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59th Medical Wing Clinical Research Division

CLINICAL INVESTIGATIONS PROGRAM

SPOTLIGHT ON GME/GHSE-SUPPORTED RESEARCH

An example of a "Parent" 59 MDW/ST R&D Project; representative of synergy between Clinical Investigations and R&D programs:
 "Adverse childhood experience and serotonin transporters: a gene environmental interaction study of the risk of PTSD in soldiers (ACES)"

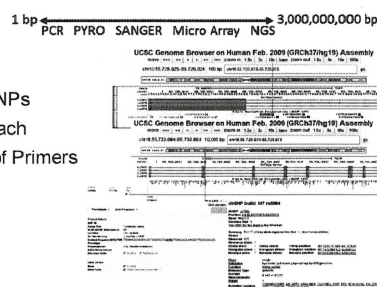
CRD Support:

Project 1 GME investigators requested lab support to assess for SNPs in select genes. After consulting with ST CRD Lab Scientists, Investigators decide to utilize PCR and whole exome NGS for their Protocol.
 Project 2 GME investigators requested lab support to assess the methylation status of genes. After consulting with ST CRD Lab Scientists, Investigators decide to utilize Pyrosequencing for their Protocol.

Genetic Status of Genes via PCR & NGS

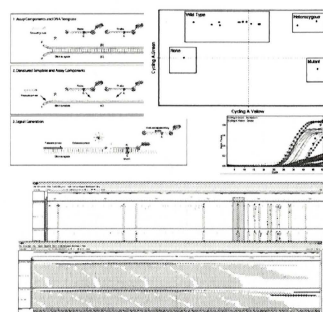
A. Development:

- Selecting Relevant SNPs
- Selecting NGS approach
- Selecting/Designing of Primers
- Verification of Assays



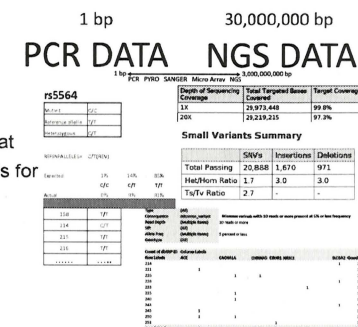
B. Performance:

- Collect & Extract DNA from Sample (CAMD)
- PCR for SNP
- Construct Exome library for NGS
- Sequence Exome via NGS
- Store Exome data for future studies



C. Dissemination:

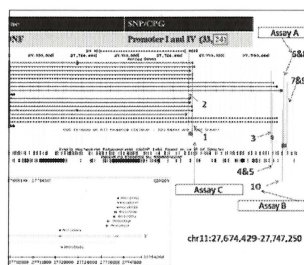
- Analyze/Interpret Data
- Provide Data in Excel Format
- Provide Materials & Methods for Publication of Research



Epigenetic Status of Genes via Pyrosequencing

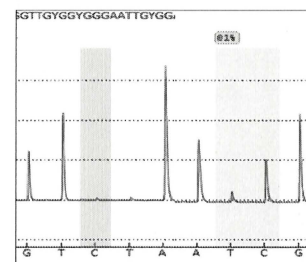
A. Development:

- Selecting regions of Genome
- Selecting/Designing of Primers
- Verification of Assays



B. Performance:

- Collect & Extract DNA from Sample (CAMD)
- Bisulfite Conversion of DNA
- PCR Converted DNA
- Pyrosequence



C. Dissemination:

- Analyze/Interpret Data
- Provide Data in Excel Format
- Provide Materials & Methods for Publication of Research

Sample ID	Well	Assay	ID	Internal Control (I)	Internal Control (C)	Multisite conversion of control	M
Low Cont	A5	BDNF_08	L	150.12	6.32	4%	-
	A5	BDNF_10	L	152.94	9.38	5%	-
	A1	NR3C1_01	L	363.37	7.38	2%	-
	B5	NR3C1_05	L	220.15	3.55	3%	-
High Cont	C5	NR3C1_05	L	238.72	4.11	4%	-
	A6	BDNF_08	H	183.48	6.38	5%	5
	A6	BDNF_10	H	188.57	11.60	8%	5
	A2	NR3C1_01	H	425.86	9.56	2%	5
High Cont	B6	NR3C1_05	H	219.40	3.29	5%	4
	C6	NR3C1_05	H	368.83	3.38	2%	5
High Cont	A7	BDNF_08	11	230.08	6.08	5%	-
	A7	BDNF_10	11	203.04	6.03	8%	-