BioMedVerse

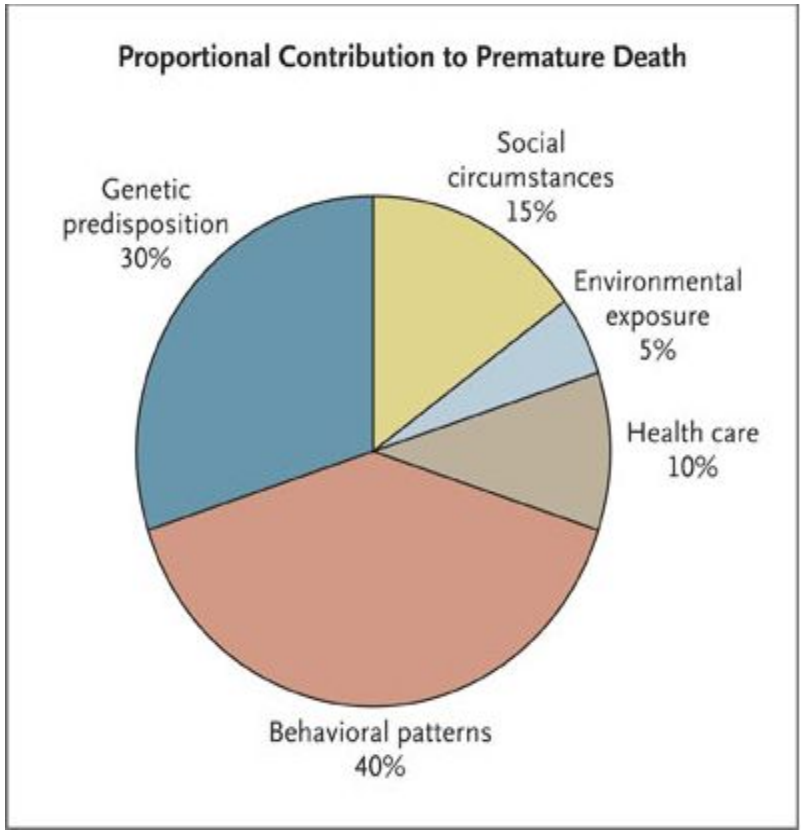
COMPLETE, TRANSFORM, APPLY

MEDICAL SOFTWARE |TECHNOLOGY EVALUATION | CONTRACT RESEARCH | BUSINESS DEVELOPMENT

Identity of BioMedVerse Inc.

- Mission: Transform Theoretical Research Into Impactful Applications for Human Harmonic Progress.
  - Founded during the NSF-I Corps Program in November 2018
- Primary Industries: Bioinformatics, Genomics, Machine Learning, Data Science, Precision Medicine, Environmental Science & Health, Digital Health, Epidemiology, Public Safety
- Services:
  - 1. Use Machine Learning and Data Science to Create Custom Medical Software to Solve Healthcare & Biological Experiment Difficulties => Computational Meta Analyzer for Gene Expression (C-MAGE)
  - 2. Use Technology Evaluation and Business Development to Analyze Improve the Work Capabilities of Other Companies & Organizations
  - 3. Perform Contract Research for Institutions, Organizations, and People Looking to Complete Projects

Suffering Patients = At Least 70% are Children



Problem: Lots of Faulty Genes & Less Usage of Genetic Medicines

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Top 10 Rare Genetic Diseases

- Cystic Fibrosis
- Down Syndrome
- Fragile X Syndrome
- Hemophilia
- Duchenne Muscular Dystrophy
- Sickle Cell Anemia
- Thalassemia
- Tay-Sachs
- Angelman Syndrome
- Huntington Disease

Top 10 Cancer Diseases

- Bladder Cancer
- Breast Cancer
- Colon & Rectal Cancer
- Endometrial Cancer
- Kidney Cancer
- Leukemia Cancer
- Liver Cancer
- Non-Hodgkin Lymphoma
- Prostate Cancer
- Thyroid Cancer

Solutions to Fixing Faulty Genes

Product 1 => Computational Meta Analyzer of Gene Expression (C-MAGE).....Where Machine Learning & Data Science Explains Genetic Actions of Microarrays for Better Medical Healthcare.

Product 2 => DNA Coordinator Software (DNAC).....How Mathematics & Data Mining Tracks Changes in a DNA Sequence with Clarity.

How C-MAGE Works

- Computational Meta-Analyzer of Gene Expression (C-MAGE):
  - Retrieve & Format Microarray Data, Check for Conserved Targets & Properties (Patterns), Takes Note of Blank Results & Predicts Identities
  - Platform: R Program & Microsoft Excel
  - **Unique Features: Text Tally Analysis, Trace Back Analysis, Blank Result Prediction**
  - **Counts the components you're targeting, performs side by side comparison for similarities, and creates predictive analytic models for decision-making.**
    - Recurring Gene Families, Gene Ontologies (Biological Processes, Molecular Functions)
    - **Using for research on Immune System Response (Adaptive Immune System)**
  - Areas: Precision Medicine, Immunotherapy, Genomics, Proteomics, Biostatistics, Pharmacogenomics, Metabolomics

C-MAGE Tally Analysis - Count System for Targeted Components

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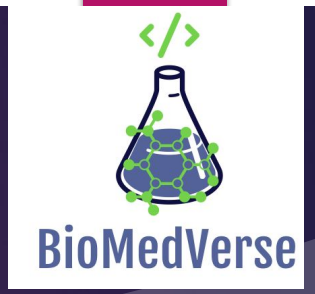
	C	D	E	F	G	H	I
1	Gene Title		Tally of Interleukin-Affiliated Genes		Tally of Receptor-Affiliated Genes		Tally of Binding Protein Affiliated Genes
2	Interleukin 6		1		#VALUE!		#VALUE!
3	Chemokine C-X-C Motif Ligand 9		#VALUE!		#VALUE!		#VALUE!
4	CD40 Antigen		#VALUE!		#VALUE!		#VALUE!
5	Chemokine C-C Motif Ligand 12		#VALUE!		#VALUE!		#VALUE!
6	Integrin Beta 8		#VALUE!		#VALUE!		#VALUE!
7	Guanylate Binding Protein 6		#VALUE!		#VALUE!		11
8	Suppressor of Cytokine Signaling 3		#VALUE!		#VALUE!		#VALUE!
9	CD69 Antigen		#VALUE!		#VALUE!		#VALUE!
10	Chemokine C-X-C Motif Ligand 11		#VALUE!		#VALUE!		#VALUE!
11	Chemokine C-X-C Motif Receptor 4		#VALUE!		23		#VALUE!
12	Family with Sequence Similarity 26 - Member F		#VALUE!		#VALUE!		#VALUE!
13	Lipase - Endothelial		#VALUE!		#VALUE!		#VALUE!
14	Interferon Inducible GTPase 1		#VALUE!		#VALUE!		#VALUE!
15	Prostaglandin-Endoperoxide Synthase 2		#VALUE!		#VALUE!		#VALUE!
16	Interleukin 1 Beta		1		#VALUE!		#VALUE!
17	CD40 Antigen		#VALUE!		#VALUE!		#VALUE!
18	Chemokine C-X-C Motif Ligand 3		#VALUE!		#VALUE!		#VALUE!
19	Prostaglandin-Endoperoxide Synthase 2		#VALUE!		#VALUE!		#VALUE!
20	Suppressor of Cytokine Signaling 3		#VALUE!		#VALUE!		#VALUE!
21	Chemokine C-X-C Motif Ligand 11		#VALUE!		#VALUE!		#VALUE!
22	Interferon Inducible GTPase 1		#VALUE!		#VALUE!		#VALUE!
23	CD40 Antigen		#VALUE!		#VALUE!		#VALUE!
24	Tumor Necrosis Factor - Ligand Superfamily - Member 10		#VALUE!		#VALUE!		#VALUE!
25	RAS - Guanyl Releasing Protein 3		#VALUE!		#VALUE!		#VALUE!
26	Chemokine C-X-C Motif Ligand 1		#VALUE!		#VALUE!		#VALUE!
27	LIM Homeobox Protein 2		#VALUE!		#VALUE!		#VALUE!
28	CCAAT / Enhancer Binding Protein [C/EBP] - Alpha		#VALUE!		#VALUE!		18
29	Guanylate Binding Protein 6		#VALUE!		#VALUE!		11
30	Chemokine C-X-C Motif Ligand 2		#VALUE!		#VALUE!		#VALUE!
31	Guanylate Binding Protein 7		#VALUE!		#VALUE!		11
32	Cholesterol 25-Hydroxylase		#VALUE!		#VALUE!		#VALUE!
33	TNF Receptor-Associated Factor 1		#VALUE!		5		#VALUE!

How DNAC Works



- DNA Coordinator Software (D-NAC)
  - Performs simulated DNA Sequencing, Alignment, and Modification.
  - Platform: Python
  - **Unique Features: Quartile Modification => Find Quartiles**
  - **Calculates probability of DNA Sequences & keeps track of amino acids produced from modifications.**
    - **Disease Promoting & Inhibiting Amino Acids**
    - **Using for research on Coronary Heart Disease & Liver Cancer**
  - Areas: Precision Medicine, Whole Genome Sequencing, Cancer Sequencing, Proteomics, Amino Acid Therapy, Pharmacogenomics

DNAC - Generating Pro & Anti-Cancer Amino Acids From DNA

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```
In [342]:
AminoAcidSequence.replace('AsparticAcidOne','AntiCancer1').replace('AsparticAcidTwo','AntiCancer2').replace('
GlycineFour','AntiCancer3').replace('GlycineTwo','AntiCancer4').replace('GlycineThree','AntiCancer5').replace
('GlycineFour','AntiCancer6').replace('HistidineOne','AntiCancer7').replace('HistidineTwo','AntiCancer8').rep
lace('AlanineOne','AntiCancer9').replace('AlanineTwo','AntiCancer10').replace('AlanineThree','AntiCancer11').
replace('AlanineFour','AntiCancer12').replace('SerineOne','AntiCancer13').replace('SerineTwo','AntiCancer14')
.replace('LeucineOne','AntiCancer15').replace('LeucineTwo','AntiCancer16').replace('LeucineThree','AntiCancer
17').replace('LeucineFour','AntiCancer18').replace('ArginineOne','AntiCancer19').replace('ArginineTwo','AntiC
ancer20').replace('ArginineThree','AntiCancer21').replace('ArginineFour','AntiCancer22').replace('GlutamicAci
dOne','ProCancer1').replace('GlutamicAcidTwo','ProCancer2').replace('TyrosineOne','ProCancer3').replace('Tyro
sineTwo','ProCancer4').replace('MethionineOne','ProCancer5').replace('GlutamineOne','ProCancer6').replace('Gl
utamineTwo','ProCancer7').replace('AsparagineOne','ProCancer8').replace('AsparagineTwo','ProCancer9').replace
('CysteineOne','ProCancer10').replace('CysteineTwo','ProCancer11').replace('ProlineOne','ProCancer12').replac
e('ProlineTwo','ProCancer13').replace('ProlineThree','ProCancer14').replace('ProlineFour','ProCancer15')
```

Product & Service Advantages

- ***FAIR Data Standard*** => Easy to Find Info, Accessible (Transferrable), Interoperable (Correct Mistakes & Integrates With Other Technology Platforms), Reusable (Use for Years)
- LONG TERM USE & EASY MAINTENANCE
- Handle Loads of Messy Genetic Data Files from Experiments & Clinical Trials
- Saves Time and User Friendly
- Modelling Options & Clear-Cut Data Visuals to Use = Accurate & Organized Results

Competitive Advantage

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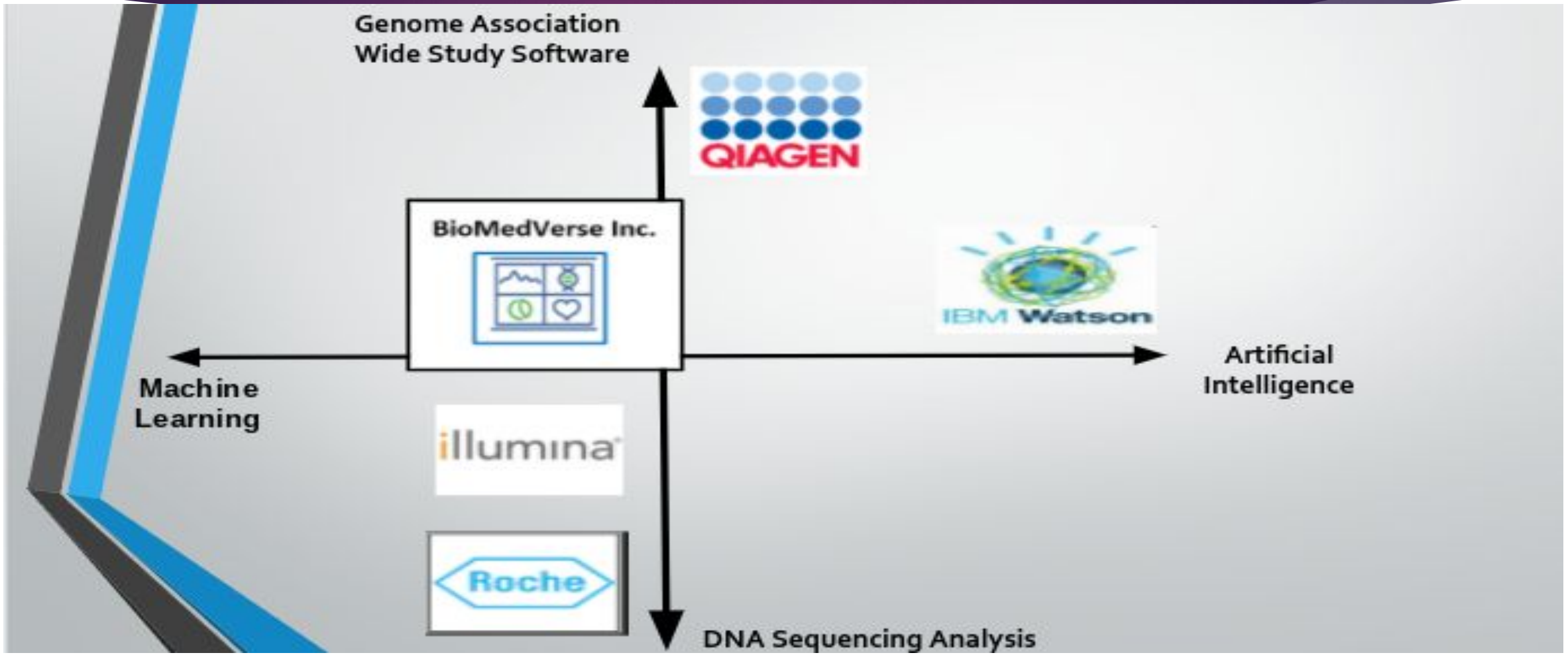
	BioMedVerse	IBM Watson	Qiagen	Illumina	Roche
Speed	Fast	Fast	Fast	Fast	Fast
Accuracy	High	High	High	High	High
Handle Unstructured Data	Yes	No	No	No	No
Easy Maintenance	Yes	No	No	No	No
Cost	Low	High	High	High	High
Scalability	Good	High	High	High	High
User-Friendly	Great	Good	Good	Good	Good
Microarray & Sequencing	Yes	Yes	Yes	Yes	Yes
Custom-Tailored	Yes	No	No	No	No

Competitive Landscape



Additional Pipeline Products

- Scale Factor Circuit Analysis Software (SFCA)
  - Mathematical Simulation to Model Gene Expression or Protein Expression Changes (Artificial or Natural)
    - Defining Equations (Vector & Elementary Algebra)
    - Unique Feature: Scale Factor Prediction
  - Tracks & compares numerical changes in Gene Expression Metrics
    - Used in Computation Gene Knockout & Knock-In Simulations
    - Could Be Used to Simulate & Model Other Datasets with Changes That Don't Have Clear Numerical Patterns or Trends
    - Areas: Gene Editing, Gene Therapy, Immunotherapy, Cheminformatics, Biohacking, Machine Learning, Genomics

Client & Sponsors

Current Clients: Binghamton University SUNY (Triton Ceramics, Brownridge Liquid Convection Laboratory, Center of Biomanufacturing for Regenerative Medicine, Center for Autonomous Solar Power), Starnation Solutions (Toronto, Canada), YouScript Inc, Near-Infrared Imaging LLC, National Society of Black Engineers (Aerospace Special Interest Group), Universities Allied for Essential Medicines (UAEM)

Past Clients: Binghamton University SUNY (Office of Entrepreneurship & Innovative Partnerships, Center for Autonomous Solar Power), Process Integration & Predictive Analytics LLC, National Science Foundation, U.S. Office for Naval Research, U.S. Air Force Research Laboratory - Oak Ridge Institute for Science & Education, University of Colorado Boulder- ATLAS Institute

Sponsors: National Science Foundation I-Corps Program, Koffman Southern Tier Incubator & Accelerator, Binghamton University SUNY Department of Biomedical Engineering, New York Small Business Development Center

Business Timeline

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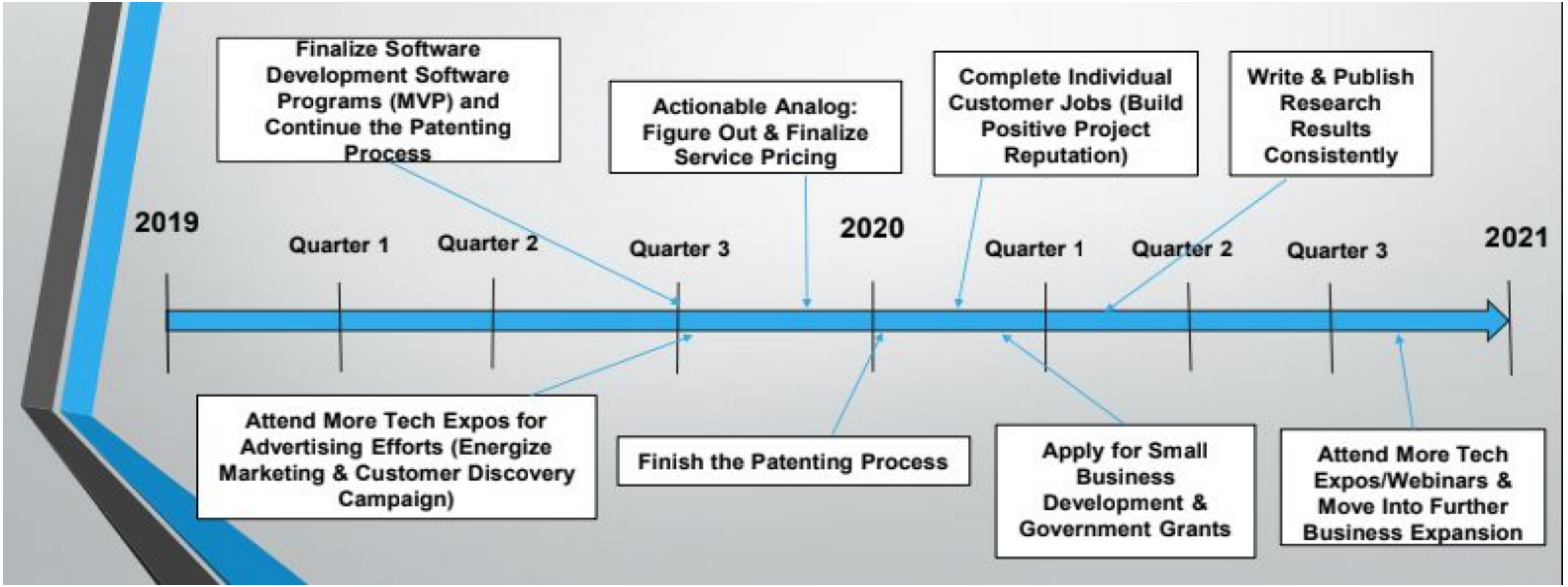

Planned Budget

Software Licenses => Less Than $3,000

- **Planning to Go Into Mobile Application Development => Have Current Prospective Contractors**
- Computers & Wifi Access
- Recruitment of Professionals (Marketer,, Financial Accountant, Cyber Security & Machine Learning Experts, Genetic Counselors & Clinical Bioinformaticians)

- **Traveling to Meet Customers for Business & Attend Expo Events => Attended 2020 Precision Medicine World Conference (Biggest Conference in the World for Precision Medicine)**

- Patent Lawyers & Technology Transfer Fees
- **Fundraising Target = $250,000**
  - **Equity Sales in Company Up For Discussion, Searching for Active & Silent Investors**

Team

Darrell Robinson

Founder/CEO/Entrepreneurial Lead

Bioinformatician, Geneticist, Software Developer

PhD Student in Biomedical Engineering

Dr. Kaiming Ye

Chair Professor of Department of Biomedical Engineering at Binghamton University SUNY

Director of Center of Biomanufacturing for Regenerative Medicine

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