



Multi-Ethnic Study of Atherosclerosis Monitoring Board Agenda

Conference Call

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Monday, November 3, 2014

11:00 am – 2:00 pm ET OSMB Meeting

Closed Session:

- | | | |
|----------|-----------------------------|---------------|
| 11:00 am | Call to order | Dr. Hazuda |
| 11:10 am | Announcements | Ms. Sholinsky |
| | • Disclosure of conflicts | |
| 11:15 am | Project Office Report | Dr. Olson |

General Session:

- | | | |
|----------|--------------------------------------------|---------------------|
| 11:30 am | Steering Committee Report | Dr. Burke |
| | • General remarks | |
| | • Responses to recommendations | |
| | • MESA III/Exam 6 Proposal update | |
| 11:45 am | Coordinating Center Report..... | Mr. Johnson |
| 12:00 pm | Participant Retention | Dr. Barr |
| 12:15 pm | Events | Dr. Folsom |
| 12:30 pm | Break | |
| 12:45 pm | Radiation Exposure Update | Dr. Budoff |
| 1:00 pm | Genetics Update | Dr. Rotter or Rich? |
| 1:15 pm | P&P Report/Update on Recent Findings | Dr. Shea |

Closed Session:

- | | | |
|---------|--------------------------------------|-------|
| 1:30 pm | Discussion and Recommendations | Board |
| 2:00 pm | Adjourn | |

MESA OSMB Report: Executive Summary

Meeting Date: 11/03/2014

Overview

MESA OSMB twice reviewed MESA Exam 6 ancillary study proposals earlier this year (Spring and Fall, 2014). The most recent OSMB review of MESA was by teleconference on September 30, 2013. Minutes from the September meeting are provided in Appendix A and the corresponding response to recommendations is provided in in the body of this executive summary.

Response to OSMB Recommendations (9/30/2013)

Recommendation 1: Enthusiastic endorsement of continuation of the MESA Study, highlighting these Study strengths and accomplishments:

- a. Continued outreach to non-MESA investigators and positioning MESA as a “population studies” laboratory
- b. Specimen usage policy
- c. Use of participant longitudinal summary report
- d. Outstanding publications record
- e. Successful involvement in NHLBI GO-Exome Sequencing Project

Response: Monitoring Board’s recognition of the continuing scientific value of MESA is noted and appreciated.

Recommendation 2: Addition of a pulmonary disease expert to the Board, given likely funding of MESA COPD grant.

Response: NHLBI is pleased to welcome to the MESA OSMB Dr. Carlos Vaz Fragoso, from the VA-CT Clinical Epidemiology Research Center at Yale School of Medicine. Dr. Fragoso brings expertise in geriatrics and sleep disorders as well as pulmonary disorders. His membership will both complement and strengthen the Board as it provides oversight to MESA’s expanding involvement in COPD and pulmonary related ancillary study activities.

Recommendation 3: Consideration of formal documentation/publication of MESA’s experience with long-term retention and follow-up of a multi-ethnic, aging cohort.

Response: We very much appreciate the excellent publication topic. Several Coordinating Center Investigators are interested in this topic and are taking a leadership role in developing a manuscript.

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Recommendation 4: Exploration of new venues for outreach to basic and translational scientists.

Response: To date, targeted outreach to basic and translational scientists has been somewhat limited. It should be noted that MESA resources and collaboration are available to virtually any interested researcher and that some ancillary studies currently being conducted have features that would be classified as basic or translational science. MESA is involved in the following noteworthy projects that might be classified as basic or translational science:

- COMBI-Bio – a European / US collaboration in metabolomics.
- Epigenomics – an epigenome-wide association study of DNA methylation and atherosclerosis.
- Arterial Elasticity – measurement of pulse waveforms using novel equipment and analytic techniques.
- Markers for CKD – a study of early kidney disease.

As part of overall outreach efforts, MESA will look for additional opportunities to engage basic and translational scientists.

Recommendation 5: NHLBI consideration of metrics comparing MESA to other cohorts of similar duration and complexity.

Response: The identification of metrics to evaluate the value and impact of large research studies has been an increasing focus of NHLBI. In 2013, the Institute established the NHLBI Advisory Council/Board of Extramural Experts Working Group on Epidemiology and Population Science to define how epidemiology and population research can be optimized, and in doing so is taking advantage of new evaluation methods and tools. The Working Group has just completed its deliberations and its draft report and recommendations can be found here:

<http://nhlbiepi.wordpress.com/2014/10/22/recommendations-from-the-nhlbi-working-group-on-epidemiology/>. NHLBI has begun to carefully consider these recommendations.

Over the past year, the Institute has been actively evaluating our research portfolio in new ways. Several portfolio analysis projects focusing on our epidemiology studies, including MESA, are underway to capture their productivity and assess their impact through bibliometrics and other evaluation methodologies. Additionally, manuscripts are in the latter stages of development that will help NHLBI identify the contributions of Institute-supported research to the field of epidemiology and identify where gaps lie in its research portfolio.

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Recommendation 6: Radiation exposure – both per Exam and cumulative, noting that:

- Exact study procedure radiation dose is estimated per person
- Procedure radiation doses have come down considerably with technology advances
- Relatively few participants are nearing the MESA Study maximum threshold based on the Exam 5 report
- Risks of cumulative radiation exposure are not understood

Given the study threshold recommendations were made in 2009, the OSMB would like an update, including plans for managing radiation exposure going forward, should there be additional ancillary studies and/or exams.

Response:

Recommendation for Maximum Radiation Exposure

This report summarizes estimated radiation exposure for participants in MESA and presents recommendations for maximum radiation exposure for future examinations. These recommendations are most pertinent for MESA participants who received more radiation than expected due to protocol violations.

The MESA CT Committee still recommends the maximum total exposure for any MESA participant to be 25 milliSieverts for MESA research studies. This is more conservative than guidelines previously published regarding radiation safety limits including BIER VII¹ (<100 mSev) or annual doses for radiation workers² (<50 mSev/year). The MESA CT Committee felt it was both not feasible and outside the scope of the study to attempt to address or consider non-MESA clinical exposure to radiation. As shown in Table 3 below, no participant exceeded the recommended limit of 25 ms after completion of exam 5 at this time.

MESA CT Committee recommends that participants in the 21-25 mSev range be excluded from future studies that involve radiation. Since expected doses are <5 mSev for ancillary studies, no patients will exceed 25 mSev in MESA, inclusive of exam 6. Of special note is proposed study of CTA at Exam 6 which took into account this restriction when calculating sample sizes.

We are not aware of any updated data on radiation safety since 2009.

References:

1. *Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation, National Research Council. Health risks from exposure to low levels of ionizing radiation: BEIR VII phase 2. Washington, DC: The National Academies Press; 2005.*
2. *1990 Recommendations of the International Commission on Radiological Protection. ICRP Publication 60. Ann ICRP 1990;21.*

Determining CT Radiation Exposure

Computed Tomography (CT) was performed during MESA exams, exposing participants to radiation. When Cardiac CT scans were acquired in exams 1 through 4, the protocol consisted of two scans during each examination. The Exam 5 Cardiac CT scan protocol consisted of one scan. For a select group of participants, Abdominal Aortic CT measurements (consisting of one scan) were completed once at either Exam 2 or 3, and a second time at Exam 4.

The estimated mean radiation exposure (per scan, in MilliSieverts), stratified by CT scanner model type and participant gender are presented below:

Table 1a. Estimated per scan mean Radiation Exposure (mSv) by CT Scanner Model and Gender (E1-4)

CT Scanner Model	Estimated Mean Radiation Exposure (in MilliSieverts)			
	Cardiac		Abdomen	
	Males	Females	Males	Females
Aquilion	1.1	1.3	3	3
Aquilion 64	1.1	1.3	3	3
Imatron C-150	0.6	0.7	2.7	2.7
Inner EBT	0.6	0.7	2.7	2.7
Light Speed 16	1.1	1.3	2.6	2.6
Light Speed Plus	1.5	1.9	2.4	2.4
Light Speed Pro 16	1.5	1.9	2.4	2.4
Light Speed QX/i	1.5	1.9	2.4	2.4
Sensation 16	1.1	1.3	2.6	2.6
Sensation Cardiac 64	0.9	1.1	2	2
Volume Zoom	0.9	1.1	2.2	2.2

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Table 1b. Estimated per scan mean Radiation Exposure (mSv) by CT Scanner Model and Gender (E5)

CT Scanner Model	Estimated Mean Radiation Exposure (in MilliSieverts)			
	Cardiac		Lung	
	Males	Females	Males	Females
GE 64	1.2	1.1	3.9	3.7
Siemens Definition 64	0.5	0.5	3.9	3.8
Siemens Sensation 64	0.9	0.9	3.3	3.1
Toshiba 320	1.3	1.2	3.3	3.0

A dataset containing one case per participant has been created that combines all Cardiac, Lung, and Abdominal Aortic CT scan data from Exams 1 through 5. This file was used to summarize study radiation exposure in this report and will be used later on to track future total radiation exposure from participation in MESA. Also, this dataset will be used to identify study participants that may potentially exceed the study radiation exposure thresholds and, as a result, be recommended that they limit their participation in a future exam or not participate at all.

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All Sites: 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 (Exam 5 only) 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.

Table 2. Total Radiation Exposure from All MESA CT Procedures, Exams 1 – 5 (All Sites)

Total MilliSieverts	Female	Male	Total
0.1 to 2.9 mSv	783	632	1415
3.0 to 5.9 mSv	701	701	1402
6.0 to 8.9 mSv	753	774	1527
9.0 to 11.9 mSv	767	667	1434
12.0 to 14.9 mSv	365	295	660
15.0 to 17.9 mSv	164	97	261
18.0 to 20.9 mSv	39	41	80
21.0 to 24.9 mSv	29	6	35
25.0 mSv or more	0	0	0
Total	3601	3213	6814

MESA OSMB Report: Executive Summary**Meeting Date: 11/03/2014****Table 3. Total Radiation Exposure: Descriptive Summary (All Sites)**

Exam Component	N	Mean (mSv)	SD	Min	25th %ile	Median	75th %ile	Max
Exam 1 Cardiac CT	6814	1.86	0.77	1.20	1.40	1.40	2.20	3.80
Exam 2 Cardiac CT	2955	1.86	0.78	1.20	1.40	1.40	2.20	3.80
Exam 3 Cardiac CT	2929	2.01	0.79	1.20	1.40	1.80	2.60	3.80
Exam 4 Cardiac CT	1412	2.14	0.75	1.20	1.40	2.20	2.60	3.80
Exam 5 Cardiac CT	3266	1.04	0.43	0.05	0.73	0.95	1.16	12.26
Exam 5 Lung CT	3124	4.10	0.89	0.11	3.49	3.80	4.77	10.04
Exam 2 Abd CT	780	2.54	0.20	2.20	2.40	2.70	2.70	2.70
Exam 3 Abd CT	1191	2.56	0.20	2.00	2.40	2.70	2.70	2.70
Exam 4 Abd CT	936	2.56	0.30	2.00	2.40	2.60	2.70	3.00
Cumulative Total (Ex1-5)	6814	7.44	4.34	1.20	3.60	7.12	10.22	23.33

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 6814 MESA cohort, 376 participants have had a cumulative radiation exposure greater than 15 milliSieverts. No participant has reached or exceeded the cumulative radiation exposure threshold of 25 mSv.

Retention Report

Steering Committee Report Section 1 describes clinic exam and follow-up call retention rates in detail. Important highlights from the report follow.

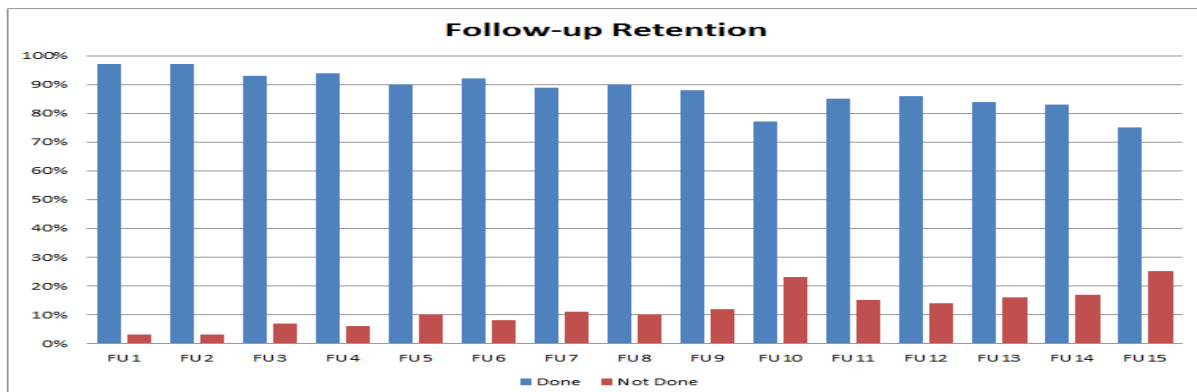
Clinic Exam Retention

As of the end of Exam 5 (approximately 10 years post baseline) which was completed in February 2012, there are 4,655 participants who completed the exam which is approximately 76% of the cohort that was still enrolled (not deceased) as of Exam 5. Despite efforts emphasizing minority retention, Exam 5 minority retention rates were still lower than those observed for white participants.

	Exam 2			Exam 3			Exam 4			Exam 5		
	Enrolled	Done	%	Enrolled	Done	%	Enrolled	Done	%	Enrolled	Done	%
AFA	1872	1692	90%	1842	1607	87%	1806	1531	85%	1651	1233	75%
CHN	798	729	91%	790	699	88%	783	661	84%	750	541	72%
HIS	1476	1352	92%	1461	1257	86%	1444	1224	85%	1367	999	73%
CAU	2608	2466	95%	2575	2383	93%	2539	2288	90%	2381	1882	79%
Total	6754	6239	92%	6668	5946	89%	6572	5704	87%	6149	4655	76%

Follow-up Call retention

Follow-up call 14 was recently completed. Follow-up call 15 is currently underway and Follow-up call 16 is scheduled to begin by the end of October 2014. As would be expected, retention rates have decreased over time. Follow-up 10 difficulties (resources were directed to Exam 5 clinic exam efforts) were temporary and subsequent retention is more in line with expectations.



MESA OSMB Report: Executive Summary

Meeting Date: 11/03/2014

Appendix A: MESA OSMB Meeting Minutes (September 30, 2014)

MINUTES
Observational Study Monitoring Board
Multi-Ethnic Study of Atherosclerosis (MESA)
Conference Call, 09/30/2013

PARTICIPANTS:

OSMB Members Present: Helen Hazuda (Chair), Ingrid Borecki, James Chesebro, Elisa Lee, L. Kristin Newby, Lewis Wexler

OSMB Members Absent: none

Investigators: Greg Burke (Steering Committee Chair), R. Graham Barr, Aaron Folsom, Susan Heckbert, Stephen Rich

Data Coordinating Center Staff: Craig Johnson, Richard Kronmal, Robyn McClelland

NHLBI Staff: Phyliss Sholinsky (Executive Secretary), Roxane Burkett, Cheryl Jennings, Jean Olson, Lorraine Silsbee

CALL TO ORDER: Dr. Hazuda convened this regularly scheduled annual meeting, being held as a conference call, at 11:00 am. Potential Board Member conflicts-of-interest were reviewed; there were no new ones to report.

The Project Office report included discussion of cohort follow-up and retention efforts. There have been 146 MESA manuscripts in press or published since the 2012 OSMB report. Thirty-five ancillary studies were approved. The current MESA contracts expire in 2015; proposed MESA renewal options are under consideration.

STUDY DESCRIPTIONS:

The MESA OSMB reviews the MESA Study along with its ancillary studies, including the MESA Air Study, which recruited new participants in addition to collecting data on consenting participants from the parent MESA study. The main MESA Study investigates the prevalence, correlates, and progression of subclinical cardiovascular disease (CVD) in a multi-ethnic cohort. The MESA Air Study prospectively examines the relationship between individual-level long-term air pollution exposures and progression of CVD. MESA Air is funded by the EPA, which convenes its own External Scientific Advisory Committee (ESAC), while the MESA OSMB provides oversight of participant burden and impact on the main MESA Study.

RESPONSES TO 2012 RECOMMENDATIONS:

The investigators presented their responses to the OSMB's September 2012 recommendations, which the OSMB accepted. Detailed follow-up information on participants with alert-level findings from MESA CT and MR exam components were provided in the OSMB report; relatively very few required urgent follow-up. The MESA Operations Committee, Participant Relations Committee and Field Center staff are working collaboratively to identify effective strategies for cohort retention, focusing on the older, possibly increasingly cognitively-impaired make-up of the cohort, along with on-going multi-ethnic considerations. MESA's outreach to non-MESA colleagues has resulted in the latter's involvement in 40% of ancillary studies and 25% of manuscripts as well as additional data access via BioLINCC and dbGaP.

ADVERSE EVENTS:

Not applicable; Examination 5 was completed prior to the 2012 OSMB report.

STUDY PROGRESS:

The investigators presented the progress made in the past year in cohort retention, follow-up data collection and events surveillance, longitudinal data availability, data analysis, publications (564 overall), and ancillary studies.

As part of ongoing efforts to position MESA as a “population laboratory”, a Specimen Usage Policy was developed and incorporated into MESA’s Ancillary Study Policy to optimize and prioritize use of specimens by MESA and non-MESA colleagues. In addition, an Analytic Opportunities Committee was established with expert contact persons assigned to promote collaborations in specific research areas. Ancillary studies proposed during the current contract period cover a wide range of research areas and achieved a high rate of funding success.

Based on Follow-Up 13, cohort retention is at 89% of target and showed improvement over past heterogeneity across sites. Follow-up 14 has begun. Challenges include those anticipated for an aging cohort, such as declining cognitive function, and cultural and immigration issues, such as participant return to country of origin. As noted above, there are ongoing efforts to improve retention efforts. The newly introduced Participant Summary Report, providing data feedback from the five Examinations, is anticipated to be an effective retention tool.

Although two centers are behind in follow-up activities, overall events surveillance continues to be up-to-date, with 94% of identified reports investigated and 91% classified. MESA surveillance remains an important activity as HMO-provided care is not represented in Medicare databases nor does the latter allow for validation. An average of 8.5 years of follow-up event data per participant is currently available for analyses; the next scheduled release is in 2014.

The NHLBI GO-Exome Sequencing Project, CHARGE-MESA ExomeChip and MESA’s contributions to these programs were also discussed in depth.

MESA’s overall focus will continue to be on: 1) maintenance of cohort retention; 2) follow-up calls and events surveillance; and 3) integration of ancillary studies. Analyses and publications will be emphasized, along with continued expansion of opportunities for engagement of “non-MESA” colleagues.

2013 Recommendations:

There were no issues of serious concern. The Board approved the request to oversee the MESA-related participant-burden aspects of the follow-up MESA COPD ancillary study.

The following recommendations were made:

- 1) Enthusiastic endorsement of continuation of the MESA Study, highlighting these Study strengths and accomplishments:
 - a. Continued outreach to non-MESA investigators and positioning MESA as a “population studies” laboratory
 - b. Specimen usage policy
 - c. Use of participant longitudinal summary report
 - d. Outstanding publications record
 - e. Successful involvement in NHLBI GO-Exome Sequencing Project

Appendix B: Recent Publications

Published MESA Papers (4th Quarter 2013 – 3rd Quarter 2014)
Chronological by Date published

1. [DeSantis AS, Diez Roux AV, Moore K, Baron KG, Mujahid MS, Nieto FJ. Associations of Neighborhood Characteristics with Sleep Timing and Quality: The Multi-Ethnic Study of Atherosclerosis. *Sleep*. 2013;36\(10\):1543-1551.](#)
2. [Harhay MO, Tracy RP, Bagiella E, Barr RG, Pinder D, Hundley WG, Bluemke DA, Kronmal RA, Lima JA, Kawut SM. Relationship of CRP, IL-6 and fibrinogen with right ventricular structure and function: The MESA-Right Ventricle Study. *Int J Cardiol*. 2013;168\(4\):3818-3824.](#)
3. [Blondon M, Sachs M, Hoofnagle AN, Ix JH, Michos ED, Korcarz C, Gepner AD, Siscovick DS, Kaufman JD, Stein JH, Kestenbaum B, de Boer IH. 25-hydroxyvitamin D and parathyroid hormone are not associated with carotid intima-media thickness or plaque in the multi-ethnic study of atherosclerosis. *Arterioscler Thromb Vasc Biol*. 2013;33\(11\):2639-2645.](#)
4. [Klein R, Li X, Kuo JZ, Klein BE, Cotch MF, Wong TY, Taylor KD, Rotter JI. Associations of candidate genes to age-related macular degeneration among racial/ethnic groups in the multi-ethnic study of atherosclerosis. *Am J Ophthalmol*. 2013;156\(5\):1010-1020.](#)
5. [Jensky NE, Allison MA, Loomba R, Carnethon MR, de Boer IH, Budoff MJ, Burke GL, Criqui MH, Ix JH. Null association between abdominal muscle and calcified atherosclerosis in community-living persons without clinical cardiovascular disease: The multi-ethnic study of atherosclerosis. *Metabolism*. 2013;62\(11\):1562-1569.](#)
6. [Elmariah S, Budoff MJ, Delaney JA, Hamirani Y, Eng J, Fuster V, Kronmal RA, Halperin JL, O'Brien KD. Risk factors associated with the incidence and progression of mitral annulus calcification: the multi-ethnic study of atherosclerosis. *Am Heart J*. 2013;166\(5\):904-912.](#)
7. [Hirsch JA, Diez Roux AV, Rodriguez DA, Brines SJ, Moore KA. Discrete land uses and transportation walking in two U.S. cities: The Multi-Ethnic Study of Atherosclerosis. *Health Place*. 2013;24:196-202.](#)
8. [Steffen BT, Steffen LM, Liang S, Tracy R, Jenny NS, Tsai MY. n-3 and n-6 Fatty acids are independently associated with lipoprotein-associated phospholipase A2 in the Multi-Ethnic Study of Atherosclerosis. *Br J Nutr*. 2013;110\(9\):1664-1671.](#)
9. [Golden SH, Sanchez BN, Wu M, Champaneri S, Diez Roux AV, Seeman T, Wand GS. Relationship between the cortisol awakening response and other features of the diurnal cortisol rhythm: The Multi-Ethnic Study of Atherosclerosis. *Psychoneuroendocrinology*. 2013;38\(11\):2720-2728.](#)
10. [Tomey K, Diez Roux AV, Clarke P, Seeman T. Associations between neighborhood characteristics and self-rated health: A cross-sectional investigation in the Multi-Ethnic Study of Atherosclerosis \(MESA\) cohort. *Health Place*. 2013;24:267-274.](#)
11. [Hicken MT, Adar SD, Diez Roux AV, O'Neill MS, Magzamen S, Auchincloss AH, Kaufman JD. Do psychosocial stress and social disadvantage modify the association between air pollution and blood pressure?: the multi-ethnic study of atherosclerosis. *Am J Epidemiol*. 2013;178\(10\):1550-1562.](#)

12. [Hajat A, Diez-Roux AV, Adar SD, Auchincloss AH, Lovasi GS, O'Neill MS, Sheppard L, Kaufman JD. Air Pollution and Individual and Neighborhood Socioeconomic Status: Evidence from the Multi-Ethnic Study of Atherosclerosis \(MESA\). *Environ Health Perspect.* 2013;121\(11-12\):1325-1333.](#)
13. [Soliman EZ, Alonso A, Misialek JR, Jain A, Watson KE, Lloyd-Jones DM, Lima J, Shea S, Burke GL, Heckbert SR. Reference ranges of PR duration and P-wave indices in individuals free of cardiovascular disease: The Multi-Ethnic Study of Atherosclerosis \(MESA\). *J Electrocardiol.* 2013;46\(6\):702-706.](#)
14. [Patton KK, Heckbert SR, Alonso A, Bahrani H, Lima JA, Burke G, Kronmal RA. N-terminal pro-B-type natriuretic peptide as a predictor of incident atrial fibrillation in the Multi-Ethnic Study of Atherosclerosis: the effects of age, sex and ethnicity. *Heart.* 2013;99\(24\):1832-1836.](#)
15. [Bansal N, Katz R, de Boer IH, Kestenbaum B, Siscovick DS, Hoofnagle AN, Tracy R, Laughlin GA, Criqui MH, Budoff MJ, Li D, Ix JH. Influence of Estrogen Therapy on Calcium, Phosphorus, and Other Regulatory Hormones in Postmenopausal Women: The MESA Study. *J Clin Endocrinol Metab.* 2013;98\(12\):4890-4898.](#)
16. [Kerr KF, Wang Z, Janes H, McClelland RL, Psaty BM, Pepe MS. Net reclassification indices for evaluating risk prediction instruments: a critical review. *Epidemiology.* 2014;25\(1\):114-121.](#)
17. [Al-Mallah MH, Nasir K, Katz R, Lima JA, Bluemke DA, Blumenthal RS, Mao S, Hundley WG, Budoff MJ. Relation of Thoracic Aortic Distensibility to Left Ventricular Area \(from the Multi-Ethnic Study of Atherosclerosis \[MESA\]\). *Am J Cardiol.* 2014;113\(1\):178-182.](#)
18. [Tsai MY, Steffen BT, Guan W, McClelland RL, Warnick R, McConnell J, Hoefner DM, Remaley AT. New automated assay of small dense low-density lipoprotein cholesterol identifies risk of coronary heart disease: the multi-ethnic study of atherosclerosis. *Arterioscler Thromb Vasc Biol.* 2014;34\(1\):196-201.](#)
19. [Gepner AD, Korcarz CE, Colangelo LA, Hom EK, Tattersall MC, Astor BC, Kaufman JD, Liu K, Stein JH. Longitudinal effects of a decade of aging on carotid artery stiffness: the multiethnic study of atherosclerosis. *Stroke.* 2014;45\(1\):48-53.](#)
20. [Smith BM, Austin JH, Newell JD Jr, D'Souza BM, Rozenshtein A, Hoffman EA, Ahmed F, Barr RG. Pulmonary Emphysema Subtypes on Computed Tomography: The MESA COPD Study. *Am J Med.* 2014;127\(1\):94.e7-94.e23.](#)
21. [Armstrong AC, Gjesdal O, Almeida A, Nacif M, Wu C, Bluemke DA, Brumback L, Lima JA. Left ventricular mass and hypertrophy by echocardiography and cardiac magnetic resonance: the multi-ethnic study of atherosclerosis. *Echocardiography.* 2014;31\(1\):12-20](#)
22. [Martin SS, Blaha MJ, Blankstein R, Agatston A, Rivera JJ, Virani SS, Ouyang P, Jones SR, Blumenthal RS, Budoff MJ, Nasir K. Dyslipidemia, coronary artery calcium, and incident atherosclerotic cardiovascular disease: implications for statin therapy from the multi-ethnic study of atherosclerosis. *Circulation.* 2014;129\(1\):77-86.](#)
23. [Wheeler AL, Scherzer R, Lee D, Delaney JA, Bacchetti P, Shlipak M, Sidney S, Grunfeld C, Tien PC; Study of Fat Redistribution and Metabolic Change in HIV Infection \(FRAM\). *HIV/hepatitis*](#)

- [C virus coinfection ameliorates the atherogenic lipoprotein abnormalities of HIV infection. *AIDS*. 2014;28\(1\):49-58.](#)
24. [Criqui MH, Denenberg JO, Ix JH, McClelland RL, Wassel CL, Rifkin DE, Carr JJ, Budoff MJ, Allison MA. Calcium density of coronary artery plaque and risk of incident cardiovascular events. *JAMA*. 2014;311\(3\):271-278.](#)
 25. [Linefsky JP, O'Brien KD, Sachs M, Katz R, Eng J, Michos ED, Budoff MJ, de Boer I, Kestenbaum B. Serum phosphate is associated with aortic valve calcification in the Multi-ethnic Study of Atherosclerosis \(MESA\). *Atherosclerosis*. 2014;233\(2\):331-337.](#)
 26. [Bradley RD, Fitzpatrick AL, Jacobs DR Jr, Lee DH, Swords Jenny N, Herrington D. Associations between \$\gamma\$ -glutamyltransferase \(GGT\) and biomarkers of atherosclerosis: The multi-ethnic study of atherosclerosis \(MESA\). *Atherosclerosis*. 2014;233\(2\):387-393.](#)
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Appendix C: Steering Committee Report



Multi-Ethnic Study of Atherosclerosis

MESA Master Draft Agenda

September 17-18, 2014

Hilton Crystal City Hotel

2399 Jefferson Davis Highway Arlington, VA 22202

Telephone: 703-418-6800

Fax: 703-418-3763

Tuesday, September 16, 2014

Meeting rooms in italics

5:00 pm – 7:00 pm	TBD Subcommittee or Working Group Meeting – <i>Blue Ridge</i> TBD
5:30 pm – 7:30 pm	Genetics Committee Meeting – <i>Adams</i> Dr. Rotter
7:00 pm – 8:00 pm	Operations Committee Meeting – <i>Blue Ridge</i> Dr. Barr
7:30 pm – 9:30 pm	HIV-CVD Working Group Meeting – <i>Adams</i> Dr. Delaney
8:00 pm – 9:00 pm	Lab Committee Meeting – <i>Blue Ridge</i> Dr. Tracy

Wednesday, September 17, 2014

Meeting rooms in italics

7:30 am – 8:30 am	Cognition Working Group Meeting – <i>Relish Restaurant</i> Dr. Fitzpatrick
8:30 am – 5:00 pm	MESA Steering Committee Meeting – <i>Madison</i> Dr. Burke
5:00 pm – 7:00 pm	COPD 2 Meeting – <i>Madison</i> Dr. Barr
7:00 pm – 9:00 pm	PI Working Meeting – <i>Madison</i> Dr. Burke

Thursday, September 18, 2014

Meeting rooms in italics

8:30 am – 12:00 pm	MESA Steering Committee Meeting – <i>Madison</i> Dr. Burke
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Wednesday, September 17, 2014*Meeting rooms in italics***7:30 am – 8:30 am Cognition Working Group Meeting – *Relish Restaurant*..... Dr. Fitzpatrick****8:30 am – 5:00 pm MESA Steering Committee Meeting – *Madison* Dr. Burke**

8:30 am Call to Order and meeting overview Dr. Burke

8:45 am Project Office Report Dr. Olson

9:15 am Operations Committee Report Dr. Barr

9:45 am Participant Relations Committee Report Dr. Post

10:00 am Break

10:45 am Genetics

- Genetics Committee Report..... Dr. Rotter

11:30 am Lunch

1:00 pm Ancillary Studies Committee Report Dr. Heckbert

- MESA Lung/COPD Report..... Dr. Barr

1:30 pm Scientific Presentations

- MASALA Dr. Kanaya
- Predictors of Incident Heart Failure with Preserved Ejection Fraction Dr. Blaha
- Use of Coronary Artery Calcium Testing to Guide Aspirin Utilization Dr. Miedema
- The association of neighborhood characteristics with cardiovascular health Dr. Allen

3:30 pm Break

3:40 pm Publication and Presentation Committee Report Dr. Shea

3:50 pm Morbidity & Mortality Committee Report Dr. Folsom

4:00 pm Scientific Presentations

- Findings from the MESA Kidney ancillary study Dr. Shafi
- Abdominal Aortic Calcium, Coronary Artery Calcium Dr. Criqui

5:00 pm Adjourn

5:00 pm – 7:00 pm COPD 2 Meeting – *Madison* Dr. Barr**7:00 pm – 9:00 pm PI Working Meeting – *Madison* Dr. Burke**

Thursday, September 18, 2014
Meeting rooms in italics

8:30 am – 12:00 pm **MESA Steering Committee Meeting – *Madison*.....Dr. Burke**

8:30 am Scientific Presentations

- Sleep Architecture: A Novel Marker in Cardiovascular Risk: Findings from MESA..... Dr. Kwon
- Genetic predictors of sleep apneaDr. Cade
- CAC and Incident CVD EventsDr. Yeboah
- CVD events and long-term exposure to air pollutantsDr. Kaufman
- Metabolomics Dr. Tracy

11:00 am MESA III and Exam 6.....Dr. Burke

11:30 am Review action items, next steps, future meetingsDr. Burke

12:00 pm Adjourn

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Section 1: Retention

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Introduction

MESA began enrolling participants in July of 2000, and is now well into the fourteenth year of data collection. Of the 6814 originally enrolled participants, 989 have died since enrolling. The remaining 5825 participants constitute the set of participants from which we calculate the retention rate. Although there are 492 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.

Retention continues to be a high priority in MESA. Since the conclusion of Exam 5, the focus of retention strategies has shifted to successful completion of the surveillance phone calls.

1.1 Exam Retention – All MESA Exams

The MESA field centers began the fifth MESA visit in mid-April of 2010 and completed all exam components by mid-February, 2012. The overall retention rate of 76% reflects clinic visits for all enrolled participants.

Table 1.1.1 is a summary of MESA retention for all exams by site and race. This table shows a comparison of retention rates across time. Some participants cannot be located and others refused the exam. There are numerous no-shows. All sites made every effort to schedule and examine as many of the enrolled participants as possible.

1.1.1 Exam Retention – All MESA Exams

Site	Race	Exam 2			Exam 3			Exam 4			Exam 5		
		Enrolled	Done	%	Enrolled	Done	%	Enrolled	Done	%	Enrolled	Done	%
WFU	African American	493	447	91%	483	423	88%	476	405	85%	438	351	80%
	Hispanic	3	3	100%	3	2	67%	3	3	100%	3	2	67%
	White	570	539	95%	563	534	95%	552	490	89%	513	399	78%
	Total	1066	989	93%	1049	959	91%	1031	898	87%	954	752	79%
COL	African American	376	354	94%	369	335	91%	358	322	90%	327	260	80%
	Chinese	2	2	100%	2	2	100%	2	2	100%	2	2	100%
	Hispanic	491	459	93%	485	434	89%	478	435	91%	452	374	83%
	White	221	214	97%	219	208	95%	218	207	95%	204	174	85%
	Total	1090	1029	94%	1075	979	91%	1056	966	91%	985	810	82%
JHU	African American	552	474	86%	544	458	84%	532	425	80%	480	315	66%
	White	528	482	91%	518	456	88%	510	435	85%	481	343	71%
	Total	1080	956	89%	1062	914	86%	1042	860	83%	961	658	68%
UMN	Hispanic	454	402	89%	449	392	87%	444	369	83%	427	323	76%
	White	601	567	94%	595	554	93%	585	534	91%	540	448	83%
	Total	1055	969	92%	1044	946	91%	1029	903	88%	967	771	80%
NWU	African American	297	272	92%	293	265	90%	288	253	88%	268	207	77%
	Chinese	301	278	92%	300	277	92%	297	273	92%	285	246	86%
	Hispanic	0	0		0	0		1	1	100%	0	0	
	White	553	531	96%	547	509	93%	543	498	92%	519	423	82%
	Total	1151	1081	94%	1140	1051	92%	1129	1025	91%	1072	876	82%
UCLA	African American	154	145	94%	153	126	82%	152	126	83%	138	100	72%
	Chinese	495	449	91%	488	420	86%	484	386	80%	463	293	63%
	Hispanic	528	488	92%	524	429	82%	518	416	80%	485	300	62%
	White	135	133	99%	133	122	92%	131	124	95%	124	95	77%
	Total	1312	1215	93%	1298	1097	85%	1285	1052	82%	1210	788	65%
Total	African American	1872	1692	90%	1842	1607	87%	1806	1531	85%	1651	1233	75%
	Chinese	798	729	91%	790	699	88%	783	661	84%	750	541	72%
	Hispanic	1476	1352	92%	1461	1257	86%	1444	1224	85%	1367	999	73%
	White	2608	2466	95%	2575	2383	93%	2539	2288	90%	2381	1882	79%
	Total	6754	6239	92%	6668	5946	89%	6572	5704	87%	6149	4655	76%

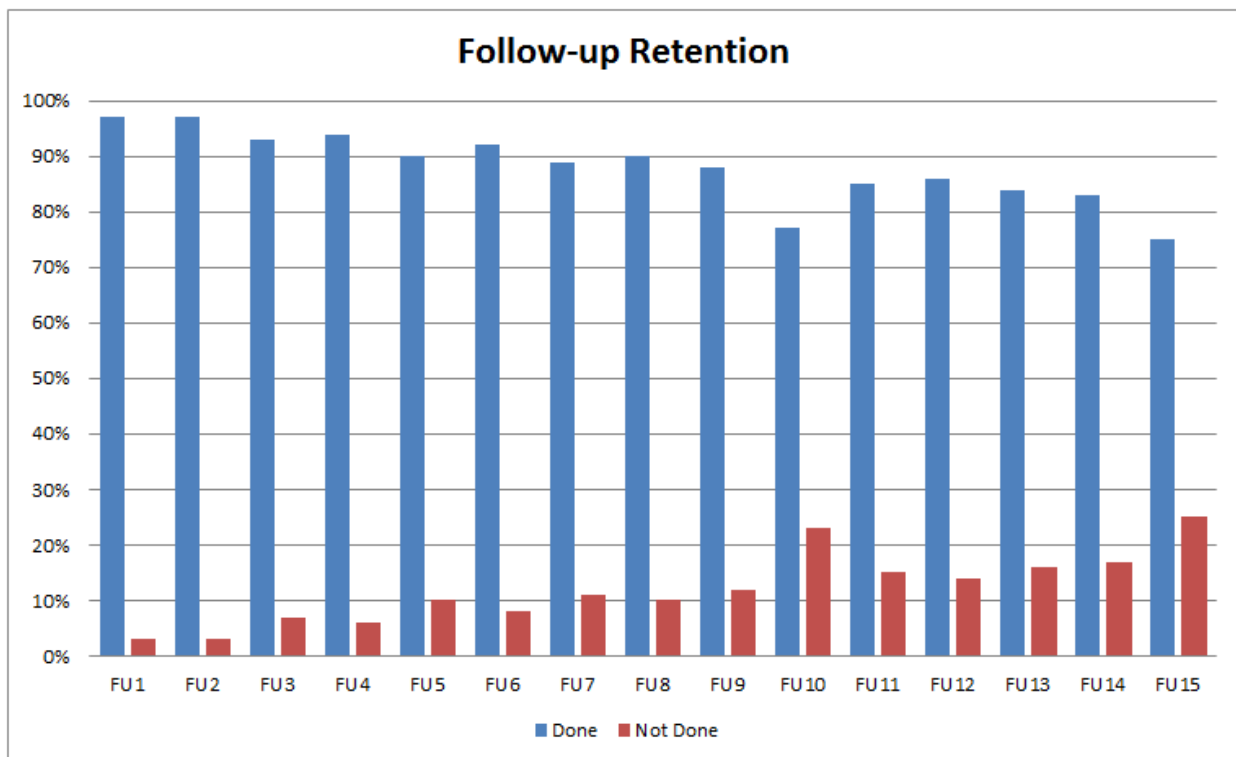
1.2 Follow-up Calls

Follow-up phone interviews are administered to participants in order to identify potential events that may require investigation. (Please 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. During time periods when clinic exams are not taking place, these follow-up calls are performed approximately every nine months. 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 or not the interview was successfully completed.

1.2.1 Follow-up Retention Overall

The table below is a graphic illustration of retention for follow-up calls since the first follow-up. As could be 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.



1.2.2 Follow-up 9-15 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-ups 14 and 15 are 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 8/22/2014.

		WFU	Col.	JHU	UMN	NWU	UCLA	Total
F9	Transferred	0	0	0	0	0	0	0
	Deceased	13	12	10	8	4	6	53
	Enrolled	1005	1035	1015	1014	1115	1271	6455
	Completed	910 (91%)	856 (83%)	902 (89%)	918 (90%)	1028 (92%)	1060 (83%)	5674 (88%)
	Not Completed	95	179	113	96	87	211	781
F10	Transferred	0	0	0	0	0	0	0
	Deceased	17	13	14	15	10	24	93
	Enrolled	988	1022	1001	999	1105	1247	6362
	Completed	901 (91%)	516 (50%)	831 (83%)	831 (83%)	836 (76%)	971 (78%)	4886 (77%)
	Not Completed	87	506	170	168	269	276	1476
F11	Transferred	1	-3	0	1	0	1	0
	Deceased	35	33	40	33	33	36	210
	Enrolled	953	989	961	966	1072	1211	6152
	Completed	870 (91%)	829 (84%)	823 (86%)	863 (89%)	939 (88%)	921 (76%)	5245 (85%)
	Not Completed	83	160	138	103	133	290	907
F12	Transferred	0	0	0	0	0	0	0
	Deceased	0	22	11	0	2	33	68
	Enrolled	953	967	950	966	1070	1178	6084
	Completed	868 (91%)	801 (83%)	786 (83%)	809 (84%)	967 (90%)	924 (78%)	5155 (85%)
	Not Completed	85	166	164	157	103	254	929
F13	Transferred	0	0	0	0	0	0	0
	Deceased	41	12	12	25	24	20	134
	Enrolled	912	955	938	941	1046	1158	5950
	Completed	807 (88%)	786 (82%)	736 (78%)	803 (85%)	925 (88%)	917 (79%)	4974 (84%)
	Not Completed	105	169	202	138	121	241	976
F14	Transferred	0	0	0	0	0	0	0
	Deceased	6	11	9	9	18	13	66
	Enrolled	906	944	929	932	1028	1145	5884
	Expected	785	834	801	815	982	1006	5133
	Completed	690 (88%)	697 (84%)	628 (78%)	657 (81%)	778 (79%)	770 (77%)	4220 (82%)
	Not Completed	95	137	173	158	204	236	913
F15	Transferred	0	0	0	0	0	0	0
	Deceased	2	4	10	10	12	10	48
	Enrolled	904	940	919	922	1016	1135	5836
	Expected	311	327	322	323	353	395	2031
	Completed	235 (76%)	221 (68%)	243 (75%)	266 (82%)	297 (84%)	291 (74%)	1553 (76%)
	Not Completed	76	106	79	57	56	104	478

- Expected: Enrolled and FU14/FU15 window has closed (denominator for FU14/FU15 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 14 Retention as of 8/12/2014

Section 1.2.3 provides more detailed information about retention in Follow-up 14, which is 89% complete. Follow-up 14 began in mid-2013 and will continue through September 2014. 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.

To calculate true retention at a given time period, the numbers in the first two tables are based only on participants whose windows have closed. Participants whose windows have not closed are not included in these tables, even if interviews were completed or follow-up was closed out.

All participants not deceased, including study dropouts (true retention rate)

Site Name	Follow-up Due	Contacts Made		Interviews Completed (F14 Retention)		Not Completed	Contact not made
Wake Forest	757	732	97%	679	90%	53	25
Columbia	807	722	89%	682	85%	40	85
Johns Hopkins	776	645	83%	618	80%	27	131
Minnesota	790	699	88%	643	81%	56	91
Northwestern	854	788	92%	753	88%	35	66
UCLA	964	859	89%	753	78%	106	105
Total	4948	4445	90%	4128	83%	317	503

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

Site Name	Follow-up Due	Contacts Made		Interviews Completed		Not Completed	Contact not made
Wake Forest	732	732	100%	679	93%	53	0
Columbia	760	722	95%	682	90%	40	38
Johns Hopkins	658	645	98%	618	94%	27	13
Minnesota	757	699	92%	643	85%	56	58
Northwestern	801	788	98%	753	94%	35	13
UCLA	863	859	100%	753	87%	106	4
Total	4571	4445	97%	4128	90%	317	126

All participants, not deceased OR dropped out (regardless of contact window)

Site Name	Follow-up 14 Due	Contacts Made		Interviews Completed		Not Completed	Contact not made
Wake Forest	879	736	84%	683	78%	53	143
Columbia	900	831	92%	784	87%	47	69
Johns Hopkins	793	675	85%	643	81%	32	118
Minnesota	893	724	81%	668	75%	56	169
Northwestern	960	876	91%	838	87%	38	84
UCLA	1033	1014	98%	883	85%	131	19
Total	5458	4856	89%	4499	82%	357	602

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

1.2.4 Follow-up 15 Retention as of 8/12/2014

Section 1.2.4 provides more detailed information about retention in Follow-up 15, which began in January 2014 and will continue through June 2015. 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.

To calculate true retention at a given time period, the numbers in the first two tables are based only on participants whose windows have closed. Participants whose windows have not closed are not included in these tables, even if interviews were completed or follow-up was closed out.

All participants not deceased with closed windows, including study dropouts (true retention rate)

Site Name	Follow-up Due	Contacts Made		Interviews Completed (F15 Retention)		Not Completed	Contact not made
Wake Forest	289	218	75%	204	71%	14	71
Columbia	306	207	68%	202	66%	5	99
Johns Hopkins	297	238	80%	227	76%	11	59
Minnesota	298	262	88%	247	83%	15	36
Northwestern	329	263	80%	259	79%	4	66
UCLA	369	322	87%	270	73%	52	47
Total	1888	1510	80%	1409	75%	101	378

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

Site Name	Follow-up Due	Contacts Made		Interviews Completed		Not Completed	Contact not made
Wake Forest	274	218	80%	204	74%	14	56
Columbia	283	207	73%	202	71%	5	76
Johns Hopkins	246	238	97%	227	92%	11	8
Minnesota	285	262	92%	247	87%	15	23
Northwestern	308	263	85%	259	84%	4	45
UCLA	325	322	99%	270	83%	52	3
Total	1721	1510	88%	1409	82%	101	211

All participants (regardless of contact window), not deceased OR dropped out (total completion rate of those expected)

Site Name	Follow-up 15 Due	Contacts Made		Interviews Completed		Not Completed	Contact not made
Wake Forest	870	240	28%	226	26%	14	630
Columbia	889	330	37%	321	36%	9	559
Johns Hopkins	770	277	36%	265	34%	12	493
Minnesota	881	377	43%	357	41%	20	504
Northwestern	946	354	37%	347	37%	7	592
UCLA	1014	575	57%	502	50%	73	439
Total	5370	2153	40%	2018	38%	135	3217

Follow-up Due: Not Deceased and Follow-up window has closed

Contacts Made: Follow-up status obtained (with closed window)

Interview Completed: General Health Questionnaire data received (with closed window, % 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

1.2.5 MESA Air Family and New Recruits Follow-up

The MESA Air grant ended July 31, 2014. MESA Air Family and New Recruit Follow-up 14 calls were prioritized to be completed by the end of the grant period.

MESA Family Follow-up 14

Site Name	Follow-up Due	Contacts Made		Interviews Completed		Not Completed	Contact not made
Wake Forest	44	44	100%	40	91%	4	0
Columbia	136	136	100%	107	79%	29	0
Johns Hopkins	43	40	93%	35	81%	5	3
Minnesota	78	68	87%	55	71%	13	10
Northwestern	144	144	100%	114	79%	30	0
UCLA	16	16	100%	13	81%	3	0
Total	461	448	97%	364	79%	84	13

Air New Recruits Follow-up 14

Site Name	Follow-up Due	Contacts Made		Interviews Completed		Not Completed	Contact not made
Coastal LA	74	74	100%	70	95%	4	0
Riverside LA	76	76	100%	68	89%	8	0
Rockland NY	95	95	100%	86	91%	9	0
Total	245	245	100%	224	91%	21	0

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 (percent 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

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Introduction

Progress in follow-up calls and events has continued since the October 2013 Steering Committee Meeting.

Highlights include the following:

- The 2012 Events data set (for events dated through 12/31/2012) will be posted in September.. Work will begin on the 2013 dataset in October 2014.
- The abstractors have initiated a QC review of the more problematic data they collect, led by Cynthia Jones and beginning with enzyme values.
- The annual Abstraction QC review has been split into two sessions, in the fall and the spring.
- With the completion of the MESA Air study, investigation of events for Family and Air participants formally ceased, though some sites may choose to complete their few remaining investigations.
- We continue to discover new efficiencies that the EDC makes possible. Sites are no longer shipping physical records to the central Stroke abstractor now that she can view them online, and we match medical record scans to investigations centrally (freeing up site staff from this task).

Conversion from Follow-up call based cumulative clinical events datasets to calendar year based clinical events datasets

Starting with our last data set (for 2011 events), the Coordinating Center began to produce cumulative clinical events datasets to correspond to a calendar year. The rationale for this change is to better align the datasets produced by the study with data obtained from CMS or other sources (NDI) that are based on calendar year. Release of Calendar year based cumulative events datasets will occur approximately 15 months after the end of the calendar year (e.g. Calendar Year 2013 clinical events dataset release is expected 2nd quarter, 2015). This delay is necessary in order to allow for completion of follow-up calls after the end of the calendar year (up to 9 months) that would include surveillance of the time period of interest and to allow sufficient time for processing potential events, obtaining medical records, and adjudication.

2.1 Participants Available for Events Surveillance

The table below shows the number of participants still available for events surveillance in August 2014. 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.

Due primarily to Field Center resources being directed at completing Exam 5, Follow-up 10 was not completed for 1132 participants, many of whom are reported below as available. Since then, all but 141 of the participants still enrolled have completed at least one of the followup interviews.

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 8/1/2014

SiteName	Baseline	Deceased	Do Not Contact	Transfers	Available for Events
3: Wake Forest	1077	-178	-34	2	867
4: Columbia	1102	-154	-60	-5	881
5: Johns Hopkins	1086	-172	-150	3	768
6: Minnesota	1066	-145	-47	-1	873
7: Northwestern	1164	-140	-70	-8	946
8: UCLA	1319	-195	-130	9	1004
Total	6814	-984	-491	0	5339

2.2 Participant Reports from General Health Questions (Follow-Ups 1 - 15)

This is an updated version of an abbreviated summary of a larger dataset posted in August 2011 in the Events subsection of the Exam Datasets section of the [MESA Internal web site](#); the full dataset includes detailed data for each participant. 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 8/1/2014

Follow-Up General Health Question	Total of 6814 Participants	
	#	%
Chest Pain or Discomfort *	2860	42%
Shortness of Breath *	3212	47%
Leg Pain *	4852	71%
Doctor Visit or Hospital Stay	6715	99%
High Blood Pressure	4733	69%
High Blood Pressure: New Diagnosis since baseline	1823	27%
Diabetes	1782	26%
Diabetes: New Diagnosis since baseline	883	13%
High Cholesterol Level	4665	68%
High Cholesterol Level: New Diagnosis since baseline	2232	33%
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	262	4%
Angina	198	3%
Heart Failure or CHF	186	3%
PVD/Intermittent Claudication/Pain in Legs Due to Artery Blockage	155	2%
Atrial Fibrillation	367	5%
Deep Vein Thrombosis/Leg Blood Clot	172	3%
TIA or Mini-Stroke	264	4%
Stroke	162	2%
Carotid Artery Blockage	172	3%
Lung Abnormality/Nodule	426	6%
Cancer	1056	15%
Hospital Stay	3347	49%
Nursing Home or Rehab Center Stay	534	8%
Exercise Treadmill or Bicycle Test *	2410	35%
Coronary Angiography or Heart Catheterization *	538	8%
Echocardiogram *	2683	39%
Coronary Bypass Surgery	133	2%
Angioplasty: Open Up Arteries to Heart	216	3%
Angioplasty: Open Up Arteries in Legs	79	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 8/1/2014

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	1707	54.4%	978	31.2%	141	4.5%	65	2.1%	42	1.3%	119	3.8%	81	2.6%	3139
4: COL	2223	84.8%	290	11.1%	41	1.6%	16	0.6%	18	0.7%	0	0.0%	33	1.3%	2621
5: JHU	1945	91.6%	67	3.2%	35	1.6%	6	0.3%	20	0.9%	31	1.5%	17	0.8%	2123
6: UMN	1803	79.4%	262	11.5%	23	1.0%	13	0.6%	27	1.2%	15	0.7%	127	5.6%	2272
7: NWU	1696	89.5%	100	5.3%	33	1.7%	9	0.5%	28	1.5%	11	0.6%	17	0.9%	1894
8: UCLA	1874	95.1%	59	3.0%	10	0.5%	2	0.1%	6	0.3%	0	0.0%	18	0.9%	1971
Total	11248	80.2%	1756	12.5%	283	2.0%	111	0.8%	141	1.0%	176	1.3%	293	2.1%	14020

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. In addition, a set of trigger questions was added to identify MESA Air participants who need to have a new Air Questionnaire administered, though Follow-up 13. Contacts from Follow-up 8 through the start of Follow-up 15 were jointly supported by MESA and the 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 8/1/2014

Follow-up 13

Site Name	Followup Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	892	892	100%	811	91%	80	69	11	0	0
4: COL	910	910	100%	801	88%	109	97	12	0	0
5: JHU	810	810	100%	748	92%	50	32	18	0	0
6: UMN	907	907	100%	817	90%	89	75	14	0	0
7: NWU	981	981	100%	925	94%	55	53	2	0	0
8: UCLA	1055	1055	100%	917	87%	138	133	5	0	0
Total	5555	5555	100%	5019	90%	521	459	62	0	0

Follow-up 14

Site Name	Followup Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	879	754	86%	701	80%	53	51	2	0	125
4: COL	900	837	93%	787	87%	50	41	9	0	63
5: JHU	793	675	85%	643	81%	31	26	5	0	118
6: UMN	893	754	84%	688	77%	63	58	5	0	139
7: NWU	960	903	94%	860	90%	43	39	4	0	57
8: UCLA	1033	1017	99%	884	86%	131	121	10	0	16
Total	5458	4940	91%	4563	84%	371	336	35	0	518

Follow-up 15

Site Name	Followup Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
		Count	Percentage	Count	Percentage					
3: WFU	871	278	32%	257	30%	21	19	2	0	593
4: COL	889	366	41%	357	40%	9	8	1	0	523
5: JHU	770	277	36%	265	34%	12	12	0	0	493
6: UMN	881	397	45%	375	43%	21	16	5	0	484
7: NWU	949	440	46%	430	45%	10	6	4	0	509
8: UCLA	1015	615	61%	542	53%	71	66	5	0	400
Total	5375	2373	44%	2226	41%	144	127	17	0	3002

Summary for all follow-ups

Followup (dates)	Followup Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unknown	Contact Not Made
		Count	Percentage	Count	Percentage					
FU 1 (8/01-5/03)	6772	6771	99.99%	6631	97.92%	140	124	16	0	1
FU 2 (9/02-1/04)	6763	6756	99.90%	6576	97.20%	180	114	65	1	7
FU 3 (6/03-12/04)	6740	6702	99.40%	6313	93.70%	389	301	88	0	38
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)	6343	6338	99.90%	5874	92.60%	464	368	86	10	5
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)	6043	6018	99.60%	4886	80.90%	1132	1083	47	2	25
FU 11 (3/10-8/11)	5952	5950	100.00%	5244	88.10%	706	587	119	0	2
FU 12 (8/11-1/13)	5781	5771	99.80%	5202	90.00%	569	497	72	0	10
FU 13 (5/12-10/13)	5555	5555	100.00%	5019	90.40%	521	459	62	0	0
FU 14 (3/13-9/14)	5458	4940	90.50%	4563	83.60%	371	336	35	0	518
FU 15 (1/14-6/15)	5375	2373	44.10%	2226	41.40%	144	127	17	0	3002

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 complete interview for unknown reason
- Contacts Not Made: Participant not deceased or lost to Follow-up, but no Contact Cover sheet received

2.4.1 Air Pollution Ancillary Study Participant Status, from Follow-up

The status of the additional MESA Family participants recruited for MESA Air is summarized below. The following table shows the participant status ascertained at the three surveillance calls regardless of the contact window. Contacts from Follow-up 8 through the start of Follow-up 15 were jointly supported by MESA and the 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.

From the completed Follow-up calls (and other sources), 426 investigations have been opened for possible events. Three hundred and ninety nine investigations have so far been completed; of these 87 are eligible for review, and 42 have been reviewed.

As of August 1, 2014, there were 9 Family and Air investigations not initiated, and 29 Family and Air investigations initiated but not completed. One of the uninitiated cases and 6 of the uncompleted cases were likely to be eligible. While the MESA Air Pollution study no longer supports this work, sites are free to complete these cases at their own discretion.

Reports Generated 8/1/2014

MESA Air New Recruits Follow-up 14:

Follow-up	Follow-up Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
		Count	Percentage	Count	Percentage					
4: COL	95	38	40%	36	38%	1	1	0	0	57
8: UCLA	151	61	40%	61	40%	0	0	0	0	90
Total	246	99	40%	97	39%	1	1	0	0	147

MESA Air New Recruits Follow-up 15:

Follow-up	Follow-up Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
		Count	Percentage	Count	Percentage					
4: COL	94	7	7%	7	7%	0	0	0	0	87
8: UCLA	149	147	99%	121	81%	26	26	0	0	2
Total	243	154	63%	128	53%	26	26	0	0	89

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

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MESA Air Family Follow-up 13:

Follow-up	Follow-up Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	44	44	100%	41	93%	3	3	0	0	0
4: COL	137	130	95%	95	69%	34	33	1	0	7
5: JHU	48	48	100%	33	69%	14	11	3	0	0
6: UMN	77	77	100%	47	61%	30	30	0	0	0
7: NWU	145	145	100%	123	85%	22	22	0	0	0
8: UCLA	16	16	100%	12	75%	4	4	0	0	0
Total	467	460	99%	351	75%	107	103	4	0	7

MESA Air Family Follow-up 14:

Follow-up	Follow-up Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	44	0	0%	0	0%	0	0	0	0	44
4: COL	137	36	26%	36	26%	0	0	0	0	101
5: JHU	48	17	35%	16	33%	1	1	0	0	31
6: UMN	77	20	26%	20	26%	0	0	0	0	57
7: NWU	145	28	19%	25	17%	1	1	0	0	117
8: UCLA	16	0	0%	0	0%	0	0	0	0	16
Total	467	101	22%	97	21%	2	2	0	0	366

MESA Air Family Follow-up 15:

Follow-up	Follow-up Expected	Contact Made		Interview Completed		Interview Not Completed	Unable	Refused	Unk.	Contact Not Made
3: WFU	40	2	5.0%	2	5.0%	0	0	0	0	38
4: COL	134	12	9.0%	12	9.0%	0	0	0	0	122
5: JHU	44	2	4.5%	2	4.5%	0	0	0	0	42
6: UMN	77	27	35.1%	25	32.5%	2	2	0	0	50
7: NWU	142	2	1.4%	1	0.7%	1	1	0	0	140
8: UCLA	16	16	100.0%	10	62.5%	6	6	0	0	0
Total	453	61	13.5%	52	11.5%	9	9	0	0	392

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 complete 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 8/1/2014

FU	Status	WFU		Columbia		JHU		Minn		NWU		UCLA		Total	
1-12	Investigations Indicated	2860		2314		1842		1968		1635		1761		12380	
	Investigations Not Yet Initiated	0	0%	0	0%	0	0%	0	0%	0	0%	11	1%	11	0%
	Investigations Initiated	2860	100%	2314	100%	1842	100%	1968	100%	1635	100%	1750	99%	12369	100%
	Investigations Not Yet Complete	0	0%	11	0%	26	1%	0	0%	0	0%	23	1%	60	0%
	Investigations Not Yet Complete - OVERDUE	0	0%	9	0%	26	1%	0	0%	0	0%	22	1%	57	0%
	Investigations Complete	2860	100%	2303	100%	1816	99%	1968	100%	1635	100%	1727	99%	12309	100%
	MD Review Not Indicated due to Insufficient Data	54	2%	93	4%	131	7%	72	4%	65	4%	69	4%	484	4%
	MD Review Not Indicated per MESA Protocol	2035	71%	1703	74%	1259	69%	1208	61%	1239	76%	1217	70%	8661	70%
	MD Review Indicated	771	27%	507	22%	426	23%	688	35%	331	20%	441	26%	3164	26%
	MD Review Not Yet Complete	20	3%	14	3%	4	1%	23	3%	13	4%	26	6%	100	3%
MD Review Complete	751	97%	493	97%	422	99%	665	97%	318	96%	415	94%	3064	97%	
FU	Status	WFU		Columbia		JHU		Minn		NWU		UCLA		Total	
13	Investigations Indicated	155		155		163		159		159		102		893	
	Investigations Not Yet Initiated	0	0%	0	0%	0	0%	0	0%	1	1%	1	1%	2	0%
	Investigations Initiated	155	100%	155	100%	163	100%	159	100%	158	99%	101	99%	891	100%
	Investigations Not Yet Complete	4	3%	19	12%	26	16%	5	3%	3	2%	41	4%	98	11%
	Investigations Not Yet Complete - OVERDUE	3	2%	12	8%	25	15%	2	1%	2	1%	41	4%	85	10%
	Investigations Complete	151	97%	136	88%	137	84%	154	97%	155	98%	60	59%	793	89%
	MD Review Not Indicated due to Insufficient Data	6	4%	13	10%	1	1%	0	0%	4	3%	9	15%	33	4%
	MD Review Not Indicated per MESA Protocol	100	66%	84	62%	119	87%	96	62%	115	74%	25	42%	539	68%
	MD Review Indicated	45	30%	39	29%	17	12%	58	38%	36	23%	26	43%	221	28%
	MD Review Not Yet Complete	33	73%	27	69%	11	65%	41	71%	27	75%	25	96%	164	74%
MD Review Complete	12	27%	12	31%	6	35%	17	29%	9	25%	1	4%	57	26%	
FU	Status	WFU		Columbia		JHU		Minn		NWU		UCLA		Total	
14	Investigations Indicated	81		125		120		112		97		95		639	
	Investigations Not Yet Initiated	5	6%	7	6%	22	18%	5	4%	12	12%	1	1%	61	10%
	Investigations Initiated	76	94%	118	94%	98	82%	107	96%	85	88%	94	99%	578	90%
	Investigations Not Yet Complete	18	24%	54	46%	71	72%	23	21%	11	13%	60	64%	237	41%
	Investigations Not Yet Complete - OVERDUE	8	11%	34	29%	55	56%	5	5%	6	7%	38	40%	146	25%
	Investigations Complete	58	76%	64	54%	27	28%	84	79%	74	87%	34	36%	341	59%
	MD Review Not Indicated due to Insufficient Data	0	0%	6	9%	0	0%	0	0%	4	5%	9	26%	19	6%
	MD Review Not Indicated per MESA Protocol	43	74%	41	64%	26	96%	51	61%	55	74%	20	59%	236	69%
	MD Review Indicated	15	26%	17	27%	1	4%	33	39%	15	20%	5	15%	86	25%
	MD Review Not Yet Complete	15	100%	17	100%	1	100%	33	100%	13	87%	5	100%	84	98%
MD Review Complete	0	0%	0	0%	0	0%	0	0%	2	13%	0	0%	2	2%	

Table continues on the following page

FU	Status	WFU	Columbia	JHU	Minn	NWU	UCLA	Total							
15	Investigations Indicated	58	47	36	42	49	35	267							
	Investigations Not Yet Initiated	14	24%	13	28%	17	47%	4	10%	33	67%	10	29%	91	34%
	Investigations Initiated	44	76%	34	72%	19	53%	38	90%	16	33%	25	71%	176	66%
	Investigations Not Yet Complete	19	43%	26	76%	18	95%	16	42%	7	44%	22	88%	108	61%
	Investigations Not Yet Complete - OVERDUE	1	2%	3	9%	1	5%	2	5%	1	6%	12	48%	20	11%
	Investigations Complete	25	57%	8	24%	1	5%	22	58%	9	56%	3	12%	68	39%
	MD Review Not Indicated due to Insufficient Data	0	0%	0	0%	0	0%	0	0%	0	0%	1	33%	1	1%
	MD Review Not Indicated per MESA Protocol	24	96%	6	75%	1	100%	16	73%	8	89%	2	67%	57	84%
	MD Review Indicated	1	4%	2	25%	0	0%	6	27%	1	11%	0	0%	10	15%
	MD Review Not Yet Complete	1	100%	2	100%	0	-	6	100%	1	100%	0	-	10	100%
MD Review Complete	0	0%	0	0%	0	-	0	0%	0	0%	0	-	0	0%	
FU	Status	WFU	Columbia	JHU	Minn	NWU	UCLA	Total							
TOTAL	Investigations Indicated	3158	2641	2162	2281	1940	1994	14185							
	Investigations Not Yet Initiated	19	1%	20	1%	39	2%	9	0%	46	2%	23	1%	165	1%
	Investigations Initiated	3139	99%	2621	99%	2123	98%	2272	100%	1894	98%	1971	99%	14020	99%
	Investigations Not Yet Complete	45	1%	110	4%	142	7%	44	2%	21	1%	147	7%	509	4%
	Investigations Not Yet Complete - OVERDUE	12	0%	58	2%	107	5%	9	0%	9	0%	113	6%	308	2%
	Investigations Complete	3094	99%	2511	96%	1981	93%	2228	98%	1873	99%	1824	93%	13511	96%
	MD Review Not Indicated due to Insufficient Data	60	2%	112	4%	132	7%	72	3%	73	4%	88	5%	537	4%
	MD Review Not Indicated per MESA Protocol	2202	71%	1834	73%	1405	71%	1371	62%	1417	76%	1264	69%	9493	70%
	MD Review Indicated	832	27%	565	23%	444	22%	785	35%	383	20%	472	26%	3481	26%
	MD Review Not Yet Complete	69	8%	60	11%	16	4%	103	13%	54	14%	56	12%	358	10%
MD Review Complete	763	92%	505	89%	428	96%	682	87%	329	86%	416	88%	3123	90%	

2.6 Stroke Investigations

As of August 2014, 569 investigation of potential cerebrovascular events have been designated eligible for review, 460 of which have been reviewed and classified by the physician reviewers. The remaining investigations are pending assignment or review.

Report Generated 8/1/2014

Site	Eligible for Review		Cerebro Reviews Completed
	Cerebro Only Events	Cerebro / Cardiac Combination Events	
3: WFU	98	33	114
4: COL	55	17	55
5: JHU	42	21	60
6: UMN	117	29	118
7: NWU	49	12	41
8: UCLA	67	21	72
Total	428	133	460

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 8/1/2014

	Out of Hospital		In Hospital		Total	
MD Review Indicated	852	-	2705	-	3557	-
MD Review Not Yet Complete	65	8%	323	12%	388	11%
Pending Review Assignment	52	80%	237	73%	289	74%
Assigned, Pending Reviewer Completion	13	20%	86	27%	99	26%
MD Review Complete	787	92%	2382	88%	3169	89%

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 8/1/2014

	Total	Wake Forest	Columbia	Johns Hopkins	Minnesota	North western	UCLA
All Deaths (Pending and Completed)	1027	190	158	187	146	148	198
Death Pending Investigation	194	36	45	27	21	22	43
Review Ineligible (Non-CVD)	544	100	72	98	83	101	90
Review Complete	296	55	43	63	43	27	65
CHD Death	93	21	9	19	8	13	23
Stroke Death	35	9	2	6	5	7	6
Other Athero Death	8	0	3	2	3	0	0
Other CVD Death	45	8	11	9	6	3	8
Non-CVD Death	111	17	17	27	19	4	27
Unknown Cause Death	4	0	1	0	2	0	1

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 8/1/2014

Class	Description	Num
A, B	Certain infectious and parasitic diseases	29
C	Neoplasms	322
D	Neoplasms or blood-related diseases	9
E	Endocrine, nutritional and metabolic diseases	41
F	Mental and behavioural disorders	41
G	Diseases of the nervous system	33
I	Diseases of the circulatory system	232
J	Diseases of the respiratory system	76
K	Diseases of the digestive system	39
M	Diseases of the musculoskeletal system and connective tissue	7
N	Diseases of the genitourinary system	24
R	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	8
V-Y	External causes of morbidity and mortality	33
	Events Eligibility form not yet completed	133

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 8/1/2014

ICD-10	Count	Description
C34.9	88	BRONCHUS OR LUNG, UNSPECIFIED
I25.1	39	ATHEROSCLEROTIC HEART DISEASE
F03.	34	UNSPECIFIED DEMENTIA
I25.0	33	ATHEROSCLEROTIC CARDIOVASCULAR DISEASE, SO DESCRIBED
C25.9	29	PANCREAS, UNSPECIFIED
I21.9	27	ACUTE MYOCARDIAL INFARCTION, UNSPECIFIED
J44.9	23	CHRONIC OBSTRUCTIVE PULMONARY DISEASE, UNSPECIFIED
C18.9	21	COLON, UNSPECIFIED
I64.	18	STROKE, NOT SPECIFIED AS HEMORRHAGE OR INFARCTION
J18.9	17	PNEUMONIA, UNSPECIFIED
E14.9	17	WITHOUT COMPLICATIONS
G30.9	16	ALZHEIMER'S DISEASE, UNSPECIFIED
C61.	15	MALIGNANT NEOPLASM OF PROSTATE
C56.	13	MALIGNANT NEOPLASM OF OVARY
C22.0	12	LIVER CELL CARCINOMA
I50.0	12	CONGESTIVE HEART FAILURE
C16.9	11	STOMACH, UNSPECIFIED
J84.1	10	OTHER INTERSTITIAL PULMONARY DISEASES WITH FIBROSIS
C92.0	10	ACUTE MYELOID LEUKEMIA
A41.9	10	SEPTICEMIA, UNSPECIFIED
Other	572	

2.7.3 Events Data Release Update: Participants with CHD & CVD Combination Endpoints (Average of 9.5 years of surveillance)

The following table summarizes combination endpoints from the Events dataset update released in December 2013 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 12/30/2013

Site Name	CHD Hard		CHD All		CVD Hard		CVD All	
	Ppts	Rate	Ppts	Rate	Ppts	Rate	Ppts	Rate
3: Wake Forest	63	61.5	101	101.0	98	96.9	139	140.7
4: Columbia	38	37.2	64	63.5	62	61.2	94	94.0
5: Johns Hopkins	44	44.2	67	68.4	71	72.1	102	105.2
6: Minnesota	53	53.2	77	78.3	90	91.7	118	121.9
7: Northwestern	35	31.8	63	58.3	51	46.8	80	74.7
8: UCLA	51	41.6	77	63.5	78	64.1	106	88.1
Total	284	44.6	449	71.7	450	71.5	639	103.1

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 8/1/2014

Site Name	CHD Hard	CHD All	CVD Hard	CVD All
3: Wake Forest	65	101	100	139
4: Columbia	41	69	64	100
5: Johns Hopkins	46	69	73	106
6: Minnesota	53	80	92	123
7: Northwestern	41	71	57	89
8: UCLA	53	81	78	111
Total	299	471	464	668

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 9.5 years of surveillance)

The following table summarizes endpoints from the Events dataset update released in December 2013 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 12/30/2013

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	41	10	57	63	9	68	37	22	21	9	0	8	13	0	75
	Rate	40.1	9.6	56.5	61.8	8.7	67.6	35.9	21.3	19.9	8.5	0.0	7.6	12.3	0.0	71.1
4: COL	Ppts	27	3	53	38	9	49	24	5	9	3	2	7	13	1	65
	Rate	26.4	2.9	52.7	37.2	8.7	48.3	23.4	4.8	8.3	2.8	1.9	6.5	12.1	0.9	60.3
5: JHU	Ppts	27	6	36	33	18	42	31	13	17	6	1	8	26	0	88
	Rate	27.1	6.0	36.7	33.3	18.1	42.9	31.2	13.0	16.3	5.8	1.0	7.7	24.9	0.0	84.3
6: UMN	Ppts	51	2	47	42	26	63	38	17	7	5	3	6	17	2	71
	Rate	51.2	2.0	47.5	42.1	26.0	63.8	38.1	17.0	6.7	4.8	2.9	5.8	16.3	1.9	68.1
7: NWU	Ppts	26	5	37	26	7	52	19	3	10	4	0	2	3	0	75
	Rate	23.6	4.5	33.9	23.7	6.3	48.0	17.2	2.7	8.7	3.5	0.0	1.7	2.6	0.0	65.2
8: UCLA	Ppts	33	1	43	35	12	41	31	7	21	7	0	5	25	1	73
	Rate	26.9	0.8	35.4	28.5	9.7	33.6	25.2	5.7	16.0	5.3	0.0	3.8	19.0	0.8	55.5
Total	Ppts	205	27	273	237	81	315	180	67	85	34	6	36	97	4	447
	Rate	32.2	4.2	43.4	37.3	12.7	50.1	28.2	10.5	12.7	5.1	0.9	5.4	14.5	0.6	66.9

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 8/1/2014

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	43	10	57	65	9	68	38	22	21	9	0	8	16	0	101
4: COL	30	3	56	42	13	51	24	5	9	2	3	11	16	1	71
5: JHU	27	6	36	33	19	42	31	13	19	6	2	9	27	0	98
6: UMN	51	2	51	43	28	66	40	17	8	5	3	6	19	2	82
7: NWU	29	6	41	28	7	59	19	3	13	4	0	3	4	0	99
8: UCLA	33	1	45	36	13	44	31	7	23	6	0	8	27	1	89
Total	213	28	286	247	89	330	183	67	93	32	8	45	109	4	540

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 8/1/2014

	Site Name	MI		Resuscitated 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	10	9	7	7	7	0	7	4	4	17	4	0	6	8	0
	4: COL	0	0	0	0	9	11	2	1	4	0	4	1	1	8	1	2	6	7	1
	5: JHU	0	1	0	0	3	8	2	3	13	1	3	6	1	17	3	1	7	7	0
	6: UMN	0	0	0	0	9	12	4	4	15	3	3	4	6	5	3	1	3	6	1
	7: NWU	0	0	0	0	9	4	0	0	7	3	2	3	0	10	2	0	3	2	0
	8:UCLA	0	1	0	0	4	5	1	2	6	0	0	3	1	20	3	0	6	4	1
	Total	2	2	1	0	44	49	16	17	52	7	19	21	13	77	16	4	31	34	3
In Hospital	3: WFU	29	18	8	1	41	11	79	24	11	0	76	40	22	4	5	0	2	9	0
	4: COL	14	20	2	1	46	17	34	22	15	1	66	30	4	1	1	1	3	10	0
	5: JHU	19	9	5	1	20	10	29	6	18	1	44	26	13	2	3	1	2	20	0
	6: UMN	42	19	1	1	39	10	51	11	28	2	80	42	15	3	2	2	3	13	1
	7: NWU	26	15	6	0	41	7	30	6	7	0	72	17	3	3	2	0	0	2	0
	8:UCLA	19	16	1	0	33	18	23	15	8	1	49	30	6	3	3	0	2	23	0
	Total	149	97	23	4	220	73	246	84	87	5	387	185	63	16	16	4	12	77	1
Total	151	99	24	4	264	122	262	101	139	12	406	206	76	93	32	8	43	111	4	

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 investigations are estimated at about 99% complete through Follow-up 13, about 59% from Follow-up 14 and 39% from Follow-up 15 (Follow-ups 14 and 15 are currently underway).

Reports Generated 8/1/2014

	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
Insufficient Data to Classify	79	46	64	36	46	32	24	25	36	23	41	42	36	21	5

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

Site	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									
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%				
3: WFU	1	2%	10	17%	0	0%	9	15%	0	0%	2	3%	0	0%	6	10%	31	53%	0	0%	0	0%	59	100%
4: COL	0	0%	19	17%	0	0%	19	17%	0	0%	4	3%	0	0%	9	8%	57	50%	5	4%	2	2%	115	100%
5: JHU	0	0%	14	11%	0	0%	34	26%	0	0%	9	7%	0	0%	11	8%	63	47%	1	1%	1	1%	133	100%
6: UMN	0	0%	8	11%	0	0%	12	16%	0	0%	1	1%	0	0%	1	1%	52	70%	0	0%	0	0%	74	100%
7: NWU	0	0%	5	7%	0	0%	19	25%	0	0%	3	4%	0	0%	3	4%	39	51%	5	7%	2	3%	76	100%
8: UCLA	0	0%	11	12%	1	1%	15	17%	0	0%	2	2%	1	1%	8	9%	47	52%	5	6%	0	0%	90	100%
Total	1	0%	67	12%	1	0%	108	20%	0	0%	21	4%	1	0%	38	7%	289	53%	16	3%	5	1%	547	100%

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Section 3: Publications and Presentations

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3.1. P&P and Genetics P&P Membership

3.1.1.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
David Bluemke, MD, PhD	MRI Reading Center, NIH/CC/DRD	bluemke@nih.gov
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
Karol Watson, MD, PhD	UCLA Field Center	kwatson@mednet.ucla.edu
Joseph Polak, MD, MPH	Tufts-NEMC Ultrasound Reading Center	jpolak@tuftsmedicalcenter.org
Michael Tsai, PhD	Blood Laboratory, Univ. of Minnesota	tsaix001@tc.umn.edu
Joao Lima, MD	MRI Reading Center	jlima@jhmi.edu
Ian de Boer, MD, MS	University of Washington	deboer@u.washington.edu
Michael Blaha, MD	Johns Hopkins Hospital	mblaha1@jhmi.edu
Norrina B. Allen, PhD	Northwestern University	norrina-allen@northwestern.edu;

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

3.1.2. Genetics P&P Members

Member	Site/Affiliation	E-mail address
Wendy Post, MD, MS	Johns Hopkins University Field Center	wpost@jhmi.edu
Stephen Rich, PhD	University of Virginia	ssr4n@virginia.edu
Xiuqing Guo, PhD	LA BioMed/Harbor UCLA	xguo@labiomed.org
Nancy Swords Jenny, PhD	Blood Laboratory (Univ. of Vermont)	nancy.jenny@uvm.edu
Yongmei Liu, PhD	Wake Forest University	Yoliu@wfubmc.edu
James Pankow, PhD, MPH	Minnesota Field Center	pankow@epi.umn.edu
Christina Wassel, PhD	University of Pittsburgh	cwassel@pitt.edu

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

3.2. Recent P&P Activities

- ✓ Review and approval of proposals, abstracts, and penultimate drafts
 - MESA now has 1,285 approved paper proposals:
 - 664 papers published or in press
 - 185 penultimate drafts approved for submission
 - 19 penultimate drafts in revision and review process
 - 417 papers in progress
 - 24 MESA abstracts were submitted to the AHA Scientific Sessions 2014 meeting scheduled for November 15-19, 2014.
 - 46 MESA abstracts were submitted to 16 different conferences other than the AHA meeting. These 16 conferences will be held between May and December 2014.
- ✓ 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
- ✓ Conducted a large audit follow-up project in May-July 2014

3.3. Recent Genetics P&P Activities

- ✓ Review and approval of proposals, abstracts, and penultimate drafts, as of August 11, 2014
 - Genetics P&P now has 326 paper proposals:
 - 70 papers published or in press
 - 34 penultimate drafts approved for submission
 - 8 penultimate drafts in revision and review process
 - 8 proposals withdrawn
 - 214 approved proposals with paper in progress
 - Genetics P&P approved 10 MESA Genetics abstracts between January 3, 2014 and August 11, 2014:
 - 1 abstract was submitted to the International Society for Environmental Epidemiology, August 24-24, 2014 in Seattle, WA.
 - 1 abstract was submitted to the American Society of Nephrology, November 11-16, 2014 in Philadelphia, PA.
 - 1 abstract was submitted to the American Society of Hematology, December 6-9, 2014 in San Francisco, CA.
 - 7 abstracts were submitted to the American Society of Human Genetics, October 18-22, 2014 in San Diego, CA.
- ✓ 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 comprehensive list of MESA Genetics papers can be found on the MESA SHARe website (<http://www.mesa-nhlbi.org/MesaInternal/MESASHARe/PublicationsPres.aspx>)

3.4. Summary of MESA Authorship: Approved Proposals as of August 14, 2014

“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 = 591)	All papers (N = 1,318)	Main papers (N = 591)	All papers (N = 1,318)	Main papers (N = 591)	All papers (N = 1,318)
Coordinating Center	17	24	40	51	228	472
Project Office	1	1	9	9	31	81
Field Centers						
Wake Forest	19	29	40	65	245	414
Columbia	13	37	42	78	146	353
Johns Hopkins	45	70	94	163	257	525
Minnesota	15	19	31	36	169	295
Northwestern	31	43	58	85	184	326
UCLA	6	14	24	38	48	153
Reading Centers						
CT	5	10	12	22	118	261
MRI	12	26	29	45	197	401
Tufts-NEMC Ultrasound	1	1	3	3	51	101
Wisc. Ultrasound Blood	5	8	10	13	105	230
USC Nutrition	0	0	1	1	6	6
ECG	2	2	3	3	38	57
Retinal	1	4	4	8	10	53
Other*	191	381	563	992	525	1,211

*Not affiliated with above.

3.5. Summary of Genetics P&P Authorship: Approved Proposals as of August 11, 2014

“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 = 326)	G papers (N = 326)	G papers (N = 326)
Coordinating Center	11	22	78
Project Office	2	3	18
Field Centers			
Wake Forest	19	25	85
Columbia	16	19	72
Johns Hopkins	16	26	86
Minnesota	13	12	63
Northwestern	5	13	34
UCLA	1	3	10
Reading Centers			
CT	6	2	16
MRI	11	9	37
Ultrasound	1	1	10
Blood	15	9	79
Nutrition	0	0	0
ECG	1	2	4
Retinal	6	4	14
Other*	59	248	286

*Not affiliated with above.

3.6. Central and Local Analyst Activities

	Central Analyst	Local Analyst
Main Study	387	198
Ancillary Studies	458	264
Genetics	279	27

3.7. Accounting of Paper Status

3.7.1. Table: Summary of Manuscripts as of August 14, 2014

	Total Main & Ancillary	Main Study	Ancillary Studies
Papers Published or In Press	664	311	353
Pen Drafts Approved	185	81	104
Pen Drafts in Review	19	11	8
Pen Drafts Pending	417	167	250
0 – 3 months (from approval)	47	20	27
>3 – 6 months	42	11	31
>6 – 9 months	41	16	25
>9 – 12 months	43	13	30
>12 months	224	107	137
Total Papers Approved	1,285	570	715

3.7.2. Table: Summary of Genetics Manuscripts as of August 11, 2014

	Approved Genetics Paper Proposals
Papers Published or In Press	70
Pen Drafts Approved	34
Pen Drafts in Review	2
Pen Drafts Pending (paper in progress)	214
0 – 3 months (from approval)	13
>3 – 6 months	10
>6 – 9 months	12
>9 – 12 months	17
>12 months	166
Total Papers Approved	326

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

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

Over 12 months

Manuscript Number	Title	First Author	Approval Date
ME 006	Neighborhood characteristics and CVD risk in a multi-ethnic sample	Mujahid, Mahasin S.	08/24/2006
ME 020	Value of coronary artery calcium and carotid IMT in predicting cardiovascular disease events among individuals with family history of heart diseases: Multiethnic Study of Atherosclerosis.	Nasir, Khurram	09/20/2007
MC 163	Association between features of the radial artery pulse pressure waveform and diabetes: The Multi-Ethnic Study of Atherosclerosis.	Brumback, Lyndia	04/04/2008
MC 185	Association between Sleep Duration and Sub-clinical Cardiovascular Disease Risk Status: The Multi-Ethnic Study of Atherosclerosis (MESA)	Kwon, Jeff	01/30/2009
ME 049	DASH Diet Adherence and Incident Heart Failure: Multi-Ethnic Study of Atherosclerosis	Nguyen, Ha T	08/21/2009
ME 050	CONFORMITY WITH PRINCIPLES OF THE DASH DIET AND RISK OF INCIDENT TYPE 2 DIABETES IN THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS (MESA)	Nguyen, Ha T	09/15/2009
ME 052	The Relationship Between Global Left Ventricular Diastolic Function Determined by Magnetic Resonance Imaging and Incident Cardiovascular Disease – The Multi-Ethnic Study of Atherosclerosis	Yan, Raymond T	10/20/2009
ME 054	Is the association of hypertension with cardiovascular events stronger among the lean and normal weight than among the overweight and obese? The Multi-Ethnic Study of Atherosclerosis	Colangelo, Laura	12/04/2009
ML 079	Timing of Ambient Particulate Matter Exposure and Blood pressure/Hypertension in the Multi-Ethnic Study of Atherosclerosis (MESA)	Chen, Yeh-Hsin	12/22/2009
MC 208	Association of the Mediterranean diet pattern with left ventricular structure and function: the Multi-Ethnic Study of Atherosclerosis	Levitan, Emily B.	03/12/2010
ML 082	Racial/ ethnic differences in physical activity mode and longitudinal associations with body mass index and depression in a population-based cohort: The Multi-Ethnic Study of Atherosclerosis	Echeverria, Sandra E.	03/12/2010
ML 088	Place of Birth and Age Trajectories of Health Status: Results from the Multiethnic Study of Atherosclerosis	Le-Scherban, Felice Z.	05/14/2010
ME 062	Quantification of Left Atrial Myocardial Deformation for Prediction of Incident Atrial Fibrillation: The Multiethnic Study of Atherosclerosis	Opdahl, Anders	05/17/2010

ME 040	Prognosis of Coronary Calcium based upon location of CAC: The Multi-Ethnic Study of Atherosclerosis (MESA)	Blaha, Michael	06/11/2010
ME 065	Use of Coronary Calcium Score to Reclassify Coronary Heart Disease Risk in those with Metabolic Syndrome and Diabetes : Results from the Multi-ethnic Study of Atherosclerosis (MESA)	Malik, Shaista	06/17/2010
ME 036	Association between Physical Activity and Cardiovascular Events in the Multi-Ethnic Study of Atherosclerosis (MESA)	Turkbey, Evrim Bengi	01/28/2011
ML 102	Aortic biomechanics by MRI: Relation with age, gender, ethnicity and traditional cardiovascular risk factors. A cross-sectional and longitudinal study: The Multi-Ethnic Study of Atherosclerosis (MESA)	Teixido-Tura, Gisela	01/28/2011
ML 107	Reproducibility of the radial artery pulse waveform: The Multi-Ethnic Study of Atherosclerosis	Brumback, Lyndia	04/29/2011
ME 087	Quantifying Zero Coronary Artery Calcium as a Negative Risk Factor: Risk-Adjusted Likelihood Ratios – MESA	Blaha, Michael	04/29/2011
ML 109	Comparison of anthropometrics in individuals with and without HIV in two large national cohorts: The Multi-Ethnic Study of Atherosclerosis (MESA) and AIDS Clinical Trials Group Longitudinal Linked Randomized Trials (ALLRT)	Atkinson, Benjamin E	06/10/2011
ME 088	Differences in traditional risk factors and lipid particle size and number in individuals with HDL-C > 80mg/dL with and without coronary and carotid atherosclerosis: The Multi-Ethnic Study of Atherosclerosis	Wilkins, John T	06/23/2011
ME 095	Association of Ideal Cardiovascular Health with Baseline Subclinical Cardiovascular Disease and Incident Events: the Multi-Ethnic Study of Atherosclerosis	Polonsky, Tamar	06/26/2011
ME 097	The Association of Calcium Supplementation and Incident Cardiovascular Events: Multi-Ethnic Study of Atherosclerosis.	Agarwal, Subhashish	08/04/2011
ME 098	Prevalence and prognostic implications of coronary artery calcium in low risk women: a meta-analytic study of MESA and three additional cohorts	Desai, Chintan S	08/10/2011
ML 114	The Biomechanical Relationship between Left Ventricular Torsion, Circumferential Strain and Aortic Stiffness: A Combined Risk Factor Parameter	Chugh, Atul R	10/03/2011
ML 118	Physical activity, insulin sensitivity, and blood pressure: findings from the Multi-Ethnic Study of Atherosclerosis (MESA)	Foy, Capri G	12/08/2011
MC 241	Arterial Aging Chronic Kidney Patients as a Marker of Accelerated Atherogenesis– a Comparison to the Multiethnic Study of Atherosclerosis	Rizzi, Patricia Belfort	12/08/2011
MC 245	Prevalence and Degree of Vertebral Fractures of the Thoracic Spine from Cardiac CT Images of the Multi Ethnic Study of Atherosclerosis	Li, Dong	01/03/2012
ME 109	Use of 12-lead electrocardiogram as an index of myocardial scar: relationship with demographic characteristics, traditional cardiovascular risk factors and prognostic value in the Multi-Ethnic Study of Atherosclerosis.	Mewton, Nathan	01/03/2012

MC 242	Work Hours and Coronary Artery Calcium: the Multi-Ethnic Study of Atherosclerosis (MESA)	Baughman, Penelope	01/03/2012
ME 110	Reclassification of coronary heart disease events with coronary artery calcium score versus a multiple biomarker approach: Multi-Ethnic Study of Atherosclerosis	Rana, Jamal S	01/03/2012
MC 244	Association between PR Interval and measure of left ventricular structure and function in the Multi-Ethnic Study of Atherosclerosis (MESA)	Husby, Michael	01/03/2012
ML 123	Neighborhood Socioeconomic Status and Longitudinal Cumulative Biological Risk: The Multi-Ethnic Study of Atherosclerosis	Merkin, Sharon Stein	02/15/2012
ME 119	Cardiovascular Disease Risk Prediction in Combined Cohort Studies	D'Agostino, Sr., Ralph B.	02/22/2012
MC 249	Does Social Support Moderate the Effects of Socioeconomic Status on Subclinical Atherosclerosis?: The Multi-Ethnic Study of Atherosclerosis	Abedin, Zameer	03/09/2012
ML 121	Traditional Ethnic Diet and Type 2 Diabetes, Prevalence and Incidence: The Multi-Ethnic Study of Atherosclerosis (MESA)	Mercado, Carla I.	03/22/2012
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
ML 125	Clinical and Imaging Risk Factors for Myocardial Scar in MESA Study	Nacif, Marcelo Souto	04/13/2012
MC 250	The Relationship of Bone Mineral Density to Aortic Valve Calcium in the Multi Ethnic Study of Atherosclerosis	Tandon, Karman	04/27/2012
MM 028	Impact of Methods Used to Determine Net Reclassification Improvement on Perceived Value of Biomarkers Used to Identify Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis (MESA)	Blankstein, Ron	05/11/2012
ME 127	Comparison of Small Artery Elasticity, Large Artery Elasticity, Aortic Distensibility, Carotid Artery Distensibility, and Young's Modulus at the Carotid Artery in Prediction of Congestive Heart Failure Cardiovascular Events in An Asymptomatic Population: The Multi-Ethnic Study of Atherosclerosis (MESA)	Hom, Elizabeth K	05/11/2012
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
MC 252	A comparison of sex differences in the atherosclerotic burden in those with and without diabetes: The Multi Ethnic Study of Atherosclerosis (MESA)	Huxley, Rachel R.	05/11/2012
ME 135	Coronary Artery Calcium and High-Sensitivity C-reactive Protein as Predictors of Incident Coronary Heart Disease Events at Different Stages of Hypertension: The Multi-Ethnic Study of Atherosclerosis.	Tota-Maharaj, Rajesh	05/18/2012
ME 137	The Hypertriglyceridemic state of Chronic kidney Disease and its association with Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis.	Lamprea, Julio A	05/18/2012

ME 139	Dose Response of Cigarette Smoking on Cardiac Function In the Multiethnic Study of Atherosclerosis	Gjesdal, Ola	05/30/2012
ME 141	Association of New Generation Antidepressants with Cardiovascular Morbidity and Mortality: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Camacho, Alvaro	05/30/2012
MC 254	The impact of race/ethnicity on infection and telomere shortening: The Multi-Ethnic Study of Atherosclerosis	Aiello, Allison E.	05/30/2012
ME 133	Inflammatory markers, family history, and lifestyle habits as predictors of cardiovascular events	Klonoff-Cohen, Hillary Sandra	06/21/2012
ML 127	Low-carbohydrate diets and incidence, prevalence, and progression of coronary artery calcium in the Multi-Ethnic Study of Atherosclerosis (MESA)	Hu, Tian	06/21/2012
ML 129	Electrocardiographic models for estimating serial change in left ventricular mass in the Multi-Ethnic Study of Atherosclerosis (MESA)	Soliman, Elsayed Z.	07/26/2012
ME 142	Cardiovascular Disease Risk Prediction with a Multiple Biomarker Strategy: The Multi Ethnic Study of Atherosclerosis (MESA).	Agarwal, Subhashish	07/26/2012
ME 112	Outcomes and Structural Associations of Baseline ST Elevation in the Multi-Ethnic Study of Atherosclerosis	Tian, David G	08/04/2012
ME 143	Correlates of Bradycardia and its impact on incident CVD: The Multi-ethnic Study of Atherosclerosis (MESA)	Dharod, Ajay	08/09/2012
ML 131	Ten-year trends in Cardiovascular Risk Factors in the Multi-Ethnic Study of Atherosclerosis	Burke, Gregory	08/24/2012
ME 146	Predictors of Intermediate-term Events in Subjects with a Low Lifetime Risk of Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis (MESA).	Joshi, Parag H.	08/31/2012
MC 256	Chronic stress, personality traits, and endothelial dysfunction: The Multi-Ethnic Study of Atherosclerosis	Kershaw, Kiarri N.	08/31/2012
MM 032	Cardiovascular exposures, cognitive decline and depression in whites and blacks	Zeki Al Hazzouri, Adina	09/05/2012
ME 149	Association of Comorbid Depression and Diabetes with Mortality: A Pooled Cohort Analysis	Carnethon, Mercedes	09/05/2012
ME 151	CardioRS: Toward a New Methodology for Predicting Cardiovascular Events	Kakadiaris, Ioannis A	10/02/2012
MC 261	Incidence, Prevalence, and basic predictors of diagnosed type 2 diabetes at the Chicago MESA field center; a comparison study	Rasmussen-Torvik, Laura J.	10/02/2012
ML 136	Associations between medication use and left ventricular mass, volume, and systolic function in a multi-ethnic cohort	Delaney, Joseph Chris	10/02/2012
ML 137	Statin use and risk for depressive symptoms in the Multi-Ethnic Study of Atherosclerosis	Colangelo, Laura	10/02/2012
MM 033	Regression methods using parametric two-part models, with application to Coronary Artery Calcium progression: The Multi-Ethnic Study of Atherosclerosis	Mercer, Laina D	10/02/2012
MC 262	Association of R wave to Radial pulse Delay with Subclinical Cardiovascular Disease and Risk Factors: The Multi-Ethnic Study of Atherosclerosis	Duprez, Daniel A.	10/26/2012

ML 139	Impact of the Objective and Perceived Healthy Food Environment on Diet: A Longitudinal Analysis of the Multi-Ethnic Study of Atherosclerosis	Zhang, Yun	11/08/2012
ME 155	Inflammatory Markers and Incident Atrial Fibrillation in the Multi-Ethnic Study of Atherosclerosis	Verma, Nishant	11/30/2012
ME 156	Abnormal P-wave indices and Incident Atrial Fibrillation in the Multi-Ethnic Study of Atherosclerosis	Verma, Nishant	11/30/2012
ML 140	The Association of Changes in Transport and Leisure Walking with Perceived Safety and Police-Reported Crime: The Multi-Ethnic Study of Atherosclerosis	Kerr, Zachary Y	11/30/2012
MM 035	Methods of handling missing data for Coronary Artery Calcium: a comparison of multiple imputation, weighting and complete case analysis	Young, Rebekah	11/30/2012
ME 160	Developing a NASA/NSBRI Integrated Risk Calculator to Estimate the Short Term Risk of an Acute Coronary Event in Astronauts	Khera, Amit	12/13/2012
ME 159	Aortic stiffness determined by MRI as a predictor of cardiovascular events in the Multi-Ethnic Study of Atherosclerosis	Kim, Jang Young	12/28/2012
MC 264	Association between acculturation and overweight or obesity in Mexican ancestry adults: The Multi-Ethnic Study of Atherosclerosis	Moran, Andrew	01/09/2013
ML 141	Latent Transition Analysis of Anxious-Depression among different Ethnic groups: The Multi Ethnic Study of Atherosclerosis.	Camacho, Alvaro	01/24/2013
MC 265	Everyday discrimination and markers of inflammation in the Multi-Ethnic Study of Atherosclerosis (MESA): A test of the Stress Process Model	Mitchell, Uchechi A.	01/24/2013
ME 161	Predictors of change in ankle brachial index over time and incident peripheral arterial disease: Are there racial/ethnic differences?	Wassel, Christina	02/08/2013
ML 100	Stratifying severity for metabolic syndrome features by clustering individuals on their VLDL, LDL and HDL cholesterol diameters in the Multi-ethnic Study of Atherosclerosis	Frazier-Wood, Alexis C.	02/12/2013
ME 165	Cardiovascular Risk Factor Control in Diabetes Pooling Project: Multiethnic Study of Atherosclerosis, Atherosclerosis Risk in Communities Study, and Jackson Heart Study	Wong, Nathan	02/27/2013
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
ML 144	Dietary Diversity and Quality and Weight Gain and Incident Type II Diabetes in the Multi-Ethnic Study of Atherosclerosis	de Oliveira Otto, Marcia C.	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
ML 147	Examining the role of neighborhood-level foreclosure on changes in health behaviors and mental health	Crawford, Natalie D	03/15/2013
ME 166	Longitudinal Association of Self-reported Sleep-Disordered Breathing and Peripheral Arterial Disease: The Multi-Ethnic Study of Atherosclerosis.	Nagayoshi, Mako	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
ML 149	Cholesterol Ester Transfer Protein Activity, HDL Subclasses, and the Progression of Coronary Artery Calcification: The Multi-Ethnic Study of Atherosclerosis (MESA)	Silverman, Michael G	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 Intimal 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 153	Persistent Coronary Artery Calcium Scores of Zero: Long-Term Non-Progressors in the Multi-Ethnic Study of Atherosclerosis	Whelton, Seamus	05/17/2013
ME 175	Impact of Cholesterol Ester Transfer Protein Activity on Cardiovascular Disease in a Multi-Ethnic Cohort: The Multi-Ethnic Study of Atherosclerosis (MESA)	Silverman, Michael G	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 176	Predictors of Incident Heart Failure with Preserved Ejection Fraction in a Multi-Ethnic Cohort: The Multi-Ethnic Study of Atherosclerosis (MESA)	Silverman, Michael G	05/30/2013
ME 178	Do retinal microvascular markers improve cardiovascular risk assessment in intermediate-risk individuals? The Multi-Ethnic Study of Atherosclerosis	Cheung, Carol Y	06/20/2013
ME 177	Change in Allostatic Load and the Prediction of Cardiovascular Disease and Mortality: The Multi-Ethnic Study of Atherosclerosis	Merkin, Sharon Stein	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
MC 273	VALIDATION OF A RISK SCORE TO DETECT OCCULT CKD IN THE GENERAL COMMUNITY: THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS	Peralta, Carmen A.	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	06/20/2013
MM 036	Common Spatial-Temporal Factor Analysis of Measured Neighborhood Level Characteristics: The Multi-Ethnic Study of Atherosclerosis	Nethery, Rachel	07/02/2013
ME 179	Central pressure and incident cardiovascular disease: An individual participant meta-analysis	Ben-Shlomo, Yoav	07/10/2013
ME 183	Past progression of kidney dysfunction and mortality: A collaborative meta-analysis	Naimark, David MJ	07/10/2013

End table.

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

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

Over 12 months

Manuscript Number	Title	First Author	Approval Date
AC 025	Prevalence And Risk Factors of Visual Impairment and Blindness And Its Relationship To Retinal Diseases in A Multi-Ethnic Population	Cotch, Mary Frances	08/26/2004
AC 069	Carotid artery wall thickness and associations with cardiovascular risk factors: A comparison between measurements by MRI vs. Ultrasound.	Zhang, Yiyi	01/27/2006
AL 008	Fatty Liver and the Risk of Calcific Atherosclerosis: The Multi-Ethnic Study of Atherosclerosis	Remigio-Baker, Rosemay A	05/03/2007
AC 147	Association of thrombotic factors with exogenous and endogenous sex hormone levels (The Multi-Ethnic Study of Atherosclerosis)	Williams, Marlene S	05/16/2007
AC 150	Features of the Metabolic Syndrome and/or Diabetes Mellitus as Predictors of Thoracic Aortic Calcification as Detected by Cardiac Computed Tomography: The Multi-Ethnic Study of Atherosclerosis	Katz, Ronit	06/29/2007
AL 019	The Association of Neighborhood Measures on Longitudinal Changes in Walking: The Multiethnic Study of Atherosclerosis	Evenson, Kelly	08/29/2008
AC 248	Relation of Carotid Intima Media Thickness, Aortic Distensibility, Calcification and Coronary Wall Thickness to Coronary Artery Calcification (from the Multi-Ethnic Study of Atherosclerosis [MESA])	Ahmadi, Naser	09/15/2009
AC 259	The association of catecholamines with CHD risk factors in the Multi-Ethnic Study of Atherosclerosis (MESA)	Horwich, Tamara	12/22/2009
AC 268	Ethnicity and Gender Differences in the Prevalence of Rheumatic Disease Associated Autoantibodies: The CARDIA and MESA Cohorts	Majka, Darcy S.	03/12/2010
AE 025	Fetuin-A and Incident Cardiovascular Disease in MESA	St-Jules, David E	04/30/2010
AE 026	Association of NT-proBNP and Cardiac Troponin T with Subclinical Atherosclerosis and Incident Coronary Heart Disease: the Multi-Ethnic Study of Atherosclerosis	Daniels, Lori	05/14/2010
AC 280	Association of long-term exposure to ambient particulate matter and telomere length: Results from the Multi-Ethnic Study of Atherosclerosis.	Liu, Chih-Chin	07/09/2010
AL 054	Contribution of the neighborhood environment to waist size among Hispanics and Chinese immigrants to the United States: Results from the Multi-ethnic Study of Atherosclerosis (MESA)	Albrecht, Sandra S.	11/26/2010
AE 041	The Association between Amino Terminal Pro-Brain Natriuretic Peptide, Diabetes, and Incident Heart Failure- The Multi-Ethnic Study of Atherosclerosis.	Balfour, Pelbreton C	12/21/2010
AL 091	Long-term exposures to ambient coarse particulate matter (PM10-2.5) and lung function and lung density: The Multi-Ethnic Study of Atherosclerosis (MESA)	Zhang, Kai	01/28/2011

AL 055	The Use of Baseline Traditional Cardiovascular Risk Factors to Predict Right Ventricular Structure and Function: The MESA-Right Ventricle Study	Ventetuolo, Corey E.	02/11/2011
AC 313	BK Viruria and Risk of Chronic Kidney Disease: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Johnson, Catherine Owens	02/11/2011
AC 316	Air Pollution, Walking Behaviors, and Neighborhood Environment: A Cross-Sectional Analysis in the Multi-Ethnic Study of Atherosclerosis	Chen, Yeh-Hsin	02/25/2011
AC 322	Long-term exposures to airborne coarse particulate matter and in-vivo retinal images of the microvasculature: The Multi-Ethnic Study of Atherosclerosis	Adar, Sara D.	03/08/2011
AC 320	Occupation, Obesity, and Work and Leisure Time Physical Activity in the Multi-ethnic Study of Atherosclerosis (MESA) cohort	Baron, Sherry	03/11/2011
AC 318	The Association of Serum Vitamin D Concentrations and Non Alcoholic Fatty Liver Disease (NAFLD):The Multi-Ethnic Study of Atherosclerosis	Foster, Temitope	03/11/2011
AC 325	Coronary Calcium Scans and Radiation Exposure in the Multi-Ethnic Study of Atherosclerosis	Messenger, Bradley	04/29/2011
AE 049	QRS dispersion as a predictor of ventricular dyssynchrony and cardiovascular events	Jain, Rahul	04/29/2011
AC 326	Association of Urine Albumin Excretion with Cardiometabolic Risk Factors and Subclinical Atherosclerosis: Comparison of Rheumatoid Arthritis Patients to MESA Controls	Giles, Jon Tyler	04/29/2011
AL 064	B-Type Natriuretic Peptide (BNP) and Prevalent and Incident Hypertension with a Focus on Obesity: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Marney, Annis M	05/17/2011
AC 328	A Reproducibility Study of Renal Artery Calcium Measured Using Non-enhanced Computed Tomography Scans: The Multiethnic Study of Atherosclerosis	Prabhu, Sachinand	05/17/2011
AC 329	Impact of Nonalcoholic Fatty Liver Disease, Metabolic Syndrome, and Obesity on Systemic Inflammation and Subclinical Atherosclerosis: The Multi-Ethnic Study of Atherosclerosis (MESA)	Silverman, Michael G	05/17/2011
AC 332	Endogenous sex hormone levels and mitral annular calcification: results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Garcia-Ruiz, Jose Manuel	06/10/2011
AC 333	Relationship of Myocardial T1, Extracellular Volume Fraction to Obesity: the Multi-Ethnic Study of Atherosclerosis (MESA)	Liu, Songtao	06/23/2011
AL 066	Race, Neighborhood Characteristics and Early Kidney Function Decline: The Multi-Ethnic Study of Atherosclerosis	Crews, Deidra	06/23/2011
AM 033	Selecting Optimal Neighborhoods for Community Survey 3 in the Multi-Ethnic Study of Atherosclerosis	Hu, Tianle	07/08/2011
AL 069	Cardiovascular Disease Screening and Detection Costs: Results from the NIH-NHLBI-Sponsored Multi-Ethnic Study of Atherosclerosis	Shaw, Leslee J	08/31/2011
AC 340	Plasma phospholipid long-chain monounsaturated fatty acids and cardiac structure and function	Imamura, Fumiaki	10/03/2011

AC 346	The Relationship Between Central Adiposity, Adipokines, and Arterial Elasticity: The Multi-Ethnic Study of Atherosclerosis (MESA)	Forbang, Nketi Innocent	10/12/2011
AE 055	Distribution and Prognostic Implications of Segmental and Regional Left Ventricular Mass in the Multi-Ethnic Study of Atherosclerosis (MESA)	Kenchaiiah, Satish	10/12/2011
AC 347	Is Myocardial T1 Fibrosis Index, a marker of Diffuse Myocardial Fibrosis, related to Left Ventricular Mass Hypertrophy in the Multi-Ethnic Study of Atherosclerosis (MESA)?	Mewton, Nathan	10/12/2011
AL 070	Association of Phosphorus Metabolism Biomarkers with Subclinical Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis (MESA)	Kestenbaum, Bryan	10/25/2011
AC 351	Impact of Insulin Resistance (IR) on RV Structure & Function in Healthy Adults without Significant Cardiovascular Disease	Zamanian, Roham	10/25/2011
AC 353	The relationship between anthropometry and visceral fat mass from computed tomography: The Multi-Ethnic Study of Atherosclerosis	Mongraw-Chaffin, Morgana	11/07/2011
AC 465	Comparison of myocardial fibrosis using contrast enhanced T1 mapping in chemotherapy recipients to subjects in the Multi-ethnic Study of Atherosclerosis (MESA): a cross-sectional analysis.	Vasu, Sujethra	11/08/2011
AC 356	Prediction equations for visceral fat mass by sex: The Multi-Ethnic Study of Atherosclerosis	Mongraw-Chaffin, Morgana	12/08/2011
AC 355	Is BMI associated with shorter telomere length? A meta-analysis of over 60 observational studies	Nettleton, Jennifer	12/08/2011
AC 359	Fetuin-A and Lumbar Spine Bone Mineral Density in MESA	Ix, Joachim H.	01/03/2012
AC 364	Associations of self-reported sleep and daytime sleepiness with telomere length: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Prather, Aric	01/31/2012
AC 367	The association of oral contraceptive use with right ventricular structure and function: The MESA-Right Ventricle Study	Ventetuolo, Corey E.	02/01/2012
AE 057	Aorto-Iliac Bifurcation Position and Cardiovascular Events: The Multi-Ethnic Study of Atherosclerosis (MESA)	Forbang, Nketi Innocent	02/01/2012
AL 073	Angiotensin II Receptor Blockers and ACE Inhibitors and Risk of COPD/Emphysema. The MESA Lung Study.	Parikh, Megha	02/15/2012
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
AL 074	Neighborhood physical environment and changes in BMI and waist circumference over time: the Multi-Ethnic Study of Atherosclerosis	Barrientos-Gutierrez, Tonatiuh	02/15/2012
AL 075	Relation between retinopathy and progression of coronary artery calcium (CAC) score: The Multi-Ethnic Study of Atherosclerosis	Khazai, Bahram	03/09/2012
AC 373	Thoracic aortic calcification, central pulse pressure and Left Ventricular Hypertrophy: the Multi-Ethnic Study of Atherosclerosis	Khan, Abigail DeFrees May	03/09/2012

AE 060	The association of pericardial fat and fatty liver with incident atrial fibrillation in the Jackson Heart Study and Multi-Ethnic Study of Atherosclerosis	Heckbert, Susan	03/09/2012
AC 374	The association between leukocyte telomere length and right ventricular structure and function: The MESA-RV Study	Harhay, Michael Oscar	03/09/2012
AC 377	Long-term exposures to ambient coarse particulate matter (PM10-2.5) and right ventricle ejection fraction and mass: The Multi-Ethnic Study of Atherosclerosis (MESA)	Elkayam, Laura R.	03/22/2012
AC 375	Associations between neighborhood characteristics and cognitive functioning: A cross-sectional investigation in the Multi-Ethnic Study of Atherosclerosis (MESA) cohort	Tomey, Kristin	03/22/2012
AL 078	Role of Inflammatory Markers and Lipoprotein Particle subclasses in the Progression of Coronary Artery Calcium: The Multi-Ethnic Study of Atherosclerosis	Zeb, Irfan	03/22/2012
AC 378	Correlation between bi-dimensional and three-dimensional Right Ventricular measures and airflow obstruction in The MESA COPD Study	Corona-Villalobos, Celia Pamela	03/22/2012
AE 064	Non-alcoholic Fatty Liver Disease is Independent Predictor of Long-term Incident Cardiovascular Events-The Multi-Ethnic Study of Atherosclerosis	Zeb, Irfan	03/22/2012
AL 081	Methodological considerations in the study of kidney function decline	Sachs, Michael C	04/11/2012
AM 038	3D Left ventricular wall thickness and thickening by cardiac MRI: the Multi-Ethnic Study of Atherosclerosis (MESA)	Yang, Eunice	04/13/2012
AL 079	The role of pronounced socioeconomic neighborhood change on cardiovascular risk behaviors and acute health outcomes	Crawford, Natalie D	04/13/2012
AE 061	Association between Brain Natriuretic Peptide (BNP) Levels, Glomerular Filtration Rate, and CHF in the Multi-ethnic Study of Atherosclerosis (MESA).	Pesenko, Stephanie	04/24/2012
AC 178	The effects of acute and chronic exposure to ambient particulate matter on cardiopulmonary function in the Multiethnic Study of Atherosclerosis (MESA)	Chervona, Yana	04/25/2012
AL 080	Renal and Retinal Microvascular Changes and Chronic Kidney Disease: The Multi-Ethnic Study of Atherosclerosis	Chacko, Billy G.	04/27/2012
AE 069	Association of Fetuin-A with All-Cause Mortality: A Multiple Cohort Approach	Ix, Joachim H.	05/09/2012
AC 384	Determinants of interstitial fibrosis evaluated by MR T1 mapping in Multi-Ethnic Study of Atherosclerosis (MESA)	Volpe, Gustavo J	05/11/2012
AL 083	Serum, Dietary, and Urinary Potassium and Their Associations with Diabetes Risk in a Multi-ethnic Population: the Multi-ethnic Study of Atherosclerosis (MESA)	Chatterjee, Ranee	05/11/2012
AL 084	Associations of neighborhood segregation with BMI and obesity in the Multi-ethnic Study of Atherosclerosis (MESA)	Do, D. Phuong	05/18/2012
AE 070	Multimarker Approach to Evaluate the Risk of Incident Heart Failure: The Multi-Ethnic Study of Atherosclerosis	Balfour, Pelbreton C	05/25/2012

AC 389	The association between transition metal components of PM2.5 and lung function and density: The Multi-Ethnic Study of Atherosclerosis.	Sullivan, Mark D	05/30/2012
AC 386	Evaluation of myocardial fibrosis in the Multi-Ethnic Study of Atherosclerosis (MESA) by modified Selvester QRS score: relationship with myocardial scar and interstitial fibrosis	Inoue, Yuko	05/30/2012
AC 387	Strain Relaxation Index and Diastolic Function from Echocardiography: The Multi-Ethnic Study of Atherosclerosis	Ambale-Venkatesh, Bharath	05/30/2012
AL 085	Long-term Exposure to Ambient Particulate Matter and Other Air Pollutants and Progression of Subclinical Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air)	Kaufman, Joel	05/30/2012
AE 073	Multisite Atherosclerosis and Cardiovascular Event Risk: The Multiethnic Study of Atherosclerosis	Wong, Nathan	05/30/2012
AE 074	Rheumatoid Factors Are Associated with Subclinical and Clinical Atherosclerosis in a Community Based Population Cohort: The Multi-Ethnic Study of Atherosclerosis (MESA)	Majka, Darcy S.	06/19/2012
AE 075	Identifying the Interaction between Left Ventricular Mass and Thoracic Aortic Distensibility in Predicting Cardiovascular Outcomes: The Multi-Ethnic Study of Atherosclerosis	Chacko, Billy G.	06/21/2012
AL 087	Serum Phosphate, FGF-23 and Carotid Atherosclerosis among Adults with Normal Kidney Function and Chronic Kidney Disease: The Multi-Ethnic Study of Atherosclerosis	Rosas, Sylvia E.	06/22/2012
AE 077	All-Cause Mortality in Hypertensive Normal Weight Adults	Arguelles, Lester Molina	06/27/2012
AC 395	Occupational risk factors for percent emphysema and airway wall thickness on computed tomography in the Multi-Ethnic Study of Atherosclerosis Lung Study	Doney, Brent	07/06/2012
AL 088	Determinants of temporal change in regional myocardial function: The MESA study	Donekal, Sirisha	07/13/2012
AC 394	Carotid IMT comparisons between South Asians and MESA ethnic groups: MASALA and MESA studies	Kanaya, Alka M.	07/13/2012
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
AL 089	Associations of Serum Fetuin-A with Aortic Valve and Mitral Annular Calcification in the Multi-Ethnic Study of Atherosclerosis	Linefsky, Jason	07/26/2012
AC 396	Reference Limits for Renal Duplex Sonographic Parameters: The Multi-Ethnic Study of Atherosclerosis	Craven, Timothy	07/26/2012
AC 397	Prevalence of Renovascular Disease in Late Middle-aged Adults: The Multi-Ethnic Study of Atherosclerosis	Hansen , Kimberley J	07/26/2012
AL 092	Neighborhood characteristics and changes in systolic blood pressure over time: the Multi-Ethnic Study of Atherosclerosis	Kaiser, Paulina MB	08/09/2012
AC 399	Relationship between total arterial compliance (stroke volume to pulse pressure ratio) and aortic stiffness: The Multi-Ethnic Study of Atherosclerosis	Tanami, Yutaka	08/24/2012

AC 400	Association of Mineral Metabolism Biomarkers with Renal Artery Calcium: The Multi-Ethnic Study of Atherosclerosis	Kremsdorf, Robin A	08/24/2012
AL 095	Evolution of aortic wall thickness and stiffness with atherosclerosis: long-term follow up from the Multi-Ethnic Study of Atherosclerosis (MESA)	Liu, Chia-Ying	08/31/2012
AC 402	Chronic stress, neighborhood-level resources, and visceral adiposity: The Multi-Ethnic Study of Atherosclerosis	Kershaw, Kiarri N.	08/31/2012
AC 403	The association between perceived discrimination and the diurnal cortisol rhythm: Evidence from the Multi-Ethnic Study of Atherosclerosis	Hajat, Anjum	09/18/2012
AC 404	Circulating Levels of Tissue Inhibitor of Metalloproteinase-2 (TIMP-2) and Matrix Metalloproteinase-2 (MMP-2) in Relation to Cardiovascular Risk Factors and Subclinical and Clinical Atherosclerosis: The Multi-Ethnic Study of Atherosclerosis (MESA) Study	Bielinski, Suzette J.	09/18/2012
AC 405	Anthropometric Measures of Obesity and Renal Artery Calcification: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Ricalde, Aldrich A	09/18/2012
AC 406	Diastolic Function from Tagged MRI and Myocardial Fibrosis: The Multi-Ethnic Study of Atherosclerosis	Ambale-Venkatesh, Bharath	09/18/2012
AC 409	Rheumatoid arthritis-related autoimmunity and lung abnormalities: a population based study	Weisman, Michael H.	10/02/2012
AC 412	Pulmonary artery cross-sectional area in COPD: the MESA-COPD study	Poor, Hooman Dadkhahi	10/26/2012
AL 097	Do sex hormones or HRT modify the relation of n-3 fatty acids with incident depressive symptoms in postmenopausal women? The MESA Study.	Colangelo, Laura	10/26/2012
AL 099	Left Ventricular Size and Incident Left Intraventricular Conduction Delay in the Multi Ethnic Study of Atherosclerosis. (MESA)	Rezaeian, Panteha	11/02/2012
AC 416	Comparison of Peripheral and Coronary Imaging Markers of Subclinical Atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Murthy, Venkatesh L.	11/08/2012
AC 339	The association of subclinical cardiovascular abnormalities and subclinical kidney injury as measured by novel urinary biomarkers: The Multi-Ethnic Study of Atherosclerosis	Park, Meyeon	11/28/2012
AL 101	Reported and Perceived Crime and Changes in Body Mass Index and Waist Circumference Over Time: Multi-Ethnic Study of Atherosclerosis (MESA)	Powell-Wiley, Tiffany M	11/30/2012
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
AE 084	Sex Differences in the Association of Diabetes with Mortality: A Pooled Cohort Analysis	Carson, April P	12/12/2012
AL 102	Change in neighborhood characteristics and change in subclinical indicators of coronary heart disease: A longitudinal investigation in the Multi-Ethnic Study of Atherosclerosis (MESA) cohort	Tomey, Kristin	12/28/2012

AE 088	High-density lipoprotein cholesterol, decline in lung function, and chronic lower respiratory disease events in seven population-based cohorts.	Oelsner, Elizabeth C	01/23/2013
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 105	Anti-human Heat Shock Protein 60 Antibodies and Longitudinal Change in Lung Function and Percent Emphysema: The MESA Lung Study	Aaron, Carrie P	02/08/2013
AL 106	Vitamin D Metabolites and Longitudinal Change in Coronary Artery Calcium: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Sachs, Michael C	03/22/2013
AL 107	Phosphate Metabolism and Longitudinal Change in Coronary Artery Calcium: Results from the Multi-Ethnic Study of Atherosclerosis (MESA)	Sachs, Michael C	03/22/2013
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	Hicken, Margaret T	04/12/2013
AL 110	Relationship of Antihypertensive Therapy on the Progression of Arterial Stiffness Over Ten Years: The Multi-Ethnic Study of Atherosclerosis (MESA)	Gepner, Adam D	04/17/2013
AC 432	Serum 25-hydroxyvitamin D and hemostatic / inflammatory biomarkers in the Multi-Ethnic Study of Atherosclerosis.	Blondon, Marc	04/17/2013
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 433	Association between Sleep Duration and Quality and Alteration of the Hypothalamic-Pituitary Adrenocortical (HPA) Axis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Castro-Diehl, Cecilia	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 435	Testosterone Deficiency in Pulmonary Arterial Hypertension: A Case-Control Study from the Multi-Ethnic Study of Atherosclerosis-Right Ventricle Study	Ventetuolo, Corey E.	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
AC 438	Association between Sleep Duration and Quality and Sympathetic Nervous System Activation: The Multi-Ethnic Study of Atherosclerosis	Castro-Diehl, Cecilia	06/20/2013
AL 117	Associations between indices of subclinical vascular disease and cognitive function: Multi-Ethnic Study of Atherosclerosis (MESA)	Tomey, Kristin	07/02/2013
AC 440	Workforce participation, job strain, and differences in daily salivary cortisol profiles: the Multi-Ethnic Study of Atherosclerosis	Rudolph, Kara E	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
AC 442	Exposure to Ambient Air Pollution as a Potential Explanation of Ethnic Disparities in Subclinical Atherosclerosis: Evidence from the Multi-Ethnic Study of Atherosclerosis (MESA)	Jones, Miranda Renee	07/26/2013
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 Renee	07/26/2013
AL 119	The interaction between long-term exposure to air pollutants and psychosocial stress on markers of inflammation, coagulation and endothelial activation: The Multi-Ethnic Study of Atherosclerosis (MESA)	Hajat, Anjum	07/26/2013
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
AC 443	Endothelial progenitor cells (EPC) and circulating endothelial cells (CEC) in chronic obstructive pulmonary disease (COPD): the MESA COPD Study.	Doyle, Margaret	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 444	Ultrasound Assessment of Carotid Arterial Stiffness with Speckle Tracking: A New Use of a Novel Imaging Technique for Evaluating Arterial Stiffness in the Multi-Ethnic Study of Atherosclerosis (MESA)	Gepner, Adam D	07/26/2013
AC 445	Aortic stiffness in obstructive sleep apnea - MESA study	Kwon, Younghoon	07/26/2013
AC 446	Ethnic differences in the associations between sleep-disordered breathing, sleep disruption, and glycemic control: The Multi-Ethnic Study of Atherosclerosis.	Bakker, Jessie P	07/31/2013
AM 047	Discovering Biomarkers for Cardiovascular Disease Using Rule Learning	Menon, Prahlad G	08/09/2013
AL 126	Examining the association between stress and depression, and HbA1c as a potential mediator, in individuals with low socioeconomic standing	Voegel, Patricia	08/12/2013

End table.

3.7.5 Table: Time from Manuscript Approval – Genetics Papers Pending

Genetics Papers Proposals Over 12 Months with no Pen Draft Submission

#	Title	Author	Approval Date
G 003	Association between age-related macular degeneration and genetic variants of C-reactive protein, MTHFR, interleukin 6 and fibrinogen-beta genes	Ching-Yu Cheng MD, MPH	3/14/2007
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)	Laura A. Raynor MS	11/5/2009
G 005	Associations Between Aldosterone Synthase (CYP11B2) Polymorphisms and Hypertension and Left Ventricular Hypertrophy	Kurt R. Daniel D.O.	3/15/2010
G 006	Associations between ABCA1 and CETP polymorphisms and lipoproteins, inflammatory markers, and subclinical atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Kurt R. Daniel D.O.	3/14/2007
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	Mark O Goodarzi MD, PhD	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	Mark O Goodarzi MD, PhD	4/13/2007
G 009	Association between ACE pathway genes and subclinical atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Xiaohui Li MD, MS	4/13/2007
G 010	Relationship of lipoxigenase pathway gene variants, lipid levels, and obesity in the Multi-Ethnic Study of Atherosclerosis (MESA)	Kiran Musunuru MD, PhD	5/14/2007
G 012	Gene/Environment Interactions and the Effect of Short and Long-term Exposure to PM2.5 and Traffic-related Air Pollution on Functional Measures of Arterial Health: The Multi-Ethnic Study of Atherosclerosis	Erin O'Brien Semmens	5/14/2007
G 015	Association between genetic variants in the PPARG gene and subclinical atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Yi-Chun Chen MD	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	Ching-Yu Cheng MD, MPH	7/13/2007
G 017	Associations between polymorphisms of genes in the homocysteine metabolic pathway and homocysteine: The Multi-Ethnic Study of Atherosclerosis (MESA)	Dr. Michele M. Sale PhD	7/13/2007
G 019	Associations between genetic variants in the FGA, FGB, and FGG genes and fibrinogen and subclinical atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Sudip Saha	8/1/2007
G 022	Machine Learning to Identify Complex Interactions in Candidate Genes: The Multi-Ethnic Study of Atherosclerosis	Yongmei Liu PhD	8/1/2007
G 023	EDG1, EDG5 SNPs and Subclinical Atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Catherine C. Hedrick PhD	8/23/2007
G 025	Associations between genetic variants in the blood pressure genes AGT, NOS3, ARDB2, SCNN1A, AGTR and diabetes/metabolic syndrome related traits in the Multi-Ethnic Study of Atherosclerosis (MESA)	Dr. Xiuqing Guo PhD	8/31/2007
G 027	The MESA Family Study: A sibship approach to identify genes contributing to the onset of atherosclerosis	James Pankow PhD, MPH	8/31/2007

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	Hossein Bahrami MD, MPH, Belle Fang, Xiuqing Guo	2/11/2008
G 029	Associations of Serum Amyloid P Phenotype and Genotypes with Atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Nancy Swords Jenny, PhD	10/16/2007
G 030	Phosphodiesterase 4D gene polymorphisms and lung function/lung density in a multiethnic population. The Multi Ethnic Study of Atherosclerosis (MESA)-Lung Study	Elizabeth M Kiefer MD	10/16/2007
G 032	Relationship between fibulin polymorphisms and subclinical atherosclerosis, blood pressure and arterial stiffness: The Multi-Ethnic Study of Atherosclerosis (MESA)	Jose Vargas MD, PhD	11/9/2007
G 034	Ancestry informative markers and spirometry in a multiethnic population: The Multi-Ethnic Study of Atherosclerosis (MESA) Lung Study	Dr. Michele M. Sale PhD	11/9/2007
G 035	MCP-1 polymorphisms, inflammation mediators, subclinical atherosclerosis, and incident coronary heart disease: The Multi-Ethnic Study of Atherosclerosis (MESA)	Suzette J. Bielinski PhD	12/21/2007
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)	Yi-Chun Chen MD	5/6/2008
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.	Kristin Marie Burkart MD, MSc	1/23/2008
G 039	ABCG1 SNPs and Subclinical Atherosclerosis in the Multi-Ethnic Study of Atherosclerosis (MESA)	Stephen Rich PhD	2/12/2008
G 040	GPR132 SNPs and variation in lipid metabolism in the Multi-Ethnic Study of Atherosclerosis (MESA)	Stephen Rich PhD	2/12/2008
G 041	Associations between renin-angiotensin system genes and aortic and carotid artery stiffness and diameter in The Multi-Ethnic Study of Atherosclerosis (MESA)	Jose Vargas MD, PhD	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	J. Hunter Young MD, MHS	4/16/2008
G 044	Genetic variation in TLR2 and TLR4, endothelial function and subclinical atherosclerosis: The Multi-Ethnic Study of Atherosclerosis (MESA) study	Craig R. Lee PharmD, PhD	3/4/2008
G 046	Dietary polyunsaturated fatty acids, lipoxygenase genotypes and atherosclerosis: the Multi-Ethnic Study of Atherosclerosis	Michael Tsai PhD	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)	Weibin Shi MD, PhD	6/12/2008
G 049	Genetic variation in estrogen receptors 1 and 2 and endogenous estradiol levels in relation to left ventricular mass in women: the Multi-Ethnic Study of Atherosclerosis	Susan Heckbert MD, PhD	7/10/2008
G 050	Associations of a Candidate Gene Panel with Circulating D-dimer Concentration: The Multi-Ethnic Study of Atherosclerosis (MESA)	Mary Cushman MD	8/7/2008
G 051	Genetic variation in paraoxonase in relation to subclinical atherosclerosis and cardiovascular events: the Multi-Ethnic Study of Atherosclerosis	Karol E. Watson MD, PhD	5/4/2009

G 052	Novel Type 2 Diabetes Candidate Genes, Subclinical Atherosclerosis and Intermediate Traits in the Multi-Ethnic Study of Atherosclerosis	Nehal N Mehta MD	10/7/2008
G 053	Investigation of association between TCF7L2 and kidney function in The Multi-Ethnic Study of Atherosclerosis (MESA)	Jamison Chang MD	10/7/2008
G 056	Genetic Determinants of Right Ventricular Morphology and Function: MESA-RV CARE	Steven M. Kawut MD, MS	2/13/2009
G 057	Association between polymorphisms in the C-reactive protein (CRP) gene with blood pressure levels and hypertension in the Multi-Ethnic Study of Atherosclerosis	Dr. Walter Palmas MD	3/20/2009
G 058	A Candidate-wide Gene Association Study of Right Ventricular Morphology and Function: MESA-D-RV CARE	Steven M. Kawut MD, MS	5/5/2009
G 060	Association between OLR1 Gene Polymorphisms and Endothelial Function in the Multi-Ethnic Study of Atherosclerosis	Tina E Brinkley PhD	5/5/2009
G 061	Genetic variation in KLOTHO and calcium-phosphorous metabolism: The Multi-Ethnic Study of Atherosclerosis	Bryan Kestenbaum MD, MS	9/5/2009
G 063	Association between KLOTHO polymorphisms and subclinical atherosclerosis in The Multi-Ethnic Study of Atherosclerosis (MESA)	Dan Arking PhD	9/5/2009
G 064	Candidate-wide gene-air pollution interactions and cardiac structure & function in The Multi-Ethnic Study of Atherosclerosis (MESA)	Victor C. Van Hee MD	9/18/2009
G 065	Associations of a Candidate Gene Panel with blood pressure levels and hypertension in the Multi-Ethnic Study of Atherosclerosis	Dr. Walter Palmas MD	3/11/2010
G 066	Finding better predictors of Left Ventricular Mass among Hispanic Subgroups involving ancestry informative markers: The Multi-Ethnic Study of Atherosclerosis (MESA).	Carlos Jose Rodriguez MD, MPH, FACC	5/6/2010
G 068	GWAS of LV Structure	Sanjiv Shah	5/19/2010
G 072	CHARGE collaboration - GWAS of BMI genotype interaction	Walter Palmas	6/10/2010
G 074	Meta-analysis of GWAS data for PR interval duration	Nona Sotoodehnia	6/24/2010
G 077	Alcohol GWAS: CHARGE meta-analysis	Jennifer Nettleton	6/24/2010
G 080	GWAS of sex-specific genotypic association with BP levels	Walter Palmas	7/14/2010
G 081	GWAS of BP Levels and Hypertension in MESA	Walter Palmas	7/14/2010
G 082	GWAS for Retinal Venular Caliber	Kamran Ikram	7/14/2010
G 083	GWAS of abdominal aortic diameter measurements	Christina Wassel	7/14/2010
G 084	Validation of ECG-association genetic variants in MESA	Dan Arking	7/14/2010
G 086	GWAS of Caffeine Intake	Jennifer Nettleton	7/28/2010
G 088	GWAS for development of Heart Failure and Precursors	Harjit Chahal	7/28/2010
G 089	TCF7L2 and Kidney Function	Jamison Chang	7/28/2010
G 092	Genetics of atrial fibrillation in multiple race/ethnic groups	Dan Arking	8/26/2010

G 093	Predictive Model of Coronary Artery Calcification in Atherosclerosis in a Chinese American Cohort: The Multi-Ethnic Study of Atherosclerosis (MESA)	Michael McGeachie PhD	8/26/2010
G 096	Systems Genetics of Dyslipidemia and Hyperglycemia	Ani Manichaikul	9/22/2010
G 097	GWAS of coronary artery disease in MESA	Matthew Sellers	9/22/2010
G 099	GWAS of lung function in Hispanics and Asians (MESA Lung)	Rhea Powell	10/8/2010
G 100	Meta-analysis of GWAS data for QRS voltage-duration product	Kathleen Kerr	10/21/2010
G 111	Admixture Mapping Study of Atrial Fibrillation in AA	Gregory Marcus	1/6/2011
G 112	SNP Age interaction in Atrial Fibrillation	Lin Yee Chen	1/21/2011
G 113	GWAS meta-analysis of incident CKD & rapid decline in GFR	Holly Kramer	2/3/2011
G 115	Hemostatic factors in European-Americans	Dhananjay Vaidya	2/22/2011
G 116	GIANT meta analysis physical activity x GWAS for adiposity	Laura Rasmussen-Torvik	3/17/2011
G 117	GWAS - age at natural menopause	Leslie Raffel	3/17/2011
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	Shizhen Wang Ph.D.	4/13/2011
G 122	Meta-analysis of GWAS for intake of fish & dietary EPA-DHA	Dariush Mozaffarian	4/7/2011
G 123	GWAS meta-analysis of salivary cortisol concentrations	Erin Payne	4/7/2011
G 124	CHARGE Meta GWAs in CRP	Sylvia Rosas	4/7/2011
G 126	Replication of GWAS for Diabetic Retinopathy - Scotland	Jane Kuo	4/21/2011
G 128	Population diversity and association with glucose homeostasis	Michelle Jones	4/21/2011
G 130	Plasma fatty acid composition, 5-lipoxygenase activating protein (ALOX5AP) polymorphisms and atherosclerosis: the Multi-Ethnic Study of Atherosclerosis (MESA)	Shuang Liang PhD	4/29/2011
G 131	GWAS of BP Levels and Hypertension in Hispanics	Walter Palmas	4/21/2011
G 133	Sex interaction GWAS of plasma phospholipid fatty acids	Millennia Foy	5/5/2011
G 136	Candidate gene and Genome Wide Association Study (GWAS) of aortic dimensions and biomechanics: The Multi-Ethnic Study of Atherosclerosis	Gisela Teixido-Tura	5/5/2011
G 137	GWAS of heart rate variability	Susan Heckbert	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	Jane Z Kuo MD	6/2/2011

G 141	RYR3 Gene Variants in Carotid Atherosclerosis in the Multi-Ethnic Study of Atherosclerosis	Sadeep Shrestha PhD	6/13/2011
G 142	Interaction between a multi-facotiral diet score for BMI and WHR	Jennifer Nettleton	6/3/2011
G 143	NFE2L2 SNPs and variation in atherosclerosis and inflammatory markers in the Multi-Ethnic Study of Atherosclerosis	Norbert Leitinger PhD	7/19/2011
G 145	GWAS of plasma phospholipid long-chain saturated fatty acids	Rozenn lemaitre	7/21/2011
G 146	Replication of 2 novel SNPs related to early menopause	Melissa Wellons	7/21/2011
G 148	P-selectin polymorphisms, subclinical and clinical atherosclerosis, and circulating levels of serum P-selectin: The Multi-Ethnic Study of Atherosclerosis (MESA)	Suzette J. Bielinski PhD	8/18/2011
G 149	Genetic contributors to NMR-based lipoprotein subclasses in Afr.Am.	Michele Sale	8/18/2011
G 150	GWAS of Serum Natriuretic Peptide Levels	Walter Palmas	9/8/2011
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	Amanda Cox Postdoctoral Fellow	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	Ani Manichaikul	9/22/2011
G 155	Proglucagon Gene Loci and Type 2 Diabetes Risk, Prevalence and Incidence: the Multi-Ethnic Study of Atherosclerosis	Carla Isabel Mercado	10/1/2011
G 156	Genome Wide Association Study of T Helper Cell Bias in the Multi-Ethnic Study of Atherosclerosis	John Peter Durda	10/1/2011
G 157	Genome-wide association study of odd-numbered chain saturated fatty acids in plasma phospholipids: CHARGE Fatty Acid Consortium	Qi Sun	10/19/2011
G 161	MESA participation in population structure analysis in African Americans	Huang	12/7/2011
G 162	Genome-wide association scan (GWAS) for SNPs associated with small artery elasticity (SAE) and large artery elasticity (LAE) in the Multi-Ethnic Study of Atherosclerosis (MESA)	Jennifer Hall	12/7/2011
G 163	Variation in Subclinical Emphysema among Lung Zones, Families, and Neighborhoods. The MESA Lung Study.	Gina Lovasi	12/22/2011
G 165	GWAS meta-analysis of leptin	Laura J. Rasmussen-Torvik	12/22/2011
G 166	Replication of common genetic polymorphisms associated with circulating 25-hydroxyvitamin D concentration among Europeans	Ian de Boer	1/4/2012
G 167	A GWAS Linkage Study of Subclinical Interstitial Lung Disease on CT scan: The Multi-Ethnic Study of Atherosclerosis Lung Fibrosis Study	Ani Manichaikul	1/4/2012
G 171	Genome-wide association analysis of fetuin-A levels	Majken Karoline Jensen	2/1/2012
G 172	Candidate gene study of common genetic polymorphisms associated with circulating 25-hydroxyvitamin D concentration among persons of African ancestry	Ian de Boer	2/9/2012

G 173	Genomewide Associations Study of Serum Estradiol in European-Origin men – CHARGE consortium - The Multi-Ethnic Study of Atherosclerosis (MESA) joining as discovery cohort	Dhananjay Vaidya	3/7/2012
G 174	Genome-wide interaction with dietary factors with respect to fasting plasma LDL, HDL, and triglyceride concentrations	Nettleton	4/4/2012
G 176	Interactions between the social environment and genetic factors in the prediction of depressive symptoms in the Multi-Ethnic Study of Atherosclerosis (MESA).	Bakshis	4/4/2012
G 178	SNPs associated with coronary artery disease and type 2 diabetes as determinants for age at natural menopause	Kerr	4/4/2012
G 179	GENOME-WIDE SNP x DIET INTERACTION STUDIES: whole grains, magnesium, and zinc FOR FASTING GLUCOSE and INSULIN	Nettleton	4/18/2012
G 181	GIANT Meta-analysis of Interactions between Smoking and Genome-Wide SNP data for Anthropometric Traits	Manichaikul	4/18/2012
G 184	Participation of MESA in a TAGC Genome-Wide Association Study of Asthma	Katie Donohue	5/15/2012
G 185	n-3 fatty acids and insulin traits in the context of genetic variation	Ani Manichaikul	5/16/2012
G 187	Common Genetic Variants and Circulating Parathyroid Hormone Concentrations: The Multi-Ethnic Study of Atherosclerosis (MESA)	Cassianne Robinson-Cohen	5/16/2012
G 188	Association of Phosphorous Metabolism Gene Polymorphisms with Subclinical and Clinical Cardiovascular Disease: The Multi-Ethnic Study of Atherosclerosis (MESA)	Cassianne Robinson-Cohen	5/30/2012
G 189	Common Genetic Variants and Circulating Fibroblast Growth Factor-23 Concentrations: The Multi-Ethnic Study of Atherosclerosis (MESA)	Cassianne Robinson-Cohen	5/30/2012
G 190	Meta- analyses of Toatl and Free Testosterone in Women -- CHARGE constorium -The Multi-Ethnic Study of Atherosclerosis (MESA) joining as discovery cohort	Leslie Raffel	6/13/2012
G 191	GWAS meta-anlyses of Estradiol and Estrone in Post-menopausal Women - CHARGE consortium - The Multi-Ethnic Study of Atherosclerosis (MESA) joining as a discovery cohort	Leslie Raffel	6/13/2012
G 192	GWAS of Fertility Behavior - CHARGE consoritum - The Multi-Ethnic Study of Atherosclerosis (MESA) joining as a discovery cohort	Leslie Raffel	6/13/2012
G 195	Genome-wide Association Study of Spine Volumetric Bone Measures from Computed Tomography	Christina Wassel	6/13/2012
G 196	Interactions between psychosocial factors and genes in shaping blood pressure distribution: the Atherosclerosis Risk in Communities Study (ARIC) and the Multi-Ethnic Study of Atherosclerosis (MESA)	Jennifer Smith	6/27/2012
G 197	Novel locus including FGF21 as a predictor of dietary macronutrient intake	Audrey Chu	7/24/2012
G 198	Genome-wide association study of electrocardiographic P wave indices	Susan Heckbert	7/18/2012
G 199	Interactions between cortisol levels and candidate gene polymorphisms in predicting anthropometric and metabolic characteristics in the Multi-Ethnic Study of Atherosclerosis	Erin Payne	7/18/2012
G 200	Genetic Associations with Lipoprotein Subfraction Measures Differ by Ethnicity in the Multi-Ethnic Study of Atherosclerosis	Alexis C. Wood	7/18/2012
G 202	Fasting glucose and insulin and thiazide diuretic gene interactions: a CHARGE meta-analysis	Mark Goodarzi	8/1/2012

G 203	Fasting glucose and insulin and statin gene interactions: a CHARGE meta-analysis	Mark Goodarzi	8/1/2012
G 204	A GWAS Meta Analysis of African American Diabetic Nephropathy	Maggie Ng	8/1/2012
G 205	Meta-Analysis of Genetic Associations with Blood Pressure Phenotypes in the International Consortium of Blood Pressure Genome Wide Association Studies (ICBP-GWAS) Using 1000Genomes Imputed Data	Walter Palmas	8/8/2012
G 207	Common and Exonic Variants Associated with Biomarkers of Inflammation	Alex Reiner	8/28/2012
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)	Yiqi Huang	9/5/2012
G 209	GWAS of moderate/vigorous leisure physical activity and sedentary behavior: The Multi-Ethnic Study of Atherosclerosis	Katie Kerr	9/19/2012
G 211	Genome-Wide Association Study of Right Ventricular Structure and Function: The MESA-Right Ventricle Study	Steven M. Kawut MD, MS	10/17/2012
G 213	Genome-wide association study of monounsaturated fatty acids in Chinese and Caucasian cohorts – Participation of MESA in a CHARGE Plasma Fatty Acids Working Group Meta-analysis	Jingwen Zhu	11/15/2012
G 215	A GWAS Study of Airways on CT scan	Kathleen Donoahue	10/17/2012
G 216	Peripheral Blood Mononuclear Cell (PBMC) Gene Expression and Pulmonary Parenchymal Perfusion	Tess Pottinger	11/5/2012
G 217	Genome-Wide Association Study of n-3 and n-6 Polyunsaturated Fatty Acids (PUFAs) in Chinese – Participation of MESA in a CHARGE Plasma Fatty Acids Working Group Meta-analysis	Ling Lu	11/15/2012
G 220	CHARGE Consortium Meta-Analysis for Anthropometric Traits: The Multi-Ethnic Study of Atherosclerosis	Talin Haritunians	12/15/2012
G 221	Association of Rare and Low Frequency Variants with Subclinical Atherosclerosis in the CHARGE Consortium: An Exome Chip Analysis	Christina Wassel	12/15/2012
G 222	CardioMetaboChip Collaborative Study of Blood Pressure and Hypertension: Participation of the Multi-Ethnic Study of Atherosclerosis (MESA)	Walter Palmas	12/20/2012
G 223	The role of inflammatory biomarkers in the association of SCARB1 variant, rs10846744, with subclinical atherosclerosis and incident cardiovascular disease.	Ani Manichaikul	12/20/2012
G 227	Analysis of Adiponectin (ADIPOQ) Low Frequency Variants including Coding variants from the Exome Chip in the Multi-Ethnic Study of Atherosclerosis SHARe	Nichollette D Allred PhD	2/23/2013
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	Kristin Tomey PhD	1/4/2013
G 230	1000G Meta-Analysis for BMI in African Americans	Laura J. Rasmussen-Torvik PhD, MPH	1/16/2013
G 231	Paraoxonase and Subclinical Atherosclerotic Burden: The Multi-ethnic Study of Atherosclerosis	Vibha Bhatnagar MD MPH	1/25/2013
G 232	Peripheral blood gene expression and airway morphology on CT scan: The MESA COPD Study	Kathleen Donoahue	5/3/2013

G 233	Interactions between Inflammation and Genes on Cognition: The Multi-Ethnic Study of Atherosclerosis (MESA)	Annette Fitzpatrick PhD	2/6/2013
G 234	GWAS Meta-analysis of C-reactive protein (CRP) in Asian populations	Dr. Xiuqing Guo PhD	2/6/2013
G 235	DNA Methylation related SNPs Interact with Fatty Acids for HDL: Participation of MESA in a CHARGE Plasma Fatty Acids Working Group Meta-analysis	Ani Manichaikul	2/14/2013
G 237	Common Genetic Variants and Circulating 24,25(OH)2D Concentrations: The Multi-Ethnic Study of Atherosclerosis (MESA)	Cassianne Robinson-Cohen MS	2/6/2013
G 238	Developing New Methodologies for Network-Based Methods for Integrative Analysis of Biological Pathways in Cardiovascular Diseases	Ali Shojaie PhD	2/14/2013
G 239	Admixture Mapping of Loci for Arterial Distensibility in African Americans using Ancestry Informative Panels from Genomewide Arrays	Dr. Dhananjay Vaidya PhD, MPH	2/7/2013
G 240	Genetic analyses of obstructive sleep apnea and related traits in The Multi-Ethnic Study of Atherosclerosis (MESA)	Brian Edmand Cade PhD	2/21/2013
G 243	Association of KCNK3 and KCNK9 SNPs with hypertension, aldosterone and renin in The Multi-Ethnic Study of Atherosclerosis (MESA)	Ani Manichaikul PhD	2/20/2013
G 245	DNA Methylation and Gene Expression of P2Y12 ADP Receptor: The Multi-Ethnic Study of Atherosclerosis.	Michael Cammarata	3/5/2013
G 247	Common Genetic Variants and Subclinical Atherosclerosis: The Multi-Ethnic Study of Atherosclerosis (MESA)	Jose Vargas MD, PhD	10/25/2013
G 248	Join the CHARGE Consortium for GENOME-WIDE SNP x DIET INTERACTION STUDIES	Xiuqing Guo	3/20/2013
G 250	Gene-environment interactions and effect of short-term and long-term PM2.5 and NOx air pollution on arterial stiffness: The Multi-Ethnic Study of Atherosclerosis	Elizabeth Hom	3/20/2013
G 251	Analysis of gene-environment (G x E) interaction using a novel additive main effects and multiplicative interactions model and an empirical Bayes estimator for longitudinal data in the Multi-Ethnic Study of Atherosclerosis Cohort	Ko, Yi-An, MS	3/20/2013
G 252	MESA SHARe Exome Project: ESP-GO Renal Working Group Manuscript Proposal	Holly Kramer	3/20/2013
G 253	Exome Chip and Blood Pressure Phenotypes: Participation of MESA in a CHARGE Consortium Meta-Analysis	Walter Palmas	3/20/2013
G 256	Air Pollution, DNA Methylation, and Transcription: Results from the Multi-ethnic Study of Atherosclerosis and Air Pollution (MESA Air)	Gloria Chi	5/19/2013
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)	Mark Hensley	10/4/2013
G 259	Common genes underlying asthma and chronic obstructive pulmonary disease. A genome-wide association study on the Dutch hypothesis	Kathleen Donohue	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	5/1/2013
G 262	Airway dimensions at CT scan and gene expression in peripheral blood monocytes: The MESA Epigenetics Study	Donohue	5/1/2013

G 263	Genome-wide Association Study of Nonalcoholic Fatty Liver Disease in a Multiethnic Meta-analysis	Nicholette Allred	7/3/2013
G 264	Meta-analysis of Exome Chip Data in a Multiethnic Sample to Identify Variants Associated with Nonalcoholic Fatty Liver Disease	Nicholette Allred	7/3/2013
G 265	CHARGE Consortium Hemostasis Working Group Exome project manuscript proposal	Xiuqing Guo	5/16/2013
G 266	Gene expression analyses of blood pressure measures in GHS and MESA	Xiuqing Guo	6/4/2014
G 267	Blood Pressure and global DNA methylation in the Multi-Ethnic Study of Atherosclerosis (MESA)	Xiuqing Guo	5/15/2013
G 268	The Exome Chip Analysis of Pulmonary Function- the CHARGE Consortium	Tess Diandra Pottinger	5/16/2013
G 269	Longitudinal GWAS Analysis of Interaction between QT interval and Drug Use: the Meta-Analysis by CHARGE consortium (AGES, ARIC, CHS, FHS, RS, PROSPER, HABC, ERF, Health 2000 and MESA)	Xiaohui Li MD, MS	6/6/2013
G 270	Multi-ethnic GWAS of diabetic retinopathy: enhanced power using new methods	Sobrin	6/5/2013
G 271	MESA-SHARE Participation in the AAGILE Consortium: Meta Analysis of Genome Wide Association Data for Fasting Glucose and Insulin in ~25,000 nondiabetic	Xiuqing Guo PhD	6/19/2013
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	Leslie Raffel	7/17/2013
G 275	Analysis of gene-gene interaction and gene-environment interaction using a novel additive main effects and multiplicative interactions model for longitudinal data in the Multi-Ethnic Study of Atherosclerosis Cohort	Ko, Yi-An, MS	8/8/2013
G 276	Genetic association of kidney traits in African American and Hispanic individuals using the MetaboChip array: Discovery and Fine Mapping in the Population Architecture Using Genomics in Epidemiology (PAGE) Consortium	Christina Wassel	8/8/2013
G 277	Generalization and fine mapping of previously identified QT loci to multi-ethnic populations	Christina Wassel	8/8/2013
G 278	Rare variants and stroke risk: MESA contribution to the CHARGE Neurology Working Group ExomeChip Analysis	Ani Manichaikul	8/8/2013
G 279	Generalization and fine mapping of previously identified PR loci to multi-ethnic populations	Christina Wassel	8/8/2013

3.8. 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

3.9 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>

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Introduction

This section was produced by the Central Laboratory in Vermont. Section 4.1 is the status of MESA Laboratory Variables as of August, 2014. Section 4.2 provides a complete inventory of samples in the repository as of August, 2014 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.

4.1 MESA Lab Variables and Current Completion Status as of 8.28.2014

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).

4.1.1 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).

4.1.2 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

4.1.3 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

4.1.4 Table: Visit 4 Assays

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

Creatinine	1	MN	Done
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4.1.5 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

4.1.6 Table: Ancillary Study Assays, Funded

Analyte	PI	N	Lab	Visit	Lab Status
Sphingomyelin	Tall	7000 (all)	Tall	1	Complete
total and free Testosterone, DHEA, E2, and SHBG	Gapstur/ Ouyang	~6100 (no premenop females)	Longcope	1	Complete
Serum amyloid P, pentraxin-3	Jenny	2880 (DNA Group)	Vermont	1	Complete
MESA Family	Rotter	Genotyping, various analytes on MESA probands	Vermont/UCLAWFU	1	In progress
MESA Family – CRP, IL-6, Insulin, D-dimer, PAI-1, adiponectin, resistin, TNF-alpha, MCP-1	Rotter	New recruits (~1650) + MESA Classic in MESA Family (n=420)	Vermont	1	Complete
Stress	Diez-Roux	1000 new blood draw	Vermont	3,4	Complete
CORIN SNPs	Rame	6800 who consented to DNA	UTSW	1	Complete
intact PTH, calcium, phosphate. 25 and 1,25 vitamin D, FGF-23	Kestenbaum	535 with low est GFR, 800 (or 300) ul serum	Vermont	1	Complete
Urinary cotinine, ICAM Eselectin, 20 SNPs (300 mcg)	Barr	3250 urines 1125 E-selectin 250 ICAM-1	Vermont	1	In progress
CRP, ICAM-1, ox-LDL, F2 isoprostanes, P selectin	Kaufman	1000 + new recruits	Vermont	3-4	In progress
Novel inflammation	Tracy	1000, separate blood draw	Vermont	3-4	Complete
<i>KLOTHO</i> gene	Arking	6800	Arking	1	Complete
Osteoprotegerin	Shin	400	Amgen	1	Complete
Cystatin C	Shlipak	6800 50 ul previously thawed serum	VT	1	Complete
Osteoprotegerin	Shin	800	VT	2	Complete
Hgb MRI and subclin dis	Astor	Drops of EDTA whole blood for hgb	NA	4	Withdrawn
Telomere length, stress, and subclinical disease	Diez-Roux	Group 3. 100 ng DNA for telomeres	Outside	1	Complete
Pilot study to measure endothelial progenitor cells	Folsom	50-100 MN ppts, collecting own samples	MN	4	Withdrawn
NT-pro BNP	Daniels/Bahrami/Lima	Full cohort	UCSD Maisel	1,3	Done
mRNA expression	Huang	~30 ppts each site-collecting 5 ml sample	Huang	After 4	Done, Additional assay requested
LpPLA2 activity and mass	Cushman/Jenny	Baseline full cohort 100ul for 2 assays	DiaDexus	1	Done
Adiponectin, leptin, TNF-alpha, insulin, CRP, IL-6, FGN	Allison	2000 aortic Ca study	VT	2-3	Done
PDAY validation	Herrington	6500* 10 ug DNA		1	Complete
Cystatin C	Shlipak/ Peralta	50 ul EDTA or serum (250 ul dead space	VT	2,3,4	Complete
GGT	Bradley	Full cohort	VT	1	Complete
Urine phosphorous calciumpilot	Kestenbaum	200 ul Urine on 440 with CKD	Seattle	1	Complete

Analyte	PI	N	Lab	Visit #	Lab Status
Autoantibody panel	Majka	6800 (all) 100 ul serum	TheraTest Labs	1	Complete
Nitrotyrosine, 25 µl EDTA; 25-hydroxy vit D, 120 µl EDTA	Jiang	145 ul. Random 2000 MESA Lung ppts prior thaw ok	VT	1	Complete
Predictors of RV Function	Barr	1550 non-group 3. vWF, TM	VT	1	Complete
Vitamin D associations with urine albumin excretion, inflammation, and coronary artery calcification	deBoer	1000-person sample (not Group 3; overlaps with Ix sample) 25-hydroxy vitamin D; 400 ul serum; PO4	VT	1	Complete
Apo B and Apo A1	Tsai Paramsothy	Baseline minus ppts on lipid lowering or in Group 3	Tsai	1	Complete
BK Viruria and CKD	Johnson	250 CKD cases, 250 controls	Seattle – Corey	1	Complete
MESA COPD: endoth cells and MPs, sphingosine-1phosphate, mRNA expression	Barr	Collect own samples	Vermont	5	Complete
Gene-environment interactions of traffic related pollution and CVD	Vedal	750 random sample from candidate gene gp and MESA Air IL-6, ICAM-1, HSP-60, oxidized LDL and E-selectin	Vermont	2, 3, 4	Pending
Vitamin K	Shea	300 cases of CAC prog, 759 controls. 300 ul serum for VK. NOT group 3 without justification	Tufts Vit K Lab	1	Complete
Renal Artery Calcium, renin, aldosterone creatinine cysC	Allison	700 ul EDTA V2 or 3, 75 ul serum V2, 700 EDTA 40 serum V3 on Aortic Ca subset	VT	2-3	Complete
Fetuin A, Ca, PO4, CVD and DM	Ix	3196 baseline serum, 150 ul	U Md	1	Complete
CRP, ferritin, insulin, adiponectin, IL2Ra, lipid markers: CE 16:1, 20:3, 18:2, 16:0, 18:1, 18:2, 18:1	Bertoni	5245 V2 full cohort, 400 ul serum	Tethys	2	Samples sent
PALM. 45 proteins* Aviiir	McCluskey	150 ul V1 serum 232 incident CHD, 603 cohort rndm sample	VT	1	Complete
Autoimmunity and Athero 1	Majka	40 ul serum FC minus 860. RF, anti-CCP Ab	TheraTest	1	Samples sent
Stress II Stress and epigenetic changes IL-6, IL-10, TNF-a, D-dimer, FVIII	Diez Roux	275 ul EDTA, 200 ul citrate on 1300 Stress participants	VT	5	Complete

Analyte	PI	N	Lab	Visit #	Lab Status
Phosphorous/ Vitamin D and CVD	Kestenbaum/ deBoer	Full cohort minus those with measures already done. 450 ul serum, 200 ul urine. Ca, PO4, 25OHvitD, 24,25OHvitD, FGF-23, PTH. lytes, Urine: Ca, PO4, lytes, uric acid	Seattle, U Washington	1	Samples sent
Athero and adhesion	Bielinski	Group 4 2880. 6Ckine, ecadherin, MCP-1, IL-1F2, MMP1, MMP2, RANTES, SDF-1a, VCAM-1	UMinn	2	Samples sent
Lung II	Barr	V5. PAI-1, plasma viscosity, urinary cotinine on Lung 1 ppts	VT	5	In progress
Urinary biomarkers & Kidney decline	Shlipak/ Peralta	500 Incident CKD 500 controls 680 BL CKD. 2 ml urine NGAL, KIM 1, IL-18, uromodulin, TGF- β	VT	1,5	Samples sent
Estrogen metabolism and RV fxn	Venetuolo	0.15 ml urine in 1738 MESA RV women`	VT	1	Funded July 2011
Lung Fibrosis	Lederer	300 ul Exam 1 serum for 2,047 non-group 3 ppts; 500 ul exam 5 urine from all ppts with available sample.	VT	1,5	In progress
Neurocognitive effects of dietary exposure to organophosphorous pesticides	Curl	2 mL urine in 800 ppts (400 random ppts from Exam 1 (Group 3 excluded) + 400 ppts at Exam 5).	UW Environmental Health Laboratory and Trace Organic Analytical Center (Dills)	1,5	Funded

Plasma fatty acid composition, polymorphisms in the 5-Lipoxygenase pathway and atherosclerosis.	Tsai	250 ul previously thawed samples EDTA plasma + 100ng DNA, Baseline (visit 1) ppts excluding 2880 MESA Candidate Gene ppts.	UMinn	1	Active, funded
Leukotrienes, allergy, and the risk of cardiovascular disease	Savage	200 ul serum from exam corresponding to 2nd CAC exam, 250 ul serum and 200 ul urine from any later exam	Robert Wood Laboratory, Dermatology, Allergy and Clinical Immunology laboratory at Johns Hopkins Bayview	2-4	Active, funded
Vitamin K dependent proteins	Danziger	0 ul EDTA plasma from 1119 ppts at baseline (681 (subcohort) + 438 (cases)):	VT	1	Active, funded
Perfluoroalkyl chemicals and the risk of developing cardiovascular disease in the Multi-Ethnic Study of Atherosclerosis	Gurka	250 ul baseline serum, 250ul Exam 3 serum, 500ul Exams 2,3,4&5 urine. Note: 50% Group 3 for all. 1800 (1000 cohort random sample + 800 cases of incident CVD/CKD)		1-5	Funded
Plasma free fatty acids	Tsai	20 ul baseline serum on all participants	UMN	1	Active, funded
Combi-Biomarkers	Elliott	0.4 ml serum (.8ml total) in 4000 MESA ppts in V1 and V2.	Metabometrix, Ltd	1-2	Active, funded
HDL subclasses defined by apolipoprotein C-III	Jensen	250 ul baseline EDTA plasma in N=5814 (no group 3)	Harvard School of Public Health (Sacks)	1	Active, funded

* excluding 300 participants with < 100 ug of DNA available.

4.2 MESA Repository Summary as of August, 2014

4.2.1 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	6724	99%	0	1	6723	6797	212	28	3				Uminn Group 2 (n=6797), N. Jenny 1 (n=5), N. Jenny 2 (n=28), Candidate Gene Grp (n=31), and M. Jensen (n=179)	Uminn Group 2, N. Jenny 1 and 2, Candidate Gene Grp, and M. Jensen - complete.
EDTA	03	6795	6595	97%	200	6595	0	0	0	0	0				Drift selection reserved (n=200)	Drift selection - reserved.
EDTA	04	6798	5768	85%	0	5768	0	1030	0	0	0				Uminn Group 3 (n=1030)	Uminn Group 3 - complete.
EDTA	05	6797	6751	99%	0	0	6751	6797	405	0	0				Liposcience/NMR (n=6797), N. Jenny 1 (n=5), M. Tsai 3 (n=68), and M. Jensen (n=332)	Liposcience/NMR, N. Jenny 1, M. Tsai 3, and M. Jensen - complete.
EDTA	06	6794	6594	97%	200	6593	1	1	0	0	0				Liposcience/NMR (n=1), and Drift selection reserved (n=200)	Liposcience/NMR - complete. Drift selection - reserved.
EDTA	07	6793	6793	100%	0	6793	0	0	0	0	0					
EDTA	08	6779	6779	100%	0	6779	0	0	0	0	0					
EDTA	09	6763	6760	100%	0	6760	0	3	0	0	0				D. Jacobs (n=3)	D. Jacobs - complete.
EDTA	10	6743	6731	100%	0	6693	38	49	12	0	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 D. Jacobs (n=8)	P. Holvert, B. Kestenbaum 2, Cushman/Jenny, Candidate Gene Grp, M. Tsai 3, M. Jensen, and D. Jacobs - complete.
EDTA	11	6734	3845	57%	0	3826	19	2908	20	0	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), and 2 and 3, Cushman/Jenny, M. Jensen, D. Jacobs (n=5)	P. Holvert, B. Kestenbaum 2, M. Tsai 1, and D. Jacobs - 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	12	6723	6502	97%	0	5811	691	909	62	5	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), and D. Jacobs (n=26).	A. Tall, M. Gross, B. Kestenbaum 1 and 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2 and 3, Candidate Gene Grp, M. Jensen, and D. Jacobs - complete.
EDTA	13	6704	6204	93%	0	5062	1142	1642	480	17	0				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), and D. Jacobs (n=72).	A. Tall, M. Gross, B. Kestenbaum 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2 and 3, Candidate Gene Grp, M. Jensen, and D. Jacobs - complete.
EDTA	14	6641	4716	71%	0	3923	793	2718	408	28	1				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), and D. Jacobs (n=121).	A. Tall, M. Gross, B. Kestenbaum 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2 and 3, Candidate Gene Grp, Fatty Acid drift, M. Jensen, and D. Jacobs - complete.
EDTA	15	6501	5798	89%	0	665	5133	5834	3479	106	2				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), and D. Jacobs (n=31).	A. Tall, M. Gross, B. Kestenbaum 2, N. Jenny 1 and 2, Cushman/Jenny, M. Tsai 2 and 3, Candidate Gene Grp, Fatty Acid drift, M. Jensen, and D. Jacobs - complete.
EDTA	16	6173	3171	51%	0	477	2694	5694	2037	155	5				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), and D. Jacobs (n=34).	A. Tall, M. Gross, B. Kestenbaum 2, N. Jenny 1 and 2, M. Tsai 2 and 3, Candidate Gene Grp, M. Jensen, and D. Jacobs - complete.
EDTA	17	5593	5461	98%	0	0	5461	5589	5580	1486	113				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).	A. Tall, B. Kestenbaum 2, and N. Jenny 1 and 2, M. Tsai 2 and 3, Candidate Gene Grp, and M. Jensen - complete.
REDCE	LL	18	6777	0	0%	0	0	6777	0	0	0				Uminn Group 1 DNA Extraction (n=6777)	Uminn Group 1 - complete.
REDCE	LL	19	6758	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.
SCAT	23	6738	6738	100%	0	6738	0	0	0	0	0				UVM Group 2 (n=1)	UVM Group 2 - complete.
Citrate	24	6776	6769	100%	0	0	6769	6776	439	0	0				UVM Group 2 (n=6776), and MF Mesa Classic PAI-1 (n=439)	UVM Group 2, and MF Mesa Classic - 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
Citrate	25	6775	6775	100%	0	6775	0	0	0	0	0				UVM Group 3 (n=999), and Mesa RV/Kawut (n=2)	UVM Group 3, and Mesa RV/Kawut - complete.
Citrate	26	6771	6770	100%	0	5770	1000	1001	0	0	0				Mesa RV/Kawut (n=1338)	Mesa RV/Kawut - complete.
Citrate	27	6761	6761	100%	0	5423	1338	1338	0	0	0				Uminn Group 1 Chem (n=6792)	Uminn Group 1 - complete.
Serum	28	6792	0	0%	0	0	0	6792	0	0	0				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), and S. Bielinski (n=31).	Uminn Group 2, M. Shlipak, B. Kestenbaum, R. Bradley, J. Ix, T. McCluskey, D. Majka 1 and 2, M. Tsai 4, and S. Bielinski - complete.
Serum	29	6794	4212	62%	0	0	4212	6793	6789	6742	3165	589	90	1	Drift selection reserved (n=199)	Drift selection - reserved.
Serum	30	6791	6592	97%	199	6592	0	0	0	0	0				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), and S. Bielinski (n=88). 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, and S. Bielinski - complete. Drift selection reserved.
Serum	31	6790	6444	95%	1	5759	685	1030	351	219	29	1			Drift selection reserved (n=200). P. Greenland (n=3) and S. Bielinski (n=4).	Drift selection - reserved. P. Greenland, and S. Bielinski - complete.
Serum	32	6785	6578	97%	200	6578	0	7	0	0	0				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), and S. Bielinski (n=214).	UVM Group 3, R. Bradley, K. Shea, T. McCluskey, D. Majka 2, M. Tsai 4, P. Greenland, and S. Bielinski - complete.
Serum	33	6782	6533	96%	0	5570	963	1212	245	12	5				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), and S. Bielinski (n=120).	Daniels/Bahrami, D. Majka 1 and 2, R. Bradley, J. Ix, K. Shea, T. McCluskey, B. Kestenbaum Rpts, M. Tsai 4, P. Greenland, and S. Bielinski - complete.
Serum	34	6773	4653	69%	0	1116	3537	5657	5040	2107	1422	60	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), and S. Bielinski (n=262).	B. Kestenbaum, Daniels/Bahrami, K. Shea, T. McCluskey, D. Majka 2, High ins Comp, M. Tsai 4, P. Greenland, and S. Bielinski - complete.
Serum	35	6759	6263	93%	0	5885	378	874	142	42	18				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), and S. Bielinski (n=473).	S. Gapstur, MF Mesa Classic, Glucose drift, J. Ix, K. Shea, B. Kestenbaum 3, Rpt2 VitD, D. Majka 2, M. Tsai 4, P. Greenland, and S. Bielinski - complete.
Serum	36	6736	5866	87%	0	5506	360	1230	77	46	11					

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	37	6704	508	8%	0	508	0	6196	5	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), and S. Bielinski (n=15). 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), and S. Bielinski (n=730).	S. Gapstur, J. Ix, K. Shea, B. Kestenbaum 3, D. Majka 2, M. Tsai 4, P. Greenland, and S. Bielinski - complete.
Serum	38	6675	4960	74%	0	4507	453	2167	614	311	207	12			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, and S. Bielinski - complete.	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, and S. Bielinski - complete.
Serum	39	6633	4407	66%	0	4059	348	2572	448	215	155	10			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), and S. Bielinski (n=651).	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, and S. Bielinski - complete.
Serum	40	6557	2959	45%	0	2871	88	3679	190	120	32				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), and S. Bielinski (n=1240).	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, and S. Bielinski - complete.
Serum	41	6398	2767	43%	0	1642	1125	4740	743	431	206	5			B. Kestenbaum 1 (n=200), Rpts (n=12), 2 (n=278), 3 (338), and Rpt2 VitD (n=93), and 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), and S. Bielinski (n=1149).	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, and S. Bielinski - complete.
Serum	42	6116	941	15%	0	756	185	5319	408	279	16				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), and S. Bielinski (n=1088).	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, and S. Bielinski - 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	43	5605	484	9%	0	105	379	5470	827	428	25	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), and S. Bielinski (n=602). 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), and S. Bielinski (n=113).	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, and S. Bielinski - complete. 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, and S. Bielinski - complete.
Serum	44	4858	571	12%	0	40	531	4815	2023	1853	76	2				
CPT	45	6769	6769	100%	0	6769	0	0	0	0	0	0				
CPT	46	6770	6770	100%	0	6770	0	0	0	0	0	0				
CPT	47	6772	6772	100%	0	6772	0	0	0	0	0	0				
CPT	48	6769	6769	100%	0	6769	0	0	0	0	0	0				
CPT	49	6764	6764	100%	0	6764	0	0	0	0	0	0				
CPT	50	6766	6766	100%	0	6766	0	0	0	0	0	0				
CPT	51	6759	6759	100%	0	6759	0	0	0	0	0	0				
CPT	52	6745	6745	100%	0	6745	0	0	0	0	0	0				
CPT	53	6733	6733	100%	0	6733	0	0	0	0	0	0				
CPT	54	6700	6700	100%	0	6700	0	0	0	0	0	0				
CPT	55	6662	6662	100%	0	6662	0	0	0	0	0	0				
CPT	56	6632	6632	100%	0	6632	0	0	0	0	0	0				
CPT	57	6582	6582	100%	0	6582	0	0	0	0	0	0				
CPT	58	6505	6505	100%	0	6505	0	0	0	0	0	0				
CPT	59	6368	6368	100%	0	6368	0	0	0	0	0	0				
CPT	60	6205	6205	100%	0	6205	0	0	0	0	0	0				
CPT																
CELLS	61	6759	6707	99%	0	6707	0	52	0	0	0	0			Uminn - Gene Expression (n=52)	Uminn - Gene Expression - complete.
CPT																
CELLS	62	6625	6607	100%	0	6607	0	18	0	0	0	0			Mesa Family cell lines (n=18)	Mesa Family cell lines - complete.
FAHC																
Urine	63	6777	0	0%	0	0	0	6777	0	0	0	0			UVM Group 1 UMALB (n=6777)	UVM Group 1 UMALB - 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
URINE	64	6770	6763	100%	0	4	6759	6762	4420	829	43	1			Mesa Lung cotinine/G. Barr (n=3944), C. Johnson (n=300), B. Kestenbaum 3 (n=6758), Shlipak/Peralta (n=743), and A. Navas-Acien (n=310).	Mesa Lung cotinine/G. Barr, C. Johnson, B. Kestenbaum 3, and Shlipak/Peralta - complete. A. Navas-Acien - in progress
URINE ACETI C	65	6749	4976	74%	0	4682	294	2066	150	0	0				B. Kestenbaum (n=438) and 3 (n=6), C. Ventetuolo (n=1772)	B. Kestenbaum - complete. C. Ventetuolo - in progress
Totals:	65	431319	342936		800	279846	63090	150555	35626	15461	5535					

4.2.2 Exam 2

Type	Cryo	# Rec'd	# Avail.	% Avail.	# Reserved	# Frozen	# Thawed	# 1X Used	# 2X Used	# 3X 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	2396	39%	0	5	2391	6186	3804	3	Uminn Group 1 Lipids (n=6186), M. Allison 1 (n=4) and 2 (n=305), Mesa Lung SHARE (n=1), and S. Bielinski (n=3497).	Uminn Group 1 and M. Alison 1 and 2, Mesa Lung SHARE, and S. Bielinski - complete.
EDTA	03	6187	5984	97%	200	5981	3	5	1	0	Uminn Group 1 Lipids (n=5), and S. Bielinski (n=1). Drift selection reserved (n=200)	Uminn Group 1, and S. Bielinski - complete. Drift selection - reserved.
EDTA	04	6190	6190	100%	0	6187	3	2	0	0	Uminn Group 1 Lipids (n=2)	Uminn Group 1 - complete.
EDTA	05	6186	6185	100%	0	6184	1	1	0	0	S. Bielinski (n=1).	S. Bielinski - complete.
EDTA	06	6167	6126	99%	0	6121	5	45	1	0	Cushman/Jenny (n=4), M. Allison 1 (n=1), and S. Bielinski (n=41).	Cushman/Jenny, M. Allison 1, and S. Bielinski - complete
EDTA	07	6126	5782	94%	0	4934	848	1191	74	3	Cushman/Jenny (n=480), M. Allison 1 (n=6), and 2 (n=435), S. Bielinski (n=343), and Mesa Lung SHARE (n=4).	Cushman/Jenny, M. Allison 1 and 2, S. Bielinski, and Mesa Lung SHARE - complete.
EDTA	08	6108	3807	62%	0	3092	715	3015	316	10	Uminn Group 1 Lipids (n=2), M. Allison 1 (n=769) and 2 (n=304), S. Bielinski (n=2265), and Mesa Lung SHARE (n=3).	Uminn Group 1, M. Alison 1 and 2, S. Bielinski, and Mesa Lung SHARE - 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	5872	95%	0	0	5872	6190	1071	0	Uminn Group 1 Chem (n=6190), M. Allison 2 (n=770), and B. Kestenbaum 3 (n=301)	Uminn Group 1, M. Allison 2, and B. Kestenbaum 3 - complete.
Serum	19	6187	5986	97%	200	5980	6	6	0	0	Uminn Group 1 Chem (n=6), Drift selection reserved (n=200)	Uminn Group 1 - complete. Drift selection - reserved.
Serum	20	6183	6183	100%	0	6181	2	1	0	0	Uminn Group 1 Chem (n=1)	Uminn Group 1 - complete.
Serum	21	6175	6175	100%	0	6173	2	1	0	0	Uminn Group 1 Chem (n=1)	Uminn Group 1 - complete.
Serum	22	6143	5838	95%	0	5833	5	309	0	0	A. Bertoni (n=56), and S. Bielinski (n=253).	A. Bertoni and S. Bielinski - complete.
Serum	23	6084	4095	67%	0	3325	770	2758	69	0	V. Shin 2 (n=762), Glucose Drift (n=3), A. Bertoni (n=190), S. Bielinski (n=1804), M. Allison 2 (n=1), and B. Kestenbaum 3 (n=67)	V. Shin, Glucose Drift, A. Bertoni, S. Bielinski, M. Allison 2, and B. Kestenbaum 3 - complete.
Serum	24	6013	699	12%	0	497	202	5509	0	0	Uminn Grp1 Chem (n=5), Glucose Drift (n=195), A. Bertoni (n=4920), S. Bielinski (n=393), and B. Kestenbaum 3 (n=1).	Uminn Group 1, Glucose Drift, A. Bertoni, S. Bielinski, and B. Kestenbaum 3 - 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	126635		400	115801	10834	37795	5336	16		

4.2.3 Exam 3

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	# 1xUsed	# 2xUsed	# 3xUsed	Sample Selections	Sample Selection Status/Comments
EDTA	01	5893	5827	99%	0	1	5826	5892	58	4	Uminn Group 1 Lipids (n=5892), M. Allison 1 (n=8) and 2 (n=54)	Uminn Group 1 and M. Allison 1 and 2 - complete.
EDTA	02	5890	5691	97%	199	5688	3	3	0	0	Uminn Group 1 Lipids (n=3), Drift selection reserved (n=199)	Uminn Group 1 - complete. Drift selection - reserved.
EDTA	03	5889	5888	100%	1	5886	2	2	0	0	Uminn Group 1 Lipids (n=2), Drift selection reserved (n=1)	Uminn Group 1 - complete. Drift selection - reserved.
EDTA	04	5884	5884	100%	0	5884	0	0	0	0		
EDTA	05	5866	5866	100%	0	5861	5	5	0	0	Cushman/Jenny (n=5)	Cushman/Jenny - complete.
EDTA	06	5833	5826	100%	0	4694	1132	1139	12	0	Cushman/Jenny (n=4), M. Allison 1 (n=91) and 2 (n=1056)	Cushman/Jenny and M. Allison 1 and 2 - complete.
EDTA	07	5794	5779	100%	0	4245	1534	1546	124	5	Uminn Group 1 Lipids (n=5), Cushman/Jenny (n=448), M. Allison 1 (n=1089) and 2 (n=125), and Mesa Lung SHARE (n=13)	Uminn Group 1, Cushman/Jenny, and M. Allison 1 and 2, and Mesa Lung SHARE - 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	5771	100%	0	5673	98	98	70	0	Daniels/Bahrami (n=74), M. Shlipak (n=94)	Daniels/Bahrami and M. Shlipak - 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 - 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	127940		400	107807	20133	26143	4977	9		

4.2.4 Exam 4

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	# 1X Used	# 2X Used	Sample Selections	Sample Selection Status/Comments
01	5635	5626	100%	0	0	5626	5635	0	Uminn Group 1 Lipids (n=5635)	Uminn Group 1 - complete.	01
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.	02
03	5628	5628	100%	0	5628	0	0	0			03
04	5622	5622	100%	0	5622	0	0	0			04
05	5594	5594	100%	0	5594	0	0	0			05
06	5567	5567	100%	0	5513	54	54	1	Cushman/Jenny (n=4), Mesa Air (n=44), and Mesa Lung SHARE (n=7)	Cushman/Jenny, Mesa Air, and Mesa Lung SHARE - complete.	06
07	5549	5549	100%	0	4579	970	969	12	Cushman/Jenny (n=429), Mesa Air (n=412), and Mesa Lung SHARE (n=140)	Cushman/Jenny, Mesa Air, and Mesa Lung SHARE - complete.	07
08	5625	5625	100%	0	5625	0	0	0			08
09	5625	5625	100%	0	5625	0	0	0			09
10	5617	5617	100%	0	5617	0	0	0			10
11	5596	5596	100%	0	5596	0	0	0			11
12	5583	5583	100%	0	5583	0	0	0			12
13	5583	5583	100%	0	5583	0	0	0			13
14	5572	5572	100%	0	5572	0	0	0			14
15	5549	5549	100%	0	5549	0	0	0			15

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	# 1X Used	# 2X Used	Sample Selections	Sample Selection Status/Comments
16	5634	5627	100%	0	0	5627	5634	0	Uminn Group 1 Chem (n=5634)	Uminn Group 1 - complete.	16
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.	17
18	5622	5622	100%	0	5622	0	0	0			18
19	5605	5605	100%	0	5604	1	1	0	Umin Group 1 Chem (n=1)	Uminn Group 1 - complete	19
20	5550	5550	100%	0	5549	1	1	0	Mesa Air Cotinines (n=1)	Mesa Air Cotinines - complete.	20
21	5484	5482	100%	0	5248	60	61	0	Glucose Drift (n=3), M. Shlipak (n=56), and Mesa Air Cotinines (n=2)	Glucose Drift, M. Shlipak, and Mesa Air Cotinines - complete	21
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	22
22	122930	122498		400	104594	17730	17756	192			22

4.2.5 Exam 5

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	#1X Used	#2X Used	Sample Selections	Sample Selection Status/Comments
EDTA- whole blood(HbA1 c)	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	4580	100%	0	4580	0	0	0		
EDTA	08	4579	4579	100%	0	4578	1	1	0	Mesa Air (n=1)	Mesa Air - in progress
EDTA	09	4572	4572	100%	0	4571	0	1	0	Mesa Air (n=1)	Mesa Air - in progress
EDTA	10	4557	4557	100%	0	4555	0	2	0	Mesa Air (n=2)	Mesa Air - in progress
EDTA	11	4540	4540	100%	0	4539	0	1	0	Mesa Air (n=1)	Mesa Air - in progress
EDTA	12	4531	4531	100%	0	4529	0	2	0	Mesa Air (n=2)	Mesa Air - in progress
EDTA	13	4524	4524	100%	0	4522	0	2	0	Mesa Air (n=2)	Mesa Air - in progress
EDTA	14	4504	4504	100%	0	4498	0	6	0	Mesa Air (n=6)	Mesa Air - in progress
EDTA	15	4466	4466	100%	0	4456	0	10	0	Mesa Air (n=10)	Mesa Air - in progress
EDTA	16	4418	4418	100%	0	4398	0	20	0	Mesa Air (n=20)	Mesa Air - in progress
EDTA	17	4299	4297	100%	0	4254	0	45	0	Mesa Air (n=45)	Mesa Air - in progress
EDTA	18	4069	4059	100%	0	3641	1	428	0	Uminn Group 1 Lipids (n=1) and Mesa Air (n=427)	Uminn Group 1 - complete. Mesa Air - in progress
Red Cells	19	4582	3287	72%	0	3287	0	1295	0	Mesa Stress (n=1295)	Mesa Stress - in progress.
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		
SCAT	23	4428	4428	100%	0	4428	0	0	0		
Citrate	24	4575	4575	100%	0	4575	0	0	0		
Citrate	25	4575	4575	100%	0	4575	0	0	0		
Citrate	26	4573	4561	100%	0	4561	0	12	0	Mesa Stress (n=12)	Mesa Stress - in progress.
Citrate	27	4528	3594	79%	0	3594	0	934	0	Mesa Stress (n=934)	Mesa Stress - in progress.
Serum	28	4589	4589	100%	0	0	4589	4589	0	Uminn Group 1 Chem and Cystatin C (n=4589).	Uminn Group 1 - complete

Type	Cryo	# Received	# Available	% Available	# Reserved	# Fresh Frozen	# Thawed	#1X Used	#2X Used	Sample Selections	Sample Selection Status/Comments
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	4586	100%	0	4586	0	1	0	Mesa Stress (n=1)	Mesa Stress - in progress.
Serum	33	4587	4587	100%	0	4587	0	0	0		
Serum	34	4580	4580	100%	0	4580	0	0	0		
Serum	35	4577	4573	100%	0	4573	0	4	0	Mesa Stress (n=4)	Mesa Stress - in progress.
Serum	36	4557	4551	100%	0	4551	0	6	0	Mesa Stress (n=6)	Mesa Stress - in progress.
Serum	37	4538	4532	100%	0	4532	0	6	0	Mesa Stress (n=6)	Mesa Stress - in progress.
Serum	38	4512	4503	100%	0	4503	0	9	0	Mesa Stress (n=9)	Mesa Stress - in progress.
Serum	39	4492	4473	100%	0	4473	0	19	0	Mesa Stress (n=19)	Mesa Stress - in progress.
Serum	40	4442	4400	99%	0	4400	0	42	0	Mesa Stress (n=42)	Mesa Stress - in progress.
Serum	41	4335	4263	98%	0	4263	0	72	0	Mesa Stress (n=72)	Mesa Stress - in progress.
Serum	42	4122	4034	98%	0	4034	0	88	0	Mesa Stress (n=88)	Mesa Stress - in progress.
Serum	43	3809	3672	96%	0	3672	0	137	0	Mesa Stress (n=137)	Mesa Stress - in progress.
Serum	44	3227	2662	82%	0	2662	0	565	0	Mesa Stress (n=565)	Mesa Stress - in progress.
Whole Blood	45	4454	4454	100%	0	4454	0	0	0		
Whole Blood FAHC	46	4339	4339	100%	0	4339	0	0	0		
Urine	47	4553	0	0%	0	0	0	4553	0	UVM Group 1 UMALB (n=4553)	UVM Group 1 - complete
Urine	48	4548	4548	100%	0	1128	3420	3420	0	Mesa Lung Cotinine / G. Barr (n=3420) UVM Group 1 UMALB (n=1) and C. Curl (n=1)	Mesa Lung Cotinine / G. Barr - complete UVM Group 1 and C. Curl - complete
Urine/Acetic Acid	49	4527	4527	100%	0	4525	2	2	0		
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	215365		0	202263	12598	25438	0		

4.3 MESA Repository Report, as of August, 2014

4.3.1 MESA Repository Availability, by Category

4.3.1.1 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	6795	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	4	0%
No Sample	0	0	7	0%
Baseline - SCAT				
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				
Baseline - SERUM	# cryos	Volume	# FreshCryos Available	% of 6806
Available	3 - 17	≥ 1.0 mL	6781	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	12	0%
No Sample	0	0	13	0%
Baseline - CITRATE				
Baseline - CITRATE	# cryos	Volume	# FreshCryos Available	% of 6806
Available	3 - 4	≥ 1.0 mL	4475	66%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	2301	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	999	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	0	0%
Baseline - SCAT				
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				
Baseline - SERUM	# cryos	Volume	# FreshCryos Available	% of 999
Available	3 - 17	≥ 1.0 mL	999	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	0	0%
Baseline - CITRATE				
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%

4.3.1.2 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			# FreshCryos Available	% of 6211
Available	2 - 7	≥ 1.0 mL	6190	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	20	0%
Exam 2 - SCAT				
Exam 2 - SCAT			# 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				
Exam 2 - SERUM			# FreshCryos Available	% of 6211
Available	2 - 7	≥ 1.0 mL	6183	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	3	0%
No Sample	0	0	25	0%
Exam 2 - CITRATE				
Exam 2 - CITRATE			# FreshCryos Available	% of 6211
Available	3 - 4	≥ 1.0 mL	6175	99%
Critical	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	≥ 1.0 mL	925	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	1	0%
Exam 2 - SCAT				
Exam 2 - SCAT	# cryos	Volume	# FreshCryos Available	% of 926
Available	3 - 4	≥ 1.0 mL	922	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	4	0%
Exam 2 - SERUM				
Exam 2 - SERUM	# cryos	Volume	# FreshCryos Available	% of 926
Available	2 - 7	≥ 1.0 mL	924	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	1	0%
No Sample	0	0	1	0%
Exam 2 - CITRATE				
Exam 2 - CITRATE	# cryos	Volume	# FreshCryos Available	% of 926
Available	3 - 4	≥ 1.0 mL	922	100%
Critical	1 - 2	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	4	0%

4.3.1.3 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	5891	100%
Critical	1	≥ 0 and ≤ 1.0 mL	2	0%
No Sample	0	0	20	0%
Exam 3 - SCAT				
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				
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				
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	884	99%
Critical	1	≥ 0 and ≤ 1.0 mL	0	0%
No Sample	0	0	6	1%
Exam 3 - SCAT				
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				
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				
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%

4.3.1.4 Table: Exam 4

Exam 4 N = 5637

Exam 4

				# FreshCryos Available	% of 5637
Exam 4 - EDTA	# cryos	Volume			
Available	2 - 7	≥ 1.0 mL		5628	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		5	0%
No Sample	0	0		4	0%
				# FreshCryos Available	% of 5637
Exam 4 - SCAT	# cryos	Volume			
Available	3 - 4	≥ 1.0 mL		5573	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		12	0%
No Sample	0	0		52	1%
				# FreshCryos Available	% of 5637
Exam 4 - SERUM	# cryos	Volume			
Available	2 - 7	≥ 1.0 mL		5620	100%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		11	0%
No Sample	0	0		6	0%
				# FreshCryos Available	% of 5637
Exam 4 - CITRATE	# cryos	Volume			
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)

				# FreshCryos Available	% of
Exam 4 - EDTA	# cryos	Volume		847	
Available	2 - 7	≥ 1.0 mL		846	92%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		0	7%
No Sample	0	0		1	0%
				# FreshCryos Available	% of
Exam 4 - SCAT	# cryos	Volume		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%
				# FreshCryos Available	% of
Exam 4 - SERUM	# cryos	Volume		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%
				# FreshCryos Available	% of
Exam 4 - CITRATE	# cryos	Volume		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%

4.3.1.5 Table: Exam 5

Exam 5 n = 4626

Exam 5

				% of
Exam 5 - EDTA	# cryos	Volume	# FreshCryos Available	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%
				% of
Exam 5 - SCAT	# cryos	Volume	# FreshCryos Available	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%
				% of
Exam 5 - SERUM	# cryos	Volume	# FreshCryos Available	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%
				% of
Exam 5 - CITRATE	# cryos	Volume	# FreshCryos Available	4626
Available	3 - 4	≥ 1.0 mL	4561	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL	14	0%
No Sample	0	0	51	1%

(Table continues on following page)

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

				# FreshCryos Available	% of 728
Exam 5 - EDTA	# cryos	Volume			
Available	3 - 17	≥ 1.0 mL		719	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		0	0%
No Sample	0	0		9	1%
				# FreshCryos Available	% of 728
Exam 5 - SCAT	# cryos	Volume			
Available	3 - 4	≥ 1.0 mL		698	96%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		2	0%
No Sample	0	0		28	4%
				# FreshCryos Available	% of 728
Exam 5 - SERUM	# cryos	Volume			
Available	3 - 17	≥ 1.0 mL		722	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		1	0%
No Sample	0	0		5	1%
				# FreshCryos Available	% of 728
Exam 5 - CITRATE	# cryos	Volume			
Available	3 - 4	≥ 1.0 mL		718	99%
Borderline	1 - 2	≥ 0 and ≤ 1.0 mL		0	0%
No Sample	0	0		10	1%

MESA Repository Report, as of August, 2014

4.3.2 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.

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

Quantity category	n
≤ 15 ug	36*
16 - 25 ug	12
26 - 50 ug	53
51 - 100 ug	436
101 - 150 ug	724
151 - 200 ug	1023
201 - 300 ug	2202
301 - 400 ug	1299
401 - 500 ug	516
> 500 ug	265
Total	6566

*There is 1 specimen with no DNA.

4.3.2.2 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
Total				55.12

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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.

5.1 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, Sphingomyelin, 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

5.1.1 Update Status

Updates and changes to the Exam 1 datasets since February 2014 include:

- Assays: Apolipoprotein E data added.
- Cardiac MRI: “Mean LV Wall Thickness, End-Diastole (mm)” variable added
- Commercial Use of Data Consent: Updated with Exam 5 consent information.
- ECG: “Cornell Voltage” variable computed by Reading Center
- ECG: “Left Ventricular Hypertrophy, by Cornell Voltage” variable computed by Reading Center
- Medications: All medication category variables updated to reflect revised category definitions
- “Estimated 10-Year ASCVD Risk Rate” variable 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

5.2 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.

5.2.1 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.

5.2.2 Update Status

Updates and changes to the Exam 2 datasets since February 2014 include:

- Medications: All medication category variables updated to reflect revised category definitions
- “Estimated 10-Year ASCVD Risk Rate” variable added

The complete history of Exam 2 data updates can be found at:

http://www.mesa-nhlbi.org/MesaInternal/Exam2Data/Exam2_Data_Updates_completed.doc

5.3 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.

5.3.1 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.

5.3.2 Update Status

Updates and changes to the Exam 3 datasets since February 2014 include:

- Medications: All medication category variables updated to reflect revised category definitions
- “Estimated 10-Year ASCVD Risk Rate” variable added

The complete history of Exam 3 data updates can be found at:

http://www.mesa-nhlbi.org/MesaInternal/Exam3Data/Exam3_Data_Updates_completed.doc

5.4 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.

5.4.1 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.

5.4.2 Update Status

Updates and changes to the Exam 4 datasets since February 2014 include:

- Medications: All medication category variables updated to reflect revised category definitions
- “Estimated 10-Year ASCVD Risk Rate” variable added

The complete history of exam 4 data updates can be found at:

http://www.mesa-nhlbi.org/MesaInternal/Exam4Data/Exam4_Data_Updates_completed.doc

5.5 Ancillary Study Data

Thirteen ancillary studies have produced and posted data since February 2014. For the MESA Candidate Gene study, a total of thirty four data sets are available; numerous 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.

5.6 Events Datasets

The Events data sets were updated in January 2014, and now include data through calendar year 2011. See Section 3 for a description of the data sets and further information on the status of Events surveillance, data collection and adjudication.

5.7 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.

5.7.1 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.

5.7.2 Update Status

Updates and changes to the Exam 5 datasets since February 2014 include:

- CT Cardiac: recomputed to exclude QC cases
- ECG: “Any Major or Minor ECG Abnormalities per Minnesota Code” variable computed
- ECG: “Cornell Voltage” variable computed by Reading Center
- ECG: “Left Ventricular Hypertrophy, by Cornell Voltage” variable computed by Reading Center
- ECG: P-Wave continuous waveform variables updated by Reading Center
- Medications: All medication category variables updated to reflect revised category definitions
- MRI Myocardial Scarring: data posted.
- MRI Tagging: data posted.
- “Estimated 10-Year ASCVD Risk Rate” variable added

The complete history of exam 5 data updates can be found at:

http://www.mesa-nhlbi.org/MesaInternal/Exam5Data/Exam5_Data_Updates_completed.doc

5.7.3 Exam 5 Descriptive Summary

	N	Mean	SD	Minimum	Median	Maximum
DEMOGRAPHICS						
SITE						
WAKE FOREST	813 (17%)					
COLUMBIA	810 (17%)					
JOHNS HOPKINS	658 (14%)					
MINNESOTA	771 (16%)					
NORTHWESTERN	876 (19%)					
UCLA	788 (17%)					
RACE / ETHNICITY						
WHITE, CAUCASIAN	1926 (41%)					
CHINESE AMERICAN	541 (11%)					
BLACK, AFRICAN-AMERICAN	1250 (27%)					
HISPANIC	999 (21%)					
GENDER						
FEMALE	2514 (53%)					
MALE	2202 (47%)					
AGE AT EXAM 5	4655	70	9	53	69	94
CHD RISK						
NCEP 10-YEAR HARD CHD RISK (frmcep5c)	3633	.09	.07	.00	.08	.30
JAMA 2001 10-YEAR HARD CHD RISK (frjama5c)	4532	.09	.08	.01	.06	.76
CIRCULATION 1998 10-YEAR ALL CHD RISK	4532	.10	.08	.02	.08	.77
METABOLIC SYNDROME BY NCEP (mtsy035c)						
NO	2901 (63%)					
YES	1673 (37%)					
DIABETES (2003 ADA FASTING CRITERIA)						
NORMAL	2726 (59%)					
IMPAIRED FASTING GLUCOSE	948 (21%)					
UNTREATED DIABETES	85 (2%)					
TREATED DIABETES	836 (18%)					
ANTHROPOMETRY						
WEIGHT (lb)	4643	172.1	39.3	76.0	168.9	352.2
HEIGHT (cm)	4646	165.3	10.0	136.0	164.9	198.0
BODY MASS INDEX	4642	28.48	5.66	14.58	27.71	56.01
ANKLE-BRACHIAL INDEX						
ANKLE-BRACHIAL INDEX	4436	1.12	.15	.35	1.13	3.45
BLOOD PRESSURE						
SEATED SYSTOLIC BLOOD PRESSURE (mmHg)	4653	124.13	20.92	62.00	120.50	250.00
SEATED DIASTOLIC BLOOD PRESSURE (mmHg)	4653	68.25	10.07	36.50	68.00	123.00
SEATED PULSE PRESSURE (mmHg)	4653	55.9	17.4	15.0	53.0	152.0
SEATED HEART RATE (BEATS PER MINUTE)	4653	64.37	10.72	28.50	63.50	123.00
HYPERTENSION BY JNC VI (1997) CRITERIA						
NO	1875 (40%)					
YES	2778 (60%)					
HYPERTENSION						
OPTIMAL	2193 (47%)					
NORMAL	781 (17%)					
HIGH-NORMAL	657 (14%)					
STAGE 1 HYPERTENSION	722 (16%)					
STAGE 2 HYPERTENSION	204 (4%)					
STAGE 3 HYPERTENSION	65 (1%)					
CARDIAC CT						
ADJUSTED CORONARY CALCIUM SCORE	3300	287.70	595.62	.00	42.97	6388.93
COGNITIVE ASSESSMENT						
TOTAL COGNITIVE ASSESSMENT SCORE	4588	87	11	1	89	100

Exam 5 Descriptive Summary (continued)

	N	Mean	SD	Minimum	Median	Maximum
LAB ASSAY						
SERUM INSULIN (mIU/L)	4162	60.26	49.12	3.00	48.00	1039.00
HEMOGLOBIN A1C	4558	6.0	.9	3.2	5.8	16.0
FASTING GLUCOSE (mg/dl)	4587	102	29	38	95	448
TOTAL CHOLESTEROL	4582	183		75	181	372
DESIRABLE, <200	3128 (68%)					
BORDERLINE HIGH, 200-239	1134 (25%)					
HIGH, 240+	320 (7%)					
LDL CHOLESTEROL (mg/dl)	4559	105	37	12	103	310
OPTIMAL, <100	2106 (46%)					
NEAR OPTIMAL, 100-129	1427 (31%)					
BORDERLINE HIGH, 130-159	767 (17%)					
HIGH, 160-189	214 (5%)					
VERY HIGH, 190+	45 (1%)					
HDL CHOLESTEROL (mg/dl)	4581	56	17	22	53	187
HIGH, 60+	1583 (35%)					
40-59	2358 (51%)					
LOW, <40	640 (14%)					
TRIGLYCERIDES (mg/dl)	4582	109	62	21	95	931
NORMAL, <150	3782 (83%)					
BORDERLINE HIGH, 150-199	489 (11%)					
HIGH, 200-499	302 (7%)					
VERY HIGH, 500+	9 (0%)					
CREATININE (mg/dl)	4587	.923	.405	.270	.870	12.200
GLOMERULAR FILTRATION RATE (MDRD)	4587	80.05	21.30	3.15	79.14	246.95
GLOMERULAR FILTRATION RATE (CKD-EPI)	4587	79.08	18.22	2.98	81.58	141.85
MEDICATIONS / SUPPLEMENTS						
HYPERTENSION MEDICATION	2609 (55%)					
INSULINS	147 (3%)					
ORAL HYPOGLYCEMIC AGENTS	672 (14%)					
LIPID-LOWERING MEDICATION	1834 (39%)					
MULTI-VITAMINS	1023 (35%)					
MRI						
LV END DIASTOLIC VOLUME	3013	119.23	31.71	37.40	115.40	310.20
LV END SYSTOLIC VOLUME	3012	46.12	18.18	11.90	43.00	210.90
LV EJECTION FRACTION (%)	3012	61.92	7.32	23.70	62.30	83.30
LV STROKE VOLUME (mL)	3012	73.11	18.46	23.30	71.00	161.60
LV END-DIASTOLIC MASS (g)	3013	123.01	33.84	51.10	117.70	285.50
PERSONAL HISTORY						
CIGARRETTE SMOKING STATUS						
NEVER	2098 (45%)					
FORMER	2188 (47%)					
CURRENT	365 (8%)					
CIGARRETTE SMOKING PACK-YEARS	4604	10.92	20.55	.00	.00	272.24
PHYSICAL ACTIVITY						
TOTAL INTENTIONAL EXERCISE (MET-MIN/WK)	3498.34	4638	2702.68	.00	1650.00	69367.50
MODERATE & VIGOROUS PA TOTAL (MET-MIN/WK)	4638	4298.43	4889.00	.00	2883.75	97110.00
ULTRASOUND IMT						
RIGHT CCA MEAN (mm)	3405	.8666	.2151	.4320	.8310	3.0680
LEFT CCA MEAN (mm)	3383	.8665	.2342	.3860	.8250	3.1400
URINE						
URINARY ALBUMIN (mg/dl)	4552	3.38	16.01	.10	.60	380.00
URINARY CREATININE (mg/dl)	4552	109.34	69.28	4.00	96.40	573.50
URINARY ALBUMIN/CREATININE (mg/g)	4552	36.35	177.55	.40	6.10	3643.40
URINARY MICROALBUMINURIA						
NORMAL	3942 (87%)					
MICROALBUMINURIA	511 (11%)					
MACROALBUMINURIA	99 (2%)					

5.8 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%
RDCCAMNAV5: 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%

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Section 6: Ancillary Studies

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6.1 New and Revised Proposals

Since the last report in February, 2014, the Ancillary Studies Committee (ASC) has reviewed seventeen new proposals. Sixteen 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:

- A249 Age-associated Vascular and Cardiac Changes. Joao Lima, Eliseo Guallar, So Yeon Lim, Russell Tracy, Myron Gross, Kiang Liu, Donald Lloyd-Jones, Colin Wu, Erin P. Ricketts, David Jacobs, David Bluemke, Alban Redheuil, Yoshiaki Ohyama.
- A250 Epigenetic roles in regulation of cholesterol metabolism and CVD risk. Yongmei Liu, David Herrington, Jingzhong Ding, John Parks, Jennifer Van Eyk, Russell P. Tracy, Ina Hoeschele.
- A251 The Insulin Axis and Diabetes Risk: Effects of Microbiome Diversity and Host Genome in a Multiethnic Cohort. Mark Goodarzi, Steve Rich, Martin Wu, Joe Mychaleckyj, Ani Manichaikul, Suna Onengut (UVA), Lekki Wood (Baylor), Jim Pankow, Aaron Folsom, Alain Bertoni, Karol Watson, Mike Tsai, Jerome Rotter, Yii-Der Ida Chen, Kent Taylor, Xiuqing Guo.
- A252 Epigenomics and transcriptomics of cognitive decline. Jingzhong Ding, Yongmei Liu, Annette Fitzpatrick, Steve Rapp, Ina Hoeschele, Teresa Seeman, Jose Luchsinger, Constantine Lyketsos, Alvaro Alonso.
- A253 Obesity, Immunity and Epigenetic Changes in a Cholesterol Metabolism Network. Jingzhong Ding, Yongmei Liu, Russell Tracy, Bruce Psaty, Ina Hoeschele, David Herrington, Wendy Post, David Jacob, Steve Shea, Gregory Burke.
- A254 Atrial fibrillation, cardiac MRI, and vascular disease of the brain in MESA. Susan Heckbert, David Bluemke, Nick Bryan, Greg Burke, Lin Yee Chen, Aaron Folsom, Phil Greenland, Tamara Horwich, Dick Kronmal, João Lima, Kiang Liu, Robyn McClelland, Wendy Post, Bruce Psaty, Steve Shea, Sayed Soliman, Preethi Srikanthan, Russ Tracy, Karol Watson.
- A255 From Risk Factors to Early Heart Failure: The Multi-Ethnic Study of Atherosclerosis. Alain Bertoni, Sanjiv Shah, Gregory Burke, Joseph Yeboah, Haiying Chen, Carlos Rodriguez, Sylvia E. Rosas, Rahul Deo, Julio Chirinos.
- A256 Determinants of Mobility, Usual Physical Activity and Quality of Life in an Elderly Multi-Ethnic Cohort. Matthew Allison, Michael Criqui, Mary Cushman, Mary McDermott, Robyn McClelland.
- A257 Coronary Atherosclerosis and the effects of Intestinal Microbiota, Diet and Genetics in MESA. Matthew Budoff, Stephen Rich, Jerome Rotter, Wendy Post, Jeff Carr, Robyn McClelland, Joao Lima, Alexis Frazier-Wood, Martin Wu, Kent Taylor, Xiuqing Guo.
- A258 Pulmonary Perfusion in MESA. The MESA Lung Study III. Graham Barr, Matt Budoff, Aaron Folsom, John Hankinson, Eric Hoffman, David Jacobs, Richard Kronmal, Kiang Liu, Wendy Post, Daniel Rabinowitz, Steven Shea, Russ Tracy, Karol Watson.

- A259 Vitamin D pharmacogenomics. Ian de Boer, Bryan Kestenbaum, David Siscovick, Russ Tracy, Jerry Rotter, Steve Rich.
- A260 Urinary KNOWledge study (U-KNOW). Holly Kramer, Kiang Liu, Linda Brubaker, Sue Penckhofer, Kate Wolin, Alan Wolf.
- A261 HDL-mediated cholesterol efflux and carotid FDG PET in MESA Steven Shea, Alan Tall, Wendy Post, Joao Lima, David Bluemke, James Stein, Zahi Fayad, Mani Vankatesh, Daniel Rabinowitz.
- A262 The Spectrum of Non-Esterified Fatty Acids and Cardiometabolic Disease in Older Adults. Luc Djousse, Kenneth J Mukamal, David Siscovick, Michael Tsai, Alice Arnold, Mary Lou Biggs, Jorge Kizer, Joachim Ix.
- A263 Defining A Reference Profile of Circulating Extracellular RNA. Kenneth Mukamal, Nancy Jenny, Jane Freedman, Chris O'Donnell.
- A264 Idiopathic Hypoglycemic Symptoms and Incident Cardiovascular Disease. Morgana Mongraw-Chaffin, Matthew Allison, Cheryl Anderson, Andrea LaCroix, Dorothy Sears.

Proposals Not Approved (none)

6.3 Ancillary Study Proposals of Ancillary Studies (none)

6.6 MESA Ancillary Studies Status Tables

Table 1: All Ancillary studies

	N (%)
Proposals ^[1]	269 (100%)
Withdrawn ^[2]	47 (15%)
Funding pending ^[3]	87 (32%)
Funded/active ^[4]	102 (40%)
Completed ^[5]	33 (13%)

The full status table can be viewed online at the following link:

<http://www.mesa-nhlbi.org/Mesa-Internal/AncillaryS/>

^[1] Proposals include all ancillary study proposals but not proposals designated as substudies (procedure or questionnaire included in an exam without separate funding).

^[2] Withdrawn are approved ancillary study proposals that were never funded and officially declared as no longer being pursued by the ancillary study PI.

^[3] Funding pending indicates ancillary studies that have not yet been funded (yet).

^[4] Funded active indicate ancillary studies that have received notice of funding award or work on the study has begun (if no funding involved).

^[5] Complete indicates an ancillary study whose work has officially ended.

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