ANEUVAS TECH. INC.
PORTABLE MEDICAL BENCH

Kenyon Rowley *Project Manager and Financial Manager*

Katherine Riffle *Test Engineer and CAD Engineer*

Hunter Daniel *Logistics Manager and Manufacturing Engineer*

DR. BECKER - ADVISOR

Project Description

Aneuvas Technologies, Inc. develops microcatheter-based medical devices for treating aneurysms.

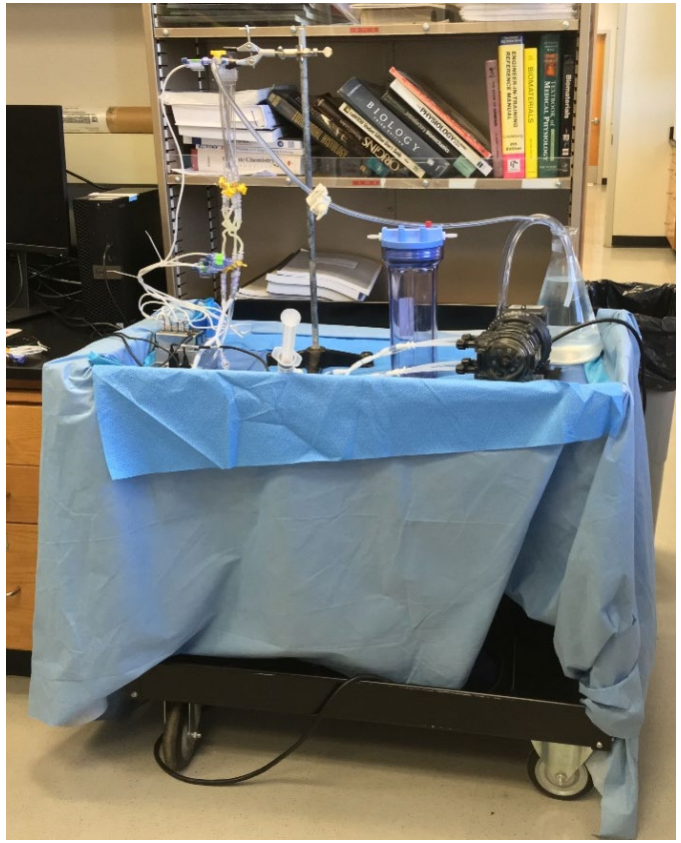
The portable bench:

Compatible with devices

Support clean-room cover

Reduce shock during transport

Minimal X-Ray interference

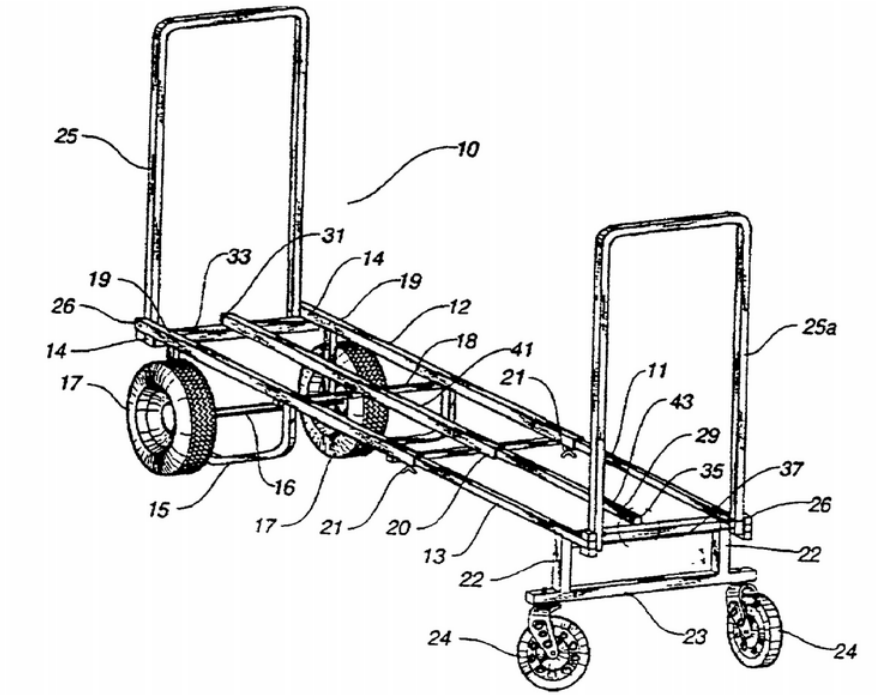


Background and Benchmarking

Aneuvas Technologies, Incorporated

Current Technology used

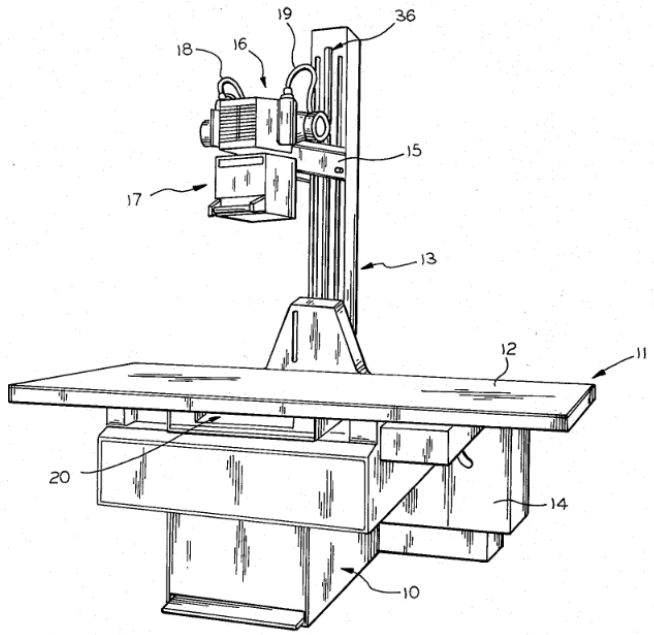
Background and Benchmarking



Lightweight Cart

Background and Benchmarking

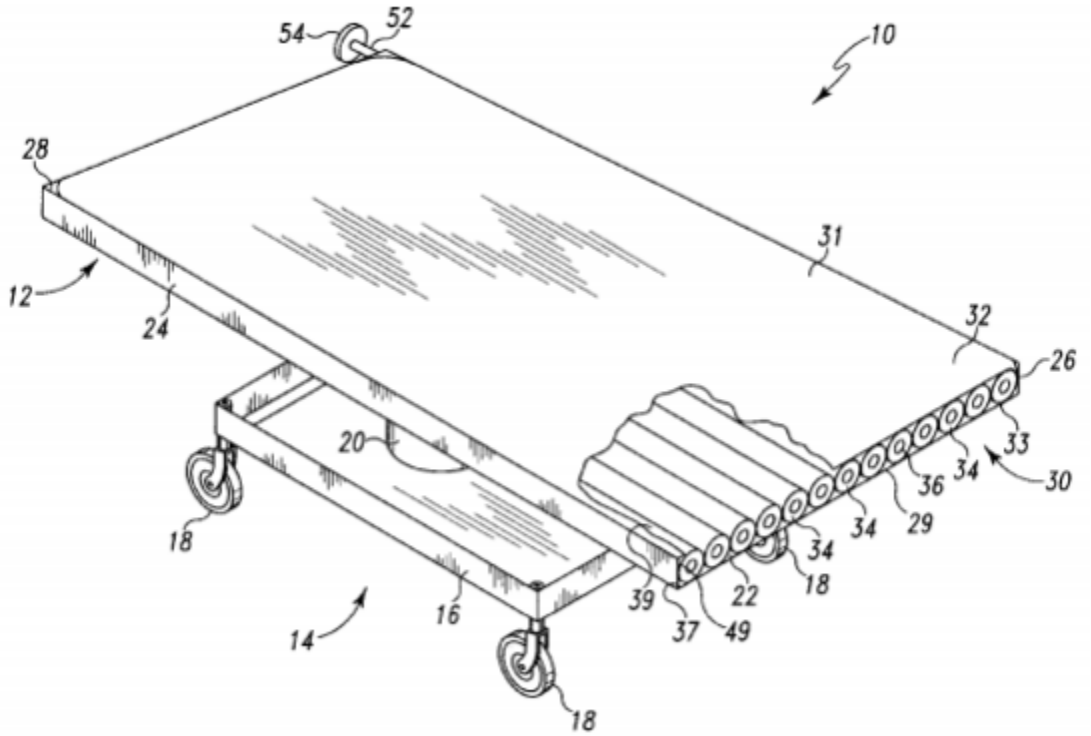
Aneuvas Technologies, Incorporated



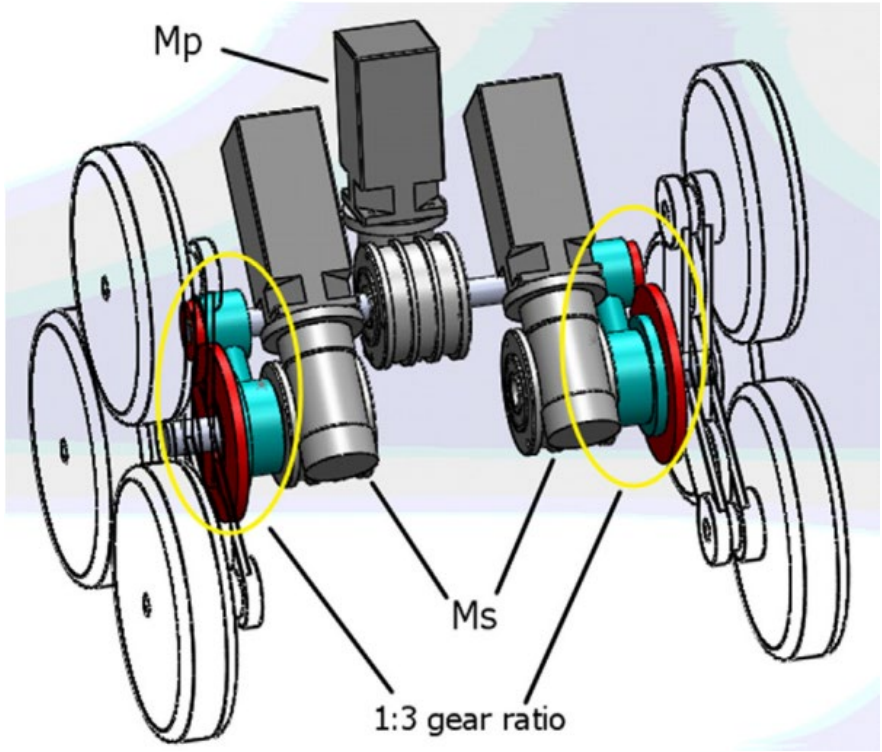
X-ray Table

Background and Benchmarking

Aneuvas Technologies, Incorporated



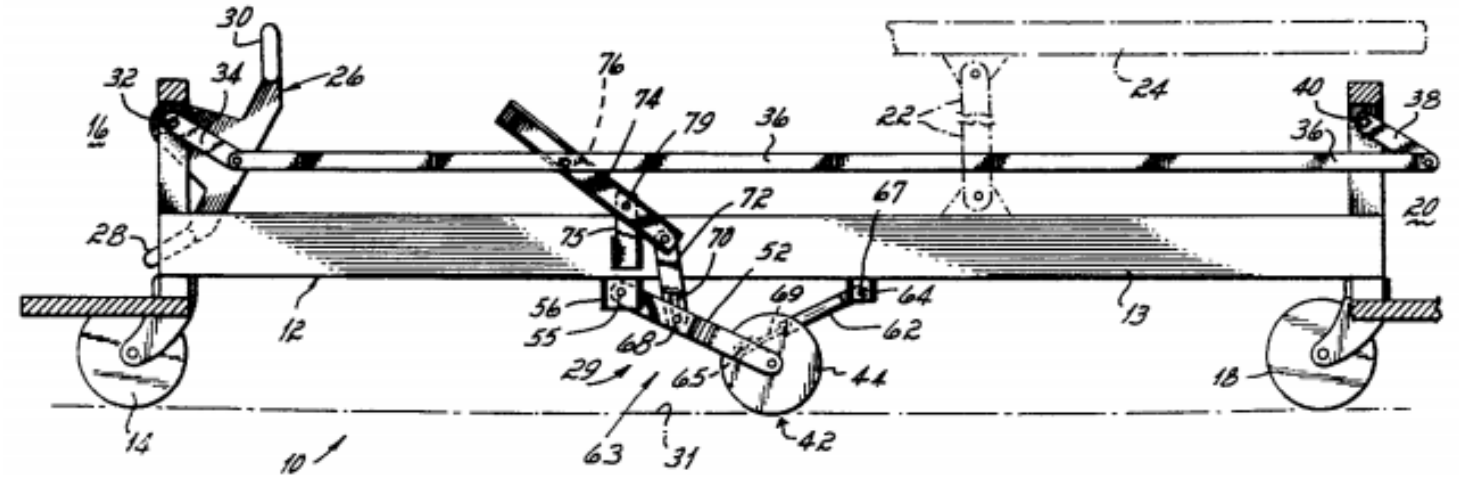
Mobile Medical Table



Actuation and Transmission System of a Self-Leveling Cam Mechanism for Stair-Climbing Wheelchair

Background and Benchmarking

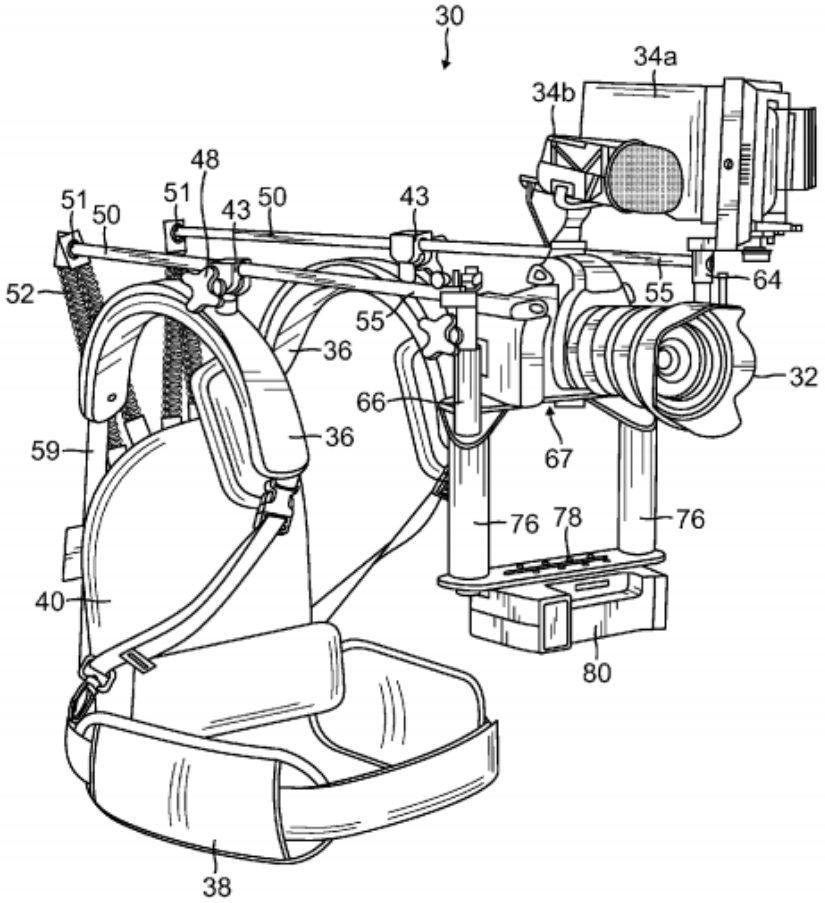
Aneuvas Technologies, Incorporated

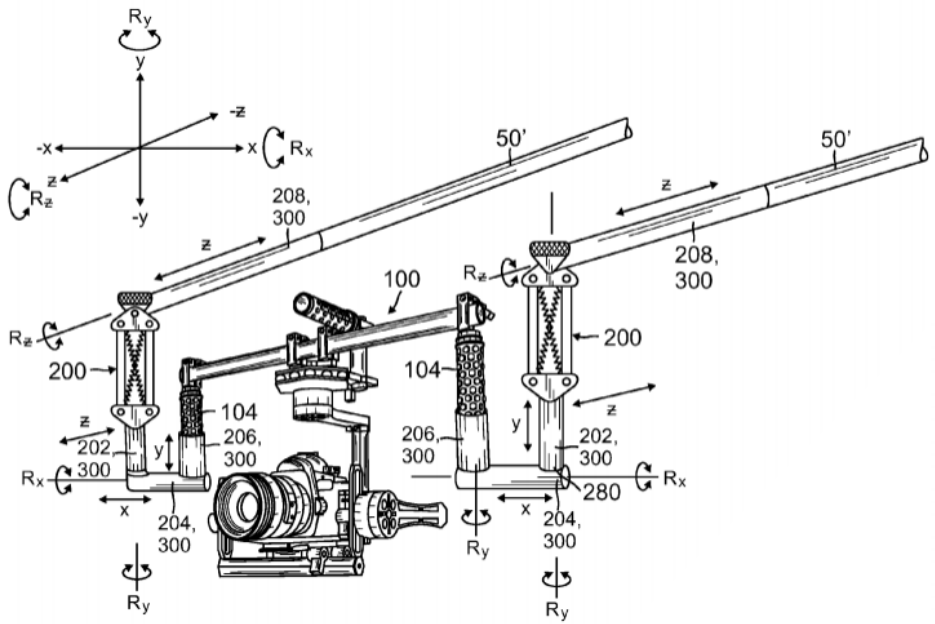


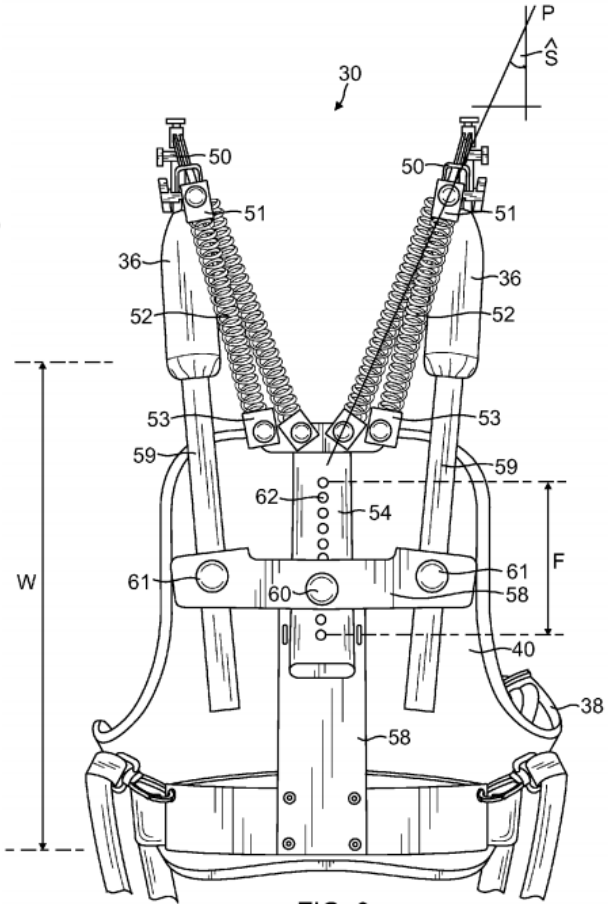
Carrier with Deployable Center Wheels

Background and Benchmarking

Aneuvas Technologies, Incorporated







Video Stabilization

Literature Review

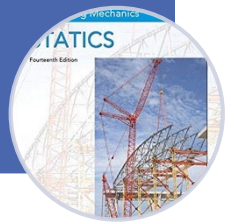
Aneuvas Technologies, Incorporated

- Moving and shock-absorb components (locks, springs, etc)
- Hunter Daniel and Katherine Riffle

Machine Design

- Tabletop
- Drainage System
- Supporting the clean-room cover
- Hunter Daniel

Statics



- Bench legs and supportive trusses
- Designs at wheels
- Hunter Daniel and Katherine Riffle

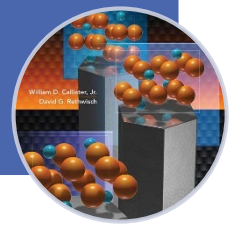
Mechanics of Materials

Literature Review

Aneuvas Technologies, Incorporated

- X-Ray compatible countertop
- Bench legs support clean-room cover
- Hunter Daniel

Materials Science



- Drainage and Locking systems
- Compatibility with other pieces
- Katherine Riffle

SolidWorks

Characterization of Injectable Liquid Embolic Particles

- Article on ATI Products
- Kenyon Rowley

Histopathologic Validation of DICOM based-Ultrasound Signal Intensity

- Fluoroscopic Imaging and Artery Procedures
- Kenyon Rowley

Customer and Engineering Requirements

Safety	Durability	Reliability
Deflection	Weight	Volume

HOQ Calculations

- Total cost of materials, labor, etc.
- Found through SolidWorks
- Machine design, Statics, structural analysis, etc.
- Calculated using Heat transfer

House of Quality

Customer Requirement	Weight	Engineering Requirement	Cost($)	Weight(lb)	Volume(in^3)	Yield Strength(psi)	Effective Spring constant(lb/in)	Deflection(in)
1. Durablility	9		3			3	3	9
2. Reliability	9		3	3	3	3	3	3
3. Safety	9		1	3	1	3		3
4. Manoverability	9		1	9	9			
5. Inexpensive	3		9	3	1			
6. Asthetically pleasing	1		1					
7. Multipurpose	3		3					
8. Lightweight	3		3	9	3			
Absolute Technical Importance (ATI)			118	171	129	81	54	135
Relative Technical Importance (RTI)			0.15	0.21	0.16	0.10	0.07	0.17
Target ER values			1,000	50	40	100	20	0.25
Tolerances of Ers			100	10	20	50	10	0.05
Testing Procedure (TP#)			1	2	2	3	3	3

Schedule

Aneuvas Technologies, Incorporated

Task	Lead	Start	Due	% of Task Complete
Team Management	Kenyon			5%
Peer Evaluations				0%
Meet with Advisor	Hunter			13%
Project Updates	Hunter			13%
Meeting Minutes	Katherine			0%
Website Updates	Hunter			0%
Team Charter		9/3	9/6	100%
Presentation 1		9/9	9/16	100%
Project Description	Hunter			100%
BG/Benchmarking	Katherine and Kenyon			100%
Literature Review	Hunter			100%
CRs/Ers and Budget	Kenyon			100%
Schedule	Katherine			100%
Self Learning		9/20	10/4	0%
Presentation 2		9/16	10/7	6%
Project Description	Hunter			25%
Concept Generation	Kenyon			0%
Concept Evalutaion	Katherine			0%
Budget Planning	Kenyon			0%
Preliminary Report		10/7	10/18	0
Background	Hunter			0%
Requirements	Kenyon			0%
Research	Hunter			0%
Concept Generation	Katherine			0%
Design Selected	Katherine			0%
Analyses		10/7	10/25	0%
Presentation 3		10/14	11/4	0
Prototype: Low Fidelity	Katherine and Hunter			0%
Project Description	Hunter			0%
Design Description	Katherine			0%
Design Validation	Katherine			0%
Design Requirements	Kenyon			0%
Schedule and Budget	Kenyon			0%
Final Report		11/4	11/15	0
Background	Hunter			0%
Requirements	Kenyon			0%
Research	Hunter			0%
Concept Generation	Katherine			0%
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BOM/CAD		11/11	11/27	0%
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Analytical Reports		11/24	12/13	0
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Risk Analysis and Mitigation	Katherine			0%
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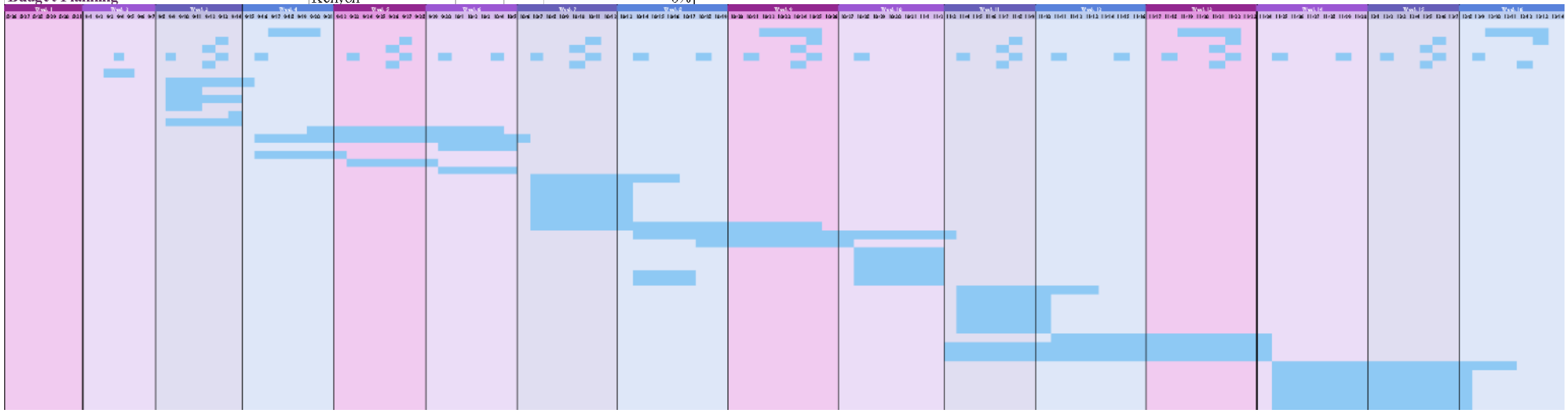
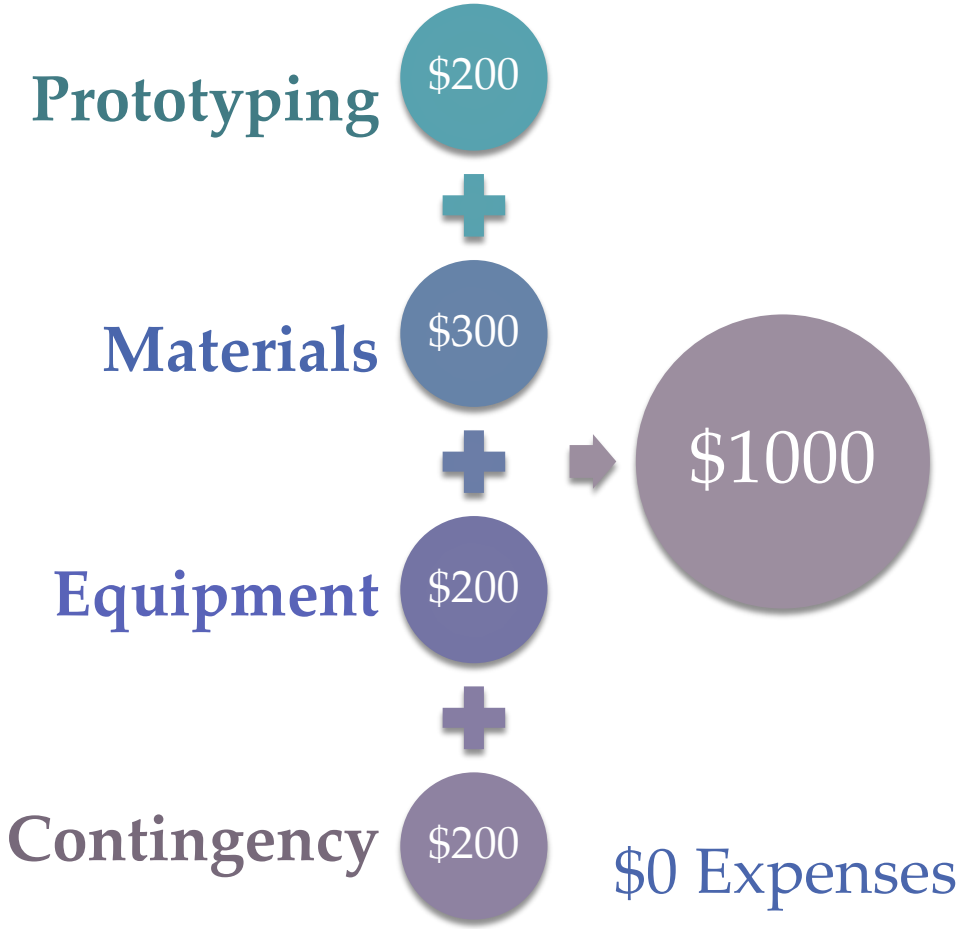
Aneuvas Technologies, Incorporated

GANTT Chart



Budget and Conclusion



$0 Expenses to-date

Project Details

Benchmarking

Literature Review

ERs and CRs, HOQ

Schedule (GANTT)

Concept Gen and Eval

CAD Model

Prototyping

Appendix

Citations

1. Budynas, Richard Gordon, and J.Keith. Nisbett. Shigley's Mechanical Engineering Design. McGraw-Hill Higher Education, 2008.
2. Hibbeler, C Russel. Engineering Mechanics: Statics(14th Edition). Pearson Copyright, 2016.
3. Gere, M James, and Goodno, J Barry. Mechanics of Materials (8Th Edition). CLE (2012).
4. Callister, D William, and Rethwisch, G David. Materials Science and Engineering: An Introduction(10th Edition). Wiley, 2018.
5. Reyes, Alejandro. Beginners Guide to SolidWorks 2018-Level 1. SDC Publications, 2017.
6. 6. Cotter, Trevor, Becker, Timothy A., Kellar, Robert, and Mann, Christopher. Characterization of Injectable Liquid Embolic Particles (2018): ProQuest Dissertations and Theses. Web.
7. 7. Kim, Sw, Mintz, Gs, Hong, Yj, Lee, Sy, Lee, Ws, Kim, Hj, Kim, Gh, Lee, Kj, Kim, Th, Kim, CJ, Ryu, Ws, and Weissman, Nj. "Histopathologic Validation of DICOM Based-Ultrasound Signal Intensity: An Echoplaque Medical Imaging Bench(MIB) Study in Autopsied Coronary Arteries." Journal Of The American College Of Cardiology 53.10 (2009): A91. Web.

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