ACM SIGGRAPH COMMITTEE REPORT

Committee: Education

Committee Chair: Marc J. Barr

Action Item by the EC:

- Colleen Case approved as committee chair as I have been selected to be chair of SIGGRAPH 2015

Activities Completed:

- Organized Education Panel for SIGGRAPH Asia 2012
- Promoted and obtained applications for Pioneer Mentoring at S13
- Applied for and received notice of grant approval from NSF for funding of Pioneer Mentoring.
- Promoted and in the process of organizing educator and student outreach for S13. This is a responsibility that was taken on for the 2012 conference and continues. Over 100 participants will be attending from the local area. Funding for this comes from a $10 donation made by conference attendees.
- For the 2013 conference Glenn Goldman and I have been involved with organizing 15 Birds of a Feather sessions, that have been grouped together on Sunday and Monday and promoted for educators. S2013 Committee allocated a room for our use and AVW gave us special pricing on AV. Additional information about these and the conference talk Multi Disciplinary Collaboration in Education can be found at the end of this report.
- Completed translating certification exams from Computer GraphicArts Society. Unfortunately, the Chair of Business Symposium reported that there wasn't enough interest in this to pursue with industry.

Upcoming Activities:

- Training Seminar Sponsored by the SIGGRAPH Education Committee   and Unity 3D

   As of 7/5 this seminar had approximately 75 registrants

- Processing as Intro to CS/Teaching Java programming through art and game creation
- Drawing Machines/Embedded programming with a twist of studio art

   As of 7/5 the preceding two workshops, organized by Ginger Alford, have 33 registrants of whom 23 have never attended SIGGRAPH. 22 registrants are in both workshops. An additional 6 are in Processing only and 5 in Drawing Machines only.

   Totals are: Processing 28; Drawing Machines 27

   Of the 33 coming 25 are from California; 2 are from Texas; 1 each from New Mexico, New York, Ohio, Puerto Rico; origin of 2 are unidentified.

- Training Seminar Sponsored by the SIGGRAPH Education Committee and Side Effects Software Fluids/Cloth/Lighting Development.

  As of 7/5 these seminars have over 200 registrants

Additional information about these can be found at the end of this report, under Activities at the SIGGRAPH 2013 Conference.

- Educators Meet and Greet funds donated by Autodesk

The training sessions and workshops were added to adress EC's instruction to add opportunities for Professional Development. They are being done with companies that exhibit at the conference. There was an additional request from Autodesk, but it was turned down as they are not exhibiting this year. The two others have a target audience of high school level teachers intended to address current interest in STEM education and to be in line with interests of the ACM Education Council.

We incurred no expense for setting any of these up as the companies we are working with are bearing the costs.

By having them at conference hotels, they are not in competition with space at the convention center.

Attendees at all of the sessions are also conference attendees and we are also having some Birds of a Feather and Studio sessions that the events together.

The Educators Meet and Greet is being paid for by Autodesk. I communicated with Mike Weil about this to make sure there would be no conflicts or misunderstandings.

Reports on Committee Activities

The Education Website (education.siggraph.org)
By Wobbe Koning

The current Plone based site received the regular updates but has not been our focus over the last year.

The new Drupal base Education website is by now long overdue but we are getting close to having all content ported, which unfortunately was an entirely manual process as exporting anything the broken Plone installation on which the current site runs turned out to be impossible. Ken Bauer has been very helpful in the process, especially by enabling FTP on the Plone site that made downloading multiple files at once possible albeit though a two step process.

Phillip Likens, who did important initial work on setting up the cgSource submission and review system, could not continue to work on the site due to changing work commitments. Barbara Helfer has been very helpful by porting all the artist pages for the History of CG project, and Kevin McNulty chipped in by porting most of the SpaceTime galleries.

I ported all the other content on the site, what is left for the most part is some formatting and updating of outdated content. Some portions of the pre-2006 site were never moved over to Plone and are still accessible though the old HTML based site. A discussion needs to be had if those pages, which include HyperGraph and HyperVis, should be moved to new site and whether they should be updated.

The remaining part of the site that still needs work is cgSource. The basic framework is in place but needs some fine-tuning. The rating system has not been implemented correctly yet. Bridget Gaynor and Josephine Leong have been copying content over to cgSource shortly after last year's conference, thereby testing the submission system. This process seems to have stalled and Bridget has since indicated no longer being able to continue work on cgSource. Adriana Jaroszewicz has since joined the team and successfully tested the submission system.

Committee members who are working on this are planning to do much of the remaining work while in Anaheim.

We need one final push on completing cgSource, which is the last major hurdle left, and after some tweaking and refining we think we should finally be able to go live with our new Drupal based site shortly after this years conference.

International Activities Report (2012-2013)

by **Rejane Spitz** (Brazil)
Global Outreach Coordinator

Introduction
One of the major objectives of the ACM SIGGRAPH Education Committee is to help establish a worldwide network of computer graphics educators.

Our international ACM SIGGRAPH Education Committee members have active roles in the planning and organization of education-related Computer Graphics events in several countries, which offers an excellent opportunity for us to exchange information and promote our ACM SIGGRAPH educational activities worldwide.

Our current International Representatives are:

   - **Gitta Domik** (Germany) – **European Representative**
   - **Rejane Spitz** (Brazil) - **South American Representative**
   - **Zhigeng Pan** (China) – **Asian Representative**

In this report we present several international educational activities, events and conferences in Computer Graphics and related areas in which our Committee members and International Representatives have been and/or are actively involved in 2012-2013, aiming at showing the scope and diversity of our international network.

Report from Europe
by Gitta Domik (Germany)

Within the Education Committee I am responsible for education activities, developing resources and providing information in and on computer-generated visualization. I try to provide information and materials through my website and through my publications.

The following education activities were accomplished in 2012-2013:

- The ACM SIGGRAPH Education Committee Website http://www.uni-paderborn.de/cs/vis has been updated for new activities. This is the website that is linked to from the SIGGRAPH Education committee website http://education.siggraph.org/resources.

- Another source of information for visualization and graphics educators is the new Education Department at IEEE Computer Graphics and Applications (Editors: Gitta Domik and G. Scott Owen). Between September 2012 and July 2013 the following articles were published through this department:

  - How Visualization Courses have changed over the past 10 years, by G. Scott Owen, Gitta Domik, David S. Ebert, Jörn Kohlhammer, Holly Rushmeier, Beatriz Sousa Santos, Daniel Weiskopf, IEEE Computer Graphics and Applications, Vol. 33, No. 4, July/August, 2013

  - Building Virtual Worlds Carrying on the Legacy of Randy Pausch's "Head Fake", by Jesse Schell and Chris Klug, Vol. 33, No. 3, pp. 12-15, May/June, 2013

  - Information Visualization Courses for Students with a Computer Science Background, by Andreas Kerren, Vol. 33, No. 2, pp. 12-15, March/April, 2013

  - Helping High Schoolers Move the (Virtual) World, by Gitta Domik, Stephan Arens, Peter Stilow and Hauke Friedrich, Vol. 32, No. 1, pp. 70-74, January/February, 2013

  - Introducing Google Chart Tools and Google Maps API in Data Visualization Courses, by Ying Zhu, Vol. 32, No. 6, pp. 6-9, November/December, 2012

  - Teaching 3D Computer Animation to Illustrators: The Instructor as Translator and Technical Director, by Wobbe F. Koning, Vol. 32, No. 5, pp. 81-83, September/October, 2012

- Eurographics 2013 featured the Education Track on May 9, 2013, in Girona, Spain, with four papers and one discussion:
  - Project-Based Learning of Advanced Computer Graphics and Interaction   *Romero, M.*
  - Student Project – Racing Launcher Game   *Anderson, E.F.*
  - Introductory graphics for very diverse audiences   *Pelechano, N. & Fairen M.*
  - Scene graph creation and management for Undergraduates   *Shesh, A. & Jones M.*
  - Moderated discussion: "The progress of computer graphics programs in meeting the Bologna requirements"   *Moderator: Jean-Jacques Bourdin*

  Chairs of the Education Track were Eva Cerezo, Jean-Jacques Bourdin and Steve Cunningham.

The new chair of the Eurographics Education Committee starting 2013 is Beatriz Sousa Santos.

Report from South America
*by **Rejane Spitz (Brazil)***

In parallel with my SIGGRAPH activities, I have been conducting several other volunteer activities throughout this year, as a member of the Executive, Advisory, Scientific and/or Organizing Committees at several Conferences in South America. Said volunteer activities help me promote ACM SIGGRAPH educational activities and events through different communities, by building a major international network linking the areas of Art, Design, Architecture, Computer Graphics and Science.

I have also been involved in several international teaching activities (at the Doctoral level), as a result of a partnership established between PUC-Rio University (Brazil) and Pontificia Universidad Catolica de Valparaiso (Chile), in 2011, and between PUC-Rio University (Brazil) and Universidad IberoAmericana (Mexico), in 2012. Through these activities, I have had the opportunity to disseminate SIGGRAPH and its educational activities to numerous professionals in Latin America, including my Chilean and Mexican PhD students in their respective fields of Art, Design and Architecture. Prior to these conversations, the majority of them were not aware of SIGGRAPH, but are now interested in becoming participants in the association and its related conferences.

In 2011-2012 I have been involved in establishing links and promoting our ACM SIGGRAPH Education Committee initiatives at the following conferences and events, held in South America, as well as in North America:

a) In Brazil:

- **SIGRADI 2012** - November 13- 16, 2012
  The XVI SIGraDi conference took place in Fortaleza, Brazil. It was organized by the Universidade Federal do Ceara and by Fundacao Edson Queiroz Universidade de Fortaleza. Most of SIGRADI's attendees are educators, and during my talks I had the opportunity to encourage attendees to join and attend SIGGRAPH conferences and SIGGRAPH educational related events.

- **VI RUN - International Academic Network for Digital Creation (VI Encontro da RUN - *Réseau Universitaire International de Création Numérique)*,**
  Universidade Federal Fluminense, Niterói, Rio de Janeiro, 7-13 July 2013.
  Professors and students from all continents which are part of the RUN Network once a year get togehter for a week for a series of talks, workshops and activities. This year the meeting will be held in Niteroi, Rio de Janeiro, and I was invited to give a talk in the Seminar, and to participate in other activites – with my group of posgraduate students (15 MA and PhD students). During my talk, I will have the opportunity to mention my role as SIGGRAPH Global Outreach Coordinator, show samples of works exhibited and presented at SIGGRAPH, and to encourage attendees to join and attend SIGGRAPH conferences and educational related events.

b) In Mexico:

- **International Seminar for Research in Design, Diversity and Integration *(Seminário Internacional de Investigación en Diseño, Diversidad y Integración)* – Universidad Iberoamericana, Mexico –** October 26 –November 1, 2012
  This event was part of the major event *XXIII Encuentro Nacional de Escuelas de Diseño Gráfico* (XXIII Graphic Design Schools National Meeting), hosted by the Universidad Iberoamericana, in Ciudad de Mexico, Mexico, which was attended by hundreds of Graphic Design educators from different regions of Mexico. The aim of the

International Seminar for Research in Design, Diversity was to present the work and researches conducted at the Department of Art & Design at PUC-Rio by a group of leading professors. In my talk, I mentioned my role as SIGGRAPH Global Outreach Coordinator, presented samples of works exhibited at SIGGRAPH Conferences, and encouraged participants to get involved with the Education Committee international activities and to attend SIGGRAPH conferences.

c) In the United States:

- **-Birds of a Feather Session "Art, Science, and Interactivity: creating engaging experiences in education – Rejane Spitz/ACM SIGGRAPH Education Committee - 22 July 2013**
  The "Art with Science" project *("ARTE COM CIÊNCIA"),* organized by the NGO IPTI (*Institute for Research in Technology and Innovation*), aims at promoting art+science education in high schools located in very poor communities in the Northeast of Brazil. Two projects developed by high school students from poor communities in the State of Sergipe - using very limited resources and technical skills – were transformed by The Department of Art & Design at PUC-Rio University into interactive installations which are currently being exhibited at the *Museu da Gente Sergipana*, a museum of Art & Technology in the Northeast of Brazil, focusing on interactivity and science education.

  The goals, development and results of the "Art with Science" project will be presented at the SIGGRAPH 2013 Birds of a Feather Session "Art, Science, and Interactivity: creating engaging experiences in education", submitted by Rejane Spitz (Global Outreach Coordinator) in partnership with the ACM SIGGRAPH Education Committee, which will be held on Monday 22 July 2013, from 10 – 11 am. In this session, we will also encourage the use of interactive approaches and techniques in education, by discussing ways to promote creative and technical collaboration for the development of engaging educational projects.

Undergraduate Research Alliance
By William J. Joel

The purpose of the Alliance is to foster and support original undergraduate research in computer graphics and related disciplines. More importantly, the Alliance attempts to facilitate the creation of inter-institutional projects, where students from different schools can share their respective expertise. Our SIGGRAPH 2012 Birds-of-a-Feather session attracted more than two dozen attendees, demonstrating a strong interest in both the Alliance and undergraduate research in general.

During this year's conference, students and faculty from all institutions, Alliance members or not, are encouraged to attend our Birds-of-a-Feather session (Monday, 22 July 11:00 AM **-** 12:00 PM) and relate their experiences with undergraduate research. In addition, we plan to initiate a call for position statements at this year's conference, in hopes of expanding the on-going dialogue.

For further information, faculty and students should visit the Alliance's website (http://education.siggraph.org/community/ug-research) or contact the director via email.

Education Index
By Tereza Flaxman

The Education Index is a comprehensive online database of educational programs in computer graphics and related fields. It has been serving the international academic community, students and the general public for seven years. It currently lists over 600 academic programs, with emphasis in animation, gaming and visual arts. Unlike many other similar types of listings, it is not commercially subsidized.

The interface was updated last year and we also have been re-designing the database backend to be searchable by more than one category at the same time. For example, the user will be able to search the database by location (City/Country), school name, area of focus and degree at the same time. We also are performing "search engine optimization" so the database entries are indexed by search engines. With these changes the Education Index will show up correctly in Google and other search engines, which we expect to increase the number of users significantly.

Over the past year, the index has had nearly 2000 hits. Approximately 85% are first time visits, with two thirds coming from the U.S.

Activities at the SIGGRAPH 2013 Conference

Education Birds of a Feather – 2013

Anaheim Convention Center 203B (Education BOF Room)

Sunday 9:00 AM – 10:00 AM

Cross-disciplinary Education (Bonnie Mitchell) This session is for interdisciplinary educators, artists, scientists, and researchers. Attendees share experiences and discuss approaches to collaboration, integrated research, and anti/multi-disciplinary creative production.

Sunday 10:00 AM – 11:00 AM

Visualization for Science and Engineering Education (Violeta Ivanova) Animations and interactive media for teaching and learning and lessons learned from collaboration of artists with science and engineering faculty. Presented by MIT ARTEMiS visualization group. Co-sponsor: Education Committee.

Sunday 11:00 AM – 12:00 Noon

ACME Network (Jeannette Draper) This Birds of a Feather session focuses on 15 trends in distance education to help strengthen your animation training programs, keep current and foster better relationships with industry.

Sunday – 12:00 Noon to 2:00 PM

Studio View of Demo Reels (Art Durinski) Representatives from various animation and visual effects production studios talk about what they look for in student demo reels.

Sunday – 2:00 PM to 3:00 PM

SEAD: Innovation Thinking (Carol LaFayette) Crafting the national conversation on innovation thinking: addressing cross-disciplinary learning across formal and informal experiences that engage the sciences and engineering with the arts and design.

Sunday – 3:00 PM to 4:00 PM

Learn by doing: using rapid prototyping game development events to enhance and augment the classroom experience (Foaad Khosmood) Game jams, hackathons, and other fixed-time/rapid experiences for studying game development or interactive entertainment. Join Global Game Jam Director Foaad Khosmood in a discussion about game jams and the classroom.

Sunday – 4:00 PM to 5:00 PM

ASIFA-Hollywood Animation Educators Forum: What is the State of On-Line Animation Instruction Today?

(Dori Littell-Herrick)

Do online programs provide the same quality training as on-ground schools? Which topics work; which don't? Does online level the field through easier access, or short-change and build unrealistic expectations?

This BOF is for interdisciplinary educators, artists, scientists and researchers. Participants share experiences

and discuss approaches to collaboration, integrated research and anti/multi-disciplinary creative production.

Monday – 8:00 AM to 9:00 AM

Tools and Trends Incorporating Multisensory Information in Science, Math, and Art Integrative Education

(Anna Ursyn)

This session aims to exchange methods, approaches and answers to programming with human senses in mind and will focus on apps and experimentations with proccessing.org, Arduino boards, and other trends.

Monday – 9:00 AM to 10:00 AM

3D Printing from the Experts (Ryan Hayford)   Hear from the experts about how 3D printing is changing the world and the value of particular technologies. David Cawley (Art Center College of Design) & John Miralles (LSU).

Monday – 10:00 AM to 11:00 AM

Art, Science, and Interactivity: creating engaging experiences in education (Rejane Spitz)   This session encourages the use of interactive approaches and techniques in education. Join us to discuss ways to promote creative and technical collaboration for the development of engaging educational projects.

Monday – 11:00 AM to 12:00 Noon

SIGGRAPH Education Committee: Undergraduate Research Alliance (William Joel)   Faculty and students from all institutions of higher learning are invited to join us as we discuss our undergraduate research efforts, our successes and failures, and future ideas.

Monday – 12:00 Noon to 1:00 PM

Integrated Help: Bringing information to artists at the time of need to reduce onboarding and time-on-task

(Margaret Plumley)

A forum for discussing methods for breaking the classroom training model and bringing information and resources to artists in the context of their work.

Monday – 1:00 PM to 2:00 PM

Open Source in Graphics Education (Wobbe Koning)   Software licenses are a major financial burden for computer graphics programs. Can using free and open source software be a viable alternative to the "Industry Standard"? An open discussion.

Monday – 2:00 PM to 3:00 PM

The Khronos Group: Not-For-Profit Open Standards Group (Glenn Fredericks)   This session is for educators who wish to interact with the Khronos Institute for Training and Education by sharing educational materials and advising on certification.

Monday – 3:00 PM to 4:00 PM

Creating Worlds of Art and Music (Aliza Sorotzkin)   With music, procedural animation methodology allows for a unique level of synchronization and experimentation. We will look at a range of assets created for music video and concert visual productions.

Monday – 4:00 PM to 5:00 PM

VFX Student and Intern Showcase (Aliza Sorotzkin)   Recent VFX students and interns showcase demo reels and breakdown their VFX and Game projects, explaining techniques and sharing lessons learned during their progression to working professional.

Education Talk – 2013

Multi-Disciplinary Collaboration in Education

TUESDAY, 23 JULY 2:00 PM - 3:30 PM

Session Chair: Glenn Goldman, New Jersey Institute of Technology

Exploring the Intersection of Art, Music, and Technology

Results of a collaborative learning experience between students from the visual arts and computing sciences that explores the intersection of art, music, and interactive technology.

Susan Lakin

Rochester Institute of Technology

Joe Geigel

Rochester Institute of Technology

Arts/Tech Collaboration With Embedded Systems and Kinetic Art

A cross-disciplinary collaborative course and curriculum that teams computer science students with art students to engage in joint engineering design and creative studio projects that involve embedded computing and kinetic artworks.

Erik Brunvand

University of Utah

Creating a Nimble New Curriculum for Digital Media Artists

A framework for immersive learning and new approaches to curriculum design that allow digital-media artists to collaborate on interdisciplinary media arts or design projects within virtual environments while pursuing individualized degrees.

Nicola Marae Allain

SUNY Empire State College

Best Practices in Short Animation Production in Private/Public Partnerships: An Agile Approach

Seneca College introduces its approach to facilitating production partnerships among education, industry, and government that has led to several successful high-profile short animated films such as "Ryan" (National Film Board of Canada, 2005), using as an example "Subconscious Password" (National Film Board of Canada, 2013), the latest film by director Chris Landreth.

Mark Jones

Seneca College of Applied Arts and Technology

Sean Craig

Seneca College of Applied Arts and Technology

Education Training – 2013

Training Seminar Sponsored by the SIGGRAPH Education Committee   and Unity 3D

SUNDAY, 21 JULY | 10 am – 6 pm | Hilton Anaheim

Hands-on workshop on how to create multi-platform 3D games with Unity from start to finish. Includes a tutorial on setting up the 3D level; creating interactivity with scripting; exporting and optimizing games for iOS, Flash, Android and PC/Mac standalone; publishing tips; and tips on how to use Unity in the classroom.

Two free professional-development workshops sponsored by the SIGGRAPH Education Committee:

Processing as Intro to CS

SUNDAY, 21 JULY | 9 am – noon | Hilton Anaheim

Teaching Java programming through art and game creation:

• Java-based language
• Intuitive graphics
• Labs and examples
Fast forward through a six-week introductory programming course designed for a high school classroom. Loops become explorations in structure and randomness. Event handling becomes controls for sprite-based games. Graphics libraries provide a study in data types and method overloading. Laptops required.

Drawing Machines

SUNDAY, 21 JULY | 1:30–5 pm | Hilton Anaheim

Embedded programming with a twist of studio art:

• Arduino embedded microcontroller
• Electronic components

- Art supplies

Physical computing combines computer hardware with sensors and actuators to interact with the environment. Wire basic electronic circuits. Understand the difference between digital and analog signals. Be creative with light sensors, potentiometers, LEDs, and servo motors to create machines that create art. Arduinos and electronics provided for use in the workshop. Laptops required.

Training Seminar Sponsored by the SIGGRAPH Education Committee and Side Effects Software

SUNDAY, 21 JULY | 10 am - 6 pm | Hilton Anaheim

Side Effects hosts an in-depth day of training in its award-winning Houdini software. This training is designed for university-level educators and industry professionals. Attendees may choose to attend one or all of the three sessions. Certificates of participation will be issued to course attendees.

If you are interested in participating, please register below:

10 am - 12:30 pm: Session 1: Fluids

12:45 - 3 pm Session 2: Cloth

3:30 - 6 pm - Session 3: Lighting Development

Educators Meet and Greet

TUESDAY, 23 JULY | 4-5 pm | SIGGRAPH Village

An informal reception, sponsored by Autodesk, for all educators attending SIGGRAPH 2013.