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# IGM 2012-2025: A Revised Future Vision of the School of Interactive Games & Media

To: Andrew Sears, Professor and Dean, GCCIS
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## Introduction

This whitepaper represents the thinking of the author, *and only the author*. It was written in response to the request of Professor Jorge Diaz-Herrera, Dean of the B. Thomas Golisano College of Computing and Information Sciences, as a part of the strategic planning process of the college. In addition, the creation of this document is synergistic with campus-wide planning initiatives, including the 'RIT 2025' discussion initiated by President William Destler and Provost Jeremy Haefner.

The future of the IGM department rests in its ability to realize the mission that was drafted this past year during the formation of the department. Specifically, the mission of the department involved four major areas, including 1) the curriculum of the academic programs and the education of our students, 2) advancing the field through scholarly contributions and the production of creative works, 3) continuing to operate on the cutting edge of the fusion between media production and computation, and 4) supporting and extending collaborative works that combine and integrate our interests in games and interactive media with other domains. [2] Although there are many possibilities that can influence the growth and diversity of the field, it is the department's belief that any such changes and trends will resonate with the core mission. In particular, any future trends must address the need for increased and sustained collaboration between IGM and various experts in other domains, both as research partners and domain specific experts in multi-disciplinary teams. The department two decades from now should exist as both a multi-disciplinary group in its own right, and a multi-disciplinary nexus of collaboration. The emphasis will be upon the design and development of interactive media that interoperates across a wide array of academic fields and with a diverse group of constituents.

This document attempts to define the overall direction of the IGM department, and thus contains first a discussion of trends that will shape the field, a discussion of the focus on collaboration that will drive the department forward over the next few years, identification of trends in the future curriculum, scholarship, and service activities of the department, and a discussion of possible barriers over the next 4-5 years that will need to be overcome to attain these goals. The department, as it stands today, is a model for other institutions that desire a technology-focused Game Design and Development program, as well as a cross-cutting New Media program. It is clear that the IGM department has the potential to expand its position as a national leader in the field, but doing so will depend on hard work and commitment on the part of both the department and the Institute at large.

# 1. A Brief Overview of Interactive Games & Media

Interactive Games & Media studies computing as a discipline of duality. At one level, computing is truly a science and students must familiarize themselves with the preciseness of computing as well as its ability to accommodate a scientific mode of inquiry. At another level, computing is an art and expression of the creative process. This duality emerges in the earliest courses in the department, as the introductory IGM student must master both the strictness of the digital world as well as the elegance and beauty of a particular solution. The science and art of computing are inexorably intertwined and each aspect cannot hold without the other. The science and art can be seen from the beginning in such tasks as learning the structure and flow of a particular language, concepts of object-oriented programming such as inheritance and polymorphism, algorithms and simple data structures, as well as the complexities of designing and implementing intricate systems. At the same time, our work with technology produces artifacts of value to an audience, experiences that tell stories and communicate through a variety of media to engage and inspire an audience. As a faculty, we strive to produce and disseminate a curriculum that conveys both the science and art of the discipline, to illustrate different techniques, optimizations, and tradeoffs along both axis.

The IGM curriculum is founded on the notion of an active model of engagement in the classroom, and employs elements such as the "studio model" to further this sense of active participation and collaboration. For IGM, computing must be made relevant and personal such that students invest in their own creations and conveyance of message. At one level, this belief is motivated by interactions with students from the arts, which places great importance on the student portfolio as a means of securing a career or continued education. At another level, student created work that is relevant and meaningful as a bridge for friends, family, and peers. For each project, the duality of the technical and interactive requirements is a key balancing act, coupled with the critical importance of student-engaged expression.

In similar fashion, IGM operates on the tenant that scholarship must be inclusive of the student body, and in fact must be collaborative to succeed. As scholarship in IGM is likely to produce interactive works, and as reflection of these works to an audience is often required in order to gauge effectiveness, it stands to reason that at the very least there must exist a collaboration between author and audience in an interactive context. As the general complexity of work in this area has increased, and the affective domain has broadened to include the substantial use of media systems by many traditional disciplines (see the following section for details), the ability for the single-author to directly manipulate all aspects of experience has diminished. Indeed the entire notion of romantic authorship has been subsumed. Instead, the multi-disciplinary project team is now the operational norm, which further opens opportunities for student engagement in this activity at all levels, particularly as scholarship in IGM can be fun, motivating, and exciting.

Due to IGM's unique approach to media-centric computing, the academic programs within the department are nationally recognized by partners such as Microsoft, Adobe, Activision, the New Media Consortium, the Society of Digital Agencies (SoDA) and others. Work from the IGM department has been presented at national and international venues including the Game Developer's Conference and SIGGRAPH, as well as interactive gallery installations, games such as Picture the Impossible, etc.

# 2. Understanding and Preparing for Future Trends in Interactive Media

Future trends in interactive games and media will radically expand the field from the present day. There are three major trends that, in the views of the author, will define the relevant academic space within which the department will continue to grow and flourish. These three trends, broadly speaking, are 1) media convergence, 2) persistent and pervasive experiences spanning a range of home and mobile devices, and 3) content and interactivity that extends beyond the current concept of computer, console, and mobile device. The first of these, convergence, can be seen throughout industry, academia, and

even the audiences traditionally associated with interactive works of various forms. Lines are blurring between 'game studies', 'development', 'interactive experience', and 'art' to an ever increasing degree. The audiences traditionally associated with games are expanding as the definition of 'what constitutes a game' and the various forms and flavors of such work expand. This is one such example of this convergence – works are produced that have appeal across several broad constituencies and/or that are multi-functional and/or situational. Audiences are playing an ever increasing role in the interactivity of the associated systems and in the production of content itself: FaceBook, Twitter, YouTube, and media-enabled collaborative web technologies are blurring the lines between author, developer, and audience. We also see the end-goal of media related technologies changing. Many new experiences are not just to inform or entertain the audience, but rather design to stimulate new ways of approaching scientific inquiry as well as artistic expression. Experiences that challenge our beliefs, provide a differing point of view, or introduce a global perspective to a local problem are all starting to emerge.

The key paradigm that will drive IGM during this period of convergence is the cyclical nature between development processes and the production of media that was identified in the charter drafted by the faculty last year [1], namely that there is a cyclical relationship between the creation of new tools and methodologies for production, and the creation of interactive media. One drives advances in the other, and as such, work in the department will include the production of media experiences as well as the creation of tools, systems, and technologies to realize productive work models. IGM will continue to be distinguished by this intersection of interactive content production and media systems development.

The second trend identified above, the idea of persistent and pervasive media across a multitude of devices, forms the second large-scale platform of growth for the department. Currently, content is exploding on mobile screens and devices as technologies such as mobile phones, PDAs, and tablet computing systems provide technological capabilities for playback and interaction that were not previously available. The most critical experiences, and the most important to the long term growth of the field, are those that are evolving beyond the singular device. At the heart of this paradigm shift is the concept that the experience is not constrained by the mode of access, but rather enhanced by the differences provided by different hardware platforms. In other words, the user can manipulate a shared experience differently depending upon device (PC, console, mobile technology), location (home, school, work, traveling), and mode of interaction (casual, immersed, cooperative). The paradigm shift places less emphasis upon the technology, but instead enriches those elements of theme, community, relationship, brand, and purpose. As IGM embraces this trend, the curriculum and scope of the department will expand to support experience with a multitude of devices, storage capabilities, and connectivity issues in support of such work. This also means that, as work in IGM includes the hardware platform of the audience, it is unlikely that virtualization and/or 'the cloud' will form the basis of our workflow for the future: portions of content and experience will be driven by the cloud but will be realized on a multitude of clients. As such, hardware and development environments are diversifying rather than consolidating.

The third large-scale trend facing interactive media is the extension of this work beyond the screen entirely. This is already emerging though technologies such as the Wii, which extended control of on-screen media to the physical living room on a large scale, and future technological trends will capitalize on additional advances of this type. This has also been illustrated with geospatial events such as Pac-Manhattan, or other augmented reality games, that use the physical world as an integral part of the interactive experience. It is clear that, going forward, the traditional screen will define less of our overall work, as additional technologies and installation techniques are created.

In light of these trends, and particularly in response to the convergence of interactive media in relation to its use in a plethora of other fields, the ability of the IGM department to collaborate extensively with other academic units and industry partners will be paramount. To meet this challenge, the department is uniquely prepared through its faculty's diversity of backgrounds and experiences. In such collaborations, the department will need to be focused, agile, and responsive to immediate trends in both technology and audience.

# 3. The Critical Role of Collaboration and Production

Due to the nature of academic work in games and interactive media, growth over the next few years will be through collaboration with other units. Collaboration can be seen as an ever-expanding shell, encompassing units within the Golisano College, programs across the RIT campus, as well as academia and industry the world over. The ability of students, faculty, scholars, and collaborators to effectively fuse the domain of interactive games and media with other areas of inquiry will define the next generation of how work within interactive media is utilized and understood. At the same time, it will be critical that the tension between domain knowledge and effective experience be both well understood and well executed. The ability of interactive media in general, and games in specific, to engage and sustain an audience is measured by the ability of such work to deliver an experience that is compelling and relevant to the group. This means that for IGM, the production of work and the deployment of systems is a critically important element of any collaboration: without such the effectiveness of work in the field cannot be understood. Likewise, nearly all of the work produced within the department is multi-disciplinary in nature, and in this context IGM operates as a multi-disciplinary group in and of itself, as well as through collaboration with external entities both on and off campus.

## 3.1 Existing Trends in IGM Collaboration

Currently, games and interactive media systems are becoming recognized as an exciting and capable platform for learning and simulation with the ability to contextualize a wide number of fields for the scholar. Games and simulations are quickly becoming recognized as the analytical tools of the next generation: work in visualization, data-mining and problem representation is beginning to acknowledge the field of interactive games and media due to commonality in toolsets, cognitive mapping, and approach. Much of our current work in this area has been in either the use of media systems towards enhancing pedagogical and contextual tools for our own domain, or for use in modernizing and motivating the study of the STEM disciplines at large. Additionally, a substantial amount of work has been done using media systems as visualization tools for various problem domains. Clearly this work will continue to be a major focus of the department.

## 3.2 Future Trends in IGM Collaboration

Over the next decade, however, it is likely that a significant impact of these tools and systems will be applied to the Liberal and Fine Arts, particularly in the area of the collaborative web as related to communities and group interaction, and the ways in which these tools impact humanity's ability to express thoughts and ideas in media-centric ways. Work in this area is predicated locally on extended and strengthened relationships with the College of Imaging Arts & Sciences, the College of Liberal Arts, and the College of Business. At a grass-roots level, this is already occurring. Recent projects include the use of games as a contextualization tool to aid access and appreciation to modern non-representational art, the use of interactive media as a simulation set for economic modeling, and the recent production of augmented reality games to engage the Rochester community.

It is important to note that such collaboration and interoperability is predicated on an understanding of the core mission of each of the entities involved in a partnership: the ability of IGM to partner both locally on campus and in particularly with other national laboratories and institutions has been augmented by the formation of the department and the establishment of IGM as a recognized entity. Continued and expanded presence of the department is an important element in the formation of additional key collaborations, and this is reliant on both a clear promotion of the departmental unit and the resources to produce materials that speak clearly to our mission, curriculum, and scholarly work. This has influenced recent partnerships with the Tiltfactor Laboratory at Dartmouth University, the RIT Laboratory for Social Computing, Adobe, the Rome Air Force Base, Activision, Microsoft, New York University, and others.

## 3.3 Continuing to Define the Field Through Collaborative Work

Furthermore, as the number of academic programs in this area increases, and with the number of IGM students graduating into both industry and academia, the department has a unique opportunity to transform and define the field, and to continue to extend on its already prominent national reputation. Furthermore, faculty will continue to create and strengthen university ties and form their own individual communities of scholars that are in themselves multi-disciplinary, as previously demonstrated by ongoing and emerging work. This will feed directly into the mission of RIT to continue to establish itself as an 'Innovation University', and to effectively contribute to a culture of creativity and collaboration in three concrete ways: 1) By increasing the number and scope of collaborative projects that the department is involved in the professional exchange of ideas will increase exponentially, 2) Through involvement in such work, students learn and internalize critical teamwork and social skills, and 3) production experience in such areas motivates situational learning both of core IGM skill-sets as well as domain knowledge of the collaborative discipline.

## 3.4 Enhancing the Student Experience through Collaborative Work

### 3.4.1 An Increased Need for Entrepreneurial Curriculum and Collaboration

Collaborative work in this area will also continue to define the student experience and the production of work. Over the next few years, the number of students that will seek to use interactive media and work in this area as a platform for entrepreneurship will steadily increase, with curricular and extra-curricular impacts on business, entrepreneurship, and community efforts. It is for this reason that IGM has been working this past year on a project with Adobe and the RIT Entrepreneurship Center on the establishment of a "pre-portal" for game dissemination and ranking, and placed particular emphasis on a student gallery within the departmental web presence.

### 3.4.2 A Shifting Model of Departmental Culture and Expectation

Given the growth of the programs within the department, as well as the general nature of the program, it is clear that the IGM department will operate less like other departments in GCCIS and more like a traditional media production school. Students are drawn to the field by the masterworks of a few key studios and individuals, as well as by their own individual needs to express their ideas through this new and unique medium, but (much like the media industry), graduating students will find roles in a wide variety of fields that involve media-centric computing. Academic practices synonymous with the creative arts will become ever more commonplace within IGM, including portfolio preparation and review, formal critique, collaborative ideation processes, etc., blended with and strengthened by traditional computing production techniques. In this context, the collaborative creation and distribution of work by both students and faculty in a collaborative context is ever more critical, as the experiences of our students and faculty will ultimately define the breadth and reach of the department to prepare students for the widest possible range of downstream options.

### 3.4.3 Impacts on Cooperative Educational Opportunities and Expectation

Furthermore, IGM will expand the number and type of experiences that count towards the 'co-op' portion of its degree requirements. Such changes are necessary to more distinctly align student experiences to changes with the particular industries that employ IGM graduates, as well as to support the changing nature of the Institute. Currently, the stated guidelines for co-op experiences are that they are paid full-time experiences, usually (but not always) off campus at the company's office. There are certainly exceptions to these expectations, but they are just that: situations that are individually approved. Given the breadth of experiences that IGM students will be pursing upon graduation, it follows that there be a broader set of experiences for undergraduates during their co-op experiences as well, and these should formally include 1) traditional experiences as described above, 2) unpaid experiences that utilize traditional intern programs or that target the non-profit sector, 3) participation in undergraduate research teams or funded projects, particularly those that are multi-disciplinary and/or multi-institutional, 4) presentation and/or publication of work in gallery showings and interactive installations, and 5)

entrepreneurial activity and/or freelance work of sufficient depth as to demonstrate professional capability. In all such cases the overarching purpose of the co-op experience should be maintained, i.e. to gain experience through the production of work in a professional context with an appropriate review metric, but the ways and means of obtaining and reviewing such experiences are changing both as the Institute broadens its view of the undergraduate experience and as the field itself continues to evolve.

# 4. A Future Look at Curriculum and the IGM Student Body

## 4.1 Undergraduate Education Directions

The future of the undergraduate IGM curriculum will be characterized by four major elements: 1) the continued stabilization and expansion of the GD&D and NMID curriculum at the undergraduate level, 2) an increased collaborative experience relative to the general education experience, 3) growth in the GD&D program, and 4) additional options and minors as opportunities for collaborative experiences unfold. Currently, the academic programs in IGM are recognized as national leaders in their respective areas. Over the next decade IGM will be involved in the New Media Consortium's investigation of accreditation of new media programs, and will continue to establish itself with organizations such as the IGDA and ESA as a leader in the academic game design and development field. It is the responsibility of the department to prepare students as both designers and developers. Over the next few years the department will operate in its own unique fashion, similar in some respects to a media production school (as noted previously), in service to this mission. The curriculum will expand into both broad-based elements such as 'mobile media' or 'artificial intelligence for interactive simulation' as well as niche areas that form the focus of faculty research expertise such as 'granular synthesis' and 'game engine optimization'. In several situations, the realignment and expansion of the curriculum can use the semester conversion process as an opportunity to revise and extend the current curriculum toward the future service of the field. In the particular case of New Media, the establishment of the department has invigorated the collaborative partnership with CIAS, and the conversion of that program to the new calendar will be an opportunity for an increased level of collaboration that has been somewhat absent in recent years. In all of the undergraduate programs, there are a few overall trends that are worth noting:

First, the department is likely to continue the "Core + Advanced" model at the undergraduate level. Both the GD&D and NMID BS programs are characterized by a well defined core that covers the first two years of study, followed by a highly flexible and modifiable experience in the upper division coursework. This ensures that all students receive a solid foundation in computing and are required to have mastered several core skills across the field relevant to both the design and development of interactive media, content production, and experiential design, while at the same time allowing students to specialize in sub-domains within the field and pursue an academic path of their own.

It is also the opinion of the author that this design means that the optimal point for degree-centric collaboration and multi-disciplinary work should not occur during the core experience, but rather at the advanced stage of study. During the formative years of study, students are beginning to understand their relationship to their chosen discipline as well as their role in their field of study. During these years, the focus is to provide a stable field-centric view of the field and its impact upon the world from a media-centric perspective. With a strong foundation and a degree of comfort with the core tenets of the field, the student is better equipped to be an appropriate citizen of a multi-disciplinary endeavor. The goal of collaboration in the core is to identify additional viewpoints and recognize academic diversity of approach, which is certainly critical in any modern education, and is included through several experiences in general education throughout the university. The conversion of the Institute to the semester calendar and the re-work of the general education requirements will afford students with increased opportunities to tie their major and general studies together, such as obvious connections between IGM and creative writing, music, art, art history, sociology, mathematics, physics, etc. This is particularly true as media systems and interactive applications become the tools of inquiry within these domains.

With respect to program curricula, however, this must be balanced with the key experience of students participating in multi-disciplinary projects and advanced designs at a point at which they being to identify and practice their own selection of sub-domain and expertise. As such, the IGM curriculum over the next decade will seek to enable a broader range of collaborative experiences at the upper division both within different elements of the department, and throughout the college and Institute. These experiences and future coursework will be directly influenced by the academic diversity of the IGM department, in both the existing faculty and future members that join the department in support of the growth in the Game Design & Development program.

Recently we've had a very lively debate over first year curricula and how to lay the foundation for a common experience in the School of Informatics, and between the departments of Computer Science and Software Engineering. The author feels a stronger long-term approach is to instead focus on ways that students, at their discretion, could collaborate in upper division coursework, through a capstone or development experience that integrates some of the computing disciplines in the creation of a team-based project. This has been a great localized experience in the 2D/3D graphics courses taught by the author (as well as other courses in the college) and there seems to be some emerging synergy between GD&D and Computer Science in this regard.

### 4.2 Graduate Education and Directions

Graduate education within the department will continue to evolve as well, but is likely to continue current trends of supporting a small number of exceptionally qualified, talented students. Over the next few years, the department is likely to refocus the graduate program in GD&D to provide better opportunities for RIT undergraduates that seek to continue their studies, either formally through a "4+1 model", or some other mechanism, and to develop a similar Masters program in New Media (ideally with a sister MFA program in CIAS). Recent faculty discussion has focused on requiring fewer courses, and replacing a portion of the coursework with relevant, reusable seminars that focus on current topics and trends. In all such discussions, it is clear that the focus on a team-oriented collaborative production is paramount, coupled with individual research elements that tie directly to the overall project.

In addition, there are substantial opportunities to increase graduate collaborative opportunities, particularly through projects housed in multi-disciplinary centers such as the CASCI, the Center for Student Innovation or the Laboratory for Social Computing. There are also emerging possibilities for graduate students to collaborate with peers in the MFA programs in CIAS and emerging programs in Liberal Arts that focus on communications, media, and the interactive web, which will need to be formally established over the coming years. RIT is uniquely poised, with national programs of excellence in *both* Computing and the Arts, to offer graduate experiences that compete directly with some of the most nationally recognized programs in media studies and production. By 2025, the author expects that the Institute will recognize and capitalize on these strengths through the establishment of a broad-based collaborative degree in the area that enables a greater deal of curricular flexibility than any of our current offerings.

## 5. A Future Look at Research & Scholarship in IGM

Currently, the IGM academic programs are best known for their curriculum and dedicated focus to blending the theory and exploration of interactive media with practical production knowledge and experience. Over the next decade, IGM has a unique opportunity to expand its reputation of excellence in reference of its contribution to the overall field, based in part on the multi-disciplinary background of the faculty, and in part on the collaborative opportunities that will be present as the Institute moves forward in becoming an 'Innovation University'. IGM is able to ensure richness in course offerings and research experiences due to the academic, personal, and cultural diversity of this group, and because of the concrete focus on the production of interactive works as a driving force in the department, as opposed to pure academic inquiry. For IGM, the need to express, engage, and inspire is of paramount importance.

This is reflected in the model of faculty operation that the faculty put forward in their whitepaper on Metrics and Processes for Tenure & Promotion within IGM [3], reproduced below:

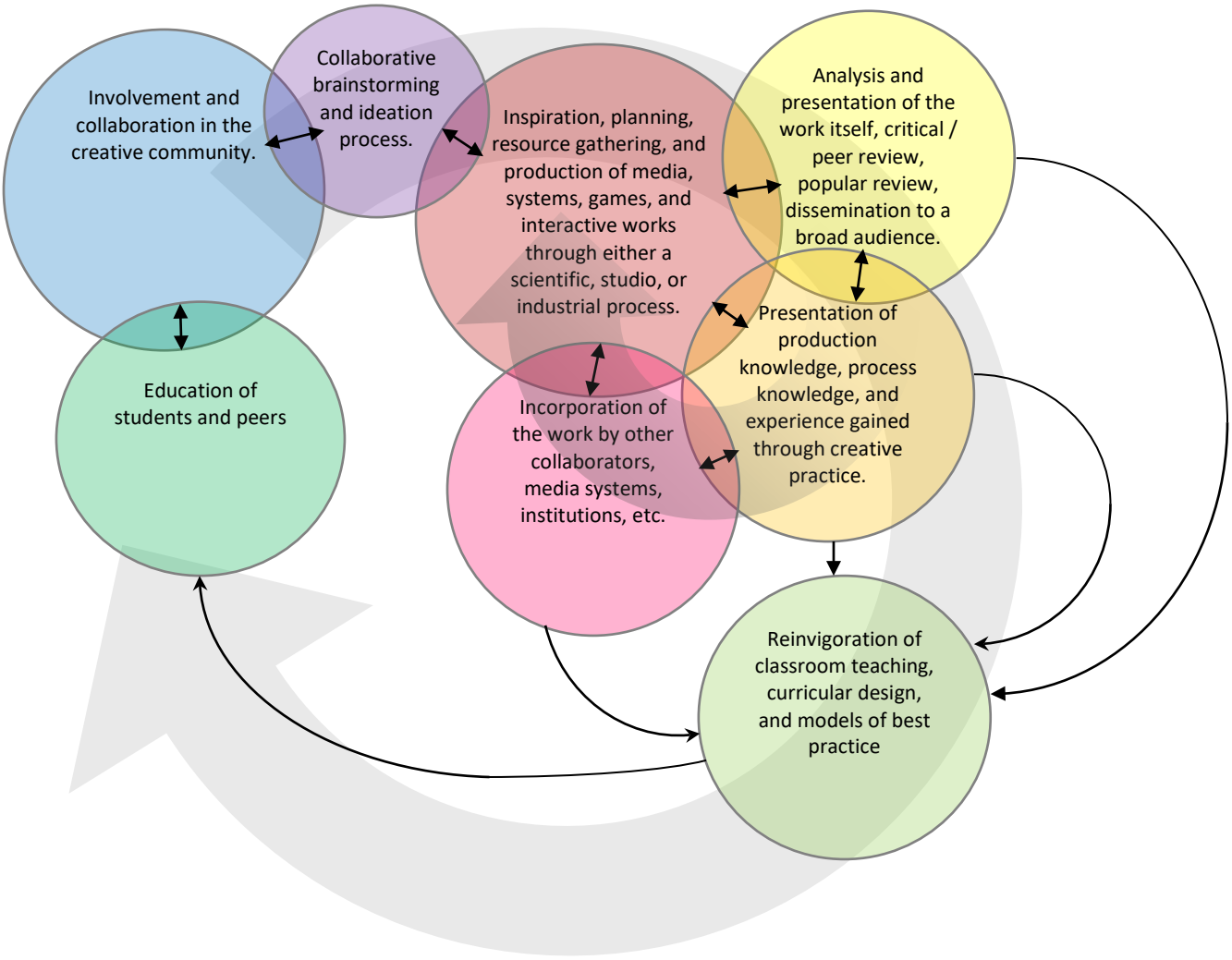


**Figure 1: A Model of Faculty Productivity and Engagement in Interactive Media**

This in turn maps to opportunities in all four forms of scholarly activity as defined by Boyer:

| Boyer Classification | Relevant Ongoing and Future Work Within IGM |
|---|---|
| Discovery | Creation of new tools and methods of production, new forms of media and experimental experiences. |
| Application | Adapting existing theories from both computing and the arts, and applying them to media systems in innovative ways to create new works. |
| Integration | Exploration of the use of computational media as related to other disciplines and/or domains, emergent systems, etc. This is coupled with the notion of experiences that are greater than the sum of their parts (i.e. the 'iTunes experience' is felt to be significantly more than just a GUI, a media database, and a commerce system by users of the system). |
| **Boyer Classification** | **Relevant Ongoing and Future Work Within IGM** |
| Pedagogy | Using our work, systems, and experiences, to both inform and transform the classroom. Through continued work in this area, IGM must continue to explore |

| | |
|---|---|
| | and define the best practices of the field, support multiple learning targets, and speak effectively to the duality of learning both technological computing concepts and the content-based tenants of a media centric education. Work in this area will address the role of learning through informed play. |

As the scholarly activities of the IGM group continue to expand, the tension between science and art that characterizes the department will be explored within the crucible of experience: projects and works will be created along each of the lines above, both internal to the department and in collaborative fashion with partners around the world. *IGM has the potential to continue its current trajectory and become a national nexus for games and media research and dissemination, with both local and national partners.* Highly related to this effort are national dissemination and engagement activities, which are described in section 6. Over the next decade there will be a significant increase in scholarly production of all kinds, but with a keen focus on the production of work and the involvement of the academy and the public as an engaged and critical audience relative to what we create.

## 6. A Future Look at Service & Outreach in IGM

Students are the highest priority within the IGM department, both in and out of the formal classroom. As creators of interactive media, and due to the public nature of our work, IGM has a unique opportunity with respect to public and private service and engagement. Over the next few years, IGM should continue to expand its outreach efforts with groups such as the Girl Scouts and Boy Scouts of America (already ongoing), local area schools, other educational institutions at all levels, etc. There is substantial opportunity to establish "exploration experiences" within IGM due to national student interest in the field, either as summer-oriented opportunities or possibly during the 'mini-mester' in the calendar post 2013. Our current students should be directly involved in such efforts, as it is the student body that will benefit most from a constant reflection of their current experiences to peers and aspiring future practitioners, as it is a concrete opportunity to frame their work to an outside audience.

In addition, it is important to recognize that as creators and scholars of interactive media, the IGM department represents a vibrant and unique culture in its own right. Students in the department are not just pursing their careers to learn a particular technology, but see themselves as using technology to convey a creative message through interaction. As such, this makes the group somewhat unique within traditional computing culture, and speaks to the importance of having both faculty, staff, and students committed and highly engaged in campus and academic life. Because of the public nature of our work, faculty and students in the department are driven to produce and disseminate interactive projects. Media cannot "happen" without societal reflection, and a large portion of our current society is the RIT campus and the local Rochester area.

Recent examples of such dissemination include our works at the RIT Innovation Festival and the Picture the Impossible ARG that involved a significant population across the city. It is important to note that works such as this are not done simply because it is "the thing to do politically" or for "local fame" – it is both necessary and productive for IGM to involve itself in such venues as significant local channels to a public audience. In the future, IGM will likely seek to expand such activities beyond the local sphere, to present works again on a national stage at the Game Developer's Conference, Adobe MAX, SIGGRAPH and other appropriate venues not only as dissemination of scholarly work, but as a matter of public discourse and involvement. Over the next decade, RIT should capitalize on the national reputation of the programs within IGM, CIS, and CIAS through the formation and support of a national conference in this area that is hosted in the region.

## 7. Concerns for the Future

There are two primary barriers to the vision described in this whitepaper, which will need to be carefully managed and overcome as the department continues to grow and change over the next decade. Broadly speaking, these two barriers can be described as an impending crisis of culture, with the very real prospect of a loss of identity in the face of unmanaged growth.

## 7.1 Issues of Identity & Academic Culture

The first issue, centered upon culture and identity, is critical to the new department, and was one of the precipitating reasons for the formation of IGM. Through the establishment of the department, it was the goal of the faculty to more directly proclaim an identity that spoke to the academic heart of the group – i.e. our focus on media-centric computing and expression. If we examine the Golisano College as a spectrum of computing, in which different departments have a unique and diverse answer to the question of "What is Computing?, the IGM group's vision clearly speaks to a view of computing in which technology enables the art of expression and user experience. This view is different and unique among the College's programs and is identified by the faculty within the departmental proposal [1]. We have, in this first year, had a great deal of success in this mission. However, involvement of the department in the School of Informatics has been troublesome in some respects, largely based around this continued clash of culture and identity, and failure to capitalize upon the issues of synergy and diversity that define the programs. This was illustrated clearly in the inability to even find a name that spoke clearly to all constituents of the school: faculty and students in IGM do not describe their work as Informatics, nor do potential collaborators, partners, and scholars.

This organization model has had some impact on several administrative processes, but can be seen most clearly in the area of student advising. In optimizing for efficiency, advisors are stretched across several disparate programs, and thus unable to situate themselves directly within a single academic identity. In contrast, departments that more directly involve staff in the work of the department utilize processes that bring students, staff, and faculty together around issues such as advising, with students often identifying and connecting with their advisor more so than any other entity in their collegiate experience. It is for this reason that alumni regularly contact their former advisor, and stay connected with them through social networking tools and correspondence. Advisors in many departments across campus form a cornerstone of departmental culture: they are often the face of the department from the student perspective, and are expected to appreciate, internalize, and emphathize directly with the student experience as deeply integrated with the academic field of study, while still disseminating departmental policy and the academic direction defined by the faculty and implemented by the administration. Advisors are expected to be the cultural touch-stones of the group, and to be closely associated with the faculty and academic work of the department.

The recent reorganization of advising personnel and policy within the School of Informatics has been observed and internalized by the IGM student body: students feel disassociated from the current advising process, are unsure how their programs relate to the overarching structure, and generally feel that they are being 'provided a service' rather than 'having an academic home'. The faith of students in these processes has been diminished over the last year, despite best efforts by all involved. Likewise, several faculty and staff have reported the same feelings of disassociation and dissatisfaction around these same issues. Decisions that directly affect how departments interact with their students are being made by constituencies other than the faculty and staff of the department itself, often without even involving the department at all, fueling further perceptions of irrelevance and isolation. In the short time since the school model was established, significant distance has grown between faculty, staff, and students surrounding most if not all issues related to advising, and these divisions could continue to deepen as well as spread to other areas. The cultural differences at the level of the School have also created an impasse, and as such, there are only limited possibilities to stimulate meaningful change.

We need to come together on issues such as this in a way that all constituents of the college can collectively move forward and feel invested if we are to effectively capitalize on the possibilities afforded by GCCIS. We need to find ways to operate collaboratively such that the faculty, staff, and student body feel engaged. In certain instances such as this, we must balance needs for efficiency and scale with what will best fit the cultural make-up of the various 'neighborhoods' within the 'city' of the college, to maximize service to the student body not only in terms of numbers, but with respect to quality of interaction and sense of involvement and community.

## 7.2 Issues of Growth, Increased Expectation and Recognition

The second major obstacle facing the department is actually much less complex, although it is highly related to the issues described previously, and with a general sense of "morale" amongst faculty, staff, and students. Faculty and staff will feel, over the next decade, the strain of several different initiatives, including:

1) Dealing with the growth and complexity of the GD&D program, which was originally planned at 30 students per year, now operates at 120 students per year, and that may well grow to 180 students per year based on academic attractiveness and institutional need. This would make the IGM department roughly the same size as the existing Computer Science department as early as 2013, nearly doubling the original size of the department and the current student body.

2) The complexity of guiding three distinct academic programs through the semester conversion process.

3) Increased demands for scholarship and research activity.

4) Increased demand for service at the university level on important task forces, committees, and ad-hoc groups. Over the last few years, the number of such groups has grown significantly, as has the workload associated with such service.

While several of these are large-scale, campus wide issues that impact faculty and staff across the Institute, it is important to realize that the faculty and staff of the IGM department are being asked to accomplish these tasks *while at the same time doubling the size of the department in a very constrained environment*. If there is up-front, self-evident and open administrative support for issues pertaining to such growth, then it is the opinion of the author that this is a platform for success that can reap benefits not just for the local department but more importantly for the Institute as a whole. Growth in our academic programs will benefit the entire campus in a variety of ways.

There is, however, a significant risk that if resources are severely constrained (as per recent history) and/or not allocated in a way as to be of immediate use that faculty and staff are left feeling that they are being asked to contribute and manage growth in the face of several additional expectations without the necessary support. This, in turn, leads to a breakdown in the process of collaborative contribution as faculty and/or staff focus locally on success with 'just their course' or 'just their project' as they are unable to contextualize their connection to the overall effort, or feel that the overall effort is not supported. Such a contraction of purview will fracture the student body, and will focus faculty not on the balance of the goals described throughout this whitepaper, but on constantly being a step behind the curve and unable to catch their collective breath. Obviously this needs to be avoided within IGM, and throughout the university, if we are to succeed in reaching both the vision described here and, more globally, as an 'Innovation University'.

## Conclusion

IGM stands poised for substantial success over the next two decades, and this success is predicated on the degree to which it can incorporate its own unique vision of computing in collaborative curricular and scholarly works both internal and external to the Institute. There are several up and coming trends that will continue to turn the field in exciting new directions for some time to come, and there will be increased national and international competition in terms of academic programs over the next few years. The strain of the growth and change over the next decade as the GD&D program solidifies and expands will be immense, but these upcoming years are also a platform for success, both academically and intuitionally. The IGM department at RIT is unique in its vision, and if we can truly come together as a college and Institute as an 'innovation university' then IGM should have a unique and exciting role to play in that larger vision.

## References to Other IGM Documents of Note

[1] Phelps, et al. "Proposal for the Creation of the Department of Interactive Games & Media". Submitted to the B. Thomas Golisano College of Computing & Information Sciences, Rochester Institute of Technology, Rochester, NY 14623-5608, USA. May 15, 2008.

[2] Phelps, et al. "Vision & Mission of the Interactive Games & Media Department". Available online: http://igm.rit.edu/node/90. Accessed March 1, 2010.

[3] Phelps, et al. "Metrics & Processes for Promotion and Tenure in Interactive Games & Media: A Whitepaper". Distributed to IGM faculty, GCCIS and RIT administrative teams. Jan 2010 - March 2010 (final revision produced March 1, 2010).