Multi-Ethnic Study of Atherosclerosis

MESA Steering Committee Meetings Master Draft Agenda

March 28, 2017
Bethesda North Marriott Hotel & Conference Center

5701 Marinelli Road Bethesda, MD 20852
Phone: 301-822-9200 Fax: 301-822-9201

March 28-29, 2018

Fishers Lane Conference Center
Terrace Level (T-Level)
5635 Fishers Lane
Rockville, MD 20852
Phone: 301-451-9273

Wednesday, March 28, 2018 ***Meeting rooms in italics***

11:30 am – 1:00 pm	**MESA Lung Meeting – *Room 508/509/510* ..... Dr. Barr**
1:00 pm – 5:00 pm	**MESA Steering Committee Meeting – *Room 508/509/510* ..... Dr. Burke**
5:00 pm – 6:00 pm	**Operations Committee Meeting – *Room 508/509/510* ..... Dr. Barr**
6:00 pm – 7:30 pm	**MESA Genetics Subcommittee Meeting – *Brookside B* ..... Dr. Rotter**
6:30 pm – 7:30 pm	**Reserved – *Brookside A* ..... Dr. Heckbert**
7:30 pm – 8:30 pm	**Lab Committee Meeting – *Brookside B* ..... Dr. Tracy**
7:30 pm – 10:00 pm	**Subcommittee Meetings (TBD) – *Brookside A* ..... TBD**
8:30 pm – 10:00 pm	**Subcommittee Meeting (TBD) – *Brookside B* ..... TBD**

Thursday, March 29, 2018 ***Meeting rooms in italics***

8:00 am – 12:00 pm	**MESA Steering Committee Meeting – *Room 508/509/510* ..... Dr. Burke**

Wednesday, March 28, 2018

Meeting rooms in italics

11:30 am – 1:00 pm MESA Lung Meeting – *Room 508/509/510*.....Dr. Barr

1:00 pm – 5:00 pm MESA Steering Committee Meeting – *Room 508/509/510*..... Dr. Burke

1:00 pm Call to Order and meeting overview.....Dr. Burke

1:10 pm Project Office Report.....Ms. Silsbee

1:25 pm Operations Committee Report..... Dr. Barr

1:50 pm Participant Relations Committee Report .....Dr. Post

2:00 pm P&P Committee Report .....Dr. Shea

2:10 pm M&M Committee Report ..... Dr. Folsom

2:20 pm Break

2:30 pm Ancillary Studies Committee Report.....Dr. Heckbert

2:35 pm Exam 6 ancillary studies status and discussion

- Early Heart Failure .....Dr. Bertoni
- Atrial Fibrillation…….. .....Dr. Heckbert
- Lung Studies..…….. ..... Dr. Barr
- Epigenetics ..... Dr. Liu
- UNKNOW..... Dr. Kramer
- INVITE Vitamin D..……. .....Dr. De Boer
- Memory/AD .....Dr. Hughes
- Tissue Sodium .....Dr. Allen
- FDG PET .....Dr. Shea

3:20 pm Scientific Presentations

- The Relationship of Cigarette Smoking and Incident Heart Failure .....Dr. Blaha
- Former and Low-dose Smoking and Risk of Lung Disease..... Dr. Oelsner
- Demographic, clinical and cardiac MRI characteristics in relation to supraventricular ectopy .....Dr. Heckbert
- Environmental and Occupational Factors and CT Interstitial Lung Abnormalities …….....Dr. Sack

5:00 pm Adjourn

5:00 pm – 6:00 pm Operations Committee Meeting – *Room 508/509/510* .....Dr. Barr

6:00 pm – 7:30 pm MESA Genetics Subcommittee Meeting – *Brookside B*.....Dr. Rotter

6:30 pm – 7:30 pm Reserved – *Brookside A* .....Dr. Heckbert

7:30 pm – 8:30 pm Lab Committee Meeting – *Brookside B*.....Dr. Tracy

7:30 pm – 10:00 pm Subcommittee Meetings (TBD) – *Brookside A*..... TBD

8:30 pm – 10:00 pm Subcommittee Meeting (TBD) – *Brookside B* ..... TBD

Thursday, March 29, 2018

Meeting rooms in italics

8:00 am – 12:00 pm MESA Steering Committee Meeting – *Room 508/509/510*..... Dr. Burke

8:00 am Genetics Committee Report..... Dr. Rotter

8:10 am Scientific Presentations

- TOPMed Whole Genome Sequence and Lipids .....Dr. Natarajan
- TOPMed Multi-Omics: transcriptomics in the MESA Cohort.....Dr. Aguet

9:00 am Laboratory Committee Report..... Dr. Tracy

9:10 am Scientific Presentations

- Validity of Cardiovascular Data From Electronic Source .....Dr. Allen
- Clinical and Subclinical CVD Risk and Cognitive Decline .....Dr. Hughes
- Antihypertensive Treatment, Blood Pressure Control and Change in Arterial Stiffness .....Dr. Tedla

10:30 am Break

10:40 am Future Directions in MESA

- The Multisite MESA-AD Study: Designs for Exam 7 and Exam 8…….....Dr. Hughes
- TBD.....Dr. Tracy
- Linking MESA to Electronic Health Records…….....Dr. Allen
- MESA-Frailty…….....Dr. Baldwin
- Ambulatory and Home Blood Pressure Monitoring……. .....Dr. Yano

11:40 am Review action items, next steps, future meetings.....Dr. Burke

12:00 pm Adjourn

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Section 1: Retention

Introduction

MESA began enrolling participants in July of 2000, and is now well into the seventeenth year of data collection. Of the 6,814 originally enrolled participants, 1,453 have died since enrolling. The remaining 5,361 participants constitute the set of participants from which we calculate the retention rate. Although there are 593 participants who have asked to be dropped from the study, they are nevertheless considered to be part of the living cohort for the purpose of calculating the true retention in MESA.

Good retention is essential to effectively identify potential events, obtain quality study data over time, and to address the study goals. In addition, it is important in MESA to ensure the highest possible retention rates across all ethnic and age categories. All the clinics have implemented activities designed to enhance retention in their specific ethnic groups and have dedicated considerable time and resources to retaining their minority participants.

1.1 Exam Retention – All MESA Exams

The MESA field centers began the sixth MESA visit in September of 2016 and have completed the exam for about 57% of the cohort. As of 3/6/2018, 3,047 participants completed Exam 6 core exam. If on target, 3,965 participants would have completed the exam (~11 participants per day). Retention is currently at 77% of the target.

The following section provides retention statistics for clinic exams. Table 1.1.1, describes Exam 6 retention. Retention rates are reported for each ethnic group and the entire cohort, and are based on the total number of non-deceased participants.

Table 1.1.2 is a summary of MESA retention for all exams. This table shows a comparison of retention rates across time.

Table 1.1.3 gives the distributions within age, gender, and ethnic group for each exam. Since the distribution of the earliest participants recruited varies from that of the cohort, this table also shows the distribution of the first 76% of participants enrolled.

1.1.1 Exam 6 Retention Table, by Clinic and Ethnicity

The Exam 6 retention table provides details about retention within ethnic groups, and is based on Exam 6 visit status. Follow-up retention is provided in Section 1.2.

	Race	Enrolled	Active	Done	% Enrolled	% Active	Pending
WFU	African-American	372	356	164	44%	46%	192
	Hispanic	2	2	1	50%	50%	1
	White	432	411	169	39%	41%	244
	Total	806	769	334	41%	43%	437
COL	African-American	288	266	183	64%	69%	83
	Chinese	2	2	2	100%	100%	0
	Hispanic	408	375	221	54%	59%	154
	White	185	169	120	65%	71%	50
	Total	883	812	526	60%	65%	287
JHU	African-American	411	318	207	50%	65%	113
	White	407	331	243	60%	73%	88
	Total	818	649	450	55%	69%	201
MINN	Hispanic	392	354	225	57%	64%	130
	White	470	441	343	73%	78%	99
	Total	862	795	568	66%	71%	229
NWU	African-American	225	202	155	69%	77%	49
	Chinese	261	236	190	73%	81%	46
	White	448	395	307	69%	78%	91
	Total	934	833	652	70%	78%	186
UCLA	African-American	120	105	61	51%	58%	44
	Chinese	402	344	198	49%	58%	146
	Hispanic	430	365	193	45%	53%	172
	White	104	95	65	63%	68%	30
	Total	1056	909	517	49%	57%	392
Total	African-American	1416	1247	770	54%	62%	481
	Chinese	665	582	390	59%	67%	192
	Hispanic	1232	1096	640	52%	58%	457
	White	2046	1842	1247	61%	68%	602
	Total	5359	4767	3047	57%	64%	1732

1.1.2 Exam Retention Comparison by race/ethnicity across Exams 3, 4, 5 and Exam 6 to date

Site	Race	Exam 3			Exam 4			Exam 5			Exam 6		
		Enrolled	Done		Enrolled	Done		Enrolled	Done		Enrolled	Done	
WFU	African American	483	423	88%	476	405	85%	438	351	80%	372	164	44%
	Hispanic	3	2	67%	3	3	100%	3	2	67%	2	1	50%
	White	563	534	95%	552	490	89%	513	399	78%	432	169	39%
	Total	1049	959	**91%**	1031	898	**87%**	954	752	**79%**	806	334	**41%**
COL	African American	369	335	91%	358	322	90%	327	260	80%	288	183	64%
	Chinese	2	2	100%	2	2	100%	2	2	100%	2	2	100%
	Hispanic	485	434	89%	478	435	91%	452	374	83%	408	221	54%
	White	219	208	95%	218	207	95%	204	174	85%	185	120	65%
	Total	1075	979	**91%**	1056	966	**91%**	985	810	**82%**	883	526	**60%**
JHU	African American	544	458	84%	532	425	80%	480	315	66%	411	207	50%
	White	518	456	88%	510	435	85%	481	343	71%	407	243	60%
	Total	1062	914	**86%**	1042	860	**83%**	961	658	**68%**	818	450	**55%**
UMN	Hispanic	449	392	87%	444	369	83%	427	323	76%	392	225	57%
	White	595	554	93%	585	534	91%	540	448	83%	470	343	73%
	Total	1044	946	**91%**	1029	903	**88%**	967	771	**80%**	862	568	**66%**
NWU	African American	293	265	90%	288	253	88%	268	207	77%	225	155	69%
	Chinese	300	277	92%	297	273	92%	285	246	86%	261	190	73%
	Hispanic	0	0		1	1	100%	0	0	0%	0	0	0%
	White	547	509	93%	543	498	92%	519	423	82%	448	307	69%
	Total	1140	1051	**92%**	1129	1025	**91%**	1072	876	**82%**	934	652	**70%**
UCLA	African American	153	126	82%	152	126	83%	138	100	72%	120	61	51%
	Chinese	488	420	86%	484	386	80%	463	293	63%	402	198	49%
	Hispanic	524	429	82%	518	416	80%	485	300	62%	430	193	45%
	White	133	122	92%	131	124	95%	124	95	77%	104	65	63%
	Total	1298	1097	**85%**	1285	1052	**82%**	1210	788	**65%**	1056	517	**49%**
Total	African American	1842	1607	87%	1806	1531	85%	1651	1233	75%	1416	770	54%
	Chinese	790	699	88%	783	661	84%	750	541	72%	665	390	59%
	Hispanic	1461	1257	86%	1444	1224	85%	1367	999	73%	1232	640	52%
	White	2575	2383	93%	2539	2288	90%	2381	1882	79%	2046	1247	61%
	Total	6668	5946	**89%**	6572	5704	**87%**	6149	4655	**76%**	5359	3047	**57%**

1.1.3 Distribution of Participants, by Age, Gender, and Race

One of the goals of MESA is to retain similar distributions within these categories across exams. This table shows the simple distributions within age, gender, and ethnic groups for each exam. This includes the breakdown to date for Exam 6.

Across exams, the numbers in the oldest age category decreased, but this is to be expected because the older participants are more likely to become ill or deceased. The proportion of White participants increased slightly, and the Hispanic and African-American groups were consistent for the past two exams. The proportion of Chinese participants declined slightly. However, these were not significant changes.

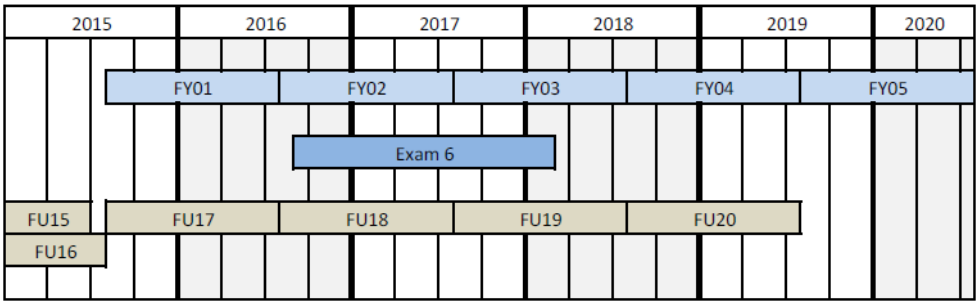
Category		Baseline		Exam 2		Exam 3		Exam 4		Exam 5		Exam 6	
Age	**45-54**	1948	28.6%	1815	29.1%	1761	29.6%	1739	29.9%	1544	33.8%	1158	38.0%
	55-64	1884	27.6%	1735	27.8%	1687	28.4%	1652	28.4%	1425	31.2%	1008	33.1%
	65-74	2017	29.6%	1834	29.4%	1743	29.3%	1723	29.6%	1296	28.4%	741	24.3%
	75-84	965	14.2%	855	13.7%	755	12.7%	704	12.1%	390	8.5%	140	4.6%
	Total	6814	100.0%	6239	100.0%	5946	100.0%	5818	100.0%	4655	100.0%	3047	100.0%
Gender	**Female**	3601	52.8%	3267	52.3%	3132	52.7%	3075	52.9%	2477	53.2%	1614	53.0%
	Male	3213	47.2%	2972	47.6%	2814	47.3%	2743	47.1%	2178	46.8%	1433	47.0%
	Total	6814	100.0%	6239	100.0%	5946	100.0%	5818	100.0%	4655	100.0%	3047	100.0%
Race	**African American**	1891	27.7%	1692	27.1%	1607	27.0%	1579	27.1%	1233	26.5%	770	25.3%
	Chinese	804	11.8%	729	11.7%	699	11.8%	662	11.4%	541	11.6%	390	12.8%
	Hispanic	1496	22.0%	1352	21.7%	1257	21.1%	1230	21.1%	999	21.5	640	21.0%
	White	2623	38.5%	2466	39.5%	2383	40.1%	2347	40.3%	1882	40.4%	1247	40.9%
	Total	6814	100.0%	6239	100.0%	5946	100.0%	5818	100.0%	4655	100.0%	3047	100.0%

1.2 Follow-up Calls

Follow-up phone interviews are administered to participants in order to identify potential events that may require investigation. (see Section 2 of this Steering Committee Report for information on the number of potential events requiring investigation). These telephone interviews have been administered at the time of each exam and between exams. Since the interview is administered by phone, retention for follow-up calls should not be affected significantly by participants who have relocated or cannot come to the clinic because of illness or time constraints. The clinics are expected to complete a final follow-up call interview with a proxy when the participant has passed away.

The status of the follow-up call is recorded on a Contact Cover Sheet, indicating if the interview was performed, was unable to be done, or was refused. A Contact Cover Sheet is expected for each enrolled participant, regardless of whether the interview was successfully completed.

Prior to August 2015, follow-up calls were scheduled approximately every nine months. With the start of the MESA 3 contract in August 2015, the follow-up call scheduled was modified to allow one follow-up call per year, corresponding with the yearly contact cycle. The following figure shows the follow-up call schedule for the MESA 3 contract period:

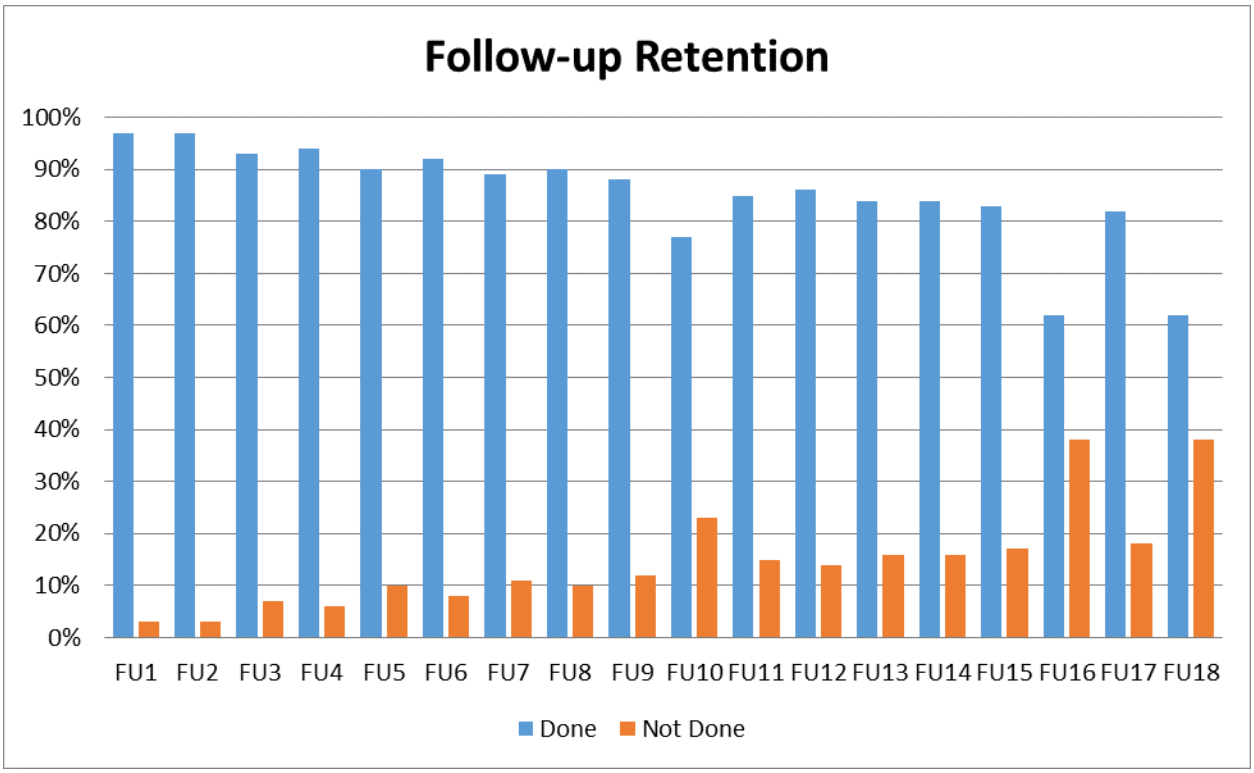


In order to transition to the new schedule, the follow-up 16 phone call (originally scheduled to end February 2016) was truncated to end in July 2015.

1.2.1 Follow-up Retention Overall

The graph below shows retention for follow-up calls since the first follow-up. As expected, retention rates have gradually decreased over time in a consistent manner. However, Follow-up 10 has a noticeably lower retention rate than the previous follow-up, followed by a return to the consistent pattern. This occurred because implementation of Exam 5 took place during the Follow-up 10 period, and due to the demands of Exam 5 start-up, the sites fell behind on Follow-up 10 completion. To allow Follow-up 11 to proceed on schedule, it was recommended that Follow-up 10 be skipped and coded as "Unable," resulting in an unusually low completion rate.

Follow-up 16 retention was also low due to the follow-up call period being truncated in August 2015 as mentioned on the previous page. Follow-up 18 began in August 2016 and ended in August 2017. Starting with Follow-up 17, the duration of calls was reduced to 12 months to match the MESA 3 contract calendar (August 15 – August 14 of the following year).



1.2.2 Follow-up 11-18 Retention by Site

This table shows retention by site for recent follow-up contacts. The number enrolled at each contact period is adjusted for the number of participants who were deceased or transferred to another clinic. The follow-up retention rate for each clinic and overall is shown in the "Completed" line. Study dropouts are included under "Not Completed."

Since Follow-up 19 is still underway, there is an additional line item in Table 1.2.2 showing the number expected at this time. The percent completed for this contact is based on the number expected instead of the total number enrolled.

This report reflects data received through 3/6/2018.

		WFU	Col.	JHU	UMN	NWU	UCLA	Total
F12	**Transferred**	0	0	0	0	0	0	0
	Deceased	13	21	17	22	18	30	121
	Enrolled	925	968	949	945	1051	1174	6012
	Completed	868 (94%)	800 (83%)	786 (83%)	809 (86%)	967 (92%)	925 (79%)	5155 (86%)
	Not Completed	57	168	163	136	84	249	857
F13	**Transferred**	0	0	0	0	0	0	0
	Deceased	21	10	13	12	25	20	101
	Enrolled	906	956	936	933	1026	1154	5911
	Completed	807 (89%)	786 (82%)	736 (79%)	803 (86%)	925 (90%)	917 (79%)	4974 (86%)
	Not Completed	99	170	200	130	101	237	937
F14	**Transferred**	0	0	0	0	0	0	0
	Deceased	3	13	22	18	13	13	82
	Enrolled	903	943	914	915	1013	1141	5829
	Completed	788 (87%)	800 (85%)	747 (82%)	789 (86%)	902 (79%)	889 (78%)	4915 (84%)
	Not Completed	115	143	167	126	111	252	914
F15	**Transferred**	0	0	0	0	0	0	0
	Deceased	12	17	15	11	12	19	86
	Enrolled	891	926	899	904	1001	1122	5743
	Completed	731 (82%)	776 (84%)	722 (80%)	801 (89%)	875 (87%)	860 (77%)	4765 (83%)
	Not Completed	160	150	177	103	126	262	978
F16	**Transferred**	0	0	0	0	0	0	0
	Deceased	8	6	12	9	7	9	72
	Enrolled	883	920	887	895	994	1113	5620
	Completed	465 (53%)	523 (57%)	572 (64%)	582 (65%)	680 (68%)	687 (62%)	3509 (62%)
	Not Completed	488	397	315	313	314	426	2183
F17	**Transferred**	0	0	0	0	0	0	0
	Deceased	29	5	6	7	12	13	72
	Enrolled	854	915	880	887	983	1101	5620
	Completed	725 (85%)	735 (80%)	664 (75%)	773 (87%)	859 (87%)	835 (76%)	4591 (82%)
	Not Completed	129	180	216	114	124	266	1029
F18	**Transferred**	0	0	0	0	0	0	0
	Deceased	9	17	43	14	22	29	134
	Enrolled	845	898	838	875	960	1070	5486
	Completed	495 (59%)	508 (57%)	634 (76%)	675 (78%)	642 (67%)	635 (59%)	3599 (66%)
	Not Completed	350	390	203	152	319	436	1850
F19	**Transferred**	0	0	0	0	0	0	0
	Deceased	4	18	15	6	25	17	85
	Enrolled	841	880	822	868	936	1054	5401
	Expected	386	425	433	427	462	544	2677
	Completed	144 (37%)	155 (36%)	268 (62%)	161 (38%)	222 (48%)	282 (52%)	1232 (46%)
	Not Completed	242	270	165	266	240	262	1445

- Expected: Enrolled and FU19 window has closed (denominator for FU19 retention)
- Completed: General Health Interview data received
- Not completed: Includes study dropouts as well as other reasons interview could not be completed

1.2.3 Follow-up 19 Retention as of 3/6/2018

Section 1.2.3 provides more detailed information about retention in Follow-up 19, which began in August 2017 and will conclude in August 2018. The first table includes all participants who are not deceased, and gives the true retention rate. In the second table, participants who have dropped out are also excluded to show progress among participants who are actually expected to respond.

MESA Air Next provides funding to follow MESA Air Family and New Recruit participants starting in March 2018 and continuing through the end of the MESA 3 contract. This cohort will be integrated into the MESA Classic follow-up schedule and finish Follow-up 19 by August 2018. Participants were last contacted in 2014 and efforts are underway now to re-contact them and complete events investigations.

All participants not deceased OR dropped out (completion rate of those expected)

Site Name	Follow-up Expected	Contact Made		Interview Completed		Not Completed	Unable	Refused	Contact Not Made
Wake Forest	773	199	25.7%	172	22.3%	27	26	1	574
Columbia	831	262	31.5%	220	26.5%	35	32	3	569
Johns Hopkins	675	369	54.7%	326	48.3%	42	31	11	306
Minnesota	801	218	27.2%	187	23.3%	29	29	0	583
Northwestern	871	333	38.2%	274	31.5%	54	41	13	538
UCLA	934	362	38.8%	319	34.2%	42	34	8	572
Total	4885	1743	35.7%	1498	30.7%	229	193	36	3142

All participants with closed contact windows not deceased OR dropped out (Active Participants)

Site Name	Follow-up 19 Due	Contacts Made		Interviews Completed		Unable	Refused
Wake Forest	352	171	49%	144	41%	26	1
Columbia	378	182	48%	155	41%	22	3
Johns Hopkins	306	305	100%	268	88%	27	9
Minnesota	366	190	52%	161	44%	28	0
Northwestern	394	264	67%	222	56%	33	6
UCLA	423	321	76%	282	67%	32	7
Total	2219	1433	65%	1232	56%	168	26

All participants with closed contact windows not deceased (True Retention)

Site Name	Follow-up 19 Due	Contacts Made		Interviews Completed		Unable	Refused
Wake Forest	386	171	44%	144	37%	26	1
Columbia	425	182	43%	155	36%	22	3
Johns Hopkins	433	305	70%	268	62%	27	9
Minnesota	427	190	44%	161	38%	28	0
Northwestern	462	264	57%	222	48%	33	6
UCLA	544	321	59%	282	52%	32	7
Total	2677	1433	54%	1232	46%	168	26

Follow-up Due: Not Deceased and Follow-up window has closed
Contacts Made: Follow-up status obtained (regardless of window)
Interview Completed: General Health Questionnaire data received (% calculated from Follow-ups Due)
Interview Not Completed: Contact Cover indicates interview will not be done
Contact Not Made: No data or status has been received

Section 2: Follow-up Calls and Events

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Introduction

Progress in follow-up calls and events has continued since the April 2017 Steering Committee Meeting.

Highlights include the following:

- The criteria by which follow-up call trigger investigations have been streamlined. Nursing home stays will no longer indicate an investigation is needed unless another trigger is found (eg. a doctor says an MI occurred). It was found that all of the nursing-home investigations to date that generated any adjudicated events also had other triggers.
- The Events through 2015 dataset was posted in the 4th quarter of 2017.
- Work has begun on the 'Events through 2016' dataset, which is expected by end of study year 2017-2018.
- Cecilia Castro-Diehl has moved on from her Study Coordinator position at Columbia. Vijay Nayudupalli has been promoted from his position as Events Coordinator to take on her Study duties. Leinys Santos Baez (Samantha) has joined him to take events duties.
- The Coordinating Center is preparing for the return of MESA Air and Family participants to the pool of participants generating events investigations.
- MESA has been approved to use CMS data to initiate investigations when MESA has not detected an event. The Coordinating Center is determining how best to implement the inclusion of these CMS identified investigations. Preliminary research indicates that incorporating CMS identified investigations will increase the rate of investigations required by less than 10% across all sites.

2.1 Participants Available for Events Surveillance

The table below shows the number of participants still available for events surveillance in March 2018. Participants who have left the study voluntarily (i.e., made a hard refusal—"Do Not Contact") are dropped from the "Available" column, but participants who returned to the study after a previous absence are considered available and included in the "Available" column.

Note: the number of deceased listed in this table differs slightly from the number in the "Death Investigation and Classification" table (Section 2.7.2) because the latter table includes deaths still pending confirmation.

Report Generated 3/10/2018

Site Name	Baseline	Deceased	Do Not Contact	Transfers	Available for Events
3: Wake Forest	1077	-273	-37	1	769
4: Columbia	1102	-213	-71	-3	811
5: Johns Hopkins	1086	-270	-170	2	649
6: Minnesota	1066	-203	-67	-1	795
7: Northwestern	1164	-223	-101	-6	833
8: UCLA	1319	-274	-147	7	908
Total	**6814**	**-1456**	**-593**	**0**	**4765**

2.2 Participant Reports from General Health Questions (Follow-Ups 1 - 19)

This is an updated abbreviated summary of participant self-reported CVD triggers during the follow-up call interview. This includes all Follow-up calls to date including F19 and multiple 'Yes' responses to the same question by the same participant at different Follow-ups are counted only once in the table below. The table summarizes affirmative participant responses to inquiries regarding new diagnoses and/or procedures since their previous MESA Follow-up. The diagnoses/procedures reported by the participants were NOT necessarily confirmed by physicians or MESA reviewers. This is not MESA endpoint data.

It is recommended that MESA Investigators confirm the raw data in this table before any public presentation or publication. Participant surveillance time varies widely for the raw data below.

Report Generated 3/10/2018

	Total of 6814 Participants	
Follow-Up General Health Question	**#**	**%**
Chest Pain or Discomfort *	2860	42%
Shortness of Breath *	3212	47%
Leg Pain *	4852	71%
Doctor Visit or Hospital Stay	6722	99%
High Blood Pressure	4906	71%
High Blood Pressure: New Diagnosis since baseline	1950	28%
Diabetes	1904	28%
Diabetes: New Diagnosis since baseline	975	14%
High Cholesterol Level	4793	70%
High Cholesterol Level: New Diagnosis since baseline	2351	34%
New/Different Doctor Treatment Recommendations *	4582	67%
MESA Test Results Received **	4282	63%
MESA Results Discussed with Doctor **	3652	54%
New Doctor Diagnosis/Tests Due to MESA Results **	863	13%
MI or Heart Attack	303	4%
Angina	211	3%
Heart Failure or CHF	213	3%
PVD/Intermittent Claudication/Pain in Legs Due to Artery Blockage	165	2%
Atrial Fibrillation	433	6%
Deep Vein Thrombosis/Leg Blood Clot	200	3%
TIA or Mini-Stroke	305	4%
Stroke	226	3%
Carotid Artery Blockage	184	3%
Lung Abnormality/Nodule	432	6%
Cancer	1206	17%
Hospital Stay	3762	54%
Nursing Home or Rehab Center Stay	665	9%
Exercise Treadmill or Bicycle Test *	2410	35%
Coronary Angiography or Heart Catheterization *	538	8%
Echocardiogram *	2683	39%
Coronary Bypass Surgery	145	2%
Angioplasty: Open Up Arteries to Heart	272	4%
Angioplasty: Open Up Arteries in Legs	96	1%
Carotid Ultrasound or Carotid Angiogram	781	11%
X-Ray/CAT scan/MRI/Other Study of Chest	3971	58%
Other Procedure/Surgery Related to Heart or Blood Vessels ***	2567	38%

* These questions were removed after Followup 12

** MESA test result questions were only asked at Follow-Ups 1 and 2

*** Early in MESA, some field centers recorded ECGs in this category and other field centers did not.

2.3 Initiated Investigations, by Source

The information in the following table was obtained from submitted *Initial Notification of Potential Event/Death* forms and therefore represents the number of investigations that originated from different sources of information. Due to a time lag between potential events detection at Follow-Up and the submission of an *Initial Notification of Potential Event/Death* form, some events may not yet be captured in this table. This table illustrates that follow-up calls remain the primary source for obtaining information on potential events, though field centers differ in the percentage of investigations initiated from other sources.

Report Generated 3/10/2018

Site Name	Follow-up telephone/mail contact		Investigating another event		Other clinic-initiated contact		Clinic visit		Ppt or spouse contacted field center		Obituary/ Local news		Other		Total
3: WFU	1961	49.0%	1482	37.0%	142	3.5%	65	1.6%	42	1.0%	176	4.4%	124	3.1%	4003
4: COL	2726	83.5%	384	11.8%	46	1.4%	20	0.6%	18	0.6%	0	0.0%	66	2.0%	3263
5: JHU	2539	90.0%	73	2.6%	53	1.9%	6	0.2%	33	1.2%	47	1.7%	34	1.2%	2822
6: UMN	2243	75.6%	427	14.4%	24	0.8%	16	0.5%	28	0.9%	20	0.7%	204	6.9%	2967
7: NWU	2196	88.2%	146	5.9%	37	1.5%	10	0.4%	31	1.2%	17	0.7%	46	1.8%	2489
8: UCLA	2277	95.0%	61	2.5%	11	0.5%	2	0.1%	6	0.3%	0	0.0%	36	1.5%	2396
Total	**13942**	**77.7%**	**2573**	**14.3%**	**313**	**1.7%**	**119**	**0.7%**	**158**	**0.9%**	**260**	**1.4%**	**510**	**2.8%**	**17940**

2.4 Participant Status, from Follow-up

After clinic exam 4, some of the key questions from the Medical History Form were added to the Follow-up 8 General Health form to provide the ability to track new onset of risk factor conditions. Follow-up 8 through 15 contacts were jointly supported by MESA and the MESA Air ancillary study, until the MESA Air study completed in July 2014. The current Followup 19 is supported by MESA and the newly re-funded MESA Air ancillary study.

Unlike clinic exams, these interviews should not be affected significantly by participants who cannot come to the clinic because of illness or who have relocated (unless new contact info was not provided to MESA). The clinics are required to complete a final Follow-up call interview with a proxy when the participant has passed away.

The following tables show the participant status ascertained at the three surveillance calls regardless of the contact window.

Reports Generated 3/10/2018

Follow-up 17

Site Name	Followup Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	828	815	98%	725	88%	89	74	15	0	13
4: COL	857	846	99%	735	86%	111	106	5	0	11
5: JHU	732	725	99%	664	91%	60	59	1	0	7
6: UMN	840	840	100%	774	92%	66	59	7	0	0
7: NWU	921	921	100%	859	93%	62	55	7	0	0
8: UCLA	981	981	100%	834	85%	146	144	2	0	0
Total	**5159**	**5128**	**99%**	**4591**	**89%**	**534**	**497**	**37**	**0**	**31**

Follow-up 18

Site Name	Followup Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	791	536	68%	495	63%	40	31	9	0	255
4: COL	830	551	66%	508	61%	40	38	2	0	279
5: JHU	712	708	99%	634	89%	71	64	6	1	4
6: UMN	819	808	99%	685	84%	122	118	4	0	11
7: NWU	877	719	82%	642	73%	75	64	11	0	158
8: UCLA	943	800	85%	635	67%	162	147	15	0	143
Total	**4972**	**4122**	**83%**	**3599**	**72%**	**510**	**462**	**47**	**1**	**850**

Follow-up 19

Site Name	Followup Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	773	199	26%	172	22%	27	26	1	0	574
4: COL	831	277	33%	234	28%	36	33	3	0	554
5: JHU	675	369	55%	326	48%	42	31	11	0	306
6: UMN	801	240	30%	209	26%	29	29	0	0	561
7: NWU	871	346	40%	287	33%	54	41	13	0	525
8: UCLA	934	384	41%	340	36%	43	35	8	0	550
Total	**4885**	**1815**	**37%**	**1568**	**32%**	**231**	**195**	**36**	**0**	**3070**

Summary for all follow-ups

Follow-up (dates)	Follow-up Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
FU 1 (8/01-5/03)	6772	6771	99.99%	6631	97.92%	140	124	16	0	1
FU 2 (9/02-1/04)	6762	6756	99.90%	6576	97.20%	180	114	65	1	6
FU 3 (6/03-12/04)	6737	6702	99.50%	6313	93.70%	389	301	88	0	35
FU 4 (3/04-7/05)	6673	6672	100.00%	6383	95.70%	289	186	101	2	1
FU 5 (1/05-6/06)	6581	6576	99.90%	6080	92.40%	496	403	86	7	5
FU 6 (9/05-4/07)	6484	6473	99.80%	6097	94.00%	376	272	102	2	11
FU 7 (9/06-5/08)	6342	6338	99.90%	5874	92.60%	464	368	86	10	4
FU 8 (6/07-1/09)	6236	6227	99.90%	5875	94.20%	352	287	56	9	9
FU 9 (8/08-2/10)	6166	6152	99.80%	5674	92.00%	478	408	70	0	14
FU 10 (4/09-11/10)	6041	6018	99.60%	4886	80.90%	1132	1083	47	2	23
FU 11 (3/10-8/11)	5952	5950	100.00%	5244	88.10%	706	587	119	0	2
FU 12 (8/11-1/13)	5780	5771	99.80%	5202	90.00%	569	497	72	0	9
FU 13 (5/12-10/13)	5555	5555	100.00%	5019	90.40%	521	459	62	0	0
FU 14 (3/13-9/14)	5456	5453	99.90%	4915	90.10%	532	486	46	0	3
FU 15 (1/14-6/15)	5334	5332	100.00%	4765	89.30%	562	515	47	0	2
FU 16 (10/14-12/15)	5184	3990	77.00%	3498	67.50%	487	458	29	0	1194
FU 17 (8/15-7/16)	5156	5128	99.50%	4591	89.00%	534	497	37	0	28
FU 18 (8/16-7/17)	4972	4122	82.90%	3599	72.40%	510	462	47	1	850
FU 19 (8/17-7/18)	4885	1815	37.20%	1568	32.10%	231	195	36	0	3070

These tables describe the status of all participants for whom a Follow-up Contact Cover Sheet is expected. Columns include:
-Follow-ups Expected: Number of participants not deceased or lost to Follow-up
-Contacts Made: Total number of Contact Cover sheets submitted regardless of interview completion
-Interviews Completed: Interview fully or partially completed by participant or proxy
-Interviews Not Completed: Interview not completed because participant was Unable or Refused
-Unable: Participant unable to complete interview (could not locate participant, participant reported deceased or had health issue)
-Refused: Participant contacted but refused to complete interview
- Unk.: Unknown -- Participant contacted but did not compete interview for unknown reason
-Contacts Not Made: Participant not deceased or lost to Follow-up, but no Contact Cover sheet received

2.5 Investigation Tracking Summary

The following table summarizes the progress that each field center is making toward initiating and completing investigations, as well as whether the completed and eligible investigations have been reviewed by the M&M Committee.

This table is sorted by follow-up (i.e., the follow-up phone interview that generated the event investigation, regardless of event date). To see a breakdown of "MD Review Not Yet Completed," please see Section 2.7.1

Report Generated 3/10/2018

FU	Status	WFU		Columbia		JHU		Minn		NWU		UCLA		Total	
1-16	Investigations Indicated	3717		3004		2506		2677		2166		2167		16241	
	Investigations Not Yet Initiated	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%	5	0%
	Investigations Initiated	3717	100%	3004	100%	2506	100%	2677	100%	2166	100%	2166	100%	16236	100%
	Investigations Not Yet Complete	28	1%	10	0%	7	0%	0	0%	3	0%	5	0%	53	0%
	Investigations Not Yet Complete - OVERDUE	26	1%	10	0%	3	0%	0	0%	1	0%	5	0%	45	0%
	Investigations Complete	3689	99%	2994	100%	2499	100%	2677	100%	2163	100%	2161	100%	16183	100%
	MD Review Not Indicated due to Insufficient Data	87	2%	172	6%	138	6%	75	3%	106	5%	92	4%	670	4%
	MD Review Not Indicated per MESA Protocol	2626	71%	2109	70%	1839	74%	1637	61%	1625	75%	1477	68%	11313	70%
	MD Review Indicated	976	26%	713	24%	522	21%	965	36%	432	20%	592	27%	4200	26%
	MD Review Not Yet Complete	17	2%	0	0%	7	1%	2	0%	1	0%	2	0%	29	1%
	MD Review Complete	36	4%	41	6%	17	3%	50	5%	17	4%	37	6%	198	5%
FU	**Status**	**WFU**		**Columbia**		**JHU**		**Minn**		**NWU**		**UCLA**		**Total**	
17	Investigations Indicated	91		88		90		105		117		99		590	
	Investigations Not Yet Initiated	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	Investigations Initiated	91	100%	88	100%	90	100%	105	100%	117	100%	99	100%	590	100%
	Investigations Not Yet Complete	7	8%	6	7%	3	3%	0	0%	5	4%	18	18%	39	7%
	Investigations Not Yet Complete - OVERDUE	6	7%	5	6%	2	2%	0	0%	5	4%	17	17%	35	6%
	Investigations Complete	84	92%	82	93%	87	97%	105	100%	112	96%	81	82%	551	93%
	MD Review Not Indicated due to Insufficient Data	4	5%	5	6%	0	0%	2	2%	3	3%	3	4%	17	3%
	MD Review Not Indicated per MESA Protocol	58	69%	58	71%	73	84%	63	60%	72	64%	55	68%	379	69%
	MD Review Indicated	22	26%	19	23%	14	16%	40	38%	37	33%	23	28%	155	28%
	MD Review Not Yet Complete	3	14%	1	5%	9	64%	2	5%	8	22%	9	39%	32	21%
	MD Review Complete	19	86%	18	95%	5	36%	38	95%	29	78%	14	61%	123	79%
FU	**Status**	**WFU**		**Columbia**		**JHU**		**Minn**		**NWU**		**UCLA**		**Total**	
18	Investigations Indicated	171		136		160		149		169		104		889	
	Investigations Not Yet Initiated	1	1%	0	0%	0	0%	0	0%	0	0%	2	2%	3	0%
	Investigations Initiated	170	99%	136	100%	160	100%	149	100%	169	100%	102	98%	886	100%
	Investigations Not Yet Complete	40	24%	90	66%	44	28%	0	0%	36	21%	36	35%	246	28%
	Investigations Not Yet Complete - OVERDUE	35	21%	48	35%	39	24%	0	0%	13	8%	25	25%	160	18%
	Investigations Complete	130	76%	46	34%	116	73%	149	100%	133	79%	66	65%	640	72%
	MD Review Not Indicated due to Insufficient Data	0	0%	0	0%	0	0%	3	2%	5	4%	6	9%	14	2%
	MD Review Not Indicated per MESA Protocol	89	68%	35	76%	106	91%	87	58%	104	78%	44	67%	465	73%
	MD Review Indicated	41	32%	11	24%	10	9%	59	40%	24	18%	16	24%	161	25%
	MD Review Not Yet Complete	20	49%	2	18%	8	80%	21	36%	16	67%	10	63%	77	48%
	MD Review Complete	21	51%	9	82%	2	20%	38	64%	8	33%	6	38%	84	52%

Table continues on the following page

FU	Status	WFU		Columbia		JHU		Minn		NWU		UCLA		Total	
19	Investigations Indicated	28		35		74		36		41		29		243	
	Investigations Not Yet Initiated	3	11%	2	6%	8	11%	0	0%	5	12%	2	7%	20	8%
	Investigations Initiated	25	89%	33	94%	66	89%	36	100%	36	88%	27	93%	223	92%
	Investigations Not Yet Complete	8	32%	24	73%	44	67%	10	28%	14	39%	15	56%	115	52%
	Investigations Not Yet Complete - OVERDUE	7	28%	4	12%	0	0%	0	0%	5	14%	5	19%	21	9%
	Investigations Complete	17	68%	9	27%	22	33%	26	72%	22	61%	12	44%	108	48%
	MD Review Not Indicated due to Insufficient Data	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	MD Review Not Indicated per MESA Protocol	15	88%	7	78%	21	95%	17	65%	20	91%	9	75%	89	82%
	MD Review Indicated	2	12%	2	22%	1	5%	9	35%	2	9%	3	25%	19	18%
	MD Review Not Yet Complete	2	100%	1	50%	1	100%	6	67%	2	100%	3	100%	15	79%
	MD Review Complete	0	0%	1	50%	0	0%	3	33%	0	0%	0	0%	4	21%
FU	**Status**	**WFU**		**Columbia**		**JHU**		**Minn**		**NWU**		**UCLA**		**Total**	
TOTAL	Investigations Indicated	4007		3265		2830		2967		2494		2401		17968	
	Investigations Not Yet Initiated	4	0%	2	0%	8	0%	0	0%	5	0%	5	0%	28	0%
	Investigations Initiated	4003	100%	3263	100%	2822	100%	2967	100%	2489	100%	2396	100%	17940	100%
	Investigations Not Yet Complete	83	2%	132	4%	98	3%	10	0%	59	2%	76	3%	458	3%
	Investigations Not Yet Complete - OVERDUE	74	2%	67	2%	44	2%	0	0%	24	1%	52	2%	261	1%
	Investigations Complete	3920	98%	3131	96%	2724	97%	2957	100%	2430	98%	2320	97%	17482	97%
	MD Review Not Indicated due to Insufficient Data	91	2%	177	6%	138	5%	80	3%	114	5%	101	4%	701	4%
	MD Review Not Indicated per MESA Protocol	2788	71%	2209	71%	2039	75%	1804	61%	1821	75%	1585	68%	12246	70%
	MD Review Indicated	1041	27%	745	24%	547	20%	1073	36%	495	20%	634	27%	4535	26%
	MD Review Not Yet Complete	42	4%	4	1%	25	5%	31	3%	27	5%	24	4%	153	3%
	MD Review Complete	999	96%	741	99%	522	95%	1042	97%	468	95%	610	96%	4382	97%

2.6 Stroke Investigations

As of March 2018, 734 potential cerebrovascular events have been designated eligible for review, 664 of which have been reviewed and classified by the physician reviewers. The remaining events are pending assignment or review.

Report Generated 3/10/2018

Site	Eligible for Review		Cerebro Reviews Completed
	Cerebro Only Events	Cerebro / Cardiac Combination Events	
3: WFU	116	44	146
4: COL	75	19	92
5: JHU	57	25	67
6: UMN	140	43	169
7: NWU	70	14	75
8: UCLA	91	30	115
Total	549	175	664

2.7 MD Reviews

2.7.1 Review Completion

The following table documents the rate at which completed investigations are assigned to and reviewed by the M&M subcommittee physicians. At any given period in time there will be outstanding reviews that are pending information or final decisions. Unassigned investigations include those to be assigned in the coming months, as well as those pending field center collection of records for same-participant investigations with earlier event dates (or those within 30 days).

Report Generated 3/10/2018

	Out of Hospital		In Hospital		Total	
MD Review Indicated	1063	-	3551	-	**4612**	**-**
MD Review Not Yet Complete	51	5%	114	3%	**163**	**4%**
Pending Review Assignment	31	61%	50	44%	**81**	**50%**
Assigned, Pending Reviewer Completion	20	39%	64	56%	**82**	**50%**
MD Review Complete	1012	95%	3437	97%	**4449**	**96%**

2.7.2 Death Investigation and Classification

The following table summarizes the investigation and review status of all deaths. The classifications for reviewed deaths listed here are also included in Section 2.7.3.3 below (Participants with Endpoints from Completed Reviews).

Report Generated 3/10/2018

	Total	Wake Forest	Columbia	Johns Hopkins	Minnesota	North western	UCLA
All Deaths (Pending and Completed)	**1569**	284	236	301	210	246	292
Death Pending Investigation	**262**	56	49	48	14	46	49
Review Ineligible (Non-CVD)	**825**	143	103	170	126	148	135
Review Complete	**493**	88	86	85	71	55	108
CHD Death	**156**	30	23	27	15	21	40
Stroke Death	**58**	13	6	8	9	10	12
Other Athero Death	**16**	2	4	4	4	1	1
Other CVD Death	**90**	16	23	15	9	14	13
Non-CVD Death	**168**	27	29	31	32	9	40
Unknown Cause Death	**5**	0	1	0	2	0	2

2.7.2.1 Death Investigation, underlying cause by ICD-10 category

The following table summarizes the deaths counted above by the major ICD-10 classification categories.

Report Generated 3/10/2018

Class	Description	Num
A, B	Certain infectious and parasitic diseases	50
C	Neoplasms	448
D	Neoplasms or blood-related diseases	16
E	Endocrine, nutritional and metabolic diseases	64
F	Mental and behavioural disorders	70
G	Diseases of the nervous system	78
I	Diseases of the circulatory system	410
J	Diseases of the respiratory system	118
K	Diseases of the digestive system	51
L	Diseases of the skin and subcutaneous tissue	1
M	Diseases of the musculoskeletal system and connective tissue	9
N	Diseases of the genitourinary system	39
R	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	16
V-Z	External causes of morbidity and mortality	71
	Events Eligibility form not yet completed	182

2.7.2.2 Death Investigation, underlying cause, most common ICD-10 codes

The following table lists the most common underlying causes of death among the deaths counted above, by ICD-10 code.

Report Generated 3/10/2017

ICD-10	Count	Description
C34.9	117	BRONCHUS OR LUNG, UNSPECIFIED
I25.1	62	ATHEROSCLEROTIC HEART DISEASE
F03.	59	UNSPECIFIED DEMENTIA
I25.0	44	ATHEROSCLEROTIC CARDIOVASCULAR DISEASE, SO DESCRIBED
I21.9	44	ACUTE MYOCARDIAL INFARCTION, UNSPECIFIED
J44.9	41	CHRONIC OBSTRUCTIVE PULMONARY DISEASE, UNSPECIFIED
G30.9	38	ALZHEIMER'S DISEASE, UNSPECIFIED
C25.9	37	PANCREAS, UNSPECIFIED
I64.	32	STROKE, NOT SPECIFIED AS HEMORRHAGE OR INFARCTION
C18.9	31	COLON, UNSPECIFIED
E14.9	26	WITHOUT COMPLICATIONS
J18.9	26	PNEUMONIA, UNSPECIFIED
I50.0	25	CONGESTIVE HEART FAILURE
C61.	21	MALIGNANT NEOPLASM OF PROSTATE
G20.	19	PARKINSON'S DISEASE
A41.9	19	SEPTICEMIA, UNSPECIFIED
C56.	15	MALIGNANT NEOPLASM OF OVARY
C22.0	15	LIVER CELL CARCINOMA
C16.9	15	STOMACH, UNSPECIFIED
Other	903	

2.7.3 Events Data Release Update: Participants with CHD & CVD Combination Endpoints (Average of 12.4 years of surveillance)

The following table summarizes combination endpoints from the current cumulative events dataset update (events and follow-up thru 12/31/2015 released in October 2017) and available in the Events subsection of the Exam Datasets section of the MESA Internal web site.

The table displays the number of participants with an endpoint. In other words, unlike in Section 2.7.3.4, multiple instances of the same endpoint occurring in the same participant are counted only once in the table below. "Definite" and "probable" classifications are combined for each endpoint. The rate of combination endpoint events is per 10,000 person-years.

Report Generated 3/10/2018

Site Name	CHD Hard		CHD All		CVD Hard		CVD All	
	Ppts	Rate	Ppts	Rate	Ppts	Rate	Ppts	Rate
3: Wake Forest	84	62.4	119	90.6	137	103.4	180	139.0
4: Columbia	66	49.4	100	76.2	105	79.5	157	120.7
5: Johns Hopkins	61	47.9	86	68.8	93	73.9	134	108.3
6: Minnesota	78	59.4	113	87.7	128	99.6	169	133.8
7: Northwestern	60	41.1	95	66.5	89	61.5	133	93.7
8: UCLA	82	51.7	118	75.7	127	81.0	168	108.8
Total	**431**	**51.9**	**631**	**77.4**	**679**	**82.8**	**941**	**116.8**

Definition of Combination Endpoints

Endpoint Combination	MI	Angina	Resusc. Cardiac Arrest	Stroke	CHD Death	Stroke Death	Other Athero. Death	Other CVD Death
CHD Hard	X		X		X			
CHD All	X	X *	X		X			
CVD Hard	X		X	X	X	X		
CVD All	X	X *	X	X	X	X	X	X

* Note: If Angina was classified "probable" rather than "definite," it is included in CHD All and CVD All only if a coronary revascularization was performed at the same time or afterwards.

2.7.3.1 Participants with CHD & CVD Combination Endpoints (Baseline to Present)

The following table displays the number of participants with an endpoint. In other words, multiple instances of the same endpoint occurring in the same participant are counted only once in the table below. "Definite" and "probable" classifications are combined for each endpoint.

Note: The table below includes all data classified to date; surveillance time varies widely for participants whose data are included here. For data derived from uniform surveillance time, please see tables specifying an average surveillance time.

Report Generated 3/10/2018

Site Name	CHD Hard	CHD All	CVD Hard	CVD All
3: Wake Forest	88	122	141	184
4: Columbia	67	101	106	158
5: Johns Hopkins	61	86	93	134
6: Minnesota	83	118	132	174
7: Northwestern	62	98	91	137
8: UCLA	85	121	131	172
Total	**446**	**646**	**694**	**959**

Definition of Combination Endpoints

Endpoint Combination	MI	Angina	Resusc. Cardiac Arrest	Stroke	CHD Death	Stroke Death	Other Athero. Death	Other CVD Death
CHD Hard	X		X		X			
CHD All	X	X *	X		X			
CVD Hard	X		X	X	X	X		
CVD All	X	X *	X	X	X	X	X	X

* Note: If Angina was classified "probable" rather than "definite," it is included in CHD All and CVD All only if a coronary revascularization was performed at the same time or afterwards.

2.7.3.2 Events Data Release Update: Participants with Endpoints from Completed Reviews (Average of 12.4 years of surveillance)

The following table summarizes endpoints from the current cumulative events dataset update (events and follow-up thru 12/31/2015 released in October 2017) and available in the Events subsection of the Exam Datasets section of the MESA Internal web site.

The table displays the number of participants with an endpoint (as in Section 2.7.3.1). Multiple instances of the same endpoint occurring in the same participant are counted only once in the table below. "Definite" and "probable" classifications are combined for each endpoint. The rate of endpoint events is per 10,000 person-years. The "Death: Non-CVD – Inelig. for Review" category includes only deaths that have been finalized; non-CVD deaths pending investigation or review are not included.

Report Generated 3/10/2018

Site Name		MI	Resusc. Cardiac Arrest	Angina	CHF	PVD	Coro. Revasc.	Stroke	TIA	Death: CHD	Death: Stroke	Death: Other Athero	Death: Other CVD	Death: Non-CVD	Death: Unknown	Death: Non-CVD - Inelig. for Review
3: WFU	Ppts	55	10	62	81	14	75	58	26	29	13	2	14	25	0	131
	Rate	40.9	7.3	46.8	60.6	10.3	57.0	42.9	19.2	20.7	9.3	1.4	10.0	17.8	0.0	93.5
4: COL	Ppts	46	7	67	59	18	63	44	13	22	6	4	23	26	1	110
	Rate	34.5	5.2	51.3	44.3	13.4	47.9	32.9	9.7	15.6	4.2	2.8	16.3	18.4	0.7	77.8
5: JHU	Ppts	34	7	39	38	23	50	38	13	27	8	4	15	30	0	155
	Rate	26.7	5.4	31.2	30.0	18.0	40.0	29.9	10.2	19.5	5.8	2.9	10.8	21.7	0.0	111.9
6: UMN	Ppts	72	5	66	64	35	84	59	25	13	8	4	8	32	2	114
	Rate	54.8	3.7	50.7	48.5	26.5	64.9	44.9	18.8	9.4	5.8	2.9	5.8	23.1	1.4	82.3
7: NWU	Ppts	42	6	47	37	11	70	33	8	20	7	1	12	6	0	129
	Rate	28.8	4.1	32.5	25.3	7.5	48.9	22.5	5.4	12.9	4.5	0.6	7.8	3.9	0.0	83.5
8: UCLA	Ppts	51	2	58	52	16	58	54	12	38	11	1	13	38	2	129
	Rate	32.2	1.2	37.1	32.8	10.0	36.9	34.1	7.5	21.8	6.3	0.6	7.5	21.8	1.1	74.2
Total	**Ppts**	**300**	**37**	**339**	**331**	**117**	**400**	**286**	**97**	**149**	**53**	**16**	**85**	**157**	**5**	**768**
	Rate	**36.1**	**4.4**	**41.4**	**39.9**	**14.0**	**48.9**	**34.3**	**11.6**	**16.8**	**6.0**	**1.8**	**9.6**	**17.7**	**0.6**	**86.6**

2.7.3.3 Participants with Endpoints from Completed Reviews (Baseline to Present)

The following table displays the number of participants with an endpoint. In other words, unlike in Section 2.7.3.4, multiple instances of the same endpoint occurring in the same participant are counted only once in the table below. "Definite" and "probable" classifications are combined for each endpoint. The "Death: Non-CVD – Inelig. for Review" category includes only deaths that have been finalized; non-CVD deaths pending investigation or review are not included.

Note: The table below includes all data classified to date; surveillance time varies widely for participants whose data are included here. For data derived from uniform surveillance time, please see tables specifying an average surveillance time.

Report Generated 3/12/2018

Site Name	MI	Resusc. Cardiac Arrest	Angina	CHF	PVD	Coro. Revasc.	Stroke	TIA	Death: CHD	Death: Stroke	Death: Other Athero	Death: Other CVD	Death: Non-CVD	Death: Unknown	Death: Inelig. For Review
3: WFU	57	11	64	85	14	76	58	26	30	13	2	15	26	0	145
4: COL	46	7	67	60	18	63	44	13	23	6	4	23	28	1	114
5: JHU	34	7	39	40	23	50	38	13	27	8	4	15	31	0	171
6: UMN	75	5	67	67	35	87	59	25	15	9	4	9	32	2	125
7: NWU	43	6	49	39	11	73	33	8	21	7	1	14	9	0	145
8: UCLA	52	2	58	53	16	58	55	12	40	11	1	13	40	2	144
Total	**307**	**38**	**344**	**344**	**117**	**407**	**287**	**97**	**156**	**54**	**16**	**89**	**166**	**5**	**844**

2.7.3.4 Endpoints from Completed Reviews (Baseline to Present)

The following table shows the results from all finalized reviews. Unlike in Sections 2.7.3 through 2.7.3.3, multiple endpoints occurring more than once in the same participant are included here (e.g., if a participant had two MIs, they are both recorded here).

Note: The table below includes all data collected to date; surveillance time varies widely for participants whose data are included here. For data derived from uniform surveillance time, please see tables specifying an average surveillance time.

Report Generated 3/10/2018

	Site Name	MI		Rescusitated Cardiac Arrest		Angina		CHF		PVD		Coro. Revasc.	Stroke	TIA	Death					
		def	prob	def	prob	def	prob	def	prob	def	prob				CHD	Stroke	Other Athero	Other CVD	Non-CVD	Unknown
Out of Hospital	3: WFU	2	0	1	0	11	10	7	9	9	0	9	5	4	25	5	1	11	13	0
	4: COL	0	0	0	0	10	14	2	3	9	0	6	2	2	19	3	2	17	11	1
	5: JHU	0	1	0	0	7	8	2	3	18	1	5	6	1	25	4	3	8	8	0
	6: UMN	1	0	0	0	12	12	5	7	23	3	6	9	8	10	6	2	6	8	1
	7: NWU	0	0	0	0	10	5	0	0	8	3	4	4	0	18	3	1	12	3	0
	8:UCLA	0	1	0	0	5	5	2	3	6	1	0	6	1	34	4	1	11	8	2
	Total	**3**	**2**	**1**	**0**	**55**	**54**	**18**	**25**	**73**	**8**	**30**	**32**	**16**	**131**	**25**	**10**	**65**	**51**	**4**
In Hospital	3: WFU	37	34	9	1	45	16	98	44	19	1	85	63	26	5	8	1	4	14	0
	4: COL	22	29	6	1	53	20	57	30	28	1	77	49	11	4	3	2	6	18	0
	5: JHU	24	13	6	1	21	11	35	10	20	1	52	34	13	2	4	1	7	23	0
	6: UMN	54	33	2	3	51	23	77	22	46	2	104	66	22	5	3	2	3	24	1
	7: NWU	32	23	6	0	51	9	48	11	10	1	91	35	8	3	4	0	2	6	0
	8:UCLA	30	25	2	0	44	21	46	19	10	1	63	54	11	6	7	0	2	32	0
	Total	**199**	**157**	**31**	**6**	**265**	**100**	**361**	**136**	**133**	**7**	**472**	**301**	**91**	**25**	**29**	**6**	**24**	**117**	**1**
Total		**202**	**159**	**32**	**6**	**320**	**154**	**379**	**161**	**206**	**15**	**502**	**333**	**107**	**156**	**54**	**16**	**89**	**168**	**5**

2.8 Investigations Ineligible for Review Due to "Insufficient Data to Classify"

The following table shows the initial participant-reported event type for investigations ultimately ending as ineligible for review because there was "Insufficient Data to Classify." Potential events receive this designation only after several attempts have been made to obtain sufficient records. The most common reasons for this designation are the following: participant refusal to provide/renew consent for release of records, participant failure to sign/return consent form, inability to locate participant to obtain/renew consent, hospital/physician failure to respond to record requests. Investigations initially reported as a cardiac/cerebrovascular combination case are counted twice in the total column.

The number of investigations classified as 'Insufficient Data to Classify' has generally decreased steadily since the early Follow-ups. Events investigation completion is estimated at about 97% from Follow-up 16, about 93% from Follow-up 17 and about 72% from Followup 18 (Followup 19 is currently underway).

Reports Generated 3/10/2018

	FU-1	FU-2	FU-3	FU-4	FU-5	FU-6	FU-7	FU-8	FU-9	FU-10	FU-11	FU-12	FU-13	FU-14	FU-15	FU-16	FU-17	FU-18	FU-19
Insufficient Data to Classify	81	47	66	38	47	33	26	28	39	26	44	48	61	51	51	29	17	21	0

Note: The table below includes all data finalized to date; surveillance time varies widely for participants whose data are included here.

	Cardiac								Cerebrovascular								Non-CVD Non-Fatal Hospitalized		Non-CVD Death		Unknown		Total	
	Hospitalized				Out of Hospital				Hospitalized				Out of Hospital											
	Death		Non-Fatal		Death		Non-Fatal		Death		Non-Fatal		Death		Non-Fatal									
Site	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
3: WFU	1	1%	9	10%	0	0%	9	10%	0	0%	2	2%	0	0%	6	7%	44	49%	0	0%	19	21%	90	100%
4: COL	0	0%	27	15%	0	0%	21	12%	0	0%	5	3%	0	0%	11	6%	111	62%	3	2%	1	1%	179	100%
5: JHU	0	0%	17	12%	0	0%	34	25%	0	0%	10	7%	0	0%	11	8%	65	47%	0	0%	1	1%	138	100%
6: UMN	0	0%	10	12%	0	0%	13	16%	0	0%	1	1%	0	0%	2	2%	56	68%	0	0%	0	0%	82	100%
7: NWU	0	0%	7	6%	0	0%	18	16%	0	0%	3	3%	0	0%	3	3%	78	67%	5	4%	2	2%	116	100%
8: UCLA	0	0%	13	13%	1	1%	15	15%	1	1%	2	2%	1	1%	8	8%	61	59%	1	1%	0	0%	103	100%
Total	**1**	**0%**	**83**	**12%**	**1**	**0%**	**110**	**16%**	**1**	**0%**	**23**	**3%**	**1**	**0%**	**41**	**6%**	**415**	**59%**	**9**	**1%**	**23**	**3%**	**708**	**100%**

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Section 3: Exam 6

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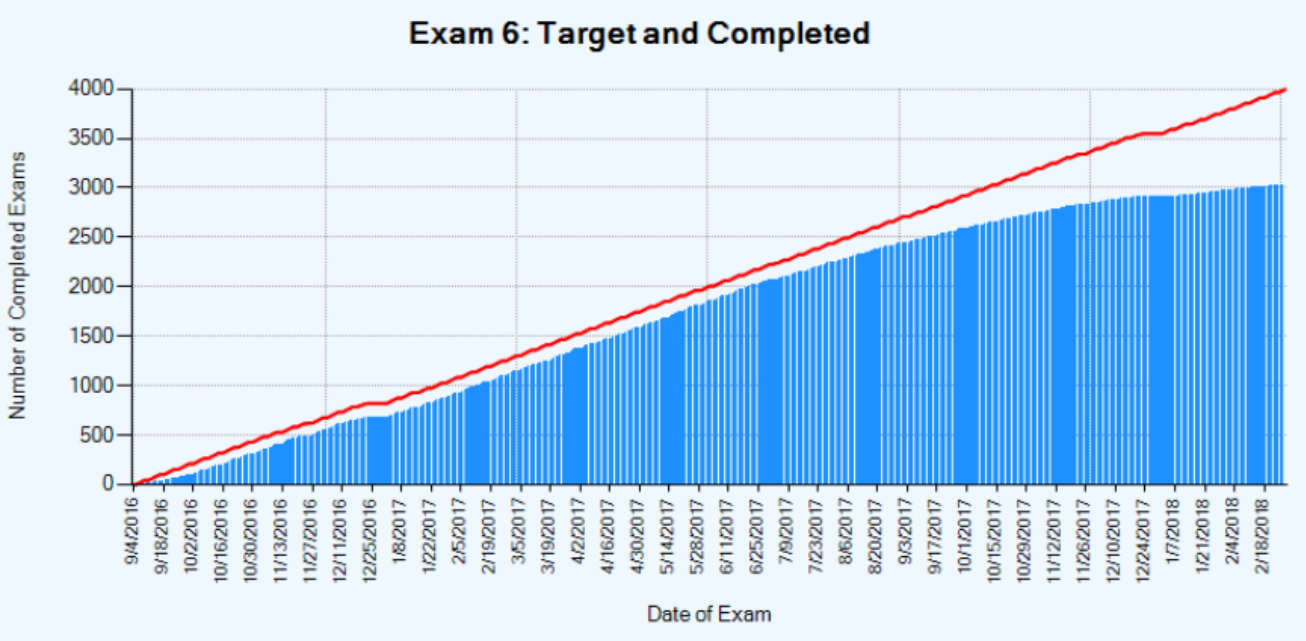
3.1 Exam 6 through February 28, 2018

Percent of Exam 6 completed contains all participants still enrolled at each site (not deceased or dropout and adjusted for transfers).

3.1.1 Actual vs. Target Number of Clinic Visits

To complete Exam 6 by the end of the exam period, the sites must complete between 1.5 and 2 clinic visits per day (depending on number of enrolled participants. The tables and graphs below display the Exam 6 progress overall and by clinic. The following tables include all Exam 6 data received at the Coordinating Center (CC) on or before February 28, 2018.

3.1.2.1 All Sites



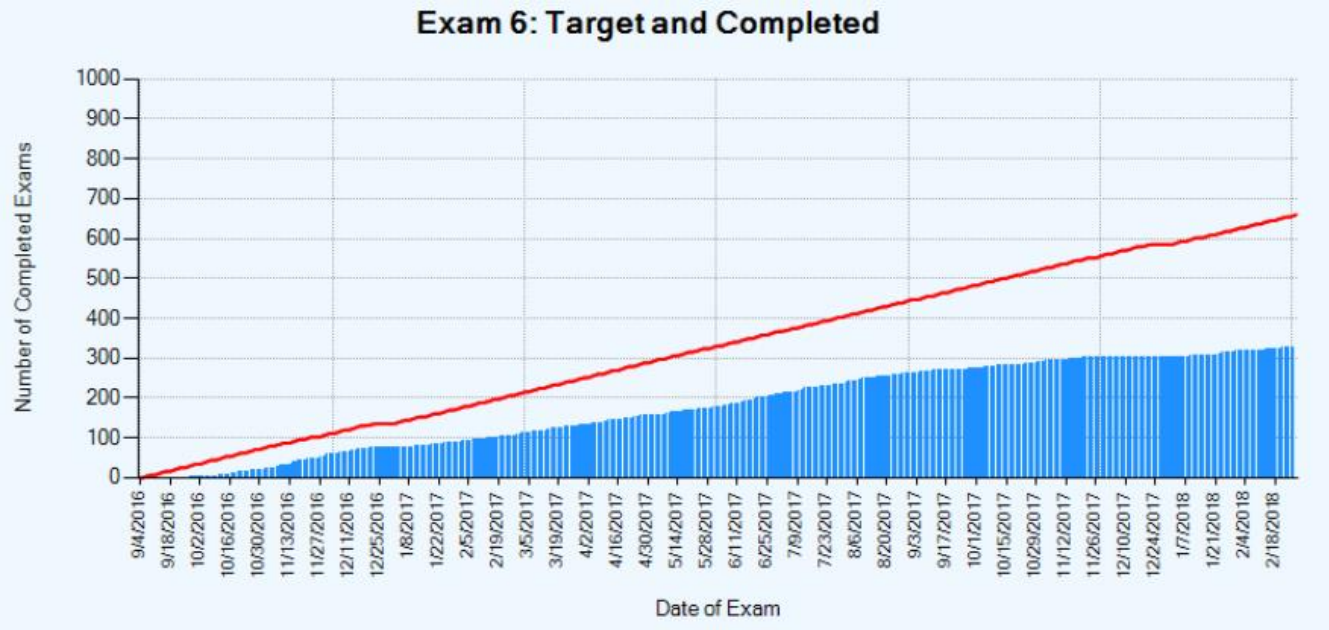
Comments:
Targets above assume 18 months for Exam 6 visits, a typical holiday schedule, approximately 5 clinic days per week and approximately 11 participants per day.
As of 2/28/2018, 3034 participants completed Exam 6 core exam. If on target, 3965 participants would have completed the exam (~11 ppts/day), so retention is currently at 78% of the target.

Number of Visits per day/month by site for 18-month exam

	Total ppts	Ppts/month	Ppts/day*
WFU	646	36	1.7
COL	696	39	1.9
JHU	565	31	1.5
UMN	663	37	1.8
NWU	753	42	2.0
UCLA	677	38	1.8
Total	4000	222	10.1

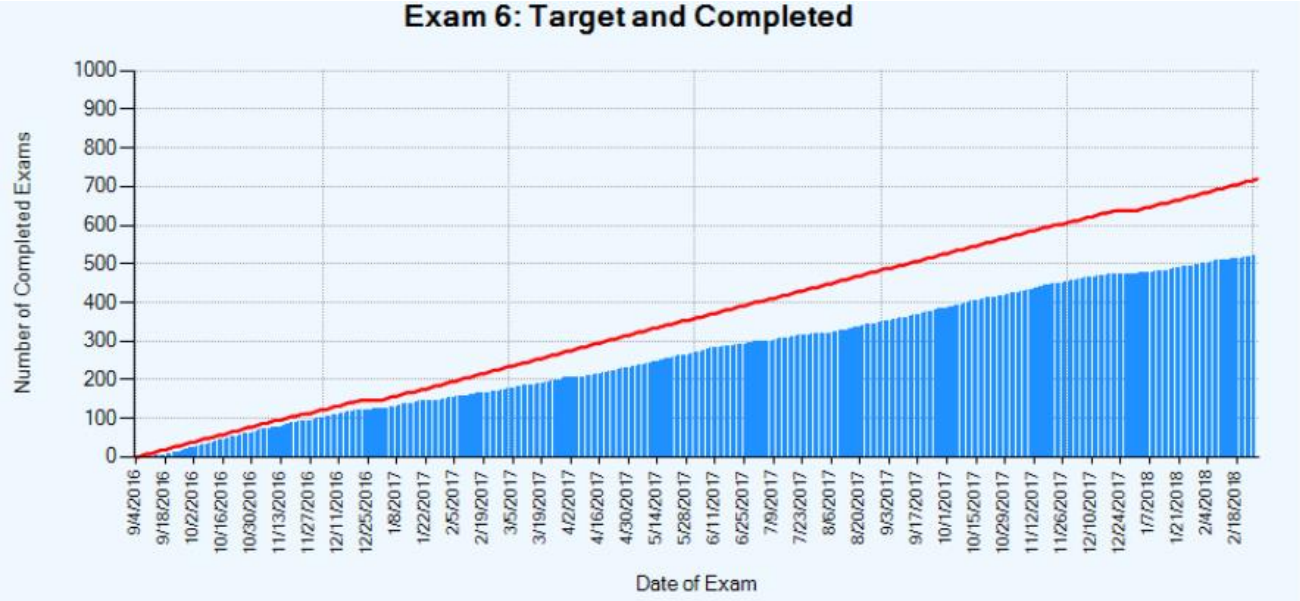
*The above table estimates do not take into account typical holiday schedule. As a result, the number needed on each clinic day will be a little higher in order to stay on target.

3.1.2.2 Wake Forest



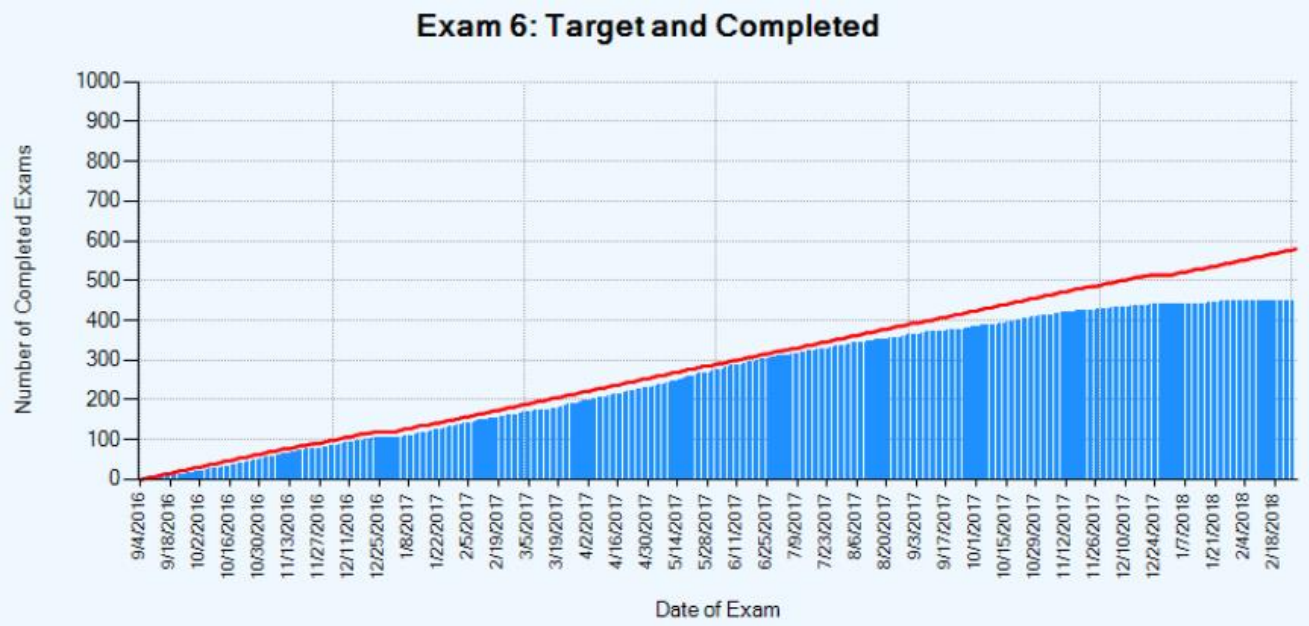
WFU completed 327 Exam 6 visits (50% of goal, target as of 2/28/2018 is 654).

3.1.2.3 Columbia



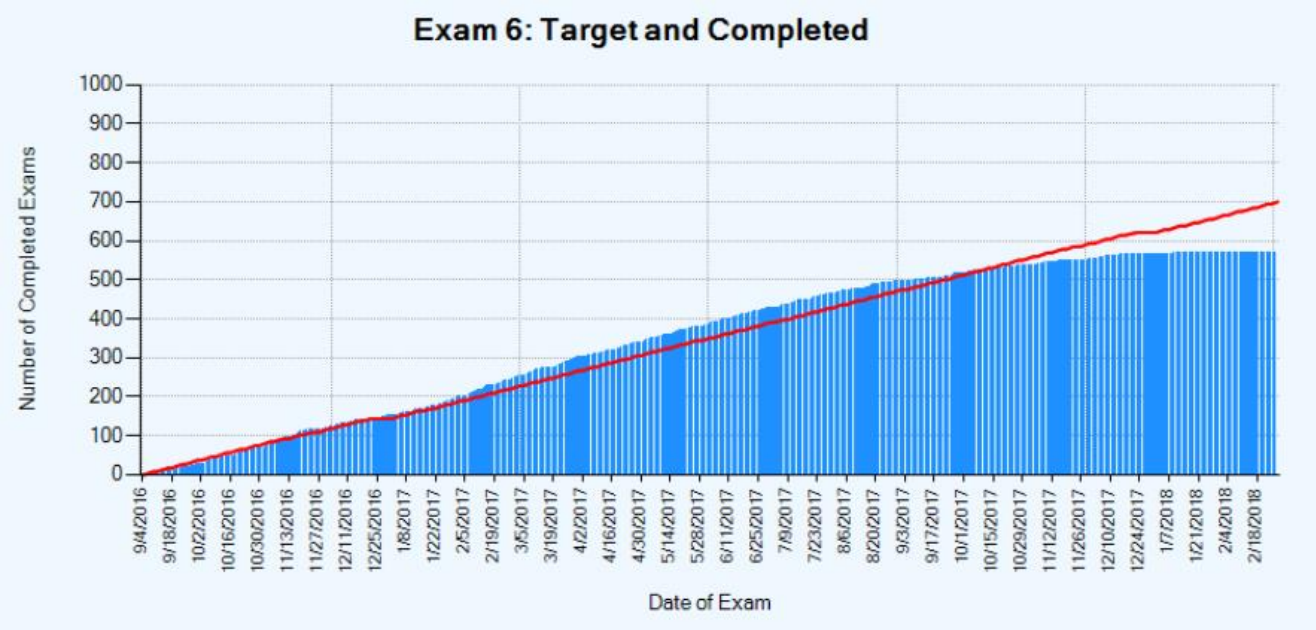
COL completed 520 Exam 6 visits (73% of goal, target as of 2/28/2018 is 714).

3.1.2.4 Johns Hopkins



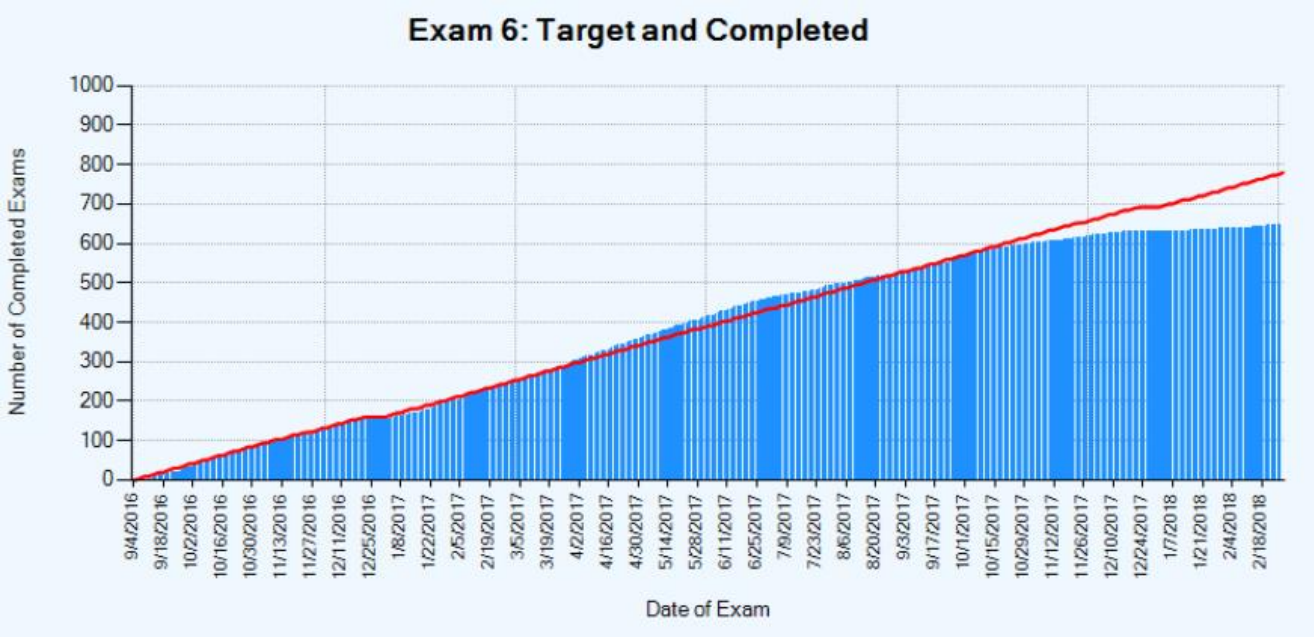
JHU completed 450 Exam 6 visits (78% of goal, target as of 2/28/2018 is 575).

3.1.2.5 Minnesota



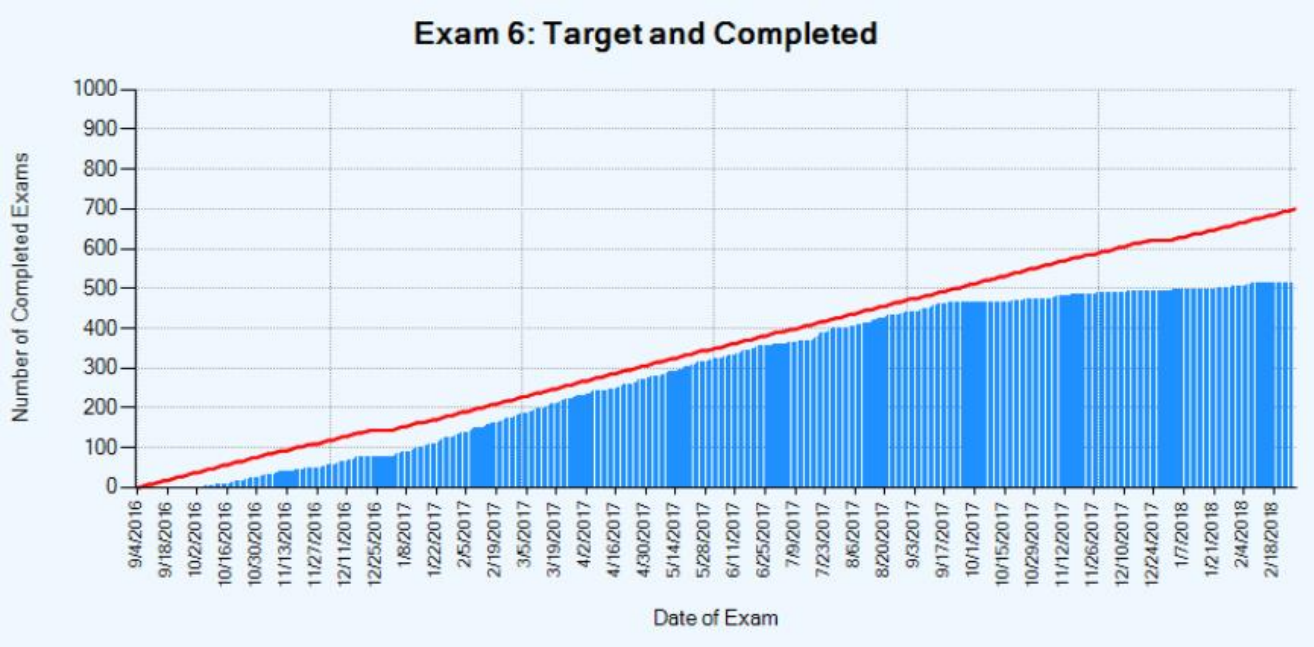
Minn completed 568 Exam 6 visits (82% of goal, target as of 2/28/2018 is 694).

3.1.2.6 Northwestern



NWU completed 648 Exam 6 visits (84% of goal, target as of 2/28/2018 is 773).

3.1.2.7 UCLA



UCLA completed 515 Exam 6 visits (74% of goal, target as of 2/28/2018 is 694).

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3.2 Ancillary Study Completion

3.2.1 Core Exam Components

Site	Visits[1]	Home Visits	Blood Pressure	Oximetry	Anthro pometry	Phle botomy	Urine	Medi cations	Medical History	Personal History	Physical Function
WFU	327	0	324	324	326	311	312	324	325	324	323
COL	520	31	519	517	517	491	454	519	519	516	484
JHU	450	27	446	448	449	441	400	450	450	450	423
MN	568	14	568	568	568	562	550	568	568	568	555
NWU	648	0	648	648	648	632	641	646	645	640	639
UCLA	515	5	514	514	514	498	504	514	514	514	509
Total	3028	77	3019	3019	3022	2935	2861	3021	3021	3012	2933

[1] Visits column includes both in-clinic and home visits.

3.2.2 Atrial Fibrillation Component Consent

Site	Selected HR Monitor	Consented HR Monitor	Consented to Cog Function Tests	Consented to Brain MRI
WFU	327	223	325	227
COL	520	296	298	293
JHU	450	276	401	272
MN	568	327	347	341
NWU	648	337	334	335
UCLA	515	346	350	348
Total	3028	1805	2055	1816

3.2.3 Atrial Fibrillation Component Completion and Alerts

Site	Eligible and Consented	Patch #1 Applied[1]	Patch #2 Mailed to Ppt	Cog Function Testing Complete	# with prior Afib (including E6 self-report)	# Alerts
WFU	189	172	85	163	21	6
COL	271	233	96	227	33	3
JHU	212	203	108	200	25	6
MN	303	287	196	283	35	6
NWU	299	279	135	276	37	10
UCLA	319	315	46	313	43	11
Total	1593	1489	666	1462	194	42

[1] Total target sample size is 1,500 participants.

3.2.4 Heart Failure Components

Site	Selected[2]	Echo	Arterial Stiffness	Physical Activity	KCCQ-12	6MW	6MW Exclusion
WFU	327	223	226	323	322	277	37
COL	520	487	483	484	485	400	81
JHU	450	418	417	423	423	349	74
MN	568	547	525	555	555	447	99
NWU	648	641	627	639	644	490	144
UCLA	515	504	490	509	508	453	52
Total	3028	2820	2768	2933	2937	2416	487

[2] Target sample size is all participants who complete in-clinic Exam 6 visit.

3.2.5 UKNOW Urinary Symptoms Questionnaire

Site	Selected	ICIQ-FLUTS/MLUTS[3]
WFU	327	323
COL	520	484
JHU	450	422
MN	568	555
NWU	648	637
UCLA	515	509
Total	3028	2930

[3] Target sample size is all participants who complete in-clinic Exam 6 visit.

3.2.6 MESA Memory

Total MESA, N=675	Cognitive Testing		MRI		Aβ-PET		LP sub-study		
	Phase 1	Completed	n	Completed	n	Completed		n	Completed
AFIB	177	26%					AFiB		
Scheduled	175		0		0		Scheduled	0	
Complete	175		0		0		Complete	0	
In process	2		0		0		In process	0	
Memory	145	21%					Memory		
Scheduled	144	99%	0	0%	6	5%	Scheduled	1	6%
Complete	144	99%	109	93%	67	54%	Complete	8	50%
In process	1	0%	7	6%	49	40%	In process	7	44%
Total Sample	322	48%	294	91%	300	93%	Total Sample	16	11%
Not Enrolled	2	0%	28	9%	22	7%	Not Enrolled	59	41%

Target sample (n=550, 80% of 675) for cognitive testing, MRI and Aβ-PET.
LP sub-study has a target sample size of 200 (37% of 540).

3.2.7 Lung/Lung NS Components

Site	Selected ANY Lung CT	Consented ANY Lung CT	Completed ANY Lung CT[1]	Selected Contrast CT	Consented Contrast CT	Completed Contrast CT	Not eligible for Contrast	Consented to Spirometry	Completed Spirometry	Completed Lung Q
WFU	327	296	188	170	147	67	30	185	153	186
COL	468	401	345	337	199	125	46	343	321	344
JHU	418	367	362	306	185	143	30	359	337	362
MN	568	522	507	196	161	114	52	504	468	507
NWU	607	476	406	479	272	145	111	403	353	406
UCLA	477	453	250	377	297	81	64	250	240	250
Total	2865	2515	2058	1865	1261	675	333	2044	1872	2055

[1] Target total sample size is 3,260 (2,610 Lung III + 650 nonsmokers)

3.2.8 Spirometry Completion

Site	Exam 6 Visits	Selected for Spirometry	Consented to Spirometry	Completed Pre-BD Spirometry	Not eligible for Pre-BD Spirometry	Pre-BD Spirometry Not Complete	Selected Post-BD Spirometry	Completed Post-BD Spirometry	Post-BD Spirometry Not Complete	Completed Lung Questionnaire
WFU	327	327	297	237	16	44	59	41	19	234
COL	520	468	422	386	17	19	116	86	30	386
JHU	450	418	388	362	17	9	122	88	34	362
MN	568	568	538	498	16	24	115	42	73	498
NWU	648	607	583	479	22	82	118	45	73	479
UCLA	515	477	465	421	13	31	107	48	59	420
Total	3028	2865	2693	2383	101	209	637	350	288	2379

3.2.9 MESA INVITE Completion

		Total Screeners Complete						Screening Result							Consent status for those eligible			Study Drug Status for those consented	
		E6 Complete before INVITE start		E6 Complete after INVITE start		E6 Pending													
Site	Selected	E6 Visits	Screener Complete	E6 Visits	Screener Complete	E6 not complete	Screener Complete	Refused		Not Eligible		Eligible		Missing/ Incomplete	Eligible and Consented	Eligible and did not Consent	Eligible missing consent	Consented Study Drug Dispensed[1]	Consented Study Drug not Dispensed
WFU	707	147	24	139	106	421	0	54	42%	26	20%	50	38%	33	48	2	0	38	10
COL	736	147	38	299	260	290	0	101	34%	81	27%	116	39%	39	111	2	3	110	1
JHU	631	91	91	304	304	236	5	127	32%	163	41%	110	28%	0	106	1	3	106	0
NWU	817	225	166	364	361	228	0	145	28%	254	48%	128	24%	3	125	3	0	125	0
Total	2891	610	319	1106	1031	1175	5	427	32%	524	39%	404	30%	75	390	8	6	379	11

Site	6 Plus Visits	2-Week phone call Due		6A Visit Due			Results Letter Sent	Results Letter missing >12 weeks after 6A visit
		complete	not done	complete	not done	refused		
WFU	6	34	5	20	13	2	8	5
COL	22	107	1	69	11	1	37	1
JHU	53	117	1	95	6	4	52	0
NWU	61	123	1	90	13	2	42	1
Total	142	381	8	274	43	9	139	7

[1] Target sample size is 1,600

3.2.10 MESA INVITE Reasons for Ineligibility

Site	Not Eligible	Exceed Vit D Dose	Medication Exclusion	Kidney Stone	Kidney Failure	Primary hyper-parathyroidism	Sarcoidosis	Elevated Serum Calcium	Allergy	Enrolled in clinical trial	Excluded for other reasons
WFU	26	16	0	2	0	1	0	1	0	0	6
COL	81	52	0	2	0	4	2	7	2	2	10
JHU	163	135	0	7	0	1	1	2	0	9	14
NWU	254	167	0	9	0	0	4	5	0	6	74
Total	524	370	0	20	0	6	7	15	2	17	104

3.2.11 MESA Epigenetics of Atherosclerosis Carotid Ultrasound

Site	Selected and had E6 Visit	Selected and Consented	Consented and Completed N (%)[1]	Consented, no completion form rec'd	Not selected but completed	Consented, completion form rec'd, test not	Reason: Equipment Malfunction	Reason: Time/Staff Issues	Reason: Refused	Reason: Physically Unable	Reason: Other
WFU	262	213	41	165	0	3	0	2	1	0	0
COL	420	311	266	44	0	1	0	0	0	0	1
JHU	301	270	264	5	0	1	0	0	1	0	0
MINN	385	352	340	11	0	1	1	0	0	0	0
Total	1368	1146	911	225	0	6	1	2	2	0	1

[1] Target sample size is 1,892 (or as many as possible of those who completed Exam 5 Epigenetics AS)

3.2.12 MESA Epigenetics Blood Draw

Site	Selected	Eligible and had Exam 6	Complete or partially complete[1]	Not complete	Missing completion status
WFU	808	327	310	6	11
COL	841	520	256	41	223
JHU	710	450	410	40	0
UMN	823	567	506	58	3
Total	3182	1864	1482	145	237

[1] Target sample size is as many as possible of those completing Exam at the 4 sites.

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3.3 Exam 6 Alerts

The following tables provide a comprehensive summary of all Exam 6 alerts reported to the Coordinating Center (CC) from the field centers or reading centers. Alerts are categorized by the type of response required by clinic staff:

Immediate Alerts: Medical emergencies that require immediate notification of both the participant and his/her primary physician.

Urgent Alerts: Detection of abnormalities that require medical attention but not on an emergency basis. A given participant may have multiple clinic alerts (e.g., elevated blood pressure and a retinal alert), all of which are reported. Thus, the numbers reported reflect distinct alerts but not necessarily distinct participants.

Site	Wake	Col	JHU	Minn	NWU	UCLA	Total
Oximetry Complete	325	519	448	568	650	515	3025
Oximetry Alert	0	4	3	1	1	1	10
BP Complete	325	521	446	568	650	515	3025
BP Alert	3	8	20	10	11	9	61
Echo Complete	218	479	388	520	635	458	2698
Echo Read Complete	232	464	407	532	621	504	2760
Echo Alerts	2	14	5	6	13	11	51
Participants with Heart Monitor Patch Applied	170	205	196	282	273	308	1434
Heart Monitor Patch Safety Read Complete (2 per ppt)	245	299	275	446	389	347	2001
Heart Monitor Patch Alert	6	3	6	6	10	11	42
CT Complete	192	351	362	507	407	266	2085
Lung Safety Read Done	188	347	362	507	406	256	2066
Lung CT Alerts	13	31	44	47	117	17	269
Lipids Data Received	314	472	441	562	591	472	2852
Lipids Alert	1	3	1	2	3	3	13
Carotid US Complete	41	269	264	341	0	0	915
Carotid US Alerts	5	23	21	26	0	0	75

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3.4 Protocol Violations

3.4.1 Lung CT Protocol Violations

As of February 28, 2018, 2071 chest CT scans had been completed in Exam 6. To date there have been three reportable protocol violations attributable to the Chest CT exam in Exam 6. All three of the protocol violations, listed below, were previously reported to the NHLBI Project Office and local IRBs.

In September 2016 and again in November 2016, respectively, participants were correctly scanned per protocol, but, due to the participants' body habitus, the CareDose-modulated total estimated radiation for the scans acquired was higher than expected. In response, we revised the CT Completion form to collect upper limits of the estimated cumulative radiation dose from EACH scan with strict instructions to stop scanning if the dose is expected to exceed certain limits and we re-trained all CT technologists. This issue has not occurred again since.

Also in November 2016, a participant consented for contrast, however, the estimated glomerular filtration rate (eGFR), based on measured serum creatinine, was 58 ml/min/1.73m^2, below the CT protocol exclusion threshold of 60 ml/min/1.73m^2. The technologist incorrectly applied the clinical protocol, which uses a minimum eGFR threshold for contrast of 45 ml/min/1.73m^2, and proceeded to administer contrast. In addition, the CT technologist did not use the CT Screener form which includes the correct eGRF exclusion threshold. The technologist involved was re-trained on the eGFR contrast threshold for this study and the need to complete the Contrast Screener form prior to performing the contrast CT.

In addition, 108 low-severity protocol violations, due to incorrect scanner settings or a slightly smaller or larger than expected scan area, have occurred. The summary of violations is below.

Violation Type	Severity Level	N (% of all scans)	Previously Reported to NHLBI	Action Taken
Patient body habitus required CareDose to use a higher than anticipated dose for the scans. Total dose ended up above consented limit.	High – Radiation above consented limit	3 (0.15%)	Yes	Scan done correctly. This was an unexpected outcome of CareDose and a larger patient. Workflow updated to include tracking cumulative estimated DLP to ensure it never exceeds 430mGy*cm (6mSv). This has been implemented at all sites
Subjects eGFR was below 60. CT Tech used clinical threshold of 45, instead of the research threshold. Patient ineligible for contrast yet completed contrast CT scan.	High – Radiation not above consented limit	1 (0.05%)	Yes	This was the first contrast scan at site. Additional Training Provided.
Scanner settings incorrect or scan	Low – Radiation	108 (5.22%)	No	Notice sent to site. Additional training offered.

performed in a slightly larger or slightly smaller area than stated in protocol	below consented amount			
Total number of Scans with Protocol Violations/Deviations		112 (5.41%)		

3.4.2 Other Exam 6 Protocol Violations

As of February 28, 2018, 2 non-CT related protocol violations have occurred in Exam 6. Both of the protocol violations, listed below, were previously reported to the NHLBI Project Office and local IRBs.

1. In July 2017 on two separate occasions, participants' blood was drawn and processed according to protocol but was inadvertently not placed in the -80 freezer until 3 days later when staff arrived back to work on the following Monday. On a previous occasion, blood was drawn and processed according to protocol but was not placed in the freezer for 3 hours post processing. The same staff member was responsible for these incidents and blood samples for 5 total participants were affected. Note that the protocol states that samples should be frozen within 10 minutes of aliquotting. The lab staff notified the central lab for the MESA study on each of the aforementioned occasions. The central lab informed the staff that, if possible and the five participants agreed, their blood should be re-drawn and processed according to protocol. Three of the participants had their blood re-drawn. Due to the fact that their blood was drawn twice, the total amount drawn between the two clinic visits exceeded the amount listed in the consent form by 40 ml for each participant. As part of their corrective action plan, the field center has prohibited additional blood draws for any reason. Thus, participants will only have one blood draw. Incomplete blood draws are noted as such on the data collection form. In addition, a system has been implemented in which 2 additional staff members, including the study coordinator, will check the lab prior to leaving at the end of every day. This will serve to ensure that no samples are left out of the freezer overnight. This issue has not occurred again since.

2. In April 2017, a MESA Air participant who is not part of MESA Classic completed an Exam 6 visit at a MESA Field Center after their home phone number was confused with a MESA Classic participant during a prior follow-up phone call. Contacts and physician addresses for were carefully reviewed and updated with the participant. Field Center staff reviewed the situation and conducted retraining of issues related to 1) changes to contact information in the database and 2) confirming that the correct individual is contacted or responding.

3.5 Data Transmission and Tracking and Completeness

The Coordinating Center (CC) tracks the progress of scans or samples from the clinics to the Reading Center or Labs, and then transmission of the resulting data to the CC. Timely receipt of these data is crucial for the production of participant results letters within an acceptable time frame.

Tracking of lab and reading center data is implemented specifically for procedures for which results of scans or assays are transmitted to the CC on a regular basis and are subsequently reported to participants. Tracking of other blood samples or scans, which are analyzed and sent to the CC in batches and for which results are not reported to participants, are reviewed for completeness after receipt of the batch.

If a CT scan cannot be transmitted from a field center to the reading center, the scanning center attempts to retransmit. If this is not possible, it can be written to CD and mailed. The cases reported as "not received at the CC" are investigated and can usually be resolved within a couple of months.

Note that the CT and echo completion forms are scanned at the clinic instead of entered directly, so delays in transmission of these forms to the CC sometimes occur.

3.5.1 Echo Data Received to date

	WFU	Col.	JHU	UMN	NWU	UCLA	Total
Echo Completed	223	487	418	547	641	504	2820
Data Received at CC	223	485	418	547	638	504	2815
Data Not Received at CC	0	2	0	0	3	0	5
No data for HT letter after 8 weeks	0	0	0	0	0	0	0
No data for HT letter after 12 weeks	0	0	0	0	0	0	0

3.5.2 Heart Monitor Patch Data Received to date

	WFU	Col.	JHU	UMN	NWU	UCLA	Total
First Patch Applied	172	233	203	287	279	315	1489
Data Received at CC	166	220	195	280	268	297	1426
Data Not Received at CC	6	13	8	7	11	18	63
No data for HT Letter after 8 weeks	0	0	0	0	0	0	0
No data for HT Letter after 12 weeks	0	0	0	0	0	0	0

3.5.3 Spirometry Data Received to date

	WFU	Col.	JHU	UMN	NWU	UCLA	Total
Spirometry Completed	237	386	362	498	479	421	2383
Data Received at CC	220	368	358	435	470	300	2151
Data Not Received at CC	17	18	4	63	9	121	232
No data for HT Letter after 8 weeks	0	0	0	0	0	0	0
No data for HT Letter after 12 weeks	10	16	0	63	2	104	195

3.5.4 Lipid Data Received to date

	WFU	Col.	JHU	UMN	NWU	UCLA	Total
Phlebotomy Completed [1]	311	491	441	562	632	498	2935
Lipid Data Received at CC[2]	311	472	441	562	591	472	2852
Data Not Received at CC[2]	0	19	0	0	41	26	83
No data for Lab Letter after 8 weeks	0	4	0	0	7	4	15
No data for Lab Letter after 12 weeks	0	0	0	1	20	8	29

[1] Includes partial blood draw and urine specimen collection.
[2] Missing lipids data may be masked in this table in situations where urinary creatinine and albumin results have been received.

3.5.5 Lung CT Alerts and High Tech Data Received to date

	WFU	Col.	JHU*	UMN	NWU*	UCLA	Total	Total w/o NWU*
Lung CT Completed	192	351	362	507	407	266	2085	N/A
Data for Alerts/High-Tech Letter Received at CC	185	344	362	507	352	254	2004	N/A
Data for Alerts/High-Tech Letter Not Received at CC	7	7	0	0	55	12	81	26
Total Number of Alerts	13	31	44	47	117	17	269	152
Missing Alert/High-tech read 4 weeks < 8 weeks post scan	0	0	0	0	4	1	5	1
Missing Alert/High-Tech read 8 weeks < 12 weeks post scan	0	0	0	0	5	0	5	0
Missing Alert/High Tech read > 12 weeks post scan	0	0	0	0	46	0	46	0

*Local Safety Reads performed. Note: NWU enters all alerts into the reporting database and is in the process of entering records with no findings.

3.6 Participant Results Completion

Reporting exam results to participants in a timely manner is a high priority in MESA.

3.6.1 Lab Reports

The creation and posting of lab results is an automated process for Exam 6. Every two weeks a procedure runs on the CC database server that creates reports for all participants for whom lab data has been received. Study Coordinators are notifying that a new set of reports is ready to download. The table below shows participants to date who had a blood draw and should receive a report of the results.

3.7.1.1 Lab Results Letters (Days from Exam 6 Visit to Results Letter)

Procedure	Count	Minimum	25th Percentile	Median	75th Percentile	Maximum
Wake	295	18	29	35	45	410
Columbia	415	13	28	39	49	87
Hopkins	412	17	28	36	48	94
Minnesota	543	16	27	34	47	260
Northwestern	591	13	26	33	44	91
UCLA	472	13	24	31	42	82
Total	2728	13	29	34	46	410

3.6.2 High Tech Reports

The creation and posting of High Tech results is an automated process for Exam 6. Every two weeks a procedure runs on the CC database server that creates reports for all participants for whom high data has been received. Study Coordinators are notified when a new set of reports is ready to download. The table below shows participants to date who had a high tech procedure and should receive a report of the results.

3.6.2.1 Complete or Partial High Tech Results Letters (Days from Exam 6 Visit to Results Letter)

Procedure	Count	Minimum	25th Percentile	Median	75th Percentile	Maximum
Spirometry	2093	2	45	57	73	455
Echocardiography	2768	2	44	58	72	402
Heart Patch	1394	6	65	97	190	465

3.6.2.2 Spirometry High Tech Results letters (Days from Exam 6 Visit to Results Letter)

Procedure	Count	Minimum	25th Percentile	Median	75th Percentile	Maximum
All Sites	2093	2	45	57	73	455
3: Wake Forest	218	10	33	51	65	235
4: Columbia	348	3	47	57	71	238
5: Johns Hopkins	355	3	37	50	63	143
6: Minnesota	422	2	47	57	69	301
7: Northwestern	455	4	44	56	72	455
8: UCLA	295	20	62	85	136	384

3.6.2.3 Echocardiography High Tech Results letters (Days from Exam 6 Visit to Results Letter

Procedure	Count	Minimum	25th Percentile	Median	75th Percentile	Maximum
All Sites	2768	2	44	58	72	402
3: Wake Forest	218	8	46	63	77	238
4: Columbia	473	14	49	61	76	358
5: Johns Hopkins	417	6	39	52	68	199
6: Minnesota	547	5	46	60	75	402
7: Northwestern	626	4	42	54	70	383
8: UCLA	487	2	48	60	73	252

3.6.2.4 Heart Patch Monitor High Tech Results letters (Days from Exam 6 Visit to Results Letter)

Procedure	Count	Minimum	25th Percentile	Median	75th Percentile	Maximum
All Sites	1394	6	65	97	190	465
3: Wake Forest	163	13	61	85	173	413
4: Columbia	215	26	68	103	202	418
5: Johns Hopkins	192	21	62	102	236	432
6: Minnesota	278	7	62	85	138	441
7: Northwestern	260	6	64	94	161	465
8: UCLA	286	23	75	150	239	448

3.7 Total CT Radiation Exposure

The following tables summarize the total radiation exposure from all MESA Cardiac CT (Exams 1 thru 5), Abdominal CT (Exams 2/3 and 4), and Lung CT (Exams 5 and 6, including MESA COPD and MESA COPD2 scans) procedures. Protocol violations (where participants received more than the prescribed number of scans, or were scanned out of protocol, resulting in additional radiation exposure), are accounted in this summary.

All Sites: Total Radiation Exposure by Gender

Total MilliSieverts	Female	Male	Total
0.1 to 2.9 mSv	711	562	1273
3.0 to 5.9 mSv	599	603	1202
6.0 to 8.9 mSv	737	657	1394
9.0 to 11.9 mSv	668	600	1268
12.0 to 14.9 mSv	505	480	985
15.0 to 17.9 mSv	257	198	455
18.0 to 20.9 mSv	82	93	175
21.0 to 24.9 mSv	39	19	58
25.0 mSv or more	3	1	4
Total	3601	3213	6814

All Sites: Total Radiation Exposure: Summary Descriptives

Site	Valid N	Mean (mSv)	Standard Deviation	Minimum	25th Percentile	Median	75th Percentile	Maximum
Wake Forest	1079	11.81	5.16	2.4	7.48	11.61	15.14	26.77
Columbia	1095	8.24	4.68	1.2	3.51	8.41	11.73	22.97
Johns Hopkins	1089	7.91	4.67	1.8	3.89	7.2	11.25	23.13
Minnesota	1065	9.08	4.49	1.8	5.13	8.33	12.77	21.08
Northwestern	1157	7.43	4.21	1.2	2.4	7.36	10.33	21.9
UCLA	1329	6.21	4.21	1.2	1.4	5.45	9.03	20.02
All Sites	6814	8.35	4.89	1.2	4.19	7.94	11.8	26.77

Variability in exposure shown in this table is based on scanner type and number of participants who received scans from different scanners, including protocol violations. Out of the 6,814 MESA cohort, 62 participants have had a cumulative radiation exposure greater than or equal to 21 milliSieverts. No participant has reached or exceeded the cumulative radiation exposure threshold of 30 mSv.

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Section 4: Publications and Presentations

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4.1. P&P and Genetics P&P Membership

4.1.1.P&P Members

Member	Site/Affiliation	E-mail address
Moyses Szklo, MD, DrPH	Johns Hopkins University Field Center	mszklo1@jhu.edu
Steven Shea, MD, MS	Columbia University Field Center	ss35@columbia.edu
Kiang Liu, PhD	Northwestern University Field Center	kiangliu@northwestern.edu
Robyn McClelland, PhD	Coordinating Center, Univ. of Washington	rmcclell@u.washington.edu
Alain Bertoni, MD	Wake Forest University Field Center	abertoni@wakehealth.edu
Joseph Polak, MD, MPH	Tufts-NEMC Ultrasound Reading Center	jpolak@tuftsmedicalcenter.org
Joao Lima, MD	MRI Reading Center	jlima@jhmi.edu
Michael Blaha, MD	Johns Hopkins Hospital	mblaha1@jhmi.edu
Norrina B. Allen, PhD	Northwestern University	norrina-allen@northwestern.edu
Lyndia Brumback, PhD	Coordinating Center, Univ. of Washington	lynb@u.washington.edu
Matthew Allison, MD, MPH, FAHA	University of California San Diego	mallison@ucsd.edu
Benjamin M. Smith	Columbia University	bs2723@cumc.columbia.edu
Susan Heckbert, MD, PhD	University of Washington	heckbert@u.washington.edu
Andrew Paul DeFilippis, MD, MSc	University of Louisville	andrew.defilippis@louisville.edu

The Coordinating Center has a Program Coordinator, Karen Hansen (hansenk3@u.washingtion), to assist the P&P Committee. Any procedural questions to P&P should be directed to her.

4.1.2. Genetics P&P Members

Member	Site/Affiliation	E-mail address
Wendy Post, MD, MS	Johns Hopkins University	wpost@jhmi.edu
Stephen Rich, PhD	University of Virginia	ssr4n@virginia.edu
Xiaohui Li, MD, MS	LA BioMed/Harbor UCLA	xiaohuili@labiomed.org
Nancy Swords Jenny, PhD	University of Vermont	nancy.jenny@uvm.edu
Ani Manichaikul, PhD	University of Virginia	am3xa@eservices.virginia.edu
Alexis Frazier-Wood, PhD	Baylor College of Medicine	lekki.wood@gmail.com
James Pankow, PhD, MPH	University of Minnesota	pankow@epi.umn.edu
Christina Wassel, PhD	University of Vermont	cwassel@med.uvm.edu

Procedural questions related to Genetics P&P should be directed to genpp@uw.edu.

4.2. Recent P&P Activities

- ✓ Review and approval of proposals, abstracts, and penultimate drafts
  - MESA now has 1,788 approved paper proposals:
    - 1,136 papers published or in press
    - 152 penultimate drafts approved for submission
    - 20 penultimate drafts in revision and review process
    - 480 papers in progress
  - 20 MESA abstracts were submitted to the AHA EPI/Lifestyle meeting scheduled for March 20-23, 2018. (There was a 100% acceptance rate by AHA for MESA abstracts.)
  - 32 MESA abstracts were submitted to 19 different conferences other than the AHA meeting listed above. These 19 conferences will be held between November 2017 and August 2018.
- ✓ Complete and up-to-date website listing
  - It is the responsibility of all first and Senior MESA authors to maintain accurate author lists and to notify P&P of any changes to these.
- ✓ Website updates and changes
  - Published papers additions
  - P&P policy and procedural information updated
  - Presentations (from approved abstracts) added online
- ✓ 70 notices were sent to authors of proposals aged 36 months or more as of November 1, 2017.
  - Authors were encouraged to submit pen drafts by July 2, 2018 or free up topics by withdrawing proposals.

4.3. Recent Genetics P&P Activities

- ✓ Review and approval of proposals, abstracts, and penultimate drafts, as of March 6, 2018
  - Genetics P&P now has 612 paper proposals:
    - 167 papers published or in press
    - 296 penultimate drafts approved for submission
    - 132 penultimate drafts not yet published
    - 273 approved proposals with pen draft in progress
  - Genetics P&P approved 27 MESA Genetics abstracts between March 17, 2017 and March 6, 2018:
    - 1 abstract was submitted to the British and Irish Hypertension Society Annual Scientific Meeting, September 11-13, 2017 in Glasgow, Scotland, UK.
    - 1 abstract was submitted to the Integrating Genetics and the Social Sciences Conference (IGSS), October 19-20, 2017 in Boulder, CO.
    - 1 abstract was submitted to the European Respiratory Society (ERS) International Congress, September 9-13, 2017 in Milan, Italy.
    - 10 abstracts were submitted to The American Society of Human Genetics (ASHG) Meeting, October 17-21, 2017 in Orlando, FL.
    - 3 abstracts were submitted to the American Heart Association (AHA) Scientific Sessions, November 11-15, 2017 in Anaheim, CA.
    - 4 abstracts were submitted to the Cohorts for Heart and Aging Research in Genomic Epidemiology (CHARGE) Consortium Meeting, September 27-28, 2017 in Boston, MA.
    - 4 abstracts were submitted to the American Thoracic Society (ATS) Conference, May 18-23, 2018 in San Diego, CA.
    - 1 abstract was submitted to the Epi|Lifestyle 2018 Scientific Sessions, American Heart Association (AHA), March 20-23, 2018 in New Orleans, LA.
    - 1 abstract was submitted to the Alzheimer's Association International Conference, July 22-26, 2018 in Chicago, IL.
    - 1 abstract was submitted to the European Society of Human Genetics meeting, June 16-19, 2018 in Milan, Italy.
- ✓ Complete and up-to-date website listing
  - It is the responsibility of all first and Senior MESA authors to maintain accurate author lists and to notify Genetics P&P of any changes to these.
  - A list of MESA Genetics papers can be found on the MESA internal website (http://www.mesa-nhlbi.org/MesaInternal//Publications.aspx).

4.4. Summary of MESA Authorship: Approved Proposals as of February 21, 2018

"Site is represented" counts papers with authors, coauthors, sponsors, and analysts from a site; "authors represented" counts only first authors and coauthors from a site.

	Number of first authors represented		Number of authors represented		Number of papers on which site is represented	
	Main papers (N = 823)	All papers (N = 1,801)	Main papers (N = 823)	All papers (N = 1,801)	Main papers (N = 823)	All papers (N = 1,801)
Coordinating Center	10	12	24	25	221	460
Project Office	3	3	10	11	76	145
Field Centers						
Wake Forest	29	36	63	84	339	547
Columbia	14	46	53	105	178	437
Johns Hopkins	57	90	127	207	388	777
Minnesota	13	19	30	40	166	332
Northwestern	33	50	64	99	240	430
UCLA	7	18	28	45	66	188
Reading Centers						
CT	11	15	22	39	165	353
MRI	12	27	31	54	222	452
Tufts-NEMC Ultrasound	1	1	2	3	56	110
Wisc. Ultrasound Blood	5	9	9	17	131	328
USC Nutrition	0	0	1	1	5	5
ECG	3	3	4	4	59	91
Retinal	1	3	4	8	13	60
Other*	301	553	967	1,588	774	1,729

*Not affiliated with above.

4.5. Summary of Genetics P&P Authorship: Approved Proposals as of March 5, 2018

"Site is represented" counts papers with authors, coauthors, sponsors, and analysts from a site; "authors represented" counts only first authors and coauthors from a site.

	Number of first authors represented	Number of authors represented	Number of papers on which site is represented
	G papers (N = 612)	G papers (N = 612)	G papers (N = 612)
Coordinating Center	1	12	65
Project Office	0	4	22
Field Centers			
Wake Forest	10	32	147
Columbia	10	31	132
Johns Hopkins	16	49	158
Minnesota	6	13	95
Northwestern	8	23	57
UCLA	2	6	39
Reading Centers			
CT	0	5	31
MRI	1	9	34
Ultrasound	0	1	10
Blood	6	12	118
ECG	0	2	12
Retinal	1	3	16
Other*	147	462	535

*Not affiliated with above.

4.6. Central and Local Analyst Activities

	Central Analyst	Local Analyst
Main Study	531	287
Ancillary Studies	636	335
Genetics	533	49

4.7. Accounting of Paper Status

4.7.1.Table: Summary of Manuscripts as of February 21, 2018

	Total Main & Ancillary	Main Study	Ancillary Studies
Papers Published or In Press	1,136	534	602
Pen Drafts Approved	152	63	89
Pen Drafts in Review	20	9	11
Pen Drafts Pending	480	205	275
0 – 3 months (from approval)	44	24	20
>3 – 6 months	38	16	22
>6 – 9 months	20	6	14
>9 – 12 months	41	15	26
>12 months	337	144	193
Total Papers Approved	1,788	811	977

4.7.2.Table: Summary of Genetics Manuscripts as of March 6, 2018

	Approved Genetics Paper Proposals
Papers Published or In Press	167
Pen Drafts Approved	296
Pen Drafts not yet published	132
Pen Drafts Pending (paper in progress)	273
0 – 3 months (from approval)	11
>3 – 6 months	8
>6 – 9 months	15
>9 – 12 months	14
>12 months	225
Total Papers Approved	612

4.7.3.Table: Time from Manuscript Approval – Main Study Papers Pending

Information is sorted by manuscript approval date. Table continues on the following eight pages.

Over 12 months

Proposal Number	Title	First Author	Approval Date
ME 049	DASH Diet Adherence and Incident Heart Failure: Multi-Ethnic Study of Atherosclerosis	Campos, Claudia L	08/21/2009
MC 242	Work Hours and Coronary Artery Calcium: the Multi-Ethnic Study of Atherosclerosis (MESA)	Allison, Penelope	01/03/2012
ME 123	The relationship of HDL size, particles and subclasses to carotid atherosclerosis and cardiovascular events: The Multi-Ethnic Study of Atherosclerosis	Mackey, Rachel H	03/22/2012
MC 251	Relationship Between Cardiovascular Risk Factors With Small Artery Elasticity, Large Artery Elasticity, Aortic Distensibility, Carotid Artery Distensibility, and Young's Modulus at the Carotid Artery: The Multi-Ethnic Study of Atherosclerosis (MESA)	Hom, Elizabeth K	05/11/2012
MM 032	Cardiovascular exposures, cognitive decline and depression in whites and blacks	Zeki Al Hazzouri, Adina	09/05/2012
MC 261	Incidence, Prevalence, and basic predictors of diagnosed type 2 diabetes at the Chicago MESA field center; a comparison study	Tedla, Yacob G	10/02/2012
ML 141	Latent Transition Analysis of Anxious-Depression among different Ethnic groups: The Multi Ethnic Study of Atherosclerosis.	Camacho, Alvaro	01/24/2013
MC 267	Association of minor ECG abnormalities and bundle branch block (BBB) with subclinical myocardial fibrosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Mitchell, Adam	03/01/2013
ME 164	Dietary Diversity and Quality and Incident Cardiovascular Disease in a Multi-Ethnic America - the Multi-Ethnic Study of Atherosclerosis	de Oliveira Otto, Marcia C.	03/01/2013
ME 075	Role of GFR-estimation and Age in Cardiovascular Event-free Survival: The Multi-Ethnic Study on Atherosclerosis	Puzantian, Houry	03/07/2013
MC 268	Association between short-term and long-term PM2.5 and NOx air pollution and cross-sectional measurement of arterial stiffness measures in the Multi-Ethnic Study of Atherosclerosis (MESA)	Hom, Elizabeth K	03/15/2013
ML 146	Association between long-term PM2.5 and NOx air pollution and longitudinal change in arterial stiffness measures in the Multi-Ethnic Study of Atherosclerosis (MESA)	Hom, Elizabeth K	03/15/2013
ME 168	Anxiety and Incident Cardiovascular Disease in the Multi-Ethnic Study of Atherosclerosis (MESA)	Alcantara, Carmela	04/12/2013
ME 169	Left ventricular mass and volume in relationship to traditional risk factors and cardiovascular events at 10 years of follow-up: the MESA study	Bluemke, David A.	04/12/2013
ME 167	A 10-year Stroke Risk Prediction Model: Multi-ethnic Study of Atherosclerosis (MESA)	Arnan, Martinson Kweku	05/17/2013
ME 173	Left Ventricular Remodeling Index (Assessed using MRI) and Incident Atrial Fibrillation in a Multi-Ethnic Cohort. The Multi-Ethnic Study of Atherosclerosis (MESA).	Cammarata, Michael W	05/17/2013

ML 152	The association of Non-alcoholic Fatty Liver Disease with carotid Arterial compliance, Carotid Initimal Media Thickness and coronary artery calcification. The Multi-Ethnic Study of Atherosclerosis	Oni, Ebenezer T.	05/17/2013
ML 151	Adherence to a Mediterranean-like diet and incident hypertension among normotensives in a racially diverse population: The Multi-Ethnic Study of Atherosclerosis	Aneni, Ehimen C	05/17/2013
MC 272	Effect of migration and acculturation on refractive error in the US: The Multi-Ethnic Study of Atherosclerosis	Chua, Sharon Yu Lin	05/17/2013
ME 172	Implications of Coronary artery calcium score on Sample Size Calculations in Cardiovascular Primary Prevention Trials: The Multi-Ethnic Study of Atherosclerosis (MESA)	Bittencourt, Márcio Sommer	05/17/2013
ML 097	Establishing Temporality Amongst Correlated Metabolic Variables: Multi-Ethnic Study of Atherosclerosis Joining in a Multi-Cohort Study	Vaidya, Dhananjay	05/22/2013
ME 178	Do retinal microvascular markers improve cardiovascular risk assessment in intermediate-risk individuals? The Multi-Ethnic Study of Atherosclerosis	Cheung, Carol Yim Lui	06/20/2013
ML 155	Association between Baseline Use of Antidepressant Medications with Coagulation Factors and Inflammatory Markers: The Multi-Ethnic Study of Atherosclerosis (MESA)	Stojanovic, Danijela	06/20/2013
ML 156	Longitudinal association of psychological variables and subclinical atherosclerosis in US Latino group: Evidence from the Multi-Ethnic Study of Atherosclerosis (MESA).	Ortiz, Manuel S.	06/20/2013
ME 179	Central pressure and incident cardiovascular disease: An individual participant meta-analysis	Ben-Shlomo, Yoav	07/10/2013
ME 194	Association of Snoring/Sleep apnea with Incident Hypertension and Diabetes Mellitus in an Adult Population. (MESA).	Qureshi, Waqas	09/20/2013
ME 191	The Relationship of Parity with Left Ventricular and Aortic Stiffness and Congestive Heart Failure in Women: Multi-Ethnic Study of Atherosclerosis (MESA)	Aggarwal, Shivani R	10/30/2013
ML 160	Longitudinal Association between Kidney Function and Left Ventricular Function as Measured by Cardiac MRI: The Multi-Ethnic Study of Atherosclerosis	Ohyama, Yoshiaki	10/30/2013
MC 282	Demographic, Socioeconomic and Psychosocial Characteristics among Hispanics and Hispanic subgroups in two large cohorts: MESA and HCHS-SOL	Langdon, Sarah	11/27/2013
ME 200	Psychosocial Factors and Cardiovascular Risk in Blacks: A Pooled Analysis of Coronary Artery Risk Development in Young Adults, Jackson Heart Study, and the Multi-Ethnic Study of Atherosclerosis	Richardson, Amanda Joy	12/11/2013
ML 165	Resting Heart Rate, Heart Rate Variability and Incident Atrial Fibrillation: Results from the Multi-Ethnic Study of Atherosclerosis	Habibi, Mohammadali	12/20/2013
ME 205	Implications of New ACC/AHA Prevention Guidelines on Individuals with Chronic Kidney Disease in Multi Ethnic Study of Atherosclerosis	Qureshi, Waqas	12/20/2013
ME 206	The Association of Diet Beverage intake with Micro and Macrovascular Outcomes in Persons with Diabetes	Odegaard, Andrew O	01/08/2014
ME 181	Do socioeconomic and psychosocial adversity contribute to cardiovascular risk prediction?: The Multi-Ethnic Study of Atherosclerosis	Hicken, Margaret T	01/15/2014

ML 168	Depression and Progression of Coronary Calcium in the Multiethnic Study of Atherosclerosis	Burg, Matthew M	02/04/2014
MC 286	The Role of Health Behaviors in Explaining the Association between Acculturation and Obesity: Results from the Multi-ethnic Study of Atherosclerosis (MESA)	Murillo, Rosenda	02/04/2014
ML 169	Incidence of New Coronary Calcification: What is the Warranty Period of CAC = 0 in the Multi-Ethnic Study of Atherosclerosis?	Desai, Dhaval	02/19/2014
ME 215	Can Ascending Aortic Size improve the Prediction of Incident Cardiovascular Events and All-Cause Mortality provided by the Framingham Risk Score in The Multi-Ethnic Study of Atherosclerosis	Sharma, Rahul	05/09/2014
MC 291	Allometric Indexing of Left Ventricular Mass and Volume to Fat Free Mass and Fat Mass	Sillau, Stefan	05/22/2014
ME 223	Coronary Calcium Density and Coronary Heart Disease Incidence in Diabetes and Metabolic Syndrome: the Multiethnic Study of Atherosclerosis	Zhao, Yanglu	07/10/2014
MC 295	Electrocardiographic Predictors of Left Atrial Volume and Dimension Defined by Cardiac Magnetic Resonance in the Multi-ethnic Study of Atherosclerosis (MESA) study	Win, Theingi Tiffany	07/25/2014
MC 293	Distribution of HDL-cholesterol levels in a contemporary, multi-ethnic cohort: The Multi-Ethnic Study of Atherosclerosis	deGoma, Emil M	07/25/2014
ME 226	Gamma glutamyltransferase and Heart Failure Risk: Individual Participant Meta-analysis of MESA, EPIC-Norfolk, Rotterdam and KIHD Studies	Khan, Hassan	08/27/2014
ML 182	The Effect of Positive Psychological Well-being on Changes in Allostatic Load: The Multi-Ethnic Study of Atherosclerosis	Hernandez, Rosalba	08/28/2014
MC 299	Matching obstructive sleep apnea phenotypes with clinical outcomes: The Multi-Ethnic Study of Atherosclerosis	Sands, Scott	09/12/2014
ML 184	Progression of Coronary Artery calcium and Density under the influence of Statin therapy, In MESA	Budoff, Matthew	09/17/2014
ML 185	Plasminogen Activator Inhibitor-1 and Subclinical Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis	Khan, Sadiya Sana	09/17/2014
MM 039	Quantitation of non-apical emphysema on cardiac CT with a hidden Markov measure field model: The Multi-Ethnic Study of Atherosclerosis	Häme, Yrjö	09/17/2014
MC 301	Relationship between Tissue Factor Pathway Inhibitor and Proximal Aortic Dimensions, Distensibility and Pulse Wave Velocity in the Multi-Ethnic Study of Atherosclerosis	Ohyama, Yoshiaki	10/24/2014
ME 234	Can medical claims be used to augment adjudicated myocardial infarction and stroke outcomes in the Multi-Ethnic Study of Atherosclerosis	Kronmal, Richard	11/07/2014
ML 186	Health Effects of the Great Recession - Area-level Economic Recession Effects	Thomas, Duncan	11/25/2014
ME 233	Prognostic Significance of Coronary Artery Calcification in Adults with and without Depression: The Multi-Ethnic Study of Atherosclerosis (MESA)	Varghese, Tina	12/23/2014
MC 305	Regression equations for cardiac size	Reed, Robert M	01/21/2015
MC 307	The association of NSAID use with right ventricular morphology and function: The MESA-Right Ventricle Study	Laslett, David B	01/21/2015

ME 247	The effects of midlife cardiovascular risk factor changes on under-65 stroke: individual participant data meta-analysis in US cohorts	Yano, Yuichiro	02/11/2015
ML 126	Timing and Duration of Hormone Replacement Therapy and Coronary Artery Calcium Progression: The Multi-Ethnic Study of Atherosclerosis	Nezarat, Negin	02/13/2015
ML 192	Comparison of Approaches to Measurement of Allostatic Load in relation to Mortality in the Multi-Ethnic Study of Atherosclerosis	Seeman, Teresa	02/13/2015
ME 243	Total Daily Carbohydrate to Fiber Ratio and Incident Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis	Cohen, Randy E	02/13/2015
MC 309	Correlation of Major and Minor Electrocardiographic Abnormalities with Cardiovascular Morbidity and Mortality in the Multi-Ethnic Study of Atherosclerosis Cohort	Rezaeian, Panteha	02/13/2015
ME 244	Incidence of coronary heart disease in the US and Japan: the Multi-Ethnic Study of Atherosclerosis and Suita study	Ahuja, Vasudha	02/13/2015
ML 194	Electrocardiographic models for estimating serial change in left ventricular mass in the Multi-Ethnic Study of Atherosclerosis (MESA)	Sparapani, Rodney A	02/27/2015
MC 310	Impact of Corn Price on Obesity in the US: The Multi-Ethnic Study of Atherosclerosis	Pitt, Allison L	02/27/2015
ME 251	Multimodality Cardiovascular Risk Prediction; Implications for Astronaut Selection and Monitoring During Prolonged Spaceflight: The Multi-Ethnic Study of Atherosclerosis	de Lemos, James Andrew	03/11/2015
ME 237	Association of Carotid Distensibility on Carotid Ultrasound with Incident Stroke and Dementia: Multi-Ethnic Study of Atherosclerosis (MESA)	Dubey, Prachi	03/26/2015
MC 311	Estimating Population Distribution of 24-Hour Sodium Excretion: The MESA, CARDIA and CDC Urinary Sodium Studies	Allen, Norrina B	03/26/2015
MC 313	Estimated Atherosclerotic Cardiovascular Disease Risk and Coronary Artery Calcium in Five Racial/Ethnic Groups Living in the US: The Multi-Ethnic Study of Atherosclerosis (MESA) and the Mediators of Atherosclerosis in South Asians Living in America (MASALA) Studies.	Cainzos-Achirica, Miguel	03/26/2015
ML 198	An evaluation of lipoprotein particles and non-traditional lipid risk factors in coronary artery calcium progression: the Multi-Ethnic Study of Atherosclerosis	Cao, Jing	03/26/2015
ML 199	Age-related Changes in Aortic Geometry and Function: The Multi-ethnic Study of Atherosclerosis (MESA)	AlGhatrif, Majd	03/26/2015
ME 254	Correlation of the longitudinal changes in IL-6, CRP and fibrinogen with incident cardiovascular events, heart failure and subclinical atherosclerosis: The Multi-Ethnic Study of Atherosclerosis.	Bakhshi , Hooman	04/10/2015
ME 255	Alcohol and Incidence of Heart Failure: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Miller, P Elliott	04/10/2015
MC 315	Cross-sectional and longitudinal associations of individual and neighborhood socioeconomic status and subclinical interstitial lung disease: The MESA lung study	Sell, Jessica L.	04/10/2015
MC 316	Association of Left Atrial and Ventricular Function with Prevalence and Severity of Sleep Related Breathing Disorders: Multi-Ethnic Study of Atherosclerosis (MESA)	Javaheri , Sogol	04/10/2015
ME 262	The relationship of diabetes mellitus and glycemic levels with incident atrial fibrillation: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Gautam, Sandeep	04/24/2015

MC 317	Characterization of Clinical Phenotypes in Patient with Diabetes and their Relationship with Coronary Artery Calcium Score: The Multi-Ethnic Study of Atherosclerosis	Krumholz, Harlan	05/22/2015
MM 041	Assessing interscan reproducibility of coronary calcium measurements in the MESA Study and on 320 Detector Row CT at the NIH Clinical Center	Leifer, Eric S	05/22/2015
MC 250	The Relationship of Bone Mineral Density to Aortic Valve Calcium in the Multi Ethnic Study of Atherosclerosis	Tandon, Karman	05/28/2015
ML 205	The Interaction Between Insulin Resistance and Arterial Stiffness and their Relationship with Cognitive Performance: The Multi-Ethnic Study of Atherosclerosis (MESA).	Hughes, Timothy	06/02/2015
ML 207	Variation by age of the association between healthy behaviors and 10-Year change in arterial stiffness. The Multi Ethnic Study of Atherosclerosis (MESA)	Tedla, Yacob G	06/02/2015
ML 211	Circulating Very-Long Chain Saturated Fatty Acids and Incident Diabetes: a Meta-Analysis of Prospective Cohort Studies	Frazier-Wood, Alexis C.	06/24/2015
ML 210	Circulating Fatty Acids in the De Novo Lipogenesis Pathway and Incident Diabetes: a Meta-Analysis of Prospective Cohort Studies	Frazier-Wood, Alexis C.	06/24/2015
ML 208	Cross-sectional and longitudinal associations of diet quality and subclinical interstitial lung disease: The MESA lung study	Sell, Jessica L.	06/26/2015
ML 212	Cross Sectional and longitudinal associations between cardiovascular medication use and subclinical interstitial lung disease in the MESA study	Restivo, Michaela D	07/24/2015
ME 271	Protein biomarkers predict short-term risk of acute coronary syndromes, but not long-term risk among asymptomatic patients: Results from Multi-Ethnic Study of Atherosclerosis (MESA)	Nakanishi, Rine	08/27/2015
MC 323	Assessing the distinctiveness of the South Asian cardiometabolic phenotype in contemporary populations: the CARRS, MASALA, and MESA studies	Patel, Shivani A	09/09/2015
ME 272	Variation in the association between progression of left ventricular mass and heart failure events: implications for understanding the Hispanic paradox.	Rodriguez, Carlos Jose	09/30/2015
MC 325	Determinants of Urinary Cadmium and Zinc in the Multi-Ethnic Study of Atherosclerosis	Pang, Yuanjie	10/02/2015
ME 277	Effects of pessimism and optimism on incident cardiovascular disease events in the Multi-Ethnic Study of Atherosclerosis (MESA)	Hernandez, Rosalba	10/06/2015
MC 287	DASH Diet Adherence and Cognitive Function: Multi-Ethnic Study of Atherosclerosis	Hayden, Kathleen M	10/12/2015
ML 218	Socioeconomic status and incident cardiovascular disease across different ethnicities, results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Crim, Matthew T	10/23/2015
ME 280	Interaction of chronic kidney disease with obesity: A collaborative meta-analysis	Chang, Alex R	10/28/2015
ML 219	Chronic kidney disease (CKD) incidence prediction: A collaborative meta-analysis	Nelson, Robert G.	10/28/2015
ME 281	Social support and heart failure outcomes: The Multi-Ethnic Study of Atherosclerosis	Kaiser, Paulina MB	11/13/2015

MC 328	Plasminogen Activator Inhibitor-1 and Vascular Aging: The Multi-Ethnic Study of Atherosclerosis	Khan, Sadiya Sana	11/13/2015
ML 223	Alcohol use and subclinical interstitial lung disease: The Multi-ethnic Study of Atherosclerosis (MESA)	Wu, Min	12/04/2015
ML 221	Impact of Aortic Structure and Function assessed by MRI on Incident Hypertension and Blood Pressure Progression: The Multi-Ethnic Study of Atherosclerosis	Ohyama, Yoshiaki	12/04/2015
ME 286	Long-term glycemic status, cardiovascular events and mortality: a multi-cohort study	Virtanen, Marianna	12/09/2015
ME 287	Type 2 diabetes risk scores and incident diabetes, cardiovascular disease and mortality: a multi-cohort study	Virtanen, Marianna	12/09/2015
MC 330	Mobile monitoring estimates of exposure to NOx and O3 and pulmonary abnormalities in the Multi-Ethnic Study of Atherosclerosis (MESA)	Xu, Wei	12/22/2015
ME 285	Prognosis of patients after developing heart failure in The Multi-Ethnic Study of Atherosclerosis	Ostovaneh, Mohammad R	12/22/2015
ME 288	Left Ventricular Hypertrophy by Electrocardiogram versus Cardiac Magnetic Resonance Imaging as a Predictor for Stroke: The MESA Study.	Oseni, Abdullahi O	12/22/2015
ME 289	N-3 Fatty Acids and Aspirin, Their Preventive Co-Dependence: The Multi-Ethnic Study of Atherosclerosis	Block, Robert C	01/26/2016
ME 290	Normal Weight Central Obesity, Subclinical Cardiovascular Disease and Cardiovascular Risk: the Multi-Ethnic Study of Atherosclerosis	Geng, Deng-feng	01/29/2016
MC 331	Relationship of atypical non-ischemic left ventricular myocardial scar with regional and global left ventricular function and diffuse myocardial fibrosis: The Multi-Ethnic Study of Atherosclerosis	Kawel-Boehm, Nadine	01/29/2016
MC 332	Ethnic Differences in the Association Between Fasting Blood Glucose, Hemoglobin A1C and Coronary Artery Calcium: The Multi-Ethnic Study of Atherosclerosis (MESA) and the Mediators of Atherosclerosis in South Asians Living in America (MASALA) Studies.	Tota-Maharaj, Rajesh	01/29/2016
ML 226	Temporal Trends in Health Behaviors Among Statin Users Versus Non-Users: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Cohen, Randy E	01/29/2016
ME 295	Association of subclinical hypoglycemia with incident cardiovascular disease and all-cause mortality: The Multi-Ethnic Study of Atherosclerosis	Mongraw-Chaffin, Morgana	02/05/2016
MC 336	The Origin and Correlates of Increased Cardiovascular Disease in Type 2 Diabetes	Bowden, Donald	02/10/2016
ME 298	Egg consumption, overall diet quality, and risk of type 2 diabetes: a pooling project of US prospective cohorts	Djousse, Luc	02/24/2016
MC 334	The Association between Life's Simple 7 and Non-Alcoholic Fatty Liver Disease: The Multi-Ethnic Study of Atherosclerosis	Oni, Ebenezer T.	02/26/2016
MC 337	Comparison of educational inequalities in cardiovascular risk factors and blood pressure control in Chilean adults and the Multi-Ethnic Study of Atherosclerosis (MESA)	Nazzal, Carolina	03/11/2016
ME 300	Interactions of Inflammation and HDL particles on CVD and mortality risk: The Multi-Ethnic Study of Atherosclerosis	Mackey, Rachel H	03/11/2016

ML 229	Long-Term Exposure to Fine Particulate Air Pollution and Electrocardiographic Left Atrial Abnormalities: The Multi-Ethnic Study of Atherosclerosis (MESA)	O'Neal, , Wesley T	03/18/2016
ME 282	Incidence, Progression and Cardiovascular Risk Discrimination of Coronary Artery Calcium among Patients with Chronic Kidney Disease without Diabetes Mellitus	Shroff, Gautam R	04/12/2016
ML 230	Lowering middle-age blood pressure to reduce disparities and prevent late-life cognitive impairment or dementia	Levine, Deborah A.	04/27/2016
ME 308	Association of fasting triglycerides, triglyceride rich lipoproteins, subclinical atherosclerosis and cardiovascular events	Bittencourt, Márcio Sommer	04/29/2016
ME 313	Association of coronary artery calcium, thoracic aortic calcium and aortic pulse wave velocity with incident peripheral artery disease: the Multi-Ethnic Study of Atherosclerosis.	Meyghani, Zahra	05/13/2016
MC 340	Airflow Obstruction and Antidepressants: The Multi-Ethnic Study of Atherosclerosis	Armstrong, Hilary F	05/20/2016
ME 314	Implications of Enrichment Strategies with CAC Testing for Future Clinical Trials Assessing Efficacy of Novel Add-on Therapies Among High Risk Individuals Without Established Cardiovascular Disease: Insights from Multiethnic Study of Atherosclerosis (MESA)	Nasir, Khurram	05/20/2016
MC 341	Ethnic differences in the association between chronic kidney disease risk factors and measures of kidney function	Koye, Digsu Negese	05/25/2016
MC 294	The association of dietary linoleic acid source with markers of inflammation and subclinical atherosclerosis in the Multi-Ethnic Study on Atherosclerosis (MESA).	Frazier-Wood, Alexis C.	05/27/2016
ML 233	Race, Ethnic and Immigrant Disparities in Neighborhood Socioeconomic Status and Longitudinal Cumulative Biological Risk: The Multi-Ethnic Study of Atherosclerosis	Merkin, Sharon Stein	06/17/2016
ME 322	The relationship of low-density lipoprotein (LDL) particle number (LDL-P) and LDL particle size and incident stroke events: The Multi-Ethnic Study of Atherosclerosis	Kim, Yong-Jae	07/26/2016
ME 324	Health and economic costs of imperfect 10-year atherosclerotic cardiovascular disease risk score predictions: the Multi-Ethnic Study of Atherosclerosis	Tajeu, Gabriel S.	08/12/2016
ME 326	High fat dairy products and cardiovascular disease: the Multi-ethnic Study of Atherosclerosis	Delaney, Joseph Chris	08/26/2016
MM 046	Prediction Model for Incident Stroke for Early Screening of an Individual at Risk of Stroke	Bhuiyan, Alauddin	09/09/2016
MC 345	The assessment and reproducibility of complex flow quantification with 4D flow MRI in patients with varying severities of Chronic Obstructive Pulmonary Disease or controls.	Rahman, Ozair A	09/23/2016
ML 234	Changes in Cardiovascular Health and Association with Progression of Subclinical Cardiovascular Disease: the Multi-Ethnic Study of Atherosclerosis (MESA)	Bailey, Simone A	09/23/2016
ME 328	Associations of Coronary Artery Calcium Volume and Density with Incident Heart Failure in a Multi-Ethnic Cohort	Forbang, Nketi Innocent	10/07/2016
ME 327	Predictors and Outcomes of Coronary Artery Calcium Density and Volume Progression	Forbang, Nketi Innocent	10/07/2016

ME 330	Underlying behavioral and physiological mechanisms linking stress to CHD: results from the Women's Health initiative (WHI) and the Multi-Ethnic Study of Atherosclerosis studies	Wang, Conglong	10/07/2016
ME 331	Potential future benefits of cardiovascular risk factor control in today's young adults	Moran, Andrew	10/12/2016
ME 335	Race and the Risk of Atrial Fibrillation and Heart Failure: A pooled analysis	McNamara, David	10/12/2016
ME 336	Association of GlycA with the Incidence and Progression of Coronary Artery Calcification: The Multi-Ethnic Study of Atherosclerosis (MESA)	Rambod, Mehdi	10/28/2016
ME 333	Plasma Sphingomyelin levels, Cardiac Structure and Function, Natriuretic Peptides and Incident Heart Failure: Insights from the Multi Ethnic Study of Atherosclerosis (MESA).	Yeboah, Joseph	10/28/2016
MC 349	The associations between psychosocial stress and coronary heart disease risks in men and women: results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Wang, Conglong	11/08/2016
MC 351	Long sleep time as an independent risk factor of cardiovascular disease: The Multi-Ethnic Study of Atherosclerosis	Patel, Sarah N	11/22/2016
ME 339	Gout and increased cardiovascular disease, a longitudinal cohort community based population study: the multi ethnic study of atherosclerosis (MESA).	Miller, Elizabeth Zachman	11/22/2016
MC 352	Sex and Race/Ethnic Specific Association Between Anthropometry and Liver Fat: Evidence from The Multi-Ethnic Study of Atherosclerosis	Rodriguez, Luis A.	11/22/2016
ML 235	Sex and Race/Ethnic Specific Association Between Anthropometry, Liver Fat and Incident Type 2 Diabetes: Evidence from The Multi-Ethnic Study of Atherosclerosis	Rodriguez, Luis A.	11/22/2016
ME 338	Risk stratification with coronary artery calcification in individuals meeting eligibility criteria for low-to-intermediate risk statin trials in primary prevention of atherosclerotic cardiovascular disease: a meta-analysis of prospective population-based cohort studies.	Leening, Maarten	12/14/2016
ME 343	Inter-arm blood pressure difference, cardiovascular events, cerebrovascular disease and mortality: an individual patient data meta-analysis and development of a prognostic algorithm	Clark, Christopher E	12/14/2016
ME 340	1,5 Anhydrosorbitol mediates the association between a Mediterranean-style Diet and incident Cardiovascular Disease in the Multi-Ethnic Study of Atherosclerosis.	Frazier-Wood, Alexis C.	12/23/2016
MC 355	Prevalence and Characteristics of High HDL-C and Elevated Coronary Artery Calcium in The Multi-Ethnic Study of Atherosclerosis	Sandesara, Pratik	01/27/2017
ME 344	Determining if Plasma Levels of EPA Associate with Reduced Pathologic Left Ventricular Remodeling Over Time: The Multi-Ethnic Study of Atherosclerosis	Block, Robert C	01/27/2017

End table.

4.7.4.Table: Time from Manuscript Approval – Ancillary Study Papers Pending

Information is sorted by manuscript approval date. Table continues on the following eleven pages.

Over 12 months

Proposal Number	Title	First Author	Approval Date
AE 058	Association of Subclinical measures of Atherosclerosis with GFR decline and Incident Chronic Kidney Disease: Results from the Multi-ethnic Study of Atherosclerosis (MESA)	Rosas, Sylvia E.	02/15/2012
AE 075	Identifying the Interaction between Left Ventricular Mass and Thoracic Aortic Distensibility in Predicting Cardiovascular Outcomes: The Multi-Ethnic Study of Atherosclerosis	Stacey, R. Brandon	06/21/2012
AL 090	Long-term exposure to ambient fine particulate matter and decline in lung function, progression of emphysema and incident COPD. The MESA Lung and MESA Air Studies.	Madrigano, Jaime	07/26/2012
AM 040	A Simple Approach for Estimating Windkessel Model Parameters from the Radial Artery Pressure Waveform: The Multi-Ethnic Study of Atherosclerosis	Brumback, Lyndia	11/30/2012
AC 421	Cellular Aging (Leukocyte Telomere Length) and Carotid Artery Distensibility: Multi-Ethnic Study of Atherosclerosis	Vaidya, Dhananjay	01/24/2013
AL 104	Variation in the association between race/ethnicity and progression of subclinical cardiovascular disease: implications for understanding the Hispanic paradox, the Multi-ethnic Study of Atherosclerosis	Albrecht, Sandra S.	01/24/2013
AE 089	Edge detected common carotid artery IMT and incident peripheral arterial disease events in the Multi-Ethnic Study of Atherosclerosis.	Polak, Joseph F.	02/08/2013
AL 108	Gamma-glutamyltransferase (GGT) Activity and Risk of Type 2 Diabetes: The Multi-Ethnic Study of Atherosclerosis	Bradley, Ryan	03/22/2013
AE 091	Gamma-glutamyltransferase (GGT) Activity and Risk of Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis	Bradley, Ryan	03/22/2013
AL 109	The association between neighborhood racial/ethnic segregation and allostatic load: The Multi-Ethnic Study of Atherosclerosis	Mayne, Stephanie L	04/12/2013
AL 112	Long-term residential coarse particulate matter exposure and indicators of atherosclerosis: The Multi-Ethnic Study of Atherosclerosis and Coarse Particles (MESA Coarse)	Adar, Sara D.	05/17/2013
AC 434	Association of plasma renin with subclinical cardiovascular disease in a community-based cohort: The Multi-Ethnic Study of Atherosclerosis	Rifkin, Dena	05/17/2013
AC 436	Association of ECG R-wave to Arterial Pulse Delay with Subclinical Cardiovascular Disease and Risk Factors: The Multi-Ethnic Study of Atherosclerosis (MESA)	Whelton, Seamus	05/17/2013
AC 437	Influence of circadian rhythm on cardiovascular disease: The Multi-Ethnic Study of Atherosclerosis	Lu, Brandon S.	06/20/2013
AL 117	Associations between indices of subclinical vascular disease and cognitive function: Multi-Ethnic Study of Atherosclerosis (MESA)	Garg, Parveen K	07/02/2013
AL 122	Long-term air pollution exposure and measures of MR cardiac structure and function: the Multi-Ethnic Study of Atherosclerosis and Air Pollution	Ross, Michelle E	07/09/2013
AE 095	Exposure to Ambient Air Pollution as a Potential Explanation of Ethnic Disparities in Cardiovascular Disease: Evidence from the Multi-Ethnic Study of Atherosclerosis (MESA)	Jones, Miranda R.	07/26/2013
AL 119	The interaction between long-term exposure to air pollutants and psychosocial stress on markers of inflammation, coagulation and	Hajat, Anjum	07/26/2013

	endothelial activation: The Multi-Ethnic Study of Atherosclerosis (MESA)		
AL 118	Measurement of Tobacco Exposure in the Multi-Ethnic Study of Atherosclerosis (MESA): Comparison of Self-Report with Urinary and Plasma Biomarkers	Hinckley Stukovsky, Karen	07/26/2013
AE 096	Distribution of Systemic Atherosclerosis in Persons with Metabolic Syndrome and Diabetes and Prediction of CVD Events	Evans, Marcella	07/26/2013
AC 445	Aortic stiffness in obstructive sleep apnea - MESA study	Kwon, Younghoon	07/26/2013
AC 258	Indicators of Coronary Arterial Age in Rheumatoid Arthritis	Giles, Jon Tyler	08/27/2013
AL 121	Sleep duration, sleep quality, and leukocyte telomere length Change: The Multi-Ethnic Study of Atherosclerosis (MESA)	Carroll, Judith E.	08/30/2013
AL 127	T1 Mapping, LA function, and Atrial Fibrillation in a Community: Results from the Multi-ethnic Study of Atherosclerosis (MESA)	Suzuki, Takeki	09/13/2013
AE 099	Comparison of the incidence, prevalence, and basic predictors of cardiovascular disease between cohort data and data derived from electronic health records in the City of Chicago	Tedla, Yacob G	09/13/2013
AC 462	Obstructive Sleep Apnea and Chronic Obstructive Pulmonary Disease: The MESA Lung/Sleep Study.	Chandra, Subani	10/11/2013
AC 464	Left Atrial Volume, Strain and Strain Rate measured by MRI in patients with COPD and emphysema: The Multi-Ethnic Study of Atherosclerosis COPD study	Habibi, Mohammadali	10/11/2013
AE 106	Radial Augmentation Index as a predictor of Cardiovascular Events and Mortality: The Multiethnic Study of Atherosclerosis	Chirinos, Julio A	10/30/2013
AC 472	Traffic Related Air Pollutants and Endothelial Dysfunction: The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air)	Krishnan, Ranjini M	11/27/2013
AC 468	Association of carotid ultrasound measures with snoring, SDB and insufficient sleep.	Zhao, Ying	11/27/2013
AC 469	Association of statins use and endogenous sex hormone levels in the Multi-Ethnic Study of Atherosclerosis (MESA) cohort	Yarmohammadi, Hirad	11/27/2013
AL 141	Neighborhood Social Environment and Incident Obesity (the Multi-Ethnic Study of Atherosclerosis)	Mujahid, Mahasin S.	12/20/2013
AC 479	Association between Chronic Dietary Exposure to Organophosphate Pesticides and Neurocognition: The Multi-Ethnic Study of Atherosclerosis	Curl, Cynnie L	12/20/2013
AE 098	Association between Left Atrial Function and Structure measured with Multimodality Tissue Tracking from Cine MRI and Dementia or Stroke/Transient Ischemic Attack: The Multi-Ethnic Study of Atherosclerosis	Zareian , Mytra	01/17/2014
AC 485	Vanadium In Fine Particulate Matter and Its Association with Blood Pressure in the Multi-Ethnic Study of Atherosclerosis Cohort	Sikka, Reema Ritika	01/24/2014
AC 481	Associations of Inflammation Biomarkers with Sleep Disordered Breathing and Sleep Duration in the Multi-Ethnic Study of Atherosclerosis (MESA)	Jenny, Nancy Swords	01/24/2014
AE 109	Radial Artery Pressure Decay and 10 Year Coronary Heart Disease Risk: The Multi-Ethnic Study of Atherosclerosis	Brumback, Lyndia	01/24/2014
AL 140	Associations between HIV infection and Coronary Artery Calcium progression: results from the MESA and SUN cohort studies	Delaney, Joseph Chris	01/24/2014

AM 051	Sparse Sampling and Clustering for Unsupervised Learning of Local Lung Texture Patterns: MESA COPD Study	Häme, Yrjö	01/24/2014
AC 492	Understanding inequality in the distribution of environmental hazards: The association between air pollution and psychosocial stress in the Multi-Ethnic Study of Atherosclerosis	Hajat, Anjum	02/19/2014
AL 146	Particulate matter composition and atherosclerosis: longitudinal study in MESA Air	Kim, Sun-Young	02/19/2014
AL 143	Long-term neighborhood ethnic composition and BMI, diet, and physical activity among immigrants: the Multi-Ethnic Study of Atherosclerosis	Le-Scherban, Felice Z.	02/19/2014
AC 493	Electrocardiographic Abnormalities in Idiopathic Inflammatory Myopathies	Harrington, Colleen Mary	02/19/2014
AL 134	FGF-23 and PTH and left ventricular systolic deformation	Bansal, Nisha	03/14/2014
AL 150	Association between Serum 25-hydroxyvitamin D and Left Ventricular Remodeling: The Multi-Ethnic Study of Atherosclerosis (MESA) study	Echouffo Tcheugui, Justin B	03/14/2014
AC 420	Nonalcoholic Fatty Liver Disease (NAFLD), Ambient Air Pollution, and Occupational Exposures in The Multi-Ethnic Study of Atherosclerosis (MESA)	Young, Michael T	03/28/2014
AE 102	Dynamic Nonlinear Analyses for Critical Health Assessment and Outcomes Study (DNA-CHAOS) during sleep in the multi-ethnic study of atherosclerosis (MESA)	DeMazumder, Deeptankar	04/08/2014
AL 155	Vulnerability to Heat-Associated Changes in Blood Markers of Inflammation and Heat Shock in Six U.S. Cities: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Gronlund, Carina J	04/08/2014
AE 112	Long-term exposure to ambient particulate matter and other air pollutants and incidence of cardiovascular disease events: The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air)	Kaufman, Joel	04/08/2014
AC 501	Stress reactivity and previous cumulative exposure to chronic stressors: Findings from the Multi-ethnic Study of Atherosclerosis (MESA)	Brenner, Allison B	04/08/2014
AE 113	Association of Retinal Microvascular Signs with Incident Atrial Fibrillation in the Multi-Ethnic Study of Atherosclerosis (MESA)	Lin, Gen-Min	04/08/2014
AL 157	Association between Air Pollution Exposure and Self-Report of Recent Infection: The Multi-Ethnic Study of Atherosclerosis and Air Pollution	Miller, Carly M	04/25/2014
AL 158	Air pollution and Change in Retinal Vascular Caliber in the Multiethnic Study of Atherosclerosis (MESA)	Young, Michael T	04/25/2014
AL 156	Incidence of Diabetic and Non-Diabetic Retinopathy in a Multi-Ethnic Population: the Multi-Ethnic Study of Atherosclerosis (MESA)	Cheung, Ning	04/25/2014
AL 162	Relationship between Aortic Stiffness and Myocardial Fibrosis: The Multi-Ethnic Study of Atherosclerosis	Ohyama, Yoshiaki	05/22/2014
AC 506	Comparative Analyses of Strain and Left Ventricular Dyssynchrony in heart failure: Multi-Ethnic Study of Atherosclerosis	Sharma, Ravi K	05/22/2014
AC 507	Relationship of Left atrial volume, function and dyssynchrony with regional left ventricular dysfunction: Multi-Ethnic Study of Atherosclerosis	Sharma, Ravi K	05/22/2014

AE 119	The sodium-potassium ratio in the US diet: possible links with cardiovascular disease	Averill, Michelle	06/13/2014
AE 120	Long-Term Exposure to Airborne Particles and Incident Atrial Fibrillation: The Multi-Ethnic Study of Atherosclerosis (MESA)	O'Neal, , Wesley T	07/25/2014
AE 124	Pericardial fat and the risk of heart failure in the MESA study	Kenchaiah, Satish	08/08/2014
AE 125	Neighborhood socioeconomic status and neighborhood physical environment and incident cardiovascular disease: The Multi-Ethnic Study of Atherosclerosis	Ranchod, Yamini Kesavan	08/08/2014
AL 165	Statin use and progression of emphysema in a population-based cohort: The MESA Lung Study	Kalhan , Ravi	08/08/2014
AE 126	Non-esterified fatty acids and incident heart failure: The Multi-Ethnic Study of Atherosclerosis	Djousse, Luc	08/08/2014
AL 169	Short- and Long-term Diabetes Risk Assessed by Multivariate Indices Derived from a Single NMR Spectrum of Fasting Plasma: The Multi-Ethnic Study of Atherosclerosis	Otvos, James D.	08/08/2014
AL 166	Association of Plasminogen Activator Inhibitor-1 and Obesity, Hypertension, and Fibroblast Growth Factor-23: The Multi-Ethnic Study of Atherosclerosis	Khan, Sadiya Sana	08/28/2014
AL 171	Longitudinal Association between Pericardial Fat and Diabetes: the Multi-ethnic Study of Atherosclerosis (MESA)	Alman, Amy C	08/28/2014
AC 517	Association of somatic versus cognitive symptoms of depression with inflammation: The Multi-Ethnic Study of Atherosclerosis (MESA).	Camacho, Alvaro	08/28/2014
AL 172	Neighborhood restaurants, frequency of eating out, and dietary quality: prevalence and changes over time (Multi-Ethnic Study of Atherosclerosis)	Auchincloss, Amy H.	09/12/2014
AC 413	Correlation of Coronary Artery Calcium (CAC) Scoring on Ungated CT compared to Gated Cardiac CT Scans from the Multi-Ethnic Study of Atherosclerosis (MESA)	DeFranco, Anthony	09/16/2014
AC 520	Comparison of Plasma and Serum Metabolic Profiles and Their Relationships with Age, Gender, and Subclinical Atherosclerosis: the Multi-Ethnic Study of Atherosclerosis (MESA)	Olson, Nels C	09/17/2014
AC 523	New Predictive Equations for 24-Hour Urine Sodium Excretion from Spot Urine Samples Among Older and Hypertensive Adults: The MESA and CARDIA Urinary Sodium Study	Zhao, Lihui	09/17/2014
AC 525	Pulmonary Perfusion and Systemic Blood Pressure: The MESA Lung Study	Lo Cascio, Christian M.	10/01/2014
AL 179	The association of pericardial fat volume with left atrial size in the Multi-Ethnic Study of Atherosclerosis	Heckbert, Susan	10/24/2014
AC 524	Validity of Predictive Equations for 24-Hour Urinary Potassium Excretion among Adults: The MESA and CARDIA Urinary Sodium Study and CDC Urinary Sodium Calibration Study	Mercado, Carla I.	10/24/2014
AE 133	Vitamin K status, cardiovascular disease and hypertension: A pooled analysis of the Multi-ethnic Study of Atherosclerosis, Framingham Offspring Study, and Health Aging and Body Composition Study	Shea, M Kyla	12/10/2014
AL 184	Associations between stress and cognitive function in a diverse sample of adults: Results from the Multi-Ethnic Study of Atherosclerosis (MESA) and MESA Stress study	Munoz, Elizabeth	12/23/2014

AL 183	Associations of composite features of neighborhood with changes in cardiovascular health over time: the Multi-Ethnic Study of Atherosclerosis	Michael, Yvonne L.	12/23/2014
AE 134	Associations of composite features of neighborhood with cardiovascular health events: the Multi-Ethnic Study of Atherosclerosis	Michael, Yvonne L.	12/23/2014
AL 185	Short-term exposure to air pollution and novel markers of cardiovascular effect: a repeated measures study in the Multi-Ethnic Study of Atherosclerosis (MESA)	Vedal, Sverre	01/21/2015
AC 531	The Association of Autoantibodies with Right Ventricular Morphology: The MESA RV Study	Bernstein, Elana J.	01/21/2015
AC 532	Association of Quantitative EEG Parameters with Blood Pressure: The Multi-Ethnic study of Atherosclerosis	Kim, John S	01/21/2015
AE 136	Carotid Artery Displacement and Cardiovascular Disease Events: The Multi-Ethnic Study of Atherosclerosis	Gepner, Adam D	01/21/2015
AE 132	Carotid Plaque Characteristics: Relationships with PM2.5 Multi-Ethnic Study of Atherosclerosis (MESA Air)	Mitchell, Carol	02/13/2015
AE 135	Histamine H2-receptor antagonists, sex hormones, bone density, and the risk for coronary disease: The Multi-Ethnic Study of Atherosclerosis	Leary, Peter Joseph	02/13/2015
AL 188	Air Pollution and Kidney Function in MESA (Multi-Ethnic Study of Atherosclerosis)	Bell, Griffith	02/18/2015
AM 054	Associations of complex mixtures of air pollutants and the built environment with subclinical atherosclerosis.	Hamra, Ghassan B	02/27/2015
AL 187	Air pollution and cognitive function with an examination of mediation by subclinical atherosclerosis: The Multi-Ethnic Study of Atherosclerosis	Wang, Meng	02/27/2015
AC 539	Air pollution and Circulating Adhesion Molecules in the Multi-Ethnic Study of Atherosclerosis (MESA)	Young, Michael T	02/27/2015
AC 541	Associations of Cardiovascular Disease Risk Factors and Subclinical Cardiovascular Disease with Circulating Levels of Natural Killer Cells in a Multi-Ethnic Population: the Multi-Ethnic Study of Atherosclerosis (MESA)	Jenny, Nancy Swords	03/26/2015
AL 190	Impact of Liver Fat on Coronary Artery Calcium Progression in MultiEthnic Study of Atherosclerosis (MESA)	Qureshi, Waqas	03/26/2015
AC 545	Metabonomics of Blood Pressure: the COMBI-BIO Consortium	de Vries, Paul S	04/08/2015
AC 544	Association of peripheral endothelial function with myocardial perfusion by cardiac magnetic resonance imaging	Shah, Ravi V	04/10/2015
AC 547	Association of Plasma Renin and Aldosterone levels with Myocardial Fibrosis, Hypertrophy and Dysfunction: The Multi-Ethnic Study of Atherosclerosis	Ambale-Venkatesh, Bharath	05/06/2015
AC 548	Association of adipokines with subclinical cardiovascular diseases and myocardial dysfunction	Ostovaneh, Mohammad R	05/06/2015
AC 550	Serum Fibroblast Growth Factor-23 and Myocardial Fibrosis using Cardiac Magnetic Resonance T-1 Mapping and Extracellular Volume Fraction in The Multi-Ethnic Study of Atherosclerosis	Almahmoud, Mohamed Faher	05/22/2015

AL 195	The association of baseline sex hormone levels with Ankle brachial indices and progression of peripheral arterial disease in the Multi-Ethnic Study of Atherosclerosis	Goldman, Matthew P	05/22/2015
AM 055	Inferring spatial and temporal scales for the associations between built environment attributes and cardiovascular risk factors: The Multi-Ethnic Study of Atherosclerosis	Sanchez, Brisa Ney	05/22/2015
AL 196	Changes in Retinal Abnormalities and Their Associations with Cognitive Performance: The Multi-Ethnic Study of Atherosclerosis (MESA).	Hughes, Timothy	06/02/2015
AE 146	Predictive Value of New Derived Parameters of the Radial Artery Waveform and Clinical Cardiovascular Disease Incidence: The Multi-Ethnic Study of Atherosclerosis	Duprez, Daniel A.	06/02/2015
AE 144	Association of Troponin T and Ankle Brachial Indices with Incident Coronary Heart Disease: the Multi-Ethnic Study of Atherosclerosis	Driver, Steven Lawrence	06/26/2015
AL 197	Longitudinal Associations of Psychosocial Factors with Inflammation, Hemostasis and Endothelial Markers: The Multi-Ethnic Study of Atherosclerosis (MESA)	Castro-Diehl, Cecilia	06/26/2015
AL 200	The Association of Depression with Diurnal Cortisol and Stress Response in the Multi-Ethnic Study of Atherosclerosis	Hussein, Mustafa	07/10/2015
AC 557	Dietary acid load and measures of metabolic acidosis in the Multi-Ethnic Study of Atherosclerosis	van Ballegooijen, Adriana Johanne	07/10/2015
AC 560	Optimal Weight for Preserving Cognitive Function: The Multiethnic Study of Atherosclerosis	Remigio-Baker, Rosemay A	07/10/2015
AM 056	Associations of complex mixtures of air pollutants and neighborhood social factors with biomarkers of inflammation	Hamra, Ghassan B	07/24/2015
AE 151	The association of fatty liver with incident atrial fibrillation and electrocardiographic PR interval in the Jackson Heart Study and Multi-Ethnic Study of Atherosclerosis	Heckbert, Susan	07/24/2015
AC 556	Renal Artery Calcification and Kidney Function	Conill Marasciulo, Rodrigo	07/24/2015
AE 153	Distribution and Prognostic Significance of Segmental and Regional Left Ventricular Mass	Kenchaiah, Satish	08/07/2015
AL 202	Associations of Serum Adipokine Levels with Subclinical Interstitial Lung Disease: The MESA Lung Fibrosis Study	Giles, Jon Tyler	08/07/2015
AE 154	The Association of Kidney Biomarkers with Subclinical and Clinical Heart Failure Events: The Multi-Ethnic Study of Atherosclerosis (MESA)	Robinson-Cohen, Cassianne	08/07/2015
AC 565	Relationship of Myocardial T1 and Extracellular Volume Fraction to Weight and Body Mass Index: Implications for Myocardial Fibrosis Imaging (the Multi-Ethnic Study of Atherosclerosis: MESA Study)	Liu, Songtao	08/07/2015
AL 207	Systematic review and individual participant level meta-analysis of the association between retinal vessel caliber and chronic kidney disease.	Sabanayagam, Charumathi	08/26/2015
AL 205	Systematic review and individual participant level meta-analysis of the association between retinal vessel caliber, retinopathy and diabetic kidney disease.	Sabanayagam, Charumathi	08/26/2015
AC 533	Insomnia, Sleep Duration, and Coronary Artery Calcification: The Multi-Ethnic Study of Atherosclerosis	Bertisch, Suzie	08/27/2015

AE 155	An examination of the associations between plasma omega-3 fatty acids and development/progression of retinopathy in the Multi-Ethnic Study of Atherosclerosis	Weir , Natalie L	08/27/2015
AC 563	Ethnic differences in the relationship of adiponectin, leptin, resistin, and tumor necrosis factor-alpha with diabetes mellitus: The Multi-Ethnic Study of Atherosclerosis (MESA)	Bhatnagar, Sheelu	08/27/2015
AL 203	Chronic Kidney Disease and the Progression of Emphysema: The MESA Lung Study	Viola, Sara R	08/27/2015
AL 206	Emphysema Quantification on Large-Scale Cardiac Scans Using Hidden Markov Measure Field Model: The Multi-Ethnic Study Of Atherosclerosis Lung Study	Yang, Jie	09/10/2015
AC 568	Assessing the spatial heterogeneity in cardiovascular risk factors within and between blacks and whites: the Multi-Ethnic Study of Atherosclerosis	Tabb, Loni P	09/22/2015
AC 571	Pulmonary Artery Pulse Wave Velocity in Chronic Obstructive Pulmonary Disease (COPD) – the MESA COPD Study.	Huurman, Roy	10/02/2015
AL 212	Hormone replacement therapy and the progression of emphysema and airflow limitation: The Multi-Ethnic Study on Atherosclerosis.	Killeen, Kyle	10/02/2015
AL 209	Longitudinal association between subclinical atherosclerosis and pulmonary emphysema: The Multi-Ethnic Study of Atherosclerosis	Gomez Almonte, Maximo E	10/02/2015
AL 208	Plasma von Willebrand factor and longitudinal change in percent emphysema and lung function: the MESA Lung Study	Aaron, Carrie P	10/02/2015
AC 572	Depression and anxiety related to lung function and Emphysema in the Multi-Ethnic Study of Atherosclerosis	Almonte , Casandra A	10/02/2015
AE 157	Can left ventricular trabeculation measured by fractal dimension predict development of heart failure? The Multi-Ethnic Study of Atherosclerosis	Zemrak, Filip	10/02/2015
AC 576	Body Composition and Diabetes Prevalence: Comparing South Asians in MASALA and the MESA Race/Ethnic Groups	Flowers, Elena	10/23/2015
AC 574	Exploring the Lipid Paradox Hypothesis in Rheumatoid Arthritis in the Multi-Ethnic Study of Atherosclerosis: Do Rheumatoid Arthritis Patients with Very Low Circulating Lipid Concentrations Have Subclinical Atherosclerosis?	Giles, Jon Tyler	10/23/2015
AL 213	Cellular Response to Chronic Psychosocial Stress: Ten-Year Longitudinal Changes in Telomere Length in the Multi-Ethnic Study of Atherosclerosis	Hussein, Mustafa	10/23/2015
AC 578	Mobile monitoring estimates of exposure to NOx and O3 and cross-sectional measures of atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Xu, Wei	11/13/2015
AC 577	Association of non-steroidal anti-inflammatory drugs and subclinical interstitial lung disease (ILD): The multi-ethnic study of atherosclerosis (MESA)	Madahar, Purnema	11/13/2015
AM 057	Patient Metadata-Constrained Shape Models for Cardiac Image Segmentation	Pereañez, Marco	12/04/2015
AL 215	Association between inflammatory markers and global and regional cardiac function and structure measured by cardiac magnetic resonance Imaging	Rahsepar, Amir Ali	12/08/2015

AE 162	Lupus and RA-related Autoantibodies Are Associated with Markers of Inflammation in a Community Based Population Cohort: The Multi-Ethnic Study of Atherosclerosis (MESA)	Majka, Darcy S.	12/22/2015
AC 583	The Association of Serum Vitamin D Concentrations and Non Alcoholic Fatty Liver Disease (NAFLD): Effects of Gender, Age and Race/Ethnicity. The Multi Ethnic Study of Atherosclerosis	El Khoudary, Samar R.	01/20/2016
AE 163	Change in Hepatocyte Growth Factor is associated with Development of Coronary Heart Disease: The Multi-Ethnic Study of Atherosclerosis (MESA) Study	Decker, Paul A	01/29/2016
AE 164	Hepatocyte Growth Factor, a Promising Biomarker for Predicting Risk of Coronary Heart Disease: The Multi-Ethnic Study of Atherosclerosis (MESA)	Bielinski, Suzette J.	01/29/2016
AC 581	Cardiovascular morphology and function associated with respiratory chemoreflex activation in the Multi-Ethnic Study of Atherosclerosis (MESA)	Thomas, Robert	01/29/2016
AE 165	Left Ventricular Hypertrophy, B-type Natriuretic Peptide and Incident Dementia in Asymptomatic Individuals from the Multi-Ethnic Study of Atherosclerosis	Yoneyama, Kihei	01/29/2016
AL 216	Association of coronary calcium, cIMT and carotid plaque progression with LDL and HDL cholesterol particle concentration measured by ion mobility testing: multiethnic study of atherosclerosis (MESA)	Ceponiene, Indre	01/29/2016
AM 058	Explaining radiological emphysema subtypes with texture dictionaries and unsupervised learning of texture subtypes: MESA COPD study	Yang, Jie	01/29/2016
AL 218	Association between pericardial fat volume and left ventricular strain abnormalities: subanalysis of the MESA trial	Ordovas, Karen G	02/26/2016
AE 159	Association of Testosterone with Progression of Carotid Atherosclerosis and Coronary Calcium Score: The Multi-Ethnic Study of Atherosclerosis (MESA)	Ceponiene, Indre	03/11/2016
AL 220	Does HDL mediate the association between air pollution and atherosclerosis? The Multi-Ethnic Study of Atherosclerosis	Bell, Griffith	03/11/2016
AL 222	Air pollution exposure and novel biomarkers of inflammation and cardiac stress in the Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air)	Hazlehurst, Marnie F	03/18/2016
AE 168	The Association of ABO Blood Type and Coronary Heart Disease: The Multi-Ethnic Study of Atherosclerosis	Bell, Elizabeth J.	03/18/2016
AE 170	Machine Learning for the Identification of Phenotypic Signatures Associated with Incident Heart Failure and Heart Failure Subtypes: The Multi-Ethnic Study of Atherosclerosis	Ahmad, Faraz S	03/18/2016
AC 584	Normal Reference Values and Determinants of Thoracic Aortic Diameter Using Cardiac CT in the Multi-Ethnic Study of Atherosclerosis (MESA)	Rahmani, Sina	03/31/2016
AL 224	Muscle Mass and Diabetes Risk in a Diverse Cohort	Larsen, Britta A.	04/29/2016
AE 173	Circulating Very Long Chain Saturated Fatty Acids and Incident Heart Failure: Multiethnic Study of Atherosclerosis	Qureshi, Waqas	04/29/2016
AE 171	Phenotype of and CETP Activity Level in the High Non-HDL-C/Low Apolipoprotein B Discordant Lipid Group	Pagidipati, Neha J	04/29/2016

AC 588	Associations between Rheumatoid Arthritis Related Autoimmunity and Bone Mineral Density in Community-Living Individuals: The Multi-Ethnic Study of Atherosclerosis	Hughes-Austin, Jan M	04/29/2016
AE 175	Estimated glomerular filtration rate upper reference limits and outcomes associated with NT-proBNP and high sensitivity troponin T	Bansal, Nisha	05/11/2016
AL 226	Neighborhood-level determinants of leukocyte telomere length attrition over ten years in the Multi-Ethnic Study of Atherosclerosis (MESA)	Brown, Rashida	05/13/2016
AL 225	Changes in health behaviors and changes in leukocyte telomere length maintenance over ten years in the Multi-Ethnic Study of Atherosclerosis (MESA)	Brown, Rashida	05/13/2016
AL 228	Association between Coronary Artery Calcium (CAC) and Serum Collagen Biomarkers: The Multi-Ethnic Study of Atherosclerosis (MESA)	Papayannis, Aristotelis	05/13/2016
AE 176	Association of Testosterone with Cardiovascular Events and Mortality: The Multi-Ethnic Study of Atherosclerosis (MESA)	Ceponiene, Indre	05/13/2016
AE 177	The Relationship of Fibroblast Growth Factor 21 in Subclinical Atherosclerosis and Cardiovascular Events in the Multi-Ethnic Study of Atherosclerosis	Campbell, Steven	05/20/2016
AL 233	Vitamin D, Parathyroid Hormone, Glucose Metabolism and Incident Diabetes in the Multi-Ethnic Study of Atherosclerosis	Joseph, Joshua J.	06/10/2016
AC 589	Association of Circulating Biomarkers of Mineral Metabolism with Valvular and Annular Calcification in the Multi-Ethnic Study of Atherosclerosis (MESA)	Bortnick, Anna E	06/23/2016
AE 180	Vitamin D levels and Autoimmunity in the Multi-ethnic Study of Atherosclerosis (MESA): Implications for cardiovascular disease	Jering, Karola Simone	06/23/2016
AC 594	Do Endogenous Sex Hormones Affect Pericardial Adipose Tissue Volume of Males in The Multi-Ethnic Study of Atherosclerosis (MESA)?	Aydogdu, Aydogan	06/29/2016
AE 183	Association of IL-10 , soluble TNFa receptor and IL-2 receptor levels with incident heart failure: The Multi-Ethnic Study of Atherosclerosis.	Bakhshi , Hooman	07/06/2016
AE 003	Mitral Annular Calcification and Stroke: The Multi-Ethnic Study of Atherosclerosis	Ceponiene, Indre	07/26/2016
AC 592	Use of Dietary Supplements and Coronary Artery Calcium Density and Volume: The Multi-Ethnic Study of Atherosclerosis	Bradley, Ryan	07/26/2016
AM 059	Methods to study salivary cortisol as a predictor of disease and contributor to health disparities: The Multi-Ethnic Study of Atherosclerosis	Sanchez, Brisa Ney	07/26/2016
AL 238	Long-Term Exposure to Ambient Air Pollution and Change in Lipids Over Time: The Multi-Ethnic Study of Atherosclerosis (MESA)	Tibuakuu, Martin	08/12/2016
AL 239	Neighborhood Noise as a Modifiable Risk Factor for Incident Hypertension: A Population-Based Cohort Study (MESA and CHAP)	Adar, Sara D.	08/12/2016
AL 240	An examination of plasma fatty acids and incidence of impaired fasting glucose, insulin resistance, and diabetes: The Multi-Ethnic Study of Atherosclerosis (MESA)	Weir , Natalie L	08/12/2016
AE 185	An evaluation of plasma fatty acid levels and cardiovascular event outcomes: the Multi-Ethnic Study of Atherosclerosis	Steffen, Brian	08/12/2016

AM 060	Determinants of Thoracic Aortic Volume: Multi-Ethnic Study of Atherosclerosis	Sanampudi, Sreeja	08/26/2016
AM 061	Right ventricular strain and volume quantification using Cardiac Magnetic Resonance with Multimodality Tissue Tracking in The Multi-Ethnic Study of Atherosclerosis Chronic Obstructive Pulmonary Disease	Garimella , Harisha	08/26/2016
AM 062	Health effects associated with exposure to multiple built environment factors: Multi-Ethnic Study of Atherosclerosis	Sanchez, Brisa Ney	08/26/2016
AL 243	Measurement error bias in built environment health effects: The Multi-Ethnic Study of Atherosclerosis	Sanchez, Brisa Ney	08/26/2016
AC 596	Association Between Serum Collagen Biomarkers and Myocardial Fibrosis Assessed by Cardiovascular Magnetic Resonance Imaging: The Multi-Ethnic Study of Atherosclerosis	Ambale-Venkatesh, Bharath	09/23/2016
AE 190	Association of MRI Defined Right Atrial Enlargement with Development of Atrial Fibrillation: The Multi-Ethnic Study of Atherosclerosis	Xie, Eric Glen	09/23/2016
AE 186	T helper cells and incident cardiovascular disease risk: the Multi-Ethnic Study of Atherosclerosis (MESA)	Olson, Nels C	09/23/2016
AE 187	Endothelial dysfunction, arterial elasticity, and the risk of heart failure in a multi-ethnic population	Arnlov, Johan	09/23/2016
AC 600	Brachial artery intima-media thickness: associations with coronary heart disease risk factors in MESA.	Polak, Joseph F.	10/28/2016
AE 191	Brachial artery intima-media thickness: associations with coronary heart disease events in MESA	Polak, Joseph F.	10/28/2016
AE 192	Association of Fibroblast Growth Factor 23 with the Renin-Angiotensin-Aldosterone System and Risk of Heart Failure: The Multi-Ethnic Study of Atherosclerosis	Akhabue, Ehimare	11/08/2016
AL 247	Race, Neighborhood Characteristics and Early Kidney Function Decline: The Multi-Ethnic Study of Atherosclerosis	Hicken, Margaret T	11/18/2016
AC 602	Leukocytes As Mediators Linking OSA and Subclinical Atherosclerosis: The Multi-Ethnic Study of Atherosclerosis (MESA)	Reis Geovanini, Glaucylara	11/22/2016
AE 193	Impact of Endogenous Sex Hormones Levels on Risk for Incident Heart Failure in Men and Women from the Multi Ethnic Study of Atherosclerosis	Zhao, Di	11/22/2016
AE 194	Associations of Different Measures of Coronary Artery Calcium Density with Incident Cardiovascular Disease: The MESA (Multi-Ethnic Study of Atherosclerosis)	Forbang, Nketi Innocent	11/22/2016
AC 603	Participation of MESA in a Meta-analysis of the Association of Dietary and Circulating Omega-3 Fatty Acids with Pulmonary Function in the CHARGE Consortium	Manichaikul, Ani	12/14/2016
AE 195	Mid-ventricular systolic strain, menopause age and incident heart failure in postmenopausal women of the MESA study	Ebong, Imo A.	12/23/2016
AL 248	The Relationship of circulating fibroblast growth factor 21 levels with pericardial fat: The Multi-Ethnic Study of Atherosclerosis	Ong, Kwok Leung	12/23/2016
AL 249	Age Related Left Atrial Remodeling with Cardiac Magnetic Resonance Imaging: The Multi-Ethnic Study of Atherosclerosis	Ambale-Venkatesh, Bharath	12/23/2016
AE 199	Implications of a combination of coronary artery calcification and carotid artery plaque in the primary prevention of ischemic stroke	Osawa , Kazuhiro	01/27/2017

	according to American College of Cardiology/American Heart Association Cholesterol Management guidelines: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)		
AC 604	Relationship of Sleep disordered breathing with myocardial infarcts and diffuse interstitial fibrosis on cardiac magnetic resonance (CMR): Results of the Multi-Ethnic Study of Atherosclerosis (MESA)	Shah, Neomi	01/27/2017
AE 200	Carotid Artery Echolucency and Cardiovascular Disease Events: The Multi-Ethnic Study of Atherosclerosis	Mitchell, Carol	01/27/2017
AL 250	Associations of Endogenous Sex Hormone Levels with Coronary Artery Calcium Progression over 10-Years Among Women in the Multi-Ethnic Study of Atherosclerosis	Subramanya, Vinita	01/27/2017
AC 607	Sleep Apnea in Relation to Autonomic Nervous System Measures: The Multi-Ethnic Study of Atherosclerosis (MESA).	Castro-Diehl, Cecilia	02/03/2017

End table.

4.7.5 Table: Time from Manuscript Approval – Genetics Papers

Genetics Papers Proposals Over 12 Months with no Pen Draft Submission

Proposal Number	Title	First Author	Approval Date
G 006	Associations between ABCA1 and CETP polymorphisms and lipoproteins, inflammatory markers, and subclinical atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Daniel, Kurt R.	3/15/2007
G 003	Association between age-related macular degeneration and genetic variants of C-reactive protein, MTHFR, interleukin 6 and fibrinogen-beta genes	Cheng, Ching-Yu	3/15/2007
G 004	Associations between genetic variants in the LDLR, LPA, LRP and OLR1 genes and lipids, CAC and carotid IMT in the Multi-Ethnic Study of Atherosclerosis (MESA)	Raynor, Laura A.	3/15/2007
G 007	Association of LPL genetic variants with phenotypes related to diabetes, structural atherosclerosis, lipids, hypertension, vessel function, and inflammation in the Multi-Ethnic Study of Atherosclerosis	Goodarzi, Mark O	4/13/2007
G 008	Associations between genetic variants in the diabetes genes GCK, CAPN10, AMPD1, AMPD2, PRKAA2, and SORCS1 and diabetes-related traits and measures of structural atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Goodarzi, Mark O	4/13/2007
G 015	Association between genetic variants in the PPARG gene and subclinical atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Chen, Yi-Chun	6/8/2007
G 016	Association between polymorphisms of the C-reactive protein (CRP) gene and plasma CRP levels in The Multi-Ethnic Study of Atherosclerosis	Cheng, Ching-Yu	7/13/2007
G 022	Machine Learning to Identify Complex Interactions in Candidate Genes: The Multi-Ethnic Study of Atherosclerosis	Liu, Yongmei	8/1/2007
G 023	EDG1, EDG5 SNPs and Subclinical Atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Hedrick, Catherine C.	8/23/2007
G 030	Phosphodiesterase 4D gene polymorphisms and lung function/lung density in a multiethnic population. The Multi Ethnic Study of Atherosclerosis (MESA)-Lung Study	Kiefer, Elizabeth M	10/16/2007
G 038	A Candidate Gene Association Study of Vascular Endothelial Growth Factor (VEGF), Endothelial Nitric Oxide Synthase (eNOS) and Endothelial Differentiation-Sphingolipid G-protein-coupled receptors 1 and 5 (EDG1 and EDG5) Polymorphisms with Lung Function and CT Lung Density in a Multi-Ethnic Population. The MESA Lung Study.	Burkart, Kristin Marie	1/23/2008

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G 028	Association of Polymorphisms in Genes Related to Renin-Angiotensin-Aldosterone and Adrenergic Systems with Left Ventricular Structure and Function and Incident Heart Failure; The Multi-Ethnic Study of Atherosclerosis	Bahrami, Hossein	2/11/2008
G 040	GPR132 SNPs and variation in lipid metabolism in the Multi-Ethnic Study of Atherosclerosis (MESA)	Rich, Stephen	2/12/2008
G 042	Associations between genetic variants in the ACE, AGT, AGTR1, and AGTR2 genes and hypertension in the Multi-Ethnic Study of Atherosclerosis	Young, J. Hunter	4/17/2008
G 036	Association study between genetic variants in the membrane metallo-endopeptidase (MME) gene and subclinical atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Chen, Yi-Chun	5/6/2008
G 048	Investigation of candidate genes in the syntenic region of a murine locus for fasting blood glucose levels, Bglu3, in The Multi-Ethnic Study of Atherosclerosis (MESA)	Shi, Weibin	6/12/2008
G 052	Novel Type 2 Diabetes Candidate Genes, Subclinical Atherosclerosis and Intermediate Traits in the Multi-Ethnic Study of Atherosclerosis	Mehta, Nehal N	10/7/2008
G 051	Genetic variation in paraoxonase in relation to subclinical atherosclerosis and cardiovascular events: the Multi-Ethnic Study of Atherosclerosis	Watson, Karol E.	5/5/2009
G 058	A Candidate-wide Gene Association Study of Right Ventricular Morphology and Function: MESA-D-RV CARe	Kawut, Steven M.	5/5/2009
G 060	Association between OLR1 Gene Polymorphisms and Endothelial Function in the Multi-Ethnic Study of Atherosclerosis	Brinkley, Tina E	5/5/2009
G 061	Genetic variation in KLOTHO and calcium-phosphorous metabolism: The Multi-Ethnic Study of Atherosclerosis	Kestenbaum, Bryan	9/5/2009
G 066	Finding better predictors of Left Ventricular Mass among Hispanic Subgroups involving ancestry informative markers: The Multi-Ethnic Study of Atherosclerosis (MESA).	Rodriguez, Carlos Jose	5/6/2010
G 068	Genome-Wide Association Study of Left Ventricular Structure: The Multi-Ethnic Study of Atherosclerosis (MESA)	Shah, Sanjiv J	5/19/2010
G 074	Meta-analysis of genome-wide association data for PR interval duration and association with atrial fibrillation - Participation of the Multi-Ethnic Study of Atherosclerosis in the PRIMA Consortium	Sotoodehnia, Nona	6/24/2010

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G 082	Genome-Wide Association Study for Retinal Venular Caliber	Ikram , Mohammad Kamran	7/14/2010
G 083	Genome-wide Association Study of Abdominal Aortic Diameter measurements	Wassel, Christina L.	7/14/2010
G 084	Validation of ECG-associated Genetic Variants in the Multi-Ethnic Study of Atherosclerosis	Arking, Dan	7/14/2010
G 088	Genome wide association study for development of Heart Failure and Heart Failure Precursors: results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Chahal, Harjit	7/28/2010
G 089	Further exploration of the association between variants in TCF7L2 and kidney function in the Multi-Ethnic Study of Atherosclerosis (MESA).	Chang, Jamison	7/28/2010
G 093	Predictive Model of Coronary Artery Calcification in Atherosclerosis in a Chinese American Cohort: The Multi-Ethnic Study of Atherosclerosis (MESA)	McGeachie, Michael	8/26/2010
G 092	GWA and gene-wide significance study of atrial fibrillation in multiple race/ethnic groups	Arking, Dan	8/26/2010
G 097	Genome-wide Association Study of Coronary Artery Disease: the Multi-Ethnic Study of Atherosclerosis	Sellers, Matthew B.	9/22/2010
G 099	A genome-wide association study to assess loci associated with lung function among Hispanic-Americans and Asian-Americans: The MESA Lung Study.	Powell, Rhea E.	10/8/2010
G 111	Admixture Mapping Study of Atrial Fibrillation in African Americans	Marcus, Gregory M	1/6/2011
G 113	Genome Wide Association meta-analysis of Incident CKD and rapid decline in GFR: the CKDGen Consortium	Kramer, Holly	2/3/2011
G 115	CHARGE Consortium Hemostatic factors Working Group: GWAS of Factor VII, Factor VIII, and von Willebrand Factor in European-Americans	Vaidya, Dhananjay	2/22/2011
G 117	Genome Wide Association Study of Age at Natural Menopause in African-American Women in the MESA Family Study – Joining the CARe Project	Raffel, Leslie	3/17/2011
G 124	META Genomes wide analysis plan for serum C-reactive protein levels	Rosas, Sylvia E.	4/7/2011
G 120	Genetic Variation and the Risk of Cardiovascular Disease Associated with Exposure to Chemical Components of Particulate Matter: The Multi-Ethnic Study of Atherosclerosis and Air Pollution	Wang, Shizhen	4/13/2011

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G 128	Copy number variants in the Multi-Ethnic Study of Atherosclerosis: role in population diversity and association with glucose homeostasis traits and diabetes	Jones, Michelle Renee	4/21/2011
G 126	Replication of Genome-Wide Significant Hits from a GWAS for Diabetic Retinopathy in a Dundee, Scotland study of diabetic persons	Kuo, Jane Z	4/21/2011
G 131	Genome Wide Association Study of Blood Pressure Levels and Hypertension in Hispanics: A Collaborative Meta-Analysis	Palmas, Walter	4/21/2011
G 136	Candidate gene and Genome Wide Association Study (GWAS) of aortic dimensions and biomechanics: The Multi-Ethnic Study of Atherosclerosis	Teixido-Tura, Gisela	5/5/2011
G 133	Sex Interaction Genome-Wide Association Study of Plasma Phospholipid Polyunsaturated Fatty Acids: A CHARGE-based Meta-Analysis (including the Multi-Ethnic Study of Atherosclerosis)	Foy, Millennia	5/5/2011
G 139	Genetic associations of diabetic retinopathy (DR) candidate genes in the Multi-Ethnic Study of Atherosclerosis (MESA) study -- DR and retinal vascular caliber	Kuo, Jane Z	6/2/2011
G 141	RYR3 Gene Variants in Carotid Atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Shrestha, Sadeep	6/13/2011
G 143	NFE2L2 SNPs and variation in atherosclerosis and inflammatory markers in the Multi-Ethnic Study of Atherosclerosis	Leitinger, Norbert	7/19/2011
G 146	Genetic Variation in Early Menopause: The Multi-Ethnic Study of Atherosclerosis	Wellons, Melissa	7/21/2011
G 149	Genetic contributors to NMR-based lipoprotein subclasses in African Americans from the Sea Islands Genetic Network (SIGNET), the Multi-Ethnic Study of Atherosclerosis (MESA), and the Cardiovascular Health Study (CHS)	Sale, Michele M.	8/18/2011
G 152	Association of Coronary Artery Calcified Plaque with DNA Polymorphisms in the Selenoprotein S Gene: The Multi-Ethnic Study of Atherosclerosis and Diabetes Heart Study	Cox, Amanda	9/14/2011
G 153	Genome-Wide Association Study of n-3 and n-6 polyunsaturated fatty acids (PUFAs) in African American, Hispanic and Chinese cohorts through the CHARGE Consortium – Participation of the Multi Ethnic Study of Atherosclerosis in a CHARGE Plasma Fatty Acids Working Group Meta-analysis	Manichaikul, Ani	9/22/2011

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G 155	Proglucagon Gene Loci and Type 2 Diabetes Risk, Prevalence and Incidence: the Multi-Ethnic Study of Atherosclerosis	Mercado, Carla I.	10/1/2011
G 156	Genome Wide Association Study of T Helper Cell Bias in the Multi-Ethnic Study of Atherosclerosis	Durda, Jon Peter	10/1/2011
G 161	MESA participation in population structure analysis in African Americans	Huang, Yiqi	12/8/2011
G 166	Replication of common genetic polymorphisms associated with circulating 25-hydroxyvitamin D concentration among Europeans	de Boer, Ian	1/5/2012
G 174	Genome-wide interaction with dietary factors with respect to fasting plasma LDL, HDL, and triglyceride concentrations	Nettleton, Jennifer	4/5/2012
G 178	SNPs associated with coronary artery disease and type 2 diabetes as determinants for age at natural menopause	Kerr, Kathleen F.	4/5/2012
G 179	GENOME-WIDE SNP x DIET INTERACTION STUDIES: whole grains, magnesium, and zinc FOR FASTING GLUCOSE and INSULIN	Nettleton, Jennifer	4/19/2012
G 188	Association of Phosphorus Metabolism Gene Polymorphisms with Subclinical and Clinical Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis (MESA)	Robinson-Cohen, Cassianne	5/31/2012
G 190	Meta-analyses of Total and Free Testosterone in Women – CHARGE consortium - The Multi-Ethnic Study of Atherosclerosis (MESA) joining as discovery cohort	Raffel, Leslie	6/14/2012
G 191	GWAS meta-analyses of Estradiol and Estrone in Post-menopausal Women – CHARGE consortium - The Multi-Ethnic Study of Atherosclerosis (MESA) joining as discovery cohort	Raffel, Leslie	6/14/2012
G 197	Participation of the Multi Ethnic Study of Atherosclerosis in a CHARGE Nutrition Working Group Meta-analysis for in silico replication of lead hits from a parallel genome-wide meta-analysis of macronutrient intake from the DietGen Consortium	Chu, Audrey Y	7/25/2012
G 202	Fasting glucose and insulin and thiazide diuretic gene interactions: a CHARGE meta-analysis	Goodarzi, Mark O	8/2/2012
G 203	Fasting glucose and insulin and statin gene interactions: a CHARGE meta-analysis	Goodarzi, Mark O	8/2/2012
G 204	A GWAS Meta Analysis of African American Diabetic Nephropathy: The Multi-Ethnic Study of Atherosclerosis	Ng, Maggie	8/2/2012

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G 208	Genetic contributors to NMR-based lipoprotein subclasses in African Americans from the Sea Islands Genetic Network (SIGNET), the Multi-Ethnic Study of Atherosclerosis (MESA), and the Cardiovascular Health Study (CHS)	Huang, Yiqi	9/5/2012
G 207	Common and Exonic Variants Associated with Biomarkers of Inflammation	Reiner, Alexander P	9/6/2012
G 209	GWAS of moderate/vigorous leisure physical activity and sedentary behavior: The Multi-Ethnic Study of Atherosclerosis	Kerr, Kathleen F.	9/20/2012
G 211	Genome-Wide Association Study of Right Ventricular Structure and Function: The MESA-Right Ventricle Study	Kawut, Steven M.	10/18/2012
G 215	A GWAS Study of Airways on CT scan	Donohue, Kathleen M	10/18/2012
G 216	Peripheral Blood Mononuclear Cell (PBMC) Gene Expression and Pulmonary Parenchymal Perfusion.	Pottinger, Tess Diandra	11/5/2012
G 199	Association of diurnal cortisol profiles with anthropometric, metabolic, and inflammatory markers in the Multi-Ethnic Study of Atherosclerosis: Effect modification by stress response genesInteractions	He, Zihuai	12/6/2012
G 220	CHARGE Consortium Meta-Analysis for Anthropometric Traits: The Multi-Ethnic Study of Atherosclerosis	Haritunians, Talin	12/15/2012
G 229	Social Stress and DNA Methylation in Genes Related to Stress Reactivity and Inflammation: The Multi-Ethnic Study of Atherosclerosis	Needham, Belinda L	1/5/2013
G 230	1000G Meta-Analysis for BMI in African Americans	Rasmussen-Torvik, Laura J.	1/17/2013
G 231	Paraoxonase and Subclinical Atherosclerotic Burden: The Multi-ethnic Study of Atherosclerosis	Bhatnagar, Vibha	1/25/2013
G 239	Admixture Mapping of Loci for Arterial Distensibility in African Americans using Ancestry Informative Panels from Genomewide Arrays	Vaidya, Dhananjay	2/6/2013
G 233	Interactions between Inflammation and Genes on Cognition: The Multi-Ethnic Study of Atherosclerosis (MESA)	Fitzpatrick, Annette	2/6/2013
G 234	GWAS Meta-analysis of C-reactive protein (CRP) in Asian populations	Guo , Xiuqing	2/6/2013
G 237	Common Genetic Variants and Circulating 24,25(OH)2D Concentrations: The Multi-Ethnic Study of Atherosclerosis (MESA)	Robinson-Cohen, Cassianne	2/7/2013

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G 238	Developing New Methodologies for Network-Based Methods for Integrative Analysis of Biological Pathways in Cardiovascular Diseases	Shojaie, Ali	2/14/2013
G 232	Peripheral blood gene expression and airway morphology on CT scan: The MESA COPD Study	Donohue, Kathleen M	2/14/2013
G 227	Analysis of Adiponectin (ADIPOQ) Low Frequency Variants including Coding variants from the Exome Chip in the Multi-Ethnic Study of Atherosclerosis SHARe	Allred, Nicholette D	2/23/2013
G 252	MESA SHARe Exome Project: ESP-GO Renal Working Group Manuscript Proposal	Kramer, Holly	3/20/2013
G 248	Join the CHARGE Consortium for GENOME-WIDE SNP x DIET INTERACTION STUDIES	Guo , Xiuqing	3/21/2013
G 257	Exposure to Ambient Particulate Matter and Other Air Pollutants, and Variation of Transcription and Epigenetic Methylation: The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air)	Hensley, Mark D	4/6/2013
G 259	Common genes underlying asthma and chronic obstructive pulmonary disease. A genome-wide association study on the Dutch hypothesis	Donohue, Kathleen M	4/17/2013
G 261	Proposal for an extended analysis under approved CARe manuscript proposal CMP00119 (Meta Analysis of Genome Wide Association Data for Type 2 Diabetes Quantitative Traits in African Americans including the Candidate Gene Association Resource [CARe] Project)	Guo , Xiuqing	5/3/2013
G 262	Airway dimensions at CT scan and gene expression in peripheral blood monocytes: The MESA Epigenetics Study	Donohue, Kathleen M	5/3/2013
G 228	Does the apolipoprotein E (APOE) epsilon-4 allele modify associations between social factors and cognitive functioning? A cross-sectional investigation in the Multi-Ethnic Study of Atherosclerosis (MESA) cohort	Smith, Jennifer A	5/15/2013
G 264	Meta-analysis of Exome Chip Data in a Multiethnic Sample to Identify Variants Associated with Nonalcoholic Fatty Liver Disease	Allred, Nicholette D	7/15/2013
G 263	Genome-wide Association Study of Nonalcoholic Fatty Liver Disease in a Multiethnic Meta-analysis	Allred, Nicholette D	7/15/2013
G 272	Transethnic analysis: Age at Menarche, Age at Natural Menopause - The Multi-Ethnic Study of Atherosclerosis (MESA) and MESA Family joining as discovery cohort in ReproGen	Raffel, Leslie	7/17/2013
G 278	Rare variant contribution to Stroke: MESA participation in the CHARGE Stroke Working Group ExomeChip analysis	Manichaikul, Ani	8/8/2013

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G 279	Generalization and fine mapping of previously identified PR loci to multi-ethnic populations	Wassel, Christina L.	8/8/2013
G 273	Role of Adhesion Molecules in Clinical and Subclinical Cardiovascular Disease: the Multi-Ethnic Study of Atherosclerosis (MESA)	Berardi, Cecilia	9/4/2013
G 288	Adenosine A2B receptor signaling in Diabetes: The Multi-Ethnic Study of Atherosclerosis (MESA)	Manichaikul, Ani	9/18/2013
G 294	Bivariate Genome-Wide Association Study (GWAS) to identify pleiotropic genes that affect depression and plasma levels of tumor necrosis factor-alpha (TNF-a)	Bakshis, Erin J	10/14/2013
G 290	Acculturation and telomere shortening among Hispanic adults: The Multi-Ethnic Study of Atherosclerosis	Novak, Nicole L	10/16/2013
G 296	Common genetic variants and myocardial fibrosis: The Multi-Ethnic Study of Atherosclerosis (MESA).	Vargas, Jose	10/16/2013
G 295	DNA Methylation Profiles and Salivary Cortisol: The Multi-Ethnic Study of Atherosclerosis	Needham, Belinda L	10/30/2013
G 305	Genetic association analysis of SLC17A9 SNPs for glucose and insulin traits among non-diabetics: The Multi-Ethnic Study of Atherosclerosis (MESA)	Manichaikul, Ani	1/8/2014
G 313	Differences between African and European Americans in long chain omega-3 and omega-6 polyunsaturated fatty acid synthesis: Replication in MESA	Seeds, Michael C	1/28/2014
G 311	Genome-wide predictors of response to anti-inflammatory foods	Frazier-Wood, Alexis C.	1/29/2014
G 309	Interactions between genetic variants and macronutrient substitution on BMI	Frazier-Wood, Alexis C.	3/5/2014
G 327	Genetic and epigenetic relationships between sleep timing and type 2 diabetes in The Multi-Ethnic Study of Atherosclerosis (MESA)	Lane, Jacqueline	5/7/2014
G 329	Investigation of fat intake as a modulator of the association between a genetic risk score of obesity and BMI in Asians, Mexican Americans, and African Americans from MESA.	Hidalgo, Bertha	5/21/2014
G 331	Interactions between linoleic acid intake and FADS variants on phospholipid levels of n-6 and n-3 polyunsaturated fatty acids (PUFAs) by FADS variants in the Multi-ethnic Study on Atherosclerosis	Frazier-Wood, Alexis C.	6/18/2014
G 332	Genome-wide association study of percent emphysema on CT scan: meta-analysis across three cohorts	Manichaikul, Ani	7/2/2014
G 336	Meta-analysis of genetic variants associated with Helicobacter pylori status in the Cohorts for Heart and Aging Research Genetic Epidemiology (CHARGE) consortium	Frazier-Wood, Alexis C.	7/8/2014
G 341	Mendelian Randomization to Assess A Causal Link Between Plasminogen Activator Inhibitor-1 and Obesity and Hypertension	Khan, Sadiya Sana	8/20/2014

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G 343	Genetic association analysis of common and rare protein coding variants for percent emphysema on CT scan in MESA	Manichaikul, Ani	8/20/2014
G 345	The role of mitochondrial DNA copy number and genetic variation in type 2 diabetes: The Multi-Ethnic Study of Atherosclerosis	Arking, Dan	8/20/2014
G 346	The Epidemiology of GlycA and GlycB: new markers of inflammation derived from NMR data	Frazier-Wood, Alexis C.	8/29/2014
G 349	The Contribution of Genes to Health Care Costs: Results from the Multi-ethnic Study of Atherosclerosis	Lu, Yang	9/3/2014
G 348	Genome-wide analysis of mitochondrial DNA copy number: the CHARGE consortium	Wassel, Christina L.	9/3/2014
G 352	Adaptive genetic variants at PNPLA3 associated with obesity and interact with animal source food intake in Europeans and Hispanic populations	Frazier-Wood, Alexis C.	9/17/2014
G 339	Catechol-O-methyltransferase association with coronary heart disease in The Multi-Ethnic Study of Atherosclerosis	Hall, Kathryn	10/2/2014
G 353	Hispanic Anthropometry Consortium (HISLA) 1000 Genomes GWAS Study of adiposity	Guo , Xiuqing	10/2/2014
G 360	Investigation of genetic risk score as an effect modifier in the relationship between adiposity and dietary quality in the Multi-Ethnic Study of Atherosclerosis (MESA).	Davis, Jennifer S	10/2/2014
G 363	GWAS Analysis of lipids for response to statin therapy: the Meta-Analysis by CHARGE and GIST consortia	Li, Xiaohui	10/15/2014
G 369	Meta-analysis of GWAS data (with 1000 genomes imputation) in relation to ventricular ectopy in African Americans, Hispanics, and whites, with the HCHS/SOL consortium: The Multi-Ethnic Study of Atherosclerosis	Lin, Henry J.	11/5/2014
G 373	MESA join CHARGE Consortium MI/CHD Exome Chip Analysis	Guo , Xiuqing	11/5/2014
G 362	Associations between Sleep EEG Spectral Power and Cognition in the Multi-Ethnic Study of Atherosclerosis (MESA)	Djonlagic, Ina	11/19/2014
G 377	Association of APOL1 with the Ankle Brachial Index (ABI) and Lower Extremity Peripheral Arterial Disease (PAD): The Multi-Ethnic Study of Atherosclerosis (MESA)	Wassel, Christina L.	12/8/2014
G 364	Is sickle cell trait associated with increased risk and incidence of coronary disease in African Americans? A Meta-analysis of MESA, JHS, ARIC and WHI.	Hyacinth, Hyacinth I	12/17/2014
G 381	Genetic Investigation of ANthropometric Traits (GIANT) consortium 1000 Genomes GWAS Study	Guo , Xiuqing	12/17/2014

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G 383	MAGIC Consortium Meta-Analysis for Type 2 Diabetes-Related Quantitative Traits: The Multi-Ethnic Study of Atherosclerosis	Goodarzi, Mark O	1/21/2015
G 386	Blood Pressure Response to Antihypertensives PharmacoGenetics - CHARGE Consortium + ASCOT	Guo , Xiuqing	1/21/2015
G 390	Genetic replication analysis of obstructive sleep apnea and nocturnal oxygen saturation in The Multi-Ethnic Study of Atherosclerosis (MESA)	Wang, Heming	1/21/2015
G 384	Meta-analysis of GWAS data (with 1000 genomes imputation) in relation to atrial fibrillation in populations of African, Asian, European, and Hispanic descent, with CHARGE and AFGen consortia cohorts: The Multi-Ethnic Study of Atherosclerosis	Lin, Henry J.	2/2/2015
G 315	Common genetic variants and myocardial structure and function: The Multi-Ethnic Study of Atherosclerosis (MESA)	Vargas, Jose	2/4/2015
G 392	Participation of MESA in the GLGC Asian Exome Chip Lipids Analysis	Manichaikul, Ani	2/4/2015
G 396	Vitamin D associated alterations in the transcriptome and methylome of immune cells in the Multi-Ethnic Study of Atherosclerosis (MESA)	Reynolds, Lindsay M	2/18/2015
G 394	Comparing GFR Estimating Equations Using Continuous Genetically-Derived African Ancestry: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Udler, Miriam S	2/24/2015
G 397	Participation of MESA in the CHARGE GWAS for TG:HDL ratio and non-HDL-C	Manichaikul, Ani	3/4/2015
G 404	Methylation and Gene Expression Insights Linking Air Pollution and Atherosclerosis: The Multi-Ethnic Study of Atherosclerosis	Chi, Gloria C	4/9/2015
G 403	Plasma apoCIII and risk of type 2 diabetes: a Mendelian randomization study in the Multi-Ethnic Study of Atherosclerosis	Zhu, Jingwen	5/4/2015
G 411	Association of Mitochondrial DNA Copy number with Myocardial Fibrosis and Dysfunction: The Multi-Ethnic Study of Atherosclerosis	Ambale-Venkatesh, Bharath	5/6/2015
G 421	Methylomic and Transcriptomic Profiles of Lower Extremity Peripheral Artery Disease in Monocytes: the Multi-Ethnic Study of Atherosclerosis (MESA)	Wassel, Christina L.	5/6/2015
G 418	CHARGE genome-wide interaction study of circulating fatty acids for inflammatory outcomes	Manichaikul, Ani	5/6/2015
G 422	Atrial Structural Interval Changes in Participants Possessing Variants on Chromosome 4q25 that is associated with Incident Atrial Fibrillation: Results from the Multi-ethnic Study of Atherosclerosis (MESA)	Yarmohammadi, Hirad	5/8/2015

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G 423	PR Interval Changes in Participants Possessing Variants on Chromosome 4q25 that are Associated with Incident Atrial Fibrillation: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Yarmohammadi, Hirad	5/13/2015
G 412	Analysis of 1000 Genomes imputed GWAS for subclinical atherosclerosis traits in diabetic patients – the CHARGE consortium study	Guo , Xiuqing	5/20/2015
G 424	The SLCO1B1 Gene and Incident Heart Failure	Guo , Xiuqing	5/20/2015
G 426	In silico transcriptomics of percent emphysema and subclinical ILD in MESA	Manichaikul, Ani	5/20/2015
G 429	Analysis of DNA Methylation Data on Obstructive Sleep Apnea in The Multi-Ethnic Study of Atherosclerosis (MESA).	Barfield, Richard	6/17/2015
G 433	Meta-analysis of exome chip data in relation to electrocardiographic QRS voltage duration in African American, Asian, European, and Hispanic ancestry participants, with the CHARGE consortium: The Multi-Ethnic Study of Atherosclerosis	Lin, Henry J.	6/17/2015
G 432	Meta-analysis of GWAS data (with 1000 genomes imputation) in relation to electrocardiographic heart rate in African American, Asian, and European ancestry individuals, with the CHARGE consortium: The Multi-Ethnic Study of Atherosclerosis	Lin, Henry J.	6/17/2015
G 436	Genome-Wide Association Study (GWAS) of Cognitive Performance: The Multi-Ethnic Study of Atherosclerosis (MESA)	Li, Xingnan	7/1/2015
G 438	The Role of the Social Environment in the Expression of Inflammation and Immune System related genes in the Multi-Ethnic Study of Atherosclerosis	Brown, Kristen M	7/1/2015
G 441	High-density lipoprotein cholesterol, decline in lung function, and chronic lower respiratory disease events in six population-based cohorts.	Oelsner, Elizabeth C	7/15/2015
G 440	Associations between C-reactive protein, fibrinogen, and interleukin-6 and longitudinal change in percent emphysema on computed tomography: The MESA Lung Study	Oelsner, Elizabeth C	7/15/2015
G 444	Transcriptomic profiles of aging in purified human immune cells in the Multi-Ethnic Study of Atherosclerosis	Reynolds, Lindsay M	8/20/2015
G 445	Transcriptional signatures of sleep apnea in the Multi-Ethnic Study of Atherosclerosis (MESA)	Gharib, Sina A	9/2/2015
G 448	DNA methylation patterns and age at menarche and menopause	Castillo-Fernandez, Juan E	9/16/2015

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G 449	Meta-analysis of B-vitamin Dietary Intake & DNA methylation	Mandaviya, Pooja R	9/16/2015
G 446	Comprehensive Evaluation of Mitochondrial Genetic Associations with Lipid Levels in the Multi-Ethnic Study of Atherosclerosis	Larson, Nicholas B	10/7/2015
G 454	1000G Meta-analysis of Type 2 Diabetes in African Americans - the MEDIA Consortium	Guo , Xiuqing	11/4/2015
G 458	Participation of MESA in a CHARGE Study of Genetic Risk Score Interaction of Cigarette Smoking in relation to Pulmonary Function	Manichaikul, Ani	11/18/2015
G 455	Gene-Lifestyle Interactions Analysis for Blood Pressure and Education	Guo , Xiuqing	11/18/2015
G 460	MESA joining the ATM rs3218695 and T2D replication study	Guo , Xiuqing	12/16/2015
G 462	MESA joining Gene-Lifestyle Consortium in Interactions Analysis for Education and Lipids	Guo , Xiuqing	12/16/2015
G 464	MESA join the CHARGE Consortium MI/CHD 1000G Analysis	Guo , Xiuqing	12/16/2015
G 466	MESA joining GENE-LIFESTYLE consortium in Testing an Association of Age of Quitting Smoking and Coding Variants in CHRNA5	Guo , Xiuqing	12/16/2015
G 467	Age-Stratified LDL/CHD analysis	Guo , Xiuqing	1/6/2016
G 468	MESA joining the Replication Study of WHI Weight Change Loci	Guo , Xiuqing	1/6/2016
G 471	MESA joining Gene-Lifestyle Consortium in Interactions Analysis for Lipids and Physical Activity	Guo , Xiuqing	1/6/2016
G 472	Genetic modification of the effect of self-reported psychosocial stress on incident obesity	Elboudwarej , Emon	1/6/2016
G 473	Psychosocial factors and DNA methylation of obesity risk genes	Elboudwarej , Emon	1/6/2016
G 474	Obesity and chronic disease in Asian Americans: Contributions of genetic, social and environmental factors to the Asian adiposity paradox in The Multi-Ethnic Study of Atherosclerosis	Wassel, Christina L.	1/14/2016
G 475	MESA joining the Replication Study of SOL Waist Traits Loci	Guo , Xiuqing	1/20/2016

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G 477	MESA join CHARGE in exome array analysis for fibrinolytic factors PAI-1, tPA and D-dimer	Guo , Xiuqing	2/3/2016
G 476	Do associations between neighborhood characteristics and cognition vary based on gender, APOE genotype, or sedentary behavior: The Multi-Ethnic Study of Atherosclerosis (MESA)	Besser, Lilah Marie	3/16/2016
G 481	Prediction of telomere shortening using a genetic risk score: The Multi-Ethnic Study of Atherosclerosis	Needham, Belinda L	3/16/2016
G 485	Identifying bipolar disorder and schizophrenia variants in African Americans by joint analysis of InPSYght and TOPMed sequence data	Boehnke, Michael	4/6/2016
G 491	Whole genome sequence analysis of coagulation factor VIII (FVIII) and von Willebrand factor (vWF) across TOPMed studies	Smith, Nicholas L	4/20/2016
G 492	Whole genome sequence analysis of fibrinogen and coagulation factor VII (FVII) across TOPMed studies	Smith, Nicholas L	4/20/2016
G 493	Whole genome sequence analysis of D-dimer, tissue plasminogen activator (tPA), and plasminogen activator inhibitor (PAI-1) across TOPMed studies	Smith, Nicholas L	4/20/2016
G 488	MESA joining the meta-analysis of GWAS data (with 1000 genomes imputation) in relation to electrocardiographic PR intervals in African American, Asian, and European ancestry individuals, with the CHARGE-EX EKG consortium	Lin, Henry J.	4/21/2016
G 494	MESA join GIANT Consortium in exome array analysis for body fat percentage, leptin, and adiponectin	Guo , Xiuqing	5/4/2016
G 497	Large scale whole genome sequence analysis for red cell traits in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Reiner, Alexander P	5/4/2016
G 496	Large scale whole genome sequence analysis for platelet traits in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Reiner, Alexander P	5/4/2016
G 498	Large scale whole genome sequence analysis for white blood cell traits in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Reiner, Alexander P	5/4/2016
G 499	Participation of MESA Hispanics in a Genome-wide association study of lipid traits in Hispanics/Latinos	Manichaikul, Ani	6/1/2016
G 500	Diet-associated alterations in the methylome and transcriptome of monocytes: the Multi-Ethnic Study of Atherosclerosis (MESA)	Reynolds, Lindsay M	6/1/2016
G 503	Whole genome sequence analysis of blood lipids	Lange, Leslie A	6/15/2016
G 502	Air Pollution-Associated Methylation Signals and Subclinical Atherosclerosis: The Multi-Ethnic Study of Atherosclerosis	Chi, Gloria C	6/24/2016

Proposal Number	Title	First Author	Approval Date
G 504	Whole Genome Sequence Analysis of Type 2 Diabetes Risk	Meigs, James	7/6/2016
G 505	Whole Genome Sequence Analysis of Fasting Glucose and Insulin in Individuals without Diabetes	Meigs, James	7/6/2016
G 509	MESA joining the meta-analysis of exome chip data in relation to electrocardiographic P-wave indices in African American, Asian, European, and Hispanic ancestry individuals, with the AFGen consortium	Lin, Henry J.	7/20/2016
G 511	Alpha-1 Antitrypsin in African Americans and Hispanics: the Multi-Ethnic Study of Atherosclerosis	Hashemi, Amir R	7/20/2016
G 512	Detection of Colorectal Cancer Susceptibility Loci Using Whole Genome Sequencing	Peters, Ulrike	7/20/2016
G 513	Whole genome sequence analysis for serum urate concentrations and gout in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Kottgen, Anna	7/20/2016
G 514	Whole Genome Sequencing of COPD in Multiple TOPMed Cohorts	Cho, Michael Hyosang	7/20/2016
G 516	Genetic Association Analysis of Percent Emphysema on CT scan with Whole Genome Sequencing in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Manichaikul, Ani	8/3/2016
G 515	Population-based Analysis of Pulmonary Function Phenotypes with Whole Genome Sequencing in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Manichaikul, Ani	8/3/2016
G 517	Replication of novel red blood cell loci in Hispanic/Latinos in The Multi-Ethnic Study of Atherosclerosis (MESA)	Hodonsky, Chani J	8/17/2016
G 518	Replication of novel white blood cell loci in Hispanic/Latinos in The Multi-Ethnic Study of Atherosclerosis (MESA)	Hodonsky, Chani J	8/17/2016
G 522	: Discovery and Fine-Mapping of Height Loci Using High Density Imputation of Genome-Wide Association Studies in Individuals of African Ancestry – the African Ancestry Anthropometry Genetics Consortium	Guo , Xiuqing	9/7/2016
G 524	Associations of monocyte DNA transcriptomic and methylomic profiles with T helper type 1 & type 2 bias: the Multi-Ethnic Study of Atherosclerosis (MESA)	Olson, Nels C	9/7/2016
G 519	Whole Genome Sequence Analysis of Hemoglobin A1c in Individuals without Diabetes (TOPMed)	Meigs, James	10/5/2016
G 520	Large scale whole genome sequence analysis for standing height and body mass index in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Lange, Leslie A	10/5/2016

Proposal Number	Title	First Author	Approval Date
G 531	Neighborhood Characteristics, DNA Methylation, and Cardiovascular Risk: The Multi-Ethnic Study of Atherosclerosis	Smith, Jennifer A	10/19/2016
G 532	Socioeconomic Indicators, DNA Methylation, and Cardiovascular Risk: The Multi-Ethnic Study of Atherosclerosis	Smith, Jennifer A	10/19/2016
G 533	High Dimensional Mediation Analysis: Neighborhood Physical Environment, Epigenome-wide DNA Methylation, and Obesity in The Multi-Ethnic Study of Atherosclerosis	Zhou, Xiang	10/19/2016
G 534	Participation of MESA in the International COPD Genetics Consortium (ICGC) Genetic Determinants of Quantitative Emphysema Project	Manichaikul, Ani	10/19/2016
G 535	Participation of MESA in the CHARGE Pulmonary Working Group Exome Chip-based GxSmoking Analysis	Manichaikul, Ani	10/19/2016
G 530	Clinical significance of lung function trajectory in six US population-based cohorts: the NHLBI Pooled Cohorts Study	Oelsner, Elizabeth C	11/2/2016
G 482	Meta-analysis of Genome-wide DNA methylation and Fatty Acids	Ma, Yiyi	11/16/2016
G 539	Participation of MESA in a Study of Serum Vitamin D, Genome-wide SNP×Vitamin D Interactions, and Pulmonary Function in the CHARGE Consortium	Manichaikul, Ani	12/7/2016
G 541	Genetic Differentiation of Type 3c Diabetes versus Type 2 Diabetes	Goodarzi, Mark O	12/7/2016
G 542	Large scale whole genome sequence analysis for waist-related and CT Fat traits in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Liu, Ching-Ti	12/7/2016
G 543	Large scale whole genome sequence analysis for carotid intima media thickness and plaque in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	de Vries, Paul S	12/7/2016
G 540	Metabolomic Analysis Provides Mechanistic Insight into the Role of SORT1 in Coronary Artery Disease Susceptibility: The Multi-Ethnic Study of Atherosclerosis	Allred, Nicholette D	12/16/2016
G 544	Meta-analysis of Type 2 Diabetes in East Asian - the DIAMANTE East Asian Consortium	Guo , Xiuqing	12/21/2016
G 545	Meta-analysis of Type 2 Diabetes in Hispanic - the DIAMANTE Hispanic Consortium	Guo , Xiuqing	12/21/2016
G 547	DIAbetes Meta-Analysis of Trans-Ethnic association studies (DIAMANTE)	Guo , Xiuqing	12/21/2016
G 548	Admixture mapping using whole genome sequence analysis for kidney traits in African Americans and Hispanics in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Franceschini, Nora	1/4/2017
G 549	Whole Genome Sequence Analysis of Musculoskeletal Traits in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Farber , Charles R	1/4/2017

Proposal Number	Title	First Author	Approval Date
G 550	Large scale whole genome sequence analysis for urine albumin excretion in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Kramer, Holly	1/4/2017
G 551	Large scale whole genome sequence analysis for the ankle brachial index and peripheral artery disease in the NHLBI Trans-Omics for Precision Medicine (TOPMed) Program	Wassel, Christina L.	1/4/2017
G 555	GWAS Analysis of Interaction between QT, QRS, JT intervals and QT-prolonging medications (UAZ): the Meta-Analysis by CHARGE consortium (AGES, ARIC, CHS, FHS, RS, PROSPER, HABC, ERF, Health 2000, MESA, et al)	Li, Xiaohui	2/1/2017

4.8. MESA Manuscripts and Papers

The MESA P&P status table and published papers lists can be viewed at the internal P&P Web page: http://mesa-nhlbi.org/MesaInternal/Publications.aspx

Go to: **Paper Status Information**

- Table of Status and Authorship Information

Published Papers Lists

- Alphabetical List in Order by First Author
- Chronological List in Order by Date Published
- Data Repository and Consortium Published Papers

4.9 CARe Manuscript Proposals

A list of CARe manuscript proposals is posted on the MESA P&P webpage under "Search (Paper Proposals) - http://mesa-nhlbi.org/MesaInternal/Publications.aspx

Section 5: Laboratory Repository Inventory

Introduction

This section was produced by the Central Laboratory in Vermont. Section 5.1 is the status of MESA Laboratory Variables as of March, 2018. Section 4.2 provides a complete inventory of samples in the repository as of March, 2018 and includes additional information about how much of each type of sample was received, how each type of sample has been used, and other activities related to samples. Tables showing the status of samples from Exam 2, Exam 3, Exam 4 and Exam 5 are also provided.
Section 4.3 is a report of availability of samples in the repository for the MESA cohort.

5.1 MESA Lab Variables and Current Completion Status as of 3.27.2018

Details of the rationale for each assay, including those we are performing and those we considered but are not performing, are posted on the MESA website, MESA Lab Master List 9-03.doc. Ancillary study investigators should send updates on the status of their studies and assays to Mary Cushman (Mary.Cushman@uvm.edu) and Sandi Shrager (sandis@u.washington.edu).

5.1.1 Table: Baseline Visit Assays

Analyte	Group #	Lab	Completion Status	Estimated Completion Date
Lipid profile	1	MN	Done	Done
Glucose	1	MN	Done	Done
Creatinine	1	MN	Done	Done
Urine albumin and creatinine	2	VT	Done	Done
Interleukin-6	2	VT	Done	Done
C-reactive protein	2	VT	Done	Done
Chlamydia pneumoniae IgG antibody	2	MN	Done	Done
Homocysteine	2	MN	Done	Done
Insulin	2	MN	Done	Done
Fibrinogen antigen	2	VT	Done	Done
Factor VIIIc	2	VT	Done	Done
D-dimer	2	VT	Done	Done
Plasmin-antiplasmin complex	2	VT	Done	Done
NMR Lipids	2	Liposcience	Done	Done
Soluble ICAM-1	3	VT	Done	Done
von Willebrand factor	3	VT	Done	Done
Plasminogen activator inhibitor-1	3	VT	Done	Done
HDL electrophoresis	3	MN	Done	Done
CETP ag, activity, 4 genotypes	3	MN	Done	Done
ABC genotypes	3	MN	Done	Done

Chylomicron remnants	3	MN	Done	Done
Plasma fatty acids	3	MN	Done	Done
Cytomegalovirus antibodies	3	MN	Done	Done
Herpes Simplex Virus antibodies	3	MN	Done	Done
Chlamydia heat shock protein-60	3	MN	Done	Done
Hepatitis A Virus antibodies	3	MN	Done	Done
Helicobacter pylori antibodies	3	MN	Done	Done
Interleukin-2 receptor	4	VT	Done	Done
TNF alpha receptor-1	4	VT	Done	Done
Soluble thrombomodulin	3	VT	Done	Done
Tissue factor pathway inhibitor	3	VT	Done	Done
Thrombin activatable fibrinolysis inhibitor	3	VT	Done	Done
Soluble Tissue Factor	3	VT	Done	Done
E-selectin	3	VT	Done	Done
Matrix metalloproteinase-9	3	VT	Done	Done
Matrix metalloproteinase-3 (Stromelysin)	3	VT	Done	Done

Analyte	Group#	Lab	Completion Status	Estimated Completion Date
CD40 ligand	3	VT	Done	Done
Oxidized LDL / malenaldehyde modified LDL	3	Leuven	Done	Done
HDL RNA Expression Pilot	3	Minn	Pending	
F2 Isoprostanes	436	MN	Done	Done
Abell-Kendall cholesterol	25	NW Lipid Labs	Done	Done
Interleukin-10	4	VT	Done	Done

Group indicates which participants are having each measure:
Group 1. Run on all participants and results reported to participants
Group 2. Run on all participants
Group 3. Run on a random sample of 1000 participants
Group 4. 2880 participants with candidate gene assays (includes Group 3).

5.1.2 Table: Visit 2 Assays

Analyte	Group#	Lab	Completion Status
Lipid profile	1	MN	Done
Glucose	1	MN	Done
Hemoglobin A_1c	2	MN	Done
Urine albumin and creatinine	2	VT	Done

5.1.3 Table: Visit 3 Assays

Analyte	Group#	Lab	Completion Status
Lipid profile	1	MN	Done
Glucose	1	MN	Done
Creatinine	1	MN	Done
Urine albumin and creatinine	2	VT	Done

5.1.4 Table: Visit 4 Assays

Analyte	Group#	Lab	Completion Status
Lipid profile	1	MN	Done
Glucose	1	MN	Done

Creatinine	1	MN	Done

5.1.5 Table: Visit 5 Assays

Analyte	Group#	Lab	Completion Status
Lipid profile	1	MN	Done
Glucose	1	MN	Done
Creatinine	1	MN	Done
HgA1c	1	MN	Done
Insulin	1	MN	Done
Urinary Albumin and creatinine	1	MN	Done

5.2 MESA Repository Summary as of March, 2018

5.2.1 Baseline

(Table continues on the following two pages)

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
EDTA	01	6799	1	0%	0	0	1	6799	0	0	0				Uminn Group 1 Lipids (n=6799)	Uminn Group 1 - complete.
EDTA	02	6798	6708	99%	0	0	6708	6798	2929	69	17	3			Uminn Group 2 (n=6797), N. Jenny 1 (n=5), N.Jenny 2 (n=28), CandidateGene Grp (n=31), M. Jensen (n=179), C. DeFilippi (n=34), and A. DeFilippis (n=2742)	Uminn Group 2, N. Jenny 1 and 2, Candidate Gene Grp, M. Jensen, C. DeFilippi, and A. DeFilippis - complete.
EDTA	03	6795	6595	97%	200	6595	0	0	0	0	0				Drift selection reserved (n=200)	Drift selection - reserved.
EDTA	04	6798	5765	85%	0	5763	2	1035	0	0	0				Uminn Group 3 (n=1030), W. Post/D. Vaidya (n=2), S. Shea (n=1), and A. DeFilippis (n=2)	Uminn Group 3, W. Post/D. Vaidya, S. Shea, and A. DeFilippis - complete.
EDTA	05	6797	6419	94%	0	0	6419	6797	3313	144	0				Liposcience/NMR (n=6797), N. Jenny 1 (n=5), M. Tsai 3 (n=68), M. Jensen (n=332), C. DeFilippi (n=158), and A. DeFilippis (n=2894)	Liposcience/NMR, N. Jenny 1, M. Tsai 3, M. Jensen, C. DeFilippi, and A. DeFilippis - complete.
EDTA	06	6794	6576	97%	200	6520	56	74	13	0	0				Liposcience/NMR (n=1), Jacobs/Gross 2 (n=2), K. Ong (n=15), M. Budoff (n=12), P. Leary (n=8), W. Post/D. Vaidya (n=3), S. Shea (n=12), M. Tsai 4 (n=1), TOPMed 1 (n=5) and 2 (n=20), A. DeFilippis (n=8), and Drift selection reserved (n=200)	Liposcience/NMR, Jacobs/Gross, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, M. Tsai 4, TOPMed 1 and 2, and A. DeFilippis - complete. Drift selection - reserved.
EDTA	07	6793	6674	98%	0	6535	139	258	21	0	0				Jacobs/Gross 2 (n=8), C. DeFilippi (n=6), K.Ong (n=27), M. Budoff (n=21), P. Leary (n=4), W. Post/D. Vaidya (n=13), S. Shea (n=52), M. Tsai 4 (n=43), TOPMed 1 (n=22) and 2 (n=81), and A. DeFilippis (n=2).	Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, M. Tsai 4, TOPMed 1 and 2, and A. DeFilippis - complete.
EDTA	08	6779	6546	97%	0	6207	339	572	33	0	0				Jacobs/Gross 2 (n=6), C. DeFilippi (n=23), K.Ong (n=37), M. Budoff (n=33), P. Leary (n=28), W. Post/D. Vaidya (n=43), S. Shea (n=89), M. Tsai 4 (n=88), TOPMed 1 (n=86) and 2 (n=170), and A. DeFilippis (n=2).	Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post?D. Vaidya, S. Shea, M. Tsai 4, TOPMed 1 and 2, and A. DeFilippis - complete.
EDTA	09	6763	6146	91%	0	5542	604	1220	134	0	0				Jacobs/Gross 1 (n=3), 2 (n=24), C. DeFilippi (n=22), K. Ong (n=146), M. Budoff (n=132), P. Leary (n=78), W. Post/D. Vaidya (n=106), S. Shea (n=226), M. Tsai 4 (n=254), TOPMed 1 (n=159) and 2 (n=201), and A. DeFilippis (n=3).	Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, M. Tsai 4, TOPMed 1 and 2, and A. DeFilippis - complete.

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
EDTA	10	6743	5555	82%	0	4427	1128	2314	297	6	0				P. Holvoet (n=2), B. Kestenbaum 2 (n=3), Cushman/Jenny (n=5), Candidate Gene Grp (n=34), M. Tsai 3 (n=4), M. Jensen (n=5), and Jacobs/Gross 1 (n=8) and 2 (n=114), C. DeFilippi (n=45), K. Ong (n=308), M. Budoff (n=281), P. Leary (n=322), W. Post/D. Vaidya (n=219), S. Shea (n=441), M. Tsai 4 (n=394), TOPMed 1 (n=188) and 2 (n=235), and A. DeFilippis (n=9).	P. Holvert, B. Kestenbaum 2, Cushman/Jenny, Candidate Gene Grp, M. Tsai 3, M. Jensen, Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, M. Tsai 4, TOPMed 1 and 2, and A. DeFilippis - complete.
EDTA	11	6734	3245	48%	0	2506	739	4227	209	3	0				P. Holvoet (n=997), B. Kestenbaum 2 (n=4), M. Tsai 1 (n=1862) and 2 (n=23) and 3 (n=17), Cushman/Jenny (n=17), M. Jensen (n=3), Jacobs/Gross 1 (n=5) and 2 (n=37), C. DeFilippi (n=53), K. Ong (n=213), M. Budoff (n=187), P. Leary (n=104), W. Post/D. Vaidya (n=174), S. Shea (n=273), M. Tsai 4 (n=108), TOPMed 1 (n=175) and 2 (n=174), and A. DeFilippis (n=13).	P. Holvert, B. Kestenbaum 2, M. Tsai 1, 2, 3, and 4, Cushman/Jenny, M. Jensen, Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, TOPMed 1 and 2, and A. DeFilippis - complete.
EDTA	12	6724	4878	73%	0	2156	2722	4565	1116	25	4	1			A.Tall (n=20), M.Gross (n=25), B.Kestenbaum 1 (n=212) and 2 (n=6), N.Jenny 1 (n=3) and 2 (n=5), Cushman/Jenny (n=35), Candidate Gene Grp (n=429), M. Tsai 2 (n=165) and 3 (n=23), M. Jensen (n=28), Jacobs/Gross 1 (n=26) and 2 (n=213), C. DeFilippi (n=142), K. Ong (n=1122), M. Budoff (n=1015), P. Leary (n=505), W. Post/D. Vaidya (n=433), S. Shea (n=504), M. Tsai 4 (n=428), TOPMed 1 (n=238) and 2 (n=119), and A. DeFilippis (n=15).	A. Tall, M. Gross, B. Kestenbaum 1 and 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2, 3 and 4, Candidate Gene Grp, M. Jensen, Jacobs/Gross, DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, TOPMed 1 and 2, and A. DeFilippis - complete.
EDTA	13	6704	4403	66%	0	712	3691	5991	2383	92	4				A.Tall (n=61), M.Gross (n=65), B.Kestenbaum 2 (n=34), N.Jenny 1 (n=14) and 2 (n=18), Cushman/Jenny (n=888), Candidate Gene Grp (n=200), M. Tsai 2 (n=354) and 3 (n=365), M. Jensen (n=68), Jacobs/Gross 1 (n=72) and 2 (n724), C. DeFilippi (n=383), K. Ong (n=2048), M. Budoff (n=1807), P. Leary (n=288), W. Post/D. Vaidya (n=249), S. Shea (n=274), M. Tsai 4 (n=422), TOPMed 1 (n=115) and 2 (n=4), and A. DeFilippis (n=17).	A. Tall, M. Gross, B. Kestenbaum 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2, 3, and 4, Candidate Gene Grp, M. Jensen, Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, TOPMed 1 and 2, and A. DeFilippis - complete.

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
EDTA	14	6641	2720	41%	0	74	2646	6566	1791	210	8				A.Tall (n=138), M.Gross (n=413), B.Kestenbaum 2 (n=18), N.Jenny 1 (n=25) and 2 (n=31), Cushman/Jenny (n=278), Candidate Gene Grp (n=410), Fatty Acid drift (n=17), M. Tsai 2 (n=1359) and 3 (n=163), M. Jensen (n=182), Jacobs/Gross 1 (n=121) and 2 (n=1323), C. DeFilippi (n=505), K. Ong (n=1546), M. Budoff (n=1340), P. Leary (n=181), W. Post/D. Vaidya (n=48), S. Shea (n=106), M. Tsai (n=341), TOPMed 1 (n=12), and A. DeFilippis (n=18).	A. Tall, M. Gross, B. Kestenbaum 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2, 3, and 4, Candidate Gene Grp, Fatty Acid drift, M. Jensen, Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, TOPMed 1, and A. DeFilippis - complete.
EDTA	15	6501	5024	77%	0	0	5024	6498	3806	537	19				A.Tall (n=323), M.Gross (n=388), B.Kestenbaum 2 (n=37), N.Jenny 1 (n=49) and 2 (n=113), Cushman/Jenny (n=4778), Candidate Gene Grp (n=165), Fatty Acid drift (n=8), M. Tsai 2 (n=211) and 3 (n=2893), M. Jensen (n=425), Jacobs/Gross 1 (n=31) and 2 (n=276), C. DeFilippi (n=729), K. Ong (n=152), M. Budoff (n=127), P. Leary (n=20), W. Post/D. Vaidya (n=4), S. Shea (n=10), M. Tsai (n=54), and A. DeFilippis (n=67).	A. Tall, M. Gross, B. Kestenbaum 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2, 3, and 4, Candidate Gene Grp, Fatty Acid drift, M. Jensen, Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, P. Leary, W. Post/D. Vaidya, S. Shea, and A. DeFilippis - complete.
EDTA	16	6173	1840	30%	0	0	1840	6171	2350	1670	24				A.Tall (n=594), M.Gross (n=348), B.Kestenbaum 2 (n=431), N.Jenny 1 (n=91) and 2 (n=172), Candidate Gene Grp (n=1919), M. Tsai 2 (n=2566) and 3 (n=25), M. Jensen (n=1711), Jacobs/Gross 1 (n=34) and 2 (n=264), C. DeFilippi (n=1698), K. Ong (n=181), M. Budoff (n=163), and A. DeFilippis (n=18).	A. Tall, M. Gross, B. Kestenbaum 2, and N. Jenny 1 and 2, M. Tsai 2 and 3, Candidate Gene Grp, M. Jensen, Jacobs/Gross, C. DeFilippi, K. Ong, M. Budoff, and A. DeFilippis - complete.
EDTA	17	5593	4030	72%	0	0	4030	5591	5583	4819	291	20			A.Tall (n=5587), B.Kestenbaum 2 (n=1), N.Jenny 1 (n=822) and 2 (n=1520), Candidate Gene Grp (n=1589), M. Tsai 2 (n=1) and 3 (n=358), M. Jensen (n=2890), C. DeFilippi (n=3521), K. Ong (n=1), and A. DeFilippis (n=14).	A. Tall, B. Kestenbaum 2, and N. Jenny 1 and 2, M. Tsai 2 and 3, Candidate Gene Grp, M. Jensen, C. DeFilippi, K. Ong, and A. DeFilippis - complete.
REDCELL	18	6777	0	0%	0	0	0	6777	0	0	0				Uminn Group 1 DNA Extraction (n=6777)	Uminn Group 1 - complete.
REDCELL	19	6758	0	0%	0	0	0	6758	0	0	0				Uminn Group 1 Fatty Acid Membrane (n=6758)	Uminn Group 1 - complete.
SCAT	20	6773	4106	61%	0	0	4106	6773	20	0	0				UVM Group 2 (n=6773), sICAM on TT subjects (n=20)	UVM Group 2, and sICAM - complete.
SCAT	21	6769	6769	100%	0	6636	133	133	0	0	0				UVM Group 2 (n=133)	UVM Group 2 - complete.
SCAT	22	6764	6763	100%	0	6763	0	1	0	0	0				UVM Group 2 (n=1)	UVM Group 2 - complete.

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
SCAT	23	6738	6738	100%	0	6738	0	0	0	0	0					
Citrate	24	6776	6050	89%	0	0	6050	6776	1105	43	0				UVM Group 2 (n=6776), MF Mesa Classic PAI-1 (n=439), and Danzinger (n=709)	UVM Group 2, MF Mesa Classic, and Danzinger - complete.
Citrate	25	6775	6768	100%	0	6768	0	7	0	0	0				Danzinger (n=7)	Danizinger - complete
Citrate	26	6771	6769	100%	0	5769	1000	1002	0	0	0				UVM Group 3 (n=999), Mesa RV/Kawut (n=2), and Danzinger (n=1)	UVM Group 3, Mesa RV/Kawut, and Danzinger - complete.
Citrate	27	6761	6761	100%	0	5423	1338	1338	0	0	0				Mesa RV/Kawut (n=1338)	Mesa RV/Kawut - complete.
Serum	28	6792	0	0%	0	0	0	6792	0	0	0				Uminn Group 1 Chem (n=6792)	Uminn Group 1 - complete.
Serum	29	6794	5233	77%	0	0	5233	6793	6789	6742	3166	590	90	1	Uminn Group 2 (n=6792), M. Shlipak (n=6789), B. Kestenbaum Rpts (n=419), D.Majka 1 (n=858) & 2 (n=1532), R. Bradley (n=5885), J. Ix (n=88), T. McCluskey (n=82), M. Tsai 4 (n=1693), S. Bielinski (n=31), and C. Ventetuolo 1 (n=1) and 2 (n=1).	Uminn Group 2, M. Shlipak, B. Kestenbaum, R. Bradley, J. Ix, T. McCluskey, D. Majka 1 and 2, M. Tsai 4, S. Bielinski, and C. Ventetuolo - complete.
Serum	30	6791	6592	97%	199	6592	0	0	0	0	0				Drift selection reserved (n=199)	Drift selection - reserved.
Serum	31	6790	6530	96%	1	5757	773	1032	450	242	42	2	1		Uminn Group 3 (n=1030), R. Bradley (n=12), J. Ix (n=1), K. Shea (n=19), T. McCluskey (n=15), D. Majka 2 (n=232), B. Kestenbaum Rpts (n=4), M. Tsai 4 (n=229), S. Bielinski (n=88), C. Ventetuolo 1 (n=1) and 2 (n=17), Mesa Lung/D. Lederer (n=2), and B. Psaty 1 (n=33) and 2 (n=86). Drift selection (n=1) reserved.	Uminn Group 3, R. Bradley, J. Ix, K. Shea, T. McCluskey, D. Majka 2, B. Kestenbaum Rpts, M. Tsai 4, S. Bielinski, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, and B. Psaty 1 and 2 - complete. Drift selection reserved.
Serum	32	6785	6489	96%	200	6489	0	96	2	0	0				Drift selection reserved (n=200). P. Greenland (n=3), S. Bielinski (n=4), Mesa Lung/D. Lederer (n=51), I. DeBoer (n=36), and B. Psaty 2 (n=4).	Drift selection - reserved. P. Greenland, S. Bielinski, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 2 - complete.
Serum	33	6782	6392	94%	0	5441	951	1341	289	15	5				UVM Group 3 (n=999), R. Bradley (n=4), K. Shea (n=1), T. McCluskey (n=2), D. Majka 2 (n=229), M. Tsai 4 (n=12), P. Greenland (n=13), S. Bielinski (n=214), Cystatin C calibration (n=3), C. Ventetuolo 1 (n=2) and 2 (n=5), Mesa Lung/D. Lederer (n=74), I. DeBoer (n=53), and B. Psaty 1 (n=6) and 2 (n=33).	UVM Group 3, R. Bradley, K. Shea, T. McCluskey, D. Majka 2, M. Tsai 4, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 1 and 2 - complete.

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
Serum	34	6773	4965	73%	0	1080	3885	5693	5060	2220	1429	62	4		Daniels/Bahrami (n=5597), D.Majka 1 (n=11) and 2 (n=5365), R. Bradley (n=877), J. Ix (n=2), K. Shea (n=39), T. McCluskey (n=614), B. Kestenbaum Rpts (n=373), M. Tsai 4 (n=1236), P. Greenland (n=54), S. Bielinski (n=120), Cystatin C calibration (n=1), C. Ventetuolo 1 (n=1) and 2 (n=40), Mesa Lung/D. Lederer (n=21), I. DeBoer (n=16), and B. Psaty 1 (n=2) and 2 (n=99).	Daniels/Bahrami, D. Majka 1 and 2, R. Bradley, J. Ix, K. Shea, T. McCluskey, B. Kestenbaum Rpts, M. Tsai 4, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 1 and 2 - complete.
Serum	35	6759	6146	91%	0	5758	388	1001	191	45	18	2			B. Kestenbaum Rpt Ca/Ph (n=464), Rpt1 VitD (n=33), Rpt2 VitD (n=16) and 3 (n=2), Daniels/Bahrami (n=1), K. Shea (n=23), T. McCluskey (n=10), D. Majka 2 (n=76), Ex5 Ins Comparability (n=1), M. Tsai 4 (n=33), P. Greenland (n=155), S. Bielinski (n=262), Cystatin C calibration (n=3), C. Ventetuolo 1 (n=2) and 2 (n=4), Mesa Lung/D. Lederer (n=70), I. DeBoer (n=53), and B. Psaty 2 (n=49).	B. Kestenbaum, Daniels/Bahrami, K. Shea, T. McCluskey, D. Majka 2, High ins Comp, M. Tsai 4, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 2 - complete.
Serum	36	6736	5642	84%	0	5259	383	1477	169	49	12	1			S. Gapstur (n=6), MF Mesa Classic Insulin (n=410), Glucose drift (n=9), MF Mesa Classic Panel A&B (n=3), J. Ix (n=3), K. Shea (n=12), B. Kestenbaum 3 (n=42) and Rpt2 VitD (n=17), D. Majka 2 (n=46), M. Tsai 4 (n=48), P. Greenland (n=295), S. Bielinski (n=473), Cystatin C calibration (n=5), C. Ventetuolo 1 (n=11) and 2 (n=7), Mesa Lung/D. Lederer (n=151), I. DeBoer (88), and B. Psaty 2 (n=82).	S. Gapstur, MF Mesa Classic, Glucose drift, J. Ix, K. Shea, B. Kestenbaum 3, Rpt2 VitD, D. Majka 2, M. Tsai 4, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 2 - complete.
Serum	37	6704	497	7%	0	495	2	6209	6	2	0				S. Gapstur (n=6165), J. Ix (n=1), K. Shea (n=1), B. Kestenbaum 3 (n=5), D. Majka 2 (n=4), M. Tsai 4 (n=5), P. Greenland (n=7), S. Bielinski (n=15), Cystatin C calibration (n=1), Mesa Lung/D. Lederer (n=7), I. DeBoer (n=5), and B. Psaty 2 (n=1).	S. Gapstur, J. Ix, K. Shea, B. Kestenbaum 3, D. Majka 2, M. Tsai 4, P. Greenland, S. Bielinski, Cystatin C calibration, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 2 - complete.

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
Serum	38	6675	4958	74%	0	4272	686	2402	726	322	212	14	1		S. Gapstur (n=2), B. Kestenbaum 1 (n=12), Rpts (n=1), Rpt1 VitD (n=5), 3 (110) and Rpt2 VitD (n=50), Glucose drift (n=187), MF Mesa Classic Panel A&B (n=435), J. Ix (n=30), K. Shea (n=182), T. McCluskey (n=114), Ex5 Ins Harmonization (n=1), D. Majka 2 (n=600), M. Tsai 4 (n=269), P. Greenland (n=583), S. Bielinski (n=730), Cystatin C calibration (n=6), C. Ventetuolo 1 (n=9) and 2 (n=7), Mesa Lung/D. Lederer (n=142), I. DeBoer (n=84), and B. Psaty 2 (n=118).	S. Gapstur, B. Kestenbaum 1, Rpts, Rpt1 VitD, 3, and Rpt2 VitD, Glucose drift, MF Mesa Classic, J. Ix, K. Shea, T. McCluskey, Ex5 Ins Harmonization, D. Majka 2, M. Tsai 4, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 2 - complete.
Serum	39	6633	4127	62%	0	3617	510	3014	535	231	160	11	1		V. Shin 1 (n=400), I. DeBoer (n=14), MF Mesa Classic Panel A&B (n=1), R. Bradley (n=77), J. Ix (n=51), K. Shea (n=164), T. McCluskey (n=14), B. Kestenbaum 3 (n=195) and Rpt2 VitD (n=57), Ex5 Ins Harmonization (n=10), Ex5 Ins Comparability (n=3), D. Majka 2 (425), M. Tsai 4 (n=201), P. Greenland (n=1137), S. Bielinski (n=651), Cystatin C calibration (n=11), C. Ventetuolo 1 (n=4) and 2 (n=3), Mesa Lung/D. Lederer (n=265), I. DeBoer (n=168), and B. Psaty 2 (n=101).	V. Shin, I. DeBoer, MF Mesa Classic, R. Bradley, J. Ix, K. Shea, T. McCluskey, B. Kestenbaum 3, Rpt2 VitD, Ex5 Ins Harmonization, Ex5 Ins Comparability, D. Majka 2, M. Tsai, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 2 - complete.
Serum	40	6557	2647	40%	0	2442	205	4109	365	124	38				B. Kestenbaum 1 (n=200), Rpts (n=7), Rpt2 VitD (n=37), and 3 (n=299), I. DeBoer (n=998), R. Bradley (n=3), J. Ix (n=79), K. Shea (n=17), T. McCluskey (n=3), Ex5 Ins Harmonization (n=9), Ex5 Ins Comparability (n=3), D. Majka 2 (n=200), M. Tsai 4 (n=201), P. Greenland (n=781), S. Bielinski (n=1240), Cystatin C calibration (n=14), C. Ventetuolo 1 (n=14) and 2 (n=10), Mesa Lung/D. Lederer (n=216), I. DeBoer (n=195), and B. Psaty 1 (n=1) and 2 (n=165).	B. Kestenbaum 1, 3, Rpts, and Rpt2 VitD, I. DeBoer, J. Ix, K. Shea, T. McCluskey, Ex5 Ins Harmonization, D. Majka 2, M. Tsai, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 1 and 2 - complete.
Serum	41	6398	2599	41%	0	1132	1467	5250	904	454	231	12			B. Kestenbaum 1 (n=200), Rpts (n=12), 2 (n=278), 3 (338), and Rpt2 VitD (n=93), I. DeBoer (n=984), R. Bradley (n=35), J. Ix (n=84), K. Shea (n=85), T. McCluskey (n=10), Ex5 Ins Harmonization (n=7), D. Majka 2 (n=817), M. Tsai 4 (n=455), P. Greenland (n=1578), S. Bielinski (n=1149), Cystatin C calibration (n=4), C. Ventetuolo 1 (n=9) and 2 (n=15), Mesa Lung/D. Lederer (n=145), I. DeBoer (n=358), and B. Psaty 2 (n=195).	B. Kestenbaum 1, Rpts, 2, and 3, I. DeBoer, R. Bradley, J. Ix, K. Shea, T. McCluskey, Ex5 Ins Harmonization, D. Majka 2, M. Tsai, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 2 - complete.

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
Serum	42	6116	750	12%	0	291	459	5785	539	288	27	3			B. Kestenbaum 2 (n=278), Rpt VitD (n=34), Rpt2 VitD (n=103), and 3 (n=903), J. Ix (n=230), K. Shea (n=82), T. McCluskey (n=8), Ex5 Ins Harmonization (n=33), Ex5 Ins Comparability (n=8), D. Majka 2 (n=416), M. Tsai 4 (n=345), P. Greenland (n=2494), S. Bielinski (n=1088), Cystatin C calibration (n=2), C. Ventetuolo 1 (n=9) and 2 (n=13), Mesa Lung/D. Lederer (n=76), I. DeBoer (n=387), B. Psaty 1 (n=1) and 2 (n=132).	B. Kestenbaum 2, 3, Rpt VitD, and rpt2 VitD, J. Ix, K. Shea, T. McCluskey, Ex5 Ins Harmonization, D. Majka 2, M. Tsai, P. Greenland, S. Bielinski, Cystatin C calibration, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 1 and 2 - complete.
Serum	43	5605	1069	19%	0	33	1036	5545	891	461	46	1			B. Kestenbaum 2 (n=278), Rpt VitD (n=1), Rpt2 VitD (n=171), and 3 (n=2484), I. DeBoer (n=2), R. Bradley (n=3), J. Ix (n=344), K. Shea (n=328), T. McCluskey (n=23), Ex5 Ins Harmonization (n=34), Ex5 Ins Comparability (n=2), D. Majka 2 (n=806), M. Tsai 4 (n=776), P. Greenland (n=897), S. Bielinski (n=602), C. Ventetuolo 1 (n=5) and 2 (n=19), Mesa Lung/D. Lederer (n=6), I. DeBoer (n=63), and B. Psaty 1 (n=4) and 2 (n=96).	B. Kestenbaum 2, 3, Rpt VitD, and Rpt2 vitD, I. DeBoer, R. Bradley, J. Ix, K. Shea, T. McCluskey, Ex5 Ins Harmonization, D. Majka 2, M. Tsai, P. Greenland, S. Bielinski, C. Ventetuolo 1 and 2, Mesa Lung/D. Lederer, I. DeBoer, and B. Psaty 1 and 2 - complete.
Serum	44	4858	2147	44%	0	33	2114	4822	2038	1857	102	2			I. DeBoer (n=2), R. Bradley (n=15), J. Ix (n=2241), K. Shea (n=283), T. McCluskey (n=52), B. Kestenbaum 3 (n=2186), and Rpt2 VitD (n=153), Ex5 Ins Harmonization (n=6), D. Majka 2 (n=1943), M. Tsai 4 (n=1771), P. Greenland (n=3), S. Bielinski (n=113), Mesa Lung/D. Lederer (n=2), I. DeBoer (n=5), C. Ventetuolo 2 (n=8), and B. Psaty 1 (n=3) and 2 (n=34).	I. DeBoer, R. Bradley, J. Ix, K. Shea, T. McCluskey, B. Kestenbaum 3, and Rpt2 VitD, Ex5 Ins Harmonization, D. Majka 2, M. Tsai 4, P. Greenland, S. Bielinski, Mesa Lung/D. Lederer, I. DeBoer, C. Ventetuolo, and B. Psaty 1 and 2 - complete.
CPT	45	6769	6769	100%	0	6769	0	0	0	0	0					
CPT	46	6770	6770	100%	0	6770	0	0	0	0	0					
CPT	47	6772	6772	100%	0	6772	0	0	0	0	0					
CPT	48	6769	6769	100%	0	6769	0	0	0	0	0					
CPT	49	6764	6764	100%	0	6764	0	0	0	0	0					
CPT	50	6766	6766	100%	0	6766	0	0	0	0	0					
CPT	51	6759	6759	100%	0	6759	0	0	0	0	0					
CPT	52	6745	6745	100%	0	6745	0	0	0	0	0					
CPT	53	6733	6733	100%	0	6733	0	0	0	0	0					
CPT	54	6700	6700	100%	0	6700	0	0	0	0	0					
CPT	55	6662	6662	100%	0	6662	0	0	0	0	0					

Type	Cryo	# Received	# Available	Percent Available	# Reserved	# Fresh Frozen	# Thawed	#1x Used	#2x Used	#3x Used	#4x Used	#5x Used	#6x Used	#7x Used	Sample Selections	Sample Selection/Comments
CPT	56	6632	6632	100%	0	6632	0	0	0	0	0					
CPT	57	6582	6582	100%	0	6582	0	0	0	0	0					
CPT	58	6505	6505	100%	0	6505	0	0	0	0	0					
CPT	59	6368	6368	100%	0	6368	0	0	0	0	0					
CPT	60	6205	6205	100%	0	6205	0	0	0	0	0					
CPT CELLS	61	6759	6707	99%	0	6707	0	52	0	0	0				Uminn - Gene Expression (n=52)	Uminn - Gene Expression - complete.
CPT CELLS FAHC	62	6625	3271	49%	0	3271	0	3335	0	0	0				Mesa Family cell lines (n=18); M. Sorci (n=83), Doyle/Psaty (n=1195), TOPMed (n=832), C. McNamara (n=215), and L. Hendrick (n=561).	Mesa Family cell lines, M. Sorci, Doyle/Psaty, TOPMed, C. McNamara, and L. Hendrick - complete.
Urine	63	6777	0	0%	0	0	0	6777	0	0	0				UVM Group 1 UMALB (n=6777)	UVM Group 1 UMALB - complete.
URINE	64	6770	5473	81%	0	4	5469	6762	4807	1624	239	14			Mesa Lung cotinine/G. Barr (n=3944), C. Johnson (n=300), B. Kestenbaum 3 (n=6758), Shlipak/Peralta (n=743), A. Navas-Acien (n=310), C. Curl (n=102), and W. Post/D. Vaidya (n=1289).	Mesa Lung cotinine/G. Barr, C. Johnson, B. Kestenbaum 3, Shlipak/Peralta, A. Navas-Acien, C. Curl, and W. Post/D. Vaidya - complete
URINE ACETIC	65	6749	6608	98%	0	4682	1926	2066	281	39	0				B. Kestenbaum (n=438) and 3 (n=6), and C. Ventetuolo 1 (n=1772) and 2 (n=140).	B. Kestenbaum, and C. Ventetuolo - complete
Totals:	**65**	**431320**	**329192**		**800**	**254990**	**74202**	**175394**	**49145**	**22333**	**6094**					

5.2.2 Exam 2

Type	Cryo	# Rec'd	# Avail.	% Avail.	# Reserved	# Frozen	# Thawed	# 1X Used	# 2X Used	# 3X Used	# 4X Used	# 5X Used	Sample selections	Sample Selection Status/Comments
EDTA-whole blood	01	6181	0	0%	0	0	0	6181	0	0			Uminn Group 1 Homocysteine (n=6181)	Uminn Group 1 - complete.
EDTA	02	6192	3305	53%	0	5	3300	6186	5088	1207			Uminn Group 1 Lipids (n=6186), M. Allison 1 (n=4) and 2 (n=305), Mesa Lung SHARE (n=1), S. Bielinski (n=3497), and A. Rodriguez-Oquendo (n=2488).	Uminn Group 1 and M. Alison 1 and 2, Mesa Lung SHARE, S. Bielinsk, and A. Rodriguez-Oquendoi - complete.
EDTA	03	6187	5983	97%	200	5980	3	5	2	0			Uminn Group 1 Lipids (n=5), S. Bielinski (n=1), and A. Rodriguez-Oquendo (n=1). Drift selection reserved (n=200)	Uminn Group 1, S. Bielinski, and A. Rodriguez-Oquendo - complete. Drift selection - reserved.
EDTA	04	6190	6110	99%	0	6095	15	2	0	0			Uminn Group 1 Lipids (n=2)	Uminn Group 1 - complete.
EDTA	05	6186	5670	92%	0	5640	30	544	140	0			S. Bielinski (n=1), A. Rodriguez-Oquendo (n=41),Mesa Discover (n=22), A. Manichaikul (n=152), S. Cheng (n=317), J. Hughes-Austin (n=97), and J. Dai (n=54).	S. Bielinski, A. Rodriguez-Oquendo, Mesa Discover, A. Manichaikul, S. Cheng, J. Hughes-Austin, and J. Dai - complete.
EDTA	06	6167	4102	67%	0	3916	186	1267	5	0			Cushman/Jenny (n=4), M. Allison 1 (n=1), S. Bielinski (n=41), A. Rodriguez-Oquendo (n=262), Mesa Discover (n=128), and A. Manichaikul (n=836).	Cushman/Jenny, M. Allison 1, S. Bielinski, A. Rodriguez-Oquendo, Mesa Discover and A. Manichaikul - complete
EDTA	07	6126	2282	37%	0	1113	1169	3715	598	42			Cushman/Jenny (n=480), M. Allison 1 (n=6), and 2 (n=435), S. Bielinski (n=343), Mesa Lung SHARE (n=4), A. Rodriguez-Oquendo (n=1418), Mesa Discover (n=338), and A. Manichaikul (n=1331).	Cushman/Jenny, M. Allison 1 and 2, S. Bielinski, Mesa Lung SHARE, A. Rodriguez-Oquendo, Mesa Discover, and A. Manichaikul - complete.
EDTA	08	6108	1502	25%	0	79	1423	5573	642	154	3		Uminn Group 1 Lipids (n=2), M. Allison 1 (n=769) and 2 (n=304), S. Bielinski (n=2265), Mesa Lung SHARE (n=3), A. Rodriguez-Oquendo (n=2018), Mesa Discover (n=260), and A. Manichaikul (n=751).	Uminn Group 1, M. Alison 1 and 2, S. Bielinski, Mesa Lung SHARE, A. Rodriguez-Oquendo, Mesa Discover, and A. Manichaikul - complete.
Citrate	09	6178	6178	100%	0	6177	1	0	0	0				
Citrate	10	6175	6175	100%	0	6174	1	0	0	0				
Citrate	11	6177	6177	100%	0	6176	1	0	0	0				
Citrate	12	6161	6161	100%	0	6160	1	0	0	0				
SCAT	13	6163	6163	100%	0	6162	1	0	0	0				
SCAT	14	6163	6163	100%	0	6162	1	0	0	0				
SCAT	15	6159	6159	100%	0	6158	1	0	0	0				
SCAT	16	6146	6146	100%	0	6145	1	0	0	0				
Buffy Coat	17	6191	5995	97%	0	5994	1	196	0	0			Sent to Uminn (n=196)	Sent to Uminn - complete.
Serum	18	6190	281	5%	0	0	281	6190	5942	727			Uminn Group 1 Chem (n=6190), M. Allison 2 (n=770), B. Kestenbaum 3 (n=301), and K. Kiryluk (n=5598).	Uminn Group 1, M. Allison 2, B. Kestenbaum 3, and K. Kiryluk - complete.

Type	Cryo	# Rec'd	# Avail.	% Avail.	# Reserved	# Frozen	# Thawed	# 1X Used	# 2X Used	# 3X Used	# 4X Used	# 5X Used	Sample selections	Sample Selection Status/Comments
Serum	19	6187	5985	97%	200	5980	5	7	0	0			Uminn Group 1 Chem (n=6), and K. Kiryluk (n=1). Drift selection reserved (n=200)	Uminn Group 1, and K. Kiryluk - complete. Drift selection - reserved.
Serum	20	6183	6175	100%	0	6173	2	1	0	0			Uminn Group 1 Chem (n=1)	Uminn Group 1 - complete.
Serum	21	6175	6065	98%	0	6063	2	23	0	0			Uminn Group 1 Chem (n=1), Cystain C calibration (n=21), and K. Kiryluk (n=1).	Uminn Group 1, Cystatin C calibration, and K. Kiryluk - complete.
Serum	22	6143	5290	86%	0	5285	5	335	0	0			A. Bertoni (n=56), S. Bielinski (n=253), Cystatin C calibration (n=25), and K. Kiryluk (n=1).	A. Bertoni, S. Bielinski, Cystatin C calibration, and K. Kiryluk - complete.
Serum	23	6084	3408	56%	0	2644	764	2763	74	1			V. Shin 2 (n=762), Glucose Drift (n=3), A. Bertoni (n=190), S. Bielinski (n=1804), M. Allison 2 (n=1), B. Kestenbaum 3 (n=67), Cystatin C calibration (n=1), and K. Kiryluk (n=10).	V. Shin, Glucose Drift, A. Bertoni, S. Bielinski, M. Allison 2, B. Kestenbaum 3, Cystatin C calibration, and K. Kiryluk - complete.
Serum	24	6013	529	9%	0	339	190	5513	12	0			Uminn Grp1 Chem (n=5), Glucose Drift (n=195), A. Bertoni (n=4920), S. Bielinski (n=393), B. Kestenbaum 3 (n=1), Cystatin C calibration (n=3), and K. Kiryluk (n=13).	Uminn Group 1, Glucose Drift, A. Bertoni, S. Bielinski, B. Kestenbaum 3, Cystatin C calibration, and K. Kiryluk - complete.
FAHC Urine	25	6199	0	0%	0	0	0	6199	0	0			UVM Group 1 UMALB (n=6199)	UVM Group 1 UMALB - complete.
Totals:	**25**	**154024**	**112004**		**400**	**104620**	**7384**	**44700**	**12503**	**2131**				

5.2.3 Exam 3

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	# 1xUsed	# 2xUsed	# 3xUsed	# 4xUsed	Sample Selections	Sample Selection Status/Comments
EDTA	01	5893	7	0%	0	1	6	5892	5875	7		Uminn Group 1 Lipids (n=5892), M. Allison 1 (n=8) and 2 (n=54), C. DeFilippi (n=5820).	Uminn Group 1, M. Allison 1 and 2, and C. DeFilippi - complete.
EDTA	02	5890	5690	97%	199	5687	3	3	1	0		Uminn Group 1 Lipids (n=3), and Mesa Discover (n=1); Drift selection reserved (n=199)	Uminn Group 1 and Mesa Discover - complete. Drift selection - reserved.
EDTA	03	5889	5881	100%	1	5879	2	7	0	0		Uminn Group 1 Lipids (n=2), C. DeFilippi (n=3), Mesa Discover (n=1), and J. Hughes-Austin (n=3). Drift selection reserved (n=1)	Uminn Group 1, C. DeFilippi, Mesa Discover, and J. Hughes-Austin - complete. Drift selection - reserved.
EDTA	04	5884	5854	99%	0	5854	0	30	0	0		C. DeFilippi (n=7), Mesa Discover (n=12), and J. Hughes-Austin (n=11)	C. DeFilippi, Mesa Discover, and J. Hughes-Austin - complete
EDTA	05	5866	5695	97%	0	5690	5	176	0	0		Cushman/Jenny (n=5), C. DeFilippi (n=14), Mesa Discover (n=139), and J. Hughes-Austin (n=18).	Cushman/Jenny, C. DeFilippi, Mesa Discover, and J. Hughes-Austin - complete.
EDTA	06	5833	5620	96%	0	4570	1050	1263	82	12		Cushman/Jenny (n=4), M. Allison 1 (n=91) and 2 (n=1056), C. DeFilippi (n=35), Mesa Discover (n=73), and J. Hughes-Austin (n=98)	Cushman/Jenny, M. Allison 1 and 2, C. DeFilippi, Mesa Discover, and J. Hughes-Austin - complete.
EDTA	07	5794	3891	67%	0	3529	362	2267	1185	115	1	Uminn Group 1 Lipids (n=5), Cushman/Jenny (n=448), M. Allison 1 (n=1089) and 2 (n=125), Mesa Lung SHARE (n=13), C. DeFilippi (n=308), Mesa Discover (n=524), and J. Hughes-Austin (n=1056)	Uminn Group 1, Cushman/Jenny, M. Allison 1 and 2, Mesa Lung SHARE, C. DeFilippi, Mesa Discover, and J. Hughes-Austin - complete.
Citrate	08	5875	5875	100%	0	5875	0	0	0	0			
Citrate	09	5874	5874	100%	0	5874	0	0	0	0			
Citrate	10	5870	5870	100%	0	5870	0	0	0	0			
Citrate	11	5852	5852	100%	0	5852	0	0	0	0			
SCAT	12	5803	5803	100%	0	5803	0	0	0	0			
SCAT	13	5801	5801	100%	0	5801	0	0	0	0			
SCAT	14	5791	5791	100%	0	5791	0	0	0	0			
SCAT	15	5746	5746	100%	0	5746	0	0	0	0			
Serum	16	5890	5855	99%	0	0	5855	5890	100	0		Uminn Group 1 Chem (n=5890), and J. Ix (n=100).	Uminn Group 1 and J. Ix - complete.
Serum	17	5886	5686	97%	200	5684	2	2	1	0		Uminn Group 1 Chem (n=2), M. Shlipak (n=1); Drift selection reserved (n=200)	Uminn Group 1 and M. Shlipak - complete. Drift selection - reserved.
Serum	18	5883	5883	100%	0	5875	8	8	5	0		Uminn Group 1 Chem (n=8), M. Shlipak (n=5)	Uminn Group 1 and M. Shlipak - complete
Serum	19	5866	5866	100%	0	5864	2	2	1	0		Uminn Group 1 Chem (n=2), M. Shlipak (n=1)	Uminn Group 1 and M. Shlipak - complete
Serum	20	5830	5830	100%	0	5830	0	0	0	0			
Serum	21	5771	5721	99%	0	5623	98	148	70	0		Daniels/Bahrami (n=74), M. Shlipak (n=94), and Cystain C calibration (n=50)	Daniels/Bahrami, M. Shlipak, and Cystatin C calibration - complete
Serum	22	5680	5676	100%	0	10	5666	5670	4606	0		Uminn Grp 1 Chem (n=4), Glucose Drift (n=196), Daniels/Bahrami (n=4629), M. Shlipak (n=5451)	Uminn Grp 1, Glucose Drift, Daniels/Bahrami and M. Shlipak -

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	# 1xUsed	# 2xUsed	# 3xUsed	# 4xUsed	Sample Selections	Sample Selection Status/Comments
													complete.
FAHC Urine	23	5886	0	0%	0	0	0	5886	0	0		UVM Group 1 UMALB (n=5886)	UVM Group 1 UMALB - complete.
Totals:	**23**	**134353**	**119767**		**400**	**106708**	**13059**	**27244**	**11926**	**134**			

5.2.4 Exam 4

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	# 1X Used	# 2X Used	Sample Selections	Sample Selection Status/Comments
EDTA	01	5635	5626	100%	0	0	5626	5635	0	Uminn Group 1 Lipids (n=5635)	Uminn Group 1 - complete.
EDTA	02	5633	5432	96%	200	5432	0	1	0	Uminn Group 1 Lipids (n=1), Drift selection reserved (n=200)	Uminn Group 1 - complete. Drift selection - reserved.
EDTA	03	5628	5628	100%	0	5621	7	7	0	S. Cheng (n=7)	S. Cheng (n=7) - complete
EDTA	04	5622	5622	100%	0	5596	26	26	2	Mesa Discover (n=4), and S. Cheng (n=24)	Mesa Discover, and S. Cheng - complete
EDTA	05	5594	5594	100%	0	5516	78	77	2	Mesa Discover (n=3), and S. Cheng (n=76)	Mesa Discover, and S. Cheng - complete
EDTA	06	5567	5566	100%	0	4568	998	999	78	Cushman/Jenny (n=4), Mesa Air (n=44), Mesa Lung SHARE (n=7), Mesa Discover (n=77), and S. Cheng (n=945)	Cushman/Jenny, Mesa Air, Mesa Lung SHARE, Mesa Discover, and S. Cheng - complete.
EDTA	07	5549	5549	100%	0	111	5438	5437	676	Cushman/Jenny (n=429), Mesa Air (n=412), Mesa Lung SHARE (n=140), Mesa Discover (n=666), and S. Cheng (n=4466)	Cushman/Jenny, Mesa Air, Mesa Lung SHARE, Mesa Discover, and S. Cheng - complete.
Citrate	08	5625	5625	100%	0	5625	0	0	0		
Citrate	09	5625	5625	100%	0	5625	0	0	0		
Citrate	10	5617	5617	100%	0	5617	0	0	0		
Citrate	11	5596	5596	100%	0	5596	0	0	0		
SCAT	12	5583	5583	100%	0	5583	0	0	0		
SCAT	13	5583	5583	100%	0	5583	0	0	0		
SCAT	14	5572	5572	100%	0	5572	0	0	0		
SCAT	15	5549	5549	100%	0	5549	0	0	0		
Serum	16	5634	5627	100%	0	0	5627	5634	0	Uminn Group 1 Chem (n=5634)	Uminn Group 1 - complete.
Serum	17	5631	5431	96%	200	5430	1	0	0	Umin Group 1 Chem (n=1), Drift selection reserved (n=200)	Uminn Group 1 - complete. Drift selection - reserved.
Serum	18	5622	5622	100%	0	5622	0	0	0		
Serum	19	5605	5605	100%	0	5604	1	1	0	Umin Group 1 Chem (n=1)	Uminn Group 1 - complete
Serum	20	5550	5548	100%	0	5547	1	3	0	Mesa Air Cotinines (n=1), and Cystatin C calibration (n=2).	Mesa Air Cotinines, and Cystatin C calibration - complete.
Serum	21	5484	5434	99%	0	5200	234	109	0	Glucose Drift (n=3), M. Shlipak (n=56), Mesa Air Cotinines (n=2), and Cystatin C calibration (n=48).	Glucose Drift, M. Shlipak, Mesa Air Cotinines, and Cystatin C calibration - complete
Serum	22	5426	5413	100%	0	23	5390	5400	179	Glucose Drift (n=191), M. Shlipak (n=5208), Mesa Air Cotinines (n=180)	Glucose Drift, M. Shlipak, and Mesa Air Cotinines - complete
Totals:	**22**	**122930**	**122447**		**400**	**99020**	**23427**	**23329**	**937**		

5.2.5 Exam 5

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	#1X Used	#2X Used	#3X Used	Sample Selections	Sample Selection Status/Comments
EDTA-whole blood(HbA1c)	01	4582	0	0%	0	0	0	4582	0		Uminn Group 1 HbA1c (n=4582)	Uminn Group 1 - complete
EDTA	02	4584	4584	100%	0	0	4584	4584	0		Uminn Group 1 Lipids (n=4584)	Uminn Group 1 - complete
EDTA	03	4584	4584	100%	0	4584	0	0	0			
EDTA	04	4583	4583	100%	0	4583	0	0	0			
EDTA	05	4583	4583	100%	0	4583	0	0	0			
EDTA	06	4583	4583	100%	0	4583	0	0	0			
EDTA	07	4580	4579	100%	0	4579	0	1	0		TOPMed 2 (n=1)	TOPMed 2 - complete
EDTA	08	4579	4576	100%	0	4575	1	4	0		Mesa Air (n=1), Jacobs/Gross (n=1), and TOPMed 1 (n=1) and 2 (n=1)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	09	4572	4568	100%	0	4567	1	5	0		Mesa Air (n=1), Jacobs/Gross (n=1), and TOPMed 1 (n=1) and 2 (n=2)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	10	4557	4553	100%	0	4551	2	6	0		Mesa Air (n=2), Jacobs/Gross (n=1), and TOPMed 1 (n=2) and 2 (n=1)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	11	4540	4536	100%	0	4535	1	5	0		Mesa Air (n=1), Jacobs/Gross (n=1), and TOPMed 1 (n=1) and 2 (n=2)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	12	4531	4523	100%	0	4521	2	10	0		Mesa Air (n=2), Jacobs/Gross (n=2), and TOPMed 1 (n=2) and 2 (n=4)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	13	4524	4509	100%	0	4507	2	17	0		Mesa Air (n=2), Jacobs/Gross (n=2), and TOPMed 1 (n=5) and 2 (n=8)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	14	4504	4474	99%	0	4468	6	36	0		Mesa Air (n=6), Jacobs/Gross (n=2), and TOPMed 1 (n=7) and 2 (n=21)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	15	4466	4397	98%	0	4387	10	79	0		Mesa Air (n=10), Jacobs/Gross (n=6), and TOPMed 1 (n=22) and 2 (n=41)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	16	4418	4131	94%	0	4111	20	307	0		Mesa Air (n=20), Jacobs/Gross (n=16), and TOPMed 1 (n=40) and 2 (n=231)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	17	4299	3353	78%	0	3310	43	989	0		Mesa Air (n=45), Jacobs/Gross (n=29), and TOPMed 1 (n=241) and 2 (n=674)	Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
EDTA	18	4069	2934	72%	0	2516	418	1552	0		Uminn Group 1 Lipids (n=1), Mesa Air (n=427), Jacobs/Gross (n=429), and TOPMed 1 (n=681) and 2 (n=15)	Uminn Group 1, Mesa Air, Jacobs/Gross, and TOPMed 1 and 2 - complete
Red Cells	19	4582	2666	58%	0	2666	0	1916	0		Mesa Stress (n=1295), and TOPMed 1 (n=621)	Mesa Stress and TOPMed - complete.
SCAT	20	4496	4496	100%	0	4496	0	0	0			
SCAT	21	4496	4496	100%	0	4496	0	0	0			
SCAT	22	4486	4486	100%	0	4486	0	0	0			

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	#1X Used	#2X Used	#3X Used	Sample Selections	Sample Selection Status/Comments
SCAT	23	4428	4428	100%	0	4428	0	0	0			
Citrate	24	4575	4575	100%	0	4575	0	0	0			
Citrate	25	4575	4574	100%	0	4574	0	1	0		K. Mukmal (n=1)	K. Mukamal - complete.
Citrate	26	4573	4482	98%	0	4471	11	102	0		Mesa Stress (n=12), K. Mukamal (n=90)	Mesa Stress, and K. Mukamal - complete.
Citrate	27	4528	4217	93%	0	3284	933	1244	0		Mesa Stress (n=934), K. Mukamal (n=310)	Mesa Stress, and K. Mukamal - complete.
Serum	28	4589	2	0%	0	0	2	4589	4587		Uminn Group 1 Chem and Cystatin C (n=4589), S. Heckbert (n=4587).	Uminn Group 1, and Cystatin C calibration - complete; S. Heckbert - in-progress
Serum	29	4589	4589	100%	0	4589	0	0	0			
Serum	30	4587	4587	100%	0	4587	0	0	0			
Serum	31	4587	4587	100%	0	4587	0	0	0			
Serum	32	4587	4587	100%	0	4586	1	1	0		Mesa Stress (n=1)	Mesa Stress - complete.
Serum	33	4587	4587	100%	0	4587	0	0	0			
Serum	34	4580	4580	100%	0	4580	0	0	0			
Serum	35	4577	4577	100%	0	4573	4	4	0		Mesa Stress (n=4)	Mesa Stress - complete.
Serum	36	4557	4557	100%	0	4551	6	6	0		Mesa Stress (n=6)	Mesa Stress - complete.
Serum	37	4538	4537	100%	0	4531	6	7	0		Mesa Stress (n=6), and Mesa Lung/D. Lederer (n=1)	Mesa Stress, and Mesa Lung/D. Lederer - complete.
Serum	38	4512	4510	100%	0	4502	8	10	0		Mesa Stress (n=9), and Mesa Lung/D. Lederer (n=1)	Mesa Stress, and Mesa Lung/D. Lederer - complete.
Serum	39	4492	4490	100%	0	4471	19	21	0		Mesa Stress (n=19), and Mesa Lung/D. Lederer (n=2).	Mesa Stress, and Mesa Lung/D. Lederer - complete.
Serum	40	4442	4439	100%	0	4399	40	43	0		Mesa Stress (n=42), and Mesa Lung/D. Lederer (n=1)	Mesa Stress, and Mesa Lung/D. Lederer - complete.
Serum	41	4335	4320	100%	0	4251	69	84	0		Mesa Stress (n=72), Cystatin C calibration (n=4), and Mesa Lung/D. Lederer (n=8).	Mesa Stress, Cystatin C calibration, and Mesa Lung/D. Lederer - complete.
Serum	42	4122	4104	100%	0	4019	85	103	0		Mesa Stress (n=88), Cystatin C calibration (n=5), and Mesa Lung/D. Lederer (n=10).	Mesa Stress, Cystatin C calibration, and Mesa Lung/D. Lederer - complete.
Serum	43	3809	3763	99%	0	3632	131	177	0		Mesa Stress (n=137), Cystatin C calibration (n=13), and Mesa Lung/D. Lederer (n=27).	Mesa Stress, Cystatin C calibration, and Mesa Lung/D. Lederer - complete.
Serum	44	3227	3143	97%	0	2584	559	643	0		Mesa Stress (n=565), Cystatin C calibration (n=28), and Mesa Lung/D. Lederer (n=50).	Mesa Stress, Cystatin C calibration, and Mesa Lung/D. Lederer - complete.
Whole Blood	45	4454	4454	100%	0	4454	0	0	0			
Whole Blood	46	4339	4301	99%	0	4301	0	38	0		TOPMed (n=38)	TOPMed - complete

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	#1X Used	#2X Used	#3X Used	Sample Selections	Sample Selection Status/Comments
FAHC Urine	47	4553	0	0%	0	0	0	4553	0		UVM Group 1 UMALB (n=4553)	UVM Group 1 - complete
Urine	48	4548	3867	85%	0	982	2885	3566	540	24	Mesa Lung Cotinine / G. Barr (n=3420), K. Mukamal (n=400), A. Navas-Acien (n=310)	Mesa Lung Cotinine / G. Barr, K. Mukamal, and A. Navas-Acien - complete
Urine	49	4527	4527	100%	0	4525	2	2	0		UVM Group 1 UMALB (n=1) and C. Curl (n=1)	UVM Group 1 and C. Curl - complete
Urine/Acetic Acid	51	4410	4410	100%	0	4409	1	0	0		(Recd in cracked tube)	(Sample transferred to new tube)
Urine/Acetic Acid	52	4277	4277	100%	0	4277	0	0	0			
Totals:	**52**	**227702**	**208265**		**0**	**198413**	**9852**	**29287**	**5127**			

5.3 MESA Repository Summary of Samples Received Per Exam as of March, 2018

5.3.1 Baseline

	EDTA		Red Cells	Citrate	SCAT-1	Serum	CPT Plasma	CPT Cells	Urine		Urine w/ Acetic Acid
	1 mL	0.5 mL	5.0 mL	0.5 mL	0.5 mL	0.5 mL	0.5 mL	2.0 mL	3.0 mL	9.0 mL	9.0 mL
#Cryos	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd
1	6799		31	1	3	2		150	6777	6770	6749
2			6752	3	7	1		6617			
3		1		16	29	1	2				
4		2		6757	6735	3	3				
5		2				5	1				
6		13				10	7				
7		18				13	14				
8		17				24	14				
9		12				33	32				
10		9				30	38				
11		20				37	33				
12		60				79	53				
13		141				159	72				
14		327				283	138				
15		613				518	197				
16		5564				763	6171				
17						4835					
Total IDs	6799	6,799	6,783	6,777	6,774	6,796	6,775	6,767	6,777	6,770	6,749
% of Total IDs Rec'd (n=6806)	99.90%	99.90%	99.66%	99.57%	99.53%	99.85%	99.54%	99.43%	99.57%	99.47%	99.16%
Total Cryos	6799	106,129	13,535	27,083	27,044	110,543	106,501	13,384	6,777	6,770	6,749
Total Sample Volume mLs	6799	53,065	67,675	13,542	13,522	55,272	53,251	26,768	20,331	60,930	60,741

Total Cryos/Tubes Collected:	431,314	
Total Sample Volume Collected:	432	Liters!

Update: Excludes cryos received empty or otherwise unuseable.

5.3.2 Exam 2

#Cryos	EDTA		Citrate	SCAT-1	Buff Coat	Serum		Urine
	Whole Blood 5uL	1.0 mL	0.5 mL	0.5 mL	2.0 mL	0.5 mL	1.0 mL	3.0 mL
	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd
1	6181		1	1	6191	6190	2	6199
2			1	4			10	
3		3	16	14			32	
4		20	6160	6145			60	
5		42					70	
6		32					6013	
7		6095						
Total IDs	6,181	6,192	6,178	6,164	6,191	6,190	6,187	6,199
Total Cryos	6,181	43,156	24,691	24,631	6,191	6,190	36,786	6,199
% of Total IDs Rec'd (n=6211)	99.52%	99.69%	99.47%	99.24%	99.68%	99.66%	99.61%	99.81%
Total Sample Volume mLs	31	43,156	12,346	12,316	12,382	3,095	36,786	18,597

Total Cryos/Tubes Collected:	154,025	
Total Sample Volume Collected:	139	Liters!

Update: Excludes cryos received empty or otherwise unuseable.

5.3.3 Exam 3

	EDTA	Citrate	SCAT-1	Serum		Urine
	1.0 mL	0.5 mL	0.5 mL	0.5 mL	1.0 mL	3.0 mL
#Cryos	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd
1			3	5890	3	5886
2	2	5	10		15	
3	7	19	46		38	
4	18	5851	5745		58	
5	33				95	
6	44				5677	
7	5789					
Total IDs	5,893	5,875	5,804	5,890	5,886	5,886
Total Cryos	41,049	23,471	23,141	5,890	34,916	5,886
% of Total IDs Rec'd (n=5913)	99.66%	99.36%	98.16%	99.61%	99.54%	99.54%
Total Sample Volume mLs	41,049	11,736	11,571	2,945	34,916	17,658

Total Cryos/Tubes Collected:	134,353	
Total Sample Volume Collected:	120	Liters!

Update: Excludes cryos received empty or otherwise unuseable.

5.3.4 Exam 4

	EDTA	Citrate	SCAT-1	Serum	
	1.0 mL	0.5 mL	0.5 mL	0.5 mL	1.0 mL
#Cryos	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd
1	2		2	5634	9
2	5	8	10		17
3	6	21	27		54
4	27	5596	5546		68
5	27				57
6	21				5426
7	5547				
Total IDs	5635	5625	5585	5634	5631
% of Total IDs Rec'd (n=5637)	99.96%	99.79%	99.08%	99.95%	99.89%
Total Cryos	39,228	22,463	22,287	5,634	33,318
Total Sample Volume mLs	39,228	11,232	11,144	2,817	33,318
Total Cryos/Tubes Collected:		122,930			
Total Sample Volume Collected:		98	Liters!		

Update: Excludes cryos received empty or otherwise unuseable.

5.3.5 Exam 5

	EDTA			Red Cells	SCAT-1	Citrate	Serum	EDTA Whole Blood	Urine		Urine w/ Acetic Acid
	Whole Blood 5uL	1.0 mL	0.5 mL	9.0 mL	0.5 mL	0.5 mL	0.5 mL	1.0 mL	3.0 mL	9.0 mL	9.0 mL
#Cryos	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd
1	4582	4584	1	4582	1	0	0	115	4553	21	133
2			0		10	2	2	4339		4527	4277
3			0		59	45	0				
4			3		4427	4528	0				
5			1				0				
6			7				6				
7			15				4				
8			17				19				
9			9				20				
10			7				26				
11			20				19				
12			37				51				
13			49				107				
14			119				213				
15			231				314				
16			4068				583				
17							3225				
Total IDs	4582	4,584	4,584	4,582	4,497	4,575	4,589	4,454	4,553	4,548	4,410
% of Total IDs Rec'd (n=4626)	99.05%	99.09%	99.09%	99.05%	97.21%	98.90%	99.20%	96.28%	98.42%	98.31%	95.33%
Total Cryos	4582	4,584	71,972	4,582	17,906	18,251	74,717	8,793	4,553	9,075	8,687
Total Sample Volume mLs	22.91	4,584	35,986	41,238	8,953	9,126	37,359	8,793	13,659	81,675	78,183

Total Cryos/Tubes Collected:	227,702	
Total Sample Volume Collected:	320	Liters!

Update: Excludes cryos received empty or otherwise unuseable.

5.3.6 Exam 6

	EDTA			Serum		Urine	Paxgene
	Whole Blood 0.5 mL	0.5 mL	1.0 mL	0.5 mL	1.0 mL	1.5 mL	2.5 mL
#Cryos	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd	#Rec'd
1	2901		10	2	14		2810
2		3	33	2	49	2	
3		2	41	6	67	4	
4		2898	41	2896	165	5	
5			144		375	11	
6			2630		2232	2873	
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
Total IDs	2,901	2,903	2,899	2,906	2,902	2,895	2,810
% of Total IDs Rec'd (n=2958)	98.07%	98.14%	98.01%	98.24%	98.11%	97.87%	95.00%
Total Cryos	2901	11,604	16,863	11,608	16,240	17,329	2,810
Total Sample Volume mLs	1450.5	5,802	16,863	5,804	16,240	25,994	7,025

Total Cryos/Tubes Collected:	79,355	
Total Sample Volume Collected:	79	Liters!

Update: Excludes cryos received empty or otherwise unuseable.

5.4 MESA Repository Report, as of March, 2018

5.4.1 MESA Repository Availability, by Category

5.4.1.1 Table: Baseline

Baseline N =6806 (baseline cohort IDs N = 6814; received samples on only 6806 cohort Ids)

Baseline

Baseline - EDTA	# cryos	Volume	# FreshCryos Available	% of 6806
Available	3 - 17	≥ 1.0 mL	6673	98%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	126	2%
No Sample	0	0	7	0%

Baseline - SCAT	# cryos	Volume	# FreshCryos Available	% of 6806
Available	3 - 4	≥ 1.0 mL	6602	97%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	169	2%
No Sample	0	0	35	1%

Baseline - SERUM	# cryos	Volume	# FreshCryos Available	% of 6806
Available	3 - 17	≥ 1.0 mL	6670	98%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	123	2%
No Sample	0	0	13	0%

Baseline - CITRATE	# cryos	Volume	# FreshCryos Available	% of 6806
Available	3 - 4	≥ 1.0 mL	4467	66%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	2309	34%
No Sample	0	0	30	0%

(Table continues on following page)

Baseline Selected 1000 (Group3) n=999

Baseline - EDTA	# cryos	Volume	# FreshCryos Available	% of 999
Available	3 - 17	≥ 1.0 mL	966	97%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	33	3%
No Sample	0	0	0	0%

Baseline - SCAT	# cryos	Volume	# FreshCryos Available	% of 999
Available	3 - 4	≥ 1.0 mL	961	96%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	38	4%
No Sample	0	0	0	0%

Baseline - SERUM	# cryos	Volume	# FreshCryos Available	% of 999
Available	3 - 17	≥ 1.0 mL	996	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	3	0%
No Sample	0	0	0	0%

Baseline - CITRATE	# cryos	Volume	# FreshCryos Available	% of 999
Available	3 - 4	≥ 1.0 mL	0	0%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	999	100%
No Sample	0	0	0	0%

Note: Above EDTA counts do not reflect sample use for currently in-progress AS#228 (D. Mozaffarian).

5.4.1.2 Table: Exam 2

Exam 2 N=6211 (based on baseline defined cohort with Exam 2 samples received at Vermont)

Exam 2 n= 6211*

Exam 2 - EDTA	# cryos	Volume	# FreshCryos Available	% of 6211
Available	2 - 7	≥ 1.0 mL	6094	98%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	94	2%
No Sample	0	0	23	0%

Exam 2 - SCAT	# cryos	Volume	# FreshCryos Available	% of 6211
Available	3 - 4	≥ 1.0 mL	6158	99%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	5	0%
No Sample	0	0	48	1%

Exam 2 - SERUM	# cryos	Volume	# FreshCryos Available	% of 6211
Available	2 - 7	≥ 1.0 mL	6175	99%
Critial	1 - 2	≥ 0 and ≤ 1.0 mL	11	0%
No Sample	0	0	25	0%

Exam 2 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 6211
Available	3 - 4	≥ 1.0 mL	6175	99%
Critial	1 - 2	≥ 0 and ≤ 1.0 mL	2	0%
No Sample	0	0	34	1%

(Table continues on following page)

Exam 2 Selected 1000
(Group3) n=926

Exam 2 - EDTA	# cryos	Volume	# FreshCryos Available	% of 926
Available	2 - 7	$\geq$ 1.0 mL	906	98%
Critical	1 - 2	$\geq$ 0 and $\leq$ 1.0 mL	19	2%
No Sample	0	0	1	0%

Exam 2 - SCAT	# cryos	Volume	# FreshCryos Available	% of 926
Available	3 - 4	$\geq$ 1.0 mL	922	100%
Critical	1 - 2	$\geq$ 0 and $\leq$ 1.0 mL	0	0%
No Sample	0	0	4	0%

Exam 2 - SERUM	# cryos	Volume	# FreshCryos Available	% of 926
Available	2 - 7	$\geq$ 1.0 mL	923	100%
Critial	1 - 2	$\geq$ 0 and $\leq$ 1.0 mL	2	0%
No Sample	0	0	1	0%

Exam 2 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 926
Available	3 - 4	$\geq$ 1.0 mL	922	100%
Critial	1 - 2	$\geq$ 0 and $\leq$ 1.0 mL	0	0%
No Sample	0	0	4	0%

5.4.1.3 Table: Exam 3

Exam 3 N=5913 (based on baseline defined cohort with Exam 3 samples received at Vermont)

Exam 3

Exam 3 - EDTA	# cryos	Volume	# FreshCryos Available	% of 5913
Available	2 - 7	≥ 1.0 mL	5884	100%
Critical	1	≥ 0 and ≤ 1.0 mL	9	0%
No Sample	0	0	20	0%

Exam 3 - SCAT	# cryos	Volume	# FreshCryos Available	% of 5913
Available	3 - 4	≥ 1.0 mL	5791	98%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	13	0%
No Sample	0	0	109	2%

Exam 3 - SERUM	# cryos	Volume	# FreshCryos Available	% of 5913
Available	2 - 7	≥ 1.0 mL	5880	99%
Critical	1	≥ 0 and ≤ 1.0 mL	6	0%
No Sample	0	0	27	0%

Exam 3 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 5913
Available	3 - 4	≥ 1.0 mL	5870	99%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	5	0%
No Sample	0	0	38	1%

(Table continues on following page)

Exam 3 Selected 1000 (Group3) n=890

Exam 3 - EDTA	# cryos	Volume	# FreshCryos Available	% of 890
Available	2 - 7	≥ 1.0 mL	883	99%
Critical	1	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	6	1%

Exam 3 - SCAT	# cryos	Volume	# FreshCryos Available	% of 890
Available	3 - 4	≥ 1.0 mL	871	98%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	19	2%

Exam 3 - SERUM	# cryos	Volume	# FreshCryos Available	% of 890
Available	2 - 7	≥ 1.0 mL	885	99%
Critical	1	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	5	1%

Exam 3 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 890
Available	3 - 4	≥ 1.0 mL	882	99%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	7	1%

5.4.1.4 Table: Exam 4

Exam 4 N = 5637

Exam 4

Exam 4 - EDTA	# cryos	Volume	# FreshCryos Available	% of 5637
Available	2 - 7	≥ 1.0 mL	5619	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	14	0%
No Sample	0	0	4	0%

Exam 4 - SCAT	# cryos	Volume	# FreshCryos Available	% of 5637
Available	3 - 4	≥ 1.0 mL	5573	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	12	0%
No Sample	0	0	52	1%

Exam 4 - SERUM	# cryos	Volume	# FreshCryos Available	% of 5637
Available	2 - 7	≥ 1.0 mL	5620	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	11	0%
No Sample	0	0	6	0%

Exam 4 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 5637
Available	3 - 4	≥ 1.0 mL	5617	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	8	0%
No Sample	0	0	12	0%

(Table continues on following page)

Exam 4 Selected 1000 (Group3), (n=847)

Exam 4 - EDTA	# cryos	Volume	# FreshCryos Available	% of 847
Available	2 - 7	≥ 1.0 mL	845	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	1	0%

Exam 4 - SCAT	# cryos	Volume	# FreshCryos Available	% of 847
Available	3 - 4	≥ 1.0 mL	841	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	6	1%

Exam 4 - SERUM	# cryos	Volume	# FreshCryos Available	% of 847
Available	2 - 7	≥ 1.0 mL	846	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	0	0%

Exam 4 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 847
Available	3 - 4	≥ 1.0 mL	845	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	1	0%

5.4.1.5 Table: Exam 5

Exam 5 n = 4626

Exam 5

Exam 5 - EDTA	# cryos	Volume	# FreshCryos Available	% of 4626
Available	3 - 17	≥ 1.0 mL	4583	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	42	1%

Exam 5 - SCAT	# cryos	Volume	# FreshCryos Available	% of 4626
Available	3 - 4	≥ 1.0 mL	4486	97%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	11	0%
No Sample	0	0	129	3%

Exam 5 - SERUM	# cryos	Volume	# FreshCryos Available	% of 4626
Available	3 - 17	≥ 1.0 mL	4587	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	2	0%
No Sample	0	0	37	1%

Exam 5 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 4626
Available	3 - 4	≥ 1.0 mL	4471	97%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	104	2%
No Sample	0	0	51	1%

(Table continues on following page)

Exam 5 Selected 1000 (Group3), (n=728)

Exam 5 - EDTA	# cryos	Volume	# FreshCryos Available	% of 728
Available	3 - 4	≥ 1.0 mL	719	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	9	1%

Exam 5 - SCAT	# cryos	Volume	# FreshCryos Available	% of 728
Available	3 - 4	≥ 1.0 mL	698	96%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	2	0%
No Sample	0	0	28	4%

Exam 5 - SERUM	# cryos	Volume	# FreshCryos Available	% of 728
Available	3 - 17	≥ 1.0 mL	722	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	5	1%

Exam 5 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 728
Available	3 - 4	≥ 1.0 mL	700	96%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	18	2%
No Sample	0	0	10	1%

5.4.1.6 Table: Exam 6

Exam 6 n = 2958*

Exam 6 – EDTA (0.5 mL cryos)	# cryos	Volume	# FreshCryos Available	% of 2958
Available	3 - 4	≥ 1.0 mL	2900	98%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	3	0%
No Sample	0	0	55	2%

Exam 6 – EDTA (1.0 mL cryos)	# cryos	Volume	# FreshCryos Available	% of 2958
Available	2 - 6	≥ 1.0 mL	2889	98%
Borderline	1	≥ 0 and ≤ 1.0 mL	10	0%
No Sample	0	0	59	2%

Exam 6 - PAXgene	# cryos	Volume	# FreshCryos Available	% of 2958
Available		≥ 0 mL	2810	95%
No Sample		0	148	5%

Exam 6 – SERUM (0.5mL cryos)	# cryos	Volume	# FreshCryos Available	% of 2958
Available	3 - 4	≥ 1.0 mL	2901	98%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	5	0%
No Sample	0	0	52	2%

Exam 6 – SERUM (1.0 mL cryos)	# cryos	Volume	# FreshCryos Available	% of 2958
Available	3 - 4	> 1.0 mL	2887	98%
Borderline	1 - 2	> 0 and < 1.0 mL	15	1%
No Sample	0	0	56	2%

(Table continues on following page)

Exam 6 Selected 1000 (Group3) n=471

Exam 6 – EDTA (0.5 mL cryos)	# cryos	Volume	# FreshCryos Available	% of 471
Available	3 - 4	≥ 1.0 mL	469	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	2	0%

Exam 6 – EDTA (1.0 mL cryos)	# cryos	Volume	# FreshCryos Available	% of 471
Available	2 - 6	≥ 1.0 mL	467	99%
Borderline	1	≥ 0 and ≤ 1.0 mL	2	0%
No Sample	0	0	2	0%

Exam 6 - PAXgene	# cryos	Volume	# FreshCryos Available	% of 471
Available		≥ 0 mL	457	97%
No Sample		0	14	3%

Exam 6 – SERUM (0.5mL cryos)	# cryos	Volume	# FreshCryos Available	% of 471
Available	3 - 4	≥ 1.0 mL	2901	98%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	5	0%
No Sample	0	0	52	2%

Exam 6 – SERUM (1.0 mL cryos)	# cryos	Volume	# FreshCryos Available	% of 471
Available	3 - 4	> 1.0 mL	466	99%
Borderline	1 - 2	> 0 and < 1.0 mL	1	0%
No Sample	0	0	4	1%

***n based on baseline defined MESA Classic cohort with Exam 6 samples rec'd as of 3/02/2018 at LCBR.**

MESA Repository Report, as of March, 2018

5.5.1 MESA DNA Repository Availability, by Category

The following tables show the status of DNA in the MESA repository, as provided by the Clinical Laboratory at the University of Minnesota. Table 1 represents the distribution of DNA remaining in the repository, and Table 2 lists the amount of DNA sent to various laboratories.

5.5.1.1 Table: Distribution of quantities of DNA remaining in MESA Repository

Quantity ugs remaining	n
0	60
<10	27
10-50	77
51-100	443
101-200	1807
201-300	2282
301-400	1342
401-500	531
>500	282
TOTAL	6851

5.5.1.2 Table: MESA DNA Released

Date Sent	Sent to	Population	Amount Sent	Total sent
				ug DNA
Feb, 2004	Crider/Dries Laboratory	entire cohort	25 uL of 10 ng/uL	0.25
May, 2005	Illumina	MESA Family Candidate Gene Part 1	80 uL of 50 ng/uL	4.00
May, 2006	Kent Taylor@CS	MESA Family Candidate Gene Part 1	200 uL of 10 ng/uL	2.00
May, 2006	Don Bowden@ WF	MESA Family Candidate Gene Part 1	200 uL of 10 ng/uL	2.00
March, 2006	Dan Arking	entire cohort	17uL of 5.2 ng/uL	0.09
Jan, 2007	Diez Roux Telomere Study	selected cohort of 982	10 uL of 26-28ng/uL	0.27
Dec, 2007	CARe	entire cohort	40 uL of 50 ng/uL	2.00
Jan, 2008	Steve Rich/Michele Sale	MESA Family Candidate Gene Part 1	40 uL of 50 ng/uL	2.00
March, 2008	Barry Freedman	308 African Americans	40 uL of 100 ng/uL	4.00
March, 2008	Mike Tsai ApoE/ACE	MESA Family Candidate Gene Part 1	10 uL of 10 ng/uL	0.01
Aug, 2008	SEA, David Herrington	entire cohort	20 uL of 50 ng/uL	1.00
Nov, 2008	Kent Taylor	MESA Family Candidate Gene Part 2	40 uL of 100 ng/uL	4.00
Nov, 2008	Steve Rich/Michele Sale	MESA Family Candidate Gene Part 2	40 uL of 100 ng/uL	4.00
June, 2009	Affymetrix	MESA Classic less AFA	30 uL of 50 ng/uL	1.50
July, 2009	Rick Pilsner/MESA Epigenetics	991 MESA Stress	50 uL of 20 ng/uL	1.00
March, 2010	Jerry Rotter	entire cohort	20 uL of 100 ng/uL	2.00
August 2010-11	MESA Exome Heart Go	selected cohort of 1000	50 uL of 100 ng/uL	5.00
Aug, 2011	MESA Exome Heart Go	20 selected cohort of 1000	50 uL of 200 ng/uL	10.00
Nov, 2011	MESA Exome Heart Go	25 selected cohort of 1000	50 uL of 200 ng/uL	10.00

Feb, 2012	Jerry Rotter/Kent Taylor	MESA Classic cohort	50 uL of 40 ng/uL	2.00
Feb, 2012	Steve Rich/Michele Sale	MESA Classic cohort	50 uL of 40 ng/uL	2.00
April, 2012	Mike Tsai Alox 5 project	MESA Classic cohort	10 uL of 25 ng/uL	0.25
Dec, 2013	MESA Stress (Diez Roux)	selected cohort of 1316	22 uL of 30 ng/uL	0.66
Feb, 2014	MESA GUARDIAN (Jerry Rotter)	906 Hispanics	20 uL of 50 ng/uL	1.00
Oct, 2015	Apo L/ C. Wassel	3218	10 uL of 10 ng/uL	0.1
Nov, 2015	TopMed / J Rotter	1248	20 uL of 200 ng/uL	4
Dec, 2015	TopMed/ J Rotter	3346	20 uL of 200 ng/uL	4
Dec, 2015	Ramy Arnaout Pilot	10	Various concentrations	15
Jan, 2016	TopMed/J Rotter	96	20 uL of 200 ng/uL	4
12/14/2016	TopMed- Methylomics/J Rotter	24	20 uL of various concentrations	1.1
12/14/2016	TopMed- Methylomics/J Rotter	24	20 uL of various concentrations	0.6
3/7/2017	TopMed- Methylomics/J Rotter	27	20 uL of various concentrations	1.1
3/7/2017	TopMed- Methylomics/J Rotter	213	20 uL of various concentrations	0.6
3/13/2017	TopMed- Methylomics/J Rotter	27	20 uL of various concentrations	1.1
3/13/2017	TopMed- Methylomics/J Rotter	213	20 uL of various concentrations	0.6
3/21/2017	TopMed- Methylomics/J Rotter	25	20 uL of various concentrations	1.1
3/21/2017	TopMed- Methylomics/J Rotter	215	20 uL of various concentrations	0.6
3/28/2017	TopMed- Methylomics/J Rotter	21	20 uL of various concentrations	1.1
3/28/2017	TopMed- Methylomics/J Rotter	210	20 uL of various concentrations	0.6
4/4/2017	TopMed- Methylomics/J Rotter	2	20 uL of various concentrations	1.1
4/4/2017	TopMed- Methylomics/J Rotter	8	20 uL of various concentrations	0.6
5/16/2017	TopMed- Methylomics/J Rotter	3	20 uL of various concentrations	1.1
10/11/2016	UVA/Joe M	1033	20 uL of various concentrations	0.2
Total				99.63

Section 6: Datasets

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Introduction

Datasets, documentation and other useful information can be found by following the appropriate Exam Datasets link in the internal MESA website (http://www.mesa-nhlbi.org/Mesa-Internal/mesaData1.asp) and following the Navigation bar for further exams. A password, which is changed every week, is required to access the data files. In addition, people affiliated with MESA must complete the Data Distribution Agreement posted on the MESA web site, under Exam Datasets, and fax (or e-mail) it to David Vu at the Coordinating Center. To obtain the current password, send an email request to David Vu at voodoo@u.washington.edu, and he will contact you by phone with the password. For security reasons, the password will not be given via email.

6.1 Exam 1 Data

Exam 1 (clinic data collected July 17, 2000, to August 29, 2002):

The Exam 1 MESA data was made available May 13, 2003. Datasets are in SPSS, STATA, and SAS formats. In each format, the following files exist:

- **Main data file** includes variables from clinic procedures and questionnaires, created analytic variables (e.g., body mass index), and key reading center (RC) variables (e.g., average total calcium score).
- **RC and Questionnaire data files**: ECG, CT, MRI, US IMT, US Distensibility, US Endothelial Function, Lipid Blood Groups 1, 2, 3, Urine, sICAM, Sphyngomyelin, Pulsewave, Aortic Valvular Calcium, Physical Activity, and Diet data,. Note that the CT files contain up to two scans per enrollee.

The following MS Word files are posted and contain descriptions of all variables included in the Main and RC datasets:

- main data variables file (sorted by completion form and RC)
- RC variables file (sorted by RC), with additional files for certain data sets
- created variables data dictionary (organized by exam procedure)
- additional individual data sets have further documentation files

6.1.1 Update Status

Updates and changes to the Exam 1 datasets since September 2017 include:

- Variable [group51c] “Blood Group 5 Indicator (TOPMed WGS)” added

The complete history of Exam 1 data updates can be found at:
http://www.mesa-nhlbi.org/MesaInternal/Exam1Data/Exam1_Data_Updates_completed.doc

6.2 Exam 2 Data

Exam 2 (Clinic data collected from September 9, 2002, to February 2004):

The following Exam 2 MESA data is available. Similar to Exam 1, datasets are produced in SPSS, STATA and SAS formats. The SAS files include syntax (.sas), data (.sas7bdat), and contents (.lst) files.

6.2.1 Posted Exam 2 Datasets

- Main
- Anthropometry
- Seated Blood Pressure
- Medical History
- Phlebotomy
- Demographics
- Lipids and Urine
- Family History
- Family History of Diabetes Mellitus
- Health & Life
- Medications
- Personal History
- Sleep History
- CT on 50% of cohort at Exam 2
- CT Wide – Exam 2 data with 1 record per participant
- Physical Activity

The Main data file includes commonly used analytic variables from all of these datasets.

6.2.2 Update Status

No changes to the Exam 2 datasets since September 2017 have been made.

The complete history of Exam 2 data updates can be found at:
http://www.mesa-nhlbi.org/MesaInternal/Exam2Data/Exam2_Data_Updates_completed.doc

6.3 Exam 3 Data

Exam 3 (Clinic data collected from March 2004, to September 2005):

The following Exam 3 MESA data is available. Similar to Exam 1, datasets are produced in SPSS, STATA and SAS formats. The SAS files include syntax (.sas), data (.sas7bdat) and contents (.lst) files.

6.3.1 Posted Exam 3 Datasets

- Main
- Demographics
- Lipids and Urine
- Anthropometry
- CT on 50% of cohort at Exam 3
- CT Wide – Exam 3 data with 1 record per participant
- Personal History
- Seated BP
- Medical History
- Medications
- ABI
- Health & Life
- Physical Activity

The Main data file includes commonly used analytic variables from all of these datasets.

6.3.2 Update Status

No changes to the Exam 3 datasets since September 2017 have been made.

The complete history of Exam 3 data updates can be found at:
http://www.mesa-nhlbi.org/MesaInternal/Exam3Data/Exam3_Data_Updates_completed.doc

6.4 Exam 4 Data

Collection of Exam 4 data began in September 2005 and continued through May 2007:

Preliminary cleaning began 1st quarter 2007 and was completed and posted in 4th quarter 2007.
The following Exam 4 MESA data is available. Similar to Exam 1, datasets are produced in SPSS, Stata and SAS formats. The SAS files include syntax (.sas), data (.sas7bdat) and contents (.lst) files.

6.4.1 Posted Exam 4 Datasets

- Main
- Demographics
- Phlebotomy/Lipids
- Anthropometry
- CT on 25% of cohort at Exam 4
- CT Wide – Exam 4 data with 1 record per participant
- Personal History
- Sleep History
- Seated BP
- Medical History
- Medications
- Blood Potassium
- Health & Life

The Main data file includes commonly used analytic variables from all of these datasets.

6.4.2 Update Status

No changes to the Exam 4 datasets since September 2017 have been made.

The complete history of exam 4 data updates can be found at:
http://www.mesa-nhlbi.org/MesaInternal/Exam4Data/Exam4_Data_Updates_completed.doc

6.5 Exam 5 Data

Collection of Exam 5 data began in April 2010 and continued through April 2013.

Preliminary cleaning began 2nd quarter 2011 and was completed and posted in 3rd quarter 2012.
The following Exam 5 MESA data is available. Similar to Exam 1, datasets are produced in SPSS, Stata and SAS formats. The SAS files include syntax (.sas), data (.sas7bdat) and contents (.lst) files.

6.5.1 Posted Exam 5 Datasets

- Main
- Demographics
- Cardiac CT
- ECG
- MRI
- Ankle-Brachial Index
- Anthropometry
- Lipids (includes Phlebotomy and Urine data)
- Seated BP
- Cognitive Assessment
- Digit Span and Symbol
- Erectile Dysfunction
- Health and Life Questionnaire
- Medical History Questionnaire
- Medications
- Personal History Questionnaire
- Physical Activity

Availability of ancillary data collected during Exam 5 will be at the discretion of ancillary study investigators.

6.5.2 Update Status

Updates and changes to the Exam 5 datasets since September 2017 include:

- MRI Forms dataset updated. Gadolinium dose, rate, and time updated with additional information from COPD MRI Completion form.

The complete history of exam 5 data updates can be found at:
http://www.mesa-nhlbi.org/MesaInternal/Exam5Data/Exam5_Data_Updates_completed.doc

6.6 Longitudinal Data Availability (select variables)

Measurement	Exam 1	Exam 2	Exam 3	Exam 4	Exam 5 *	
	Count	Count	Count	Count	Count	% Exam 1 count
BMI1C: body mass index (kg)/(m^2)	6814	6226	5939	5702	4642	68%
SBP1C: seated systolic blood pressure (mmHg)	6811	6221	5936	5698	4653	68%
DM971C: diabetes mellitus by 1997 ADA fasting criteria	6790	5923	5912	5662	4595	68%
OLVEDM1: LV End-Diastolic Mass (g)	5004	-	-	-	3013	60%
AGATPM1C: Agatston calcium score, phantom-adjusted (mean)	6814	2954	2804	1406	3300	48%
RDCCAMNAVG5: Right Common Carotid Mean (mm)	3220	-	-	-	3405	106%
QTDUR1: QT Interval (msec)	6765	-	-	-	4613	68%
CHOL1: total cholesterol (mg/dl)	6791	6183	5892	5634	4582	67%
LDL1: LDL total cholesterol (mg/dl)	6701	6112	5810	5577	4559	68%
GLUCOSE1: fasting glucose (mg/dl)	6789	6182	5887	5634	4587	68%
HBA1C2: Serum Hemoglobin A1c	-	6142	-	-	4162	68%
UALBCRE1:urinary abumin/creatinine (mg/g)	6775	6145	5885	NA	4552	67%
ABI1C: Ankle-Brachial Index	6735	-	5885	-	4436	66%

6.7 Ancillary Study Data

Seven ancillary study datasets have produced and posted data since September 2017; six changes were made to existing datasets.

The complete history of ancillary data updates can be found at:
http://www.mesa-nhlbi.org/MesaInternal/ASData/Ancillary_Data_Updates_completed.doc

Note that access to the current ancillary studies requires authorization from the Study PI, and each dataset is posted with its own unique password. This password can also be obtained from David Vu.

6.8 Events Datasets

The Main Clinical Events data sets were updated in December 2017, and now include data through calendar year 2015. See Section 3 for a description of the data sets and further information on the status of Events surveillance, data collection and adjudication.

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Section 7: Ancillary Studies

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7.1 New and Revised Proposals

Since the last report in April 2017, the Ancillary Studies Committee (ASC) has reviewed twenty-five new proposals. Twenty-four of the new proposals were subsequently approved for review by the Steering Committee.

The following ASC reviews were conducted either by conference call or by email:

New Approved Proposals:

A333 *Right Precordial T-wave Inversion and the Position of the Heart in the Thorax: A Comparison Between Patients with Arrhythmogenic Right Ventricular Cardiomyopathy and Healthy Subjects from the Multi-Ethnic Study of Atherosclerosis.* Mimount Bourfiss, Hianhua Yao, Robyn McClelland, Elsayed Soliman, Anneline te Riele, David Bluemke.

A334 *The Multisite Study of the Vascular Contributions to Alzheimer's disease: The MESA-MultisiteAD study.* Timothy Hughes, Greg Burke, Kathleen Hayden, Suzanne Craft, Steve Rapp, José A. Luchsinger, Steven Shea, Wendy Post, Aaron Folsom, Kiang Liu, Karol Watson.

A335 *Automated coronary artery calcium scoring in both gated cardiac CT and ungated lung CT scans.* Ryan Chamberlain, Matt Budoff, Graham Barr, Dong Li, Steve Kohlmyer, Ilana Golub, Daniel Budoff, Alexander Johnson, Joel Kaufman..

A336 *Personalized Risk Estimation for Ventilatory and Emphysematous endopheno-Types for Chronic Lung Disease (PREVENT-CLD).* R. Graham Barr, Baccarelli, Benjamin Smith, Elizabeth Oelsner, Nadia Hansel, Wendy Post, Kiang Liu, Karol Watson, Cooper, Gregory Burke, Peters, Pamela Lutsey, Aaron Folsom, Widome, Woodruff, Benowitz, Hann, Eric Hoffman, Robyn McClelland, Richard Kronmal, Ani Manichaikul, Steve Rich..

A337 *Thoracic Aorta and Carotid Artery Calcium on Chest Computed Tomography.* Isac C. Thomas, Michael Criqui, Mathew A. Allison, R. Graham Barr, Matthew J. Budoff..

A338 *A Longitudinal Study of the Association Between Air Pollution Exposure, Oxidative Stress, and Early Cardiovascular Disease Phenotypes.* William E. Funk, Kiang Liu, Joel Kaufman, Donald Lloyd-Jones, Christopher Kuzawa, Kwang-Youn Kim, Norrina Allen, Paul Thomas.

A339 *Subclavian Artery Calcification.* Matthew Allison, Graham Barr, David Jacobs, Robyn McClelland.

A340 *Podocyturia mRNAs Provide Earlier and Superior Prediction of Adverse Cardiovascular Outcomes: Results from the Multi-Ethnic Study of Atherosclerosis.* Tarek Zghaib, Kamal Badr, Robert Habib, Assaad Eid, Saman Nazarian, Russell Tracy, Joao Lima.

A341 *NIH Data Commons: Accessing Large-Scale Biomedical Data to Improve the Precision of Health Care.* Jerome Rotter, Stephen Rich, Kent Taylor, Wendy Post, Robyn McClelland, Craig Johnson, Xiuqing Guo, Yii-Der Ida Chen.

A342 *Prediction of Major Adverse Cardiovascular Events (MACE) Using Clinical Characteristics and Cardiovascular Imaging Features: A Machine Learning Approach.* Subhi J. Al'Aref, Matthew

Budoff, Kranthi K. Kolli, Gurpreet Singh, Gabriel Maliakal, Mohit Pandey, Leslee J. Shaw, James K. Min.

A343 *Bone Density in MESA.* Matthew Budoff, SongShou Mao, Dong Li, Eric Hoffman, Graham Barr.

A344 *Molecular signatures of allostatic load in community-dwelling adults.* Gary Wand, Richard Lee, Peter Zandi, Sherita Hill Golden, Wendy Post, Ana Diez Roux.

A345 *Novel ECG Measures and Risk of Sudden Cardiac Death.* Larisa Tereshchenko, Wendy Post, Elsayed Soliman, Joao Lima, Dan Arking.

A346 *Genomic Loci Linked to Biomarkers of Cardiac Injury, Fibrosis and Heart Failure: The Multi-Ethnic Study of Atherosclerosis.* Palak Shah, Josyf Mychaleckyj, Stephen Seliger, Christopher deFilippi, Joao Lima.

A347 *ELABELA and Apelin in Hypertension in the MESA Cohort.* Steven Shea, Daichi Shimbo, Russell Tracy, Robyn McClelland.

A348 *Coronary Artery Calcium on Chest Computed Tomography*. Matthew Budoff, Michael Blaha, Matt Allison, Joel Kaufman, Graham Barr, Robyn McClelland..

A349 *Atrial Substrate in Atrial Fibrillation and AF-associated Brain Disease*. Philip Greenland, Norrina Allen, Susan Heckbert, Michael Markl.

A350 *Mitochondrial DNA heteroplasmy in atherosclerotic cardiovascular disease (ASCVD).* Dan Arking, Jerry Rotter, Eliseo Guallar, Kent Taylor.

A351 *MESA participation in the NHGRI Centers for Common Disease Genomics (CCDG).* Stephen Rich, Jerome Rotter, Graham Barr, Wei-Min Chen, Mete Civelek, Elaine Cornell, Peter Durda, Charles Farber, Xiuqing Guo, Ani Manichaikul, Clint Miller, Joe Mychaleckyj, Wendy Post, Aakrosh Ratan, Michele Sale, Kent Taylor, Russ Tracy .

A352 *Oxidative Stress and Atrial Fibrillation.* Nona Sotoodehnia, Susan Heckbert, Rozenn Lemaitre, Rheem Totah..

A353 *Arterial Stiffness and Biomarkers of Vascular Wall Remodeling.* Anna Kucharska-Newton, Joao Lima, Russell Tracy, Michelle Meyer, Ron Hoogeveen, Matthew Loop.

A354 *The Role of Skeletal Muscle Composition, Myokines, and Myometabolites in Diabetes: A Multi-Ethnic Study*. Christina Wassel, Iva Miljkovic, Peggy Doyle, Philip Greenland, Alka Kanaya, David Herrington, Matthew Allison.

A355 *Anti-ApoA-I antibodies and soluble ApoA-I/IgG immune complexes as predictive biomarkers for atherosclerotic cardiovascular disease risk.* Vincent Venditto, Andrew DeFilippis, David Henson, Robert Kline, Patrick Trainer, Richard Charnigo.

A356 *A Longitudinal Study of the Association Between Air Pollution Exposure, Oxidative Stress, and Early Cardiovascular Disease Phenotypes.* William E. Funk, Kiang Liu, Joel Kaufman, Donald Lloyd-Jones, Christopher Kuzawa, Kwang-Youn Kim, Norrina Allen, Paul Thomas.

Proposals Not Approved (none)

7.2 Ancillary Study Proposals of Ancillary Studies (none)

7.3 MESA Ancillary Studies Status Tables

Table 1: All Ancillary studies

	N(%)
Proposals	361 (100%)
Withdrawn	72 (20%)
Funding pending	88 (24%)
Funded/active	149 (41%)
Completed	52 (14%)

The full status table can be viewed online at the following link:
http://www.mesa-nhlbi.org/Mesa-Internal/AncillaryS/