

# THE LOST VOYAGE of **AMAZONIA**

## Concept Proposal

A Senior Project presented to  
The Liberal Arts and Engineering Studies Advisory Board  
California Polytechnic State University, San Luis Obispo  
On June 9, 2011

In Partial Fulfillment  
Of the Requirement for degree in  
Liberal Arts and Engineering Studies

By:  
Eric Davis  
Ryan Inouye

## Abstract

Every year, Walt Disney Imagineering, the creators of the Disney theme parks, holds a competition called ImagiNations, where college students around the world design attractions to fit into the Disney theme park brand. To be successful in this competition, participants must be able to seamlessly mesh creative and technical elements.

As students in the Liberal Arts and Engineering Studies (LAES) program, we felt that ImagiNations was a perfect way to showcase our talents in a major that combines both engineering and the arts. We then set about to create "The Lost Voyage of Amazonia," a fast-paced, hair-raising river adventure through the Amazon jungle. From our research on South American folklore, we created a deep, complex story that complemented our innovative ride system. We looked at new technologies not presently seen at any theme park attraction such as hypersonic sound.

**Keywords:** Walt Disney Imagineering, ImagiNations, theme park attraction design

## Acknowledgements

Thank you to **Walt Disney Imagineering** for considering our concept proposal for ImagiNations.

Thank you to **Douglas Smith** for assistance in creating the queuing simulation model.

Thank you to **Dr. Michael Haungs** for your input and suggestions in our initial concept.

Thank you to **Sterling Rose** for visually brining our concept to life.

Thank you to **Dr. David Gillette** for your knowledge and guidance in helping us see the project to fruition.

## Table of Contents

Abstract .....	ii
Acknowledgements .....	iii
List of Figures .....	vi
List of Tables .....	vi
Introduction .....	1
Background .....	1
Walt Disney Imagineering .....	1
ImagiNations .....	1
The Story: The Lost Voyage of Amazonia .....	2
Research Behind the Story .....	3
Story Research .....	3
Disney Theme Park Research .....	6
How it Works .....	7
Queue .....	7
Preshow .....	10
Ride .....	11
Real World Limitations .....	13
Capacity .....	13
Guest Restrictions .....	16
Conclusion .....	17
What We learned .....	18
Eric Davis .....	18
Ryan Inouye .....	18
Appendix A: Project Charter .....	A
Appendix B: Statement of Work .....	B
Appendix C: Spring Progress Report .....	E
Appendix D: The Lost Voyage of Amazonia: Treatment .....	F
Appendix E: Character Back Stories .....	I
Appendix F: Queue Layouts .....	J
Appendix G: Queuing Simulation Statistics .....	L
Appendix H: Ride Capacity Spread Sheet .....	M

Bibliography.....	N
-------------------	---

## List of Figures

Figure 1: Archibald Wellington .....	5
Figure 2: Itapallu .....	5
Figure 3: Courtyard Concept Art .....	7
Figure 4: Laboratory Concept Art.....	9
Figure 5: Greenhouse Concept Art.....	9
Figure 6: Ghost of Archibald Concept Art .....	10
Figure 7: Ride Vehicle Concept Art .....	12
Figure 8:Queue System Logical Model .....	14
Figure 9: Queue System Simulation .....	14
Figure 10: Queue System Simulation Running .....	15

## List of Tables

Table 1:Ride System Decision Matrix .....	11
---	----

## Introduction

Every year, Walt Disney Imagineering hosts a collegiate design competition called ImagiNations. For this competition, teams design some aspect of a Disney theme park; for example, an attraction, parade, or restaurant. The authors of this report decided to compete in this competition as fulfillment of the senior project requirement for graduation. To be successful in this competition, participants must be able to combine artistic and technical elements seamlessly to make their design worthwhile, which we believe, Liberal Arts and Engineering Studies (LAES) has prepared us for. Using what we learned from education and experience, we designed an attraction concept for a Disney theme park that has a deep, engaging story and is technologically revolutionary.

## Background

### Walt Disney Imagineering

Walt Disney Imagineering (WDI) is the arm of the Walt Disney Company that dreams, designs, and creates just about every aspect of the Disney "theme parks, resorts, cruise ships, and other entertainment venues" (The Imagineers) around the world. Imagineering, the word itself, is a combination of the words imagination and engineering, which are the two fields WDI embodies. As Walt Disney said, "We call it Imagineering - the blending of creative imagination with technical know-how." (Kurtti).

### ImagiNations

ImagiNations is a yearly competition hosted by Walt Disney Imagineering for university students to showcase their talents in designing an attraction, show, or restaurant for a Disney park or resort. To be successful in this competition, participants must be able to tell an engaging story, have passion for the

Disney brand, and appeal to a wide audience. Finalists for the competition are invited to Imagineering where they present their concept to a panel of executive judges.

## **The Story: The Lost Voyage of Amazonia**

*The following is a condensed version of the story for our concept used for our original concept submission to ImagiNations. The entire treatment of our story is available in Appendix D and character back stories are available in Appendix E.*

Deep in the Amazon jungle, you arrive before a dilapidated hacienda used by the Amazonia Travel Co. as its ramshackle river tour outpost. A guide boisterously greets and ushers you inside to show an amateurish safety video for your upcoming trip. Suddenly, everything goes dark; the ghostly apparition of Archibald Wellington — the British botanist who constructed the hacienda decades ago — materializes. Archibald tells you to flee because the river is haunted by the malevolent shaman, Itapallu, who caused Archibald's disappearance. Archibald's message is cut off, the lights flickering on as the video cheerfully finishes. Your guide, eerily unaware of what transpired, rushes you into the waiting boats.

Your voyage begins unnervingly serene. Unexpectedly, Itapallu manifests from the shadows, furious you have trespassed into his domain. He forcibly steers your boat into the mouth of an ominous, subterranean river. Your boat rapidly accelerates, twisting and turning as it darts through the current manipulated by Itapallu. You slam to a standstill — Itapallu reappears, beckoning you towards him. Your doomed boat races forward, but just before he catches you, Archibald knocks you away. The boat careens from the cave and through the air, splashing into the river below.



## Research Behind the Story

### Story Research

When first brainstorming for our concept we developed a few stipulations that we wanted our concept to follow. First, the story had to have a somewhat dark theme, but tame enough to fit into the Disney family brand. Second, we wanted our attraction to be water based.

Using these stipulations, we originally came up with a concept for a Western theme in the Arizona area. In this concept titled “Widow’s Peak,” guests tour through the remnants of the home of a widow, whose husband drowned in a nearby river, before embarking on a river rapid boating excursion. In the middle of a video on river safety, the ghost of the widow warns guests not to go on the river because it is haunted by the spirits of local Native Americans. Guests shortly embark on the tour, and are confronted by the spirits. The spirits send guests on a wild ride through the rapids of the river. Luckily, guests are able to survive and arrive at the downstream dock.

We originally had the “Widow’s Peak” concept pegged for being part of a Frontierland at a Disneyland or the *Magic Kingdom*. This concept was the foundation for many of our following concepts including “The Journey to Cliff House,” which was based on the California Central Coast and fit into *Disney California Adventure’s* theme. “Widow’s Peak” was also the foundation for our final concept, “The Lost Voyage of Amazonia.”

To expand our list of possible concept locations, we looked at themes that Disney has not done or currently is not part of a Disney theme park. For example, we looked into Mediterranean locales, specifically ancient Greece and Rome. We ended up focusing on the Indians of South America, more

specifically, the Inca Civilization. At the direction of Professor Gillette, we started to do research on the folklore of the region. Luckily for us, the Kennedy Library at Cal Poly had a good selection of books on South American Indian folklore. From our research we found trends in the stories; for instance, jaguars are seen as antagonists, humans regularly shape-shift to animals, and shamans appear as both good and evil.

After researching the folklore, we looked into possible locations for this story to take place. We decided to focus on the region around Peru, which has part of the Amazon jungle within it. Our first setting was an area near Machu Picchu in the highlands of Peru on the upper Urubamba River. The highlands of Peru are known for whitewater rapids as well as sacred Incan locations, which played well with our story. However, the highlands did not allow us to have the dense rainforest foliage that we wanted so we decided to scrap this location. We then finally picked the lower Amazon jungle in Eastern Peru on a tributary of the lower Urubamba and Ucayali Rivers. This area allowed us to have the dense jungle foliage as well as native Indian populations.

We decided to create a fictional river called the Huiso Ino River that this attraction is based around. Huiso Ino, which translates to “black jaguar” in a native Indian language called “Shipibo,” was based on the Urubamba and Ucayali Rivers. One of the reasons why we decided to create a fictional river was so guests would not know which part of Peru, or even South America, they were in. Disney employs this in other lands in its theme parks so guests will not have certain expectations that they would associate with other locations that actually exist.



Figure 1: Archibald Wellington

While researching the different rivers, we came across the story of John Walter Gregory, a British geologist that went to study the jungle in South America. In 1932, Gregory drowned while traversing the Urubamba River. The untimely death of Gregory became the basis for our character, Archibald Wellington, the botanist that disappeared long ago. While researching what kind of background Archibald should have, we came across the Fellows of the Royal Society (FRS), which is a scientific community in England. We thought someone that would be as famous and successful as Archibald would be part of this organization.

When looking for an antagonist for our story, we knew that he or she should have magical powers. In Indian folklore, shamans are always associated with magic, which was just what we were looking for. While researching the shaman's backstory we looked into the time when South America was conquered by the Spanish conquistadors and how the shaman may have interacted with them. We also looked into having the shaman shape shift into a jaguar. From researching folklore stories, we found that black jaguars are associated with evil magic, which was perfect for our shaman character. In looking for a name for our shaman, we wanted to choose a name that he might have if he really existed. We looked at native Indian languages before choosing the Quechua language and the name Itapallu, which means shocking.



Figure 2: Itapallu

Using everything that we researched, we were able to craft the compelling story that is "The Lost Voyage of Amazonia." We were able to incorporate the two story requirements that we originally

wanted, a darker theme and a water-based attraction. We felt that the "The Lost Voyage of Amazonia" could fit into many of Disney's theme parks in need of a water-based attraction with a darker theme.

## Disney Theme Park Research

In selecting a proposed location for our attraction, we wanted to utilize expansion space at an already existing Disney theme park. We narrowed our search to three theme parks: *Disney California Adventure* in California, *Disney's Animal Kingdom* in Florida, and *Tokyo DisneySea* in Japan. Between those three, we used the following list of five criteria when narrowing it down to our top choice:

1. If designated expansion areas already existed in the park.
2. How well our attraction integrated into the Park and/or "Land" theme.
3. The environmental impact of the attraction on its location.
4. If the show building could easily be hidden from view from the rest of the Park.
5. If the Park already had too many "thrill" attractions.

Ultimately we chose an area near the front of *Disney's Animal Kingdom*, mainly because it is land that has already been cleared resulting in minimal environmental impact to construct our attraction. Additionally, since our attraction is set in the Amazon, it integrates well with *Animal Kingdom's* overall theme. The show building is also easily disguisable since it is located near the front of the park and therefore in an area where sightlines aren't as much of an issue. Lastly, *Animal Kingdom* only has two preexisting thrill attractions (*Expedition Everest* and *Dinosaur*) so it has not yet outgrown that particular type of attraction.

## How it Works

### Queue

The queue is the most important location in telling the story of the attraction. Here, guests make their first impressions and it is also where story of the attraction starts. The queue that we have designed is broken into two areas, the courtyard queue (where we set the mood) and the hacienda queue (where we start to tell the story).

As the guest start to enter the courtyard queue, we want them to have a sense of uneasiness as they walk through the archway. To do this, our queue was designed to be the ramshackle camp of a tour company that guests have signed up for. We hope that by making the camp look to be in disarray, guests will think the tour company may be running a shady operation. The atmosphere is also very dark and ominous – the sun is setting in the distance and the calls of animals filling the soundscape enforce the sense of unease.

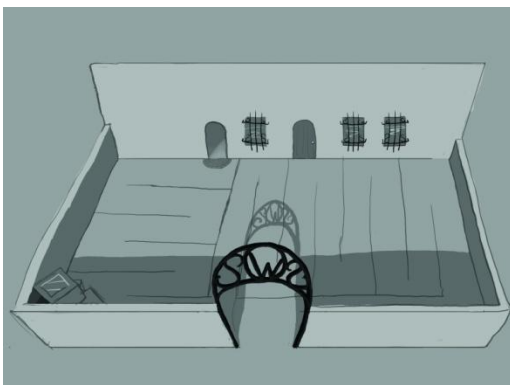


Figure 3: Courtyard Concept Art

Upon entering the hacienda queue, guests jump right into the story of the attraction. Here, we give hints and clues on the background of Archibald Wellington, the famed British scientist. Entering the laboratory, guests will see what Archibald was researching before he disappeared. Something that is seen over and over again through notes and photographs left behind is the mysterious occurrences that

happened near the river. For example, a note is posted about livestock mysteriously vanishing, another one mentions mysterious noises heard in the jungle at night, and a picture is displayed of an orb light floating above the water. All of these clues foreshadow the events to come.

We decided to model our queue after a Spanish hacienda after researching South American history from the time of the conquistadors. After the colonization of most of South America by the Spanish, they started to build plantations with haciendas at the center. The hacienda and other Spanish style architecture became infused in South American architecture that can still be seen today. With our character Archibald being a famous scientist (and therefore very wealthy), we decided that he could indulge on making his South American home large and luxurious.

As stated earlier, the queue is broken up into two areas, the courtyard and hacienda queues. The courtyard queue is surrounded by large plaster walls that used to protect the house from predators and invading indigenous plants. The walls now are in terrible shape and look like they will crumble at any moment. The courtyard itself, which is quite large, has tents setup by the tour company to store goods and supplies, which guests can look inside to see what is on display. In the middle of the courtyard is a water fountain that has been completely destroyed from the elements; however, some water still mysteriously trickles out from what was once the top.

The courtyard queue is broken up into two guest demographics, the Standby and FastPass queues. We estimated that our ride would be quite popular and decided that Disney's *FastPass* system would help in guest satisfaction. Disney's *FastPass* is a ride reservation system where guest can receive tickets that "save" their place in the queue while they go and enjoy other attractions. At the time printed on the tickets, guests can return to the attraction and "jump" back in line.

The hacienda is split into six different rooms, five of which are part of the queue and the last of which is the preshow. These five are the foyer, laboratory, greenhouse, living room, and the hallway. Each area has its own unique elements that progress the story.

The foyer, is used a transition room and sets the mood for the hacienda. The foyer is also where the Standby and FastPass queues merge together.



Figure 4: Laboratory Concept Art

After exiting the foyer, guests enter the laboratory where we introduce guests to Archibald and begin the story, as previously mentioned. As a way to keep guests entertained while in the queue, they can interact with old science tools and machines scattered around the lab. For example, a generator comes to life when a guest presses a button, or a beaker begins to bubble when touched.

The lab leads into the greenhouse, where guests can see just how rundown the hacienda is. Here, plants are either dead or have grown wildly out of control, most notably a tree that has grown through the glass of the greenhouse. Here, guests get a sense of how much time has passed outside as the sun has now completely gone down.

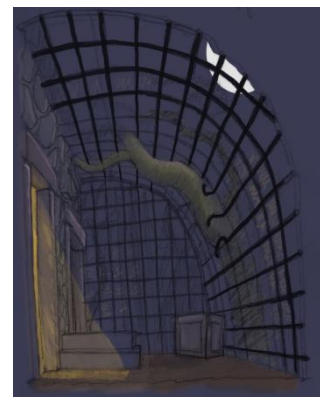


Figure 5: Greenhouse Concept Art

To prepare for the preshow, guests go through the living room where the anxiety slowly builds. This room is much darker and an old victrola plays music from the 1930's, yet its sound is muffled and scratchy. In this room, guests wait to be directed into either preshow room 1 or 2 by a Cast Member.

The hallway is where guests wait to enter the preshow room. This area is built out of necessity to keep a constant flow and for breaking up the queue into groups of about 80 for each of the preshow rooms.

Layouts of both queues can be found in Appendix F.

## Preshow

During our preshow, a number of different audio technologies will be utilized to create the most engaging and immersive soundscape possible. In the main portion of

the preshow, when Archibald appears to warn guests about Itapallu, the majority of the sound effects will be created using a system

similar to the one in use at Florida's Haunted Mansion. The

stretching room in Florida's version of the attraction features a ring

of 120 speakers around the room that can manipulate sound in both

direction and distance. While our system will not have as high of a

number of speakers, it will still be at least 50, if not more, in order to achieve as convincing an effect as possible.



Figure 6: Ghost of Archibald Concept Art

Near the end of Archibald's warning, Itapallu interrupts and takes Archibald back into the spirit realm. Shortly thereafter, maniac laughter can be heard inside guests' heads, but only some people hear it while others don't. This effect is achieved using Hypersonic Sound, which is a set of frequencies that are outside the normal range of human hearing. When pointed at an object, however, they can reverberate between two hard surfaces and inside an object, in this case a human skull. In that way a certain eeriness is attained since it sounds like the shaman is laughing inside your head, and not just as an ethereal entity in the room.



## Ride

In choosing our particular ride system, we looked at a number of current companies and their offerings, and systematically ranked them against a set of predetermined categories. Below is the decision matrix with the four ride systems we compared:

		Ride System			
		Water Coaster	AquaTrax	Super Splash	
	Multiplier	Mack	Intamin	Intamin	KumbaK
Simplicity	5	0	0	-1	-1
Vertical Lift Capable	4	1	0	1	0
Environment Impact	8	0	-1	0	0
Plausibility	9	1	1	1	1
Integration of Theme	10	-1	0	1	1
Cost of Ride System	6	1	1	0	0
Intimacy of Experience	7	0	1	-1	-1
Height Limit	9	0	1	0	0
Safety Record	10	1	-1	-1	1
Uniqueness	9	-1	1	-1	-1
Reliability	5	0	0	0	-1
Hourly Capacity	8	0	-1	1	1
Size (Footprint)	8	-1	0	0	0
LIM-capable	4	-1	1	0	0
<b>Totals:</b>		<b>-2</b>	<b>18</b>	<b>0</b>	<b>11</b>

Table 1: Ride System Decision Matrix

As you can see, the Intamin AquaTrax system ended up with the most points. Intamin's AquaTrax system is a good choice because compact layouts can be constructed (since our chosen space in Animal Kingdom limits the size of our show building), on-board sound systems can be integrated since Intamin has prior experience with this, and Linear Induction Motors (LIMs) can be integrated. We particularly were looking for LIMs to be integrated since they are low emission and subsequently environmentally friendly. Disney has also worked with Intamin

multiple times in the past, including constructing California Screamin', Mickey's Fun Wheel, and the Golden Zephyr all for Disney California Adventure Park.

Our ride vehicles can seat six people each and are connected together to create a two-car train for a total of twelve people per cycle. The vehicles are also equipped with a subtle hydraulic system to oscillate the cars ever so slightly as they move along the track. Since the vehicles do not actually float on water, the oscillation, along with fog and other lighting effects, will simulate the guests traveling on water. This phenomenon in Disney-speak is known as a “dry-for-wet environment.”

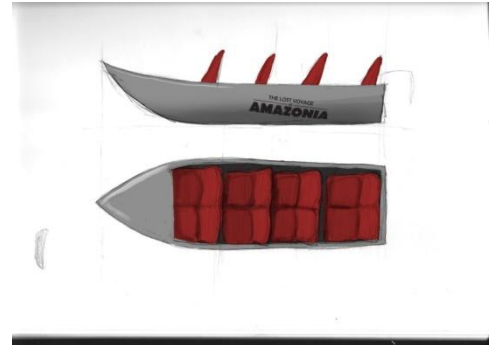


Figure 7: Ride Vehicle Concept Art

The final statistics for our proposed ride layout are as follows:

- Length: 3 minutes
- Capacity: Approx. 1500 people-per-hour
- Top Speed: 45 miles per hour
- Inversions: None
- Vehicles: 12 people per train, 2 cars per train, 6 people per car, 2 people per row
- On-board Soundtrack: Yes (3 speakers per guest)

## Real World Limitations

### Capacity

One of the areas that we were concerned about when we were designing this attraction was the hourly guest capacity. The capacity of an attraction can make or break its chances of coming off the design table and actually being created. Too low of a capacity will create long wait times and unsatisfied guests. While on the other hand, too high of a capacity creates high turnover rates that increase the ride's operational costs in order to handle the high volume of guests.

To find the median between high and low capacities, we looked at Disney attractions with similar themes and/or ride systems. These attractions include: *Space Mountain*, *The Twilight Zone Tower of Terror*, *Big Thunder Mountain Railroad*, *Pirates of the Caribbean*, *The Haunted Mansion*, and *it's a small world*. To gather data, one of the authors of this report went to *Disneyland* to conduct time studies and capacity measurements on the aforementioned attractions. For the time studies, we were interested in two areas: arrival rates of guests and load/unload times of guests from the ride vehicles. For capacity measurements, we wanted to find the measurements of queues and capacities in preshow rooms. The data that was collected became an integral part when we started designing our attraction.

Using the data we got from the time studies and capacity measurements, we were able to create a theoretical simulation of the queuing system of the attraction. This model gave us a ballpark estimate on how much capacity our ride system could handle running at full capacity.

First we needed to complete a logical model of the flow of guests from arrival to attraction exit. As stated earlier, we incorporated Disney's *FastPass* system in our queue as well as the traditional queue

system. To do this guests are broken into two demographics: Standby guests and FastPass guests. The standby guests go to the main queue, called Queue 1 (the courtyard), before entering Queue 2 (the hacienda). *FastPass* guests bypass Queue 1 and have priority to enter Queue 2 compared to standby guests. At Queue 2 both standby and *FastPass* guests merge to form one group of queuing guests. At the end of Queue 2, guests enter either preshow room 1 or 2, which run in six minute cycles. After the preshow has ended, guests enter Queue 3 where they await to board the attraction.

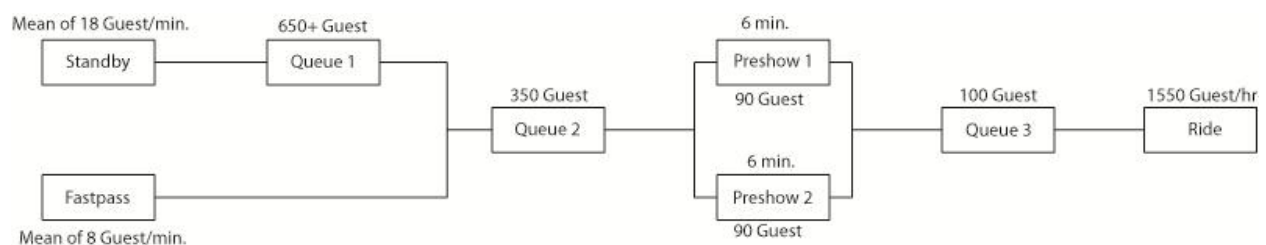


Figure 8: Queue System Logical Model

After completing the logical model, we designed a basic simulation of the queuing system. The software we used was a program called ProModel, which can simulate continuing processes. After creating the process from the logical model, the program allows the user to simulate the process in real time and is able to collect and analyze the data from the simulation.

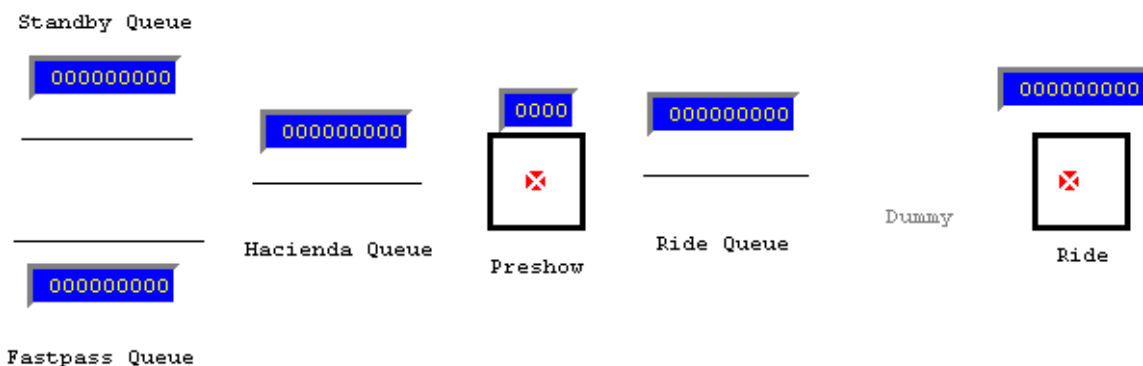


Figure 9: Queue System Simulation

This simulation is modeled exactly like the logical model shown previously, however with one minor addition: a dummy location. To make the model flow correctly we added a dummy location to act as a loading location for the guest before they enter the ride.

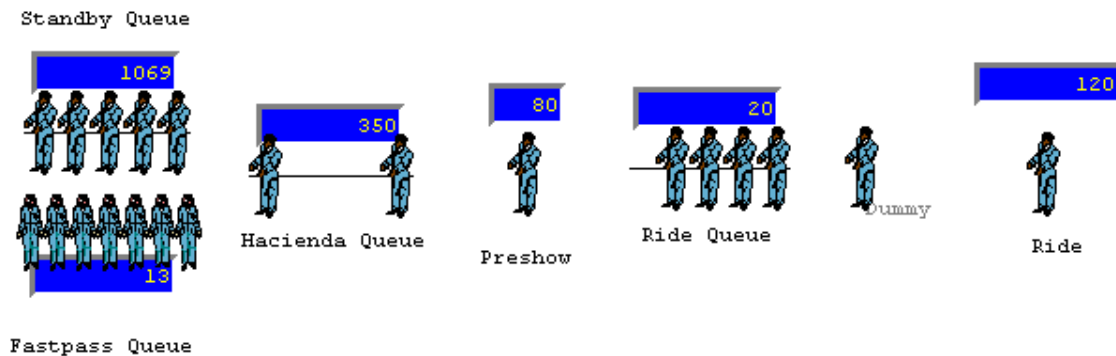


Figure 10: Queue System Simulation Running

Above is a picture of our simulation running for about an hour. The people images represent guests flowing through the queue. Above each location is a counter with how many people are presently in that location.

Using the data from simulation, we were able to create the basis for our layout. However, as stated earlier, this data is only theoretical without real world variables. For example, this system does not take into account noncyclical events such as routine maintenance or shift changes. It also does not take into account the direct correlation between the length of the queue and the value of time for the guest; that is, as the wait time increases, certain guests may not think it is worth their time waiting for the attraction.

Statistical data from our simulation is available in Appendix F.

We also created a spreadsheet that gave us highly theoretical values for the capacity of our ride system. We used it to generally see what happens when we added certain times and capacities to certain locations in our system. This spreadsheet can be viewed in Appendix G.

## Guest Restrictions

Like all at Disney theme parks around the world, certain attractions may not be suitable for certain guest demographics. "The Lost Voyage of Amazonia," being high-speed and thrilling nature, is one of these attractions.

Restrictions for this attraction include that guest must be:

- At least 48 inches tall
- In good health, free from high blood pressure, heart, back or neck problems, motion sickness or other conditions that may be aggravated by this adventure
- Able to transfer from wheelchair to ride vehicle, if necessary

Also, pregnant guest are advised not to ride the attraction.

A hearing disability friendly version of the preshow is available on request. To achieve this, special polarized glass will be given to the guest so that they will be able to see closed captioning projected on to screens and televisions inside the preshow room. Visual disability services are not offered at this attraction. Also, service animals are not allowed to board the attraction.

## Conclusion

We were able to integrate our experience and knowledge learned at Cal Poly into a project that required both technical and creative understanding. Our story, based on South American Indian folklore, is dense and realistic. We incorporated engineering principles throughout the design of the attraction such as the queuing simulation. We demonstrated possible new technologies never before seen in a Disney theme park attraction like the hypersonic sound implementation. With all these elements working in conjunction, we designed "The Lost Voyage of Amazonia" to be a Disney attraction worth experiencing.

## What We learned

### Eric Davis

I've never composed for an attraction before, so this was a brand new experience for me. I also have always had ideas for attractions for Disney, but never actually took the time to output them in some sort of tangible way, so it was great to finally be able to do that. While we didn't make it into the final stage of the Imaginations competition, it was still a rewarding experience going through the process of submitting the project and operating under real-world guidelines, even if they are more creative-based than many other project submittals.

### Ryan Inouye

While completing this project, I have a sense of respect for the work that Walt Disney Imagineers do every day. This project was a great way to incorporate my Industrial Engineering and film/theatre background, which constitute my Liberal Arts and Engineering Studies major. It was also great to use my knowledge of the Disney Parks and Resorts brand that has accumulated over the years. Although we did not get into the final stage of the ImagiNations competition, I am proud of the work I have completed and have no regrets. I hope to be able to use my experience in completing this project in my professional career in the near future.



## Appendix A: Project Charter

### **Mission Statement:**

We are committed to apply our university educations into a constructive and fulfilling senior project that will both promote Cal Poly, the Liberal Arts and Engineering Studies Program, Graphic Communications Department, and us, individually.

### **Problem Statement:**

To design an immersive and technical attraction that fits into the Walt Disney theme park brand and that will compete in the 2011 Walt Disney Imagineering's ImagiNation competition.

### **Communication Plan:**

Using today's technology, our team will utilize cell phones and the internet as a way of communication and to share information. Our group plans to use Google applications such as Gmail, Google Docs, and Google Calendar as both ways for communication and sharing our information to each other. We also plan on using Dropbox to share information not in Google Docs.

### **Performance and Team Rules:**

Each team member must abide by this set of rules:

1. Attend all planned meetings. Valid excuses will be considered.
2. Complete all assigned work by due date. It is imperative that all assign work be completed by the due date for this project to completed on time.
3. Have weekly progress reports to update the status of each facet of the project.
4. Respect the ideas and contribution of other team members.

### **Roles and Responsibilities:**

Ryan Inouye

- Project Manager
- Lead Story Writer
- Systems Design Engineer

Eric Davis

- Music Director
- Audio Engineer
- Assistant Story Writer

Sterling Rose

- Art Director
- Principle Concept Artist
- Graphic Designer

## Appendix B: Statement of Work

### Purpose Statement

Using methods and practices learned as a college undergraduate, we will design an attraction for a Disney theme park. We will create all needed materials needed to showcase our attraction. At the end of the project we will present our project at school and possibly to industry.

### Scope

*We will:*

- Design an attraction that will fit into a Disney theme park
- Compete in the 2011 Walt Disney Imagineering Competition, Imaginations (Tentative)
- Create artwork and models to showcase our attraction
- Receive Senior Project credit (if applicable)
- Meet several times a week to work on project

*We will not:*

- Build ride
- Not keep created materials after project

### Deliverables

- Create story
- Design a working ride system
- Design a model
- Create artwork pertaining to the project
- Presentation

### Budget and Schedule

We will have a budget of at least \$500 from the LAES student funding. All things bought with LAES funding is now sole property of the LAES program.

We will be working on this project starting at the beginning of Winter quarter to the end of Spring quarter. A tentative schedule can be found in Appendix A.

### Communication

Our main means of communication will be through the use of mobile phones. We will also communicate online using Gmail and its applications such as Google Docs and Google Calendar; along with Gmail, we will use Dropbox for non-Google Docs files.

Meetings will be held biweekly, Tuesdays and Thursdays at specified times throughout the school year. We will meet in the University Union, unless otherwise noted. More meeting times may be added when necessary.

Information	Contact	When	Method	Provider
Project Status Reports	Dr. Gillette	Bi-Quarterly	Report	Team
ImagiNations Application	WDI	By 3/1	Application	Team
Team Status Reports	Team	Weekly	Verbal	Team
Project Submission	WDI	By 3/31	Presentation	Team
Presentation	LAES Program	Week 10	Presentation	Team
Final Report	LAES Program	Week 10	Report	Team
ImagiNations Presentation	WDI	June	Presentation	Team

### Responsibility Matrix

Every team member has certain skills vital for the success of this project. Below shows who is responsible for each aspect of the project.

Process	Ryan	Eric	Sterling
Concept/Story	E	E	I
Ride System	E	E	C
Audio	C	E	I
Models	E	E	E
Documentation	E	E	C
Industrial Engineering	E	C	I
Artwork	C	C	E
Presentation	E	E	E

KEY	
E	Execute
C	Consult
I	Inform

Month:	October			November				December					January				February				March				April					May				June	
Week:	3	4	5	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2
Problem Statement Development																																			
"Blue Sky" Brainstorm Concept Designs																																			
Research Existing Devices/Materials																																			
Preliminary Project Review with Dr. Gillette																																			
Development of "Final" Concept																																			
Refinement Phase																																			
Basic Idea Sketches & Models																																			
Story Refinement																																			
Attraction Siteplan																																			
Ride Layout																																			
Queue Layout/Design																																			
Music Composition																																			
Project Review Preparations																																			
Project Review with Dr. Gillette & Others																																			
Computer/Solid Modeling																																			
Ordering Supplies																																			
Final Documentation/Presentation Preparation																																			
Final Presentation to Faculty/Students																																			

## Appendix C: Spring Progress Report

LAES 462

Spring Progress Report  
ImagiNations Competition Team  
*The Lost River of Amazonia*

### Spring Quarter Milestones

ImagiNations competition submission - March 31st - COMPLETED

Senior project report - June 3rd - ONGOING

Senior project presentation - June 3rd - ONGOING

ImagiNations competition presentation - TBA - TBD

### Timeline

Month:	April				May				June	
Week:	1	2	3	4	1	2	3	4	1	2
Attraction Siteplan										
Queue Layout/Design										
Music Composition										
Computer/Solid Modeling										
Visual Model Making										
Finalized Concept Art										
Industrial Engineering Applications										
Final Documentation/Presentation Preparation										
Final Presentation to Faculty/Students										

### List of Deliverable by end of quarter

- Presentation
- Report
- Concept Art
- Visual Model
- Soundtrack and Soundscape

## Appendix D: The Lost Voyage of Amazonia: Treatment

### Area Entrance

[EXT]To enter the attraction, guests must enter a cave set inside a large, jagged rock formation. A sign with the attraction title shows where guests must go in order to get to the attraction. The tunnel can get quite dark, therefore torches are used to illuminate the path.

[EXT Facade] The cave path reveals a jungle clearing at dusk with an old, hacienda-style house with overgrowth everywhere. The soundscape is filled with different animal and typical jungle sounds. A faded, white plaster wall borders the property. The front archway where the main gate was acts as an entrance to the queue. Above the gate a makeshift sign is hung with the title, *The Voyage River of Amazonia*.

### Queue #1

Queue #1 is broken into two distinct areas. The courtyard and house interior. The courtyard acts as a secondary queue, while the house interior acts as the primary queue.

### Exterior-Courtyard

[EXT Facade]The courtyard is lit by torches along the wall and the house. Various items are scattered around the yard from scientific materials left from the 1930's to more recent camping/river gear used by the travel company. The queue snakes from the beginning of the gate to the front door of the hacienda.

### Interior- House Interior

[INT House]As the guests enter the house they enter different rooms, including the foyer, lab, and greenhouse before entering the hallway that leads them into the den/library. The house is left as it was from the 1930's with artifacts left by its former owner. There is, however, lots of overgrowth and decay, which the travel company has had trouble to repair. One of these items is a working phonograph playing music from this era. Scattered about the house are clues about the mystical powers of river from the scientist who owned the hacienda. These clues include diary entries, maps of the landscape, mysterious photographs, and so on.

### Preshow

[INT House] The guests are divided into groups of approximately 45 by the tour guides (Cast Members or CM's). They are taken to a large, old-looking study/library. At the head of the room is a painting of a man later said to be the former owner of the estate, who mysteriously vanished a number of decades ago. Also in the room is a screen projector right below the painting. The tour guide in charge of the room tells the guest that it's his first day promoted as a head tour guide. The tour guide tells the guest that he/she will play a video about river safety, and after dimming the lights, the video begins.

#### *Tour Guide*

Hello! Welcome to the Huiso Ino River Tour! My name is \_\_\_\_\_, and I'll be your tour guide for this evening! I've just been promoted to head tour guide and I'm really excited to show you all the wonders of the Huiso Ino River! But first we must show you this video on boat safety.

The first part of the video is the safety spiel, while the second part goes into river history. (Both of these segments combined will take less than 20-30 seconds.) During this part of the video, a loud sound is

heard and the screen goes blank and all the lights in the room go black. The painting of the previous owner of the house starts to glow and move. At first a faint greenish light is seen. Soon his entire body starts to come out of the picture before disappearing. A voice that seems to belong to the man from the picture is heard. The voice warns of dangers of the river and of the spirit of the shaman that haunts it. He warns you to leave now before it is too late. At this his voice trails off as if he is in trouble.

***Archibald Wellington***

Foolish beings! How dare you disturb m....wait, you're  
not the petty tour guides....what are you doing  
here? You must leave! An evil Shaman terrorizes the  
river and curses any man who dares travel it. He will  
take your boat and destroy it along with your life! If you  
indeed go on this tour, it will be your last. What's this?  
Wait! No...!

A laughing voice is heard (that of the shaman), but it sounds as if it is coming from inside the guest's head. The lights and the video regain power and the video continues playing. The tour guide reappears, seemingly puzzled on what has happened.

***Tour Guide***

Hmm... well that must have been the wrong tape. Oh,  
well! Please, please move on to the dock to board the  
boats! And enjoy your cruise.

**Queue #2- Loading Dock**

[EXT Facade] After exiting the library/study, the guests join another line to board the tour boats. It is now completely dark outside, but there is a full moon to illuminate the night. Torches/lanterns line the entire dock to the loading platform. The dock has seen better days, lots of overgrowth has seeped its way into the wood. The boats that arrive at the dock are completely empty; only a single lantern illuminates the boat.

**Ride**

The ride is broken into 5 different parts, dock #1, calm section #1, thrill section, calm section #2 and dock #2. Dock #1 and #2 are very similar loading and unloading platforms. Calm section #1 and #2 take place in the jungle (exterior facade), while the thrill section takes place in the cave (interior).

**Loading Station (Dock #1)**

[EXT Facade] Dock #1 is the initial loading platform to ride the attraction. The dock is illuminated by torches/lanterns. Guests board boats. It is very dark when not illuminated by the lanterns, trees and bushes everywhere. Animal and jungle sounds fill the soundscape.

**Calm Section**

[EXT Facade] After leaving the dock, the boat is now in the area considered to be the calm section. The calm section is made out to be a boat tour. In this area, the guests are able to see wildlife and animals in their natural habitat. Although the area is pitch black, a spot light at the front of the boat is able to show where everything is. Having a full moon out also helps in illuminating the area. Like the dock, jungle sounds are heard everywhere.

### **Conflict Section**

[EXT Facade] As the boat continues to go down river getting closer a fork in the river, a jaguar snarl is heard. The bushes to the side start moving ahead of the boat. Ahead, on a ledge, a jaguar appears. The jaguar snarls and then turns into the shaman. The shaman brings down a tree blocking one of the forks to cause the boat to go down the wrong river. The river curves and a large cave is visible. [INT Cave] The river leads the boat into the pitch black cave. The lantern on the boat mysteriously turns off. A laughing whisper is heard. The whisper grows and grows in intensity. The laughing stops. The shaman reappears, chanting loudly and disappears.

### **Thrill Section**

[INT Cave] After the shaman disappears, the boat descends quickly before shooting back up again. The boat goes through twists and turns and ups and downs all done in the darkness of the cave, sporadically seeing glimpses of the shaman/jaguar. At the climax, the boat comes to an abrupt stop. Out of the darkness, the shaman appears; beckoning the guest to come to him. The boat races up towards the shaman, while an orb of light appears trying to catch up to the boat. Just before the shaman can grab the guest, the boat swerves away through an opening in the cave. The boat splash down back into the safety of the cave.

### **Calm Section #2**

[EXT Facade] After the boat leaves the cave, it returns to the main river. The sky is dimly lit to show that it is now again sunset. Guests hear something along the lines of “You haven’t seen the last of me…” being uttered by the shaman prior to their arrival at the unload dock. Ahead the unload station is visible.

### **Unload Station (Dock #2)**

[EXT Facade] The boat arrives at a different dock than the loading dock. The unload dock is similar in style to the loading dock, except it’s in the middle of the jungle and not next to the house. Guests depart their boats at this time.

### **Exit**

[EXT Facade] Guests exit dock and follow a path to the exit. The exit pathway leads you back through the original cave that led into the attraction.



## Appendix E: Character Back Stories

### **Shaman- Itapallu (means Shocking in Aymara)**

Itapallu was an outcast, hermit shaman in the mid-1500's. When the conquistadors came to the region in 1575, they stumbled upon his encampment near the Huiso Ino River. Itapallu put up a fight, but was eventually subdued by the conquistadors who took Itapallu back to their base camp along the river's edge. As the conquistadors prepared to execute Itapallu, he vowed to come back and get his revenge (See Inkarrí). A few days later, as the conquistadors left their camp and began to sail back downstream, their boats mysteriously vanished and the conquistadors were never heard of again. Legend says that, even to this day, Itapallu haunts the river with ruthless hatred.

### **Explorer- Archibald Wellington, FRS**

In 1934, famed British botanist/naturalist, Archibald Wellington decided, against the advice of his fellow scientists, to travel to South America to look for new plants that may provide cures for various diseases. Traveling alone because no one else would go with him, he decides to settle in a remote region of the Andean Highlands. He hires local Indians and mestizos (Indian/Spanish mix) to build him a grand hacienda-style house that he will use as a home and laboratory. On one expedition in late 1936, he travels upstream in an area that the locals warned him not to enter because it is sacred/cursed. While on this sacred part of the river he encounters the spirit of Itapallu who destroys his boat. Archibald is never seen or heard from again.

### **Tour Guides- The Amazonia Travel Co. - The Cast Members**

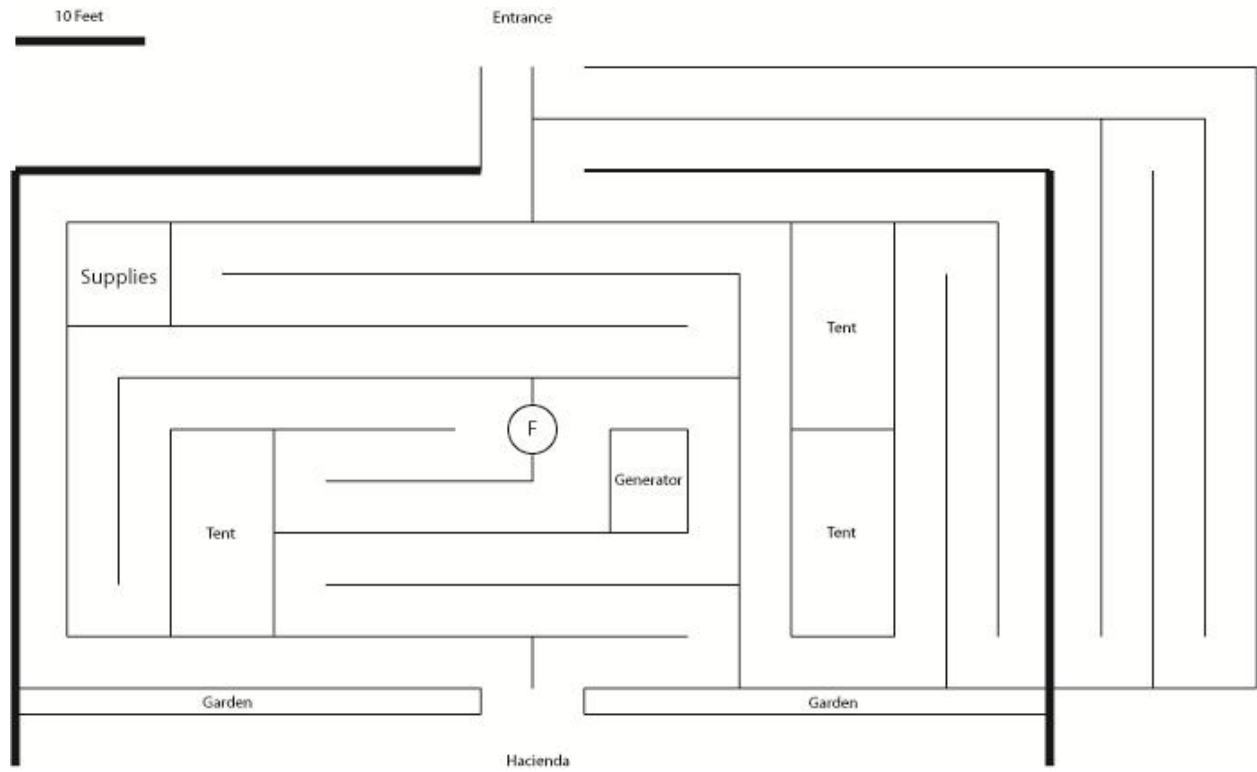
In 2006, a group of American hikers discover an abandoned hacienda in the Amazon basin of Peru. The house is located next to the Huiso Ino River, which is an area of lush scenery and calm waters - excellent for river cruises. They solicit permission from the local Indian tribes to start a river tour business, however they are forewarned that the river upstream is haunted. Casting that off as superstition, they ignore the warnings from the locals. In order to maximize their profit, they begin to hold special nighttime tours.

### **Tourists- The guests**

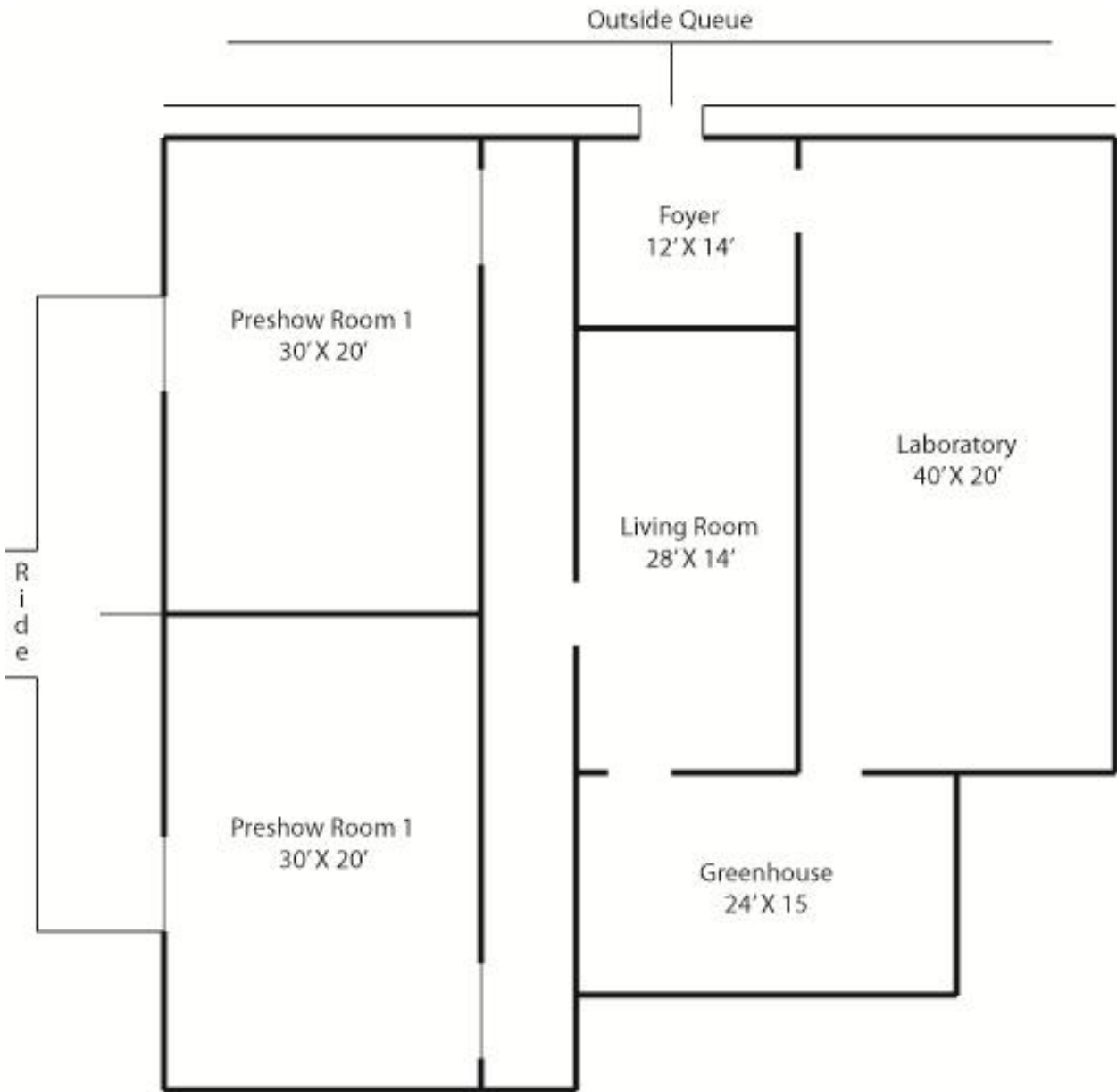
On a boat tour of the Huiso Ino River with the Amazonia Travel Company.

## Appendix F: Queue Layouts

### Outside (Courtyard) Queue



Inside (Hacienda) Queue



## Appendix G: Queuing Simulation Statistics

*The following tables are data collected from several simulations averaged to represent one hour of operation time.*

Data by Location

Name	Capacity	Total Entries	Avg Time Per Entry (MIN)	Avg Contents
Standby Queue	Infinite	1764	988.852	997
FastPass Queue	Infinite	468	11.576	0
Hacienda Queue	350	1863	350	350
Preshow	80	1649	80	80
Ride Queue	100	1600	33.254	70
Ride	120	1551	113.602	120
Dummy	10	1551	0	0

Data by Guest Demographic

Name	Total Exits	Current Qty In System	Avg Time In System (Min)	Avg Time Waiting (MIN)
Standby Guest	1121	1447	56.279	48.3215
FastPass Guest	357	180	22.694	14.689

## Appendix H: Ride Capacity Spread Sheet

RIDE	Time (Secs)
Ride Length:	200
Load & Wait:	20
<b>Total Length:</b>	<b>220</b>
Num Cycles Per Boat:	16
Num Boats on Track:	10
Capacity per Boat:	12
Realistic Capacity:	0.81
<b>Hourly Capacity:</b>	<b>1555</b>

(Auto Calc)

(Auto Calc)

(Auto Calc)

Key:	
	- Can edit
	- Fixed value
	- Auto Calculated

PRESHOW	Time (Mins)
Length:	1.5
Load & Unload:	4.5
Cycles:	10
Max Occupancy:	80
Realistic Occupancy:	0.97
<b>Hourly Capacity:</b>	<b>1552</b>

(Auto Calc)

(Auto Calc, already factoring in 2 rooms)

## Bibliography

Cobo, Bernabe. Inca Religion & Customs. Austin: University of Texas Press, 1990.

Kurtti, Jeff. Walt Disney's Imagineering Legends. New York: Disney Editions, 2008.

Muscutt, Keith. Warriors of the Clouds. Albuquerque: University of New Mexico Press, 1998.

Saunders, Nicholas. Icons of Power: Feline Symbolisms in the Americas. New York: Routledge, 1998.

The Imagineers. The Imagineering Field Guide to Disneyland. New York: Disney Editions, 2008.

—. The Imagineering Field Guide to Disney's Animal Kingdom at Walt Disney World. New York: Disney Editions, 2007.

—. Walt Disney Imagineering: A Behind the Dreams Look at Making More Magic Real. New York: Disney Editions, 2010.

Wilbert, Johannes and Karin Simoneau. Folk Literature of the Makka Indians. Los Angeles: UCLA Latin American Center Publications, 1991.

—. Folk Literature of the Sikuani Indians. Los Angeles: UCLA Latin American Center Publications, 1992.

—. Folk Literature of the Toba Indians. Los Angeles: UCLA Latin American Center Publications, 1989.

Wilbert, Johannes. Folk Literature of the Selknam Indians. Los Angeles: UCLA Latin American Center Publications, 1975.