

CURRICULUM VITAE
BHARAT THYAGARAJAN, MBBS/MPH/PHD

PROFESSIONAL ADDRESS

University of Minnesota
Department of Laboratory Medicine and Pathology
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SECTION I

EDUCATION

Degree	Institution	Date Degree Granted
Bachelor of Medicine and Bachelor of Surgery (MBBS)	Grant Medical College, Mumbai, India	1992-1998
Master of Public Health (MPH) Epidemiology	School of Public Health, University of Minnesota, Minneapolis	1998-2000
PhD/Epidemiology	School of Public Health, University of Minnesota, Minneapolis	2000-2004

TRAINING

Clinical Pathology Resident , Laboratory Medicine and Pathology University of Minnesota, Minneapolis, MN	2004 – 2007
Molecular and Genetic Pathology Fellow Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN	2006 - 2007
Pathology Leadership Fellow Association of Academic Pathologists	2023 - 2024

CERTIFICATION AND LICENSURES

1. American Board of Pathology (Clinical Pathology)	2008
2. United States Medical License (Minnesota)	2007
3. Indian Medical License	1998
4. ECFMG Certificate	2003

ACADEMIC APPOINTMENTS

February 28, 2025

Professor with Tenure June 2021-Present
Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN

Associate Professor with Tenure June 2015-May 2021
Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN

Adjunct Professor June 2021-Present
Division of Epidemiology and Community Health, University of Minnesota, Minneapolis, MN

Adjunct Associate Professor June 2015-May 2021
Division of Epidemiology and Community Health, University of Minnesota, Minneapolis, MN

Assistant Professor November 2007-May 2015
Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN

Adjunct Assistant Professor July 2011-May 2015
Division of Epidemiology and Community Health, University of Minnesota, Minneapolis, MN

Academic Administrative appointments

Vice Chair for Translational Research July 1, 2023-Present
Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN

Program Director, Advanced Research and Diagnostics Laboratory October 2021-Present
Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN

Director, Division of Molecular Pathology and Genomics April 2017-Present
Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN

Clinical/Hospital /Appointments

Medical Director, Molecular Epidemiology and Biomarker Research Core Laboratory/Clinical Core October 2013-February 2020
University of Minnesota, Minneapolis, MN

Medical Director, UMGC/Clinical Genomics Core June 2012-September 2019
University of Minnesota, Minneapolis, MN

Medical Director, Molecular Diagnostics Laboratory June 2012-September 2018
Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Member: College of American Pathology 2013

Member: Association of Molecular Pathology	2008-Present
Member: Academy of Clinical and Laboratory Professionals	2008-Present
Member: American Association for Cancer Research	2008-Present
Member: Gerontology Society of America	2018-Present

HONORS AND AWARDS FOR RESEARCH WORK, TEACHING, PUBLIC ENGAGEMENT, AND SERVICE

1. Bittner Endowed Chair in Cancer Research October
2019- present
2. Advanced Training Award. College of American Pathology Foundation 2007
3. Paul J. Stranford Young Investigator Award. Academy of Clinical Laboratory Physicians and
Scientists 2006
4. Scholar - In - Training Award. American Association for Cancer Research 2004
5. Scholar - In - Training Award. American Association for Cancer Research 2003
6. Research Excellence in Molecular Epidemiology. Molecular Epidemiology Group, American
Association for Cancer Research 2003

RESEARCH AND SCHOLARSHIP

Grants and Contracts

CURRENT FUNDING (NON-COMMERICAL EXTERNAL SOURCES)

1. Coronary Artery Risk Development in Young Adults (CARDIA) Study - Central Biorepository Relocation

Project Number: 75N92023F00001 / 75N92023D00002
Name of PD/PI: Shikany, James
Role: Co-Investigator (PI of the Biorepository)
Source of Support: NIH
Primary Place of Performance: University of Alabama
Project/Proposal Start and End Date: 03/01/2024 – 06/30/2033
Total Award Amount: \$2,908,042
Person Months: 0.48 calendar months.

2. Hispanic Community Health Study - Study of Latinos (HCHS-SOL) Coordinating Center V4 Task A

Project Number: 5134002 / 75N92025D00001 / 75N92025F0
Name of PD/PI: Cai, Jianwen
Role: Co-Investigator
Source of Support: NIH / NHLBI
Primary Place of Performance: University of North Carolina – Chapel Hill
Project/Proposal Start and End Date: 11/30/2024 – 11/29/2032
Total Award Amount: \$3,284,396
Person Months: 0.30 calendar months.

3. Year 1: Hawaiian, Asian American and Pacific Islander (MOSAIC/HAAPI) Coordinating Center

Project Number: U24HL169645 / 0001169641
Name of PD/PI: Anderson, Garnet L. (contact) / Ghuen, Gary / Chan, Kwun / Floyd, James S. / Kaplan, Robert C.
Role: Co-Investigator (Subcontract/Central Laboratory PI)
Source of Support: NIH / NHLBI
Primary Place of Performance: Fred Hutchinson Cancer Center, Seattle, WA
Project/Proposal Start and End Date: 11/01/2023 – 07/31/2030
Total Award Amount: \$2,909,719
Person Months: 0.27 calendar months.

4. Health and Retirement Study; Yr35-40

Project Number: U01AG009740 / SUBK00020106
Name of PD/PI: Weir, David / Langa, Kenneth
Role: Co-Investigator (Central Laboratory PI)
Source of Support: NIH / NIA
Primary Place of Performance: University of Michigan
Project/Proposal Start and End Date: 05/15/2024 – 12/31/2029
Total Award Amount: \$24,889,008
Person Months: 1.80 calendar months.

5. Biomarkers of neurodegeneration in the US and India: A cross-national evaluation of the biological underpinning of AD/DRD

Project Number: RF1AG088003 / 2006640837
Name of PD/PI: Gross, Alden (contact) / Crimmins, Eileen
Role: Co-Investigator (subcontract PI)
Source of Support: NIH
Primary Place of Performance: John Hopkins University
Project/Proposal Start and End Date: 09/22/2024-08/31/2029
Total Award Amount: \$2,389,265
Person Months: 0.39 calendar months.

6. ARIC Neurocognitive Study (ARIC NCS) Renewal: 2023-2028

Project Number: U01HL096812
Name of PD/PI: Coresh, Joe (contact) / Lutsey, Pamela L.
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: NYU Grossman School of Medicine
Project/Proposal Start and End Date: 04/01/2024 – 03/31/2029
Total Award Amount: \$4,097,733
Person Months: 0.24 calendar months.

7. Asa-NHPI (MOSAIC) Coordinating Center Administrative Supplement

Project Number: 3U24HL169645-02S1 / 0001199752
Name of PD/PI: Anderson, Garnet
Role: Co-Investigator
Source of Support: NIH / NHLBI
Primary Place of Performance: Fred Hutchinson Cancer Center
Project/Proposal Start and End Date: 08/01/2024 – 07/31/2028
Total Award Amount: \$182,019

Person Months: Effort on main grant.

8. MOSAAIC Coordinating Center Administrative Supplement for PBMC and RNA PaxGene

Project Number:

Name of PD/PI: Anderson, Garnet

Role: Co-Investigator

Source of Support: NIH / NHLBI

Primary Place of Performance: Fred Hutchinson Cancer Center

Project/Proposal Start and End Date: 09/10/2024 – 07/31/2028

Total Award Amount: \$405,032

Person Months: Effort on main grant.

9. A Randomized Phase 2 study of iberdomide maintenance therapy following Idecaptogene Vicleucel in multiple myeloma patients

Project Number: U01CA180821 / A062102

Name of PD/PI: Linden, Michael

Role: Co-Investigator

Source of Support: NIH

Primary Place of Performance: Alliance for Clinical Trials in Oncology

Project/Proposal Start and End Date: 01/02/2025 – 01/01/2028

Total Award Amount: \$86,887

Person Months: 0.0 calendar months (testing aspect not started).

10. A phase I/II study of the safety, tolerability and efficacy of Belantamab mafodotin (GSK2857916) in combination with iberdomide (CC-220) / dexamethasone versus Belantamab mafodotin (GSK2857916)/dexamethasone in relapsed refractory multiple Myeloma

Project Number: A062101

Name of PD/PI: Linden, Michael

Role: Co-Investigator

Source of Support: Alliance for Clinical Trials in Oncology

Primary Place of Performance: University of Minnesota

Project/Proposal Start and End Date: 01/01/2025 – 12/31/2027

Total Award Amount: \$99,650

Person Months: 0.0 calendar months (testing aspect not started).

11. Biological Aging Clock: A Tool to Differentiate Cognitive Aging Trajectories

Project Number:

Name of PD/PI: Sedaghat, Sanaz

Role: Co-Investigator

Source of Support: American Federation for Aging Research

Primary Place of Performance: University of Minnesota

Project/Proposal Start and End Date: 10/01/2024 – 09/30/2027

Total Award Amount: \$722,592

Person Months: 0.12 calendar months.

12. The 10,000 Families Cohort: a new study to understand the environmental causes of cancer

Project Number: 4UH3CA265791-03

Name of PD/PI: Poynter, Jen / Nelson, Heather

Role: Co-Investigator
Source of Support: NIH / NCI
Primary Place of Performance: University of Minnesota
Project/Proposal Start and End Date: 09/01/2023 – 08/31/2027
Total Award Amount: \$2,680,175
Person Months: Effort complete as of 8/31/2023.

13. Education and Cognitive Functioning in Late Life: The Nation's High School Class of 1972

Project Number: 1R01AG078533-01 / UTAUS-SUB00000774
Name of PD/PI: Warren, John R.
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: The University of Texas at Austin
Project/Proposal Start and End Date: 09/30/2022 – 07/31/2027
Total Award Amount: \$8,638,653
Person Months: 0.90 calendar months.

14. Analysis of Whole Genome Sequence and Hemostasis Phenotypes

Project Number: 2 R01 HL139553-04A1
Name of PD/PI: Morrison, Alanna
Role: Co-Investigator
Source of Support: NIH / NHLBI
Primary Place of Performance: University of Texas Health Science Center at Houston
Project/Proposal Start and End Date: 07/01/2023 – 06/30/2027
Total Award Amount: \$999,644
Person Months: 0.90 calendar months.

15. University of MN Building Interdisciplinary Research Careers in Women's Health

Project Number: 8K12AR084223-18/3K12AR084223-18S1
Name of PD/PI: Berge, Jerica / Allen, Sharon / Thyagarajan, Bharat
Source of Support: NIH / NIAMS
Primary Place of Performance: University of Minnesota
Project/Proposal Start and End Date: 08/01/2023 – 04/30/2027 (Renewal)
Total Award Amount: \$2,770,327
Person Months: 0.69 calendar months

16. Study of Latinos – Investigation of Neurocognitive Aging – Alzheimer's Disease (SOL INCA-AD)

Project Number: 1R01AG075758 / KR 705393 Amd 1
Name of PD/PI: Gonzalez, Hector
Role: Co-Investigator
Source of Support: NIH-NIA
Primary Place of Performance: University of California – San Diego
Project/Proposal Start and End Date: 05/15/2022 – 01/31/2027
Total Award Amount: \$5,147,012
Person Months: 0.90 calendar months

17. Understanding Pathways between Intimate Partner Violence and HIV Risk for Men

Project Number: SUBK00017511/PO# 3007147470 Amd 1/ R01NR020310
Name of PD/PI: Khale, Erin / Stephenson, Rob

Role: Co-Investigator
Source of Support: NIH / NINR
Primary Place of Performance: University of Michigan
Project/Proposal Start and End Date: 07/19/2022 – 06/30/2026
Total Award Amount: \$461,024
Person Months: 0.45 calendar months

18. Associations between Inflammation and Metabolic Functioning on Daily Cognitive Functioning and Emotional Wellbeing among Latinx Midlife Adults / Center on Aging and Population Sciences

Project Number: UTAUS-SUB00001715 / 5P30AG066614-05
Name of PD/PI: Farnia, Mateo
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: University of Texas
Project/Proposal Start and End Date: 07/01/2024 – 06/30/2026
Total Award Amount: \$23,485
Person Months: 0.12 calendar months

19. Patterns of Cardiopulmonary health across the life course

Project Number: R01HL159250 / 60059672 MIN / A02
Name of PD/PI: Khan, Sadiya
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: Northwestern University
Project/Proposal Start and End Date: 09/01/2021 – 05/31/2026
Total Award Amount: \$76,909
Person Months: 0.36 calendar months. (grant paused until 8/31/25)

20. Asian Americans and Racism: Individual and Structural Experiences (ARISE)

Project Number: 1R56AG079510-01A1 / 15042sc
Name of PD/PI: Park, Van Ta
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: University of California San Francisco
Project/Proposal Start and End Date: 09/01/2023 – 08/31/2025
Total Award Amount: \$163,642
Person Months: 0.44 calendar months.

21. Social Circumstances and Epigenomics Promoting Health in Three Countries

Project Number: R01AG068937 / 142229081 Amd 3
Name of PD/PI: Crimmins, Eileen
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: University of Southern California
Project/Proposal Start and End Date: 09/01/2020 – 04/30/2026
Total Award Amount: \$1,127,773
Person Months: 0.42 calendar months.

22. Long Life Family Study

Project Number: WU-23-0549 / PO ST00014664 / 1U19AG063893-01

Name of PD/PI: Province, Michael (contact) / Newman, Anne / Zumda, Joseph / Perls, Tom / Lee, Joseph / Cosentino, Stephanie / Province, Kaare Christensen / Thyagarajan, Bharat
Source of Support: NIH / NIA
Primary Place of Performance: Washington University in St. Louis
Project/Proposal Start and End Date: 08/15/2019 – 03/31/2026
Total Award Amount: \$4,120,692
Person Months: 0.14 calendar months.

23. Long Life Family Study – Bioethics supplement

Project Number: 5U19AG063893-05 / WU-24-0338 / PO ST00018439
Name of PD/PI: Province, Michael / Thyagarajan, Bharat
Source of Support: NIH-NIA
Primary Place of Performance: Washington University in St. Louis
Project/Proposal Start and End Date: 04/01/2022 – 03/31/2026
Total Award Amount: \$154,405
Person Months: Effort on main grant.

24. The Study of Women's Health Across the Nation (SWAN): The Impact of Midlife and the Menopause Transition on Health and Functioning in Early Old Age

Project Number: 3U19AG063720-04S2 / AWD00003000 (139916-1)
Name of PD/PI: Brooks, Maria Mori
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: University of Pittsburgh
Project/Proposal Start and End Date: 08/01/2024 – 02/28/2026
Total Award Amount: \$86,211
Person Months: 0.0 calendar months. (No effort during NCE)

25. Biological Aging Across the Life Course: Harmonizing Cohort Biospecimen Archives

Project Number: R01AG071071 / SUBK00013030 / PO 3006512148
Name of PD/PI: Colter, Mitchell
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: University of Michigan
Project/Proposal Start and End Date: 03/15/2021 – 02/28/2026
Total Award Amount: \$653,444
Person Months: 0.24 calendar months

26. Educational and Early Life Predictors of Mild Cognitive Impairment: New Evidence about Mediators and Moderators from High School & Beyond

Project Number: 5U01AG058719-05
Name of PD/PI: Dr. John R Warren
Role: Co-Investigator
Source of Support: NIH / NIA
Primary Place of Performance: University of Minnesota
Project/Proposal Start and End Date: 03/01/2021 – 02/28/2026
Total Award Amount: \$29,051,718
Person Months: 0.0 calendar months. (No effort in NCE)

27. Long Term effects on Brain Health in the Aging and Cognitive Health Evaluation in Elders

Project Number: R01AG07651
Name of PD/PI: Thyagarajan, Bharat (Site PI)
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: John Hopkins University
Project/Proposal Start and End Date: 11/01/2024 – 10/31/2025
Total Award Amount: \$98,575
Person Months: 0.07 calendar months.

28. Proteomic aging in adults before and after cancer diagnosis

Project Number: 1R01CA267977-01A1
Name of PD/PI: Prizment, Anna
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: University of Minnesota
Project/Proposal Start and End Date: 08/01/2022 – 07/31/2025
Total Award Amount: \$1,161,908
Person Months: 0.60 calendar months.

CURRENT FUNDING (INDUSTRY SOURCES):

None

PAST FUNDING (NON-COMMERICAL EXTERNAL SOURCES)

1. Hispanic Community Health Study – Study of Latinos (HCHS-SOL) V3 Task Area B Period 2

Project Number: 75N92020F0077 / 5124102 Amd 8
Name of PD/PI: Cai, Jianwen
Role: Co-Investigator
Source of Support: NIH / NHLBI
Primary Place of Performance: The University of North Carolina at Chapel Hill
Project/Proposal Start and End Date: 01/15/2020 – 03/31/2025
Total Award Amount: \$1,818,491
Person Months: 1.00 calendar months.

2. Biomarkers of Tobacco Use and Genetics of Smoking among Hispanics/Latinos

Project Number: 75N92023P00378 / 5129991
Name of PD/PI: Cai, Jianwen
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: The University of North Carolina at Chapel Hill
Project/Proposal Start and End Date: 09/28/2023 – 03/27/2025
Total Award Amount: \$29,180
Person Months: Effort on main grant.

3. Social Circumstances and Epigenomics Promoting Health in Three Countries

Project Number: R01AG068937 / 142229081 Amd 3
Name of PD/PI: Crimmins, Eileen

Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: University of Southern California
Project/Proposal Start and End Date: 09/01/2020 – 04/30/2025
Total Award Amount: \$945,287
Person Months: 0.42 calendar months.

4. Harmonized Diagnostic Assessment of Dementia for the Longitudinal Aging Study in India (LASI-DAD): Epigenomic Assays

Project Number: 3R01AG051125-08S1
Name of PD/PI: Lee, Jinkook
Role: Co-Investigator
Source of Support: NIH / NIA
Primary Place of Performance: University of Southern California
Project/Proposal Start and End Date: 09/30/2023 – 04/30/2025
Total Award Amount: \$13,425
Person Months: Effort ended, in NCE.

5. Role: Co-Investigator

Name of PI: Lisa Peterson
Grant Number: 5U2CES026533
External Granting Agency: NIH / NIEHS
Grant Title: Minnesota HHEAR Targeted Analysis Laboratory
Project Dates: 09/08/2019 – 03/31/2025
Total Costs: \$8,639,342
Effort: 0.26 calendar months

6. Transitions from Impaired Respiratory Health to Lung Disease

Project Number: R01HL122477-06A1 / 60055357 UM A04
Name of PD/PI: Kalhan, Ravi
Role: Co-Investigator
Source of Support: NIH
Primary Place of Performance: Northwestern University
Project/Proposal Start and End Date: 01/01/2020 – 06/30/2025
Total Award Amount: \$2,310,408
Person Months: 0.45 calendar months.

7. Biological Underpinnings of Socioeconomic Differentials in Health and Mortality

Name of PI: Eileen Crimmins
Role: Co-Investigator and Subcontract PI
Grant Number: R01AG060110
External Granting Agency: NIA
Project Dates: 09/01/2018 – 06/30/2025
Total Costs: \$653,932
Effort: 0.75 calendar months

8. Long Life Family Study – COVID supplement

Project Number: 5U19AG063893-05 / WU-24-0325 / PO ST00018311
Name of PD/PI: Province, Michael / Thyagarajan, Bharat
Source of Support: NIH / NIA
Primary Place of Performance: Washington University in St. Louis

Project/Proposal Start and End Date: 09/10/2021 – 03/31/2025
Total Award Amount: \$509,767
Person Months: Effort on main grant.

9. Educational and Early Life Predictors of Mild Cognitive Impairment: New Evidence about Mediators and Moderators from High School & Beyond

Name of PI: John R Warren
Role: Co-Investigator and Subcontract PI
Grant Number: 5U01AG058719
External Granting Agency: NIH / NIA
Project Dates: 03/01/2021 – 02/28/2025
Total Costs: \$29,051,718
Effort: 0.60 calendar months

10. Characterization of Sedentary Patterns and Cardiovascular Disease Risk Markers in Hispanics/Latinos

Name of PI: Jordan Carlson
Role: Co-Investigator and Subcontract PI
Grant Number: R01HL148463
External Granting Agency: NIH - NHLBI
Project Dates: 07/17/2019 – 06/30/2024
Total Costs: \$43,936
Effort: 0.12 calendar months

11. Leidos Biomedical RFP #S20-119 Option Period 3

Name of PI: Amy Karger / Stefani Thomas / Bharat Thyagarajan
Role: Multi PI
Grant Number: 75N91019D00024
External Granting Agency: NIH / NCI
Project Dates: 10/01/2020 – 03/31/2024
Total Costs: \$3,629,333
Effort: 1.20 calendar months

12. Role: Co-Investigator and Subcontract PI

Name of PI: Douglas Yee
Grant Number: 3P30CA077598
External Granting Agency: NIH / NCI
Grant Title: SeroNet Pooling Project of Immunocompromised Populations
Project Dates: 02/01/2022 – 03/31/2024
Total Costs: \$60,419
Effort: Effort on main grant.

13. Health and Retirement Study: Years 29-34

Name of PI: David Weir
Role: Co-Investigator and Subcontract PI
Grant Number: 3004822520 / U01AG009740
External Granting Agency: NIH / NIA
Project Dates: 01/01/2018 – 02/29/2024
Total Costs: \$8,412,105
Effort: 1.80 calendar months

14. Health and Retirement Study: Harmonized Cognitive Assessment Protocol HCAP

Name of PI: Kenneth Langa
Role: Co-Investigator and Subcontract PI
Grant Number: SUBK00013555 / Amd 03, PO 3007329597/ 3U01AG058499
External Granting Agency: NIH
Project Dates: 09/15/2020 – 02/29/2024
Total Costs: \$1,117,560
Effort: 0.12 calendar months

15. Inflammatory Mediators of Cardiometabolic Risk in Latinos

Name of PI: Christy Avery
Role: Co-Investigator and Subcontract PI
Grant Number: R01HL147853
External Granting Agency: NIH
Project Dates: 01/01/2020 – 12/31/2023
Total Costs: \$99,450
Effort: 0.84 calendar months

16. Expanding the measurement of blood biomarkers of neurodegeneration in the Health and Retirement Study

Name of PI: Kenneth Langa
Role: Co-Investigator and Subcontract PI
Grant Number: 18PAF01312 / SUBK00018903 Amd 2/ PO# 3007383006
External Granting Agency: Alzheimer's Association
Project Dates: 06/01/2022 – 12/31/2023
Total Costs: \$437,043
Effort: Effort on main grant.

17. PASOS: Peripheral Artery Disease Study of SOL; Period 2 An Ancillary Study of the Hispanic Community Health Study/Study of Latinos (HCHS/SOL)

Name of PI: Robert Kaplan / Kuni Matsushita
Role: Co-Investigator and Subcontract PI
Grant Number: R01HL146132
External Granting Agency: Albert Einstein College of Medicine
Project Dates: 08/01/2020 – 07/31/2023
Total Costs: \$69,925
Effort: 0.24 calendar months.

18. Study of Latinos – Investigation of Neurocognitive Aging 2 (SOL INCA2)

Name of PI: Hector Gonzalez
Role: Co-Investigator and Subcontract PI
Grant Number: R56AG048642
External Granting Agency: NIH / NIA
Project Dates: 05/01/2020 – 04/30/2023
Total Costs: \$3,140,692
Effort: 0.90 calendar months.

19. Physical Activity and Preservation of Cognitive Function – Additional funds from parent grant

Name of PI: Priya Palta
Role: Co-Investigator and Subcontract PI

Grant Number: R00AG052830
External Granting Agency: NIH
Project Dates: 05/01/2021 – 04/30/2023
Total Costs: \$256,849
Effort: 0.07 calendar months.

**20. Amendment to Hispanic Community Health Study – Study of Latinos (HCHS-SOL)
Coordinating Center – Visit 3 Basic Examination (Supplement)**

Name of PI: Jianwen Cai
Role: Co-Investigator and Subcontract PI
Grant Number: 75N92020F00077
External Granting Agency: NIH / HCLBI
Project Dates: 03/15/2022 – 04/30/2023
Total Costs: \$451,363
Effort: Effort on main grant.

21. Physical Activity and Preservation of Cognitive Function

Name of PI: Priya Palta
Role: Co-Investigator and Subcontract PI
Grant Number: 3R00AG052830
External Granting Agency: NIH
Project Dates: 03/15/2021 – 04/30/2023
Total Costs: \$352,839
Effort: 0.15 calendar months.

22. The ARIC-PET Amyloid Imaging Study

Name of PI: Joe Coresh
Role: Co-Investigator and Subcontract PI
Grant Number: R01AG040282
External Granting Agency: NIH / NIA
Project Dates: 05/01/2022 – 04/30/2023
Total Costs: \$126,969
Effort: 0.10 calendar months.

**23. Physical Activity and Preservation of Cognitive Function (Administrative
Supplement)**

Name of PI: Priya Palta
Role: Co-Investigator and Subcontract PI
Grant Number: 3R00AG052830 / GG0115814-02
External Granting Agency: NIH
Project Dates: 05/01/2021 – 04/30/2023
Total Costs: \$248,728
Effort: 0.12 calendar months.

**24. Biological Aging Across the Life Course: Harmonizing Cohort Biospecimen
Archives**

Name of PI: Mitchell Colter
Role: Co-Investigator and Subcontract PI
Grant Number: R01AG071071 / SUBK00013030
External Granting Agency: NIH

Project Dates: 03/15/2021 – 02/28/2023
Total Costs: \$1,100,194
Effort: 0.22 calendar months.

25. Cardiovascular Health of Sexual and Gender Minorities in the Hispanic Community Health Study/Study of Latinos (SGM HCHS/SOL)

Name of PI: Krista Perreira / Tonia Poteat
Role: Co-Investigator and Subcontract PI
Grant Number: R01HL14778
External Granting Agency: NIH / NHLBI
Project Dates: 03/01/2020 – 02/28/2023
Total Costs: \$24,583
Effort: 0.24 calendar months

26. University of MN Building Interdisciplinary Research Careers in Women's Health Role: Co-Investigator and Co-Research Director

Name of PI: Jerrica Berge / Sharon Allen / Bharat Thyagarajan
Grant Number: K12HD055887
External Granting Agency: NIH
Project Dates: 06/15/2022 – 07/31/2023
Total Costs: \$3,239,995
Effort: 0.60 calendar months

27. Coronary Artery Risk Development in Young Adults (CARDIA) Coordinating Center

Name of PI: James Shikany
Role: Co-Investigator and Subcontract PI
Grant Number: 75N92020F00001
External Granting Agency: NIH
Project Dates: 11/14/2019 – 02/28/2023
Total Costs: \$288,593
Effort: 0.45 calendar months.

28. Hispanic Community Health Study – Study of Latinos (HCHS-SOL) V3 TASK AREA B

Name of PI: Jianwen Cai
Role: Co-Investigator and Subcontract PI
Grant Number: 5113833 / 75N92019D00010
External Granting Agency: National Heart Lung and Blood Institute
Project Dates: 05/31/2019 – 11/03/2022
Total Costs: \$938,042
Direct Costs Per Year: \$30,547
Effort: 1.20 calendar months

29. The High School and Beyond Pilot

Name of PI: John Warren
Role: Co-Investigator
External Granting Agency: Alzheimer's Association
Project Dates: 01/01/2020 – 01/01/2021
Total Costs: \$153,880
Direct Costs Per Year: \$153,880
Effort: 1.20 calendar months

30. Pilot Study of Daily Exemestane in Women with Complex Atypical Hyperplasia of the Endometrium / Endometrial Intraepithelial Neoplasia or Grade 1 Endometrial Cancer

Name of PI: Britt Erickson
Role: Co-Investigator
External Granting Agency: National Cancer Institute
Project Dates: 01/01/2017 – 12/31/2020
Effort: No salary support

31. Molecular Epidemiology of Aortic Diameter and Subclinical Cardiovascular Disease

Name of PI: Allison Kuippers
Role: Co-Investigator and Subcontract PI
Grant Number: CNVA0062045 (131810-2)
External Granting Agency: NIH / NHLBI
Project Dates: 08/01/2019 – 07/31/2020
Total Cost: \$59,384
Direct Costs Per Year: \$38,561
Effort: 0.12 calendar months

32. Persistent Organic Pollutants, Endogenous Hormones and Diabetes in Latinos

Name of PI: Victoria Perksy
Role: Co-Investigator and Subcontract PI
Grant Number: 1R01ES025159-01
External Granting Agency: NIH
Project Dates: 6/1/2016 – 5/31/2020
Total Costs: \$315,394
Direct Costs Per Year: \$104,951
Effort: 0.60 calendar months

33. Lung Function Decline and Disease Risk from Young Adulthood to Middle Age

Name of PI: Ravi Kalhan
Role: Co-Investigator and Field Center PI
Grant Number: R01HL122477
External Granting Agency: National Heart Lung Blood Institute
Project Dates: 08/01/2014 – 07/31/2019
Total Cost: \$590,384
Effort: 0.60 calendar months

34. Genetic Epidemiology of Hematopoietic Cell Transplant Outcomes

Name of PI: Michael Verneris
Role: Co-Investigator
Grant Number: 5R01CA196754-03
External Granting Agency: National Cancer Institute
Project Dates: 07/01/2015 – 06/30/2019
Total Cost: \$47,073
Effort: 0.60 calendar months

35. Long Life Family Study

Name of PI: Michael Province
Role: Co-Investigator and Subcontract PI
Grant Number: 5U01AG023746
External Granting Agency: National Institute on Aging

Project Dates: 06/01/2014 - 05/31/2019
Total Cost: \$1,389,283
Direct Cost Per Year: \$167,758
Effort: 1.20 calendar months

36. Hispanic Community Health Study – Study of Latinos (HCHS-SOL V2)

Name of PI: Jianwen Cai
Role: Co-Investigator
Grant Number: HHSN268201300001I
External Granting Agency: National Heart Lung Blood Institute
Project Dates: 03/01/2014 – 03/31/2019
Total Cost: \$4,020,935
Effort: 2.20 calendar months

37. Nutrition and Physical Activity Assessment Study (NPAAS)

Name of PI: Marian Neuhouser
Role: Co-Investigator and Subcontract PI
Grant Number: 5R01CA119171
External Granting Agency: National Institutes of Health
Project Dates: 01/01/2018 – 12/31/2018
Total Costs: \$8,716
F. Hutchinson Cancer Research Ctr (NIH Prime)
The goal of this project is to measure Vitamin B12 and Folate in the Women's Health Initiative
Effort: 0.12 calendar months

38. Health and Retirement Study Yrs 23-28 Venous Blood

Name of PI: David Weir
Role: Co-Investigator and Subcontract PI
Grant Number: U01AG00974
External Granting Agency: National Institute of Aging
Project Dates: 01/01/2015 – 12/31/2018
Total Costs: \$9,793,998
Effort: 2.40 calendar months

39. CARDIA Central Laboratory

Name of PI: Beth Lewis
Role: Co-Investigator
Grant Number: HHSN268201300025C
External Granting Agency: National Heart Lung Blood Institute
Project Dates: 07/01/2013 – 06/30/2018
Total Cost: \$130,873
Effort: 0.10 calendar months

40. Evaluation of H. Pylori infection as a risk factor for Asthma in the Hispanic Community Health study

Name of PI: Maria Constanza Carmago
Role: Co-investigator and Subcontract PI
External Granting Agency: National Cancer Institute
Project Dates: 01/01/2017 – 12/31/2017
Total Costs: \$149,750
Effort: 0.12 calendar months

41. Health and Retirement Study Yrs 23-28: Harmonized Cognitive Assessment Protocol (HCAP)

Name of PI: David Weir
Role: Co-Investigator and Subcontract PI
Grant Number: U01AG00974
External Granting Agency: National Institute on Aging
Project Dates: 01/01/2015 – 12/31/2017
Total Cost: \$468,803
Effort: 1.20 calendar months

42. An Integrated Study of Mitochondrial Pathways in Colorectal Cancer

Role: Multiple PI (Gross/Thyagarajan)
Grant Number: 1R01CA172555-01A1
External Granting Agency: National Cancer Institute
Project Dates: 08/01/2013 – 07/31/2017
Total Cost: \$1,998,933
Effort: 0.12 calendar months

43. Mentored Patient-Oriented Research in Mineral Metabolism

Name of PI: Mehta/Wolf
Role: Co-Investigator
Grant Number: K24DK093723
External Granting Agency: National Institute of Diabetes and Digestive and Kidney Diseases
Project Dates: 07/01/2012 – 06/30/2017
Total Cost: \$12,759
Effort: 0.12 calendar months

44. NHANES Lipid Laboratory

Name of PI: John Eckfeldt
Role: Co-Investigator
Grant Number: 200-2011-38342
External Granting Agency: Centers for Disease Control and Prevention
Project Dates: 01/01/2011 – 12/31/2014
Direct costs: \$493,510
Effort: 0.60 calendar months

45. Mitochondria as a novel biomarker of colorectal adenoma.

Name of PI: Bharat Thyagarajan
Grant Number: 1R03CA167701-02
External Granting Agency: National Cancer Institute
Project Dates: 07/01/2012 – 06/30/2014
Total costs: \$97,000
Effort: 0.60 calendar months

46. Long Life Family Study Central Laboratory

Name of PI: Michael Province/John Eckfeldt
Role: Co-Investigator
Grant Number: 5U01AG023746-06
External Granting Agency: National Institute of Aging
Project Dates: 08/15/2010 – 5/31/2014

Total Cost: \$3,086,555
Effort: 0.60 calendar months

47. SOLNAS Central Laboratory

Name of PI: Mossavar Al-Rahmani
Role: Co-Investigator
External Granting Agency: National Heart Lung and Blood Institute
Project Dates: 12/01/2009 – 03/31/2014
Total cost: \$77,023
Effort: 0.24 calendar months

48. Role of mitochondria in determining breast cancer susceptibility

Training Grant PI: Nancy Raymond
Role: PI (K12 training grant)
External Granting Agency: National Institute of Child Health and Human Development
Project Dates: 12/01/2010 – 12/31/2013
Total Cost: \$75,000
Effort: 9.00 calendar months

49. Hispanic Community Health Study – Central Laboratory

Name of PI: Jianwen Cai
Role: Co-Investigator and Subcontract PI
Grant Number: HHSN268200625233C
External Granting Agency: National Heart Lung and Blood Institute
Project Dates: 06/01/2006 – 05/31/2013
Total costs: \$4,789,289
Effort: 1.56 calendar months

50. Genetic Epidemiology of Causal Variants Across the Life Course (CALiCO Consortium)

Name of PI: Gerardo Heiss
Role: Co-Investigator
Grant Number: 5 U01 HG004803-04
External Granting Agency: National Human Genome Research Institute
Project Date: 06/01/2010 – 05/31/2013
Total Costs: \$371,216
Effort: 0.12 calendar months

51. Genetic Variation in Vitamin D Metabolism and BMT Outcomes

Name of PI: Kim Robien
Role: Co-Investigator
Grant Number: 5 R21 CA 135180-02
External Granting Agency: National Cancer Institute
Project Dates: 09/01/2008 – 08/31/2010
Total costs: \$224,996
Effort: 1.20 calendar months

52. Identification and Development of Genetic Polymorphisms as Biomarkers of Graft versus-Host Disease

Name of PI: Mukta Arora

Role: Co-Investigator
Grant Number: 5R21-AI079354-02
External Granting Agency: National Institutes of Allergy and Infectious Diseases
Project Date: 07/01/2008 - 06/30/2010
Total Costs: \$274,240
Effort: 0.24 calendar months

PAST FUNDING (INDUSTRY SOURCES)

1. Chromacode Alpha Study #697535

Role: PI
External Granting Agency: CHROMACODE, INC
Project Number: 697535
Project Dates: 08/01/2022 - 07/31/2024
Total Costs: \$56,095
Effort: 0.60 calendar months

2. AsthmaID Protocol #0001 (PEAK)

Name of PI: Andrew Nelson
Role: Co-Investigator
External Granting Agency: Peak Diagnostics Partners LLC
Project Number: Asthma ID Protocol #0001
Project Dates: 07/01/2022 – 06/30/2024
Total Costs: \$336,917
Effort: No salary support

3. The Relation of Lipids, Apolipoproteins and Lp(a) with Risk of Atherosclerotic Cardiovascular Disease in US Hispanics/Latinos

Name of PI: Carol Rodriguez
Role: Co-Investigator
External Granting Agency: Make Well Known Foundation
Project Dates: 04/2020 – 03/2021
Total Costs: \$127,643
Effort: 0.09 calendar months.

4. Phase II Trial of Neoadjuvant Nivolumab with Cisplatin and Gemcitabine in Muscle-Invasive Bladder Cancer (MIBC) Patients undergoing Radical Cystectomy

Name of PI: Shilpa Gupta/ Badri Konety
Role: Co-Investigator
External Granting Agency: Bristol Meyers Squibb
Project Dates: 07/01/2017 – 06/30/2020
Effort: No salary support

5. Bioinformatics support for next generation sequencing

Role: PI
External Funding Agency: Genome Quest Lab Grant Program
Project Dates: 01/01/2012 – 12/31/2012
Total costs: \$10,000
Effort: no salary support.

6. Pilot study to identify large number of donors in samples obtained from patients undergoing umbilical cord blood transplant.

Role: PI

External Funding Agency: Cellerant Inc.

Project Dates: 04/01/2009 – 010/31/2009

Total Costs: \$8,000

Effort: No salary support

PAST FUNDING (UNIVERSITY SOURCES)

1. Ten Thousand Families Study

Name of PI: Nelson Spector

Role: Multiple PI

Grant Number: n/a

External Granting Agency: University of Minnesota Masonic Cancer Center

Grant Title:

Project Dates: 09/2018 – 08/2021

Total Costs: \$1,000,000

Effort: 0.90 calendar months

2. Exosome based biomarkers for Prostate Cancer

Name of PI: Arpit Rao

Role: Co-Investigator

Granting Agency: Shaver Cancer Fund, Masonic Cancer Center

Project Dates: 01/01/2019 – 12/31/2020 (No salary support)

Total Costs: \$80,000

Direct Costs Per Year: \$40,000

Effort: No salary support

3. Ten Thousand Families Study

Name of Contact PI: Logan Spector

Role: Multiple-PI

Granting Agency: Masonic Cancer Center

Project Dates: 09/01/2018 – 08/31/2020

Total Costs: \$1,000,000

Direct Costs Per Year: \$500,000

Project Dates: 1.20 calendar months

4. Clinical validation of Metagenomics sequencing in cerebrospinal fluid

Name of PI: Sophie Arbefiville/Evann Hilt/Patricia Ferrieri

Role: Co-Investigator

Granting Agency: Department of Laboratory Medicine and Pathology

Project Dates: 07/01/2017 – 06/30/2020

Total Costs: \$150,000

Direct Costs Per Year: \$75,000

Effort: No salary support

5. Clinical validation of digital droplet PCR for identification of minimal residual diseases in acute lymphoblastic leukemia

Name of PI: Pawel Mroz

Role: Co-Investigator

Granting Agency: Department of Laboratory Medicine and Pathology
Project Dates: 07/01/2018 – 06/30/2020
Total Costs: \$150,000
Direct Costs Per Year: \$75,000
Effort: No salary support

6. Genetic Epidemiology of Hematopoietic Cell Transplant Outcomes

Name of PI: Michael Verneris / Logan Spector
Role: Co-Investigator
Grant Number: 5R01CA196754
External Granting Agency: NIH
Project Dates: 07/2015 – 06/2019
Total Costs: \$294,970
Effort: 0.60 calendar months

7. Psychosocial Stress, Resilience, and Premature Aging

Name of Contact PI: Tetyana Shippee
Role: Multiple PI
Granting Agency: Internal AHC Support
Project Dates: 03/12/2018 – 03/30/2019
Total Costs: \$21,260
Effort: 0.60 calendar months

8. VIP-Hmong Study: Pharmacogenetics in the Hmong population

Name of Contact PI: Robert Straka
Role: Co-Investigator
Granting Agency: Office of Vice President of Research
Project Dates: 06/01/2016 – 05/31/2018
Total costs: \$100,000
Effort: no salary support

9. Pediatric Cutaneous Mastocytosis: Gene Discovery and a Path to Developing a Center of Excellence

Name of PI: Maguiness/Turcot
Role: Co-Investigator
Granting Agency: Department of Pediatrics
Project Dates: 12/31/2015 – 12/31/2017
Total Costs: \$200,000
Effort: No salary support

10. Next generation sequencing for specific diagnosis in 46,XY Disorders of Sex Development

Name of PI: Kiki Sarafagalou
Role: Co-investigator
Granting Agency: Academic Health Center University of Minnesota
Project Dates: 06/01/2013 – 5/30/2015
Total costs: \$25,000
Effort: no salary support

11. Methylation based biomarkers for early detection of breast cancer.

Role: PI

Granting Agency: Masonic Cancer Center
Project Dates: 02/01/2014 – 01/31/2015
Total Costs: \$25,000
Effort: No salary support

12. Development of state-of-art- screening technology for early detection of oral cancer.

Name of PI: Heather Nelson
Role: Co-Investigator
Granting Agency: Shaver Head and Neck Cancer Fund, Masonic Cancer Center
Project Dates: 02/01/2014 – 01/31/2015
Total costs: \$28,000
Effort: No salary support

13. Clinical application of NGS technology for diagnosis of ataxias

Role: PI
Granting Agency: Bob Allison Ataxia Research Center-Minnesota Medical Foundation
Project Dates: 07/01/2012 – 06/30/2014
Total costs: \$100,000
Effort: no salary support

14. Development of next generation sequencing technology for clinical applications

Role: PI
Granting Agency: Institute of Translational Neuroscience-University of Minnesota
Project Dates: 07/01/2010 – 06/30/2012
Total costs: \$80,000
Effort: no salary support

15. DNA repair polymorphisms: Implications for autologous transplant outcomes

Role: PI
Granting Agency: American Cancer Society Institutional Research Grant
Project Dates: 01/01/2010 – 12/31/2010
Total costs: \$30,000
Effort: no salary support

16. Measurement of UV induced apoptosis in epidemiological studies and its possible role in breast cancer susceptibility

Role: PI
Granting Agency: Minnesota Medical Foundation
Project Dates: 08/01/2008 – 07/31/2010
Total Costs: \$15,000
Effort: no salary support

17. Reliable Biomarkers for Prediction of Transplant-Related Mortality

Role: Co-investigator
Name of PI: Vladimir Cherkassky
Granting Agency: Biomedical Informatics and Computational Biology
Grant Title:
Project Dates: 07/01/2008 – 06/30/2010
Total costs: \$10,000
Effort: no salary support

18. Endothelial Microparticles: A Novel Non-Invasive Biomarker of Antibody-Mediated Kidney Transplant Rejection

Name of PI: Behzad Najafian
Granting Agency: AHC Faculty Seed Grant
Project Dates: 07/01/2009 - 06/30/2010
Total Costs: \$25,000
Effort: no salary support

19. Pancreatic cancer risk: association with 1) Meat-derived carcinogen intake (HCAs and BaP) & 2) Nucleotide excision repair (NER) (DNA repair)

Name of PI: Kristin Anderson
Role: Co-investigator
Granting Agency: Masonic Cancer Center, University of Minnesota
Project Dates: 06/01/2007 – 05/31/2008
Total Costs: \$30,000
Effort: no salary support

PUBLICATIONS

Peer-Reviewed Publications

1. Wang S, Lenzini P, **Thyagarajan B**, Lee JH, Vardarajan BN, Yashin A, Miljkovic I, Daw EW, Lin SJ, Patti GJ, Brent MR, Zmuda JM, Perls TT, Christensen K, Province MA, An P. Evidence of a novel gene locus *ARHGAP44* for longitudinal change in hemoglobin A1c levels among subjects without diabetes from the Long Life Family Study. *Physiol Genomics*. 2025 May 1;57(5):293-298. Epub 2025 Feb 28. PMID: 40019798; PMCID: PMC12182963.
2. Batalha MA, LeCroy MN, Lin J, Peters BA, Qi Q, Wang Z, Wang T, Gallo LC, Talavera GA, McClain AC, **Thyagarajan B**, Daviglius ML, Hou L, Llabre M, Cai J, Kaplan RC, Isasi CR. Life-course socioeconomic position and the gut microbiome in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *Gut Microbes*. 2025 Dec;17(1):2479772. Epub 2025 Mar 18. PMID: 40102030.
3. Alvarez CS, Camargo MC, Avilés-Santa ML, Garcia-Bedoya O, Pattany MS, **Thyagarajan B**, Graubard BI, McGlynn KA. Improving outcomes in MASLD: the role of *Helicobacter pylori* eradication and lifestyle interventions-author's response to Zhang. *Lancet Reg Health Am*. 2025 Apr 2;45:101080. PMID: 40235552.
4. Alvarez CS, Kaplan RC, Camargo MC, Avilés-Santa ML, Daviglius M, Garcia-Bedoya O, Isasi CR, Pattany MS, **Thyagarajan B**, Talavera GA, Graubard BI, McGlynn KA. Associations of *Helicobacter pylori* with metabolic dysfunction-associated steatotic liver disease and related conditions: cross-sectional results from the Hispanic Community Health Study/Study of Latinos. *Lancet Reg Health Am*. 2024 Nov 30;41:100953. PMID: 40321654.
5. Klopack ET, Farina MP, **Thyagarajan B**, Faul JD, Crimmins EM. How much can biomarkers explain sociodemographic inequalities in cognitive dysfunction and cognitive impairment? Results from a machine learning model in the Health and Retirement Study. *J Alzheimers Dis*. 2025 Jul;106(1):54-68. Epub 2025 May 5. PMID: 40325957.
6. Shrestha S, Zhu X, Griswold ME, Palta P, Sullivan KJ, Chen H, Schneider ALC, Moghekar A, Grove ML, **Thyagarajan B**, Pike JR, Gottesman RF, Windham BG, Mosley TH Jr, Deal JA, Kamath V. Olfaction and Plasma Biomarkers of Alzheimer Disease and Neurodegeneration in the Atherosclerosis Risk in Communities Study. *Neurology*. 2025 Jun 10;104(11):e213706. Epub 2025 May 15. PMID: 40373252.

7. Iacono L, Filigrana P, Batalha M, Perreira KM, Gallo LC, **Thyagarajan B**, Daviglius ML, Pirzada A, Delamater AM, Penedo FJ, Evenson KR, Isasi CR. Differences across four major US urban areas in metabolic syndrome in the Hispanic Community Children's Health Study/Study of Latino Youth (SOL Youth). *Pediatr Obes.* 2025 Aug;20(8):e70027. doi: 10.1111/ijpo.70027. Epub 2025 May 19. PMID: 40384050.
8. Sen S, Handler HP, Victorsen A, Flaten Z, Ellison A, Knutson TP, Munro SA, Martinez RJ, Billington CJ, Laffin JJ, Bray S, Mroz P, Yohe S, Nelson AC, Bower M, **Thyagarajan B**. Validation of a comprehensive long-read sequencing platform for broad clinical genetic diagnosis. *Front Genet.* 2025 May 2;16:1499456. PMID: 40385982.
9. Klopock ET, Seshadri G, Arpawong TE, Cole S, **Thyagarajan B**, Crimmins EM. Development of a novel transcriptomic measure of aging: Transcriptomic Mortality-risk Age (TraMA). *Aging (Albany NY).* 2025 Jun 13;17(6):1521-1543. Epub 2025 Jun 13. PMID: 40527520.
10. Anita NZ, Tarraf W, Kuwayama S, Márquez F, DeCarli C, **Thyagarajan B**, Franceschini N, Lash JP, Johns T, González KA, Daviglius M, Zhou H, Stickel AM, Penedo FJ, Rundek T, Galasko D, González HM. Kidney function is associated with plasma ATN biomarkers among Hispanics/Latinos: SOL-INCA and HCHS/SOL results. *Alzheimers Res Ther.* 2025 Jun 19;17(1):137. PMID: 40537838.
11. Anwar M, Renu K, Singh AK, Nayal A, **Thyagarajan B**, Hu P, Lee J, Dey S, Dey AB. Impact of hemolysis on the levels of proteins associated with aging and age-related neurodegenerative diseases in a multicentric clinical research. *Pract Lab Med.* 2025 Jan 20;44:e00455. PMID: 39906488.
12. Downie CG, Shrestha P, Okello S, Yaser M, Lee HH, Wang Y, Krishnan M, Chen HH, Justice AE, Chittoor G, Josyula NS, Gahagan S, Blanco E, Burrows R, Correa-Burrows P, Albala C, Santos JL, Angel B, Lozoff B, Hartwig FP, Horta B, Brina KR, Isasi CR, Qi Q, Gallo LC, Perreira KM, **Thyagarajan B**, Daviglius M, Van Horn L, Gonzalez F, Bradfield JP, Hakonarson H, Grant SFA, Below JE, Felix J, Graff M, Divaris K, North KE. Trans-ancestry genome-wide association study of childhood body mass index identifies novel loci and age-specific effects. *HGG Adv.* 2025 Jan 30;6(2):100411. PMID: 39885687
13. Chen Y, Abrishamcar S, Johnson S, Aqua J, Dye C, Llabre MM, Gallo LC, Pereira KM, Daviglius M, Argos M, Cai J, **Thyagarajan B**, Baccarelli A, Isasi CR, Kaplan RC, Conneely KN, Suglia SF. Adverse Childhood Experiences and Accelerated Epigenetic Aging in the Hispanic Community Health Study/Study of Latinos: Nativity as an Effect Modifier. *Psychoneuroendocrinology.* 2025 Mar;173:107369. PMID: 39883977
14. Parada H, Agalliu I, Sotres-Alvarez D, Olshan AF, Evenson KR, Rohan TE, Kaplan RC, Thompson CA, Gallo LC, Penedo FJ, Cai J, Wassertheil-Smoller S, **Thyagarajan B**, Thomas SN, Garcia-Bedoya OL, Daviglius ML, Talavera GA. Cancer Incidence in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) - The Onco-SOL Ancillary Study. *Cancer Epidemiol Biomarkers Prev.* 2025 Jan 14. Online ahead of print. PMID: 39808161
15. Slipczuk L, Kuno T, Marcovina S, Swett K, Orroth KK, López JAG, Kent ST, Booth JN 3rd, Kaplan R, Sotres-Alvarez D, **Thyagarajan B**, Sofer T, Daviglius ML, Talavera GA, Joshi PH, Rodriguez CJ. Heterogeneity of Apolipoprotein B Levels Among Hispanic or Latino Individuals Residing in the US. *JAMA Cardiol.* 2025 Feb 1;10(2):164-169. PMID: 397457526.
16. Abasilim C, Persky V, Sargis RM, Day T, Tsintsifas K, Daviglius M, Cai J, Freels S, Grieco A, Peters BA, Isasi CR, Talavera GA, **Thyagarajan B**, Davis M, Jones R, Sjodin A, Turyk ME. Persistent organic pollutants and endogenous sex-related hormones in Hispanic/Latino adults:

- The Hispanic Community health study/study of Latinos (HCHS/SOL). Environ Res. 2025 Feb 15;267:120742. PMID: 39743011.
17. Victorsen A, Ellison A, Kubiak J, Ferrieri P, **Thyagarajan B**, Hilt EE. Complete genome sequence of *Capnocytophaga* strain ARDL2 from human blood infection. Microbiol Resour Announc. 2025 Jan 16;14(1):e0091224. PMID: 39688421.
 18. Downie CG, Highland HM, Alotaibi M, Welch BM, Howard AG, Cheng S, Miller N, Jain M, Kaplan RC, Lilly AG, Long T, Sofer T, **Thyagarajan B**, Yu B, North KE, Avery CL. Genome-wide association study reveals shared and distinct genetic architecture of fatty acids and oxylipins in the Hispanic Community Health Study/Study of Latinos. HGG Adv. 2025 Jan 9;6(1):100390. PMID: 39644095.
 19. Stone AB, Martinez RJ, Arries C, Nelson AC, **Thyagarajan B**, Yohe S, Mroz P. Analysis of Molecular Testing for Suspected Myeloproliferative Neoplasm at a Hybrid Community-Academic Health System. J Mol Diagn. 2025 Jan;27(1):42-53. PMID: 39521245.
 20. Khobragade PY, Petrosyan S, Dey S, Dey AB, Lee J; LASI-DAD Authorship Team. Design and methodology of the harmonized diagnostic assessment of dementia for the longitudinal aging study in India: Wave 2. J Am Geriatr Soc. 2024. PMID: 39482079
 21. Bennis SL, Yared NF, Horvath KJ, Baker JV, Waterboer T, **Thyagarajan B**, Kulasingam S. HPV Vaccination Status in HIV-Negative MSM and Its Association with High-Risk HPV Detection Using HPV Serology and Anorectal Swabs. Vaccines (Basel). 2024 Oct 9;12(10):1154. PMID: 39460321.
 22. El Jurdi N, Te HS, Cao Q, Napurski C, Wang S, Robinson A, Arora M, ElHusseini H, He F, Niedernhofer LJ, **Thyagarajan B**, Prizment A, Holtan S, Blaes AH, Yousefzadeh MJ. Frailty and pre-frailty associated with long-term diminished physical performance and quality of life in breast cancer and hematopoietic cell transplant survivors. Aging (Albany NY). 2024 Sep 26;16. PMID: 39330993.
 23. Wang S, Rao Z, Cao R, Blaes AH, Coresh J, Deo R, Dubin R, Joshu CE, Lehallier B, Lutsey PL, Pankow JS, Post WS, Rotter JI, Sedaghat S, Tang W, **Thyagarajan B**, Walker KA, Ganz P, Platz EA, Guan W, Prizment A. Development, characterization, and replication of proteomic aging clocks: Analysis of 2 population-based cohorts. PLoS Med. 2024 Sep 24;21(9):e1004464. PMID: 39316596
 24. Liu GY, Perry AS, Washko GR, Farber-Eger E, Colangelo LA, Sheng Q, Wells Q, Huang X, **Thyagarajan B**, Guan W, Alexandria SJ, San José Estépar R, Bowler RP, Esposito AJ, Khan SS, Shah RV, Choi B, Kalhan R. Proteomic Risk Score of Increased Respiratory Susceptibility: A Multi-Cohort Study. Am J Respir Crit Care Med. 2024 PMID: 39254293
 25. Sharma S, Prizment A, Nelson H, Zhang L, Staley C, Poynter JN, Seshadri G, Ellison A, **Thyagarajan B**. Microorganisms. Association between Accelerated Biological Aging, Diet, and Gut Microbiome. 2024 Aug 20;12(8):1719. PMID: 39203561
 26. Onyeaghala GC, Sharma S, Oyenuga M, Staley CM, Milne GL, Demmer RT, Shaukat A, **Thyagarajan B**, Straka RJ, Church TR, Prizment AE. The Effects of Aspirin Intervention on Inflammation-Associated Lingual Bacteria: A Pilot Study from a Randomized Clinical Trial. Microorganisms. 2024 Aug 7;12(8):1609. PMID: 39203451
 27. Filigrana P, Moon JY, Gallo LC, Fernández-Rhodes L, Perreira KM, Daviglius ML, **Thyagarajan B**, Garcia-Bedoya OL, Cai J, Xue X, Kaplan RC, Suglia S, Isasi CR. LifeCourse Socioeconomic Position and Ideal Cardiovascular Health in Hispanic/Latino Adults of the Hispanic Community Health Study/Study of Latinos. J Am Heart Assoc. 2024 Aug 20;13(16):e035503. doi: 10.1161/JAHA.124.035503. Epub 2024 Aug 9. PMID: 39119980

28. Al Mana AF, Culp K, Keeler A, Perrera O, Rajagopalan M, Jacky L, Brown B, **Thyagarajan B**. Performance of a Rapid Digital PCR Test for the Detection of Non-Small Cell Lung Cancer (NSCLC) Variants. *Mol Diagn Ther*. 2024 PMID: 39093547
29. Lu Y, Pike JR, Chen J, Walker KA, Sullivan KJ, **Thyagarajan B**, Mielke MM, Lutsey PL, Knopman D, Gottesman RF, Sharrett AR, Coresh J, Mosley TH, Palta P. Changes in Alzheimer Disease Blood Biomarkers and Associations With Incident All-Cause Dementia. *JAMA*. 2024 PMID: 39068543
30. Wang Y, Chen GC, Wang Z, Luo K, Zhang Y, Li Y, McClain AC, Jankowska MM, Perreira KM, Mattei J, Isasi CR, Llabre MM, **Thyagarajan B**, Daviglius ML, Van Horn L, Goldsztajn Farello D, Maldonado LE, Levine SR, Yu B, Boerwinkle E, Knight R, Burk RD, Kaplan RC, Qi Q, Peters BA. Dietary Acculturation Is Associated With Altered Gut Microbiome, Circulating Metabolites, and Cardiovascular Disease Risk in US Hispanics and Latinos: Results From HCHS/SOL. *Circulation*. 2024 Jul 16;150(3):215-229. PMID: 39008559
31. Vivek S, Shen YS, Guan W, Onyeaghala G, Oyenuga M, Staley C, Karger AB, Prizment AE, **Thyagarajan B**. Association between Circulating T Cells and the Gut Microbiome in Healthy Individuals: Findings from a Pilot Study. *Int J Mol Sci*. 2024 Jun 21;25(13):6831. PMID: 38999941
32. Feitosa MF, Lin SJ, Acharya S, **Thyagarajan B**, Wojczynski MK, Kuipers AL, Kulminski A, Christensen K, Zmuda JM, Brent MR, Province MA. Discovery of genomic and transcriptomic pleiotropy between kidney function and soluble receptor for advanced glycation end products using correlated meta-analyses: The Long Life Family Study. *Aging Cell*. 2024 Jun 26:e14261. PMID: 38932496
33. Oelsner EC, Sun Y, Balte PP, Allen NB, Andrews H, Carson A, Cole SA, Coresh J, Couper D, Cushman M, Daviglius M, Demmer RT, Elkind MSV, Gallo LC, Gutierrez JD, Howard VJ, Isasi CR, Judd SE, Kanaya AM, Kandula NR, Kaplan RC, Kinney GL, Kucharska-Newton AM, Lackland DT, Lee JS, Make BJ, Min YI, Murabito JM, Norwood AF, Ortega VE, Pettee Gabriel K, Psaty BM, Regan EA, Sotres-Alvarez D, Schwartz D, Shikany JM, **Thyagarajan B**, Tracy RP, Umans JG, Vasani RS, Wenzel SE, Woodruff PG, Xanthakis V, Zhang Y, Post WS. Epidemiologic Features of Recovery From SARS-CoV-2 Infection. *JAMA Netw Open*. 2024 Jun 3;7(6):e2417440. PMID: 38884994
34. Perry AS, Farber-Eger E, Gonzales T, Tanaka T, Robbins JM, Murthy VL, Stolze LK, Zhao S, Huang S, Colangelo LA, Deng S, Hou L, Lloyd-Jones DM, Walker KA, Ferrucci L, Watts EL, Barber JL, Rao P, Mi MY, Gabriel KP, Hornikel B, Sidney S, Houston N, Lewis GD, Liu GY, **Thyagarajan B**, Khan SS, Choi B, Washko G, Kalhan R, Wareham N, Bouchard C, Sarzynski MA, Gerszten RE, Brage S, Wells QS, Naylor M, Shah RV. Proteomic analysis of cardiorespiratory fitness for prediction of mortality and multisystem disease risks. *Nat Med*. 2024 Jun;30(6):1711-1721. 2024 Jun 4. PMID: 38834850
35. Santanasto AJ, Acharya S, Wojczynski MK, Cvejkus RK, Lin S, Brent MR, Anema JA, Wang L, **Thyagarajan B**, Christensen K, Daw EW, Zmuda JM. Whole Genome Linkage and Association Analyses Identify DLG Associated Protein-1 as a Novel Positional and Biological Candidate Gene for Muscle Strength: The Long Life Family Study. *J Gerontol A Biol Sci Med Sci*. 2024 Aug 1;79(8):glae144. PMID: 38808484
36. Abasilim C, Persky V, Sargis RM, Argos M, Daviglius M, Freels S, Cai J, Tsintsifas K, Isasi CR, Peters BA, Talavera GA, **Thyagarajan B**, Turyk ME. Thyroid-related Hormones and Hypertension Incidence in Middle-Aged and Older Hispanic/Latino Adults: The HCHS/SOL Study. *J Endocr Soc*. 2024 May 2;8(6):bvae088. eCollection 2024 Apr 6. PMID: 38741939
37. Luo K, Taryn A, Moon EH, Peters BA, Solomon SD, Daviglius ML, Kansal MM, **Thyagarajan B**, Gellman MD, Cai J, Burk RD, Knight R, Kaplan RC, Cheng S, Rodriguez CJ, Qi Q, Yu B. Gut microbiota, blood metabolites, and left ventricular diastolic dysfunction in US Hispanics/Latinos. *Microbiome*. 2024 May 10;12(1):85. PMID: 38725043

38. Persky V, Abasilim C, Tsintsifas K, Day T, Sargis RM, Daviglius M, Cai J, Freels S, Kaplan R, Isasi CR, Pirzada A, Meyer ML, Talavera GA, **Thyagarajan B**, Agarwal S, Chavez N, Grieco A, Turyk ME. Thyroid Hormones and Diabetes in Euthyroid Hispanic/Latino Adults of Diverse Backgrounds: HCHS/SOL. *J Endocr Soc*. 2024 Mar 1;8(6):bvae039. eCollection 2024 Apr 6. PMID: 38623380
39. Wang Z, Peters BA, Yu B, Grove ML, Wang T, Xue X, **Thyagarajan B**, Daviglius ML, Boerwinkle E, Hu G, Mossavar-Rahmani Y, Isasi CR, Knight R, Burk RD, Kaplan RC, Qi Q. Gut Microbiota and Blood Metabolites Related to Fiber Intake and Type 2 Diabetes. *Circ Res*. 2024 Mar 29;134(7):842-854. PMID: 38547246
40. Wang S, El Jurdi N, **Thyagarajan B**, Prizment A, Blaes AH. Accelerated Aging in Cancer Survivors: Cellular Senescence, Frailty, and Possible Opportunities for Interventions. *Int J Mol Sci*. 2024 Mar 14;25(6):3319. PMID: 38542292
41. Reid BM, Desjardins C, **Thyagarajan B**, Linden MA, Gunnar M. Early Life Stress Is Associated with Alterations in Lymphocyte Subsets Independent of Increased Inflammation in Adolescents. *Biomolecules*. 2024 Feb 22;14(3):262. PMID: 38540685
42. Patel R, Cosentino S, Zheng EZ, Schupf N, Barral S, Feitosa M, Andersen SL, Sebastiani P, Ukraintseva S, Christensen K, Zmuda J, **Thyagarajan B**, Gu Y; Long Life Family Study (LLFS). Systemic inflammation in relation to exceptional memory in the Long Life Family Study (LLFS). *Brain Behav Immun Health*. 2024 Feb 23;37:100746. PMID: 38476338
43. Xicota L, Cosentino S, Vardarajan B, Mayeux R, Perls TT, Andersen SL, Zmuda JM, **Thyagarajan B**, Yashin A, Wojczynski MK, Krinsky-McHale S, Handen BL, Christian BT, Head E, Mapstone ME, Schupf N, Lee JH, Barral S; Long-Life Family Study (LLFS); Alzheimer's Disease Genetic Consortium (ADGC); Alzheimer's Biomarkers Consortium-Down Syndrome (ABC-DS). Whole genome-wide sequence analysis of long-lived families (Long-Life Family Study) identifies MTUS2 gene associated with late-onset Alzheimer's disease. *Alzheimers Dement*. 2024 Apr;20(4):2670-2679. PMID: 38380866
44. Khine H, Mathson A, Moshele PR, **Thyagarajan B**, Karger AB, Thomas SN. Targeted electronic health record-based recruitment strategy to enhance COVID-19 vaccine response clinical research study enrollment. *Contemp Clin Trials Commun*. 2023 Dec 20;37:101250. PMID: 38312474
45. Choi B, Liu GY, Sheng Q, Amancherla K, Perry A, Huang X, San José Estépar R, Ash SY, Guan W, Jacobs DR Jr, Martinez FJ, Rosas IO, Bowler RP, Kropski JA, Banovich NE, Khan SS, San José Estépar R, Shah R, **Thyagarajan B**, Kalhan R, Washko GR. Proteomic Biomarkers of Quantitative Interstitial Abnormalities in COPD Gene and CARDIA Lung Study. *Am J Respir Crit Care Med*. 2024 May 1;209(9):1091-1100. PMID: 38285918
46. Stickel AM, Tarraf W, Kuwayama S, Wu B, Sundermann EE, Gallo LC, Lamar M, Daviglius M, Zeng D, **Thyagarajan B**, Isasi CR, Lipton RB, Cordero C, Perreira KM, Gonzalez HM, Banks SJ. Connections between reproductive health and cognitive aging among women enrolled in the HCHS/SOL and SOL-INCA. *Alzheimers Dement*. 2024 Mar;20(3):1944-1957. PMID: 38160447.
47. Seshadri G, Vivek S, Prizment A, Crimmins EM, Klopach ET, Faul J, Guan W, Meier HCS, **Thyagarajan B**. Immune cells are associated with mortality: the Health and Retirement Study. *Front Immunol*. 2023 Oct 20;14:1280144. doi: 10.3389/fimmu.2023.1280144. PMID: 37928548; PMCID: PMC10623116.
48. Vivek S, Faul J, **Thyagarajan B**, Guan W. Explainable variational autoencoder (E-VAE) model using genome-wide SNPs to predict dementia. *J Biomed Inform*. 2023 Dec;148:104536. doi: 10.1016/j.jbi.2023.104536. Epub 2023 Nov 4. PMID: 37926392.
49. Liu X, Sun X, Zhang Y, Jiang W, Lai M, Wiggins KL, Raffield LM, Bielak LF, Zhao W, Pitsillides A, Haessler J, Zheng Y, Blackwell TW, Yao J, Guo X, Qian Y, **Thyagarajan B**, Pankratz N, Rich SS, Taylor KD, Peyser PA, Heckbert SR, Seshadri S, Boerwinkle E, Grove ML, Larson NB, Smith JA, Vasani RS, Fitzpatrick AL, Fornage M, Ding J, Carson AP, Abecasis

- G, Dupuis J, Reiner A, Kooperberg C, Hou L, Psaty BM, Wilson JG, Levy D, Rotter JI, Bis JC; TOPMed mtDNA Working Group in NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium; Satizabal CL, Arking DE, Liu C. Association Between Whole Blood-Derived Mitochondrial DNA Copy Number, Low-Density Lipoprotein Cholesterol, and Cardiovascular Disease Risk. *J Am Heart Assoc.* 2023 Oct 17;12(20):e029090. doi: 10.1161/JAHA.122.029090. Epub 2023 Oct 7. PMID: 37804200; PMCID: PMC10757530.
50. Wang S, Rao Z, Cao R, Blaes AH, Coresh J, Joshu CE, Lehallier B, Lutsey PL, Pankow JS, Sedaghat S, Tang W, **Thyagarajan B**, Walker KA, Ganz P, Platz EA, Guan W, Prizment A. Development and Characterization of Proteomic Aging Clocks in the Atherosclerosis Risk in Communities (ARIC) Study. *medRxiv [Preprint]*. 2023 Sep 8:2023.09.06.23295174. doi: 10.1101/2023.09.06.23295174. PMID: 37732184; PMCID: PMC10508816.
51. Abasilim C, Persky V, Sargis RM, Argos M, Daviglius ML, Freels S, Tsintsifas K, Day T, Cai J, Isasi CR, Peters BA, Talavera GA, **Thyagarajan B**, Turyk ME. Correction to: Association of Acculturation and Hispanic/Latino Background with Endogenous Sex and Thyroid-Related Hormones Among Middle-Aged and Older Hispanic/Latino Adults: the HCHS/SOL Study. *J Racial Ethn Health Disparities* 2024 Oct;11(5):3234 Erratum for: *J Racial Ethn Health Disparities*. PMID: 37725253.
52. Joyce BT, Chen X, Gao T, Zheng Y, Nannini DR, Liu L, Henkle BE, Kalhan R, Washko G, Kunisaki KM, **Thyagarajan B**, Vaughan DE, Gross M, Jacobs DR Jr, Lloyd-Jones D, Hou L. Associations between GrimAge acceleration and pulmonary function in the Coronary Artery Risk Development in Young Adults (CARDIA) study. *Epigenomics.* 2023 Jul;15(13):693-703. doi: 10.2217/epi-2023-0164. Epub 2023 Sep 11. PMID: 37694401; PMCID: PMC10503465.
53. Ramasubramanian R, Kim JW, Guan W, Meier HCS, Crimmins E, Faul J, **Thyagarajan B**. Cohabitation as a determinant of adaptive and innate immune cell profiles: Findings from the Health and Retirement Study. *Brain Behav Immun Health.* 2023 Aug 18;33:100676. doi: 10.1016/j.bbih.2023.100676. PMID: 37663036; PMCID: PMC10474123.
54. Abasilim C, Persky V, Sargis RM, Argos M, Daviglius ML, Freels S, Tsintsifas K, Day T, Cai J, Isasi CR, Peters BA, Talavera GA, **Thyagarajan B**, Turyk ME. Association of Acculturation and Hispanic/Latino Background with Endogenous Sex and Thyroid-Related Hormones Among Middle-Aged and Older Hispanic/Latino Adults: the HCHS/SOL Study. *J Racial Ethn Health Disparities.* 2024 Oct;11(5):3040-3055. Erratum in: *J Racial Ethn Health Disparities.* 2024 Oct 1: PMID: 37620727.
55. Panikkar D, Vivek S, Crimmins E, Faul J, Langa KM, **Thyagarajan B**. Pre-Analytical Variables Influencing Stability of Blood-Based Biomarkers of Neuropathology. *J Alzheimers Dis.* 2023;95(2):735-748. doi: 10.3233/JAD-230384. PMID: 37574735.
56. Filigrana P, Moon JY, Gallo LC, Fernández-Rhodes L, Perreira KM, Daviglius ML, **Thyagarajan B**, Garcia-Bedoya OL, Cai J, Lipton RB, Kaplan RC, Gonzalez HM, Isasi CR. Childhood and Life-Course Socioeconomic Position and Cognitive Function in the Adult Population of the Hispanic Community Health Study/Study of Latinos. *Am J Epidemiol.* 2023 Nov 10;192(12):2006-2017. doi: 10.1093/aje/kwad157. PMID: 37420108.
57. Han X, Lains I, Li J, Li J, Chen Y, Yu B, Qi Q, Boerwinkle E, Kaplan R, **Thyagarajan B**, Daviglius M, Joslin CE, Cai J, Guasch-Ferré M, Tobias DK, Rimm E, Ascherio A, Costenbader K, Karlson E, Mucci L, Eliassen AH, Zeleznik O, Miller J, Vavvas DG, Kim IK, Silva R, Miller J, Hu F, Willett W, Lasky-Su J, Kraft P, Richards JB, MacGregor S, Husain D, Liang L. Integrating genetics and metabolomics from multi-ethnic and multi-fluid data reveals putative mechanisms for age-related macular degeneration. *Cell Rep Med.* 2023 Jul 18;4(7):101085. doi: 10.1016/j.xcrm.2023.101085. Epub 2023 Jun 21. PMID: 37348500; PMCID: PMC10394104.
58. Liu GY, Colangelo LA, Ash SY, San Jose Estepar R, Jacobs DR, **Thyagarajan B**, Wells JM, Putman RK, Choi B, Stevenson CS, Carnethon M, Washko GR, Kalhan R. Computed tomography measure of lung injury and future interstitial features: the CARDIA Lung Study.

- ERJ Open Res. 2023 May 22;9(3):00004-2023. doi: 10.1183/23120541.00004-2023. PMID: 37313396; PMCID: PMC10259823.
59. Vivek S, Crimmins EM, Prizment AE, Meier HCS, Ramasubramanian R, Barcelo H, Faul J, **Thyagarajan B**. Age-related Differences in T-cell Subsets and Markers of Subclinical Inflammation in Aging Are Independently Associated With Type 2 Diabetes in the Health and Retirement Study. *Can J Diabetes*. 2023 Oct;47(7):594-602.e6. doi: 10.1016/j.jcjd.2023.05.010. Epub 2023 Jun 1. PMID: 37269981; PMCID: PMC10592537.
 60. Joshi PH, Marcovina S, Orroth K, López JAG, Kent ST, Kaplan R, Swett K, Sotres-Alvarez D, **Thyagarajan B**, Slipczuk L, Sofer T, Daviglius ML, Talavera GA, Schneiderman N, Rodriguez CJ. Heterogeneity of Lipoprotein(a) Levels Among Hispanic or Latino Individuals Residing in the US. *JAMA Cardiol*. 2023 Jul 1;8(7):691-696. doi: 10.1001/jamacardio.2023.1134. PMID: 37223894; PMCID: PMC10209825.
 61. Kuno T, Vasquez N, April-Sanders AK, Swett K, Kizer JR, **Thyagarajan B**, Talavera GA, Ponce SG, Shook-Sa BE, Penedo FJ, Daviglius ML, Kansal MM, Cai J, Kitzman D, Rodriguez CJ. Pre-Heart Failure Longitudinal Change in a Hispanic/Latino Population-Based Study: Insights From the Echocardiographic Study of Latinos. *JACC Heart Fail*. 2023 Aug;11(8 Pt 1):946-957. doi: 10.1016/j.jchf.2023.04.008. Epub 2023 May 17. PMID: 37204366.
 62. Moon JY, Chai JC, Yu B, Song RJ, Chen GC, Graff M, Daviglius ML, Chan Q, **Thyagarajan B**, Castaneda SF, Grove ML, Cai J, Xue X, Mossavar-Rahmani Y, Vasani RS, Boerwinkle E, Kaplan RC, Qi Q. Metabolomic Signatures of Sedentary Behavior and Cardiometabolic Traits in US Hispanics/Latinos: Results from HCHS/SOL. *Med Sci Sports Exerc*. 2023 Oct 1;55(10):1781-1791. doi: 10.1249/MSS.0000000000003205. Epub 2023 May 12. PMID: 37170952; PMCID: PMC10523950.
 63. Mao Z, Gray ALH, **Thyagarajan B**, Bostick RM. Antioxidant enzyme and DNA base repair genetic risk scores' associations with systemic oxidative stress biomarker in pooled cross-sectional studies. *Front Aging*. 2023 Apr 21;4:1000166. doi: 10.3389/fragi.2023.1000166. PMID: 37152862; PMCID: PMC10161255.
 64. Boe LA, Mossavar-Rahmani Y, Sotres-Alvarez D, Daviglius ML, Durazo-Arvizu RA, **Thyagarajan B**, Kaplan RC, Shaw PA. Nutritional Blood Concentration Biomarkers in the Hispanic Community Health Study/Study of Latinos: Measurement Characteristics and Power. *Am J Epidemiol*. 2023 Aug 4;192(8):1288-1303. doi: 10.1093/aje/kwad109. PMID: 37116075; PMCID: PMC10666967.
 65. Pirzada A, Cai J, Heiss G, Sotres-Alvarez D, Gallo LC, Youngblood ME, Avilés-Santa ML, González HM, Isasi CR, Kaplan R, Kunz J, Lash JP, Lee DJ, Llabre MM, Penedo FJ, Rodriguez CJ, Schneiderman N, Sofer T, Talavera GA, **Thyagarajan B**, Wassertheil-Smoller S, Daviglius ML. Evolving Science on Cardiovascular Disease Among Hispanic/Latino Adults: JACC International. *J Am Coll Cardiol*. 2023 Apr 18;81(15):1505-1520. doi: 10.1016/j.jacc.2023.02.023. PMID: 37045521.
 66. Miljkovic I, Cvejkus R, An P, **Thyagarajan B**, Christensen K, Wojczynski M, Schupf N, Zmuda JM. Low Risk for Developing Diabetes Among the Offspring of Individuals With Exceptional Longevity and Their Spouses. *Front Clin Diabetes Healthc*. 2022 Apr 11;3:753986. doi: 10.3389/fcdhc.2022.753986. PMID: 36992755; PMCID: PMC10012150.
 67. Wang S, Onyeaghala GC, Pankratz N, Nelson HH, **Thyagarajan B**, Tang W, Norby FL, Ugoji C, Joshi CE, Gomez CR, Couper DJ, Coresh J, Platz EA, Prizment AE. Associations between MICA and MICB Genetic Variants, Protein Levels, and Colorectal Cancer: Atherosclerosis Risk in Communities (ARIC). *Cancer Epidemiol Biomarkers Prev*. 2023 Jun 1;32(6):784-794. doi: 10.1158/1055-9965.EPI-22-1113. PMID: 36958849; PMCID: PMC10239349.
 68. Peters BA, Xing J, Chen GC, Usyk M, Wang Z, McClain AC, **Thyagarajan B**, Daviglius ML, Sotres-Alvarez D, Hu FB, Knight R, Burk RD, Kaplan RC, Qi Q. Healthy dietary patterns are associated with the gut microbiome in the Hispanic Community Health Study/Study of

- Latinos Am J Clin Nutr. 2023 Mar;117(3):540-552. doi: 10.1016/j.ajcnut.2022.11.020
PMID: 36872018
69. Usyk M, Peters BA, Karthikeyan S, McDonald D, Sollecito CC, Vazquez-Baeza Y, Shaffer JP, Gellman MD, Talavera GA, Daviglius ML, Thyagarajan B, Knight R, Qi Q, Kaplan R, Burk RD. Comprehensive evaluation of shotgun metagenomics, amplicon sequencing, and harmonization of these platforms for epidemiological studies. *Cell Rep Methods*. 2023 Jan 23;3(1):100391. PMID: 36814836 PMCID: PMC9939430
 70. Faul JD, Kim JK, Levine ME, **Thyagarajan B**, Weir DR, Crimmins EM. Epigenetic-based age acceleration in a representative sample of older Americans: Associations with aging-related morbidity and mortality. *Proc Natl Acad Sci U S A*. 2023 Feb 28;120(9):e2215840120. doi: 10.1073/pnas.2215840120. Epub 2023 Feb 21. PMID: 36802439
 71. Persky V, Abasilim C, Tsintsifas K, Day T, Sargis RM, Daviglius ML, Cai J, Freels S, Unterman T, Chavez N, Kaplan R, Isasi CR, Pirzada A, Meyer ML, Talavera GA, **Thyagarajan B**, Peters BA, Madrigal JM, Grieco A, Turyk ME Sex Hormones and Diabetes in 45-74-Year-Old Men and Postmenopausal Women: the Hispanic Community Health Study. *J Clin Endocrinol Metab*. 2023 Jun 16;108(7):1709-1726. PMID: 36633580
 72. Klopach ET, **Thyagarajan B**, Faul JD, Meier HCS, Ramasubramanian R, Kim JK, Crimmins EM. Socioeconomic status and immune aging in older US adults in the health and retirement study. *Biodemography Soc Biol*. 2022 Jul-Dec;67(3-4):187-202. doi: 10.1080/19485565.2022.2149465. Epub 2022 Dec 6. PMID: 36472376
 73. Mao Z, Gray ALH, Gross MD, **Thyagarajan B**, Bostick RM. Associations of DNA Base Excision Repair and Antioxidant Enzyme Genetic Risk Scores with Biomarker of Systemic Inflammation. *Front Aging*. 2022 May 4;3:897907. doi: 10.3389/fragi.2022.897907. PMID: 36338835; PMCID: PMC9632613.
 74. Vásquez PM, Tarraf W, Chai A, Doza A, Sotres-Alvarez D, Diaz KM, Zlatar ZZ, Durazo-Arvizu RA, Gallo LC, Estrella ML, Vásquez E, Evenson KR, Khambaty T, **Thyagarajan B**, Singer RH, Schneiderman N, Daviglius ML, González HM. Accelerometer-measured latent physical activity profiles and neurocognition among middle-aged and older Hispanic/Latino adults in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *J Gerontol B Psychol Sci Soc Sci*. 2022 Dec 29;77(12):e263-e278. PMID:36219450.
 75. Zhang J, Fan H, Gross M, Liu N, Carlson H, Wood A, Hoffman K, Petrosino J, Pankratz N, **Thyagarajan B**, Fisher W. Progressive reduction in circulating levels of carotenoids and other micronutrients in patients with chronic pancreatitis. *Pancreatology*. 2022 Dec;22(8):1126-1133. PMID: 36198488.
 76. Ramasubramanian R, Meier HCS, Vivek S, Klopach E, Crimmins EM, Faul J, Nikolich-Žugich J, **Thyagarajan B**. Evaluation of T-cell aging-related immune phenotypes in the context of biological aging and multimorbidity in the Health and Retirement Study. *Immun Ageing*. 2022 Jul 20;19(1):33. doi: 10.1186/s12979-022-00290-z. PMID: 35858901; PMCID: PMC9297609.
 77. Figueiredo JC, Hirsch FR, Kushi LH, Nembhard WN, Crawford JM, Mantis N, Finster L, Merin NM, Merchant A, Reckamp KL, Melmed GY, Braun J, McGovern D, Parekh S, Corley DA, Zohoori N, Amick BC, Du R, Gregersen PK, Diamond B, Taioli E, Sariol C, Espino A, Weiskopf D, Gifoni A, Brien J, Hanege W, Lipsitch M, Zidar DA, Scheck McAlearney A, Wajnberg A, LaBaer J, Yvonne Lewis E, Binder RA, Moormann AM, Forconi C, Forrester S, Batista J, Schieffelin J, Kim D, Biancon G, VanOudenhove J, Halene S, Fan R, Barouch DH, Alter G, Pinninti S, Boppana SB, Pati SK, Latting M, Karaba AH, Roback J, Sekaly R, Neish A, Brincks AM, Granger DA, Karger AB, **Thyagarajan B**, Thomas SN, Klein SL, Cox AL, Lucas T, Furr-Holden

- D, Key K, Jones N, Wrammerr J, Suthar M, Yu Wong S, Bowman NM, Simon V, Richardson LD, McBride R, Krammer F, Rana M, Kennedy J, Boehme K, Forrest C, Granger SW, Heaney CD, Knight Lapinski M, Wallet S, Baric RS, Schifanella L, Lopez M, Fernández S, Kenah E, Panchal AR, Britt WJ, Sanz I, Dhodapkar M, Ahmed R, Bartelt LA, Markmann AJ, Lin JT, Hagan RS, Wolfgang MC, Skarbinski J. Mission, Organization, and Future Direction of the Serological Sciences Network for COVID-19 (SeroNet) Epidemiologic Cohort Studies. *Open Forum Infect Dis*. 2022 Apr 27;9(6):ofac171. doi: 10.1093/ofid/ofac171. PMID: 35765315; PMCID: PMC9129196.
78. Barral S, Andersen SL, Perls TT, Bae H, Sebastiani P, Christensen K, **Thyagarajan B**, Lee J, Schupf N. Association between late maternal age and age-related endophenotypes in the Long Life Family Study. *Neurosci Lett*. 2022 Jul 27;784:136737. PMID: 35709880
79. Karger AB, Brien JD, Christen JM, Dhakal S, Kemp TJ, Klein SL, Pinto LA, Premkumar L, Roback JD, Binder RA, Boehme KW, Boppana S, Cordon-Cardo C, Crawford JM, Daiss JL, Dupuis AP 2nd, Espino AM, Firpo-Betancourt A, Forconi C, Forrest JC, Girardin RC, Granger DA, Granger SW, Haddad NS, Heaney CD, Hunt DT, Kennedy JL, King CL, Krammer F, Kruczynski K, LaBaer J, Lee FE, Lee WT, Liu SL, Lozanski G, Lucas T, Mendu DR, Moormann AM, Murugan V, Okoye NC, Pantoja P, Payne AF, Park J, Pinninti S, Pinto AK, Pisanic N, Qiu J, Sariol CA, Simon V, Song L, Steffen TL, Stone ET, Styer LM, Suthar MS, Thomas SN, **Thyagarajan B**, Wajnberg A, Yates JL, Sobhani K. The Serological Sciences Network (SeroNet) for COVID-19: Depth and Breadth of Serology Assays and Plans for Assay Harmonization. *mSphere*. 2022 Aug 31;7(4):e0019322. PMID: 35703544
80. Thomas SN, Karger AB, Altawallbeh G, Nelson KM, Jacobs DR Jr, Gorlin J, Barcelo H, **Thyagarajan B**. Ultrasensitive detection of salivary SARS-CoV-2 IgG antibodies in individuals with natural and COVID-19 vaccine-induced immunity. *Sci Rep*. 2022 May 25;12(1):8890. doi: 10.1038/s41598-022-12869-z. PMID: 35614113.
81. Berge JM, Macheledt K, Bakker C, Allen S, **Thyagarajan B**, Wyman JF. Bibliometric Approach to Evaluating the Impact of a Building Interdisciplinary Research Careers in Women's Health K12 Research Career Development Program. *J Womens Health (Larchmt)*. 2022 Oct;31(10):1422-1431. PMID: 35501968
82. Bhargava D, Drilling C, DeFor TE, Brunstein CG, **Thyagarajan B**, El Jurdi N, Holtan SG, Rashidi A, Warlick E, Ramesh V, Rogosheske J, Arora M, Bhatia S, Weisdorf DJ. Impact of CDC warning on co-prescribing of opioids and benzodiazepines in older allogeneic hematopoietic cell transplant recipients. *Bone Marrow Transplant*. 2022 Jul;57(7):1079-1085. PMID: 35461360
83. Lee Y, Chen H, Chen W, Qi Q, Afshar M, Cai J, Daviglius ML, **Thyagarajan B**, North KE, London SJ, Boerwinkle E, Celedón JC, Kaplan RC, Yu B. Metabolomic Associations of Asthma in the Hispanic Community Health Study/Study of Latinos. *Metabolites*. 2022 Apr 16;12(4):359. doi: 10.3390/metabo12040359. PMID: 35448546.
84. Joyce BT, Chen X, Yaffe K, Henkle BE, Gao T, Zheng Y, Kalhan R, Washko G, Kunisaki KM, **Thyagarajan B**, Gross M, Jacobs DR Jr, Lloyd-Jones D, Liu K, Sidney S, Hou L. Pulmonary Function in Midlife as a Predictor of Later-Life Cognition: The Coronary Artery Risk Development in Adults (CARDIA) Study. *J Gerontol A Biol Sci Med Sci*. 2022 Dec 29;77(12):2517-2523. PMID: 35106576
85. Liu X, Longchamps RJ, Wiggins KL, Raffield LM, Bielak LF, Zhao W, Pitsillides A, Blackwell TW, Yao J, Guo X, Kurniansyah N, **Thyagarajan B**, Pankratz N, Rich SS, Taylor KD, Peyser PA, Heckbert SR, Seshadri S, Cupples LA, Boerwinkle E, Grove ML, Larson NB, Smith JA, Vasan RS, Sofer T, Fitzpatrick AL, Fornage M, Ding J, Correa A, Abecasis G, Psaty BM, Wilson JG, Levy D, Rotter JI, Bis JC;

- TOPMed mtDNA Working Group in NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium, Satizabal CL, Arking DE, Liu C. Association of mitochondrial DNA copy number with cardiometabolic diseases. *Cell Genom.* 2021 Oct 13;1(1):100006. doi: 10.1016/j.xgen.2021.100006. PMID: 35036986; PMCID: PMC8758111.
86. Estrella ML, Pérez CM, Suárez E, Fuentes-Payán W, **Thyagarajan B**, Goldsmith JC, Daviglius ML, Avilés-Santa ML. Sex-specific associations of iron-anemia status with HbA1c levels among Hispanics/Latinos without self-reported diabetes mellitus: The Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *Endocr Pract.* 2022 Mar;28(3):282-291. PMID: 34896297.
 87. Wang Z, Usyk M, Vázquez-Baeza Y, Chen GC, Isasi CR, Williams-Nguyen JS, Hua S, McDonald D, **Thyagarajan B**, Daviglius ML, Cai J, North KE, Wang T, Knight R, Burk RD, Kaplan RC, Qi Q. Microbial co-occurrence complicates associations of gut microbiome with US immigration, dietary intake and obesity. *Genome Biol.* 2021 Dec 10;22(1):336. doi: 10.1186/s13059-021-02559-w. PMID: 34893089; PMCID: PMC8665519.
 88. Alvarez CS, Avilés-Santa ML, Freedman ND, Perreira KM, Garcia-Bedoya O, Kaplan RC, Daviglius ML, Graubard BI, Talavera GA, **Thyagarajan B**, Camargo MC. Associations of *Helicobacter pylori* and hepatitis A seropositivity with asthma in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL): addressing the hygiene hypothesis. *Allergy Asthma Clin Immunol.* 2021 Nov 24;17(1):120. doi: 10.1186/s13223-021-00625-3. PMID: 34819160; PMCID: PMC8611872.
 89. Ramasubramanian R, Kalhan R, Jacobs DR Jr, Washko GR, Hou L, Gross MD, Guan W, **Thyagarajan B**. Gene expression of oxidative stress markers and lung function: A CARDIA lung study. *Mol Genet Genomic Med.* 2021 Dec;9(12):e1832. doi: 10.1002/mgg3.1832. Epub 2021 Nov 19. PMID: 34800009; PMCID: PMC8683624.
 90. Mroz P, Michel S, Allen JD, Meyer T, McGonagle EJ, Carpentier R, Vecchia A, Schlichte A, Bishop JR, Dunnenberger HM, Yohe S, **Thyagarajan B**, Jacobson PA, Johnson SG. Development and Implementation of In-House Pharmacogenomic Testing Program at a Major Academic Health System. *Front Genet.* 2021 Oct 20;12:712602. doi: 10.3389/fgene.2021.712602. PMID: 34745204; PMCID: PMC8564018.
 91. Gonzalez S, Strizich G, Isasi CR, Hua S, Comas B, Sofer T, **Thyagarajan B**, Perreira KM, Talavera GA, Daviglius ML, Nelson SC, Giachello AL, Schneiderman N, Kaplan RC. Consent for Use of Genetic Data among US Hispanics/Latinos: Results from the Hispanic Community Health Study/ Study of Latinos. *Ethn Dis.* 2021 Oct 21;31(4):547-558. doi: 10.18865/ed.31.4.547. PMID: 34720558; PMCID: PMC8545475.
 92. Vivek S, Nelson HH, Prizment AE, Faul J, Crimmins EM, **Thyagarajan B**. Cross sectional association between cytomegalovirus seropositivity, inflammation and cognitive impairment in elderly cancer survivors. *Cancer Causes Control.* 2022 Jan;33(1):81-90. doi: 10.1007/s10552-021-01504-3. Epub 2021 Oct 12. PMID: 34637066.
 93. **Thyagarajan B**, Faul J, Vivek S, Kim JK, Nikolich-Žugich J, Weir D, Crimmins EM. Age-related differences in T cell subsets in a nationally representative sample of people over age 55: Findings from the Health and Retirement Study. *J Gerontol A Biol Sci Med Sci.* 2022 May 5;77(5):927-933. PMID: 34633448.
 94. Hu Y, Bien SA, Nishimura KK, Haessler J, Hodonsky CJ, Baldassari AR, Highland HM, Wang Z, Preuss M, Sitlani CM, Wojcik GL, Tao R, Graff M, Huckins LM, Sun Q, Chen MH, Mousas A, Auer PL, Lettre G; Blood Cell Consortium, Tang W, Qi L, **Thyagarajan B**, Buyske S, Fornage M, Hindorff LA, Li Y, Lin D, Reiner AP, North KE, Loos RJF, Raffield LM, Peters U, Avery CL, Kooperberg C. Correction to: Multi-ethnic genome-wide association analyses of white blood cell and platelet traits in the Population Architecture using Genomics and Epidemiology

- (PAGE) Study. *BMC Genomics*. 2021 Sep 13;22(1):656. doi: 10.1186/s12864-021-07919-1. Erratum for: *BMC Genomics*. 2021 Jun 9;22(1):432. PMID: 34517814; PMCID: PMC8436530.
95. Schwaiger-Haber M, Stancliffe E, Arends V, **Thyagarajan B**, Sindelar M, Patti GJ. A Workflow to Perform Targeted Metabolomics at the Untargeted Scale on a Triple Quadrupole Mass Spectrometer. *ACS Meas Sci Au*. 2021 Aug 18;1(1):35-45. doi: 10.1021/acsmeasuresciau.1c00007. Epub 2021 Jul 22. PMID: 34476422; PMCID: PMC8377714.
 96. Vivek S, Carnethon MR, Prizment A, Carson AP, Bancks MP, Jacobs DR Jr, **Thyagarajan B**. Association of the extent of return to fasting state 2-hours after a glucose challenge with incident prediabetes and type 2 diabetes: The CARDIA study. *Diabetes Res Clin Pract*. 2021 Oct;180:109004. doi: 10.1016/j.diabres.2021.109004. Epub 2021 Aug 12. PMID: 34391830; PMCID: PMC8655852.
 97. Andersen SL, Sweigart B, Glynn NW, Wojczynski MK, **Thyagarajan B**, Mengel-From J, Thielke S, Perls TT, Libon DJ, Au R, Cosentino S, Sebastiani P; Long Life Family Study. Digital Technology Differentiates Graphomotor and Information Processing Speed Patterns of Behavior. *J Alzheimers Dis*. 2021;82(1):17-32. doi: 10.3233/JAD-201119. PMID: 34219735; PMCID: PMC8328075.
 98. Spector LG, Spellman SR, **Thyagarajan B**, Beckman KB, Hoffmann C, Garbe J, Hahn T, Sucheston-Campbell L, Richardson M, De For TE, Tolar J, Verneris MR. Neither Donor nor Recipient Mitochondrial Haplotypes Are Associated with Unrelated Donor Transplant Outcomes: A Validation Study from the CIBMTR. *Transplant Cell Ther*. 2021 Oct;27(10):836.e1-836.e7. doi: 10.1016/j.jtct.2021.06.019. Epub 2021 Jun 23. PMID: 34174468; PMCID: PMC8478819.
 99. Santanasto AJ, Wojczynski MK, Cvejkus RK, Lin S, Wang L, **Thyagarajan B**, Christensen K, Schupf N, Feitosa MF, An P, Zmuda JM. Identification of a Novel Locus for Gait Speed Decline With Aging: The Long Life Family Study. *J Gerontol A Biol Sci Med Sci*. 2021 Sep 13;76(10):e307-e313. doi: 10.1093/gerona/glab177. PMID: 34156441; PMCID: PMC8436996.
 100. Neuhouser ML, Pettinger M, Lampe JW, Tinker LF, George SM, Reedy J, Song X, **Thyagarajan B**, Beresford SA, Prentice RL. Novel Application of Nutritional Biomarkers From a Controlled Feeding Study and an Observational Study to Characterization of Dietary Patterns in Postmenopausal Women. *Am J Epidemiol*. 2021 2;190(11):2461-2473. doi: 10.1093/aje/kwab171. PMID: 34142699.
 101. Qi Q, Li J, Yu B, Moon JY, Chai JC, Merino J, Hu J, Ruiz-Canela M, Rebholz C, Wang Z, Usyk M, Chen GC, Porneala BC, Wang W, Nguyen NQ, Feofanova EV, Grove ML, Wang TJ, Gerszten RE, Dupuis J, Salas-Salvadó J, Bao W, Perkins DL, Daviglius ML, **Thyagarajan B**, Cai J, Wang T, Manson JE, Martínez-González MA, Selvin E, Rexrode KM, Clish CB, Hu FB, Meigs JB, Knight R, Burk RD, Boerwinkle E, Kaplan RC. Host and gut microbial tryptophan metabolism and type 2 diabetes: an integrative analysis of host genetics, diet, gut microbiome and circulating metabolites in cohort studies. *Gut*. 2022 Jun;71(6):1095-1105. PMID: 34127525; PMCID: PMC8697256.
 102. Martinez RJ, Pankratz N, Schomaker M, Daniel J, Beckman K, Karger AB, **Thyagarajan B**, Ferreri P, Yohe SL, Nelson AC. Prediction of False-Positive Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Molecular Results in a High-Throughput Open-Platform System. *J Mol Diagn*. 2021 Sep;23(9):1085-1096. doi: 10.1016/j.jmoldx.2021.05.015. Epub 2021 Jun 8. PMID: 34116245; PMCID: PMC8186061.
 103. Hu Y, Bien SA, Nishimura KK, Haessler J, Hodonsky CJ, Baldassari AR,

- Highland HM, Wang Z, Preuss M, Sitlani CM, Wojcik GL, Tao R, Graff M, Huckins LM, Sun Q, Chen MH, Mousas A, Auer PL, Lettre G; Blood Cell Consortium, Tang W, Qi L, **Thyagarajan B**, Buyske S, Fornage M, Hindorff LA, Li Y, Lin D, Reiner AP, North KE, Loos RJF, Raffield LM, Peters U, Avery CL, Kooperberg C. Multi-ethnic genome-wide association analyses of white blood cell and platelet traits in the Population Architecture using Genomics and Epidemiology (PAGE) study. *BMC Genomics*. 2021 Jun 9;22(1):432. doi: 10.1186/s12864-021-07745-5. Erratum in: *BMC Genomics*. 2021 Sep 13;22(1):656. PMID: 34107879; PMCID: PMC8191001.
104. Poteat T, Gallo LC, Harkness A, Isasi CR, Matthews P, Schneiderman N, **Thyagarajan B**, Daviglius ML, Sotres-Alvarez D, Perreira KM. Influence of Stress, Gender, and Minority Status on Cardiovascular Disease Risk in the Hispanic/Latino Community: Protocol for a Longitudinal Observational Cohort Study. *JMIR Res Protoc*. 2021 May 6;10(5):e28997. doi: 10.2196/28997. PMID: 33955843; PMCID: PMC8138714.
105. Feitosa MF, Kuipers AL, Wojczynski MK, Wang L, Barinas-Mitchell E, Kulminski AM, **Thyagarajan B**, Lee JH, Perls T, Christensen K, Newman AB, Zmuda JM, Province MA. Heterogeneity of the Predictive Polygenic Risk Scores for Coronary Heart Disease Age-at-Onset in Three Different Coronary Heart Disease Family-Based Ascertainments. *Circ Genom Precis Med*. 2021 Jun;14(3):e003201. doi: 10.1161/CIRCGEN.120.003201. Epub 2021 Apr 12. PMID: 33844929; PMCID: PMC8214825.
106. Beebe D, Puram VV, Gajic S, **Thyagarajan B**, Belani KG. Genetics of Malignant Hyperthermia: A Brief Update. *J Anaesthesiol Clin Pharmacol*. 2020 Oct-Dec;36(4):552-555. doi: 10.4103/joacp.JOACP_360_19. Epub 2021 Jan 18. PMID: 33840940; PMCID: PMC8022069.
107. Martinez RJ, Kang Q, Nennig D, Bailey NG, Brown NA, Betz BL, Tewari M, **Thyagarajan B**, Bachanova V, Mroz P. One-Step Multiplexed Droplet Digital Polymerase Chain Reaction for Quantification of p190 BCR-ABL1 Fusion Transcript in B-Lymphoblastic Leukemia. *Arch Pathol Lab Med*. 2022 Jan 1;146(1):92-100. doi: 10.5858/arpa.2020-0454-OA. PMID: 33769465.
108. Henkle BE, Colangelo LA, Dransfield MT, Hou L, Jacobs DR Jr, Joyce BT, Pistenmaa CL, Putman RK, Sidney S, **Thyagarajan B**, Washko GR, Yaffe K, Kalhan R, Kunisaki KM. The presence of emphysema on chest imaging and mid-life cognition. *ERJ Open Res*. 2021 Mar 15;7(1):00048-2021. doi: 10.1183/23120541.00048-2021. PMID: 33748259; PMCID: PMC7957295.
109. Yang Y, Zmuda JM, Wojczynski MK, **Thyagarajan B**, Christensen K, Cvejkus RK, Kuipers AL. Genetic association analysis of the cardiovascular biomarker: N-terminal fragment of pro-B-type natriuretic peptide (NT-proBNP). *PLoS One*. 2021 Mar 15;16(3):e0248726. doi: 10.1371/journal.pone.0248726. PMID: 33720941; PMCID: PMC7959346.
110. Tsang SH, Avilés-Santa ML, Abnet CC, Brito MO, Daviglius ML, Wassertheil-Smoller S, Castañeda SF, Minnerath S, Talavera GA, Graubard BI, **Thyagarajan B**, Camargo MC. Seroprevalence and Determinants of *Helicobacter pylori* Infection in the Hispanic Community Health Study/Study of Latinos. *Clin Gastroenterol Hepatol*. 2022 Mar;20(3):e438-e451. PMID: 33667677; PMCID: PMC8410907.
111. Crimmins EM, **Thyagarajan B**, Kim JK, Weir D, Faul J. Quest for a summary measure of biological age: the health and retirement study. *Geroscience*. 2021 Feb;43(1):395-408. doi: 10.1007/s11357-021-00325-1. Epub 2021 Feb 5. PMID: 33544281; PMCID: PMC8050146.
112. Thomas SN, Altawallbeh G, Zaun CP, Pape KA, Peters JM, Titcombe PJ, Dileepan T, Rapp MJ, Bold TD, Schacker TW, Arbefeville S, Ferrieri P, **Thyagarajan B**, Jenkins MK, Karger AB. Initial determination of COVID-19 seroprevalence among

- outpatients and healthcare workers in Minnesota using a novel SARS-CoV-2 total antibody ELISA. *Clin Biochem*. 2021 Apr;90:15-22. doi: 10.1016/j.clinbiochem.2021.01.010. Epub 2021 Feb 1. PMID: 33539808; PMCID: PMC7849522.
113. Wang S, Prizment A, **Thyagarajan B**, Blaes A. Cancer Treatment-Induced Accelerated Aging in Cancer Survivors: Biology and Assessment. *Cancers (Basel)*. 2021 Jan 23;13(3):427. doi: 10.3390/cancers13030427. PMID: 33498754; PMCID: PMC7865902.
114. Crimmins EM, **Thyagarajan B**, Levine ME, Weir DR, Faul J. Associations of Age, Sex, Race/Ethnicity, and Education With 13 Epigenetic Clocks in a Nationally Representative U.S. Sample: The Health and Retirement Study. *J Gerontol A Biol Sci Med Sci*. 2021 May 22;76(6):1117-1123. doi: 10.1093/gerona/glab016. PMID: 33453106; PMCID: PMC8140049.
115. Hua S, Qi Q, Kizer JR, Williams-Nguyen J, Strickler HD, **Thyagarajan B**, Daviglus M, Talavera GA, Schneiderman N, Cotler SJ, Cai J, Kaplan R, Isasi CR. Association of liver enzymes with incident diabetes in US Hispanic/Latino adults. *Diabet Med*. 2021 Aug;38(8):e14522. doi: 10.1111/dme.14522. Epub 2021 Jan 28. PMID: 33434318.
116. Wang S, Lo Galbo MD, Blair C, **Thyagarajan B**, Anderson KE, Lazovich D, Prizment A. Diabetes and kidney cancer risk among post-menopausal women: The Iowa women's health study. *Maturitas*. 2021 Jan;143:190-196. doi: 10.1016/j.maturitas.2020.07.010. Epub 2020 Aug 11. PMID: 33308628; PMCID: PMC8034547.
117. Sun B, Wen YF, Culhane-Pera KA, Lo M, Xiong T, Lee K, Peng K, **Thyagarajan B**, Bishop JR, Zierhut H, Straka RJ. Differences in Predicted Warfarin Dosing Requirements Between Hmong and East Asians Using Genotype-Based Dosing Algorithms. *Pharmacotherapy*. 2021 Mar;41(3):265-276. doi: 10.1002/phar.2487. Epub 2020 Dec 21. PMID: 33202062.
118. Granot-HersHKovitz E, Tarraf W, Kurniansyah N, Daviglus M, Isasi CR, Kaplan R, Lamar M, Perreira KM, Wassertheil-Smoller S, Stickel A, **Thyagarajan B**, Zeng D, Fornage M, DeCarli CS, González HM, Sofer T. APOE alleles' association with cognitive function differs across Hispanic/Latino groups and genetic ancestry in the study of Latinos-investigation of neurocognitive aging (HCHS/SOL). *Alzheimers Dement*. 2021 Mar;17(3):466-474. doi: 10.1002/alz.12205. Epub 2020 Nov 6. PMID: 33155766; PMCID: PMC8016734.
119. Bhargava D, Arora M, DeFor TE, Brunstein CG, **Thyagarajan B**, El Jurdi N, Holtan SG, Rashidi A, Warlick E, Ramesh V, Rogosheske J, Bhatia S, Weisdorf DJ. Use of Potentially Inappropriate Medications in Older Allogeneic Hematopoietic Cell Transplantation Recipients. *Biol Blood Marrow Transplant*. 2020 Dec;26(12):2329-2334. doi: 10.1016/j.bbmt.2020.08.031. Epub 2020 Sep 10. PMID: 32919078; PMCID: PMC7683366.
120. Santanasto AJ, Cvejkus RK, Wojczynski MK, Marron MM, Schupf N, Christensen K, **Thyagarajan B**, Zmuda JM. Circulating Procollagen Type III N-Terminal Peptide and Physical Function in Adults from the Long Life Family Study. *J Gerontol A Biol Sci Med Sci*. 2021 Jun 14;76(7):1273-1279. doi: 10.1093/gerona/glaa197. PMID: 32794566; PMCID: PMC8355442.
121. Prizment AE, Staley C, Onyeaghala GC, Vivek S, **Thyagarajan B**, Straka RJ, Demmer RT, Knights D, Meyer KA, Shaukat A, Sadowsky MJ, Church TR. Randomised clinical study: oral aspirin 325 mg daily vs placebo alters gut microbial composition and bacterial taxa associated with colorectal cancer risk. *Aliment Pharmacol Ther*. 2020 Sep;52(6):976-987. doi: 10.1111/apt.16013. Epub 2020 Aug 8.

- PMID: 32770859; PMCID: PMC7719064.
122. Sebastiani P, Andersen SL, Sweigart B, Du M, Cosentino S, **Thyagarajan B**, Christensen K, Schupf N, Perls TT. Patterns of multi-domain cognitive aging in participants of the Long Life Family Study. *Geroscience*. 2020 Oct;42(5):1335-1350. doi: 10.1007/s11357-020-00202-3. Epub 2020 Jun 8. PMID: 32514870; PMCID: PMC7525612.
 123. Hunter-Schlichting D, Lane J, Cole B, Flaten Z, Barcelo H, Ramasubramanian R, Cassidy E, Faul J, Crimmins E, Pankratz N, **Thyagarajan B**. Validation of a hybrid approach to standardize immunophenotyping analysis in large population studies: The Health and Retirement Study. *Scientific Reports* 2020; 10(1): 8759. PMID: 32472068; PMCID: PMC7260195.
 124. Ramasubramanian R, Kalhan R, Jacobs D.R., Washko G.R., Hou L , Gross MD, Guan W, **Thyagarajan B**. Lung Function and Gene Expression of Pathogen Recognition Pathway Receptors: The CARDIA Lung Study. *Scientific Reports* 2020; 10(1): 9360. PMID: 32518239; PMCID: PMC7283270.
 125. **Thyagarajan B**, Nelson HH, Poynter JN, Prizment AE, Roesler MA, Cassidy E, Putnam S, Amos L, Hickie A, Reilly C, Spector LG, Lazovich D. Field Application of Digital Technologies for Health Assessment in the 10,000 Families Study. *Cancer Epidemiol Biomarkers Prev*. 2020 Apr;29(4):744-751. doi: 10.1158/1055-9965.EPI-19-0858. Epub 2020 Mar 4. PMID: 32132151.
 126. Carlson P, Wojczynski MK, Druley T, Lee JH, Zmuda JM, **Thyagarajan B**. Prevalence of clinically actionable disease variants in exceptionally long-lived families. *BMC Med Genomics*. 2020 Apr 10;13(1):61. doi: 10.1186/s12920-020-0710-5. PMID: 32272925; PMCID: PMC7146901.
 127. Arbeev KG, Bagley O, Ukraintseva SV, Wu D, Duan H, Kulminski AM, Stallard E, Christensen K, Lee JH, **Thyagarajan B**, Zmuda JM, Yashin AI. Genetics of physiological dysregulation: findings from the long life family study using joint models. *Aging (Albany NY)*. 2020 Apr 1;12(7):5920-5947. doi: 10.18632/aging.102987. Epub 2020 Apr 1. PMID: 32235003.
 128. Hosgood HD, Slavkovich V, Hua S, Klugman M, Grau-Perez M, **Thyagarajan B**, Graziano J, Cai J, Shaw PA, Kaplan R, Navas-Acien A, Mossavar-Rahmani Y. Urinary Arsenic Species are Detectable in Urban Underserved Hispanic/Latino Populations: A Pilot Study from the Study of Latinos: Nutrition & Physical Activity Assessment Study (SOLNAS). *Int J Environ Res Public Health*. 2020 Mar 27;17(7):2247. doi: 10.3390/ijerph17072247. PMID: 32230710.
 129. Okedele OO, Nelson HH, Oyenuga ML, **Thyagarajan B**, Prizment A. Cytomegalovirus and cancer-related mortality in the national health and nutritional examination survey. *Cancer Causes Control*. 2020 31(6):541-547. doi: 10.1007/s10552-020-01296-y. PMID: 32222844.
 130. Arbeev KG, Bagley O, Ukraintseva SV, Duan H, Kulminski AM, Stallard E, Wu D, Christensen K, Feitosa MF, **Thyagarajan B**, Zmuda JM, Yashin AI. Composite Measure of Physiological Dysregulation as a Predictor of Mortality: The Long Life Family Study. *Front Public Health*. 2020 Mar 6;8:56. doi: 10.3389/fpubh.2020.00056. PMID: 32211364; PMCID: PMC7067825.
 131. Hodonsky CJ, Baldassari AR, Bien SA, Raffield LM, Highland HM, Sitlani CM, Wojcik GL, Tao R, Graff M, Tang W, **Thyagarajan B**, Buyske S, Fornage M, Hindorff LA, Li Y, Lin D, Reiner AP, North KE, Loos RJF, Kooperberg C, Avery CL. Ancestry-specific associations identified in genome-wide combined-phenotype study of red blood cell traits emphasize benefits of diversity in genomics. *BMC Genomics*. 2020 Mar 14;21(1):228. doi: 10.1186/s12864-020-6626-9. PMID: 32171239; PMCID: PMC7071748.
 132. Wen YF, Culhane-Pera KA, **Thyagarajan B**, Bishop JR, Zierhut H, Lo M, Xiong T, Peng K, Holzer K, Lee K, Straka RJ. Potential Clinical Relevance of Differences in Allele

- Frequencies Found within Very Important Pharmacogenes between Hmong and East Asian Populations. *Pharmacotherapy*. 2020 Feb;40(2):142-152. doi: 10.1002/phar.2360. Epub 2020 Jan 14. PMID: 31884695.
133. Yohe S, Sivasankar M, Ghosh A, Ghosh A, Holle J, Murugan S, Gupta R, Schimmenti LA, Vedam R, **Thyagarajan B**. Prevalence of mutations in inherited retinal diseases: A comparison between the United States and India. *Mol Genet Genomic Med*. 2020 Feb;8(2):e1081. doi: 10.1002/mgg3.1081. Epub 2019 Dec 9. PMID: 31816670; PMCID: PMC7005662.
134. Han YY, Jerschow E, Forno E, Hua S, Mossavar-Rahmani Y, Perreira KM, Sotres-Alvarez D, Afshar M, Punjabi NM, **Thyagarajan B**, Shivappa N, Hébert JR, Kaplan RC, Celedón JC. Dietary Patterns, Asthma, and Lung Function in the Hispanic Community Health Study/Study of Latinos. *Ann Am Thorac Soc*. 2020 Mar;17(3):293-301. doi: 10.1513/AnnalsATS.201908-629OC. PMID: 31689128; PMCID: PMC7044698.
135. Washko GR, Colangelo LA, Estépar RSJ, Ash SY, Bhatt SP, Okajima Y, Liu K, Jacobs DR Jr, Iribarren C, **Thyagarajan B**, Lewis CE, Kumar R, Han MK, Dransfield MT, Carnethon MR, Kalhan R. Adult Life-Course Trajectories of Lung Function and the Development of Emphysema: The CARDIA Lung Study. *Am J Med*. 2020 Feb;133(2):222-230.e11. doi: 10.1016/j.amjmed.2019.06.049. Epub 2019 Jul 29. PMID: 31369720; PMCID: PMC6980254.
136. Santanasto AJ, Marron MM, Boudreau RM, Feitosa MF, Wojczynski MK, Arbeev KG, **Thyagarajan B**, Schupf N, Stallard E, Sebastiani P, Cosentino S, Christensen K, Newman AB. Prevalence, Incidence, and Risk Factors for Overall, Physical, and Cognitive Independence Among Those From Exceptionally Long-Lived Families: The Long Life Family Study. *J Gerontol A Biol Sci Med Sci*. 2020 Apr 17;75(5):899-905. doi: 10.1093/gerona/glz124. PMID: 31086986.
137. Hartman P, Beckman K, Silverstein K, Yohe S, Schomaker M, Henzler C, Onsongo G, Lam HC, Munro S, Daniel J, Billstein B, Deshpande A, Hauge A, Mroz P, Lee W, Holle J, Wiens K, Karnuth K, Kemmer T, Leary M, Michel S, Pohlman L, Thayanithy V, Nelson A, Bower M, **Thyagarajan B**. Next generation sequencing for clinical diagnostics: Five year experience of an academic laboratory. *Mol Genet Metab Rep*. 2019 Mar 1;19:100464. doi: 10.1016/j.ymgmr.2019.100464. PMID: 30891420; PMCID: PMC6403447.
138. Pamukcuoglu M, Bhatia S, Weisdorf DJ, DeFor TE, Ustun C, Nayar M, Holtan SG, Jurdi NE, **Thyagarajan B**, Brunstein CG, Bachanova V, Warlick ED, Severseike B, Te HS, Lund T, Arora M. Hematopoietic Cell Transplant-Related Toxicities and Mortality in Frail Recipients. *Biol Blood Marrow Transplant*. 2019 Dec;25(12):2454-2460. doi: 10.1016/j.bbmt.2019.07.030. Epub 2019 Aug 5. PMID: 31394273; PMCID: PMC6900448.
139. Kaplan RC, Wang Z, Usyk M, Sotres-Alvarez D, Daviglius ML, Schneiderman N, Talavera GA, Gellman MD, **Thyagarajan B**, Moon JY, Vázquez-Baeza Y, McDonald D, Williams-Nguyen JS, Wu MC, North KE, Shaffer J, Sollecito CC, Qi Q, Isasi CR, Wang T, Knight R, Burk RD. Gut microbiome composition in the Hispanic Community Health Study/Study of Latinos is shaped by geographic relocation, environmental factors, and obesity. *Genome Biol*. 2019 Nov 1;20(1):219. doi: 10.1186/s13059-019-1831-z. PMID: 31672155; PMCID: PMC6824043.
140. Onyeaghala G, Lane J, Pankratz N, Nelson HH, **Thyagarajan B**, Walcheck B, Anderson KE, Prizment AE. Association between MICA polymorphisms, s-MICA levels, and pancreatic cancer risk in a population-based case-control study. *PLoS One*. 2019 Jun 5;14(6):e0217868. doi: 10.1371/journal.pone.0217868. PMID: 31166958; PMCID: PMC6550421.
141. Bushara O, Miller D, Giubellino A, Schomaker M, **Thyagarajan B**, Nelson AC. Diagnosis of epidermodysplasia verruciformis: Two cases highlighting the role of direct HPV L1 gene sequencing. *J Cutan Pathol*. 2019 Jun;46(6):436-441. doi: 10.1111/cup.13444. Epub 2019 Mar 28. PMID: 30773702.

142. Kuipers AL, Wojczynski MK, Barinas-Mitchell E, Minster RL, Wang L, Feitosa MF, Kulminski A, **Thyagarajan B**, Lee JH, Province MA, Newman AB, Zmuda JM; Long-Life Family Study. Genome-wide linkage analysis of carotid artery traits in exceptionally long-lived families. *Atherosclerosis*. 2019 Dec;291:19-26. doi: 10.1016/j.atherosclerosis.2019.10.008. Epub 2019 Oct 10. PMID: 31634740; PMCID: PMC6899182.
143. Marron MM, Wojczynski MK, Minster RL, Boudreau RM, Sebastiani P, Cosentino S, **Thyagarajan B**, Ukraintseva SV, Schupf N, Christensen K, Feitosa M, Perls T, Zmuda JM, Newman AB; Long Life Family Study. Heterogeneity of healthy aging: comparing long-lived families across five healthy aging phenotypes of blood pressure, memory, pulmonary function, grip strength, and metabolism. *Geroscience*. 2019 Aug;41(4):383-393. doi: 10.1007/s11357-019-00086-y. Epub 2019 Jul 22. PMID: 31332674; PMCID: PMC6815318.
144. Marron MM, Miljkovic I, Boudreau RM, Christensen K, Feitosa MF, Lee JH, Sebastiani P, **Thyagarajan B**, Wojczynski MK, Zmuda JM, Newman AB; Long Life Family Study. A novel healthy metabolic phenotype developed among a cohort of families enriched for longevity. *Metabolism*. 2019 May;94:28-38. doi: 10.1016/j.metabol.2019.01.010. Epub 2019 Jan 30. PMID: 30710575; PMCID: PMC7099575.
145. Tryon RK, Tolar J, Preusser SM, Riddle MJ, Keene DR, Bower M, **Thyagarajan B**, Ebens CL. A homozygous frameshift variant in the *KRT5* gene is compatible with life and results in severe recessive epidermolysis bullosa simplex. *JAAD Case Rep*. 2019 Jun 26;5(7):576-579. doi: 10.1016/j.jdcr.2019.03.025. PMID: 31312705; PMCID: PMC6610641.
146. Parrinello CM, Rudolph BJ, Lazo M, Gallo LC, **Thyagarajan B**, Cotler SJ, Qi Q, Seeherunvong T, Vidot DC, Strickler HD, Kaplan RC, Isasi CR. Associations of Insulin Resistance and Glycemia With Liver Enzymes in Hispanic/Latino Youths: Results From the Hispanic Community Children's Health Study/Study of Latino Youth (SOL Youth). *J Clin Gastroenterol*. 2019 Feb;53(2):e46-e53. doi: 10.1097/MCG.0000000000000946. PMID: 29099463; PMCID: PMC5934331.
147. Scannell Bryan M, Sofer T, Mossavar-Rahmani Y, **Thyagarajan B**, Zeng D, Daviglius ML, Argos M. Mendelian randomization of inorganic arsenic metabolism as a risk factor for hypertension- and diabetes-related traits among adults in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) cohort. *Int J Epidemiol*. 2019 Jun 1;48(3):876-886. doi: 10.1093/ije/dyz046. PMID: 30929011; PMCID: PMC6659367.
148. **Thyagarajan B**, Shippee N, Parsons H, Vivek S, Crimmins E, Faul J, Shippee T. How Does Subjective Age Get "Under the Skin"? The Association Between Biomarkers and Feeling Older or Younger Than One's Age: The Health and Retirement Study. *Innov Aging*. 2019 Sep 4;3(4):igz035. doi: 10.1093/geroni/igz035. PMID: 31528718; PMCID: PMC6736363.
149. Wells JM, Colangelo LA, Sivarajan L, **Thyagarajan B**, Dransfield MT, Iribarren C, Reyfman PA, Jacobs DR, Washko GR, Kalhan R. Inflammation and endothelial activation in early adulthood are associated with future emphysema: the CARDIA Lung Study. *Eur Respir J*. 2019 Jan 17;53(1): 1801532. doi: 10.1183/13993003.01532-2018. PubMed PMID: 30464011.
150. Kraja AT, Liu C, Fetterman JL, Graff M, Have CT, Gu C, Yanek LR, Feitosa MF, Arking DE, Chasman DI, Young K, Ligthart S, Hill WD, Weiss S, Luan J, Giulianini F, Li-Gao R, Hartwig FP, Lin SJ, Wang L, Richardson TG, Yao J, Fernandez EP, Ghanbari M, Wojczynski MK, Lee WJ, Argos M, Armasu SM, Barve RA, Ryan KA, An P, Baranski TJ, Bielinski SJ, Bowden DW, Broeckel U, Christensen K, Chu AY, Corley J, Cox SR, Uitterlinden AG, Rivadeneira F, Cropp CD, Daw EW, van Heemst D, de Las Fuentes L, Gao H, Tzoulaki I, Ahluwalia TS, de Mutsert R, Emery LS, Erzurumluoglu AM, Perry JA, Fu M, Forouhi NG, Gu Z, Hai Y, Harris SE, Hemani G, Hunt SC, Irvin MR, Jonsson AE, Justice AE, Kerrison ND, Larson NB, Lin KH, Love-Gregory LD, Mathias RA, Lee JH, Nauck M, Noordam R, Ong KK, Pankow J, Patki A, Pattie A, Petersmann A, Qi Q, Ribbel-Madsen R, Rohde R, Sandow K, Schnurr TM, Sofer T, Starr

- JM, Taylor AM, Teumer A, Timpson NJ, de Haan HG, Wang Y, Weeke PE, Williams C, Wu H, Yang W, Zeng D, Witte DR, Weir BS, Wareham NJ, Vestergaard H, Turner ST, Torp-Pedersen C, Stergiakouli E, Sheu WH, Rosendaal FR, Ikram MA, Franco OH, Ridker PM, Perls TT, Pedersen O, Nohr EA, Newman AB, Linneberg A, Langenberg C, Kilpeläinen TO, Kardina SLR, Jørgensen ME, Jørgensen T, Sørensen TIA, Homuth G, Hansen T, Goodarzi MO, Deary IJ, Christensen C, Chen YI, Chakravarti A, Brandslund I, Bonnelykke K, Taylor KD, Wilson JG, Rodriguez S, Davies G, Horta BL, **Thyagarajan B**, Rao DC, Grarup N, Davila-Roman VG, Hudson G, Guo X, Arnett DK, Hayward C, Vaidya D, Mook-Kanamori DO, Tiwari HK, Levy D, Loos RJF, Dehghan A, Elliott P, Malik AN, Scott RA, Becker DM, de Andrade M, Province MA, Meigs JB, Rotter JI, North KE. Associations of Mitochondrial and Nuclear Mitochondrial Variants and Genes with Seven Metabolic Traits. *Am J Hum Genet.* 2019 Jan 3;104(1):112-138. doi: 10.1016/j.ajhg.2018.12.001. Epub 2018 Dec 27. PubMed PMID: 30595373; PubMed Central PMCID: PMC6323610.
- 151.** Svendsen AJ, Tan Q, Jakobsen MA, **Thyagarajan B**, Nygaard M, Christiansen L, Mengel-From J. White blood cell mitochondrial DNA copy number is decreased in rheumatoid arthritis and linked with risk factors. A twin study. *J Autoimmun.* 2019 Jan;96:142-146. doi: 10.1016/j.jaut.2018.09.008. Epub 2018 Oct 14. PubMed PMID: 30327147.
- 152.** Cuttica MJ, Colangelo LA, Dransfield MT, Bhatt SP, Rana JS, Jacobs DR Jr, **Thyagarajan B**, Sidney S, Lewis CE, Liu K, Lloyd-Jones D, Washko G, Kalhan R. Lung Function in Young Adults and Risk of Cardiovascular Events Over 29 Years: The CARDIA Study. *J Am Heart Assoc.* 2018 Dec 18;7(24):e010672. doi: 10.1161/JAHA.118.010672. PubMed PMID: 30561252.
- 153.** González HM, Tarraf W, Jian X, Vásquez PM, Kaplan R, **Thyagarajan B**, Daviglus M, Lamar M, Gallo LC, Zeng D, Fornage M. Apolipoprotein E genotypes among diverse middle-aged and older Latinos: Study of Latinos-Investigation of Neurocognitive Aging results (HCHS/SOL). *Sci Rep.* 2018 Dec 13;8(1):17578. doi: 10.1038/s41598-018-35573-3. PubMed PMID: 30546063; PubMed Central PMCID: PMC6292877.
- 154.** **Thyagarajan B**, Barcelo H, Crimmins E, Weir D, Minnerath S, Vivek S, Faul J. Effect of delayed cell processing and cryopreservation on immunophenotyping in multicenter population studies. *J Immunol Methods.* 2018 Dec;463:61-70. doi: 10.1016/j.jim.2018.09.007. Epub 2018 Sep 14. PubMed PMID: 30222961.
- 155.** Kulminski AM, Barochia AV, Loika Y, Raghavachari N, Arbeev KG, Wojczynski MK, **Thyagarajan B**, Vardarajan BN, Christensen K, Yashin AI, Levine SJ. The APOE ε4 allele is associated with a reduction in FEV1/FVC in women: A cross-sectional analysis of the Long Life Family Study. *PLoS One.* 2018 Nov 9;13(11):e0206873. doi: 10.1371/journal.pone.0206873. eCollection 2018. PubMed PMID: 30412599; PubMed Central PMCID: PMC6226172.
- 156.** Gibbs DC, Fedirko V, Um C, Gross MD, **Thyagarajan B**, Bostick RM. Associations of Circulating 25-Hydroxyvitamin D3 Concentrations With Incident, Sporadic Colorectal Adenoma Risk According to Common Vitamin D-Binding Protein Isoforms. *Am J Epidemiol.* 2018 Sep 1;187(9):1923-1930. doi: 10.1093/aje/kwy102. PubMed PMID: 29788105; PubMed Central PMCID: PMC6118072.
- 157.** Mehta R, Cai X, Hodakowski A, **Thyagarajan B**, Zeng D, Zee PC, Wohlgemuth WK, Redline S, Lash JP, Wolf M, Isakova T. Sleep disordered breathing and fibroblast growth factor 23 in the Hispanic Community Health Study/Study of Latinos. *Bone.* 2018 Sep;114:278-284. doi: 10.1016/j.bone.2018.06.024. Epub 2018 Jul 3. PubMed PMID: 29986841.
- 158.** Rashidi A, Shanley R, Yohe SL, **Thyagarajan B**, Curtsinger J, Anasetti C,

- Waller EK, Scott BL, Blazar BR, Weisdorf DJ. Recipient single nucleotide polymorphisms in Paneth cell antimicrobial peptide genes and acute graft-versus-host disease: analysis of BMT CTN-0201 and -0901 samples. *Br J Haematol.* 2018 Sep;182(6):887-894. doi: 10.1111/bjh.15492. Epub 2018 Jul 13. PubMed PMID: 30004111; PubMed Central PMCID: PMC6128755.
159. Tedla YG, Yano Y, **Thyagarajan B**, Kalhan R, Viera AJ, Rosenberg S, Greenland P, Carnethon MR. Peak lung function during young adulthood and future long-term blood pressure variability: The Coronary Artery Risk Development in Young Adults (CARDIA) study. *Atherosclerosis.* 2018 Aug;275:225-231. doi: 10.1016/j.atherosclerosis.2018.06.816. Epub 2018 Jun 15. PubMed PMID: 29957459.
160. Akinkugbe AA, Barritt AS, Cai J, Offenbacher S, **Thyagarajan B**, Khambaty T, Singer R, Kallwitz E, Heiss G, Slade GD. Periodontitis and prevalence of elevated aminotransferases in the Hispanic Community Health Study/Study of Latinos. *J Periodontol.* 2018 Aug;89(8):949-958. doi: 10.1002/JPER.17-0579. PubMed PMID: 29717494; PubMed Central PMCID: PMC6115292.
161. Wyss AB, Sofer T, Lee MK, Terzikhan N, Nguyen JN, Lahousse L, Latourelle JC, Smith AV, Bartz TM, Feitosa MF, Gao W, Ahluwalia TS, Tang W, Oldmeadow C, Duan Q, de Jong K, Wojczynski MK, Wang XQ, Noordam R, Hartwig FP, Jackson VE, Wang T, Obeidat M, Hobbs BD, Huan T, Gui H, Parker MM, Hu D, Mogil LS, Kichaev G, Jin J, Graff M, Harris TB, Kalhan R, Heckbert SR, Paternoster L, Burkart KM, Liu Y, Holliday EG, Wilson JG, Vonk JM, Sanders JL, Barr RG, de Mutsert R, Menezes AMB, Adams HHH, van den Berge M, Joehanes R, Levin AM, Liberto J, Launer LJ, Morrison AC, Sitlani CM, Celedón JC, Kritchevsky SB, Scott RJ, Christensen K, Rotter JI, Bonten TN, Wehrmeister FC, Bossé Y, Xiao S, Oh S, Franceschini N, Brody JA, Kaplan RC, Lohman K, McEvoy M, Province MA, Rosendaal FR, Taylor KD, Nickle DC, Williams LK, Burchard EG, Wheeler HE, Sin DD, Gudnason V, North KE, Fornage M, Psaty BM, Myers RH, O'Connor G, Hansen T, Laurie CC, Cassano PA, Sung J, Kim WJ, Attia JR, Lange L, Boezen HM, **Thyagarajan B**, Rich SS, Mook-Kanamori DO, Horta BL, Uitterlinden AG, Im HK, Cho MH, Brusselle GG, Gharib SA, Dupuis J, Manichaikul A, London SJ. Multiethnic meta-analysis identifies ancestry-specific and cross-ancestry loci for pulmonary function. *Nat Commun.* 2018 Jul 30;9(1):2976. doi: 10.1038/s41467-018-05369-0. PubMed PMID: 30061609; PubMed Central PMCID: PMC6065313.
162. Henzler C, Schomaker M, Yang R, Lambert AP, LaRue R, Kincaid R, Beckman K, Kemmer T, Wilson J, Yohe S, **Thyagarajan B**, Nelson AC. Optimization of a microfluidics-based next generation sequencing assay for clinical oncology diagnostics. *Ann Transl Med.* 2018 May;6(9):162. doi: 10.21037/atm.2018.05.07. PubMed PMID: 29911110; PubMed Central PMCID: PMC5985273.
163. Barcelo H, Faul J, Crimmins E, **Thyagarajan B**. A Practical Cryopreservation and Staining Protocol for Immunophenotyping in Population Studies. *Curr Protoc Cytom.* 2018 Apr;84(1):e35. doi: 10.1002/cpcy.35. PubMed PMID: 30040214; PubMed Central PMCID: PMC6060642.
164. Patel NP, Prizment AE, **Thyagarajan B**, Roberts E, Nelson HH, Church TR, Lazovich D. Urban vs rural residency and allergy prevalence among adult women: Iowa Women's Health Study. *Ann Allergy Asthma Immunol.* 2018;120(6):654-660. Pubmed PMID: 29630929
165. González HM, Tarraf W, Vásquez P, Sanderlin AH, Rosenberg NI, Davis S, Rodríguez CJ, Gallo LC, **Thyagarajan B**, Daviglius M, Khambaty T, Cai J, Schneiderman N. Metabolic Syndrome and Neurocognition Among Diverse Middle-Aged and Older Hispanics/Latinos: HCHS/SOL Results. *Diabetes Care.* 2018;41(7):1501-1509. PubMed PMID: 29716895; PubMed Central PMCID: PMC6014545.

166. Kalhan R, Dransfield MT, Colangelo LA, Cuttica MJ, Jacobs DR Jr, **Thyagarajan B**, San Jose Estepar R, Harmouche R, Onieva Onieva J, Ash SY, Okajima Y, Iribarren C, Sidney S, Lewis CE, Mannino DM, Liu K, Smith LJ, Washko GR. Respiratory Symptoms in Young Adults and Future Lung Disease: The CARDIA Lung Study. *Am J Respir Crit Care Med*. 2018. Jun 15;197(12):1616-1624. PubMed PMID: 29369684.
167. **Thyagarajan B**, Guan W, Fedirko V, Barcelo H, Ramasubramaian R, Gross M, Goodman M, Bostick RM. Associations of mitochondrial polymorphisms with sporadic colorectal adenoma. *Mol Carcinog*. 2018 May;57(5):598-605 PubMed PMID: 29323753 PubMed Central PMCID: PMC5880705.
168. Bulka CM, Daviglius ML, Persky VW, Durazo-Arvizu RA, Avilés-Santa ML, Gallo LC, Hosgood HD 3rd, Singer RH, Talavera GA, **Thyagarajan B**, Zeng D, Argos M. Occupational Exposures and Metabolic Syndrome Among Hispanics/Latinos: Cross-Sectional Results From the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *J Occup Environ Med*. 2017 Nov;59(11):1047-1055. PubMed PMID: 29112602 PubMed Central PMCID:PMC5841242
169. Parrinello CM, Rudolph BJ, Lazo M, Gallo LC, **Thyagarajan B**, Cotler SJ, Qi Q, Seeherunvong T, Vidot DC, Strickler HD, Kaplan RC, Isasi CR. Associations of Insulin Resistance and Glycemia With Liver Enzymes in Hispanic/Latino Youths: Results From the Hispanic Community Children's Health Study/Study of Latino Youth (SOL Youth). *J Clin Gastroenterol*. 2019 Feb;53(2):e46-e53. PubMed PMID:29099463 PubMed Central PMCID: PMC5934331
170. Eldridge RC, Goodman M, Bostick RM, Fedirko V, Gross M, **Thyagarajan B**, Flanders WD. A Novel Application of Structural Equation Modeling Estimates the Association between Oxidative Stress and Colorectal Adenoma. *Cancer Prev Res*. 2018 Jan;11(1):52-58. 2017 PubMed PMID: 29074536
171. Bhatia S, Qualls C, Crowell TA, Arynchyn A, **Thyagarajan B**, Smith LJ, Kalhan R, Jacobs DR, Kramer H, Duprez D, Celli B, Sood A. Rapid decline in lung function in healthy adults predicts incident excess urinary albumin excretion later in life. *BMJ Open Respir Res*. 2017 Jul 29;4(1):e000194. doi: 10.1136/bmjresp-2017-000194. PMID: 29071073; PMCID: PMC5647541.
172. Nelson AC, Boone J, Cartwright D, **Thyagarajan B**, Kincaid R, Lambert AP, Karnuth K, Henzler C, Yohe S. Optimal detection of clinically relevant mutations in colorectal carcinoma: sample pooling overcomes intra-tumoral heterogeneity. *Mod Pathol*. 2018 Feb;31(2):343-349. doi: 10.1038/modpathol.2017.120. Epub 2017 Oct 13. PMID: 29027537.
173. Yohe S, **Thyagarajan B**. Review of Clinical Next-Generation Sequencing. *Arch Pathol Lab Med*. 2017 Nov;141(11):1544-1557. doi: 10.5858/arpa.2016-0501-RA. Epub 2017 Aug 7. PMID: 28782984.
174. Moualla M, Qualls C, Arynchyn A, **Thyagarajan B**, Kalhan R, Smith LJ, Carr JJ, Jacobs DR, Sood A. Rapid decline in lung function is temporally associated with greater metabolically active adiposity in a longitudinal study of healthy adults. *Thorax*. 2017 Dec;72(12):1113-1120. doi: 10.1136/thoraxjnl-2016-209125. Epub 2017 Jul 20. PMID: 28729298; PMCID: PMC6158777.
175. Camacho A, Tarraf W, Jimenez DE, Gallo LC, Gonzalez P, Kaplan RC, Lamar M, Khambaty T, Thyagarajan B, Perreira KM, Hernandez R, Cai J, Daviglius ML, Wassertheil-Smoller S, González HM. Anxious Depression and Neurocognition among Middle-Aged and Older Hispanic/Latino Adults: Hispanic Community Health Study/Study of Latinos (HCHS/SOL) Results. *Am J Geriatr Psychiatry*. 2018 Feb;26(2):238-249. doi: 10.1016/j.jagp.2017.06.002. Epub 2017 Jul 3. PMID: 28684241; PMCID: PMC5752627.
176. Onyeaghala G, Lane J, Pankratz N, Nelson HH, **Thyagarajan B**, Walcheck B, Anderson KE, Prizment AE. Association between MICA polymorphisms, s-MICA levels, and pancreatic cancer risk in a population-based case-control study. *PLoS One*. 2019 Jun

- 5;14(6):e0217868. doi: 10.1371/journal.pone.0217868. PMID: 31166958; PMCID: PMC6550421.
- 177.** Raffield LM, Louie T, Sofer T, Jain D, Ipp E, Taylor KD, Papanicolaou GJ, Avilés-Santa L, Lange LA, Laurie CC, Conomos MP, Thornton TA, Chen YI, Qi Q, Cotler S, **Thyagarajan B**, Schneiderman N, Rotter JI, Reiner AP, Lin HJ. Genome-wide association study of iron traits and relation to diabetes in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL): potential genomic intersection of iron and glucose regulation? *Hum Mol Genet.* 2017 May 15;26(10):1966-1978. doi: 10.1093/hmg/ddx082. PMID: 28334935; PMCID: PMC6075359.
- 178.** Wolf SM, **Thyagarajan B**, Fogel BL. The need to develop a patient-centered precision medicine model for adults with chronic disability. *Expert Rev Mol Diagn.* 2017 May;17(5):415-418. doi: 10.1080/14737159.2017.1309976. Epub 2017 Apr 3. PMID: 28325089; PMCID: PMC6038920.
- 179.** Eldridge RC, Flanders WD, Bostick RM, Fedirko V, Gross M, **Thyagarajan B**, Goodman M. Using multiple biomarkers and determinants to obtain a better measurement of oxidative stress: a latent variable structural equation model approach. *Biomarkers.* 2017 Sep;22(6):517-524. doi: 10.1080/1354750X.2017.1306752. Epub 2017 Mar 29. PMID: 28298141.
- 180.** Arora M, Weisdorf DJ, Shanley RM, **Thyagarajan B**. Pharmacogenetics of steroid-responsive acute graft-versus-host disease. *Clin Transplant.* 2017 May;31(5):10.1111/ctr.12949. doi: 10.1111/ctr.12949. Epub 2017 Apr 4. PMID: 28266732; PMCID: PMC5413396.
- 181.** Annor F, Goodman M, **Thyagarajan B**, Okosun I, Doumatey A, Gower BA, Il'yasova D. African Ancestry Gradient Is Associated with Lower Systemic F₂-Isoprostane Levels. *Oxid Med Cell Longev.* 2017;2017:8319176. doi: 10.1155/2017/8319176. Epub 2017 Jan 31. PMID: 28250893; PMCID: PMC5307136.
- 182.** Jain D, Hodonsky CJ, Schick UM, Morrison JV, Minnerath S, Brown L, Schurmann C, Liu Y, Auer PL, Laurie CA, Taylor KD, Browning BL, Papanicolaou G, Browning SR, Loos RJF, North KE, **Thyagarajan B**, Laurie CC, Thornton TA, Sofer T, Reiner AP. Genome-wide association of white blood cell counts in Hispanic/Latino Americans: the Hispanic Community Health Study/Study of Latinos. *Hum Mol Genet.* 2017 Mar 15;26(6):1193-1204. doi: 10.1093/hmg/ddx024. PMID: 28158719; PMCID: PMC5968624.
- 183.** Wang T, Goodman M, Sun YV, **Thyagarajan B**, Gross M, Bostick RM. DNA base excision repair genetic risk scores, oxidative balance, and incident, sporadic colorectal adenoma. *Mol Carcinog.* 2017 Jun;56(6):1642-1652. doi: 10.1002/mc.22620. Epub 2017 Feb 23. PMID: 28120344.
- 184.** Sebastiani P, **Thyagarajan B**, Sun F, Schupf N, Newman AB, Montano M, Perls TT. Biomarker signatures of aging. *Aging Cell.* 2017 Apr;16(2):329-338. doi: 10.1111/accel.12557. Epub 2017 Jan 6. PMID: 28058805; PMCID: PMC5334528.
- 185.** Fagan E, Sun F, Bae H, Elo I, Andersen SL, Lee J, Christensen K, Thyagarajan B, Sebastiani P, Perls T, Honig LS, Schupf N; Long Life Family Study. Telomere length is longer in women with late maternal age. *Menopause.* 2017 May;24(5):497-501. doi: 10.1097/GME.0000000000000795. PMID: 27922939; PMCID: PMC5403597.
- 186.** **Thyagarajan B**, Howard AG, Durazo-Arvizu R, Eckfeldt JH, Gellman MD, Kim RS, Liu K, Mendez AJ, Penedo FJ, Talavera GA, Youngblood ME, Zhao L, Sotres-Alvarez D. Analytical and biological variability in biomarker measurement in the Hispanic Community Health Study/Study of Latinos. *Clin Chim Acta.* 2016 Dec 1;463:129-137. doi: 10.1016/j.cca.2016.10.019. Epub 2016 Oct 15. PMID: 27756543; PMCID: PMC5136507.
- 187.** Qi Q, Hua S, Perreira KM, Cai J, Van Horn L, Schneiderman N, **Thyagarajan B**, Delamater AM, Kaplan RC, Isasi CR. Sex Differences in Associations of Adiposity Measures and Insulin Resistance in US Hispanic/Latino Youth: The Hispanic Community Children's

- Health Study/Study of Latino Youth (SOL Youth). *J Clin Endocrinol Metab.* 2017 Jan 1;102(1):185-194. doi: 10.1210/jc.2016-2279. PMID: 27802095; PMCID: PMC5413095.
- 188.** Sebastiani P, **Thyagarajan B**, Sun F, Honig LS, Schupf N, Cosentino S, Feitosa MF, Wojczynski M, Newman AB, Montano M, Perls TT. Age and Sex Distributions of Age-Related Biomarker Values in Healthy Older Adults from the Long Life Family Study. *J Am Geriatr Soc.* 2016 Nov;64(11):e189-e194. doi: 10.1111/jgs.14522. Epub 2016 Oct 26. PMID: 27783390; PMCID: PMC5118076.
- 189.** Onsongo G, Baughn LB, Bower M, Henzler C, Schomaker M, Silverstein KA, **Thyagarajan B**. CNV-RF Is a Random Forest-Based Copy Number Variation Detection Method Using Next-Generation Sequencing. *J Mol Diagn.* 2016 Nov;18(6):872-881. doi: 10.1016/j.jmoldx.2016.07.001. Epub 2016 Sep 3. PMID: 27597741.
- 190.** Kuniholm MH, Jung M, Del Amo J, Talavera GA, **Thyagarajan B**, Hershov RC, Damas OM, Kaplan RC. Awareness of Hepatitis C Virus Seropositivity and Chronic Infection in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *J Immigr Minor Health.* 2016 Dec;18(6):1257-1265. doi: 10.1007/s10903-016-0350-1. PMID: 26864380; PMCID: PMC4980290.
- 191.** Avilés-Santa ML, Hsu LL, Arredondo M, Menke A, Werner E, **Thyagarajan B**, Heiss G, Teng Y, Schneiderman N, Giachello AL, Gallo LC, Talavera GA, Cowie CC. Differences in Hemoglobin A1c Between Hispanics/Latinos and Non-Hispanic Whites: An Analysis of the Hispanic Community Health Study/Study of Latinos and the 2007-2012 National Health and Nutrition Examination Survey. *Diabetes Care.* 2016 Jun;39(6):1010-7. doi: 10.2337/dc15-2579. Epub 2016 Apr 18. PMID: 27208330; PMCID: PMC5317242.
- 192.** Arora M, Lee SJ, Spellman SR, Weisdorf DJ, Guan W, Haagenson M, Wang T, Horowitz MH, Verneris MR, Fleischhauer K, Hsu K, **Thyagarajan B**. Validation Study Failed to Confirm an Association between Genetic Variants in the Base Excision Repair Pathway and Transplant-Related Mortality and Relapse after Hematopoietic Cell Transplantation. *Biol Blood Marrow Transplant.* 2016 Aug;22(8):1531-1532. doi: 10.1016/j.bbmt.2016.04.020. Epub 2016 May 4. PMID: 27155583; PMCID: PMC5364725.
- 193.** Druley TE, Wang L, Lin SJ, Lee JH, Zhang Q, Daw EW, Abel HJ, Chasnoff SE, Ramos EI, Levinson BT, **Thyagarajan B**, Newman AB, Christensen K, Mayeux R, Province MA. Candidate gene resequencing to identify rare, pedigree-specific variants influencing healthy aging phenotypes in the long life family study. *BMC Geriatr.* 2016 Apr 9;16:80. doi: 10.1186/s12877-016-0253-y. PMID: 27060904; PMCID: PMC4826550.
- 194.** Yang R, Nelson AC, Henzler C, **Thyagarajan B**, Silverstein KA. ScanIndel: a hybrid framework for indel detection via gapped alignment, split reads and de novo assembly. *Genome Med.* 2015 Dec 7;7:127. doi: 10.1186/s13073-015-0251-2. PMID: 26643039; PMCID: PMC4671222.
- 195.** **Thyagarajan B**, Guan W, Fedirko V, Barcelo H, Tu H, Gross M, Goodman M, Bostick RM. No association between mitochondrial DNA copy number and colorectal adenomas. *Mol Carcinog.* 2016 Aug;55(8):1290-6. doi: 10.1002/mc.22370. Epub 2015 Aug 10. PMID: 26258394; PMCID: PMC5535736.
- 196.** Honig LS, Kang MS, Cheng R, Eckfeldt JH, **Thyagarajan B**, Leiendecker-Foster C, Province MA, Sanders JL, Perls T, Christensen K, Lee JH, Mayeux R, Schupf N. Heritability of telomere length in a study of long-lived families. *Neurobiol Aging.* 2015 Oct;36(10):2785-90. doi: 10.1016/j.neurobiolaging.2015.06.017. Epub 2015 Jun 18. PMID: 26239175; PMCID: PMC4562863.
- 197.** Jung M, Kuniholm MH, Ho GY, Cotler S, Strickler HD, **Thyagarajan B**, Youngblood M, Kaplan RC, Del Amo J. The distribution of hepatitis B virus exposure and infection in a population-based sample of U.S. Hispanic adults. *Hepatology.* 2016 Feb;63(2):445-52. doi: 10.1002/hep.28328. Epub 2015 Dec 9. PMID: 26523403; PMCID: PMC4718892.

198. Cuttica MJ, Colangelo LA, Shah SJ, Lima J, Kishi S, Arynchyn A, Jacobs DR Jr, **Thyagarajan B**, Liu K, Lloyd-Jones D, Kalhan R. Loss of Lung Health from Young Adulthood and Cardiac Phenotypes in Middle Age. *Am J Respir Crit Care Med*. 2015 Jul 1;192(1):76-85. doi: 10.1164/rccm.201501-0116OC. PMID: 25876160; PMCID: PMC4511426.
199. Nelson AC, Bower M, Baughn LB, Henzler C, Onsongo G, Silverstein K, Schomaker M, Deshpande A, Beckman K, Yohe S, **Thyagarajan B**. Criteria for Clinical Reporting of Variants from a Broad Target Capture NGS Assay without Sanger Verification. *JSM Biomarkers*. 2015 January; 2(1):1005.
200. Nelson EJ, Hughes J, Oakes JM, **Thyagarajan B**, Pankow JS, Kulasingam SL. Human Papillomavirus Infection in Women Who Submit Self-collected Vaginal Swabs After Internet Recruitment. *J Community Health*. 2015 Jun;40(3):379-86. doi: 10.1007/s10900-014-9948-1. PMID: 25257565.
201. Yohe S, Bower M, Onsongo G, Silverstein K, Hauge A, Schomaker M, Zhou Y, Wilson J, Spears M, Bunjer K, Kemmer T, Erdmann J, Beckman B, **Thyagarajan B**. Clinical validation of targeted next generation sequencing for inherited disorders. *Archives of Laboratory Medicine and Pathology* 2015; 139(2):204-10. PMID: 25611102
202. Troup R, Hayes JH, Raatz SK, **Thyagarajan B**, Khaliq W, Jacobs DR Jr, Key NS, Morawski BM, Kaiser D, Bank AJ, Gross M. Effect of black tea intake on blood cholesterol concentrations in individuals with mild hypercholesterolemia: a diet-controlled randomized trial. *J Acad Nutr Diet*. 2015 Feb;115(2):264-71.e2. doi: 10.1016/j.jand.2014.07.021. Epub 2014 Sep 27. PMID: 25266246; PMCID: PMC4312726.
203. Ross JA, Tolar J, Spector LG, DeFor T, Lund TC, Weisdorf DJ, Langer E, Hooten AJ, **Thyagarajan B**, Gleason MK, Wagner JE, Robien K, Verneris MR. An exploratory analysis of mitochondrial haplotypes and allogeneic hematopoietic cell transplantation outcomes. *Biol Blood Marrow Transplant*. 2015 Jan;21(1):81-8. doi: 10.1016/j.bbmt.2014.09.023. Epub 2014 Oct 6. PMID: 25300867; PMCID: PMC4272903.
204. **Thyagarajan B**, Wojczynski M, Minster RL, Sanders J, Barral S, Christiansen L, Barr RG, Newman A; CHARGE consortium, SpiroMeta consortium. Genetic variants associated with lung function: the long life family study. *Respir Res*. 2014 Nov 1;15(1):134. doi: 10.1186/s12931-014-0134-x. PMID: 25409777; PMCID: PMC4228089.
205. Loth DW, Soler Artigas M, Gharib SA, Wain LV, Franceschini N, Koch B, Pottinger TD, Smith AV, Duan Q, Oldmeadow C, Lee MK, Strachan DP, James AL, Huffman JE, Vitart V, Ramasamy A, Wareham NJ, Kaprio J, Wang XQ, Trochet H, Kähönen M, Flexeder C, Albrecht E, Lopez LM, de Jong K, **Thyagarajan B**, Alves AC, Enroth S, Omenaas E, Joshi PK, Fall T, Viñuela A, Launer LJ, Loehr LR, Fornage M, Li G, Wilk JB, Tang W, Manichaikul A, Lahousse L, Harris TB, North KE, Rudnicka AR, Hui J, Gu X, Lumley T, Wright AF, Hastie ND, Campbell S, Kumar R, Pin I, Scott RA, Pietiläinen KH, Surakka I, Liu Y, Holliday EG, Schulz H, Heinrich J, Davies G, Vonk JM, Wojczynski M, Pouta A, Johansson A, Wild SH, Ingelsson E, Rivadeneira F, Völzke H, Hysi PG, Eiriksdottir G, Morrison AC, Rotter JI, Gao W, Postma DS, White WB, Rich SS, Hofman A, Aspelund T, Couper D, Smith LJ, Psaty BM, Lohman K, Burchard EG, Uitterlinden AG, Garcia M, Joubert BR, McArdle WL, Musk AB, Hansel N, Heckbert SR, Zgaga L, van Meurs JB, Navarro P, Rudan I, Oh YM, Redline S, Jarvis DL, Zhao JH, Rantanen T, O'Connor GT, Ripatti S, Scott RJ, Karrasch S, Grallert H, Gaddis NC, Starr JM, Wijmenga C, Minster RL, Lederer DJ, Pekkanen J, Gyllensten U, Campbell H, Morris AP, Gläser S, Hammond CJ, Burkart KM, Beilby J, Kritchevsky SB, Gudnason V, Hancock DB, Williams OD, Polasek O, Zemunik T, Kolcic I, Petrini MF, Wjst M, Kim WJ, Porteous DJ, Scotland G, Smith BH, Viljanen A, Heliövaara M, Attia JR, Sayers I, Hampel R, Gieger C, Deary IJ, Boezen HM, Newman A, Jarvelin MR, Wilson JF, Lind L, Stricker BH, Teumer A, Spector TD, Melén E, Peters MJ, Lange LA, Barr RG, Bracke KR, Verhamme FM, Sung J, Hiemstra PS, Cassano PA, Sood A, Hayward C, Dupuis J, Hall IP, Brusselle GG, Tobin MD,

- London SJ. Genome-wide association analysis identifies six new loci associated with forced vital capacity. *Nat Genet.* 2014 Jul;46(7):669-77. doi: 10.1038/ng.3011. Epub 2014 Jun 15. PMID: 24929828; PMCID: PMC4140093.
- 206.** Onsongo G, Erdmann J, Spears MD, Chilton J, Beckman K, Hauge A, Yohe S, Schomaker M, Bower M, Silverstein KAT, **Thyagarajan B** (both authors contributed equally to this work). Implementation of Cloud based Next Generation Sequencing data analysis in a clinical laboratory. *BMC Res Notes.* 2014 May 23;7:314. doi: 10.1186/1756-0500-7-314. PMID: 24885806; PMCID: PMC4036707.
- 207.** Chen Z, Pereira MA, Seielstad M, Koh WP, Tai ES, Teo YY, Liu J, Hsu C, Wang R, Odegaard AO, **Thyagarajan B**, Koratkar R, Yuan JM, Gross MD, Stram DO. Joint effects of known type 2 diabetes susceptibility loci in genome-wide association study of Singapore Chinese: the Singapore Chinese health study. *PLoS One.* 2014 Feb 10;9(2):e87762. doi: 10.1371/journal.pone.0087762. PMID: 24520337; PMCID: PMC3919750.
- 208.** Singh C, Manivel JC, Truskinovsky AM, Savik K, Amirouche S, Holler J, **Thyagarajan B**, Gulbahce HE, Pambuccian SE. Variability of pathologists' utilization of p16 and ki-67 immunostaining in the diagnosis of cervical biopsies in routine pathology practice and its impact on the frequencies of cervical intraepithelial neoplasia diagnoses and cytohistologic correlations. *Arch Pathol Lab Med.* 2014 Jan;138(1):76-87. doi: 10.5858/arpa.2012-0472-OA. PMID: 24377814.
- 209.** Kong SY, Bostick RM, Flanders WD, McClellan WM, **Thyagarajan B**, Gross MD, Judd S, Goodman M. Oxidative balance score, colorectal adenoma, and markers of oxidative stress and inflammation. *Cancer Epidemiol Biomarkers Prev.* 2014 Mar;23(3):545-54. doi: 10.1158/1055-9965.EPI-13-0619. Epub 2014 Jan 17. PMID: 24443405; PMCID: PMC3959731.
- 210.** Kuniholm MH, Jung M, Everhart JE, Cotler S, Heiss G, McQuillan G, Kim RS, Strickler HD, **Thyagarajan B**, Youngblood M, Kaplan RC, Ho GY. Prevalence of hepatitis C virus infection in US Hispanic/Latino adults: results from the NHANES 2007-2010 and HCHS/SOL studies. *J Infect Dis.* 2014 May 15;209(10):1585-90. doi: 10.1093/infdis/jit672. Epub 2014 Jan 13. PMID: 24423693; PMCID: PMC3997577.
- 211.** An P, Miljkovic I, **Thyagarajan B**, Kraja AT, Daw EW, Pankow JS, Selvin E, Kao WH, Maruthur NM, Nalls MA, Liu Y, Harris TB, Lee JH, Borecki IB, Christensen K, Eckfeldt JH, Mayeux R, Perls TT, Newman AB, Province MA. Genome-wide association study identifies common loci influencing circulating glycosylated hemoglobin (HbA1c) levels in non-diabetic subjects: the Long Life Family Study (LLFS). *Metabolism.* 2014 Apr;63(4):461-8. doi: 10.1016/j.metabol.2013.11.018. Epub 2013 Dec 4. PMID: 24405752; PMCID: PMC3965585.
- 212.** Oetting WS, Guan W, Schladt DP, Wildebush WA, Becker J, **Thyagarajan B**, Jacobson PA, Matas AJ, Israni AK. Telomere length of recipients and living kidney donors and chronic graft dysfunction in kidney transplants. *Transplantation.* 2014 Feb 15;97(3):325-9. doi: 10.1097/01.TP.0000436705.87898.88. PMID: 24492422; PMCID: PMC4104656.
- 213.** Yang B, **Thyagarajan B**, Gross MD, Fedirko V, Goodman M, Bostick RM. No evidence that associations of incident, sporadic colorectal adenoma with its major modifiable risk factors differ by chromosome 8q24 region rs6983267 genotype. *Mol Carcinog.* 2014 Feb;53 Suppl 1:E193-200. doi: 10.1002/mc.22086. Epub 2013 Sep 21. PMID: 24115145.
- 214.** Assad N, Qualls C, Smith LJ, Arynchyn A, **Thyagarajan B**, Schuyler M, Jacobs DR Jr, Sood A. Body mass index is a stronger predictor than the metabolic syndrome for future asthma in women. The longitudinal CARDIA study. *Am J Respir Crit Care Med.* 2013 Aug 1;188(3):319-26. doi: 10.1164/rccm.201303-0457OC. PMID: 23905525; PMCID: PMC5448505.

- 215. Thyagarajan B**, Arora M, Guan W, Barcelo H, Jackson S, Kumar S, Gertz M. Genetic variants in DNA repair pathways are not associated with disease progression among multiple myeloma patients. *Leuk Res.* 2013 Nov;37(11):1527-31. doi: 10.1016/j.leukres.2013.07.012. Epub 2013 Oct 12. PMID: 24129343.
- 216.** Yang B, **Thyagarajan B**, Gross MD, Goodman M, Sun YV, Bostick RM. Genetic variants at chromosome 8q24, colorectal epithelial cell proliferation, and risk for incident, sporadic colorectal adenomas. *Mol Carcinog.* 2014 Feb;53 Suppl 1:E187-92. doi: 10.1002/mc.22047. Epub 2013 Jun 18. PMID: 23776012.
- 217.** Karger AB, Wilson JD, Bower M, Schimmenti LA, **Thyagarajan B**. Detection of PAX2 deletions and duplications using multiplex ligation-dependent probe amplification. *Genet Test Mol Biomarkers.* 2013 Oct;17(10):786-8. doi: 10.1089/gtmb.2013.0176. Epub 2013 Jun 11. PMID: 23756089.
- 218. Thyagarajan B**, Wang R, Nelson H, Barcelo H, Koh WP, Yuan JM. Mitochondrial DNA copy number is associated with breast cancer risk. *PLoS One.* 2013 Jun 12;8(6):e65968. doi: 10.1371/journal.pone.0065968. PMID: 23776581; PMCID: PMC3680391.
- 219.** Oelsner EC, Pottinger TD, Burkart KM, Allison M, Buxbaum SG, Hansel NN, Kumar R, Larkin EK, Lange LA, Loehr LR, London SJ, O'Connor GT, Papanicolaou G, Petrini MF, Rabinowitz D, Raghavan S, Redline S, **Thyagarajan B**, Tracy RP, Wilk JB, White WB, Rich SS, Barr RG. Adhesion molecules, endothelin-1 and lung function in seven population-based cohorts. *Biomarkers.* 2013 May;18(3):196-203. doi: 10.3109/1354750X.2012.762805. Epub 2013 Apr 5. PMID: 23557128; PMCID: PMC3890095.
- 220.** Labadie J, Goodman M, **Thyagarajan B**, Gross M, Sun Y, Fedirko V, Bostick RM. Associations of oxidative balance-related exposures with incident, sporadic colorectal adenoma according to antioxidant enzyme genotypes. *Ann Epidemiol.* 2013 Apr;23(4):223-6. doi: 10.1016/j.annepidem.2012.12.001. Epub 2013 Jan 3. PMID: 23290999; PMCID: PMC3605204.
- 221.** Schupf N, Barral S, Perls T, Newman A, Christensen K, **Thyagarajan B**, Province M, Rossi WK, Mayeux R. Apolipoprotein E and familial longevity. *Neurobiol Aging.* 2013 Apr;34(4):1287-91. doi: 10.1016/j.neurobiolaging.2012.08.019. Epub 2012 Oct 5. PMID: 23040522; PMCID: PMC3545094.
- 222. Thyagarajan B**, Jackson S, Basu S, Jacobson P, Gross MD, Weisdorf DJ, Arora M. Association between genetic variants in adhesion molecules and outcomes after hematopoietic cell transplants. *Int J Immunogenet.* 2013 Apr;40(2):108-15. doi: 10.1111/j.1744-313X.2012.01131.x. Epub 2012 May 30. PMID: 22646485; PMCID: PMC3458148.
- 223. Thyagarajan B**, Wang R, Barcelo H, Koh WP, Yuan JM. Mitochondrial copy number is associated with colorectal cancer risk. *Cancer Epidemiol Biomarkers Prev.* 2012 Sep;21(9):1574-81. doi: 10.1158/1055-9965.EPI-12-0138-T. Epub 2012 Jul 11. PMID: 22787200; PMCID: PMC3437007.
- 224.** Sood A, Qualls C, Schuyler M, **Thyagarajan B**, Steffes MW, Smith LJ, Jacobs DR Jr. Low serum adiponectin predicts future risk for asthma in women. *Am J Respir Crit Care Med.* 2012 Jul 1;186(1):41-7. doi: 10.1164/rccm.201110-1767OC. Epub 2012 Apr 6. PMID: 22492987; PMCID: PMC3400996.
- 225.** Gross MD, Bielinski SJ, Suarez-Lopez JR, Reiner AP, Bailey K, **Thyagarajan B**, Carr JJ, Duprez DA, Jacobs DR Jr. Circulating soluble intercellular adhesion molecule 1 and subclinical atherosclerosis: the Coronary Artery Risk Development in Young Adults Study. *Clin Chem.* 2012 Feb;58(2):411-20. doi: 10.1373/clinchem.2011.168559. Epub 2011 Dec 16. PMID: 22179741; PMCID: PMC3867124.
- 226.** Shaukat A, Arain M, Anway R, Manaktala S, Pohlman L, **Thyagarajan B**. Is KRAS mutation associated with interval colorectal cancers? *Dig Dis Sci.* 2012 Apr;57(4):913-7. doi: 10.1007/s10620-011-1974-6. Epub 2011 Dec 3. PMID: 22138963.

- 227.** Jacobs DR Jr, Yatsuya H, Hearst MO, **Thyagarajan B**, Kalhan R, Rosenberg S, Smith LJ, Barr RG, Duprez DA. Rate of decline of forced vital capacity predicts future arterial hypertension: the Coronary Artery Risk Development in Young Adults Study. *Hypertension*. 2012 Feb;59(2):219-25. doi: 10.1161/HYPERTENSIONAHA.111.184101. Epub 2011 Dec 27. PMID: 22203738; PMCID: PMC3269403.
- 228.** Wang H, Odegaard A, **Thyagarajan B**, Hayes J, Cruz KS, Derosiers MF, Tyas SL, Gross MD. Blood folate is associated with asymptomatic or partially symptomatic Alzheimer's disease in the Nun study. *J Alzheimers Dis*. 2012;28(3):637-45. doi: 10.3233/JAD-2011-111271. PMID: 22064069.
- 229.** Sood A, Dominic E, Qualls C, Steffes MW, **Thyagarajan B**, Smith LJ, Lewis CE, Jacobs DR Jr. Serum Adiponectin is Associated with Adverse Outcomes of Asthma in Men but Not in Women. *Front Pharmacol*. 2011 Oct 5;2:55. doi: 10.3389/fphar.2011.00055. PMID: 22007173; PMCID: PMC3186942.
- 230.** **Thyagarajan B**, A Meyer K, Smith LJ, Beckett WS, Williams OD, Gross MD, Jacobs DR Jr. Serum carotenoid concentrations predict lung function evolution in young adults: the Coronary Artery Risk Development in Young Adults (CARDIA) study. *Am J Clin Nutr*. 2011 Nov;94(5):1211-8. doi: 10.3945/ajcn.111.019067. Epub 2011 Sep 14. PMID: 21918220; PMCID: PMC3192474.
- 231.** Bielinski SJ, Reiner AP, Nickerson D, Carlson C, Bailey KR, **Thyagarajan B**, Lange LA, Boerwinkle EA, Jacobs DR Jr, Gross MD. Polymorphisms in the ICAM1 gene predict circulating soluble intercellular adhesion molecule-1(sICAM-1). *Atherosclerosis*. 2011 Jun;216(2):390-4. doi: 10.1016/j.atherosclerosis.2011.02.018. Epub 2011 Feb 18. PMID: 21392767; PMCID: PMC3402038.
- 232.** Sood A, Qualls C, Li R, Schuyler M, Beckett WS, Smith LJ, **Thyagarajan B**, Lewis CE, Jacobs DR; CARDIA Investigators. Lean mass predicts asthma better than fat mass among females. *Eur Respir J*. 2011 Jan;37(1):65-71. doi: 10.1183/09031936.00193709. Epub 2010 Jun 4. PMID: 20525713; PMCID: PMC2978755.
- 233.** **Thyagarajan B**, Jacobs DR Jr, Smith LJ, Kalhan R, Gross MD, Sood A. Serum adiponectin is positively associated with lung function in young adults, independent of obesity: the CARDIA study. *Respir Res*. 2010 Dec 9;11(1):176. doi: 10.1186/1465-9921-11-176. PMID: 21143922; PMCID: PMC3014903.
- 234.** Goodman M, Bostick RM, Gross M, **Thyagarajan B**, Dash C, Flanders WD. Combined measure of pro- and anti-oxidant exposures in relation to prostate cancer and colorectal adenoma risk: an update. *Ann Epidemiol*. 2010 Dec;20(12):955-7. doi: 10.1016/j.annepidem.2010.08.011. PMID: 21074110; PMCID: PMC3008422.
- 235.** Kalhan R, Tran BT, Colangelo LA, Rosenberg SR, Liu K, **Thyagarajan B**, Jacobs DR Jr, Smith LJ. Systemic inflammation in young adults is associated with abnormal lung function in middle age. *PLoS One*. 2010 Jul 2;5(7):e11431. doi: 10.1371/journal.pone.0011431. Erratum in: *PLoS One*. 2010;5(8). doi 10.1371/annotation/ed92662b-c566-488d-b090-6c80046d3499. PMID: 20625390; PMCID: PMC2896391.
- 236.** Shaukat A, Arain M, **Thyagarajan B**, Bond JH, Sawhney M. Is BRAF mutation associated with interval colorectal cancers? *Dig Dis Sci*. 2010 Aug;55(8):2352-6. doi: 10.1007/s10620-010-1182-9. Epub 2010 Mar 19. PMID: 20300843.
- 237.** Arain MA, Sawhney M, Sheikh S, Anway R, **Thyagarajan B**, Bond JH, Shaukat A. CIMP status of interval colon cancers: another piece to the puzzle. *Am J Gastroenterol*. 2010 May;105(5):1189-95. doi: 10.1038/ajg.2009.699. Epub 2009 Dec 15. PMID: 20010923.
- 238.** Arora M, Lindgren B, Basu S, Nagaraj S, Gross M, Weisdorf D, **Thyagarajan B**. Polymorphisms in the base excision repair pathway and graft-versus-host disease. *Leukemia*. 2010 Aug;24(8):1470-5. doi: 10.1038/leu.2010.139. Epub 2010 Jun 24. PMID: 20574454; PMCID: PMC2921004.

- 239. Thyagarajan B**, Lindgren B, Basu S, Nagaraj S, Gross MD, Weisdorf DJ, Arora M. Association between genetic variants in the base excision repair pathway and outcomes after hematopoietic cell transplantations. *Biol Blood Marrow Transplant*. 2010 Aug;16(8):1084-9. doi: 10.1016/j.bbmt.2010.03.001. Epub 2010 Mar 11. PMID: 20226869; PMCID: PMC2905878.
- 240. Thyagarajan B**, Young S, Floodman S, Peterson R, Wang X. Systematic analysis of interference due to stutter in estimating chimerism following hematopoietic cell transplantation. *J Clin Lab Anal*. 2009;23(5):308-13. doi: 10.1002/jcla.20336. PMID: 19774632; PMCID: PMC6648958.
- 241. Sood A**, Qualls C, Arynchyn A, Beckett WS, Gross MD, Steffes MW, Smith LJ, Holvoet P, **Thyagarajan B**, Jacobs DR Jr. Obesity-asthma association: is it explained by systemic oxidant stress? *Chest*. 2009 Oct;136(4):1055-1062. doi: 10.1378/chest.09-0493. Epub 2009 Jul 10. PMID: 19592473; PMCID: PMC2771042.
- 242. Thyagarajan B**, Smith LJ, Barr RG, Gross MD, Sood A, Kalhan R, Jacobs DR Jr. Association of circulating adhesion molecules with lung function. The CARDIA study. *Chest*. 2009 Jun;135(6):1481-1487. doi: 10.1378/chest.08-1753. Epub 2009 Feb 18. PMID: 19225066; PMCID: PMC2821290.
- 243. Reiner AP**, Carlson CS, **Thyagarajan B**, Rieder MJ, Polak JF, Siscovick DS, Nickerson DA, Jacobs DR Jr, Gross MD. Soluble P-selectin, SELP polymorphisms, and atherosclerotic risk in European-American and African-American young adults: the Coronary Artery Risk Development in Young Adults (CARDIA) Study. *Arterioscler Thromb Vasc Biol*. 2008 Aug;28(8):1549-55. doi: 10.1161/ATVBAHA.108.169532. Epub 2008 Jun 5. PMID: 18535285; PMCID: PMC5643197.
- 244. Thyagarajan B**, Jacobs DR Jr, Apostol GG, Smith LJ, Jensen RL, Crapo RO, Barr RG, Lewis CE, Williams OD. Longitudinal association of body mass index with lung function: the CARDIA study. *Respir Res*. 2008 Apr 4;9(1):31. doi: 10.1186/1465-9921-9-31. PMID: 18394165; PMCID: PMC2386787.
- 245. Thyagarajan B**, Jacobs DR Jr, Carr JJ, Alozie O, Steffes MW, Kailash P, Hayes JH, Gross MD. Factors associated with paraoxonase genotypes and activity in a diverse, young, healthy population: the Coronary Artery Risk Development in Young Adults (CARDIA) study. *Clin Chem*. 2008 Apr;54(4):738-46. doi: 10.1373/clinchem.2007.099044. Epub 2008 Feb 15. PMID: 18281420.
- 246. Thyagarajan B**, Berger M, Sumstad D, McKenna DH Jr. Loss of integrity of umbilical cord blood unit freezing bags: description and consequences. *Transfusion*. 2008 Jun;48(6):1138-42. doi: 10.1111/j.1537-2995.2008.01688.x. Epub 2008 Apr 16. PMID: 18422848.
- 247. Thyagarajan B**, Bower M, Berger M, Jones S, Dolan M, Wang X. A novel polymorphism in the FMR1 gene: implications for clinical testing of fragile X syndrome. *Arch Pathol Lab Med*. 2008 Jan;132(1):95-8. doi: 10.1043/1543-2165(2008)132[95:ANPITF]2.0.CO;2. PMID: 18181681.
- 248. Thyagarajan B**, Anderson KE, Lessard CJ, Veltri G, Jacobs DR, Folsom AR, Gross MD. Alkaline unwinding flow cytometry assay to measure nucleotide excision repair. *Mutagenesis*. 2007 Mar;22(2):147-53. doi: 10.1093/mutage/gel071. Epub 2007 Jan 31. PMID: 17272291.
- 249. Thyagarajan B**, Anderson KE, Folsom AR, Jacobs DR Jr, Lynch CF, Bargaje A, Khaliq W, Gross MD. No association between XRCC1 and XRCC3 gene polymorphisms and breast cancer risk: Iowa Women's Health Study. *Cancer Detect Prev*. 2006;30(4):313-21. doi: 10.1016/j.cdp.2006.07.002. Epub 2006 Sep 11. PMID: 16963196.
- 250. Thyagarajan B**, Jacobs DR, Apostol GG, Smith LJ, Lewis CE, Williams OD. Plasma fibrinogen and lung function: the CARDIA Study. *Int J Epidemiol*. 2006 Aug;35(4):1001-8. doi: 10.1093/ije/dyl049. Epub 2006 Mar 22. PMID: 16554379.
- 251. Thyagarajan B**, Anderson KE, Kong F, Selk FR, Lynch CF, Gross MD. New approaches for genotyping paraffin wax embedded breast tissue from patients with cancer: the Iowa

women's health study. J Clin Pathol. 2005 Sep;58(9):955-61. doi: 10.1136/jcp.2004.023374. PMID: 16126877; PMCID: PMC1770813.

252. Thyagarajan B, Brott M, Mink P, Folsom AR, Anderson KE, Oetting WS, Gross M. CYP1B1 and CYP19 gene polymorphisms and breast cancer incidence: no association in the ARIC study. Cancer Lett. 2004 Apr 30;207(2):183-9. doi: 10.1016/j.canlet.2003.12.009. PMID: 15072827.

253. Khaliq W, Gross M, **Thyagarajan B**, Jones-Webb R. What motivates minorities to participate in research? Minn Med. 2003 Oct;86(10):39-42. PMID: 14621943.

II. SOFTWARE DEVELOPMENT

Large scale genotyping projects in epidemiological studies pose considerable challenges for data management and statistical analysis. Bioinformatics tools are essential for appropriate design, project management and subsequent data analysis of large scale genotyping projects. We are developing a series of web based programs in collaboration with the Minnesota Supercomputing Institute that will provide bioinformatics support for various stages of large scale genotyping projects.

1. Integrated bioinformatics pipeline for comprehensive identification of genomic variants using Long Read Sequencing data.

Release date: March 2025

2025

Role: Team leader

2. SV image Annotator: A custom software for structural variant analysis of WES and WGS data.

Release date: June 2020

Role: Team co-leader for overall design and identifying critical functionality

3. CNV:RF: This pipeline was developed to support cloud based computational analyses of NGS data for detection of copy number variation.

Release date: August 2015

Role: Team leader for overall design and identifying critical functionality

4. Scanindel: A custom bioinformatics program to detect low level somatic SNV and indel detection using amplicon based targeted NGS.

Release date: November 2014

2014

Role: Provided input into overall design

5. Bioinformatics pipeline for detection of point mutations using next generation sequencing data: This pipeline was developed to support cloud based computational analyses of NGS data for detection of point mutations.

Release date: July 2012

2012

Role: Team leader for overall design and identifying critical functionality

6. tinSNP: This software is designed for project management of medium to large scale genotyping projects and provides an interactive web-based interface to evaluate genotyping quality and organize genotype data for statistical analysis.

Release date: March 2010

Role: Provided input into overall design and identified critical functionality

III. ABSTRACTS

1. **Thyagarajan B**, Crimmins EM, Barcelo H, Langa KM, Weir D, Faul JD. Stability of blood-based biomarkers of cognitive impairment. Alzheimer's Association International Conference. July 26-31, 2021.
2. **Thyagarajan B**, Cassidy E, Nguyen V, Shanley R, Barcelo H, Muldoon D, Verneris MR, Subramanian S, Arora M. Decrease in T-Lymphocyte Mitochondrial DNA Copy Number Is Associated with Acute Graft Versus Host Disease. *Biology of Blood and Marrow Transplantation* 2020;26(3):S176-S177.
3. Bhargava D, Defor TE, Brunstein CG, **Thyagarajan B**, Arora M, El Jurdi N, Holtan S, Rashidi A, Warlick E, Ramesh V. Increasing Use of Potentially Inappropriate Medications in Older Allogeneic HCT Recipients Leads to Higher NRM. *Biology of Blood and Marrow Transplantation* 2020;26(3):S133-S134.
4. McClain AC, Gallo L, Isasi CR, Kaplan R, Cardel MI, Estrella ML, **Thyagarajan B**, Zeng D, Perreira KM, Daviglius ML. Abstract P396: Association of Subjective Social Status With Allostatic Load in The Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *Circulation* 2020;141(Suppl_1):AP396-AP96.
5. Onsongo G, Lam HC, Bower M, **Thyagarajan B**. Hadoop-CNV-RF: a clinically validated and scalable copy number variation detection tool for next-generation sequencing data. Regional Bioinformatics Conference, Milwaukee February 2020.
6. Chai JC, Chen G, Yu B, Grove M, Fretts AM, Daviglius ML, Garcia-Bedoya OL, **Thyagarajan B**, Schneiderman N, Cai J. Abstract MP59: Serum Sphingolipids and Incident Diabetes in US Hispanics/Latinos: The Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *Circulation* 2020;141(Suppl_1):AMP59-AMP59.
7. Chai JC, Moon J-Y, Yu B, Chen G, Graff M, Daviglius ML, Chan QM, **Thyagarajan B**, Castaneda S, Grove M. Metabolomic Signatures of Sedentary Behavior and Cardiometabolic Traits in US Hispanics/Latinos: Hispanic Community Health Study/Study of Latinos (HCHS/SOL). *Circulation* 2020;141(Suppl_1):A29-A29.
8. Tilves C, Kuipers A, Zmuda J, Carr JJ, Terry JG, Nair S, **Thyagarajan B**, Wheeler V, Miljkovic I. Abstract P462: Myosteatosis: Differences in Association With Type 2 Diabetes by Anatomical Location. *Circulation* 2020;141(Suppl_1):AP462-AP62.
9. Wang Z, Wang T, Usyk M, Vazquez-Baeza Y, Isasi CR, Williams-nguyen JS, Hua S, McDonald D, **Thyagarajan B**, Daviglius ML. Abstract P529: Altered Gut Microbiota in Obesity and Cardiometabolic Traits: Results From the Hispanic Community Health Study/Study of Latinos. *Circulation* 2020;141(Suppl_1):AP529-AP29.
10. An P, **Thyagarajan B**, Lee JH, Schupf N, Zmuda JM, Province M. 1447-P: Epistatic Interactions of Known Gene Variants for Glycated Hemoglobin: Evidence from the Long Life Family Study: *Am Diabetes Assoc*, 2019.
11. Andersen SL, Sweigart B, Cosentino S, Wojczynski MK, Glynn NW, **Thyagarajan B**, Mengel-From J, Thielke S, Perls TT, Sebastiani P. Digital technology identifies distinct performance patterns on the digit symbol substitution test among cognitively healthy adults. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association* 2019;15(7):P1555.
12. Vivek S, **Thyagarajan B**, Nelson H, Prizment A, Crimmins E, Faul J. Combined effect of cmv seropositivity and systemic inflammation on dementia prevalence in cancer survivors. *Innovation in Aging* 2019;3(Supplement_1):S54-S54.
13. Santanasto AJ, Wojczynski MK, Cvejkus RK, **Thyagarajan B**, Christensen K, Schupf N, An P, Zmuda JM. Genome-wide linkage analysis identifies a novel locus for longitudinal gait speed change with aging. *Innovation in Aging* 2019;3(Suppl 1):S609-S10.
14. Erickson BK, Geller MA, Lange C, Nelson A, **Thyagarajan B**. Detection of Endometrial Cancer DNA Through Vaginal Tampon Recovery 2019; 28(11): 1583.
15. Gupta S, Weight CJ, Agarwal N, Gupta S, Konety B, Gibb E, Davicioni E, **Thyagarajan B**, Sonpavde G. Abstract A008: Neoadjuvant nivolumab, gemcitabine and cisplatin in muscle-invasive bladder cancer: Study update: *AACR*, 2019.

16. Hua S, Qi Q, Parrinello CM, Kizer JR, Strickler H, **Thyagarajan B**, Daviglius M, Talavera GA, Schneiderman N, Cotler SJ. Abstract P072: Elevated Liver Enzymes Are Associated With Incident Diabetes in Hispanic/Latino Adults: Results From HCHS/SOL. *Circulation* 2019;139(Suppl_1):AP072-AP72
17. Miljkovic I, Boudreau RM, An P, **Thyagarajan B**, Christensen K, Schupf N, Kulminski A, Zmuda JM. Paradoxical association of adiponectin with mortality among long-lived individuals and their offspring. *Innovation in Aging* 2019;3(Supplement_1):S481-S82
18. Miljkovic I, Cvejkus R, An P, **Thyagarajan B**, Boudreau R, Zmuda JM. 1442-P: Incidence and Risk Factors for Type 2 Diabetes among the Offspring of Long-Lived Individuals: The Long Life Family Study: *Am Diabetes Assoc*, 2019.
19. Martinez RJ, Nanning D, **Thyagarajan B**, Bachanova V, Mroz P. Single-Step, Multiplex and Automated Droplet Digital PCR of p190 BCR-ABL1 Fusion Transcript for Minimal Residual Disease Quantification in B Lymphoblastic Leukemia. *Journal of Molecular Diagnostics* 21(6): 1145;2019.
20. Prizment AE, Menk J, Staley C, Vivek S, Onyeaghala G, **Thyagarajan B**, Demmer R, Knights D, Meyer K, Shaukat A. Effect of aspirin on gut microbiome in a pilot randomized double-blind trial: *AACR* 2019.
21. Tsang SH, Aviles-Santa M, Abnet CC, Brito MO, Burk RD, Daviglius ML, Wassertheil-Smoller S, Castaneda S, Graubard BI, Thyagarajan B, Camargo M. Seroprevalence and determinants of *Helicobacter pylori* infection in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL) *HelicoBacter* (24) 2019.
22. Ramasubramanian R, Kalhan R, Jacobs D, Washko GR, Hou L, Gross MD, Guan W, **Thyagarajan B**. Lung Function and Gene Expression of Pathogen Recognition Pathway Receptors: A CARDIA Lung Study. C32 COPD: Translational and mechanistic studies: *American Thoracic Society*, 2019:A4554-A54.
23. An P, Lenzini P, **Thyagarajan B**, Lee JH, Zmuda JM, Vardarajan BN, Miljkovic I, Yashin AI, Christensen K, Perls T. Genetics of Circulating HbA1c Long-Term Change over Time in Nondiabetic Subjects—The Long Life Family Study: *Am Diabetes Assoc*, 2018.
24. Andersen SL, Wojczynski MK, Glynn NW, **Thyagarajan B**, Mengel-From J, Au R, Perls TT, Cosentino S. Implementation of Digital Data Collection for Cognitive Performance in the Long Life Family Study. *Innovation in Aging* 2018;2(Suppl 1):71
25. Arbeev K, Bagley O, Ukraintseva SV, **Thyagarajan B**, Zmuda JM, Lee JH, Christensen K, Yashin AI. Genetics of cumulative measure of physiological dysregulation: evidence from Long Life Family Study. *Innovation in Aging* 2018;2(Suppl 1):405
26. Ashrafi A, Cosentino S, Kang MS, Lee JH, Schupf N, Andersen SL, Christensen K, Province MA, **Thyagarajan B**, Zmuda JM. In absence of dementia, cognitive performance does not relate to the biomarker of leukocyte telomere length: an examination of long life family study participants. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association* 2018;14(7):P1462
27. Beckman A, Meredith M, Rangan A, **Thyagarajan B**, Yohe S, Mroz P. Acute Myeloid Leukemia Characterized by Four CEBPA Mutations. *American Journal of Clinical Pathology* 2018;150(suppl_1):S103-S04
28. Kuipers AL, Barinas-Mitchell EJ, Minster RL, Wojczynski M, Christiansen L, Kulminski A, **Thyagarajan B**, Newman AB. Abstract P132: Genome-wide Linkage Analysis of Carotid Artery Traits in Exceptionally Long-Lived Families. *Circulation* 2018;137(suppl_1):AP132-AP32.
29. Marron M, Miljkovic I, Wojczynski M, Boudreau R, Christensen K, **Thyagarajan B**, Zmuda J, Newman A. Genome-wide association study of a healthy metabolic phenotype in the Long Life Family Study. *Innovation in Aging* 2018;2(suppl 1):272-72.

30. Onyeaghala GC, Lane J, Pankratz N, Nelson HH, **Thyagarajan B**, Anderson KE, Prizment AE. Association between MICA polymorphisms, s-MICA levels, and pancreatic cancer risk in a population-based case-control study: AACR, 2018.
31. Rashidi A, Shanley R, Holtan SG, MacMillan ML, Yohe S, **Thyagarajan B**, Curtsinger J, Anasetti C, Waller EK, Miller JS. Single Nucleotide Polymorphisms of Paneth Cell Antimicrobial Alpha Defensin-5 (DEFA5) are Associated with Acute Graft-Versus-Host Disease: Results From Analysis of BMT-CTN0201 Samples. *Biology of Blood and Marrow Transplantation* 2018;24(3):S174-S75
32. Sivarajan L, Colangelo L, Pickens C, **Thyagarajan B**, Iribarren C, Jacobs D, Smith LJ, Lewis CE, Cuttica MJ, Carnethon MR. Association Between Impaired Fasting Glucose, Insulin Resistance, and Lung Health from Young Adulthood to Middle Age: The CARDIA Lung Study. A103 ILD: OUTCOMES: American Thoracic Society, 2018:A2532-A32.
33. Wojczynski M, Graham Barr R, Zhang Y, **Thyagarajan B**, Perls T, Christensen K, Province MA. Longitudinal changes in pulmonary function elucidate genes associated with age-related pulmonary decline in LLFS. *Innovation in Aging* 2018;2(suppl_1):405-05
34. **Thyagarajan B**, Cohn C, Hansen K, Williams S, Henzler C. Next Generation Sequencing Based ABO Subtyping for Organ Donors. AABB Annual meeting. October 15, 2018.
35. Onyeaghala G, Lane J, Pankratz N, Nelson HH, **Thyagarajan B**, Anderson KE, Prizment AE. Association between MICA polymorphisms, s-MICA levels, and pancreatic cancer risk in a population-based case-control study. AACR annual meeting 2018.
36. Thayanyithy V, Billstein B, Henzler C, Schomaker M, Leary M, Daniel J, Bower M, Beckman K and **Thyagarajan B**. Development of molecular assays for the detection of MSH2 inversion And PMS2 mutation for Lynch syndrome testing. ACMGG annual meeting April 12-15 2018.
37. Hartman P, Wojczynski M, Druley T, Lee J, Zmuda J, **Thyagarajan B**. Prevalence of Clinically Actionable Disease Variants in Exceptionally Long Lived Families. ACMGG Annual meeting April 12-15, 2018.
38. Cuttica MJ, Colangelo LA, Washko G, Carr JJ, Rana J, Jacobs DR, **Thyagarajan B**, Sidney S, Lewis CE, Liu K. Lung Health And The Association With Cardiovascular Disease Outcomes: The Cardia Study. A14 COPD: Systems Biology and Comorbidity: American Thoracic Society, 2017:A1011-A11.
39. Rangan A, Henzler C, Larue R, Onsongo G, Bower M, Nelson A, **Thyagarajan B**, Yohe S. Defining minimum coverage in next generation sequencing (NGS) Annual meeting of AMP, Nov 16-18 2017.
40. Tilak A, Schomaker M, Daniel J, Billstein B, Kincaid R, Michel S, Nguyen L, **Thyagarajan B**, Nelson A. Evaluation of NGS based methods to detect the recurrent gene arrangements in lung cancer. AMP Meeting Nov 16-18, 2017. Strizich G, Gonzalez S, Isasi CR, **Thyagarajan B**, Perreira KM, Talavera GA, Sotres-Alvarez D, Daviglius ML, Laurie C, Nelson SC, Giachello AL, Schneiderman N, and Kaplan RC. Consent to Genetic Research among Community-Dwelling Hispanic/Latino Adults in the United States: The Hispanic Community Health Study/Study of Latinos. Society for Epidemiologic Research, June 20, 2017.
41. Holle J, Bower M, Beckman K, Henzler C, Silverstein K, Schomaker M, Deshpande A, Gilbert K, Yohe S, Nelson A, **Thyagarajan B**. Sequencing Local: One Medical Center's Experience Offering a 4,800 Gene Panel to Meet In-house Genetic Testing Needs. 2016 ACMG Annual Clinical Genetics Meeting MARCH 8-12, 2016
42. Raffield, LM; Louie, T; Sofer, T; Jain, D; Ipp, E; Taylor, KD; Papanicolaou, GJ; Avilés-Santa, L; Lange, LA; Laurie, CC; Conomos, MP; Thornton, TA; Chen, YI; Qi, Q; Cotler, S; **Thyagarajan, B**; Schneiderman, N; Rotter, JI; Reiner, AP; Lin, HJ. Genome-wide association study of iron traits in relation to diabetes mellitus in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL): Potential genomic intersection of iron and glucose regulation Presented at 2016 ASHG and CHARGE meetings

43. Tedla YG, Yano Y, **Thyagarajan B**, Kalhan R, Kumar R, Viera A, Rosenberg S, Greenland P, Carnethon. MR Lung Function Associated with Long-Term Blood Pressure Variability in Young Adults: The Coronary Artery Risk Development in Young Adults Study, ATS Annual Meeting May 13-18 2016.
44. Parrinello CM, Rudolph BJ, Lazo M, Gallo LC, **Thyagarajan B**, Cotler SJ, Qi Q, Vidot DC, Strickler, HD, Kaplan RC, Isasi CR. Liver Enzymes and Insulin Resistance and Glycemia In Hispanic/Latino youths: Results from the Hispanic Community Children's Health Study/Study of Latino Youth (SOL Youth). American Heart Association Council on Epidemiology and Prevention meeting March 1-4 2016.
45. **Thyagarajan B**, Guan W, Fedirko V, Barcelo H, Gross M, Goodman M, Bostick RM. Mitochondrial D-loop polymorphisms are associated with colorectal adenoma risk. American Association of Cancer Research April 2016.
46. **Thyagarajan B**, Wang R, Koh WP, Barcelo H, Adams-Haduch J, Guan W, Bostick RM, Yuan JM, Gross MD. Mitochondrial DNA copy number, urinary isoprostanes and colorectal cancer risk. American Association of Cancer Research. April 2016.
47. Hanneman J, Bower M, **Thyagarajan B**. The use of expanded next generation sequencing panels in the clinical diagnosis of ataxia. National Conference of Undergraduate Research, April 7-9, 2016.
48. P. An , N.M. Maruthur , S. Ligthart , M. Li , A.T. Kraja , M.K. Wojczynski , **B. Thyagarajan** , J.H. Lee , B.C. Astor , I. Miljkovic , A. Dehghan , K. Christensen , T.T. Perls , A.B. Newman , M.A. Province. GWAS of Circulating Soluble Receptor for Advanced Glycation End Products: Evidence from the Long Life Family Study (LLFS), the Atherosclerosis Risk in Communities Study (ARIC), and the Rotterdam Study (RS). ASHG, October 2016
49. Wiens K, Veach PM, LeRoy BS, **Thyagarajan B**, Bower M. Incidental Genetic Findings and Patient Preferences Regarding Return of Results in a Population of Patients with Unexplained Ataxia Undergoing Medical Exome Sequencing. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting May 28-30, 2015.
50. Nagaraj S, Chevour P, **Thyagarajan B**, Gopi Krishna S, Yadav N, and Ghosh A. Molecular analysis of Ocular Inflammatory Pathways driving diabetic retinopathy patients undergoing anti-VEGF therapy. Annual Meeting of the Association for Research in Vision and Ophthalmology, May 3-7, 2015.
51. **Thyagarajan B**, Shanley R, Prakash P, Barcelo H, Ross JA, Verneris MR, Arora M. Lower T-lymphocyte mitochondrial DNA copy number is associated with graft versus host disease in patients undergoing hematopoietic cell transplantation. American Association for Cancer Research April 18-22, 2015.
52. Barcelo H, Brady NJ, Schwertfeger KL, Gross M, **Thyagarajan B**. Neutrophil specific mitochondrial DNA copy number as a biomarker for breast cancer. American Association for Cancer Research April 18-22, 2015.
53. Prizment A, Nelson H, **Thyagarajan B**, Linabery A, Anderson K. Plasma MICA and pancreatic cancer. American Association for Cancer Research April 18-22, 2015.
54. Jung M, Cotler S, Ho G, Kuniholm M, Strickler HD, **Thyagarajan B**, Youngblood M, Kaplan RC, del Amo J. The distribution of Hepatitis B virus exposure and infection in a population-based sample of US Hispanic adults. New York City Epidemiology Forum (NYCEF) February 27, 2015
55. **Thyagarajan B**, Bower M, Silverstein K, Henzler C, Beckman K, Yohe S, Nelson A, Onsongo G. Clinical Implementation of deletion/duplication analysis using next generation sequencing data: The University of Minnesota Experience. NextGen Genomics and Bioinformatics Technologies Conference. November 17-19, 2014.
56. Bushara O, Borah J, Yohe S, Nelson AC, Zarei S, Surowiecka M, Schomaker M, Wilson J, Kulasingham S, **Thyagarajan B**. Distribution of HPV genotypes in Minnesota. 49th Annual

- Meeting of the Academy of Clinical Laboratory Physicians and Scientists (ACLPS) May 29-31, 2014.
57. Bhatia S, Crowell TA, Arynchyn A, **Thyagarajan B**, Smith LJ, Jacobs D, Kramer H, Duprez D, Celli B, Qualls C, Sood A. 'Rapid' decline in lung function in healthy young adults predicts albuminuria later in life. Annual Meeting of the American Thoracic Society, May 17-20, 2014
 58. **Thyagarajan B**, Barcelo H, Anderson KE, Swenson K, Nelson H, Gross MD. A low plasma mitochondrial DNA copy number is associated with increased breast cancer risk. Annual Meeting of the American Association of Cancer Research, April 4-8 2014.
 59. Bower M, Bushara K, Beckman K, Hauge A, Deshpande A, Schomaker M, Onsongo G, Silverstein K, Dalton J, Karachunski P, Wilson J, **Thyagarajan B**. Diagnostic yield of a targeted next generation sequencing approach in a young adult population: high frequency of recessive ataxias and implementation of a next-generation sequencing copy-number variation algorithm. Ataxia Investigator Meeting, March 2014.
 60. Kemmer T, Karger A, Zimmerman D, Young S, Schomaker M, Nguyen L, Spears M, Yohe S, **Thyagarajan B**. Quality improvements for performing engraftment analysis after hematopoietic cell transplantation. Annual Meeting of American Molecular Pathology, November 2013.
 61. Schomaker M, Bower M, Karnuth K, Kemmer T, Lambert A, Nguyen L, Pohlman L, Spears M, Yohe S, **Thyagarajan B**. Utilization of a Touchdown PCR Strategy to Amplify Low Coverage Regions and Variants Defined by Next Generation Sequencing. Annual Meeting of the American Society of Clinical Pathology, September 2013.
 62. Bower M, **Thyagarajan B**, Beckman K, Silverstein K, Onsongo G, Schomaker M, Tuite P. Development and Implementation of a Next Generation Sequencing Platform for Hereditary Parkinson Disease. World Parkinson Congress, Montreal, Quebec. October 1-4, 2013.
 63. Bower M, Beckman K, Hauge A, Deshpande A, Bunjer K, Silverstein K, Onsongo G, Erdmann J, Schomaker M, Kemmer T, Karnuth K, Pohlman L, Nguyen L, Lambert A, Yohe S, Wilson J, Zhou Y, Spears M, **Thyagarajan B**. Design and Implementation of a Clinical Next Generation Sequencing Platform. Upper Midwest Clinical Genetics Conference September 2013.
 64. Wilson JD, Bower M, Schomaker M, Yohe S, Onsongo G, Beckman K, Silverstein K, Spears MD, Bushara K, **Thyagarajan B**. UMN Experience with Next Generation Sequencing (NGS) of previously test negative ataxia patients. 48th Annual Meeting of the Academy of Clinical Laboratory Physicians and Scientists (ACLPS) June 6-8, 2013 Poster #85.
 65. Shearouse M, Bushara K, **Thyagarajan B**, Yohe S, Beckman K, Hauge A, Deshpande A, Silverstein K, Onsongo G, Erdmann J, Bower M. Next-generation sequencing: the key to the diagnosis of atypical ataxia telangiectasia. Accepted for poster presentation at the Upper Midwest Clinical Genetics Conference. Minneapolis, MN. September 19, 2013.
 66. Haude K, Zierhut H, **Thyagarajan B**, Yohe S, Beckman K, Hauge A, Deshpande, Silverstein K, Onsongo G, Erdmann J, Bower M. Design and implementation of a next-generation-sequencing diagnostic assay for Fanconi Anemia. Accepted for poster presentation at the Upper Midwest Clinical Genetics Conference. Minneapolis, MN. September 19, 2013.
 67. Koellner C, Athman K, Schimmenti L, Beckman K, Hauge A, Silverstein K, Onsongo G, Schomaker M, Karnuth K, **Thyagarajan B**, Yohe S, Bower M. Next Generation Sequencing and Hearing Loss: A Discussion of Results for *GJB2/GJB6* Testing. Accepted for poster presentation at the Upper Midwest Clinical Genetics Conference. Minneapolis, MN. September 19, 2013.
 68. Kuniholm M, Jung M, Everhart J, Cotler S, Heiss G, McQuillan G, Kim RS, Strickler HD, **Thyagarajan B**, Youngblood M, Kaplan R, Ho GYF. Prevalence of Hepatitis C Virus Infection

in US Hispanic/Latino Adults: Results from the NHANES 2007-2010 and HCHS/SOL Studies. CROI March 2013.

69. An P, Miljkovic I, **Thyagarajan B**, Kraja AT, Daw W, Pankow JS, Selvin E, Kao LWH, Maruthur N, Nalls MA, Liu Y, Harris TB, Lee JH, Borecki IB, Christensen K, Eckfeldt JH, Mayeux R, Perls TT, Newman AB, Province MA. Genome-Wide Association Study and Linkage Scan Identify Novel Loci Influencing Circulating Glycated Hemoglobin (HbA1c) Levels in Nondiabetics: The Long Life Family Study (LLFS). 73rd annual meeting of the American Diabetic Association, June 2013
70. Singh J, Minster RL, Barmada MM, Daw EW, **Thyagarajan B**, Christensen K, Newman AB, Kammerer CM. Genomewide linkage analyses of hematological phenotypes in Long Life Family Study. Annual Meeting of the American Society of Human Genetics November 6-10 2012.
71. **Thyagarajan B**, Bower M, Onsongo G, Silverstein K, Yohe S, Hauge A, Schomaker M, Bunjer K, Kemmer T, Erdmann J, Peterson J, Peterson R, Beckman K. Next generation sequencing diagnostic assays for genetic diagnosis of inherited disorders. Annual meeting of the Association of Molecular Pathology October 2012.
72. Zhang Y, Erdmann J, Chilton J, Onsongo G, Bower M, Beckman K, **Thyagarajan B**, Silverstein K, Anne-Francoise Lamblin AF. CLIA Certified Next-Generation Sequencing (NGS) analysis in the cloud. "Beyond the Genome 2012", Harvard Medical School, Boston MA. September 27-29, 2012.
73. Onsongo G, Bower M, Beckman K, Yohe S, Schomaker M, Peterson J, Bunjer K, Deshpande A, Erdmann J, **Thyagarajan B**, Silverstein K. Designing Custom Hybrid-Capture Bait Libraries to Boost Coverage in Low-Coverage Regions. International conference on Genomics: Americas 2012, Philadelphia PA. September 27-28, 2012.
74. **Thyagarajan B**, Guan W, Wang R, Barcelo H, Koh WP, Yuan JM. Genetic determinants of mitochondrial DNA copy number. *Women's Health Research Conference*, September, 2012.
75. **Thyagarajan B**, Wang R, Barcelo H, Koh WP, Yuan JM. Mitochondrial copy number is associated with colorectal cancer risk. *AACR Annual Meeting* April 2012.
76. Bower M, Bushara K, Beckman K, Bunjer K, Hauge A, Kemmer T, Peterson J, Peterson R, Onsongo G, Schomaker M, Silverstein K, Yohe S, **Thyagarajan B**. Technical and clinical validation of a next generation sequencing diagnostic assay for rare ataxias. Ataxia Investigators Meeting, March 2012.
77. **Thyagarajan B**, Jackson S, Basu S, Jacobson P, Gross MD, Weisdorf DJ, Arora M. Association between genetic variants in immune response genes and outcomes after hematopoietic cell transplantation. *Annual meeting of the American Society of Hematology*, December 2011.
78. **Thyagarajan B**, Wang R, Barcelo H, Jacobs DR Jr., Yee D, Koh WP, Yuan JM. Mitochondrial copy number is associated with breast cancer risk. *Eighth Annual Building Interdisciplinary Research Careers in Women's Health Conference*, November, 2011.
79. **Thyagarajan B**, Wang R, Barcelo H, Koh WP, Yuan JM. Mitochondrial copy number is associated with colorectal cancer risk. *1st Regional Translational Research in Mitochondria, Aging, and Disease Symposia*, October 2011.
80. **Thyagarajan B**, Wang R, Barcelo H, Jacobs DR Jr., Yee D, Koh WP, Yuan JM. Mitochondrial copy number is associated with breast cancer risk. *Women's Health Research Conference*, September, 2011.
81. Manaktala M, Roychowdhary M, Pambuccian S, Schomaker M, **Thyagarajan B**. Human Papilloma Virus Infection with Multiple types: Prevalence and Patterns of Co-infections. *Women's Health Research Conference*. September, 2011.

82. **Thyagarajan B**, Wang R, Barcelo H, Jacobs DR Jr., Yee D, Koh WP, Yuan JM. Mitochondrial copy number is associated with breast cancer risk. *Women's Health Research Conference*. September, 2011.
83. **Thyagarajan B**, Jacobson P, Jackson S, Basu S, Weisdorf DJ, Gross M, Arora M. Pharmacogenetic variants and outcomes after hematopoietic cell transplantation. *American Society of Clinical Oncology Annual Meeting*, June 2011.
84. Robien K, Strayer L, DeFor T, **Thyagarajan B**, Lazovich D, Cooley S, Ross J, Baker SK. Genetic variation in vitamin D pathway and risk of graft-vs-host disease after blood and marrow. *American Society of Clinical Oncology Annual Meeting*, June 2011.
85. Shaukat A, Mustafa A, Pohlman L, **Thyagarajan B**. Is KRAS mutation associated with Interval Colorectal cancers? *Digestive Diseases Week* May 2011.
86. Arynchyn A, Smith L, Sood A, Jacobs D, **Thyagarajan B**, Williams OD. Weight loss and pulmonary function changes in middle age adults: The CARDIA study. *American Thoracic Society*, May 2011.
87. Cuttica MJ, Colangelo L, Lima J, Ogunyankin K, **Thyagarajan B**, Rosenberg S, Liu K, Jacobs D, Lloyd-Jones D, Kalhan R. Echocardiographic abnormalities in young adults are associated with reduced lung function. *American Thoracic Society*, May 2011.
88. Gross MD, Bielinski SJ, Suarez-Lopez JR, Reiner AP, Bailey K, **Thyagarajan B**, Carr J. Circulating soluble ICAM-1 and subclinical atherosclerosis: The Coronary Artery Risk Development in Young Adults (CARDIA) Study. *American Heart Association Epidemiology Council*. April 2011.
89. **Thyagarajan B**, Barcelo H, Shaukat A. Is mitochondrial DNA copy number associated with interval colorectal cancers? *AACR Annual Meeting* April 2011.
90. Silverstein K, Beckman K, Bower M, Bunjer K, Schomaker M, Kemmer T, Schimmenti L, Yohe S, Peterson R, Karger A, Roychowdhury M, **Thyagarajan B**. Optimization of Bait Selection for Sequence Capture Arrays. *RECOMB Annual Meeting* March 2011.
91. Singh C, Gamez RG, **Thyagarajan B**, Holler J, Gulbahce EH, Pambuccian SE. Age-Specific HPV, High-Risk HPV and HPV16/18 Rates and Follow-Up Histologic Diagnoses in Women with Atypical Squamous Cells of Undetermined Significance (ASC-US). A Study of 17,059 Cases from a Predominantly Low-Risk Screening Population. *United States and Canadian Academy of Pathology*, March, 2011.
92. Gamez R, Pambuccian S, **Thyagarajan B**, Cook S, Amirouche S and Gulbahce E. Impact of HPV Vaccination on HPV Genotypes in Women with Atypical Cells of Undetermined Significance (ASC-US) in a Low-Risk Screening Population. *United States and Canadian Academy of Pathology*, March, 2011.
93. Manaktala M, Pambuccian S, Schomaker M, Gamez R, Yohe S, **Thyagarajan B**. Prevalence of Probable High Risk HPV Subtypes and its implications for Primary Prevention of Cervical Cancer. *Women's Health Research Conference*. September, 2010.
94. Dash C, Goodman M, Gross MD, **Thyagarajan B**, Bostick RM. Association of dietary and plasma carotenoids with circulating F2-isoprostanes in a pooled case-control study of incident colorectal adenomas. *AACR: Future of Molecular Epidemiology*, June 2010
95. Wilson J, **Thyagarajan B**, Gross MD. Association between gene expression of peripheral blood oxidative stress markers and Alzheimer's disease: The Nun Study. *International Congress of Alzheimer's Disease*. June 2010.
96. Jacobs DR, **Thyagarajan B**, Kalhan R, Rosenberg SR, Duprez D, Smith LJ. Rate of decline of forced vital capacity predicts future hypertension: The CARDIA Study. *American Thoracic Society*, May 2010.
97. Rosenberg SR, Colangelo LA, Barr RG, **Thyagarajan B**, Jacobs DR, Daviglius ML, Smith LJ, Kalhan R. Lung Function is Associated with Metabolic Syndrome, but Not with Subclinical Atherosclerosis in Middle Aged Adults. *American Thoracic Society*, May 2010.

98. Sood A, Qualls C, **Thyagarajan B**, Steffes M Smith LJ, *Jacobs DR*. Longitudinal Association Between Serum Adiponectin and Asthma Among Women: The CARDIA Study. *American Thoracic Society*, May 2010.
99. **Thyagarajan B**, Lindgren B, Basu S, Nagaraj S, Gross M, Weisdorf D, Arora M. DNA repair polymorphisms as predictors of Graft-versus-Host Disease after allogeneic hematopoietic cell transplants. *American Association for Cancer Research*, April 2010.
100. Tasso D, Kjeldahl K, Pambuccian SE, **Thyagarajan B**, Gulbahce HE. Outcomes in High-Risk HPV-Positive and HPV18/18-Positive Women with ASC-US Differ Based on the Women's Age Group. *United States and Canadian Academy of Pathology*, March, 2010.
101. Gamez RG, Roychowdhury M, Gulbahce HE, **Thyagarajan B**, Pambuccian SE. Age-Specific Histologic Follow-up Findings for Women With High-Risk Human Papillomavirus Positive Low-Grade Squamous Intraepithelial Lesion (LSIL) Papanicolaou Test Results. *United States and Canadian Academy of Pathology*, March, 2010.
102. Dunning KK, Gamez RG, **Thyagarajan B**, Savik K, Gulbahce HE, Kjeldahl K, Pambuccian SE. HPV Genotype Distribution in a Low-Risk Screening Population: Can the Impact of HPV Vaccination be Demonstrated? *United States and Canadian Academy of Pathology*, March, 2010.
103. Arora M, Lindgren B, Basu S, Nagaraj S, Gross M, Weisdorf, **Thyagarajan B**. Association between genetic variants in the base excision repair pathway and outcomes after hematopoietic cell transplants. *American Society of Hematology*, December 2009.
104. Yohe S, **Thyagarajan B**, Bower M, Peterson R, Floodman S. Three Mutations in the Tyrosinase Gene: An Unusual Case of Oculocutaneous Albinism. *Association of Molecular Pathology*, November 2009.
105. Gross M, Tyas S, **Thyagarajan B**, Hayes J, Desrosiers M, Zandi P. Blood Folate and Beta-Carotene are Associated with Asymptomatic Alzheimer's Disease: The Nun Study. *International Congress on Alzheimer's disease*, June 2009.
106. Dominic E, Qualls C, Beckett W, Jacobs DR, Smith LJ, Gross M, **Thyagarajan B**, Steffes M, Sood A. Sex-Specific Effects of Serum Adiponectin Concentration on Asthma Severity. *American Thoracic Society*, May 2009.
107. Sood A, Qualls C, Arynchyn A, Beckett W, Smith LJ, **Thyagarajan B**, Sidney S, Jacobs DR. Asthma Is Associated with Both Fat and Lean Mass in Women. *American Thoracic Society*, May 2009.
108. **Thyagarajan B**, Smith LJ, Gross MD, Beckett W, Jacobs DR. Higher circulating carotenoids and their changes are associated lung function in early adulthood: CARDIA. *American Thoracic Society*, May 2009.
109. Schmitz B, Henriksen J, Blue Arm N, Killeen AA, Dolan M, **Thyagarajan B**, Pambuccian S, Wang X. Prevalence of Human Papillomavirus (HPV) Genotypes in a Low-risk Midwestern US population. *United States and Canadian Academy of Pathology*, September 2008.
110. **Thyagarajan B**, Young S, Floodman S, Peterson R, Wang X. Optimization of use of short tandem repeat markers for chimerism analysis following allogeneic hematopoietic stem cell transplantation. *Academy of Clinical Laboratory Physicians and Scientists*, June 2008.
111. **Thyagarajan B**, Smith LJ, Barr G, Gross MD, Sood A, Kalahan R, Jacobs DR. Association of Circulating Adhesion Molecules with Lung Function: Results from the CARDIA Study. *American Thoracic Society*, May 2008.
112. Tran B, Colangelo L, **Thyagarajan B**, Arynchyn A, Liu K, Holvoet P, Jacobs DR, Smith LJ, Kalhan R. Serum F2-Isoprostanes and Oxidized LDL Are Longitudinally Associated with Lower Lung Function: The CARDIA Study. *American Thoracic Society*, May 2008.
113. **Thyagarajan B**, Koratkar R, Diebes A, Zandi P, Snowdon D, Gross MD. The feasibility of high throughput genotyping using paraffin embedded brain tissue from the Nun study. *American Association of Cancer Research*, April 2008.

114. **Thyagarajan B**, Gamez R, Sweeney C, C Blair C, Gulbahce HE. Estrogen Receptor Positivity in Normal Breast Epithelium from Women with Breast Cancer Correlates with Tumor Hormone Receptor. *United States and Canadian Academy of Pathology*, March, 2008.
115. **Thyagarajan B**, Arora M, Weisdorf D, Wang X. The Association between T Cell Receptor Excision Circles and Chronic Graft Versus Host Disease following Hematopoietic Stem Cell Transplant. *Association of Molecular Pathology*, November 2007.
116. Tran B, Colangelo L, Liu K, **Thyagarajan B**, Jacobs DR, Smith LJ, Kalhan R. Markers of Systemic Inflammation in Early Adulthood are Associated with Reduced Lung Function Later in Life: The CARDIA Study. *American Thoracic Society*, May 2007.
117. Hankinson AL, Liu K, Jacobs DR, **Thyagarajan B**, Smith LJ, Greenland P, Sidney S. Longitudinal changes in cardiorespiratory fitness and pulmonary function over 20 years. *American Heart Association*, April 2007.
118. **Thyagarajan B**, Lessard CJ, Kailash P, Hayes J, Mori T, Anderson KE, and Gross MD. Comparison of DNA repair between cultured lymphocytes and fresh lymphocytes: The alkaline unwinding flow cytometry assay. *Proc Am Assoc Cancer Res* 47: 2006.
119. Eastlund T, **Thyagarajan B**, Skeate R, Ayasola A, Mair DC, West M, and Schorer A. Acute relapse of TTP after ERCP. *Transfusion* 45 (Supplement): 39A, 2005.
120. Michniovaite R, Hayes JH, **Thyagarajan B**, Khaliq W, Raatz SK, Jacobs DR, Key NS, and Gross MD. Effect of Black Tea Intake on Blood Cholesterol Concentrations in Individuals with Mild Hypercholesterolemia. *The Federations of American Societies for Experimental Biology* conference, April, 2005.
121. Gross MD, **Thyagarajan B**, Kailash P, Hayes JH, Khaliq W, Anderson KE, Veltri G, Jacobs DR. A Comparison of DNA Repair Activity in Several Lymphocyte Preparations. *Proc Am Assoc Cancer Res* 46: 2005.
122. Khaliq W, **Thyagarajan B**, Kailash P, Hayes JH, Anderson KE, Veltri G, Jacobs DR, Gross MD. The recovery of lymphocytes from cryopreserved whole blood and measurement of their DNA repair activity. *Proc Am Assoc Cancer Res* 46: 2005.
123. **Thyagarajan B**, Khaliq W, Anderson KE, Jacobs Jr D, Bargaje A, Folsom AR, Selk F, Lynch C, and Gross MD. DNA Repair Gene Polymorphisms and the Risk of Breast Cancer: The Iowa Women Health Study (IWHS). *Proc Am Assoc Cancer Res* 45: 2004.
124. **Thyagarajan B**, Anderson KE, Kong F, Folsom AR, Selk F, Lynch C, and Gross MD. New approaches for genotyping breast tissue from cancer patients: The Iowa Women's Health Study. *Proc Am Assoc Cancer Res* 44: 2003.
125. Gross MD, Chau A, **Thyagarajan B**, Hayes JH. The inhibition of platelet activation by flavanoid metabolites. *The Federations of the American Societies for Experimental Biology*. April, 2003.
126. Gross MD, **Thyagarajan B**, Key N, Johnson G, Jacobs Jr D. Black tea reduces platelet activity and oxidative damage in healthy subjects. *Tea Symposium*. September 2002.
127. Gross MD, **Thyagarajan B**, Key N, Johnson G, Jacobs Jr D. Black tea, platelet activity, and oxidative damage in human subjects. *The Federations of American Societies for Experimental Biology* Annual Meeting. April 2002.
128. **Thyagarajan B**, Anderson KE, Kong F, Folsom AR, Lynch C, and Gross MD. A population-based estimate of DNA repair gene allele frequencies: The Iowa Women's Health Study. *Proc Am Assoc Cancer Res* 43: 774, 2002.

Presentations

Invited Oral Presentations at International Professional Meetings, Conferences

1. **Thyagarajan B**. Immune cell clonotypes and mortality: Findings from the Health and Retirement Study. USC/UCLA Geroscience Meeting. February 20-21, 2025.

2. **Thyagarajan B.** Pilot study on sharing of genetic results with study participants. NIA-NIMHD Workshop on Enhancing Diversity in Healthy Aging Cohorts for Improved Research on Longevity and Health Span. August 7, 2024
3. **Thyagarajan B.** Measurement of biomarkers of neuropathology using dried blood spots. Biomarker Network Meeting. April 17, 2024.
4. **Thyagarajan B.** Validity of Field Collected Measures of markers of neuropathology. Biomarker Network Meeting. April 12, 2023.
5. **Thyagarajan B.** Feasibility of using dried blood spots for biomarkers of neuropathology. Biomarker Network International Meeting. April 11, 2023.
6. **Thyagarajan B.** Performance of a 24-hour TAT HDPCR NSCLC panel. Association of Molecular Pathology Corporate Workshop. November 13, 2023.
7. **Thyagarajan B.** Biomarkers in Dementia Research. LASI-DAD Wave 2 Launch Meeting, October 31, 2022.
8. **Thyagarajan B.** Integrative Study of transcriptomics and DNA methylation. Biomarker Network Meeting on Functional Genomics: RNA and Epigenetics in Population Health. Virtual meeting via Zoom due to the Coronavirus pandemic. October 22, 2020.
9. **Thyagarajan B.** Novel Quality Control Metrics Applications for RNA-Seq in Population Studies. Biomarker Network Meeting on Functional Genomics: RNA and Epigenetics in Population Health. Virtual meeting via Zoom due to the Coronavirus pandemic. October 21, 2020.
10. **Thyagarajan B.** T cells and Type 2 Diabetes: Findings from HRS. Biomarker Network Meeting. Austin April 22, 2019.
11. **Thyagarajan B.** Transcriptomics in HRS. International Biomarker Network Meeting. Austin April 21, 2019.
12. **Thyagarajan B.** Next Generation Sequencing for Clinical Diagnostics: Five Year Experience of an Academic Laboratory. Next Generation Sequencing in Clinical Genomics-Advances & Applications. Bengaluru, November 2018
13. **Thyagarajan B.** Flow Cytometry: Novel Markers Of Population Immune Functioning In The HRS. Gerontology Society of America, Boston, November 2018.
14. **Thyagarajan B.** An integrated framework for detection of copy number variation using targeted next generation sequencing data. World Congress of Molecular Pathology. Melbourne, Australia, July 2016.
15. **Thyagarajan B.** Genetics of Malignant Hyperthermia. 6th Annual conference of Indian College of Anaesthesiologists, Bangalore India, November 21, 2014.
16. **Thyagarajan B.** Clinical application of the next generation sequencing platform for diagnosis of inherited disorders. MV Diabetes Research Foundation, Chennai, India March 2012.
17. **Thyagarajan B.** Genetic testing for congenital eye disorders using the next generation sequencing platform. Narayana Netralaya Eye Hospital, Bengaluru, India March 2012.
18. **Thyagarajan B.** Adhesion Molecules and Lung Function: Findings from the CARDIA study. American Thoracic Society. May 18, 2011 (Invited talk at Symposium).
19. **Thyagarajan B.** Role of Engraftment Analysis in Predicting Outcomes Following Hematopoietic Cell Transplantation. American Society of Hematology Satellite Symposium, December 3, 2010 (Invited talk at Education session at ASH satellite symposium).
20. **Thyagarajan B,** Jacobs DR, Apostol GG, Smith LJ, Jensen RL, Crapo RO, Barr GR, Lewis CE, Williams DO. Longitudinal association of body mass index with lung function: the CARDIA study. *American Thoracic Society*, May 2007 (Invited talk at Symposium).

Invited Oral Presentations at National Professional Meetings, Conferences

1. Ramasubramanian R, Meier H, Crimmins E, Faul J, **Thyagarajan B**. The role of cohabitation on adaptive and innate immune cell profiles in the Health and Retirement Study. Academy of Clinical Laboratory Physicians and Scientists. June 24, 2022.
2. Vivek S, Nelson H, Crimmins E, Faul J, **Thyagarajan B**. Cross-sectional association between Cytomegalovirus seropositivity, T cell subsets and Epigenetic aging clocks in Health and Retirement Study. Academy of Clinical Laboratory Physicians and Scientists. June 24, 2022.
3. **Thyagarajan B**. Stability of Biomarkers of Cognitive Decline. NIA Intramural Program. NIA Intramural Program. September 15, 2019
4. **Thyagarajan B**. Plasma Exosomes for measurement of Cognitive Decline Biomarkers. NIA Intramural Program. September 15, 2019
5. **Thyagarajan B**. Targeted sequencing of specimens with limited DNA on a microfluidics-coupled NGS platform for solid tumor diagnostics. Northwestern University July 2014.
6. **Thyagarajan B**. Genomics Testing: What is it good for? College of American Pathology Webinar July 2014
7. **Thyagarajan B**. Mitochondria as a novel biomarker for colorectal cancer susceptibility Emory University June 2013.

Invited Oral Presentations at Local and Regional Professional Meetings, Conferences

1. **Thyagarajan B**. Towards a better understanding of age as a risk factor for chronic disease. Life Course Center Seminar. May 1, 2019
2. **Thyagarajan B**. Genomics Testing: What is it good for? Second Annual Lab CE event, Fairview, October 6, 2018
3. **Thyagarajan B**. The Molecular Diagnostics Laboratory: Current capabilities and future of genomics testing at MHealth. Second Annual Lab CE event, Fairview, October 6, 2018
4. **Thyagarajan B**. Clinical Application of Genomics in Pediatrics. Department of Pediatrics Grand Rounds April 5, 2017.
5. **Thyagarajan B**. Clinical Genomics Applications In Research. January 5, 2017.
6. **Thyagarajan B**. Introduction to Genomics (HFN tumors) Bell Symposium November 2016.
7. **Thyagarajan B**. MtDNA copy number, colorectal cancer and BMT. Translational Biomarkers in Cancer Epidemiology September 2016.
8. **Thyagarajan B**. Introduction to genomics Fairview Southdale Grand Rounds November 2014.
9. **Thyagarajan B**. Utilization of next generation sequencing platforms to advance translational research in bone marrow transplantation. BMT Research Group, University of Minnesota, Minneapolis MN. May 5, 2014.
10. **Thyagarajan B**. Opportunities for translational research using existing genomic resources at the University of Minnesota. Prostate Cancer Translational Working Group. March 4, 2014.
11. **Thyagarajan B**. Clinical applications of next generation sequencing. Bell Symposium, University of Minnesota, Minneapolis, MN. November 1, 2013.
12. **Thyagarajan B**. Mitochondria as a novel biomarker for colorectal cancer. Research Conference, Division of Epidemiology and Community Health, University of Minnesota, Minneapolis MN. November 1, 2013.
13. **Thyagarajan B**. Clinical applications of next generation sequencing. Genetic Mechanisms of Cancer Working Group, Cancer Center, University of Minnesota, Minneapolis, MN. September 6, 2013.
14. Wherley C, Bushara K, **Thyagarajan B**, Yohe S, Beckman K, Hauge A, Deshpande A, Silverstein K, Onsongo G, Erdmann J, Bower M. What's in a name? Identifying spastic paraparesis mutations in patients with hereditary ataxia. Accepted for oral platform presentation at the Upper Midwest Clinical Genetics Conference. Minneapolis, MN.

September 19, 2013.

Student: Wherley C was a Genetic Counseling student.

15. **Thyagarajan B.** Base excision repair polymorphisms and outcomes after allogeneic hematopoietic cell transplants. *Cancer Epidemiology Interest Group*, University of Minnesota. August 20, 2009.
16. **Thyagarajan B.** Body Mass Index, Inflammation, and Lung Function. *Center for Lung Science and Health*, University of Minnesota. October 23, 2008.
17. **Thyagarajan B.** Donor Chimerism, Thymic function, and Hematopoietic Stem Cell Transplantation. *Grand Rounds: Department of Laboratory Medicine and Pathology*, University of Minnesota. April 2007.
18. **Thyagarajan B.** Genetic Susceptibility in Breast Cancer: Is there a role for Nucleotide Excision Repair Genes? Grand Rounds: *Department of Laboratory Medicine and Pathology*, University of Minnesota. February 2004.

Peer-reviewed Oral Presentations at Professional Meetings, Conferences.

1. **Thyagarajan B.** Transcriptomics: The Health and Retirement Study. Gerontology Society of America, Austin November 2019.
2. Vivek S, Prizment AE, Nelson H, Faul J, Crimmins E, **Thyagarajan B.** Combined Effect of CMV Seropositivity and Systemic Inflammation is Associated with Cognitive Impairment in Elderly Cancer Survivors. Gerontology Society of America, Austin November 2019.
Student: Sithara Vivek is a PhD student in my laboratory.
3. **Thyagarajan B,** Lazovich D, Nelson HH, Poynter J, Prizment A, Roesler M, Cassidy E, Putnam S, Reilly C, Spector L. Field Application of Digital Technologies for Health Assessment in the 10,000 Families Study. American Association of Cancer Research Special Conference on Modernizing Population Sciences in the Digital Age. San Diego February 19-22, 2019
4. Cassidy E, Barcelo H, Arora M, **Thyagarajan B.** A pilot study of plasma cell-free mitochondrial DNA copy number as a biomarker of frailty in hematopoietic cell transplantation. National Conference on Undergraduate Research. April 6, 2017.
Student: Erin Cassidy was an undergraduate working in my laboratory.
5. Cuttica MJ, Colangelo L, Washko G, Rana J, Jacobs D, **Thyagarajan B,** Sidney S, Lewis B, Liu K, Lloyd-Jones D, Dransfield M, Kalhan R. Association between Lung Health and Cardiovascular Outcomes in Young Adults: The CARDIA Study. ATS Annual Meeting, May 21, 2017.
6. Cartwright D, **Thyagarajan B,** Yohe, S, Nelson AC. Utilizing cytology preps in the Molecular Diagnostics Laboratory. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting June, 2016.
Student: David Cartwright was a Molecular and Genetic Pathology Fellow.
7. Baughn LB, Onsongo G, Bower M, Henzler C, Silverstein KAT, **Thyagarajan B.** Copy number variation detection using next generation sequencing. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting May 28-30, 2015.
Student: Linda Baughn was a ABMG Molecular Fellow
8. Boone J, Bower M, **Thyagarajan B,** Schimmenti LA. Hereditary Retinopathy: Expansion to a Single Large NGS Gene Panel Encompassing All Known Retinal Phenotypes. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting May 28-30, 2015.
Student: Jamie Boone was a Molecular and Genetic Pathology Fellow
9. Nelson AC, Schomaker S, Henzler C, Kemmer T, Wilson JD, Yohe S, **Thyagarajan B.** Targeted sequencing of specimens with limited DNA on a microfluidics-coupled NGS platform for solid tumor diagnostics. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting May 29-31, 2014.

- Student: Andrew Nelson was a Molecular and Genetic Pathology Fellow
10. Cisneros D, Qualls C, Arynchyn A, **Thyagarajan B**, Smith LJ, Jacobs D, Sood A. Despite greater symptoms, subjects with 'obesity preceding asthma' do not show worse asthma outcomes than those with 'asthma preceding obesity'. Annual Meeting of the American Thoracic Society May 17-20, 2014.
 11. Oetting W, Beckman K, Silverstein K, Onsongo G, **Thyagarajan B**, Bower M. Introduction of next generation sequencing in a clinical diagnostic laboratory. The Human Genome Variation Society (HGVS) Clinical Applications of Next Generation Sequencing meeting. Paris, France. June 8, 2013.
 12. Spears M, Onsongo G, Silverstein K, Beckman K, Schomaker M, Yohe S, Bower M, Hansen K, Baumann L, Reding M, **Thyagarajan B**. A Next-Generation Sequencing Approach to Investigating Inherited Thrombophilias. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting June 2013.
- Student: Michael Spears was a Molecular and Genetic Pathology Fellow
13. Technical and Clinical Validation of a Next-Generation Sequencing Diagnostic Assay for Fanconi Anemia. Peterson J, Beckman B, Bower M, Bunjer K, Hauge A, Kemmer T, Peterson R, Onsongo G, Schomaker M, Silverstein K, Yohe S, Zierhut H, **Thyagarajan B**. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting June 2012.
- Student: Jess Peterson was a Molecular and Genetic Pathology Fellow
14. Karger AB, Wilson JD, Bower M, Schimmenti LA, **Thyagarajan B**. Detection of PAX2 partial and whole exon deletions using multiplex ligation-dependent probe amplification (MLPA). Academy of Clinical Laboratory Physicians and Scientists Annual Meeting June 2011.
- Student: Amy Karger was a clinical pathology resident and Jon Wilson contributed to this work during his training as a Molecular and Genetic Pathology Fellow.
15. **Thyagarajan B**, Alozie O, Jacobs DR, Steffes MW, Kailash P, Hayes J, and Gross MD. Factors Associated with Paraoxonase Genotypes and Activity in a Diverse, Young, Healthy Population: The Coronary Artery Risk Development in Young Adults (CARDIA) Study. *Academy of Clinical Laboratory Physicians and Scientists*, April 2006.
 16. **Thyagarajan B**, Khaliq, W, Anderson KE, Veltri G, Jacobs Jr D, Folsom AR, and Gross MD. Inter- and Intra-Individual Variation in DNA Repair as Measured by Flow Cytometric Assays. *Proc Am Assoc Cancer Res* 45: 2004.

TEACHING AND CURRICULUM DEVELOPMENT

Residents Supervised

Residents who rotated through the Molecular Diagnostics Laboratory from November 2007-Present

Clinton Crowder, MD
Min Yi Ngae, MD
Noelle BlueArm, MD
Rhonda Peters, MD
Pong Boon-Unge, MD
Amy Karger, MD, PhD
Roberto Gamez, MD
Alesia Kaplan, MD
Sarah Meyers, MD
Monika Roychowdhury, MD
Melissa Hart, MD
Charanjeet Singh, MD
Sarah Anderson, MD

Steve Bloechl, MD
Jermaine Anderson, MD
Tetyana Mettler, MD
Arbaz Samad, MD
Leah Dvorak, MD
Annie Meares, MD
Andrew Nelson, MD
Megan Griffith, MD
Justin Peltola, MD
Sarah Drawz, MD
Shabnam Zarei, MD
Maria Surowiecka, MD
Laura Moench, MD
Sumaya Al Rawi, MD
Shifteh Vahidi
Maryam Shahi
Barrie Miller, MD
Scott Giles, MD
Evan Sell, MD

Molecular and Genetic Pathology Fellows who rotated through the Molecular Diagnostics Laboratory from November 2007- Present

Randolph Peterson, MD
Sophia Yohe, MD
Jon Wilson, MD
Monika Rowchowdhury, MD
Amy Karger, MD, PhD
Jess Peterson, MD
Michael Spears, MD
Andrew Nelson, MD, PhD
Linda Baughn, PhD
Jamie Boone, MD
Anup Tilak, PhD
Mathew Meredith, PhD
Aruna Rangan, MD
Zoltan Oltavi, MD, PhD
AbdulAziz Al Mana, MD

Post sophomore fellows who rotated through the Molecular Diagnostics Laboratory from November 2007-Present

Daniel Martig
Amanda Murphy

Hematology-Oncology Fellows who rotated through the Molecular Diagnostics Laboratory from January 2012-Present

Layla Shule, MD
Farhana Malik, MD
George Scaria, MD, PhD

ADVISING AND MENTORING**Undergraduate Student Activities**

#	Trainee Name	Degree	Year	Project	Outcome	Current Position
1	Anjaneya Bharadwaj	Undergraduate	2025	Environmental determinants of microbiome distribution	Ongoing	Sophomore at Nova University
2	Vishnu Vundamati	Undergraduate	2023-present	Flow cytometry analysis of NK-T like cells	Ongoing. Poster presentation	Junior at Nova University
3	Daniel Pannikar	Undergraduate	2021-Present	Stability of neurodegenerative biomarkers	Published manuscript	Senior: 1 st year medical school
4	Ria Koppikar	Undergraduate	2023-present	Flow cytometry analysis	Complete	Freshman
6	Claire Chabin	Undergraduate	2019-2020	Analysis of Grip Strength and Digital Cognitive Measures	Undergrad Directed Res.	Graduated
7	Vy Nguyen	Undergraduate	2018-2020	Exosome based biomarkers	Undergrad Directed Res.	Joined Osteopathic school
8	Karla Boirivant	Undergraduate	2018	Obesity and Cognitive Function in HRS	Undergrad research project	Graduated
9	Paige Hartman	Undergraduate	2016-2017	Variant classification in Long Life Family Study	Poster at ACMG: Directed Res.	Medical School, UMN Duluth
10	Erin Cassidy	Undergraduate	2016-2017	Plasma mtDNA copy number as a frailty biomarker	Oral presentation in NURC: Directed Res	Admitted to Medical School
11	Jessica Hanneman	Undergraduate	2015-2016	Genetic causes of ataxia	Poster presentation in NURC and UMN undergrad research symposium: Directed Res.	Completed a Masters program in Veterinary Science at University of Kentucky at Lexington and is currently working in the pharmaceutical industry.
12	Upasana Arvindam	Undergraduate	2015	Obtained laboratory research experience	N/A	Graduated from PhD Student in MiCAB program UMN
13	Omar	Undergrad	2012-	Geographical	Abstract	Family Practice

	Bushara	uate (Harvard University)	2016	distribution of HPV genotypes in Minnesota	and publications X2	Physician
14	Priyanka Kailash	Undergraduate	2009-2010	Obtained laboratory research experience to support application to osteopathic schools	N/A	Emergency Medicine Physician

Graduate Student Activities

#	Trainee Name	Degree	Year	Project	Outcome	Current Position
1	You-Shan Shen	MS	2022-2023	Proteomic profiles in diabetes	Graduated	Graduate student
2	Gokul Sheshadri	MS	2022-Present	Proteomic profiles in obesity	Graduated	Graduate Student
3	Sithara Vivek	PhD student	2018-2023	Adaptive immunity in diabetes	Graduated	UMN Assistant Professor
4	Ramya Ramasubramanian	PhD student	2018-2022	Immunity and lung function	Graduated	Analyst at Analysis Group
5	Daniel Muldoon	MPH student	2017-2018	Mitochondrial SNPs in HCT outcomes	Graduated	Research Scientist
6	Ramya Ramasubramanian	MPH student	2017-2018	Lung function and gene expression in CARDIA	Graduated	PhD student
7	Jonathan Ploeger	PhD Student	2013	Effect of green tea on mitochondrial DNA copy number	Completed project	PhD student
8	Sharad Manaktala	MPH student	2010-2013	Prevalence of single and multiple HPV infections	Abstracts X2	Health Informatician : Klewver
9	Heather Gray	MPH student	2009-2010	SHBG polymorphisms and polycystic ovarian syndrome	Graduated	

Undergraduate honors thesis directed:

Paige Hartman – 2017

Member of Master’s thesis committee:

Andrew Walker, MS Computer Science – 2020-2022

Guangyong Li, MPH Biostatistics – 2019-2021

Daniel Muldoon, MPH Epidemiology – 2017-2018

Heather Gray, MPH Epidemiology – 2009-2010

Master’s thesis directed:

Gokul Seshadri, M.S. Statistics – 2022-2025

Masters Capstone project Title: The Impact of CMV on T Cell Repertoire: Insights from Transcriptomic Data Analysis.

Ramya Ramasubramanian, MPH Epidemiology – 2016-2018

Master's Thesis Title: Association of lung function with inflammatory and oxidative stress gene expression profiles in peripheral blood.

Sharad Manaktala, MPH Student – 2013 (did not complete Master's thesis and moved directly to a PhD program in Health Informatics).

Member of PhD dissertation committee:

Elizabeth Polter, Epidemiology – 2019-present
 Shuo Wang, Epidemiology – 2019-present
 Noemi Vidal Folch – June 2022- present

PhD students directed:

Ramya Ramasubramanian, PhD student in Epidemiology – 2018-2022. PhD dissertation title: Immunosenescence and Aging

Sithara Vivek, PhD student in Biomedical Informatics and Computational Biology – 2018-2023
PhD dissertation title: Integrated multi-omics approach to predict dementia: using an explainable variation encoder

Shweta Sharma, PhD student in Epidemiology and Community Health – 2023-Present

Post-doctoral fellows supervised

#	Trainee Name	Degree	Year	Project	Outcome	Current Position
1	Rae Ann Martinez	PhD	2023-2025	Social factors and Epigenetic Age	Completed post-doc	Assistant Professor, University of Colorado.
2	Zoltan Oltavi	Genetic Pathology Fellow	2018-2019	CAG repeat expansions in Androgen Receptor	Validated clinical test	Professor, University of Rochester
3	Jamie Boone	Genetic Pathology Fellow	2014-2015	ABO sequencing	Ongoing work	Private Practice; pathology
4	Linda Baughn	Genetic Pathology Fellow	2014-2015	Copy number variation detection using next generation sequencing.	Abstract and publication	Assistant Professor, Mayo Clinic
5	Andrew Nelson	Genetic Pathology Fellow	2013-2014	Targeted sequencing of specimens with limited DNA on a microfluidics-coupled NGS platform.	Abstract and publication	Assistant Professor. Univ. of Minnesota
6	Michael Spears	Genetic Pathology Fellow	2012-2013	A Next-Generation Sequencing Approach to Investigating Inherited Thrombophilias.	Abstract	Private Practice: Pathology
7	Jess Peterson	Genetic Pathology Fellow	2011-2012	Technical and Clinical Validation of a Next-Generation Sequencing	Abstract	Assistant Professor: University of

				Diagnostic Assay for Fanconi Anemia.		Wisconsin, Milwaukee
8	Amy Karger	Resident	2010-2011	Detection of PAX2 partial and whole exon deletions using multiplex ligation-dependent probe amplification (MLPA).	Abstract	Assistant Professor: Univ of Minnesota
9	Monika Roychowdhury	Genetic Pathology Fellow	2010-2011	Participated in several research projects	Abstracts X3	Private Practice: Pathology
10	Jon Wilson	Genetic Pathology Fellow	2009-2010	Association between gene expression of peripheral blood oxidative stress markers and Alzheimer's disease: The Nun Study	Abstract	Associate Professor: Univ of Minnesota
11	Sophia Yohe	Genetic Pathology Fellow	2008-2009	Three Mutations in the Tyrosinase Gene: An Unusual Case of Oculocutaneous Albinism	Abstract	Associate Professor: Univ of Minnesota

Junior Faculty Mentored

#	Faculty	Position	Duration	Department	Current Position/Achievements
1	Ruping Sun	Assistant Professor	2019-present	Laboratory Medicine and Pathology; Medical School	Developing collaborations for various research projects
2	Niloufar Haddidi	Associate Professor	2019-Present	Nursing School	Mentoring in genomics related research and education
3	Elizabeth Wrigley Field	Assistant Professor	2018-2020	Sociology	Promoted to Associate Professor
4	Kelsey McinTyre	Assistant Professor	2018-2020	Laboratory Medicine and Pathology; Medical School	Moved out of Academia
5	Jesse Seegmiller	Assistant Professor	2017-2023	Laboratory Medicine and Pathology; Medical School	Promoted to Associate Professor
6	Pawel Mroz	Assistant Professor	2017-present	Laboratory Medicine and Pathology; Medical School	Promoted to Associate Professor
7	Sophia Yohe	Assistant Professor	2013-2018	Laboratory Medicine and Pathology; Medical School	Professor: Univ of Minnesota Director of Molecular Diagnostics Laboratory
8	Siddhartha Sen	Assistant Professor	2022-Present	Laboratory Medicine and Pathology; Medical School	

9	Sithara Vivek	Assistant Professor	2023-Present	Laboratory Medicine and Pathology; Medical School	
10	Shannon Sullivan	Assistant Professor	2023-Present	Laboratory Medicine and Pathology; Medical School	
11	Shijia Zhu	Assistant Professor	2023-Present	Laboratory Medicine and Pathology; Medical School	

Visiting Scholars Hosted

#	Trainee Name	Degree	Year	Project	Outcome	Current Position
1	Anuprita Ghosh	Visiting Scientist	2016	Laboratory interpretation of genetic variants in NGS	Published manuscript	Senior Scientist, Narayana Netralaya
2	Pallavi Prakash	Visiting Professor	2012-2013	Mitochondrial DNA copy number and bone marrow transplant outcomes	Ongoing publication	Associate Professor, JSS Medical College

EDUCATIONAL PRESENTATIONS

- Linking molecules to morphology: An integrated approach to cancer diagnosis.** Clinical Pathology Case Conference, University of Minnesota May 18, 2020.
- Tumor Profiling using Molecular Methods:** Guest Lecture in Genetics & Genomics in Human Health April 8, 2020.
- What Demographers should know about Genetics:** Minnesota Population Center Seminar Series, December 6, 2019.
- Genomic Techniques used in Epidemiological Techniques:** Public Health Genomics, September 18, 2019.
- Multiple oncogenic mutations in cancer: causes and clinical implications:** Clinical Pathology Case Conference. University of Minnesota May 21, 2019.
- Molecular ABO Subtyping: Techniques and Clinical Applications:** Clinical Pathology Case Conference, University of Minnesota May 15, 2018.
- Design and Implementation of the Ten Thousand Families Study:** Public Health Genomics, October 18, 2017.
- An Unusual Case of Severe Combined Immunodeficiency.** Clinical Pathology Case Conference. University of Minnesota April 18, 2017.
- Oculocutaneous albinism: a case of non-mendelian inheritance?** Clinical Pathology Case Conference. University of Minnesota April 26, 2016.
- Whole Genome Sequencing – Cancer Biology and Tumor Profiling.** Guest Lecture in. Genetics & Genomics in Human Health April 25, 2016.
- Genetics in Cancer Epidemiology.** Guest Lecture in Cancer Epidemiology. March 28, 2016.
- Whole Genome Sequencing – Cancer Biology and Tumor Profiling.** Guest Lecture in Advanced Human Genetics. April 18, 2015.
- Biomarkers in Clinical Research.** Guest Lecture in Clinical Trials class. November 11, 2015.

14. **Genomic incidental findings: to disclose or not to disclose?** Clinical Pathology Case conference. University of Minnesota April 14, 2015.
15. **Genetics in Cancer Epidemiology.** Guest Lecture in Cancer Epidemiology. March 23, 2015.
16. **Geographical distribution of HPV genotypes in Minnesota.** Clinical Pathology Case conference. University of Minnesota April 22, 2014
17. **Biomarkers in Cancer Epidemiology.** Guest Lecture in Cancer Epidemiology. April 14, 2014.
18. **Genetic characterization of hereditary syndromes: Hereditary ataxias as a case example.** Clinical Pathology Case conference. University of Minnesota April 23, 2013.
19. **Tumor Heterogeneity and Clinical Trials.** Guest Lecture in Cancer Epidemiology. April 15, 2013.
20. **Acute Lymphoblastic Leukemia: Translating Genomics advances into clinical practice.** Clinical Pathology Case conference. University of Minnesota May 8, 2012.
21. **HPV testing in the Molecular Diagnostics Laboratory** (Average 2 times/year during resident rotations 2010-2012).
22. **Role of engraftment analyses in patient monitoring after hematopoietic cell transplantation** (Average 3 times/year during resident rotations 2009-2012).
23. **Introduction to Molecular Pathology** (Average 3 times/year during resident rotations since 2009-2012).
24. **Clinical applications of next generation sequencing.** Clinical Pathology Case conference. University of Minnesota May 24, 2011.
25. **Melting Curve analyses and Next Generation Sequencing Methodology.** February 2010.
26. **Hematopoietic cell transplantation for treatment of primary immunodeficiencies.** Clinical Pathology Case conference. University of Minnesota June 8, 2010.
27. **Role of HPV testing in Cervical Cancer Screening.** Clinical Pathology Case conference. University of Minnesota May 26, 2009.
28. **Molecular Diagnostics: Principles and Techniques.** Educational lecture for pathology residents. University of Minnesota October 2008.
29. **Role of laboratory testing in diagnosis of hereditary colorectal cancer.** Educational lecture for genetic counseling students. University of Minnesota. April 3, 2008.

CLINICAL SERVICE

At the University of Minnesota

Molecular Pathology, University of Minnesota Medical Center, Fairview.

The Molecular Diagnostics Laboratory at the University of Minnesota Medical Center, Fairview is responsible for processing and evaluation of approximately 10, 000 specimens annually. Significant portion of the specimens are for evaluating HPV infections in cytology specimens and bone marrow engraftment analysis in patients undergoing hematopoietic stem cell transplantation. My service responsibilities in Molecular Pathology include

Evaluation and diagnosis of approximately 200 specimens weekly

Evaluation of laboratory QA/QC procedures.

Design and implementation of new laboratory tests.

Completed quality improvement projects

A. Automation of interpretation of HPV screening test. October 2008- February 2009

Background: Rapid increase in the number of HPV tests resulted in errors in reporting of HPV results. Systematic analyses of the errors revealed the post PCR processing steps to be a major source of errors in the Molecular Diagnostics Laboratory.

Solution: We used the Qiaxcel capillary electrophoresis system to standardize and automate all post PCR steps. This new system eliminates use of agarose gels and human error in interpretation of genotyping data. In addition, we have been able to standardize the sensitivity of the HPV screening tests to 1000 HPV copies with the use of the Qiaxcel system.

Design and implementation of new laboratory tests

A. Long read sequencing for whole genome analysis March 2022-Present

We are developing an Oxford Nanopore sequencing tests to replace our WGS short read sequencing test.

B. Pharmacogenomics testing (Pain, Psychiatry and cardiovascular) July 2015-June 2018

We are developing a microfluidics based pharmacogenomics assay for use in the pain, psychiatric and primary care clinics.

C. Detection of Structural Variants from WGS data May 2018-May 2021

We are developing novel bioinformatics tools for detection of structural variants from WGS data.

D. NGS sequencing for Blood Group Determination November 2017 – Present

We are developing sequencing approaches for detecting blood group antigens that will improve allocation of kidneys for renal transplantation.

E. Whole exome analysis July 2013 – May 2017

We have validated whole exome analysis for clinical use in inherited disorders.

F. Upgrade to targeted sequencing analyses July 2013 – April 2014

We have upgraded our NGS test to include sequencing of 4800 genes.

G. Amplicon based NGS tests for cancer diagnostics **July 2013 – November 2014**

We have validated a 21 gene test for diagnosis and prognosis for a variety of hematological malignancies and solid tumors.

H. Next generation sequencing tests **January 2010 – July 2012**

We, in collaboration with the University of Minnesota Genomics Center, offer clinical sequencing of 568 genes for more than 130 inherited disorders in the Molecular Diagnostics Laboratory.

I. Targeted sequencing analyses **July 2012 – November 2012**

We have developed and validated universal targeted sequencing tests (Tier 2 testing) that can be used for genetic testing of family members once a mutation has been identified in the proband.

J. IKAROS deletion detection **April 2011 – October 2011**

We developed a Multiplex Ligation Probe Amplification assay, in collaboration with the cytogenetics laboratory, to detect IKAROS gene deletions in patients with acute lymphoblastic leukemia.

K. Magnetic bead sorting of peripheral blood samples for chimerism analyses of post bone marrow transplant samples **September 2009 – June 2010**

We have optimized magnetic bead sorting of CD19 and CD56 cells prior to chimerism analysis of peripheral blood samples from patients who have undergone bone marrow transplants and will be offered as clinical tests for patients undergoing hematopoietic cell transplantation.

L. KRAS testing **October 2009 – June 2010**

We have developed a clinical test to detect exon 2 KRAS mutations in tumor samples and this test is currently being offered as a clinical test. This was a clinical test developed by the Molecular Fellow, John Wilson.

M. Magnetic bead sorting of peripheral blood samples for chimerism analyses of post bone marrow transplant samples **September 2008 – June 2009**

We have optimized magnetic bead sorting of CD3 and CD15 cells prior to chimerism analysis of peripheral blood samples from patients who have undergone bone marrow transplants. Cell sorting for CD3 and CD15 cells prior to chimerism analyses has now replaced previous testing methodology as the standard of care at the University of Minnesota.

PROFESSIONAL SERVICE AND PUBLIC OUTREACH

Outside the University of Minnesota

Journal Reviewer Experience (since 2007)

1. Cancer
2. Carcinogenesis
3. Journal of exposure analysis and environmental epidemiology
4. Annals of Epidemiology
5. Frontiers in Pharmacotherapy of Respiratory Diseases

6. Molecular Carcinogenesis
7. Journal of Asthma
8. Medical Principles and Practice
9. Cancer Epidemiology Biomarkers and Prevention
10. Journal of Psychosomatic medicine
11. Experimental and Clinical Pathology
12. Translational Research
13. Innate Immunity
14. PLoS One
15. Journal of Obesity
16. BMC Research Notes
17. BMC Cancer
18. Drug Design, Development and Therapy
19. Medicine
20. Molecular and Cellular Biochemistry
21. Mitochondrion
22. Tumor Biology
23. Scientific Reports
24. Biomedical Journals
25. Cancers
26. Biomarkers
27. Microarrays
28. International Journal of Molecular Sciences
29. Genome Medicine
30. Clinica Chimica Acta
31. Clinical Cancer Research
32. BioMed Research International
33. Journal of Gerontology: Medical Sciences
34. Clinical and Experimental Dermatology
35. BMC Medical Genetics
36. International Journal of Gerontology
37. BMC Pulmonary Medicine
38. Cancer Biomarkers
39. American Journal of Clinical Pathology
40. Aging

41. Immunology
42. Aging Cell
43. Nature
44. Journal of Neurochemistry
45. Clinical and Translational Medicine

Grant Reviewer

Global Health and Social Responsibility, University of Minnesota	July 2025
National Center for Advancing Translational Sciences Rare Disease Network	November 2024
National Center for Advancing Translational Sciences T32/K12 Review Panel	September 2024
National Heart Lung and Blood Institute (Special Emphasis Panel)	November 2023
National Human Genome Research Institute (Special Emphasis Panel)	March 2023
National Institute of Aging (Special Emphasis Panel)	November 2022
National Institute of Aging (Special Emphasis Panel)	September 2022
National Cancer Institute (EDRN Review Panel)	February 2022
CTSI UMN K to R Review Panel	December 2021
National Institute of Aging (COVID Emphasis Panel)	November 2021
National Heart Lung Blood Institute (Special Emphasis Panel)	May 2021
AMIDEX International Call proposal Grant Reviewer (France)	January 2019
Biomedical Research Awards for Interdisciplinary New Science	November 2018
Minnesota Colorectal Cancer Research Fund	November 2018
BIRCWH program Grant Reviewer	September 2017
California TRDRP Program	March 2017
National Human Genome Research Institute (CSER review)	February 2017
NIH (Special Emphasis Panel)	February 2017
Reviewer, Genome British Columbia, Canada	November 2016
Faculty Research Development Grants, UMN	August 2016
National Cancer Institute (Special Emphasis Panel)	October 2014, July 2016
National Cancer Institute (R03)	June 2016
National Institute of Aging (Special Emphasis Panel)	November 2015
Tyrolean Science Fund, Austria	August 2014
CTSI, University of Minnesota	March 2013/April 2014
National Science Center, Poland	November 2012

Consultant

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Medical Director, Diversigen Inc.	January 2020-August 2024
National Institute of Aging (CALERIE study)	January 2018-December 2019
Consultant for NIPT testing	August 2017
Consultant for cancer testing	August 2016
MedACorp	January 2015

Invited Panelist/Session Moderator/Conference Organizer

Novel Biomarkers of Biological Age in the Health and Retirement Study: Session Moderator in the Gerontology Society of America Annual Meeting.	November 2019
Don't Think Twice, It's Alright! There are Many Roads to Sustainability: Invited Panelist in the Regional Meeting of the International Society for Biological and Environmental Repositories.	November 2019
Conference Organizer: Molecular Pathology and Genomics Symposium	October 2018-2025
Session Moderator: World Congress of Molecular Pathology.	July 2016
Session Moderator: Diagnostics and biomarker identification for cancer and heart disease. 5 th Annual Biomedical Informatics and Computational Biology Symposium.	May 21, 2013
Session Moderator: Molecular Pathology Section. Academy of Clinical Laboratory Physicians and Scientists Annual Meeting	June 2012.

College of American Pathology (CAP) Inspector January 2009 - Present

I have been a team member of three CAP teams that inspected other clinical laboratories for CAP accreditation.

CAP Team Leader	2021-2023
NIA commissioned paper on Biomarkers in the ADD Health Study	September 2024

Service to the University/Medical School/Department

Departmental Committees

Bioinformatics Search Committee, Chair	2022-2023
Molecular Epidemiology Search Committee, Chair	2022-2023
Research Advisory Committee member	2019-2021
RAFT committee member	2016-2020
Molecular Pathologist Hire committee member	May 2016 – February 2017
Establishing a Division of Molecular Pathology	2017
Health Informatics Committee	2015-2016
Innovation Initiatives Development committee	2014-2015
Solid Tumor Cluster Hire committee member	2014

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Administrative Activities

Great Idea Awards Initiative

2018-Present

MPG Spatial -omics initiative

2023-2024

Digital Pathology initiative

2024-Present