University, Carnegie Mellon University, and Georgia Tech. The Director of one such graduate program, NYU's Interactive Telecommunications Program, has been fond of saying that TCNJ has been a source of their best students over the years.

IV. Faculty

IMM was founded by faculty specializing in Digital Media, Computer Science, and Professional Writing, and was always envisioned as a center for interdisciplinary teaching, research, and creative collaboration. The Department requires a core faculty with deep expertise in our **primary areas of study**, as the faculty must ensure that the IMM curriculum provides students with sufficient theoretical and practical grounding. (This is particularly important because our curriculum does not include some of the foundational classes that one might expect to find in a curriculum focused on one area, such as Computer Science or Music Technology. Instead, we introduce many of the important concepts in those fields in our projects-focused classes, and encourage students to pursue coursework in the contributing disciplines if they wish to acquire more in-depth knowledge.)

A consistent goal and practice has been to facilitate curricular and research collaborations among faculty in the contributing disciplines as well as in Artificial Intelligence, Mechanical Engineering, Software Engineering, and Digital Arts. These collaborations fueled our original Game Design¹⁰ curriculum, the Conducting Robots¹¹ course, the Trenton Makes Music¹² course, and our team-teaching explorations employing the Cooperative Expertise model.¹³ However, these initiatives were often tied to grant funding, and became difficult to sustain when the grant money ran out. We feel that it is important to return to that original vision of IMM as a site of interdisciplinary collaboration, transdisciplinary communication, and community building. Doing so will require some augmentation of existing faculty resources with which to devote to grant development and outreach.

¹⁰ funded by a grant from Microsoft

¹¹ funded jointly with the Schools of Engineering and Science by a grant from National Science Foundation

¹² Funded by the New Jersey Council for the Humanities and the College Music Society

¹³ The cooperative expertise model is one of three models of interdisciplinary teaching collaborations for extending computing expertise beyond the computer science classroom. In the CE model, teachers from collaborating Departments offer separate courses with separate deliverables and grading, but have students collaborate across classes on major projects. The model was developed by a team of researchers at Villanova University, Virginia Tech, and TCNJ.

Currently, IMM has assembled a core faculty with strengths in Game Design, Animation/Digital Media, Digital Humanities, Interactive Music Systems, and Digital Fabrication. Our full-time faculty actively engage in scholarly/creative/professional activities and routinely obtain MUSE, SOSA, Sabbatical, and other competitive grants related to community engagement and campus-wide cultural and intellectual community. We have adjunct faculty with strong records of achievement as animators, web designers, exhibit designers, audio recording engineers, technical writers, composers, software engineers, and entrepreneurs.¹⁴ The External Reviewer identified some critical areas in which additional faculty support is needed. For example, she noted that our Game Design curriculum rests on the shoulders of a junior faculty member and we rely too heavily on adjunct faculty. She advised the hiring of more full-time faculty in such high-demand areas as Game Design and Animation. We concur with those recommendations.

We also note the need to replace the faculty expertise in Computer Science that we lost with the departure of founding faculty member Ursula Wolz, and the more recent departure of Edward Kim, who had a joint appointment in Computer Science and IMM. We were also hurt by the untimely demise of our esteemed Computer Science colleague Miroslav (Mike) Martinovic, a co-author of our original games curriculum who used to deliver guest lectures on AI in the games classes.

Finally, we note the lack of faculty diversity with chagrin. We will be examining our recruitment strategies and seeking to develop relationships with organizations that might be a source of future teaching talent. These organizations include such entities as the National Society of Black Engineers and groups devoted to broadening participation in computing and related professions such as the IAAMCS alliance (<http://www.iaamcs.org>).

One way that we hope to reconstitute the kind of creative community that we originally envisioned is to institute a Faculty Fellows program of some sort that would allow colleagues from other Departments to teach and do scholarly or creative work in IMM. They could teach a research seminar in our Department (or perhaps guest lecture in some classes), participate in community events such as our Department Tea, and make use of our facilities.

¹⁴ We also hire alumni and subject experts to teach our Mini-courses every semester; these instructors are generally very well-liked by students and tend to receive strong teaching evaluations.

V. Resources

The Art and Interactive Multimedia building was designed over ten years ago when the IMM Program was just getting established. As such, the building was not designed to accommodate the large number of students currently being served by the Department. Currently, IMM occupies the U-lab (AIMM 206), a flexible classroom space that fosters student research, collaboration, socialization, and events. We also share a number of teaching spaces with the Departments of Art and Art History, Music, and Journalism & Professional Writing, including five computer labs, the Makerspace, and a Recording Studio. In order to compete with comparable institutions, IMM aims to build out and reinforce other learning environments to support our core curricular areas. Specifically, we plan to develop a high-end Game Design studio, a motion capture facility, and a digital design studio. We realize that space might not be readily available in our current building and might require that we make alliances with neighboring Departments in other buildings on campus. Some of our current facilities are in need of critical upgrades. For example, our Recording Studio is powered by a computer that is nearly ten years old; the Makerspace is understaffed and does not have an operating or equipment repair budget; additional needs include an integrated green screen capture and photogrammetry area for Visual Storytelling and Animation.

The IMM Department budget has not increased significantly in over a decade. The college allocates approximately \$12,000 per year for all Departmental expenses, including travel, phone lines, office supplies, general purchases, etc. As a large and growing Department that leverages emerging technologies in all areas of its curriculum, the current budget allocation does not meet our needs. As such, the Department has gone to great lengths to secure additional funding. For example, IMM was awarded a number of grants and donations totaling more than \$150,000 to establish a Makerspace. Our Game Design curriculum was made possible by a generous grant from Microsoft Research. A significant grant from the National Science Foundation (over \$400,000) was awarded to two IMM faculty along with faculty from Computer Science and Mechanical Engineering. The Trenton Makes Music initiative was also funded by grants from the New Jersey Council for the Humanities and the TCNJ CCIC. Much faculty and student research has been funded by internal MUSE, SOSA, and Sabbatical awards. We are currently seeking grant and entrepreneurial opportunities to fund the development of a design studio.

The Department of Interactive Multimedia includes five full-time faculty members. Their expertise resides in disciplines related to Game Design, Animation/Digital Media, Digital Humanities, Interactive Music Systems, and Digital Fabrication. However, more support is needed for the areas of Creative Coding, Visual Storytelling and Animation, and User Experience Design (the latter now a *Shared Competency* with Graphic Design). To this end, we plan to continue advocating for and obtaining new

faculty lines. In some ways, our popular mini-courses represent an attempt to fill in the curricular gaps through the expertise of industry professionals and recent alumni.

The Department is need of additional technical staff support. Brett Ratner, the Art & Interactive Multimedia Technical Coordinator, currently assists the faculty with tasks related to the daily operations of the Makerspace. However, Brett is also responsible for the Equipment Cage, Art Department Photo Lab, Lighting Studio, printing facilities, etc. The Department is in desperate need of technical coordinator that can assist in the operation and maintenance of the Makerspace, game studio, U-Lab, interactive music classroom, and design studio.

Appendix I.

Source: BBA/Pyramid Student Enrollment data (2010-2019) provided by the TCNJ Center for Institutional Effectiveness, February 13, 2019

IMM Enrollment Report 2010 - 2019		2010 Fall	2011 Spring	2011 Fall	2012 Spring	2012 Fall	2013 Spring	2013 Fall	2014 Spring	2014 Fall	2015 Spring	2015 Fall	2016 Spring	2016 Fall	2017 Spring	2017 Fall	2018 Spring	2018 Fall	2019 Spring
Officially Enrolled Count		60	61	72	75	75	84	109	118	127	128	122	122	129	134	141	149	147	151
Interactive Multimedia	Major	10	15	21	16	17	16	13	13	8	14	4	1	1					
	Preparation	2	4	4	5	9	11	10	11	12	11	11	10	10	8	3	3	1	1
	Minor	12	19	25	35	40	41	44	43	46	48	39	47	59	65	58	56	50	47

Source: BBA/Pyramid

Appendix II. Top 26 ranked priorities from External Review Report

Number (for reference)	Priority (10 = highest)	Recommendation
#1	10	identity needs better definition and refinement (Report: "The relationship to both the visual arts and the field of communication is central to the fundamental core of IMM.") Are we focused more on technology or design/creative? [PS: both: we are focused on the interaction between design/creative and technology/production]
#2	10	Increase rigor and academic standards; course content is remedial/repetitive, expectations are low. (Perception or reality?) Establish professional norms in class by discussing what the objectives are and why. Increase student achievement expectations; apply them consistently across course sections and entire curriculum. Give critical feedback. Hold students accountable. [maintain balance and creative tension between analytic rigor and synthetic creativity]
#3	10	Detailed restructuring of our curriculum needed. Rethink the Core classes: core course offerings should reflect the current needs of IMM (include all important topics: gaming, audio, fiction writing for animation/gaming, imaging, etc.). Avoid the "topics tasting" approach at the core and focus on student learning of core concepts. (how do we assess student need/demand?)
#4	9	create advisory board of industry sponsors (consortium?) (recruit Al Brown to support this effort; like Google's campus at Howard)

#5	9	Branding and public perceptions of what IMM is vs. what the program actually offers.
#6	7	It is clear that IMM needs more full-time faculty to help share the workload. This can come as full-time tenure-track lines and/or full-time instructors with 3 year appointments with service and teaching expectations. Expertise in Animation seems to be the most obvious need, with Web Development as a close second. Virtual and Augmented Reality are also areas that should be added into the IMM curriculum but could be combined with the previous job descriptions.
#7	7	The IMM faculty need to be provided time and necessary resources to keep up with the rapidly changing technology and updating of their courses.
#8	7	Ensure that an applied coding component runs through the curriculum and is integrated into the appropriate courses. It is more effective to cover the fundamentals of HTML, CSS, and Javascript in IMM 130 and provide semester full of a wide variety of technologies that the students are not given enough time to learn. These complex topics should be saved for an advanced web development course.
#9	7	Ensure that there is an academically rigorous introduction to digital audio, including the basic elements and principles, in at least one of the Core classes (the new Intro. to Time-Based Media class proposed). Digital audio is a necessary skill in animation, web development, and other areas within IMM but it is not the highest priority.
#10	7	Digital Fabrication should be introduced at the Core level to provide basic concepts and skills. [atoms and bits]
#11	6	establish mentoring and evaluation system for adjuncts and review their class content -- assign full-time faculty members to communicate/review adjuncts' classes

#12	6	<p>There should be a mechanism to request assistance to help students with special needs in the classroom. This could involve personal tutors, counseling, and peer support personnel. Faculty should also be trained on how to deal with students with emotional issues. The Career Services office should [seriously needs to] play a more important role in connecting IMM students to industry opportunities. [they should not be introduced into the classes then abandoned to their own devices. There needs to be a systematic consideration of the entire process, from recruitment/acceptance, to placement with sufficient remedial work, to instruction and integration into classes, through placement and adaptation assistance after graduation] They should schedule a meeting with IMM faculty to obtain information about possibilities then they should take over in helping students with internships and career opportunities. Although it adds richness to the curriculum and a cross-disciplinary flavor to IMM, having so many different professors teaching IMM classes creates a complex scheduling scenario. These faculty members are not required to contribute to the service load in IMM as well. Full-time non-IMM faculty teaching in IMM could also share in the IMM service responsibilities in proportion to the number of classes taught. [as a separate topic, administration of department also needs to address additional full time teaching faculty in order to contribute to the currently excessive service load]</p>
#13	6	<p>Implement a mechanism to receive feedback from students [and alumni] on a regular basis in an effort to improve the curriculum.</p>
#14	6	<p>A specific person should be tasked with updating the website and promotional materials as well as keeping the IMM social media sites active. This could be a student employee or incorporated as part of the responsibilities of a new staff position.</p>
#15	5	<p>course offerings too diverse; need focused progression of courses in areas of study (once areas are decided, we can improve productive relationships with other departments) add a progression of courses that adds depth to content areas in the curriculum</p>
#16	5	<p>strategic plan needed to help with social media, event planning, promotion, etc.</p>
#17	5	<p>provide training and support for faculty dealing with large numbers of students with special needs -- reach out to Meghan Sooy and Dixita and Erica Kalinowski for training for special needs students and learning challenges at end of August – is this beyond their expertise/mandate? We (and lots of other departments) need direction and support from the Provost’s Office (Academic Affairs) on curriculum and pedagogy issues– we should insist on knowing what we need to know in order to be inclusive in our teaching. Talk to Dean/Associate Provosts about this? Kerri Thompson Tillett?</p>

#18	5	diversity and inclusion
#19	5	There should be a full-time faculty mentor assigned to mentor all adjuncts, or each IMM full-time faculty member, preferably in the area the adjunct is teaching, could be assigned a number of adjuncts to mentor. At the very least, new adjuncts should meet with a full-time faculty in that area who has taught the class or knows the curriculum.
#20	4	IMM often irritates its neighbors, esp. Art, Comm Studies/RTF, CS... (because it is growing?)
#21	4	Because of the high level of demand for the games-related courses, Josh Fishburn is needed IMM to teach classes, yet he is untenured and should be protected from investing too much time in teaching and service at the expense of his research. He should be encouraged to, and given the time to, increase his scholarly and creative production as he works towards tenure. In general, untenured faculty should be freed of some of the time-consuming service and teaching expectations in the department and encouraged to focus on their research.
#22	3	too many adjuncts in the department, too few full-time professors/instructors; reduce reliance on adjuncts by increasing full-time IMM faculty (tenure track and instructors); lessen the time commitment to seek, hire, mentor and write contracts.
#23	3	Antidisciplinarity (disruptive interdisciplinarity) -- faculty don't necessarily want to be focused – breadth vs. depth -- IMM intends to be general vs. specified – the intent is to give students elements of animation, graphic design, game design, etc. not for proficiency in any one, but because creativity and innovation are the goal. The goal is not self-definition as a specific thing, but as a unique hybrid – marrying that with a really strong liberal arts education works well. If that is the direction in which the department wants to go, then 1. [in every educational institution there are inevitable strengths and areas of focus and areas which are not fully covered/explored. This in a dynamic which is always in a state of flux. Any area of teaching and/or expertise can be described as a large area of thin to moderate depth of knowledge that is punctuated by smaller spikes of deep knowledge and expertise. This is standard across every discipline and institution, and it should not be defined as an inherent shortcoming of our program.] The department needs to not advertise itself as doing things that it is not (in graphic design or animation – where students are being exposed to animation but not specializing in it). Directly or inadvertently, IMM is obfuscating that exposure to a field is the same thing as proficiency in it. [This is a misapprehension of our mission and what we actually offer and provide - we should and do say that we are not a professional training program in any one specific area, but that we offer a

		<p>multidisciplinary/interdisciplinary BA (not BFA or BS) in IMM, which incorporates areas such as storytelling, computational problem solving, human centered design, game design and animation. Our goal is to enable students to gain a sufficient basis in their area of interest and also to learn how to participate in lifelong self-development, rather than to provide a constrained professional training in any single specific skill set. This is precisely what a large subset of the current technology and new media professions require, as witnessed by what Microsoft said when they chose us to be one of the three national recipients of their game curriculum development grant. They said we were exactly what they were looking for; we bring an integrated multitude of approaches to bear in order to solve a specific set of interrelated problems, such as game design and creation.] How IMM talks about itself has to reflect the truth. Risk: counterproductive relationships with sister departments (We are a department predicated on reducing boundaries – antithetical to the very definition of department.) [If this is correctly envisioned/stated, it does not threaten any specific discipline, but complements it.]</p>
#24	3	<p>The Senior Projects should be displayed in a professional venue such as the Gallery. A productive relationship with the gallery that allows IMM students to showcase their work may be beneficial.</p>
#25	2	<p>Eliminate legacy courses [where they are not in line with our mission]</p>
#26	2	<p>With the establishment of the MakerSpace, Digital Fabrication should be a permanent part of the curriculum</p>