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Image from the animated short film "Dim Sum" by Jin Sop Kum from Ringling College of Art + Design

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Innovations in Education

Institutions infuse computer graphics curriculums with novel programs, unique methods, and the latest technologies to enhance the classroom experience

By Courtney E. Howard

"I never teach my pupils. I only attempt to provide the conditions in which they can learn."

Those are the words of Albert Einstein, but many of today's top professors in the digital content creation field share the sentiment.

Now, and perhaps more than ever, instructors and pupils alike recognize that a great education extends beyond the lecture hall. Progressive educators are intent on delivering innovative programs to students, providing the opportunity to interact with the latest technologies, real-world production scenarios and workflows, and peers and experts with diverse backgrounds and skill sets.

Learn by Doing

A comprehensive and effective education, especially one in the field of computer graphics, encompasses far more than time spent reading textbooks and attending classroom lectures with myriad slides. Although both have their place, students increasingly are learning through practice.

Educational institutions offering courses and degree programs in computer graphics and animation increasingly are providing students a hands-on education with novel, advanced hardware and software systems.

"While strong keyframe animation skills are an essential part of our curriculum—and of primary importance to the education of animators—we offer the chance to work with motion capture using a PhaseSpace Impulse active marker system," explains Michael Scroggins, Computer Animation Labs director and Program in Experimental Animation faculty at the California Institute of the Arts' (CalArts') School of Film/Video. "The goal is not to supplant keyframe animation in any way, but to add to it. Students may experiment with this form of real-time performance animation to explore extending the possibilities of their art." PhaseSpace's Impulse motion-capture system combines hardware and software in a portable solution that delivers real-time tracking of 128 unique active markers, 3600x3600-pixel resolution, and a 60-degree field of view. Used for a wide range of applications—including those in the entertainment (television, video game, and music video), research and defense, and sports and medical markets—the mocap tool provides students with a working knowledge of another form of animation in addition to what's accomplished through typical 3D animation software programs, such as Autodesk's Maya, 3ds Max, and Softimage.

Chris Nabholz harnessed innovative tools and an education at Ringling College to create eye-catching imagery.

Multiple Uses of Mocap

One application of motion capture, Scroggins describes, is as a form of 3D rotoscoping. As with 2D rotoscoping, in the hands of a good artist, the technique can be very effective. He cites as an example Michael Patterson, who used the technique for his CalArts MFA thesis and Student Academy Award-winning film "Commuter," as well as subsequent professional work with the famous A-ha video "Take on Me."

Ringling's Computer Animation program celebrates student works, such as this piece from Evan Mayfield.

"I have a collection of motion-capture data that's available to the students, and they can use [Autodesk's] MotionBuilder or my own proprietary tool for Maya to solve the data," Macleod says. "Giving students access to clean motion-capture data provides them with relevant experience. To put it another way: I would not say that motion capture is a learning tool, but a tool to learn, and is not something we are currently teaching in the Animation & Visual Effects department, although it is taught and used in the VFS Game Design program."

In yet another approach, one of CalArts' character animation students, Jaewan Park, has experimented with acting out his animation while clad in a mocap suit, and then using the results as a guide to his keyframe animation. Park previously would have recorded his performance with video and used that as an animation reference, Scroggins says. "The advantage of motion capture is that he can see his acting from any point of view using a virtual camera in Maya—not just as played to a single point of view, as is the case with a video-camera recording," he explains.

Alastair Macleod, head of animation at Vancouver Film School (VFS), takes another tack. He has elected not to bring motion capture into the program, despite many years of experience with the technology, including his work on *The Lord of the Rings* and *The Matrix* sequels.

Virtually Real

Innovative instructors and students at educational institutions, such as CalArts' School of Film/Video, are taking motion capture even a step further, combining it with other novel technologies into a virtual reality system.

"We have recently acquired a Vizard VR system from WorldViz that, coupled with an eMagin Z800 HMD (head-mounted display), may be used with the real-time, motion-capture advantage of the PhaseSpace system to create work in fully immersive VR," Scroggins explains.

Pratt Institute encourages student collaboration and use of the school's facilities.

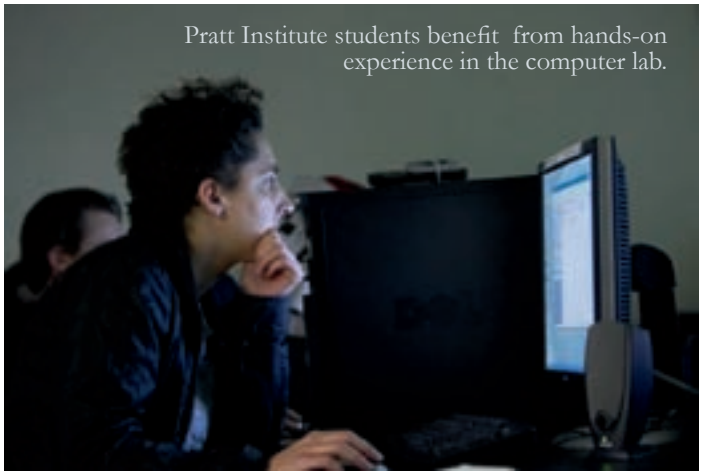
The Vizard Virtual Reality Toolkit from WorldViz encompasses high-end graphics utilities for building interactive 3D content and developing high-performance graphics applications, including virtual reality, scientific visualization, games, and flight simulation. The system supports a variety of display technologies, including the head-mounted eMagin Z800 3D Visor, reportedly

the first personal display system to combine OLED display technology with head-tracking and stereo vision.

"The use of these tools for the performance of absolute (abstract) animation is one of the unique ways we are beginning to experiment with the potential of real-time gesture capture in immersive 3D CG space," Scroggins notes.

Grasping Input and Output

When it comes to learning 3D, the best place to start is in the real world. In many schools, students are encouraged, and even required, to study and replicate tangible 3D objects before embarking on an education and career in modeling or animation.



Pratt Institute students benefit from hands-on experience in the computer lab.

At Pratt Institute, for example, students gain the use of 3D scanning and printing devices to better understand all the nuances of the three-dimensional world. Pratt Institute offers degree concentrations in 3D Animation and Motion Arts, Emerging Arts, and Digital Imaging at both the graduate and undergraduate levels.

"Our 3D scanning and 3D printing technologies allow Emerging Arts students to fabricate enclosures for interactive devices, Animation students to develop tactile models, and our Imaging students to create objects ranging from plastic to bronze," explains Peter Patchen, chair of Pratt Institute's Department of Digital Arts.

Full Facility

In addition to 3D printing and scanning tools, Pratt Institute provides students access to greenscreen facilities, vinyl cutters, laser cutters, motion-capture collaboration with industry, and a scalable renderfarm. Similarly, the Savannah College of Art and Design (SCAD) is opening a new 65,000-square-foot Digital Media building in Atlanta to serve its roughly 2300 film, digital media, and performing arts students.

"We need facilities and specialized equipment to support them," says Peter Weishar, dean of Film, Digital Media, and Performing Arts at SCAD. When the new facility opens in September, SCAD will have four greenscreen stages, two mocap studios, three sound stages, two small screening rooms (in addition to its three large screening venues with 650, 1250, and 1300 seats), two Foley stages, a recording studio, two renderfarms, 37 high-end Avid video editing systems, and two stop-motion stages.

"The variety of specialized equipment and facilities expose our students to the complex and sophisticated techniques used at the highest end of industry," Weishar explains. "Something like a motion-capture studio is not a substitute for the basics. Animation students must learn timing, drawing, storyboarding, and movement, and Visual Effects students must study light, texture, CG modeling, color, and film language."

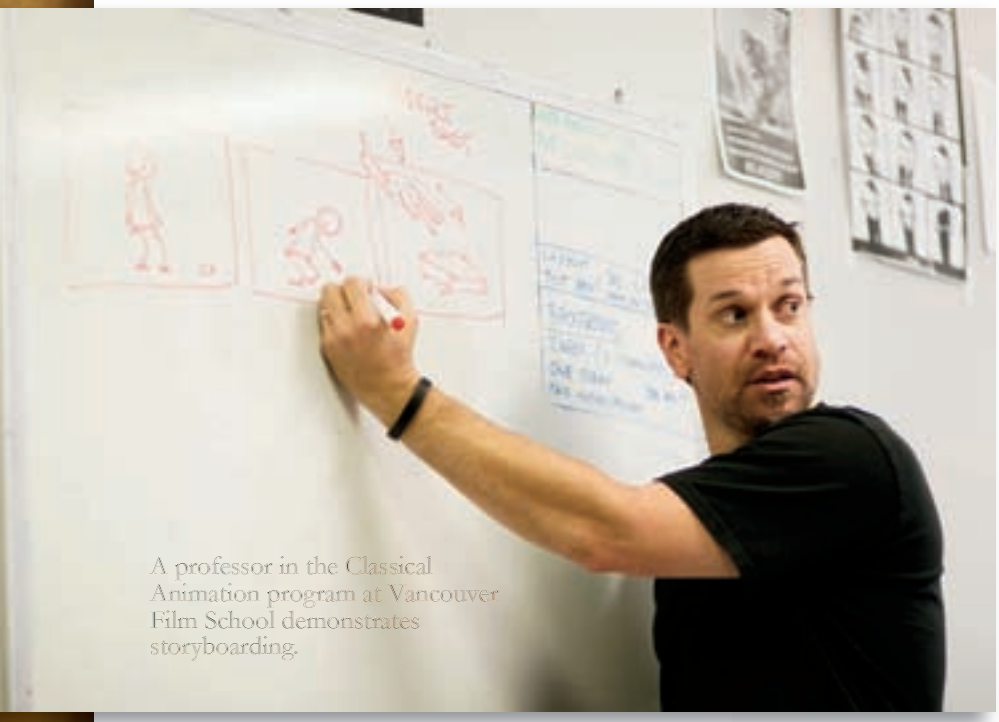
Online Instruction

Educators are increasingly teaching the basics through non-traditional methods. "In the area of technical instruction, we are beginning to enhance the classroom experience with online video tutorials captured with Camtasia," says CalArts' Scroggins, referring to Camtasia Studio, a video-capture program for Microsoft Windows that is published by TechSmith.

"Students are able to review a lesson and take advantage of the ability to follow along with the active screen demonstration, scrubbing back and forth as may be desired when following a complex tutorial," Scroggins continues.

Cross-program Collaboration

Professors at Pratt Institute encourage collaboration among students enrolled in various, and even seemingly unrelated, programs. "Digital Arts students work with sculpture students to create investment castings of digitally created artwork," Patchen describes. "In addition to traditional professor-student instruction, this collaboration allows knowledge exchange to occur between students of different disciplines, thereby reinforcing their own learning."



A professor in the Classical Animation program at Vancouver Film School demonstrates storyboarding.

For the past three years, the staff at SCAD has been making a concerted effort to increase interdepartmental collaboration, through formal, curricular efforts as well as informal, peer-to-peer initiatives.

"We have been very successful coordinating our classes so that Performing Arts students are available to voice animations; Sound Design students can design sound for animated senior and thesis projects; and Visual Effects students can work with Film for things such as matchmove and practical effects," recognizes Weishar. "We are creating the same kind of collaborative environment most students will experience when they enter the industry. In addition, because we are a school, we push creative limits and work on digital installations, live performance, and physical computing projects that are not part of a commercial artist's daily life."

Simulated Studio

Most education facilities serving the digital content creation industry recognize the importance of a comprehensive, well-rounded education. Some, however, take it to a whole other level, providing an environment that closely resembles a production studio.

In Vancouver Film School's Animation & Visual Effects department, all programs are delivered within "immersive and intensive learning environments," says Macleod.

In the VFS 3D Animation & Visual Effects program, as an example, students learn a variety of subjects through traditional teaching techniques for the first six months. Once the fundamental principles have been introduced, Macleod explains, students select a stream, each of which has a Stream Mentor who teaches the stream topic (animation, modeling, or visual effects) at an advanced level, and a final project is completed using a simulated production environment.

"The benefit to this approach is that the student gets a combination of classroom and project-based learning in a simulated production environment, giving them a range of understanding and relevant experience," Macleod adds. "I think the main strengths of the programs at VFS are the components that simulate the production environment and form a large portion of the student experience."

Comprehensive Curriculum

Computer animation students at Ringling College of Art + Design gain a similar advantage: "[They] learn all phases of the production process because our goal is to teach them to become

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complete filmmakers," says Jim McCampbell, department head of Computer Animation at Ringling. "However, because we deal with linear narrative stories for the senior-year capstone project, we focus heavily on character animation.

CalArts' Advanced Modeling teacher Dan Platt demonstrates principles of proper edge loop flow when modeling for animation deformation.

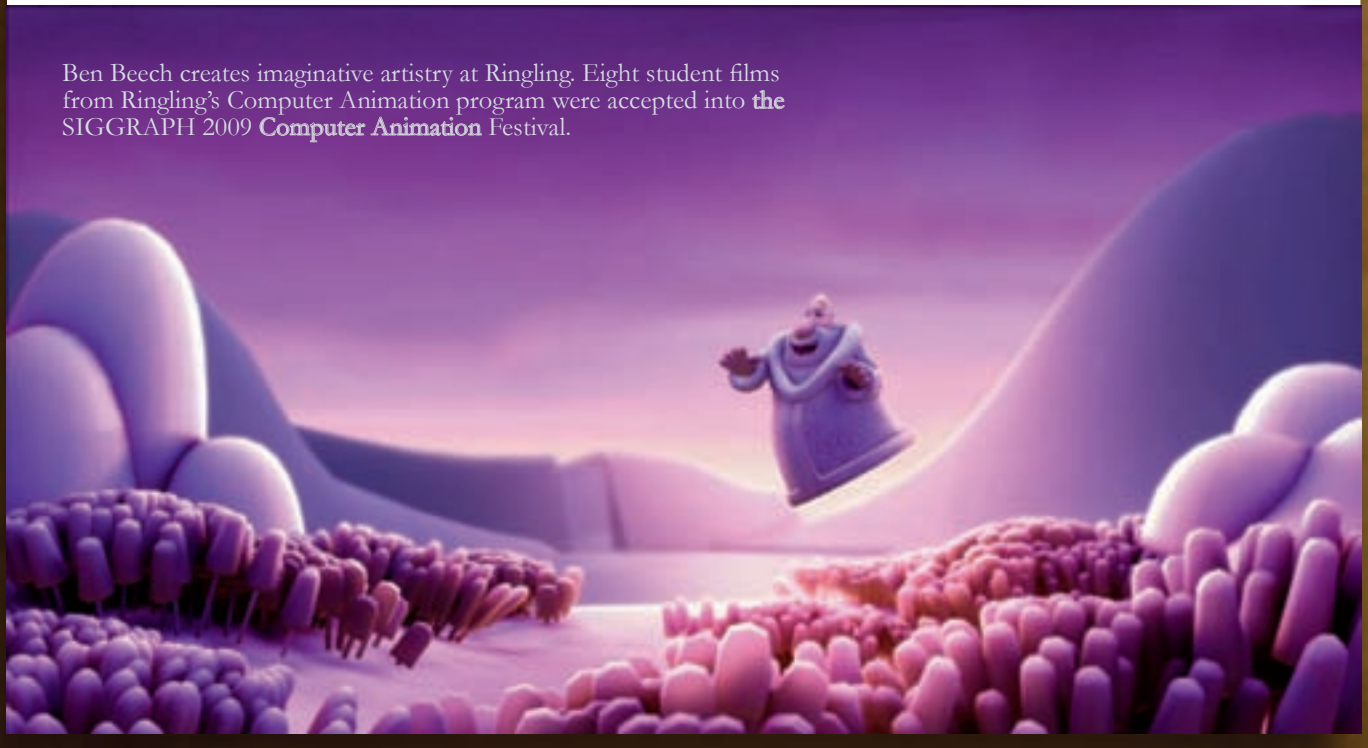
"Creating a believable performance is crucial to the success of the film as a whole," McCampbell continues. "An important aspect of the curriculum is to make sure that students see the connection between the animation and the other aspects of the film. For that reason, we don't compartmentalize our courses (a modeling course, an animation course, and so forth). Instead, we teach all aspects in all courses so that an understanding is gained of how each aspect is interrelated."

Doubtless, technology can significantly enhance an education, especially in the high-tech world of computer graphics. Experts agree that a comprehensive education is the sum of many parts, including, but not limited to: skilled and artful instruction, a foundation in the basics, collaboration, an understanding of the entire workflow, creativity, dedication, hard work, and knowledge of and experience with various novel systems and technologies.

"As we rely more and more on technology, it is vital that we do not lose touch with the core creative skills that require only the most basic tools," Macleod mentions. "Technology provides new mediums for expression, but also creates new limitations within those mediums. Removing those limitations provides a direct connection between the creative imagination and its expression in form."

Courtney E. Howard is a contributing editor for Computer Graphics World. She can be reached at cehoward@twitchcafe.com.

Ben Beech creates imaginative artistry at Ringling. Eight student films from Ringling's Computer Animation program were accepted into the SIGGRAPH 2009 Computer Animation Festival.



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Joe: The Rise of Cobra** Allen Tracy, Visual Effects Editorial Supervisor | Aruna Inversin, Digital Compositor | Jeremy Stewart, Senior Animator | Jelmer Boskma, Modeler **The Godfather (VG)** Kirk Chantraine, Motion Capture Specialist **The Golden Compass** Adam Yaniv, Animator | Chad Moffitt, Animator | Thom Roberts, Animator | Ben Sanders, Animator | Andrew Lawson, Animator | Matthias Lowry, Visual Effects | Tony Etienne, Look Development Justin Hammond, Lighter Pearl Hsu, Effects Technical Director | Aruna Inversin, Digital Compositor | Fion Mok, Matchmove Artist **Hairspray** Lon Molnar, Visual Effects Production Executive **Halo 3 (VG)** Bartek Kujbida, Character Animator **Happy Feet** Ben Sanders, Character Animator | Thom Roberts, Character Animator **Harry Potter and the Prisoner of Azkaban** Shawn Walsh, Color & Lighting Technical Director **Harry Potter and the Order of the Phoenix** Pietro Ponti, Technical Director **Harry Potter and the Half-Blood Prince** Harry Mukhopadhyay, Lead Effects Technical Director **Hellboy II: The Golden Army** Christoph Ammann, 3D Sequence Supervisor **Horton Hears a Who** Arun Ram-Mohan, Lighting Technical Director | Brent Wong, Modeler **Hulk** Geoff Richardson, Visual Effects Editor **I, Robot** Daniel Osaki, CGI Modeler | Megan Majewski, Pre-Visualization **Ice Age: The Meltdown** Ben Sanders, Character Animator | Arun Ram-Mohan, Lighting Technical Director **The Incredible Hulk** Shawn Walsh, Visual Effects Executive Producer | Tony Etienne, Look Development Lead **The Incredibles** Daniel Holland, Animator **Indiana Jones and the Kingdom of the Crystal Skull** Henri Tan, Creature Technical Director **Iron Man** Adam Marisett, Visual Effects Artist **King Kong** Chad Moffitt, Senior Animator **King of the Hill** Michael Loya, Director **Kingdom Hospital** Daniel Osaki, Visual Effects Artist | Megan Majewski, 3D Animator | Alec McClymont, 3D Artist **Kingdom of Heaven** Shawn Walsh, Digital Compositor **Left 4 Dead (VG)** Nick Maggiore, Animator **Letters from Iwo Jima** Aruna Inversin, Digital Compositor **Live Free or Die Hard** Jessica Alcorn, Compositor **Lord of the Rings Trilogy** Chad Moffitt, Senior Animator **Lost** Scott Dewis, Visual Effects Artist **Mass Effect (VG)** Sung-Hun (Ryan) Lim, 3D Modeler **Matrix: Revolutions** Aruna Inversin, Digital Compositor Shawn Walsh, Color & Lighting Technical Director **Master & Commander: The Far Side of the World** Robert Bourgeault, CG Artist **Metal Gear Solid 4 (VG)** Josh Herrig, Artist Yuta Shimizu, Artist **The Mummy: Tomb of the Dragon Emperor** Aruna Inversin, Digital Compositor **Persepolis** Marianne Lebel, Animator **Pirates of the Caribbean: At World's End** Ben Sanders, Character Animator | Allen Holbrook, Animator | Aruna Inversin, Digital Compositor **The Pirates Who Don't Do Anything: A VeggieTales Movie** Mike Dharney, Animation Supervisor **Reign of Fire** Lino DiSalvo, Animator **Resident Evil: Extinction** Joshua Herrig, Visual Effects Artist **Robots** Arun Ram-Mohan, Additional Lighting **Rome** Teh-Wei Yeh, Matchmove Artist **Scarface (VG)** Maya Zuckerman, Mocap 3D Generalist **Shrek the Third** Rani Naamani, Animator **Shrek the Third (VG)** Samuel Tung, Technical Artist **Sin City** Michael Cozens, Lead Animator **Smallville** Geeta Basantani, Lead Compositor **Star Trek** Aruna Inversin, Digital Compositor | Tom Piedmont, Digital Plate Restoration **Star Wars Episode III: Revenge of the Sith** Andrew Doucette, Character Animator | Nicholas Markel, Pre-Visualization **Star Wars: Knights of the Old Republic (VG)** Arun Ram-Mohan, 3D Artist | Jessica Mih, Level Artist **Stargate: Atlantis** Daniel Osaki, 3D Animator | Megan Majewski, 3D Animator | Alec McClymont, 3D Artist **Sweeney Todd: The Demon Barber of Fleet Street** Jami Gigot, Concept Artist **Terminator Salvation** Teh-wei Yeh, Lighting Technical Director Geeta Basantani, Digital Matte Painter **Transformers: Revenge of the Fallen** Bryan Jones, Compositor Aruna Inversin, Digital Compositor | Henri Tan, Creature Technical Director | Teh-wei Yeh, Digital Artist

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Beyond the Classroom

Industry education leaders chime in on today's self-help methods

By Courtney E. Howard

"Self-education is, I firmly believe, the only kind of education there is," Isaac Asimov, a famous science-fiction writer, has stated. While his may be an extreme view, self-education, most would agree, is important, especially when used in conjunction with more traditional methods.

Many forms of learning exist beyond the formal multi-year programs that many colleges, universities, and trade schools offer. Although a brick-and-mortar school is often the route most taken, it is not the only option. There is something to be learned everyday in everything we do, and this is especially true in animation and computer graphics. According to many players in the education segment of the digital content creation industry, several options and resources are available to further one's education without having to go to—or, in some cases, go back to—school.

On the Job

One effective way to extend education is through your job. "Never be afraid to take an entry-level or more junior position in an area in which you do not have much experience but are interested in," says Alastair Macleod, head of animation at Vancouver Film School (VFS). "Sometimes, to be qualified to work in another field or country, you must master the one you are currently in, and then you may only be qualified for a junior position.

"Put yourself in a situation where you are surrounded by people who are doing what you would like to learn," Macleod continues. "Observe, then ask questions. School is a good place to do this, but not the only place. If you are already in production, you should sit in on dailies, production meetings, or any discussions where you can hear the issues as they unfold, and listen to the solutions that are used. Find out how effective those solutions were." This method of learning through experience is, according to some, the only way true knowledge and education are gained.

Another interesting approach for the experienced professional does involve going back to school, but not as a student. Why not teach? "Taking a teaching position will generally expose you to a wide range of subjects, often brought to you in the form of interesting questions," says Macleod. "You'd also be amazed at how much can be learned when working with talented and creative students. Teaching does require a certain type of personality, but this is another interesting method in which to gain education while actually earning money."

On the Interwebs

Given the ever-expanding bandwidth of the Internet and continued gains in technology, many novel online and digital media formats now efficiently deliver interactive and educational courses based on myriad subjects.

Many sources exist for educational material today, and one of the more popular available is Lynda.com. This online resource offers so many education methods and titles that it is easy to get lost among the many instructional books and video courses on a wealth of topics, from Autodesk's Maya to Adobe's Photoshop, and anything and everything in between.

Peter Weishar, dean of Film, Digital Media, and Performing Arts at Savannah College of Art and Design, recommends online and video methods for seasoned veterans, but cautions newcomers on their initial use. "For a beginner, I would strongly suggest a class," he says. "Relying on software tutorials will not help you avoid clichés and aesthetic pitfalls that can be reflected in your portfolio. For professionals, I prefer training DVDs."

While training in the digital medium is growing, Jim McCampbell, department head of Computer Animation at Ringling College of Art + Design, reminds us not to forget the importance of talking to our peers. "Videos and books are fine for learning tools, but it is incredibly important to get individual, personalized feedback on your work,"

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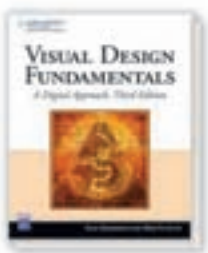

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he explains. “The most valuable possession you have is your art-direction skill. All the technical proficiency in the world won’t help you if you don’t understand how to harness it for making good art. Everyone loves the convenience of online learning, but an intra-personal experience is still the most effective way to learn.”

Peter Patchen, chair of the Department of Digital Arts at Pratt Institute, reinforces this idea. “We find one of our best resources in this area is the time our students spend working with our faculty and each other in the computer studios, sharing solutions and references,” he notes. While we self-described geeks and artists can tend to be a bit reclusive at times, our peers are our most valuable resource for making the most of what we produce, whether in a class, at work, or online.

On the Page

In any industry, a “bible,” or educational “Holy Grail,” exists, and the computer graphics industry is no different.

“*The Illusion of Life: Disney Animation* is the bible and should be used as the cornerstone for any serious animation program,” McCampbell says. This oft-recommended text was authored by Ollie Johnston and Frank Thomas, two of Disney’s Nine Old Men—the core animation group responsible for creating some of Disney’s most famous films, from *Snow White and the Seven Dwarfs* to *The Rescuers*. In their book, Johnston and Thomas preserved many of Walt Disney Animation Studios’ breakthrough techniques in animation, including the 12 Basic Principles of Animation. The book is based upon hand-drawn animation, but many of its concepts can be directly applied to computer graphics and animation today.

Richard Williams’ *The Animator’s Survival Kit* is another book many experts consider an essential read for anyone entering or currently working in the industry. Although it has not reached “bible” status quite yet, it is nonetheless considered essential.

Williams is best known for his work as animation director on the once-cutting-edge film *Who Framed Roger Rabbit*, which earned 18 award wins and another 21 award nominations. Of the film’s 18 wins, three were Academy Awards: one was for Best Effects, Visual Effects and another was a Special Achievement Award for animation direction and creation of cartoon characters. He has worked in the animation industry since the 1940s; been involved in many award-winning productions, including the Academy Award-winning *A Christmas Carol* in 1971; and boasts three British Academy Awards and more than 250 other international awards to his credit. Most recently, Williams released a 16-DVD boxed set of his acclaimed masterclass animation course, called *The Animator’s Survival Guide–Animated*.

The last bit of sound advice on the page comes from Macleod, who recommends “any good book on stress relief or meditation.” After all, it’s something perhaps everyone could use more of within this fast-paced industry, in which sleep is considered a luxury.

While school is generally agreed upon as the best option for learning, it certainly is not the only effective and efficient way of expanding one’s knowledge and experience. Alternative methods exist for obtaining knowledge, skills, education, and wisdom in this field.

Remember, as the great Mark Twain once said, “I have never let my schooling interfere with my education.”

Courtney E. Howard is a contributing editor for Computer Graphics World. She can be reached at cehoward@twitchcafe.com.

Industry Experts Suggest:

Guide to Computer Animation by Marcia Kuperberg
Focal Press
www.focalpress.com

Creative Code: Aesthetics + Computation by John Maeda
Thames & Hudson
www.thamesandhudson.com

The Writer’s Journey by Christopher Vogler
Michael Wiese Productions
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How Images Think by Ron Burnett
The MIT Press
http://mitpress.mit.edu

Texturing and Painting by Owen Demers
New Riders Press/Peachpit
www.pitchpit.com

The Animator’s Survival Guide by Richard Williams
Faber & Faber
www.faber.co.uk

The Illusion of Life: Disney Animation by Frank Thomas and Ollie Johnston
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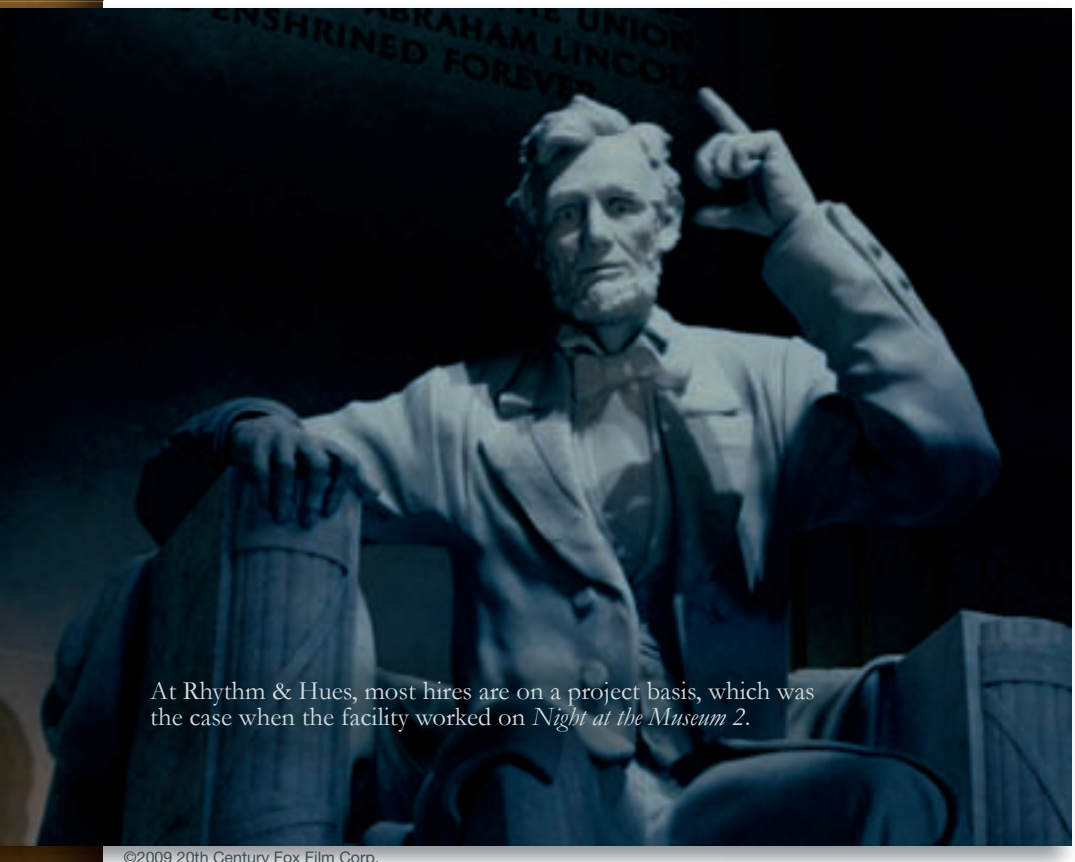
Hiring in Hard Times

CG and effects studios face new recruiting challenges, while job applicants face new employment challenges in the industry

By Jennifer Austin

Even in tough times, movies, games, and commercials still get made, and people still get hired to make them. But most CG studios have been affected by the recent financial turndown, just like everybody else. Some facilities are seeing fewer projects, and many are hiring more conservatively—picking up contract workers on a per-project basis rather than a permanent one. The applicant pool is different, too; more senior CG specialists are pounding the pavement—a boon for companies that can afford to hire them, but a bit of unwanted competition for raw recruits fresh out of school.

Computer Graphics World/Post recently spoke with studio recruiters, both independent and in-house, for a look at the current situation with regard to hiring studio talent.



At Rhythm & Hues, most hires are on a project basis, which was the case when the facility worked on *Night at the Museum 2*.

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Only a couple of studios that *Computer Graphics World/Post* spoke with say their operations had been unaffected by the recent downturn. Neither of those is in the US. "We're actually busier than we've ever been in terms of film projects," says Hannah Acock, recruitment manager for the UK-based Double Negative. And Lumière Visual Effects in Montreal has seen no changes, according to Lumière's HR recruiter, Christina Zervos.

In the US, "generally speaking, the current economy has forced the entire entertainment industry to look at budgets and costs far more carefully," says Lori Beck, recruiter for Industrial Light & Magic (ILM). "Some have been forced to decrease their workforce, while others have even had to shut their doors."

"The economy has certainly changed the way we hire right now," maintains Jana Manthei Day, director of recruiting for Sony Pictures Animation. For one, she says, when there is a "big push" to bring in recruits, the studio tries to hire locally in order to save on relocation costs. Another change, she points out, is a greater emphasis on hiring on a per-project basis rather than bringing on new staff.

Cindy Nicola, vice president of global talent acquisition for Electronic Arts (EA), says the new financial order has affected the hiring situation in several ways. "Like

other companies, we were hit by the economy, so, of course, that has impacted us from [an employee] retention perspective," she says. Nicola also notes that the increase in the number of artists out of work and, thus, looking for work is not the ideal situation for recruiters that it might seem. "With a down economy and a high unemployment rate, it actually becomes more difficult to source because the volume of active seekers is extremely high and quality continues to vary," she explains. It is also more difficult to hire talent from pre-existing situations, she continues, because people are warier about making such changes. And those who want to relocate sometimes can't because they cannot sell their homes.

Double Negative in the UK has been busier than usual, with a range of projects, including last year's *Hellboy II*.

©2008 Universal Studios

Independent recruiters are in a special situation to see the big picture. Chris Scanlon, account manager for Digital Artist Management, a recruiting agency that specializes in interactive entertainment (games), says, "Right now, things have slowed down a bit. Team sizes are smaller than in the past." Whereas previously a project team might consist of 70 or 80 people, now an average number is closer to 50, he points out.

Debra Blanchard, president of Fringe Talent, an agency focusing on visual effects and animation artists for the film industry, notes that although many animated films are being made, "it's harder and harder to find a film like a *Lion King* or *Shrek* [that is a huge box-office success]. Because studios are receiving more modest returns on animated films, "they work to keep the budget low so there's a better return on investment."

In talking with recruiters both inside and outside of studios, *Computer Graphics World/Post* observed the following trends:

Should They Stay or Go?

Perhaps the biggest change that the new economy has wrought is an increase in contract, rather than permanent, hiring. Although studios have for years ramped up hires for big projects and ramped down in between, that tendency is now more pronounced. "In the past," explains Day, "it was more cost-effective to keep artists between projects, but now it's less so. We work hard to retain people between projects," she continues, "but in this economy, we have to remain competitive."

"Lately, there are fewer and fewer places where you can hang your hat for the rest of your career," says Blanchard. "More and more people are coming in on a project basis." Although, she stresses, "staff still *does* happen." And, she was seeing this trend even before the economy took a nosedive. The other side of the coin, she notes, is that it's good to hang onto people. If you don't retain a certain number of staff, continuity suffers.

In general, studios are eager to retain staff insomuch as that is possible. At ILM, freelancers and per-project employees are hired for specific undertakings to supplement staff as needed. The situation is the same at EA, says Nicola. Freelancers are brought in to augment, rather than replace, staff.

Pixar does not tend to use freelancers, according to Pam Harbidge, senior recruiter at the studio. "We work with a set staff and typically hire for full-time staff positions." On

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rare occasions and depending on need, she says, Pixar will enlist freelance help.

Double Negative uses a sort of de-facto internship process for hiring, bringing on workers with six- to 12-month contracts, says Acock, but viewing them as long-term hires and expecting to roll them over from contract to contract. "After four years," she says, "they become permanent staff, so we have quite a large number of permanent employees now due to length of service. We don't ever hire huge crews for specific projects and then let them go afterward. It's stable employment."

At the other end of the spectrum is Rhythm & Hues Studios, where the hires are project-based in good times and bad, says Barbara McCullough, manager of recruitment. And, she adds, the economy has not affected the studio greatly: "We do have work," she says.

Lumière in Canada has experienced a steady flow of work, and student hires are not out of the question.

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The Applicant Pool

The next biggest change in studio hiring that has been brought about by the economy is the number of seasoned and highly qualified applicants seeking work. ILM's Beck has observed this, and so has Sony's Day. "We have seen a lot of senior or highly compensated artists on the market," says Day, adding that

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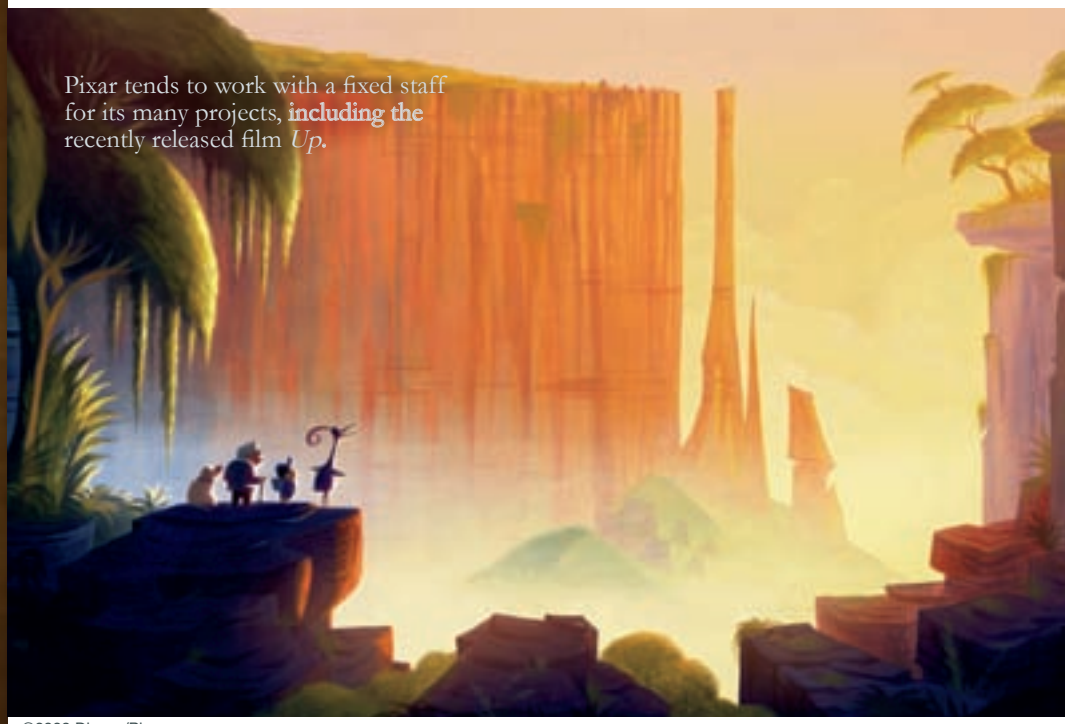
many times these job seekers explain that they were let go (or their contracts not renewed) due to their big salaries.

Digital Artist Management's Scanlon has seen the same thing. "Due to a lot of layoffs in late 2008 and early 2009, a lot of good, talented people have been unfortunate in their circumstances," he says. And practicality and humility seem to be the order of the day. "Many of these people are willing to take half a step back in order to get a job," he says.



Pixar tends to work with a fixed staff for its many projects, including the recently released film *Up*.

©2009 Disney/Pixar

Add the experienced workers to the usual throng of fresh-out-of-college job seekers, and you've got a larger-than-average overall pool. This can make a recruiter's job difficult, as EA's Nicola alluded to earlier in this article. Having a large applicant pool sometimes just makes the sorting process more time-consuming, because studios still worry about overlooking great talent. As Pixar's Harbidge puts it: "We are finding that right now there are more candidates looking for their next opportunity. However, in the animated film industry, the work is cyclical. A candidate looking for work today may be in demand tomorrow. It is essential that we quickly assess and pursue attractive candidates so that another studio doesn't hire them first."

At Double Negative, the number of applicants from the US has been on the rise, Acock says. That may be an effect of the US economy, but she believes that the primary reason for this surge of interest is increased recognition that the UK is receiving from the industry in general, as well as to her company's recent far-ranging recruiting efforts.

"As we are now able to be so competitive with large US studios work-wise, the UK is getting more and more recognition in this industry, and we have a high number of applications from senior artists in well-established US facilities," Acock says. "We're noticing that more and more people are coming over from the US, Australia, and New Zealand. For instance, we have hired more people on visas in the last quarter than we did throughout the whole of last year."

Student Hires

With all this talent looking for work, the picture might seem grim indeed for newbies fresh out of college, but not necessarily. Many studios are still hiring recent graduates, or if not hiring them outright, working with them to enhance their skills and their eventual hire-ability. Quite a number of studios have formal internship programs and long-standing relationships with animation schools. Pixar, for example, rarely hires someone full-time right out of college, according to Harbidge, but it does hire from within its internship program.

"We have an extensive internship and resident program that is open to graduating students," Harbidge says. "For someone who is graduating, applying for our internship program is the best option for getting into Pixar."

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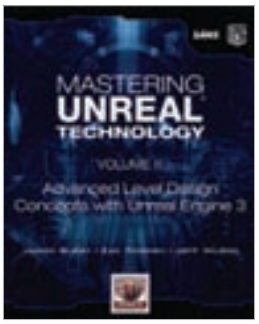

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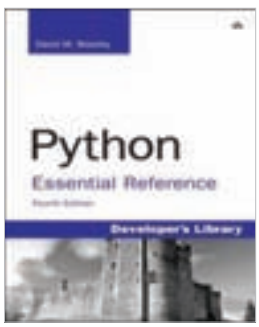

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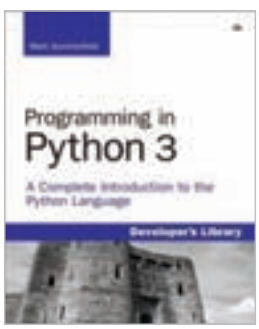

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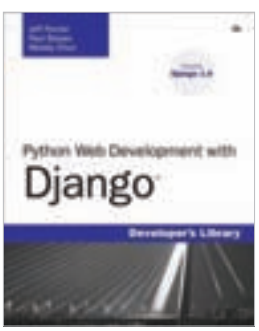

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Linked In or Left Out

This will come as no surprise to the vast majority of computer graphics professionals, but a social networking presence is absolutely required in today's job-seeking environment. Every recruiter who *Computer Graphics World/Post* spoke to, with no exceptions, maintains that he or she uses social networking sites in order to advertise jobs and seek candidates, and the vast majority calls them "vital tools."

Cindy Nicola, vice president of global talent acquisition for Electronic Arts, says she has had incredible success with social networking. "We are on Facebook, LinkedIn, Twitter, and YouTube. We have almost 100,000 members within our Facebook community, and have just launched an external blog titled Inside EA. We keep on discovering better ways to connect to our prospects, candidates, and employees."

While Facebook (www.facebook.com) is an important component of the CG studio-hiring environment, the platform of choice is, overwhelmingly, LinkedIn (www.linkedin.com). Here are some representative quotes from recruiters:

"We frequently use LinkedIn to announce positions and events, and we also publically publish our contact details." *–Lori Beck, Recruiter, Industrial Light & Magic*

Thanks to its close ties with schools, EA is committed to hiring interns and new grads.

EA also has a strong intern and new-grad hiring program. According to Nicola, "Our university partnerships and the talent they produce are key components of our overall talent strategy, and we are deeply committed to hiring interns and new graduates across EA." She estimates that EA hires a few hundred interns each year, converting a high percentage of those who are students to more permanent status after they graduate. Sony Pictures Animation also works with schools and universities to ensure a stream of fresh talent.

At Double Negative in the UK, "we're extremely keen on bringing in a broad range of graduates from all over Europe," says Acock. "We spend a significant amount of time building relationships with course leaders, traveling to universities to do presentations and master classes, as well as bringing in students for talks and tours of the facility."

At Lumière in Canada, student hires occur depending on the project, says Zervos. For long projects that allow for a learning curve, the facility might bring some less-experienced VFX artists. For tight deadlines, she says, "we require experienced artists with the knowledge and know-how to produce under stressful conditions." Lumière does offer three-month paid internships to the top talent from certain VFX graduating classes, she says. "The internship gives the selected graduates a chance to get some experience, and in doing so, we've found some talented artists that have continued on as permanent employees," she adds.

At ILM, recent grads may be hired for entry-level positions, such as technical assistant or production assistant, says Beck. And occasionally, newbies may have the chance to help fill out the roster when large numbers of animators, modelers, or painters are needed, for example.

Rhythm & Hues is especially pro-student. "We're one of those companies that will hire a lot of kids out of school," says McCullough. The studio offers apprentice programs to recent graduates (who must definitely be out of school, she cautions, so as to be able to concentrate fully on the work). She likens these apprenticeships—which may center on a variety of areas, such as animation, compositing, or even a specific software program like Side Effects' Houdini—to boot camp. At the end of the program, Rhythm & Hues hires 97 to 98 percent of the participants on a project basis.

So even though they're competing with more experienced artists this year, college graduates shouldn't fret too much. Many studios like a mix

"LinkedIn is really important. It's not uncommon for us to put a position out there [on LinkedIn] to 20 or so prospects." *– Jana Manthei Day, Director of Recruiting, Sony Pictures Animation*

"LinkedIn seems to be where everybody goes for professional contacts." *–Debra Blanchard, President, Fringe Talent*

"LinkedIn is the one I use the most." *– Chris Scanlon, Account Manager, Digital Artist Management*

"LinkedIn has proven to be a particularly good tool." *– Pam Harbidge, Senior Recruiter, Pixar*

"At the moment, LinkedIn is great for just searching for artists with certain skills and letting people know what we're recruiting for." *–Hannah Acock, Recruitment Manager, Double Negative*

Despite this overwhelming preference for using LinkedIn to make professional contacts, some recruiters use Facebook, as well. Caution for job seekers is advised here. Facebook is a little more "cute," says Sony's Day. "I always caution artists not to have anything on there they wouldn't want a recruiter to see." Facebook is definitely a tool that Digital Artist Management uses, says account manager Chris Scanlon. But I tell people: "Recruiters can access that information. Keep it PG, and keep it professional." *–Jennifer Austin*

of both seasoned and untried hires. "We're big enough that we really do try to spread it across the board," says Sony's Day, "from senior artists to interns straight out of school."

Skill Sets

Are studios looking for generalists or specialists these days? The answer is, as in fatter times, a bit of both. At Lumière, "we are prone to hire those with diverse skill sets on smaller projects that tend to have smaller budgets," says Zervos. "With larger projects, we hire artists who specialize in their departments." Fringe Talent's Blanchard says much the same thing. "Smaller studios tend to hire generalists. Larger studios have what I call the 'Henry Ford assembly line method.' Everybody is a specialist." ILM tends to hire single-skilled folks, for example.

Digital Artist Management's Scanlon says that he has noticed a trend in which studios are farming out particular pieces of a project to

Why is SCAD the university for creative careers?

According to the Los Angeles Times, SCAD's interactive design and game department is among the top 10 mentioned by industry recruiters. Areae, Blizzard, The Cartoon Network, Electronic Arts, Firaxis, Pixar, Primal Screen, Red Storm Entertainment and Rhythm & Hues Studios are just a few of the top companies that send recruiters to SCAD each year in search of fresh talent.

But SCAD students don't wait until graduation to embark on professional careers. The university's strong business partnerships with such companies as EA and the Coca-Cola Refreshing Filmmaker's competition provide ample opportunities for students to build solid portfolios.

In addition, SCAD fosters an environment of collaboration. Students frequently work together on original films, animations, interactive games and more—and many of their projects garner awards at film festivals, game competitions and industry conferences.

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Add all that together, and it's no wonder that SCAD students move seamlessly from the classroom to the professional world—and succeed so well there.

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Ryland Loncharich, B.F.A., interactive design game development, 2008, Zioson, Autodesk Maya.

wings_cover02 Joy Zhang, B.F.A., animation, 2009, Wings, Alias Autodesk Maya, Adobe Photoshop.

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Double Negative tries to avoid turning over staff after a big project, including the recent *Angels & Demons*, and is able to roll many over on new projects.

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a co-developer or other studio that specializes in that type of work. Examples of this might be a cinematic for a game or modeling for characters. "For efficiency purposes," he says, "it makes sense to hire someone who may have a specialty in that field to do the work." Otherwise, they may end up hiring and training personnel for a one-off.

The Big Picture

In short, times are a bit tough for job seekers. Says Scanlon, "As far as hiring goes, studios are being more particular. They're looking for the exact fit." They know they have a lot of choices, he notes, and are unlikely to go for anything other than "that slam-dunk home run." Candidates hoping to be the home run of choice would do well to hone their skills, keep their social networking sites up to date (see "Linked In or Left Out," pg. 20)—and exercise patience.

As the economy has its ups and downs, so goes the CG industry. Says Sony's Day, "We ebb and flow just like the rest of the country."

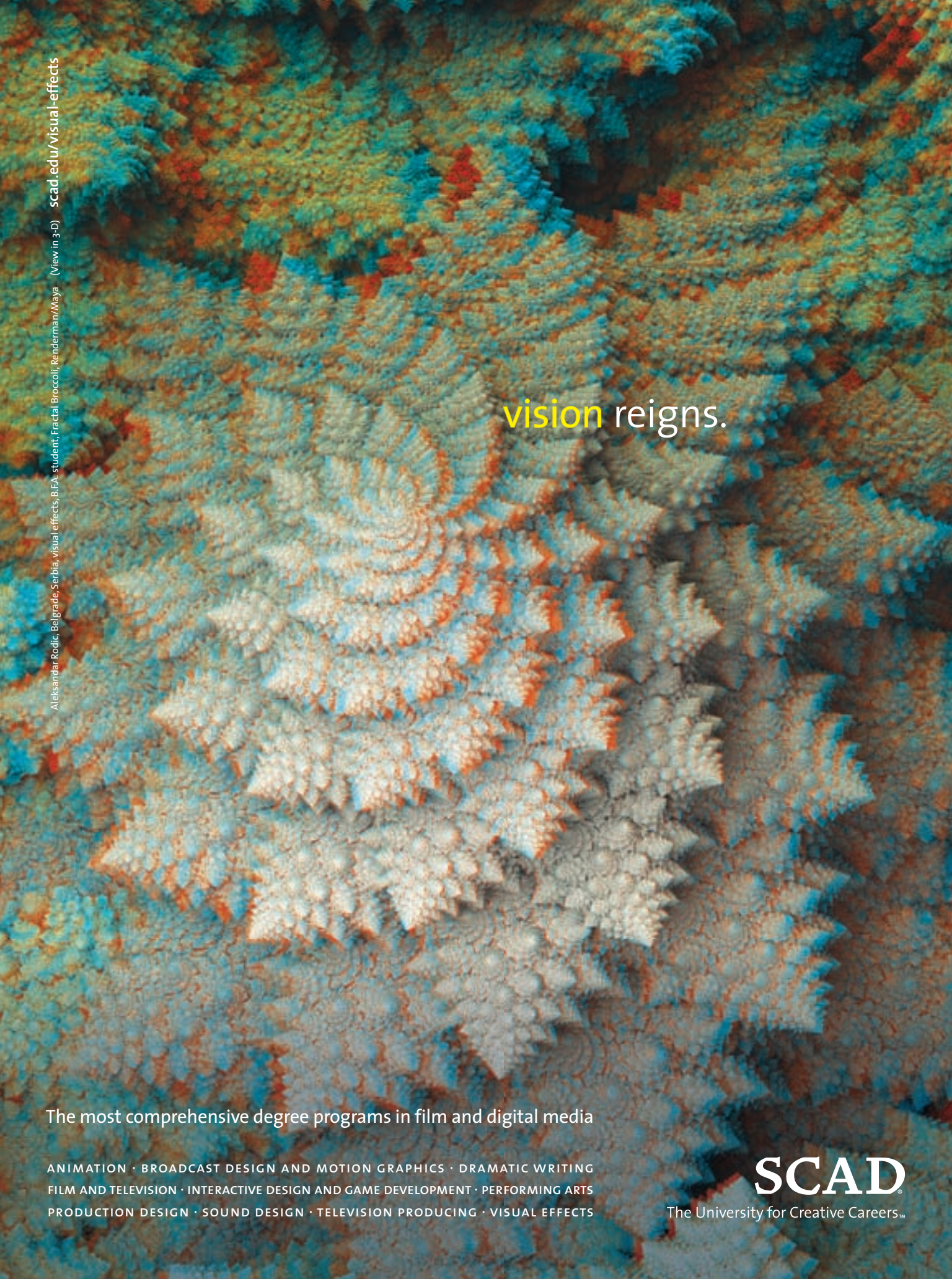
Jennifer Austin is a freelance writer with years of experience in the computer and CG industries. She is based in northern New England.

Recruiters: Inside or Outside?

Most studios *Computer Graphics World/Post* contacted for this article say they use inside recruiting exclusively. "I have been here for three years and have never used an agency on the artist side," says Hannah Acock, recruitment manager for Double Negative, adding that because the studio receives approximately 50 applications a day, there doesn't seem to be a need to do so.

Yet the independent recruiters also interviewed here seem to be making a living, so someone must be using them. Rarely, seems to be the answer from at least some of the other studios interviewed. Says Cindy Nicola, vice president of Global Talent Acquisition for Electronic Arts, "We have a very strong internal talent acquisition team and prefer to source talent directly. We partner with external recruiters on an as-needed basis, but in North America, that is less than one percent of the time."

Chris Scanlon, account manager for the independent agency Digital Artist Management, says, "I think our clients are probably looking to us more for premium talent." His company is also called upon to help staff new divisions and start-ups, he says, especially when there is an urgent need for a large number of new faces with the right capabilities. –*Jennifer Austin*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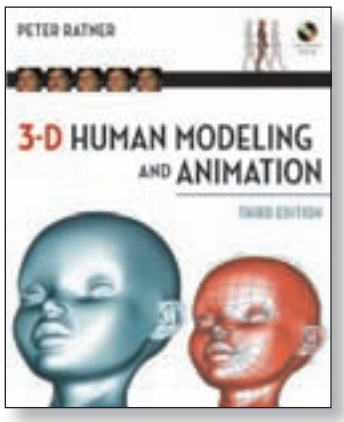

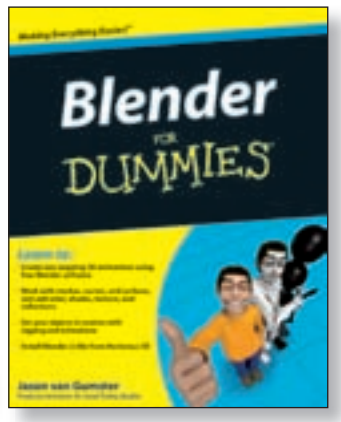

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