

# 100K Strong in the Americas

The Nexo Global Innovation Competition for Creative and Cultural Industries

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## Finding the Right Partner / Finding the right competition

Open Estudio



Information Visualization and Digital Fabrication with Applications to the Creative Industries Field



# Finding the Right Partner

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Angus Forbes, UCSC

Previous research collaborators:  
Rapport and trust established through the years  
Study abroad, papers, conferences, teacher

# Open Estudio: A platform for Colaboration between Colombian and US students since 2014



Critical perspectives on the use of technology for Pe

## Open Estudio: Mapping Intercultural Dialogues through Art and Technol

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### Abstract

This paper presents the continuation of our interdisciplinary work connecting art and technology at Purdue University (USA) and Universidad de Antioquia (Colombia). In particular, this presentation will analyze retrospectively the research, methodology and outcomes of the course experience "Open Studio / Estudio abierto: Interactive art and 3D animation", during 2014 and 2015. We will also evaluate the course in order to provide improvements for the upcoming 2017 course. The academic exchange reflects on the topic of cartography in the digital era, introducing the concept of the journey as the starting point for reflection and artistic creation. Our methodology encourages cooperative work between students and professors, establishing a dialogical relationship without the traditional teaching hierarchies. The participants of the experience (students and professors of Purdue University and UdeA) create a bridge for an interdisciplinary, geographic and cultural exchange. The social and cultural projection of this pedagogical research experience is expressed in the resulting art projects, as well as in exhibitions of the results and reflections of participants.

### Keywords

Art and Technology, Dialogic Pedagogy, Problem-based Learning (PBL), Intercultural Exchange, Teamwork, Programming, 3D Modeling, Journey and Cartography

### Introduction

Open Estudio is an academic and intercultural research experience between Purdue University (USA) and Universidad de Antioquia (Colombia), created to facilitate reflection and creation towards art and technology, "Open Estudio", is our hybrid English-Spanish word to frame this exchange experience, departing from the idea of an Open Studio. Open Studio experiences were gatherings of artists and academics to share ideas during the art salons of the 17<sup>th</sup> century. Embracing the openness of these meetings we incorporate this approach in the 21<sup>st</sup> century by including methodologies of cooperation and teamwork as a strategy for cultural exchange, interdisciplinary work and creativity. The physical exchange of faculty and

students during the intensive course is possible by intensive planning organized through virtual int between the coordinators at Purdue Univern Universidad de Antioquia. These managing activi be carefully planned and are crucial steps for th and improvement of the program, facilitating a intercultural collaboration that makes the t evolve each version. In particular, this course op a Maymester Study Abroad program from Pur an elective course at Facultad de Artes of Univer Antioquia. Professors, instructors, researchers and from both universities participated at the 2014 a... studio experiences that encompassed two modules. The first module took place during the first week, focusing on the development of technical competency in the areas of animation and programming interactivity. For this content, we used the open source platforms Processing and Blender. The second module, during the second week, focused on intercultural group work through the development of multimedia and interactive projects. These projects were presented as a public art exhibition at the end of the experience. For both modules the instructors emphasized on the concept of "Journey" and invited students to document their experiences through journaling and cartography. For this matter, the course had a third modality that included daylong trips to the city of Medellín and its mountainous and exuberant surroundings.



Figure 1. Purdue University's student analyzing a map of Santa Fe de Antioquia in the 2015 course

## 2467/3970: A SHORTCUT TO CONNECTING PURDUE UNIVERSITY (USA) AND UNIVERSIDAD DE ANTIOQUIA (COLOMBIA) IN AN INTERDISCIPLINARY EXPERIENCE BETWEEN ART AND TECHNOLOGY

Esteban García, Purdue University, Lafayette, USA; Isabel Restrepo, Universidad de Antioquia, Medellín, Colombia

**ABSTRACT**  
2467 miles / 3970 kilometers separates West Lafayette (USA) from Medellín (Colombia). Although this distance represents geographic, cultural and social differences, it also outlines a bridge for creative possibilities that connect two cities by an intercultural dialogue around new media. In particular, this paper describes the process and strategies that we developed between 2013 and 2014 to teach a study abroad course entitled "Interactive Art and 3D Animation" in the city of Medellín.

The purpose of this interdisciplinary course was to approach the topic of location, society and technology through each student's experience of the city. We combined each other's research expertise both in digital media and interactive visualization to create an integrated learning experience. Namely, merging Restrepo's experience leading the research group Hipertrópico – using digital media and open source software to develop socially interactive projects – with García's background on computer graphics visualization. This paper explains the collaborative efforts that brought both of these universities together, elaborating on the planning, methodology, realization and outcomes of the course in May 2014.

**INTRODUCTION**  
This paper gives an account of the different steps that were required for the realization and socialization of the academic experience Open Studio / Estudio abierto: Interactive art & 3D animation in Medellín. The experience was designed to facilitate an intercultural and interdisciplinary exchange among students, professors and researchers from Purdue University and Universidad de Antioquia in Medellín (UdeA).

**BRIDGING TRUST**  
This project idea was born in Sydney, Australia, at the 2013 International Symposium of Electronic Arts. We were both participating in the Latin American Forum panels. After the panel, we had a first conversation about the curricular similarities that our departments at our corresponding institutions (Purdue and UdeA) had on digital media. We both identified a great opportunity for educational research and development for the future. Upon our return, we expressed to the department heads and deans of each college our desire to solidify a Colombia – USA exchange. We would like to mention that the institutional support that we received was a strong step towards the realization of this project. To create a bridge between the two universities, we required the involvement and effort of several stakeholders. At Purdue, we were encouraged by Dr. Patrick Connolly, Department Head of the Computer Graphics Technology and Dr. Robert Cox, Dean of Globalization. At UdeA, we had the unconditional support of



Fig. 1. Flyer for the open call, 2013, Esteban García, page, © Esteban García.





Open Estudio: A platform for Colaboration between Colombian and US students since 2014

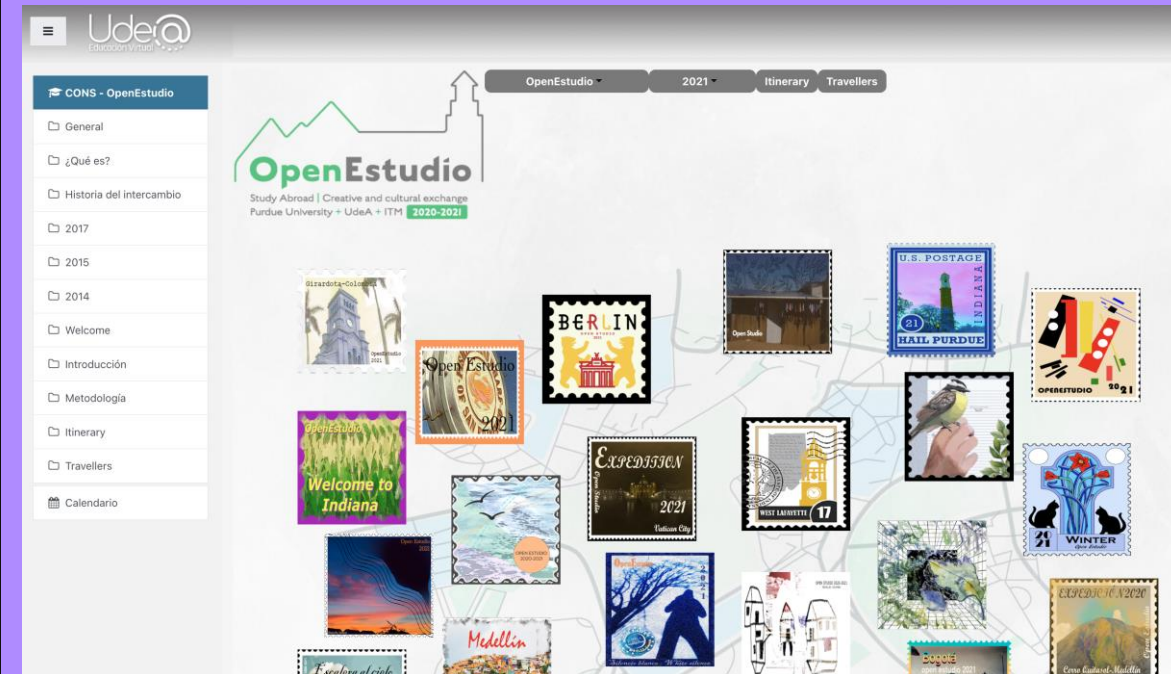
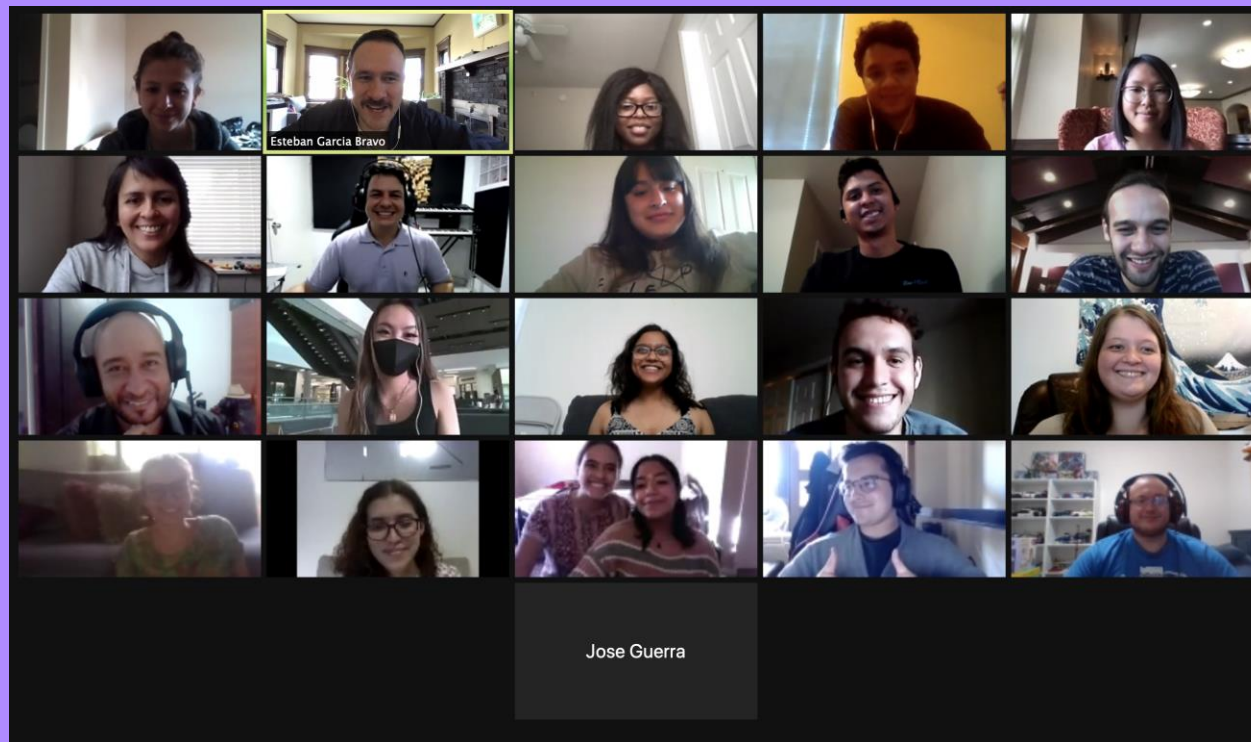




# Open Estudio 2021 (Purdue, UdeA, ITM)

5 Colombian Students came to Purdue University for one semester

10 Purdue students collaborated with Colombian students (Study abroad was cancelled)





# Open Estudio 2021

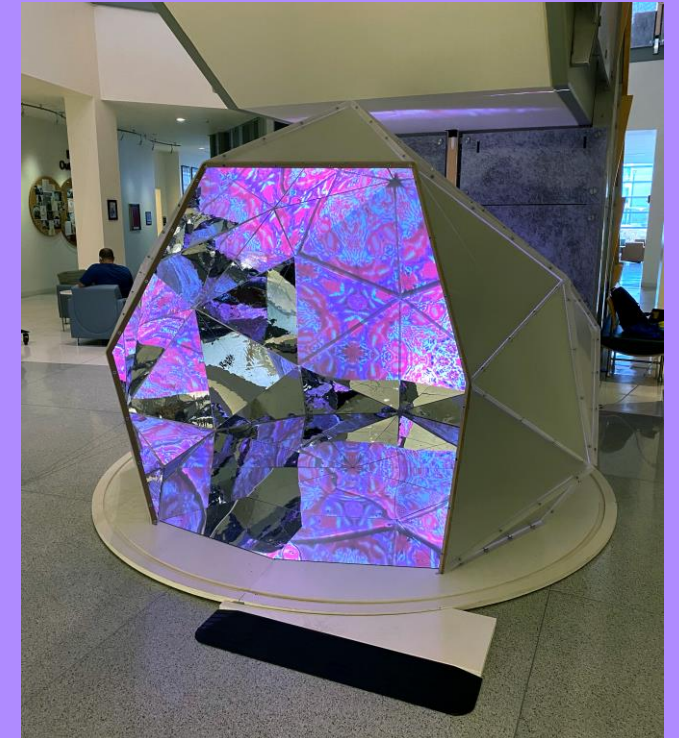




# Information Visualization and Digital Fabrication with Applications to the Creative Industries Field (Uniandes/Purdue/UCSC)

2 Colombian Students came to Purdue University for one semester

1 Purdue Student did a virtual exchange with Universidad de los Andes Faculty





## Proposal Development

How is the content delivered?

Mentorship model / Traditional course

Which other partners within your institution may help you?

Other faculty in your department

Office of Globalization

Intercultural learning (IPG)

# Proposal Development

Who is going to be the PI/Co-PI?

Define “host” university

Define clear measurable objectives

Housing plans and insurance: Work with stakeholders at your institution

Do pre/post tests to evaluate intercultural learning



## Advice in the process of drafting proposal

- Use the template and write a compelling narrative
- Design clear objectives that are achievable and measurable
- Create a detailed timeline
- Talk to DH, Deans and globalization to get matching funds
- Ask for letters of support early
- What are going to be the outcomes?
- How will the program continue after this support?

# What worked well?

- Students did their best work
- Selection of students (+)
- Made an impact on the university and local community
- Research resulted in publications and conference presentations



14 - 18 de junio 2021  
June 14th to 18th, 2021

Costo de inscripción: \$100 dólares  
Registration cost: \$100 dollars

Fecha límite de registro: 7 de Junio 2021, 23:59 CT  
Registration deadline: June, 7th 2021, 23:59 CT

Idiomas: español, inglés y portugués  
Languages: Spanish, English and Portuguese

Mayores Informes: <https://www.uv.mx/coil/conferencia-anual/registro-2021/>  
For more information, please visit: <https://www.uv.mx/en/coil/annual-conference/registration-2021/>



Congreso de la Red Latinoamericana COIL  
First Latin American COIL Network Conference  
COIL, Red y Redes Latinoamericanas de Investigación y Aprendizaje  
COIL is an international network of researchers and students from Latin American universities who are interested in the use of technology in education and research.

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PROGRAMA / PROGRAM SUMMARY

Time (BRT)	Monday 6/14	Tuesday 6/15	Wednesday 6/16	Thursday 6/17	Friday 6/18	Time (MXT)
11:30 - 12:00	Opening				Plenary Paulo Speller	09:30 - 10:00
12:00 - 12:30	Plenary Robert O'Dowd	Partnering Fair	Members	Partnering Fair		10:00 - 10:30
12:30 - 13:00					2h30 day slot	10:30 - 11:00
13:00 - 13:30	2h Day Slot		2h day slot		Parallel Sessions	11:00 - 11:30
13:30 - 14:00	Parallel Sessions 1 + 2 + 3 + 4	Workshop	Parallel Sessions 5 + 6 + 7 + 8	Workshop	9 + 10 + 11 + 12	11:30 - 12:00
14:00 - 14:30						12:00 - 12:30
14:30 - 15:00	Lunch	Lunch	Lunch	Lunch	Lunch	12:30 - 13:00
15:00 - 15:30					COIL Coordinators Meeting	13:00 - 13:30
15:30 - 16:00		Workshop	Panel Stephanie Doscher, GianMario Besana and David Julien	Workshop		13:30 - 14:00
16:00 - 16:30	COIL Coordinators Meeting				Closing	14:00 - 14:30
16:30 - 17:00						14:30 - 15:00

<https://www.uv.mx/coil/>

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Red Latinoamericana COIL

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## artnodes

<https://artnodes.uoc.edu>

Ciudad Antigua: From remote sensing to virtual interactive experience of a pre-Hispanic settlement in Colombia



Figure 1. 3D model of Ciudad Antigua, from drone photogrammetry. Photos by A. Burbano, processed by Z. Meyer, 2020.

Nevada de Santa Marta (SNSM), a mountain range in northern Colombia. We present an interdisciplinary study that combines fieldwork survey, data acquisition, data processing, image creation, architectural analysis and archaeological insights to create a functional virtual reality prototype and full 3D reconstruction, flyover and walkthrough of the ancient historic site.

### 2. Sierra Nevada de Santa Marta and Ciudad Antigua

The SNSM contains over 200 archaeological sites that date back to the 4th century and constitute a major part of the pre-Hispanic cultural heritage in Colombia (Cadavid and Herrera 1985, Reichel-Dolmatoff 1997). According to the Spaniards' descriptions from the 16th century and recent archaeological finds, the Tairona were grouped into chiefdom polities (Giraldo 2018).

SNSM, located by the Caribbean Sea, has settlements which are particularly remote, with most existing from 1000 MAMSL (metres above mean sea level), and fewer up to 2000 MAMSL. Very few have been found beyond this altitude (Reichel-Dolmatoff 1997). Additionally, due to the rugged geography of the SNSM, it took great effort to build roads and settlements on the slopes. Extensive artificial terracing and movement of massive stone elements over a difficult terrain, constituted great feats of Tairona engineering. The lithic architecture consisted mainly of retaining walls, terraces, stairs, pathways and water channeling systems, grouped together as compounds of urban infrastructure that once supported villages of up to 8,000 inhabitants (Serje 1984). On top of the terraces and stone foundations were temples, dwellings, storage shacks and public buildings, all of which have since disappeared due to the perishable materials of their construction (mostly wood, palm tree leaves and vines). Archaeological research and historical documents enable us to distinguish different hierarchies and activities for these structures, ranging from prominent ceremonial temples and the homes of political leaders, to smaller utilitarian buildings

and humble accommodations (Serje 1984). Usually built on ridges between watersheds or river basins, the settlements were located near freshwater sources and their shape adapted to the topography. Dominant views of the surrounding area characterized the central and greater hierarchy sectors, where the largest terraces and gathering places were built.

Among the ancient Tairona settlements, the most renowned is the archaeological park Ciudad Perdida (CP), first discovered by looters in the 1960s and later researched by archaeologists in the 1970s. Unlike CA, over time, there has been more literature and research on CP. CP covers an area of about 30 hectares at about 1000 MAMSL on the northern slope of SNSM (Fig. 02). *Teyuna* is believed to have been a major ceremonial and political center with over 200 stone structures (Serje 1984). Much fieldwork has been carried out here, leading to a general understanding of the Tairona culture (Giraldo 2018). However, RST has been applied here only recently, with a LIDAR digital survey carried out for the National Geographic Channel (Lin 2019). This research enabled the entire site to be visualized with a 3D model, and it also identified flat, round surfaces on the steep slopes of the surrounding area, hidden under the tree canopy. By means of ground-truthing verification, one of these topographic anomalies was inspected and a new site was revealed (unknown until then), after 40 years of research in the area. For this research, we were able to leverage a similar strategy for CA and surface the same type of information about the lesser known settlements.



Figure 2. Ciudad Antigua, Photo by E. Mazuera

The research carried out for this paper takes place in the ancient Tairona settlement known as Ciudad Antigua (CA), on the western slope of the SNSM, at 900 MAMSL (Fig. 03). CA was inhabited from approximately the year 200 to 1600. It occupies roughly 6 hectares and is composed of more than 70 stone structures, including the group



## Lessons Learned

Get course on the schedule (Colombia/USA) groups

Mentorship was the most flexible model

How do you want to give the budget? Give students money or pay through university

Be prepared for everything! Flexibility, patience

How many students can you take care of?

Selection of students (-)

Housing with roommates

Learning experience for all involved