

Current Title: VP/Chair, Scientific Council, Global Clinical Development, Regeneron

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Professional background:

Medical degree, medicine residency, and metabolic/endocrine fellowship at the University of Rome, Italy. PhD program in experimental medicine started at the University of Siena, Italy and completed at the Gladstone Institutes of the University of California, San Francisco. First faculty position at UCSF as Instructor in Medicine, then joined Vanderbilt University as Assistant Professor in the Division of Endocrinology and director of the Lipid Clinic and Diagnostic Laboratory, then promoted to Associate Professor with tenure, then joined the Division of Cardiovascular Medicine as Director of the Atherosclerosis Research Unit, then promoted to full Professor with endowment (Cornelius Vanderbilt Chair) and Chief of Cardiovascular Disease Prevention, then joined Oregon Health & Science University as the inaugural William and Sonja Connor Endowed Chair in Preventive Cardiology and Director of the Center for Preventive Cardiology. Finally, joined the Global Clinical Development group at Regeneron Pharmaceuticals with the current title of Vice President and Chair for Cardio-Metabolic Diseases in the Scientific Council.

Trajectory: Clinical care to basic research to clinical research to implementation science to drug development.

Accomplishments:

- I.** Academic clinical practice organization and leadership in 2 medical centers (27 years)
- II.** Uninterrupted NIH support and 300+ papers in the area of vascular biology (27 years)
- III.** Founder and first editor, *Am J Prev Cardiol*; President, American Board of Clinical Lipidology
- IV.** Senior-level leadership experience in biologic pharmaceutical development, including:
 1. Support of the evinacumab program (ANGPTL3i mAb) to FDA approval (Evkeeza)
 2. Support of several programs for novel cardiovascular and metabolic targets in competitive areas
 3. Creation and development of a program for a vascular condition currently without medical therapy
 4. Scientific counseling on targets, molecules, and indications for preclinical and clinical groups
 5. Digital health devices and patient-reported outcomes in clinical trials
 6. Real-world studies and exploratory analyses of clinical trial datasets and repositories
 7. Harmonization between medical affairs and clinical development groups
 8. Streamlining of scientific communication strategies

Summary of Employment History:

1988-1993	Staff Investigator, Gladstone Institutes, UC San Francisco, CA
1993-2014	Director, Lipid Clinic & Laboratory, and Professor of Medicine, VUMC, Nashville, TN
2011-2014	Cornelius Vanderbilt Chair of Preventive Cardiology, VUMC, Nashville, TN
2014-2020	William and Sonja Connor Chair of Preventive Cardiology, OHSU, Portland, OR
2014-2020	Professor of Medicine and Physiology & Pharmacology, OHSU, Portland, OR
2021-Present	Adjunct Professor of Medicine (Cardiology) – Stanford University, Stanford, CA
2020-Present	VP and Chair, CV/Metabolic Diseases – Scientific Council, Regeneron Pharmaceuticals

Medical Licenses:

Italy (#34217): valid, inactive.
State of Tennessee (#025314): valid, inactive.
State of Oregon (#165476): valid, inactive.

Exclusive Memberships:

American Society for Clinical Investigation (2001)
Association of American Physicians, (2012)
American Clinical and Climatological Association (2018)

Scientific Production (last 2 years, industry papers only):

1. Murphy WA, Lin N, Damask A, Schwartz GG, Steg PG, Szarek M, Banerjee P, Fazio S, Manvelian G, Pordy R, Shuldiner AR, Paulding C. Pharmacogenomic Study of Statin-Associated Muscle Symptoms in the ODYSSEY OUTCOMES Trial. *Circ Genom Precis Med*. 2022 May 11;101161CIRCGEN121003503. doi: 10.1161/CIRCGEN.121.003503. Epub ahead of print. PMID: 35543701.
2. Aykul S, Huang L, Wang L, Das NM, Reisman S, Ray Y, Zhang Q, Rothman NJ, Nannuru KC, Kamat V, Brydges S, Troncione L, Johnsen L, Yu PB, Fazio S, Lees-Shepard J, Schutz K, Murphy AJ, Economides AN, Idone V, Hatsell SJ. ACVR1 antibodies exacerbate heterotopic ossification in fibrodysplasia ossificans progressiva (FOP) by activating FOP-mutant ACVR1. *J Clin Invest*. 2022 May 5:e153792. doi: 10.1172/JCI153792. Epub ahead of print. PMID: 35511419.
3. Gu J, Sanchez R, Chauhan A, Fazio S, Wong N. Lipid treatment status and goal attainment among patients with atherosclerotic cardiovascular disease in the United States: A 2019 update. *Am J Prev Cardiol*. 2022 Mar 20;10:100336. doi:10.1016/j.ajpc.2022.100336. PMID: 35368909; PMCID: PMC8968014.
4. Schwartz GG, Szarek M, Bhatt DL, Bittner VA, Bujas-Bobanovic M, Diaz R, Fazio S, Fras Z, Goodman SG, Harrington RA, Jukema JW, Manvelian G, Pordy R, Ray KK, Scemama M, White HD, Steg PG; ODYSSEY OUTCOMES Investigators. Transiently achieved very low LDL-cholesterol levels by statin and alirocumab after acute coronary syndrome are associated with cardiovascular risk reduction: the ODYSSEY OUTCOMES trial. *Eur Heart J*. 2023 Mar 5;44(16):1408–17. doi:10.1093/eurheartj/ehad144. Epub ahead of print. PMID: 36879424; PMCID:PMC10119028.
5. Murdock DJ, Sanchez RJ, Mohammadi KA, Fazio S, Geba GP. Serum cholesterol and the risk of developing hormonally driven cancers: A narrative review. *Cancer Med*. 2023 Mar;12(6):6722-6767. doi: 10.1002/cam4.5463. Epub 2022 Nov 29. PMID:36444895; PMCID: PMC10067100.
6. Gu J, Sanchez RJ, Chauhan A, Fazio S, Rosenson RS. Simulation of lipid-lowering therapy (LLT) intensification in very high-risk patients with atherosclerotic cardiovascular disease. *J Clin Lipidol*. 2022 Nov-Dec;16(6):901-905. doi: 10.1016/j.jacl.2022.10.001. Epub 2022 Oct 14. PMID:36319536.
7. Murphy WA, Lin N, Damask A, Schwartz GG, Steg PG, Szarek M, Banerjee P, Fazio S, Manvelian G, Pordy R, Shuldiner AR, Paulding C. Pharmacogenomic Study of Statin-Associated Muscle Symptoms in the

ODYSSEY OUTCOMES Trial. *Circ Genom Precis Med*. 2022 Jun;15(3):e003503.

doi:10.1161/CIRCGEN.121.003503. Epub 2022 May 11. PMID: 35543701; PMCID: PMC9213083.

8. Aykul S, Huang L, Wang L, Das NM, Reisman S, Ray Y, Zhang Q, Rothman N, Nannuru KC, Kamat V, Brydges S, Troncione L, Johnsen L, Yu PB, Fazio S, Lees-Shepard J, Schutz K, Murphy AJ, Economides AN, Idone V, Hatsell SJ. Anti-ACVR1 antibodies exacerbate heterotopic ossification in fibrodysplasia ossificans progressiva (FOP) by activating FOP-mutant ACVR1. *J Clin Invest*. 2022 Jun 15;132(12):e153792. doi: 10.1172/JCI153792. PMID: 35511419; PMCID: PMC9197526.

9. Gu J, Sanchez R, Chauhan A, Fazio S, Wong N. Lipid treatment status and goal attainment among patients with atherosclerotic cardiovascular disease in the United States: A 2019 update. *Am J Prev Cardiol*. 2022 Mar 20;10:100336. doi:10.1016/j.ajpc.2022.100336. PMID: 35368909; PMCID: PMC8968014.

10. Szarek M, Reijnders E, Jukema JW, Bhatt DL, Bittner VA, Diaz R, Fazio S, Garon G, Goodman SG, Harrington RA, Ruhaak LR, Schwertfeger M, Tsimikas S, White HD, Steg PG, Cobbaert C, Schwartz GG; ODYSSEY OUTCOMES Investigators. Relating Lipoprotein(a) Concentrations to Cardiovascular Event Risk After Acute Coronary Syndrome: A Comparison of Three Tests. *Circulation*. 2023 Aug 26. doi: 10.1161/CIRCULATIONAHA.123.066398. Epub ahead of print. PMID: 37632469.

11. Mohammadi KA, Brackin T, Schwartz GG, Steg PG, Szarek M, Manvelian G, Pordy R, Fazio S, Geba GP. Effect of proprotein convertase subtilisin/kexin type 9 inhibition on cancer events: A pooled, post hoc, competing risk analysis of alirocumab clinical trials. *Cancer Med*. 2023 Aug;12(16):16859-16868. doi: 10.1002/cam4.6310. Epub 2023 Jul 17. PMID: 37458138; PMCID: PMC10501297.

12. Schwartz GG, Szarek M, Bhatt DL, Bittner VA, Bujas-Bobanovic M, Diaz R, Fazio S, Fras Z, Goodman SG, Harrington RA, Jukema JW, Manvelian G, Pordy R, Ray KK, Scemama M, White HD, Steg PG; ODYSSEY OUTCOMES Investigators. Transiently achieved very low LDL-cholesterol levels by statin and alirocumab after acute coronary syndrome are associated with cardiovascular risk reduction: the ODYSSEY OUTCOMES trial. *Eur Heart J*. 2023 Mar 5;44(16):1408-17. doi:10.1093/eurheartj/ehad144. Epub ahead of print. PMID: 36879424; PMCID: PMC10119028.

13. Murdock DJ, Sanchez RJ, Mohammadi KA, Fazio S, Geba GP. Serum cholesterol and the risk of developing hormonally driven cancers: A narrative review. *Cancer Med*. 2023 Mar;12(6):6722-6767. doi: 10.1002/cam4.5463. Epub 2022 Nov 29. PMID: 36444895; PMCID: PMC10067100.

14. Gu J, Sanchez RJ, Chauhan A, Fazio S, Rosenson RS. Simulation of lipid-lowering therapy (LLT) intensification in very high-risk patients with atherosclerotic cardiovascular disease. *J Clin Lipidol*. 2022 Nov-Dec;16(6):901-905. doi: 10.1016/j.jacl.2022.10.001. Epub 2022 Oct 14. PMID: 36319536.

15. Szarek M, Reijnders E, Jukema JW, Bhatt DL, Bittner VA, Diaz R, Fazio S, Garon G, Goodman SG, Harrington RA, Ruhaak LR, Schwertfeger M, Tsimikas S, White HD, Steg PG, Cobbaert C, Schwartz GG; ODYSSEY OUTCOMES Investigators. Relating Lipoprotein(a) Concentrations to Cardiovascular Event Risk After Acute Coronary Syndrome: A Comparison of 3 Tests. *Circulation*. 2024 Jan 16;149(3):192-203. doi: 10.1161/CIRCULATIONAHA.123.066398. Epub 2023 Aug 26. PMID: 37632469; PMCID: PMC1078294