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**“The Problem Solvers”**

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**UofL’s Research & Innovation Revamp**  
Vision Document

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Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
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## Revision History

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01/26/2020	1.0	Iteration #1	"The Problem Solvers"
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Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

## Table of Contents

1.	Introduction	4
1.1	References	4
2.	Positioning	4
2.1	Problem Statement	4
2.2	Product Position Statement	4
3.	Stakeholder and User Descriptions	4
3.1	Stakeholder Summary	5
3.2	User Summary	5
3.3	User Environment	5
3.4	Summary of Key Stakeholder or User Needs	5
3.5	Alternatives and Competition	6
4.	Product Overview	6
4.1	Product Perspective	6
4.2	Assumptions and Dependencies	6
5.	Product Features	7
6.	Other Product Requirements	8
7.	Appendix A	9

Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

## Vision (Small Project)

### 1. Introduction

The purpose of this document is to collect, analyze, and define high-level needs and features of the UofL research website. It focuses on the capabilities needed by the stakeholders and the target users, and why these needs exist. The details of how the UofL research website fulfills these needs are detailed in the use-case and supplementary specifications in the below sections.

#### 1.1 References

Feasibility Analysis - Appendix A

### 2. Positioning

#### 2.1 Problem Statement

The problem of	The U of L research and innovation website.
affects	The University and researchers.
the impact of which is	The University is missing out on additional cash flows and grants.
a successful solution would be	Redesigning the University Research and Innovation website.

#### 2.2 Product Position Statement

For	Researchers, companies, and the community.
Who	The website is preventing U of L from gaining additional profits from grants.
The Research and Innovation Website	Is a website that matches researchers with grants and researchers with industry partners.
That	Brings in additional revenue to the university, helps the university keep its Carnegie 1 status, and provides researchers with necessary funds and resources.
Unlike	Other major university Research and Innovation programs.
Our product	Matches researchers with grants, provides IP protection, matches researchers with Industry partners, and brings in revenue for the University.

Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

### 3. Stakeholder and User Descriptions

#### 3.1 Stakeholder Summary

Name	Description	Responsibilities
<ul style="list-style-type: none"> <li>Invested Partners</li> <li>Students</li> <li>Employees</li> <li>The Government</li> <li>The Community</li> </ul>	<ul style="list-style-type: none"> <li>Industries that invested money towards a grant that interests them</li> <li>Students attending the school seeking grants/research help</li> <li>Employees directly in the research and innovation department</li> <li>External grants come in from government facilities</li> <li>With medical research among other things assisting the public and community around us</li> </ul>	<ul style="list-style-type: none"> <li>Invested partners provide funding for research projects.</li> <li>The students create more projects to be invested in/work on already existing research</li> <li>Employees monitor progress and help to ensure there will be a market demand for the final product if possible.</li> <li>The government provides funding for research projects</li> <li>The community is the reason a lot of the medical research is done, to help the greater community.</li> </ul>

#### 3.2 User Summary

Name	Description	Responsibilities
<ul style="list-style-type: none"> <li>Researcher</li> <li>Industrial partner</li> </ul>	<ul style="list-style-type: none"> <li>The reason to provide funding</li> <li>The funding</li> </ul>	<ul style="list-style-type: none"> <li>accepting research grants and finding new ones</li> <li>generating a profit and providing a starting fund for researchers</li> </ul>

#### 3.3 User Environment

The working environment for the target users varies drastically. Since the target users are industries looking to invest and researchers. The amount of researchers needed for a task depends on what the task is since it could range from medical science to working with snails. Since every answer would consist of something along these lines we will look exclusively at the working environment of the website to apply for a grant of industrial partnership. Each of these tasks only requires one person and can take anywhere from 5 minutes to a few hours depending on if you can find what you are looking for and know what to apply for. Instead of keeping all of the users interaction on the website though the grants must be done either by emailing a PDF document out after downloading and completing it or following instructions on an external website. While there's not much that can be done about the external websites, internal grants can and should be handled entirely on the website out of convenience and efficiency sake.

Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

### 3.4 Summary of Key Stakeholder or User Needs

Need	Priority	Concerns	Current Solution	Proposed Solutions
1. Easier to understand pages	1. Medium	1. Users can get lost in the overwhelming information	1. None	1. Making the language easier to understand and the pages easier to read
2. Not as many hyperlink dumps	2. Low		2. None	
3. User friendly website structure	3. High	2. Because there are so many hyperlinks on each page that don't pertain to what the average user needs they can get lost easily	3. None	2. Consolidating hyperlinks instead of making a long list or getting rid of ones that do not pertain to the page
4. Ease of access to important features	4. High	3. Because it's difficult to navigate the website it can dissuade potential clients from wanting to use it leading in loss of revenue	4. None	3. Restructuring the website to make it more efficient for the user and easier to understand where you are trying to reach
		4. Because it is difficult to locate and apply for grants (the most profitable part of U of Ls research department) it can result in us not receiving grants due to researchers not being able to easily locate proper grants		4. Make it extremely clear where you can locate grants/apply to become an industry partner since those are the 2 key pieces to the financial success of the research department

### 3.5 Alternatives and Competition

Due to the poor fashion of the website and researchers/Industrial partners not being obligated to come to our university it could easily cause them to choose any other school to provide funding to. The strengths of these other universities would be more clarity in their website and possibly better labs for the research. A weakness of theirs is that while they may have some labs that we don't the same could be said for us. Each university has certain departments where they accel and falter causing these strengths and weaknesses at a base level.

## 4. Product Overview

### 4.1 Product Perspective

UofL's research and innovation website is a component of the larger UofL system. It is just one facet of how the University generates revenue. Other outlets in which the University generates revenue is through academics and athletics. The interface that serves as the jumping off point for the other systems is the UofL main webpage. The ULRI website serves as a place researchers, students, and industries can find funding and support. This will result in a ULRI database to keep track of the data of students, researchers, industries, administrators, and community members, and data of grants. This will funnel into the Main UofL database.

Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

## 4.2 Assumptions and Dependencies

Assumptions	Dependencies
Databases to fulfill requests are fully operational and team that addresses requests respond with clear/concise information in a timely manner	Industry Request Form User Funding Form Translational Research
The Web Server is fully operational	Runs on Windows, Linux, and Mac OS X environments.
Regular updates to news, announcements, and events	Calendar of Events News/Announcements
Regular updates to funding opportunities	User Funding Form

## 5. Product Features

- Industry request form
  - Ability for industry professionals to be able to fill out a form requesting for equipment, assistance, lab space, access to technologies, etc. It is important to include this feature on the website because industry support helps the University build mutually beneficial relationships within the research field. Currently, the website does include an industry request form which is very advantageous in streamlining the process, however this means the staff responsible for fulfilling these requests must be providing vital information to the requestor.
  -
- Feature to help the user find funding (form)
  - In the form, the user should be able to select what type of funding he/she is looking for (Federal Grants, Foundations/Non-Profit Agencies), and internal grants, as well as a way to select research areas. For example: I am a researcher looking for funding for my project regarding diabetes. The form should in theory, match grants that I can apply to based on my criteria. One result may be the "American Diabetes Association". It is important to include this because funding is the primary way that researchers are able to complete their research. Funding for their projects garners more attention and revenue for the university.
- Calendar of events feature
 

On the landing page, there should be a calendar events that is regularly updated.

Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

The user should be able to click on the event to find more details on the event. This is important to include because it helps the community stay engaged with UofL's research department. And as the community is more engaged, this can create more partnerships and funding opportunities which in turn positively impact the university.

- Research news/announcements feature (tab)  
When the user selects the news tab, there should be a page filled with updated news and announcements. This feature should also have searching functionality so the users can find articles from years past. This is important to include because all stakeholders get some benefit out of it, to figure out what UofL is doing and why they are a trailblazer in research. This section is really important in showing what UofL is doing that other universities are not.
- Translational Research Resources Feature  
The feature should allow the user to select whether they need funding opportunities, facilities/equipment, commercialization support, or training for their translational research. Possibly coming in a drop-down format. This is important to include because translational research is a really important facet of the research sector in which inventions/technology actually have the potential to be used, through patents. Again, translational research separates the University of Louisville from other universities.

## 6. Other Product Requirements

Current hardware can be used to support a full redesign. Current standards for fault tolerance and performance can also be maintained. The usability of an updated website needs to be a high priority. As it stands, the website is difficult to use effectively; usability will play a key role in bringing in additional revenue for the University.

Design constraints for the website are also important to note. Any changes will need to adhere to the strict policies that the University must follow. This will likely limit what shape the website will take. Going against University policy is not an option, so great care must be taken when presenting possible designs.

It may become necessary to develop some kind of instruction for how to find or fill out grants, depending on what the client deems necessary. Since current hardware may be used to implement the redesign, it is not necessary to worry about physical installation or labeling of equipment.

The website needs to be available as close to one hundred percent of the time as possible. Since the website being down loses the university opportunity costs, it is largely important to put systems in place to prevent the website from being down for extended periods.



Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

## 7. Appendix A - Feasibility Analysis

### 7.1 Technical Feasibility

Familiarity with function area	We understand the needs of ULRI and are familiar with their business functional area.
Familiarity with technology	Our technical experience is what will allow us to create the redesign. Working with students who have taken CIS courses, they have learned coding languages and business functions/processes to reach the level of expertise for this redesign. As end-users themselves, they've been using and gathering information from different online websites for years, combining this skill while learning new concepts can maximize feasible and functional ideas for the redesign. As every student has a computer, no new hardware will be needed but a passion for generating technical solutions.
Project Size	The project size is large in relation to the previous ULRI website. The original ULRI website has a lot of content that just needs to be condensed, efficient, and easier to navigate. This will enhance user experience and the operation of business functions.
Compatibility	All data from the website will come in the form of creating, editing, and deleting students, researchers, industries, community, and administrators. This information will be stored on SQL Server.

### 7.2 Economic Feasibility

Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

### 7.2.1 Costs and Benefits

Developmental Costs	Operational Costs
Software Licenses	Software Licenses
Developmental Labor	Operational Labor
Content Management System	Database Server
Database Server	Maintenance Fee

Tangible Benefits	Intangible Benefits
Increased Revenue	Increased Name Recognition
Increased Grants	Increased Role in Louisville Community

### 7.2.2 Costs and Benefits Values

<b>Developmental Costs</b>
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Labor Costs	total	per/hr	hours/wk	duration (weeks)	total pay
Developers	2	\$ 32.69	16	15	\$ 15,691.20
Database Admin	1	\$ 36.56	8	15	\$ 4,387.20
Project Manager	1	\$ 54.79	8	15	\$ 6,574.80
Systems Analyst	2	\$ 32.91	16	15	\$ 7,898.40
					<u>\$ 34,551.60</u>

software liscenses (wordpress)		\$ 300.00
database server (SQLserver)		\$ 1,859.00
maintenance fee		\$ 2,000.00
		<u>\$ 4,159.00</u>
	Total	<u>\$ 38,711</u>

Annual Costs				
Content Management System (wordpress)				\$ 300
Database Server (SQLserver)				\$ 1,859
Maintenance Fee				\$ 2,000
Total				<u>\$ 4,159</u>

Project Name: UofL's Research & Innovation Revamp	Version: 2.0
Team Name: "The Problem Solvers"	Date: 02/19/2020
Vision Document	

Total Benefits	
average number of donations/month	71
average value of donations/month	\$ 204,282.00
University takes 40%	\$ 81,712.80
remainder for research & innovation	\$ 122,569.20

Assumption Table	
increase in donations/month	5
donation value	122,569
total for 5 donations	\$612,846.00
yearly total	\$7,354,152.00

### 7.2.3 Cost Benefit Analysis

Cost-Benefit Analysis							
Year	0	1	2	3	4	5	Total
<u>Benefits</u>							
<b>Total Benefits*</b>	-	7,354,152	7,501,235	7,651,260	7,804,285	7,960,371	
<b>PV of Benefits</b>	-	6,847,441	6,503,157	6,176,182	5,865,648	5,570,727	<b>\$ 30,963,155</b>
*adjusted for 2% inflation							
<u>Costs</u>							
<b>Developmental</b>	38,711						
<b>Annual</b>		4,159	4,159	4,159	4,159	4,159	
<b>Total Costs*</b>	38,711	4,159	4,242	4,327	4,414	4,502	<b>\$ 60,355</b>
<b>PV of All Costs</b>	38,711	3,872	3,678	3,493	3,317	3,150	<b>\$ 56,222</b>
<b>Net Benefit</b>	(38,711)	7,349,993	7,496,993	7,646,933	7,799,871	7,955,869	
<b>Yearly NPV</b>	(38,711)	6,843,569	6,499,479	6,172,689	5,862,331	5,567,577	<b>\$ 30,906,934</b>
<b>ROI</b>	-100%	176725%	176725%	176725%	176725%	176725%	
<b>Breakeven Point</b>		Year 1					

### 7.3 Organizational Feasibility

The website would be highly used by the ULRI staff and anyone who visits the website. Our university provides the redesign with the equipment and labor needed. We have a number of hard working students that have taken business and technical courses who have a passion for learning and innovating, turning their knowledge into new and exciting projects. Here they manifest their skills that will please both themselves and their clients with on-campus computer labs and campus free internet, free access to paid applications and virtual environments, and access to teachers and researchers who can give guidance to new ideas. Our student's experience and technical resources available is what will make this redesign into a proper and working website. Most importantly, when we redesign the website we will submit our design to the ULRI department for approval which allows for CIS classes to then begin constructing the website.