

CITY UNIVERSITY OF HONG KONG

Office of Education Development and Gateway Education

Teaching Development Grant (TDG) 2013-14

A. Title of Proposal

Exploring Extreme Environments Creatively through Art and Science

B. Project Investigator

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C. Abstract of the Project

SCM's course "Media Art and the Environment" is the academic component of the university's Extreme Environments programme. As part of the course, data gathered via collective environmental research is reimaged in new forms of presentation including robotics, gaming, animation, interactive cinema, and mobile apps. Using the data from the 2013 expedition to Antarctica, this proposal is for the materials needed by the students to gain experience in developing new types of visualization, assistance with the exhibition of their findings through hiring and training student docents, documentation and publication of data from the final projects, and administrative help to succeed in all the abovementioned deliverables.

The first expedition and exhibition gave impetus to further investigate immersive education, develop novel interdisciplinary research strategies, and extend the discovery-enriched curriculum. The results of the pilot programme in 2012 showed the academic, research, and public outreach value in fieldwork as a form of discovery. The participating students all noted better understanding, the results were published in top tier conferences, and due to social networks and the media, millions were reached regarding new ways to promote sustainability. This TDG grant will support larger, more complex student projects, better documentation, increased visibility, deeper pedagogical research, and stronger partnerships.

D. Category and Keywords

Category: Pedagogy/Content Delivery Enhancement

Keywords: Interdisciplinary, Immersion Pedagogy, Embedded Research,
Internationalization, Creative Visualization

E. **Description and Background of the Project**

The Extreme Environments expeditions and exhibitions were specifically designed to connect with City University's Discovery-Enriched curriculum. Students work across disciplines in the planet's most fragile landscapes to find new insight into a sustainable future. For example two students from the Mojave expedition used endangered tortoise GPS tracking data to create a mobile game application that not only showed tortoise number and position, but also let users add 'dangers' (population, habitat damage, etc.) to visualize the impacts on the animal population.

The programme, known as EEEE to the students, is connected to the SCM course *Media Art and the Environment* that explores how artists and scientists working together can collect and interpret environmental data by discovering new forms of creativity and visualization. As the expedition is now offered to the entire university, the upcoming course cohort will be one of the most interdisciplinary collections of students possible. Across a wide range of fields, partnered students will have performed research in environmentally-significant Antarctica prior to the beginning of the class, funded separately. The TDG money will be used for the students enrolled in the course to form their creative projects, taking them to new levels of professional presentation. They will collate and polish the documentation, write and publish a professional catalogue, create publicity materials, and learn how to document their own work.

The grant requested here will extend the skills of our students, many from lower-income families, enabling them through the development of highly professional tools and materials, to gain entry into top graduate schools, win awards in art and design, and secure jobs within the industry. Three separate academic papers are in-progress that discuss art practices in extreme ecosystems, immersion pedagogy in difficult conditions, and alternative data visualization strategies offered by media arts. This project will add to the body of pedagogical theory we are establishing in this field, first presented proceedings of ISEA 2012, The 18th International Symposium on Electronic Art, Albuquerque as part of the panel discussion "Making Sense of Data".. Further investment into this research will build on a growing network of partnerships and increased recognition for the school, university, and Hong Kong.

F. **Objectives and Intended Outcomes/Input on Student Learning**

Objectives

- To foster international collaboration among art and design students, scientists and professionals in environmental concerns. Achieved through communications, social networks, partnerships, and field research.
- To learn how to use computer sensing, location and presentation technologies and the computational programming needed to convert the data into new visual methods. Achieved through study, experimentation, research and on-site experience.
- To present varied possibilities with visualization of collected environmental data and info-aesthetics. Achieved through creative strategies outside the normal parameters of scientific data presentation.
- To learn professional exhibition planning and execution, catalogue publication, and marketing. Achieved through the design and production of a exhibition, the writing and publishing of a catalogue, and the design and branding of the promotional materials.
- To present projects and prototypes that reflect new methods of artistic actions taken within the natural environment in the context of sustainability and care for natural resources. Achieved through the creation and exhibition of new media artworks and projects.
- To pursue embedded research in specific eco-systems including the cultural, sub-cultural and counter-cultural formations, histories, and aesthetics. Achieved through research, interviews, and site visits.

Outcomes

- A globally-networked discussion among students, academics, scientists and industry professionals about how art and design can offer new ways to interpret and present important data about the environment, documented through shared correspondence, recorded interviews, and invited talks.
- New aesthetic forms (visual, sonic, sculptural, *etc.*) that can help society better visualize and understand sustainable issues.
- Student projects that reveal an understanding of sustainable design, a new knowledge of sensing technologies, a background in sustainable art history, and a new way of looking at the natural environment.
- The establishment of long-term partnerships with international world-class arts and science organizations such as the US National Science Foundation, the British Antarctic Survey, and the Australian Antarctic Division
- Academic papers and conference presentations that demonstrate a possibility within a Discovery-enriched Curriculum to better promote environmental responsibility, such as ISEA, SIGGRAPH, and Leonardo.
- Media recognition that benefits the community by increasing awareness of climate change and how media art can be a vital part of public education.
- An exhibition, website, blog postings, videos, photographs and documentaries that can be referenced and visited by others interested in alternative ways to present climate

concerns.

G. Methodology and Management of the Project

The PI is acting as the executive producer of the project—overseeing the staff, logistics, documentation, safety, research and partnerships. The Research Assistant will coordinate activities and events, organize and submit financial documents, assist with materials creation and dissemination, and research references for the papers.

The 23 students will attend the course that is designed as a studio to form the data collected in Antarctica into new media artworks and design projects. The methodology includes weekly 3-hour meetings and critiques, required stages (drawings, plans, coding, materials, fabrication, etc.) at particular deadlines, documentation and academic writing assignments, and training for the docent work. Additional tasks scheduled include the cataloguing of materials, the design of the exhibition, and the publishing layout work.

H. Evaluation and Dissemination of the Project

Students will be required to complete an extensive questionnaire about their experience as well as individual recorded interviews (in addition to the course TLQ). The data is compiled and included in the academic research papers being generated from the programme.

Evaluation will also be on a societal level measuring and collecting local media response and tour comments to the exhibition.

The dissemination is tied to social networks and media acknowledgement. The 23 students become ambassadors with far-reaching impact. The dissemination numbers are expected to be 200% higher than those from the 2012 expedition based on initial student participation in the proposal and information stages as of 30 September 2012.

70+ students applied in 2012, 400+ have applied in 2013.

The 2012 numbers were:

- 70+ CityU Proposals submitted by Students
- 100-200 Contact with students from other universities
- 100 Assisting and participating in the exhibition
- 1000+ Students from Primary, Secondary and Tertiary Exhibition Tours
- 10,000+ Social Network contacts
- 1,000,000+ Broadcast and News Media Exposure

I. Schedule of Project Implementation

The course will be offered in Semester B, 2013/2014 Academic Year following the expedition in December 2013. The exhibition will occur in May 2014.

Task	Q1	Q2	Q3	Q4
Collate data and materials from Antarctica				
Design Artworks				
Write Artist statements				
Fabricate Artworks				
Design Catalogue and Publicity Materials				
Layout and Install Exhibition				
Reporting and Academic Journal Paper Writing				

J. Budget and Justifications

Staffing		
Job Title	HKD	Details
Part-time Research Assistant/Video Editor	14000.00	200 hours at \$70
Part-time Research Assistant/Office	24000.00	300 hours at \$80
Student Docents at Exhibition	24000.00	400 hours at \$60
STAFFING SUB-TOTAL		62000.00
Expenses		
Items	HKD	Justification
Design and Layout	30000.00	Catalogue, Posters, Logos
Translation service	4000.00	For Catalogue and Video

Printing	50000.00	Catalogue, Posters
Web Design	5000.00	Website
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PUBLICITY SUB-TOTAL	89000.00	
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Gallery Wall and Space Modifications	20000.00	Construction and Setup
Student Project Materials	50000.00	Electronics, Printing, etc.
Fabrication	20000.00	Metals, Plastics, etc.
General Expenses	5000.00	
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MATERIALS SUB-TOTAL	95000.00	
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TOTAL	246000.00	

K. Background and Qualification of All Members of the Research Team

Mr. Hessels produced the 2012 Extreme Environment expedition to the Mojave Desert—all contacts, partnerships, funding, planning, execution, deliverables, media, and reporting. He also organized the exhibition, wrote the catalogue, and designed the website. He has led several student expeditions into remote regions as innovative learning experiences across Asia and North America.

This grant proposal is a continuation of research began with TDG 6000365. The review of that project received the highest rating of 15 (Excellent).

Abstract from previously funded TDG 6000365

In collaboration with one of the world's best universities, the University of California, Los Angeles, its Art|Sci Center + Lab, and the University of California Institute for Research in the Arts, the Project takes an innovative, interdisciplinary approach to a course, *Media Art and Environment (M3703)*, which will be offered in Semester B, 2011/12 in the School of Creative Media. The course is dedicated to exploring how emerging technologies can be used to collect real-time or archived data about the environment and how that data can be used in new forms of creativity and visualization. Through participation in the Project, students will have the opportunity to carry out research in the hi-tech laboratories at UCLA and then travel to the environmentally-significant California high desert in March 2012, to create new media artworks and design projects that interpret the landscape with computer sensing technologies. In doing so, students will also be able to work with world-class arts and science organizations, their faculty, and their students.

L. **Signature(s) of Principal Investigator and Co-Investigators**

Signature: _____ Date: 30 September 2013
PI

M. **Endorsement by Head of Department / Unit**

Comments

Signature: _____ Date:

Name: _____

Department / Unit: _____

*Please submit completed application to Mrs Carmen Li-Pong of the Office of Education Development and Gateway Education (EDGE) by **27 September 2013.***