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/**Final Report for Period:** 06/2006 - 05/2007**Submitted on:** 06/04/2007**Principal Investigator:** Walker, Bruce .**Award ID:** 0533717**Organization:** GA Tech Res Corp - GIT**Title:**

Think Tank (Doctoral Consortium) at International Conference on Auditory Display 2005

Project Participants**Senior Personnel****Name:** Walker, Bruce**Worked for more than 160 Hours:** Yes**Contribution to Project:**

Bruce Walker was the PI, and co-Organizer of the ICAD 2005 ThinkTank (Doctoral Consortium), and was the organizer (along with Tony Stockman in London) of the ICAD 2006 Student Activities. He also helped coordinate reviewers and panelists, and was, himself, a panelist at ICAD 2005.

Name: Barrass, Stephen**Worked for more than 160 Hours:** No**Contribution to Project:**

Dr. Stephen Barrass from the University of Canberra, Australia, was the Chair of the ThinkTank (student consortium), and worked with me to design the event and to select student participants.

Post-doc**Graduate Student****Undergraduate Student****Technician, Programmer****Other Participant****Research Experience for Undergraduates****Organizational Partners****ICAD: Int'l Comm. for Auditory Display**

ICAD, the International Community for Auditory Display, hosted the NSF-sponsored doctoral consortium at the annual International Conference on Auditory Display (ICAD2005). Further, the funds that remained after ICAD2005 were used (by permission of the NSF) to support additional student education and networking activities at ICAD 2006.

Other Collaborators or Contacts

The ICAD 2005 Think Tank (student consortium) Chair was Dr. Stephen Barrass from the University of Canberra, Australia. Dr. Barrass and I collaborated on the design and conduct of the student forum. In addition, the Panel members included: Dr. Gregory Kramer from the Metta Foundation; Dr. Barbara Shinn-Cunningham from Boston University; Dr. Anne Guillaume from IMASSA in France.

The ICAD 2006 Student Activities were organized in collaboration with the ICAD 2006 conference organizers, led by Prof. Tony Stockman at Queen Mary University London.

Activities and Findings

Research and Education Activities: (See PDF version submitted by PI at the end of the report)

In 2005, the project included a graduate student consortium at ICAD 2005, where a panel of experts in auditory display provided advice to graduate students in the field. Additional student activities were held at ICAD 2006. Please see attached report.

Findings:

There is a strong group of up-coming student researchers. This meetings was vey successful, with all participants gaining more insight into their research. The additional activities at ICAD2006 were very successful in providing feedback and networking/career development to additional students. Please see attached report.

Training and Development:

For the 2005 Doctoral Consortium, the students submitted written submissions, and then presented verbal summaries of their work and research plans. They then interacted with the panel and the other students and researchers present to gain insight and recommendations for improving their research, or answering specific questions they had.

The networking and interaction activities at ICAD2006 helped the students develop their networks and career paths.

Please see attached report.

Outreach Activities:

Journal Publications

Books or Other One-time Publications

Web/Internet Site

URL(s):

<http://www.idc.ul.ie/icad2005/thinktank.htm>

Description:

The Web site lists the participants and their research topics, as part of the official ICAD 2005 web site.

Other Specific Products

Contributions

Contributions within Discipline:

The field of auditory display is relatively young, and as such, the scientific methods being used are still in flux. What can be said clearly, though, is that the level of science in the field is growing steadily. The acknowledgment of this fact, and the support of research projects through this Think Tank (doctoral consortium) increases the level of science, the rigor, and the overall potential for impact. The opportunity to discuss planned and ongoing research with world leading experts in the field is a huge benefit to the students, which in turn makes the entire field stronger.

Contributions to Other Disciplines:

As the level of science is increased in this sort of activity, the quality and reach of the resulting publication also grows. As a result, the results of the research projects from these students, and others in the field, will enjoy wider dissemination and more broad impact on the design and use of auditory displays in other domains, such as assistive technology, HCI, and human factors.

Contributions to Human Resource Development:

These meetings increased the quality of research at the student level, which will also encourage more students and more projects in this field. As a result, more people will be trained in this field. The networking also should increase job prospects for the students.

Contributions to Resources for Research and Education:

The Think Tank provided expertise and research methods to the student researchers, who are often working by themselves in a research project. The increased knowledge and skills will be transferred to the student's institution, and will remain as a resource for subsequent students.

Contributions Beyond Science and Engineering:

Categories for which nothing is reported:

Activities and Findings: Any Outreach Activities

Any Journal

Any Book

Any Product

Contributions: To Any Beyond Science and Engineering

ICAD 2005 Think Tank (Doctoral Consortium) and ICAD 2006 Student Activities Summary and Final Report

In the summer of 2005, ICAD saw its first ever doctoral consortium, the “ICAD 2005 Student Think Tank”, thanks to the coordination efforts of Think Tank Chair, Stephen Barrass. Our 14 graduate student “thinktankers” included 5 women, 9 men, with 5 from the USA, 5 from the UK, 2 from the EU, and 1 from Australia. Our panel of advisors came from the USA, Canada, France, and Australia. The list of thinktankers, and the panelists, is appended to this report. The US National Science Foundation (NSF) provided financial support including travel funds for many of the attendees. In addition to those already mentioned, we had many other students and professors from all areas in attendance, which made for a very knowledgeable, diverse, and lively group.

The students gave 15-minute presentations of their research, including a summary of the questions they wanted help with, or the kinds of feedback they needed at this stage of their project. Following each presentation we engaged in a 15-minute discussion and feedback, starting with the panelists, and extending to the other attendees. After a long and fruitful day of presentations and discussions, we followed Irish tradition by continuing the discussion over a pint.

The feedback from everyone who attended was positive—this is clearly a welcome and useful addition to the ICAD schedule. It does make for a longer conference, but everyone agreed that it was well worth the extra day. The range of feedback was excellent, and since this is such an interdisciplinary field, it is helpful for students to get a variety of perspectives. As many students remarked, they are often the only one at their university doing this sort of research, so they can feel a little overwhelmed; the ICAD community can serve as a very effective resource as they wade through their research projects. The Think Tank is just a start to that! The funding from the NSF was instrumental in getting the US-based students and the panelists to participate. We can consider this as a challenge to get the European Union and other international funding agencies to follow along and contribute to such a worthwhile activity the next time it is held. That will ensure the international mixture of students and expert panelists, which indeed represents the character of ICAD itself.

There were a few recommendations for improving future ICAD Think Tanks. The students suggested that the Abstracts or submissions from the other students be available online in advance, so that everyone can read up on the other topics, and perhaps participate more in the discussion, or at least have more of an idea what projects others are working on, and the sorts of challenges they are encountering. This could even be extended beyond the Think Tank to include a *Students* section on the ICAD website, where these kinds of issues could be presented and discussed with input from an even broader section of the ICAD community. Some of the students felt that allowing a bit longer application would be helpful. They felt that describing their research, and also the questions they have about it, was a little challenging in the allotted word limit. Next time (next year?) we would most certainly have a larger limit. In future, we also hope to get the announcement of the Think Tank out earlier, and perhaps to a bit broader audience. Unfortunately, one of the students accepted as a thinktanker this year was not able to get travel arrangements (including an international visa) done in time, and could not attend. An earlier

notification about acceptance and funding might have helped. The students also suggested that it would be fun and interesting to have a student reception after the Think Tank, so they could meet each other some more in a less structured format, talk about research (or not), and essentially build connections in the ICAD community.

In summary, there is a strong group of students forming the next generation of the Auditory Display community. This first ICAD Think Tank was a great success, helping them individually, but also as part of our community. The Think Tank is definitely something that should be considered for regular inclusion in ICAD conferences (perhaps every other year, to start).

Think Tank Chair:

Professor Stephen Barrass, University of Canberra

Panel:

Dr. Anne Guillaume, Institut de Médecine Aérospatiale du Service de Santé des Armées

Dr. Gregory Kramer, Metta Foundation

Professor Barbara Shinn-Cunningham, Boston University

Professor Bruce Walker, Georgia Institute of Technology

Student Thinktankers

Eoin Brasil, University of Limerick, Auditory Icons

Graeme Coleman, University of Dundee, Design Methods

J Louise Finlayson, University of Aberdeen, Auditory Interfaces

Jordi Hernandez, National University of Ireland, Audio Collaborative VE

Jeff Lindsay, Georgia Tech, Blind Navigation Studies

Nicholas Mariette, University of New South Wales, Audio Augmented Reality

Lisa M. Mauney, Georgia Tech, individual Differences

Michael A. Nees, Georgia Tech, Graphs Training

Flaithri Neff, University College Cork, Audio Diversity

Louise V. Nickerson, Queen Mary University of London, Earcon GUI

Anikó Sándor, Rice university, Duration/Pitch

Julien Tardieu, Ircam, Sound Design

Michael Schmitz, Saarland University / DFKI, Spatial Audio Navigation

Raymond M. Stanley, Georgia Tech, Bone-conduction Headphones

Addendum: Student Activities at ICAD 2006.

There were some funds (~\$1500) left over from the ICAD2005 ThinkTank. In consultation with our NSF Program Officer, these funds were used to support graduate student education and networking activities at ICAD 2006. The purpose of the conference, and the international representation at it, was similar to that of the 2005 conference. Thus, the US-based students had a great opportunity to meet other researchers, both students and senior researchers, by attending ICAD2006. Using the NSF funds, we provided a dinner, coffee breaks, and snacks at ICAD2006, which enabled students to mingle, discuss research, and get valuable feedback on their research. A total of \$1500 was used to support these student support activities, and were paid to Queen

Mary University of London, the venue for the ICAD 2006 conference and related NSF-sponsored activities. A total of about 25 students, including about 10 from the US, benefited directly from these activities.

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