

BIOGRAPHICAL SKETCH

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NAME Ronenn Roubenoff, MD, MHS		POSITION TITLE Global Head, Musculoskeletal Translational Medicine, Novartis Institutes for Biomedical Research; Adjunct Professor of Medicine and Nutrition, Tufts University & Tufts Medical Center	
eRA COMMONS USER NAME Roubenoff			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Northwestern University, Evanston, IL	B. Sc.	1981	Honors Pgm Med Ed
Northwestern University, Chicago, IL	M.D.	1983	Medicine, <i>cum laude</i>
Johns Hopkins University, Baltimore, MD	M.H.S.	1990	Clinical Epidemiology

A. Positions and Honors.**Employment:**

1983--1986: Intern and Resident, Osler Medical Service, Johns Hopkins Hospital, Baltimore.
 1986--1987: Assist. Chief of Service (Chief Resident), Osler Medical Service, Johns Hopkins Hospital; Instructor, Department of Medicine, Johns Hopkins University, Baltimore.
 1987--1990: Fellow, Molecular and Clinical Rheumatology, Johns Hopkins University School of Medicine.
 1988--1990: Fellow, Division of Clinical Epidemiology, Department of Epidemiology, Johns Hopkins University School of Hygiene & Public Health, Baltimore.
 1990--1992: Research Associate, Jean Mayer USDA Human Nutrition Research Center on Aging (HNRC), Tufts University and Rheumatology Division, New England Medical Center (NEMC), Boston.
 1992--1997: Assistant Professor of Medicine, Tufts University School of Medicine; Scientist II, Body Composition Laboratory, HNRC, Boston; Assistant Physician, Dept. of Medicine, NEMC.
 1994--1996: Assistant Professor of Nutrition, Tufts University School of Nutrition.
 1996--1997: Scientist I and Director, Sarcopenia Research Program, Body Composition Laboratory, HNRC
 1996--2001: Director, Nutrition Track, MPH Program, Tufts University School of Medicine
 1997--2001: Associate Professor of Nutrition, Tufts University School of Nutrition Science and Policy; Chief, Nutrition, Exercise Physiology and Sarcopenia (NEPS) Laboratory, USDA HNRCA
 1998--: Associate Professor of Medicine, Tufts University School of Medicine (Adjunct from 2002)
 2001--2002: Director of Human Studies, HNRCA, Tufts University, Boston
 2002--2006: Sr. Director, Molecular Medicine (Metabolism), Millennium Pharmaceuticals, Cambridge, MA
 2002--: Visiting scientist, HNRC, Tufts University, Boston; Adjunct Professor of Nutrition, Tufts University
 2007--2009: Sr. Director, Immunology R&D, Biogen Idec, Inc., Cambridge, MA
 2009 --: Global Head, Musculoskeletal Translational Medicine, Novartis Institutes for Biomedical Research, Cambridge, MA and Basel, CH.
 2010 --: Adjunct Professor of Medicine, Tufts University School of Medicine, Boston, MA
 2014-15: Global Head, ad interim, Neuroscience Translational Medicine, Novartis Institutes for Biomedical Research, Cambridge, MA and Basel, CH.
 2017-18: Head, ad interim, Autoimmunity, Transplantation, and Immunology Translational Medicine, Novartis Institutes for Biomedical Research, Basel, CH.
 2019 --: Global Head, Translational Medicine Discovery & Profiling, Novartis Institutes for Biomedical Research.

Honors/Awards/Competitive Fellowships/Government Committees:

1982: Alpha Omega Alpha
 1986: Teacher of the Year, Johns Hopkins School of Medicine
 1988: Mellon Foundation Fellowship in Clinical Epidemiology
 1990: American College of Rheumatology Senior Scholar Award; Delta Omega Honor Society in Public Health; Pew National Nutrition Scholar; Individual National Research Service Award, NIDDK, NIH
 1991: Fellow, American College of Physicians
 1992: Fellow, American College of Rheumatology; Member, WHO Subcommittee on Anthropometry in the Elderly
 1994-00: Member, Institutional Animal Care and Use Committee (IACUC), Tufts USDA Human Nutrition Research Ctr.

- 1996-01: *Ad hoc* Member, NIH Initial Review Groups AIDS and Related Research B (96-98), E (98-99), 8 (2000), 6 (2002); and NIA Clinical Aging Review Committee C (99-00), CCAM G-03 SEP (2001)
- 1998: Member, WHO Expert Consultation on Nutrition Guidelines for the Elderly
- 1999: Distinguished Faculty Award, Tufts University
- 1999: Member, IDECG Working Group on Nutrition and Aging
- 2000--: Member, Clinical Practice & Education Committee, American Society for Clinical Nutrition; *Chair* 2003-04
- 2000-06: Member (Chair, 2004-06), Publications Management Committee, American Society for Clinical Nutrition
- 2000-02: Member, Human Investigations Review Committee (IRB), Tufts University/New England Medical Ctr.
- 2002-05: Councilor, American Society for Clinical Nutrition
- 2003: Member, FDA Genomic Data Submissions Committee (2nd Pharmacogenetics and Pharmacogenomics Workshop, November 2003).
- 2006: Member, NIH Study Section ZAG1 ZIJ-2 M1 (The Adipogenic Phenotype in Aging Musculoskeletal Tissues)
- 2006--08: Chair, Publications Management Committee, American Society for Nutrition
- 2007: Speaker, Nathan Shock Memorial Symposium, National Institute on Aging, Baltimore, MD.
- 2007: Robert H. Herman Memorial Award for Clinical Research, American Society for Nutrition
- 2007--10: ASN Representative, FASEB Clinical Research Committee; Member, ASN Graduate & Professional Education Committee; Chair, Continuing Medical Education Subcommittee
- 2010: Virginia Beal Lecture & Award, University of Massachusetts Department of Nutrition, Amherst, MA. "Sarcopenia, Cachexia, and Wasting: What's the Difference?"

B. Selected peer-reviewed publications (in chronological order). List all publications from the past 3 years. Do not include publications submitted or in preparation. (*Selected from 280 publications and 203 abstracts; h-index 100 55 since 2016 [Google Scholar, March 2021]; ResearchGate score 47.98 [97.5 %ile]*):

1. Roubenoff R, Roubenoff RA, Kehayias JJ, et al. Rheumatoid cachexia: cytokine-driven hypermetabolism and loss of lean body mass in chronic inflammation. **J Clin Invest** 93: 2379-2386, 1994.
2. Rall LC, Meydani SN, Rosen CJ, et al. Protein metabolism and strength training in aging and chronic inflammation. **Arthr Rheum** 39: 1115-24, 1996.
3. Petri M, Roubenoff R, Nadeau M, Selhub J, Rosenberg IH. Homocysteine: An independent risk factor for stroke in systemic lupus erythematosus. **Lancet** 348:1120-1124, 1996.
4. Roubenoff R, Kiel DP, Hannan, MT, Dallal GE, Wilson PWF, Harris TB. Application of bioelectrical impedance analysis to elderly populations. **J Gerontol** 52: M129-136, 1997.
5. Roubenoff R, Freeman LM, Smith DE, Abad LW, Dinarello CA, Kehayias JJ. Adjuvant arthritis as a model of inflammatory cachexia. **Arthr Rheum** 40: 534-539, 1997.
6. Roubenoff R, Heymsfield SB, Cannon JG, Kehayias JJ, Rosenberg IH. Nomenclature of body composition in weight loss. **Am J Clin Nutr** 66: 192-196, 1997.
7. Roubenoff R, Harris TB, Abad LW, Wilson PWF, Dallal JE, Dinarello CA. Monocyte cytokine production in an elderly population: effect of age and inflammation. **J Gerontol** 53A: M20-M26, 1998.
8. Roubenoff R, Rall LC, Veldhuis JD, et al. The relationship between growth hormone kinetics and sarcopenia in postmenopausal women: confounding by leptin. **J Clin Endoc Metab** 83: 1502-6, 1998.
9. Frontera WR, Suh D, Krivickas LS, Hughes VA, Goldstein R, Roubenoff R. Skeletal muscle fiber quality in older men and women. **Am J Physiol** 279: C611-C618, 2000.
10. Roubenoff R, Hughes VA, Nelson ME, Morganti C, Kehayias JJ, Roberts SB. The effect of gender and body composition method on the apparent decline in lean mass-adjusted resting metabolic rate with age. **J Gerontol** 55A: M757-M760, 2000.
11. Payette H, Roubenoff R, Jacques PF, Dinarello CA, Wilson PWF, Abad LW, Harris T. Insulin-like growth factor-1 and interleukin-6 predict sarcopenia in very old community-living men and women: The Framingham Heart Study. **J Am Geriatr Soc** 51: 1-7, 2003.
12. Roubenoff R, Parise H, Payette H, Abad LW, D'Agostino RD, Jacques PF, Wilson PWF, Dinarello CA, Harris TB. Cytokines, insulin-like growth factor-1, and sarcopenia predict mortality in very old community-dwelling men and women: The Framingham Heart Study. **Am J Med** 115: 429-435, 2003.
13. Vasan RS, Sullivan LM, D'Agostino RB, Roubenoff R, Harris TB, Sawyer DB, Levy D, Wilson PWF. Serum IGF-1 and risk of heart failure in elderly subjects without a prior myocardial infarction: The Framingham Heart Study. **Ann Intern Med** 139:642-648, 2003.
14. Frontera WR, Hughes VA, Krivickas LS, Kim S-K, Foldvari M, Roubenoff R. Strength training in older women: early and late changes in whole muscle and single cells. **Muscle & Nerve** 27: 601-608, 2003.
15. Walsmith J, Abad L, Kehayias J, Roubenoff R. Tumor necrosis factor- α production is associated with less body cell mass in women with rheumatoid arthritis. **J Rheumatol** 31:23-29, 2004.
16. Janssen I, Shepard DS, Katzmarzyk PT, Roubenoff R. The health care costs of sarcopenia in the United States. **J Am Geriatr Soc** 52: 80-85, 2004.

17. Janssen I, Baumgartner RN, Ross R, Rosenberg IH, Roubenoff R. Skeletal muscle cutpoints associated with elevated disability risk in older men and women. **Am J Epidemiol** 159: 413-421, 2004.
18. Hamada K, Vannier E, Sacheck J, Roubenoff R. Age impairs sarcoactive cytokine gene expression in human skeletal muscle tissue following acute exercise. **FASEB J** 19: 264-266, 2005
19. Sacheck J, Cannon JG, Hamada K, Vannier E, Blumberg J, Roubenoff R. Age-specific relationships between exercise-induced IL-6 and oxidative stress. **Am J Physiol**, 291: E340-349, 2006.
20. Brooks N, Layne JE, Gordon PL, Roubenoff R, Nelson ME, Castaneda-Sceppa C. Strength training improves muscle quality and insulin sensitivity in Hispanic older adults with type 2 diabetes. **Int J Med Sci** 18: 19-27, 2006.
21. Plenge RM, Cotsapas C, Davies L, Price AL, de Bakker PI, Maller J, Pe'er I, Burt N, Blumenstiel B, DeFelice M, Parkin M, Barry R, Winslow W, Healy C, Gabriel S, Graham RR, Izmailova E, Roubenoff R, Parker A, Coblyn J, Weinblatt ME, Glass R, Karlson EW, Maher N, Lee DM, Brenner MB, Seldin MF, Remmers E, Lee AT, Padyukov L, Alfredsson L, Purcell S, Klareskog L, Gregersen PK, Shadick NA, Daly MJ, Altshuler D. Two independent alleles at 6q23 associated with risk of rheumatoid arthritis. **Nature Genetics** 39(12):1477-82, 2007.
22. Frontera WR, Reid KF, Phillips EM, Krivickas LS, Hughes VA, Roubenoff R, Fielding RA. Muscle fiber size and function in elderly humans: a longitudinal study. **J Appl Physiol** 105: 241-248, 2008.
23. Brooks N, Cloutier GJ, Cadena SM, Layne JE, Nelsen CA, Freed AM, Roubenoff R, Castaneda-Sceppa C. Resistance training and timed essential amino acids protect against the loss of muscle mass and strength during 28 days of bed rest and energy deficit. **J Appl Physiol** 105: 241-248, 2008.
24. Karlson EW, Chibnik LB, Cui J, Plenge RM, Glass RJ, Maher NE, Parker A, Roubenoff R, Izmailova E, Coblyn JS, Weinblatt ME, Shadick NE. Associations between HLA, PTPTN22, CTLA4 genotypes and RA disease severity phenotypes in a large cohort study. **Ann Rheum Dis** 67(3):358-63, 2008
25. Wang C, Schmid CH, Hibbert PL, Kalish R, Roubenoff R, Rones R, Okparavero A, McAlindon T. Tai Chi for treating knee osteoarthritis: design of a long-term follow up randomized clinical controlled trial. **BMC Musculoskeletal Dis** 9:108-117, 2008
26. Liu C, Batliwalla F, Li W, Lee A, Roubenoff R, Beckman E, Khalili H, Damle A, Kern M, Furie R, Dupuis J, Plenge RM, Coenen MJH, Behrens TW, Carulli J, Gregersen PK. Genome-wide association scan identifies candidate polymorphisms associated with differential response to anti-TNF treatment in rheumatoid arthritis. **Mol Med** 14(9-10):575-581, 2008.
27. Lieb W, Sullivan LM, Harris TB, Roubenoff R, Benjamin EJ, Levy D, Fox CS, Wang TJ, Wilson PW, Kannel WB, Vasani RS. Association of circulating leptin levels with incidence of heart failure, cardiovascular disease and total mortality in the elderly: The Framingham Heart Study. **Diabetes Care** 32(4):612-6, 2009
28. Sattler FR, Castaneda-Sceppa C, Binder EF, Schroeder ET, Wang Y, Yarasheski KE, Kawakubo M, Stewart Y, Hahn C, Colletti P, Roubenoff R, Bhasin S, Azen SP. Testosterone and growth hormone improve body composition and muscle performance in older men: the HORMA Trial. **J Clin Endoc Metab** 94(6):1991-2001, 2009.
29. Liu J, Taylor KE, SeStefano AL, Criswell L, Maher NE, Izmailova E, Parker A, Roubenoff R, Plenge RM, Weinblatt ME, Shadick N, Karlson EW. Genome wide association study of determinants of anti-cyclic citrullinated peptide antibodies in adults with rheumatoid arthritis. **Mol Med** 15(5-6):136-43, 2009.
30. Lieb W, Sullivan LM, Harris TB, Roubenoff R, Benjamin EJ, Levy D, Fox CS, Wang TJ, Wilson PW, Kannel WB, Vasani RS. Relation of serum leptin with cardiac mass and left atrial dimension in individuals >70 years of age. **J Am Coll Cardiol** 104(4):602-5, 2009.
31. Lieb W, Beiser A.S., Vasani R.S., Tan Z.S., Au R., Harris T.B., Roubenoff R., Auerbach S., DeCarli C., Wolf P.A., Seshadri S. Association of plasma leptin levels with incident Alzheimer disease and MRI measures of brain aging. **JAMA** 302 (23): 2565 – 2572, 2009.
32. Bienkowska J, Dagain G, Batliwalla F, Allaire N, Roubenoff R, Gregersen P, Carulli J. Convergent random forest predictor: a new method for designing predictors of drug response. Predicting response to anti-TNF's in rheumatoid arthritis using whole blood gene expression. **Genomics** 94(6):423-32, 2009.
33. Wang C, Schmid CH, Hibbert PI, Kalish R, Roubenoff R, Rones R, McAlindon T. Tai Chi is effective at treating knee osteoarthritis: a randomized controlled trial. **Arthr Care & Res** 61: 1545-1553, 2009.
34. Todd DJ, Izmailova E, Knowlton T, Centola M, Roubenoff R, Shadick N, Weinblatt M. Heterophilic binding by serum rheumatoid factor erroneously augments multiplex assay measurements in patients with rheumatoid arthritis. **Arthr Rheum** 63: 894-903, 2011.
35. Sattler F, Bhasin S, He J, Yarasheski K, Binder E, Schroeder ET, Castaneda-Sceppa C, Kawakubo M, Roubenoff R, Dunn M, Hahn C, Stewart Y, Martinez C, Azen SP. Durability of the effects of testosterone and growth hormone supplementation in older community dwelling men: the HORMA Trial. **Clin Endoc** 75: 103-111, 2011.
36. Yarasheski KE, Castaneda-Sceppa C, He J, Kawakubo M, Bhasin S, Binder EF, Schroeder ET, Roubenoff R, Azen SP, Sattler FR. Whole-body and muscle protein metabolism are not affected by acute deviations from habitual protein intake in older men: the Hormonal Regulators of Muscle and Metabolism in Aging (HORMA) Study. **Am J Clin Nutr** 94(1):172-81, 2011.
37. Morley JE, Abbatecola MA, Argiles JM, Baracos V, Bauer J, Bhasin S, Cederholm T, Coats AJS, Cummings SR,

- Evans WJ, Fearon K, Ferrucci L, Fielding RA, Guralnik JM, Harris TB, Inui A, Kalantar-Zadeh K, Kirwan B-A, Mantovani G, Muscaritoli M, Newman AB, Rossi-Fanelli F, Rosano GMC, Roubenoff R, Schambelan M, Sokol GH, Storer TW, Vellas B, von Haehling S, Yeh S-S, Anker SD. Sarcopenia with limited mobility: an international consensus. **J Am Med Dir Assoc** 12: 403-409, 2011.
38. Schroeder ET, Hee J, Yarasheski KE, Binder EF, Castaneda-Sceppa C, Bhasin S, Dieli-Conwright CM, Kawakubo M, Roubenoff R, Azen SP, Sattler FR. Value of measuring muscle performance to assess changes in lean mass with testosterone and growth hormone supplementation. **Eur J Appl Physiol** 112(3):1123-31, 2012.
39. He J, Bhasin S, Binder EF, Yarasheski KE, Castaneda-Sceppa C, Schroeder ET, Roubenoff R, Chou C-P, Azen SP, Sattler FR. Cardiometabolic risk factors during anabolic hormone supplementation in older men. **Obesity** 21: 968-975, 2013.
40. Brooks NE, Cadena SM, Cloutier G, Lopez SV, Roubenoff R, Castaneda-Sceppa C. Influence of exercise on the metabolic profile caused by 28 days of bed rest with energy deficit and amino acid supplementation. **Int J Med Sci** 11: 1248-1257, 2014.
41. Westwood AJ, Beiser A, DeCarli C, Harris TB, Chen TC, He X, Roubenoff R, Pikula A, Au R, Braverman LE, Wolf PA, Vasani RS, Seshadri S. Insulin-like growth factor-1 and risk of Alzheimer's Disease and brain atrophy. **Neurology** 82: 1613-1619, 2014.
42. Amato AA, Sivakumar K, Goyal N, David WS, Salajegheh M, Praestgaard J, Lach-Trifilieff E, Trendelenburg A, Laurent D, Glass DJ, Roubenoff R, Tseng BS, Greenberg SA. Treatment of sporadic inclusion body myositis with bimagrumab, an antibody that inhibits type II activin receptors: translational studies followed by a randomized, double-blind trial. **Neurology** 83: 2239-2246, 2014.
43. Saber H, Himali JJ, Shoamanesh A, Beiser A, Pikula A, Harris TB, Roubenoff R, Romero JR, Kase CS, Wolf PA, Vasani RS, Seshadri S. Association between serum leptin levels and stroke: results from Framingham Heart Study cohort. **Stroke** 46:2881-5, 2015. DOI: 0.1161/STROKEAHA.115.009463
44. Rooks D, Praestgaard J, Hariry S, Laurent D, Petricoul O, Perry RG, Trifilieff E, Roubenoff R. Bimagrumab improves muscle mass and function in elderly adults with sarcopenia and poor mobility. **J Am Ger Soc** ; 65: 1988-1995. doi: 10.1111/jgs.14927.
45. Seefried L, Baumann J, Hemsley S, Hofmann C, Kunstmann E, Kiese B, Huang Y, Chivers S, Valentin M-A, Borah B, Roubenoff R, Junker U, Jakob F. An inpatient dose-escalation study of BPS804, an anti-sclerostin monoclonal antibody, in adult patients with hypophosphatasia. **J Clin Invest**, 2017; 127: 2148-2158. doi: 10.1172/JCI83731.
46. Bernabei R, Mariotti L, Bordes P, Roubenoff R. The "Sarcopenia and Physical Frailty IN older people: multi-component Treatment strategies" (SPRINTT) project: advancing the care of physically frail and sarcopenic older people. **Aging Clin Exp Res**. 2017 Jan 31. doi: 10.1007/s40520-016-0707-2.
47. Garito T, Roubenoff R, Hompesch M, Morrow L, Gomez K, Rooks D, Meyers CD, Buchsbaum M, Neelakantham S, Laurent D, Petricoul O, Zakaria M. Bimagrumab improves body composition and insulin sensitivity in insulin-resistant subjects. **Diabetes Obesity Metab** 2018;20:94–102. DOI: 10.1111/dom.13042; DOI: 10.1111/dom.13042.
48. Brzezczynska J, Meyer A, McGregor R, Schilb A, Degen S, Tadini V, Johns N, Langen R, Schols A, Glass DJ, Roubenoff R, Ross JA, Fearon KCH, Greig CA, Jacobi C. Alterations in the in vitro and in vivo regulation of muscle regeneration in healthy ageing. and the influence of sarcopenia. **J Sarcop Cach Muscle** 2018 Feb;9(1):93-105. doi: 10.1002/jcsm.12252.
49. Garito T, Roubenoff R, Hompesch M, Morrow L, Gomez K, Rooks D, Meyers CD, Buchsbaum M, Neelakantham S, Laurent D, Petricoul O, Zakaria M. Bimagrumab improves body composition and insulin sensitivity in insulin-resistant subjects. **Diabetes, Obesity and Metabolism** 2018;20:94–102. DOI: 10.1111/dom.13042.
50. Garito T, Zakaria M, Papanicolaou D, Li Y, Pinot P, Petricoul O, Laurent D, Rooks D, Roubenoff R. Effects of bimagrumab, an activin receptor type II inhibitor, on neurohormonal axes. **Clin Endocrinol** 2018;88:908-919. DOI: 10.1111/cen.13601.
51. Grunseich C, Miller R, Swan T, Glass DJ, El Mouelhi M, Fornaro M, Petricoul O, Vostiar I, Roubenoff R, Meriggioli MN, Kokkinis A, Guber RD, Budron M, Vissing J, Soraru G, Mozaffar T, Ludolph A, Kissel J, Fischbeck K, in collaboration with the BVS857 Study Group. A randomized, placebo-controlled study to evaluate the safety, tolerability, and preliminary efficacy of an IGF-1 mimetic in patients with spinal and bulbar muscular atrophy. **Lancet Neurology** 2018; 17: 1043–52, [http://dx.doi.org/10.1016/S1474-4422\(18\)30320-X](http://dx.doi.org/10.1016/S1474-4422(18)30320-X).
52. Polkey MI, Rooks D, Franssen F, Singh D, Steiner M, Casaburi R & Roubenoff R. Treatment of COPD associated skeletal muscle wasting with bimagrumab, an activin receptor blocker, increases thigh muscle volume. **Am J Resp Crit Care Med** 2019;199(3):313-320, doi: 10.1164/rccm.201802-0286OC.
53. Pognan F, Couttet P, Demin I, Jaitner B, Pang Y, Roubenoff R, Sutter E, Timsit Y, Valentin MA, Vogel B, Woerly G, Wolf A, Schramm U. CSF-1 antibody lacnotuzumab in a phase 1 healthy volunteer study and mechanistic investigation of safety outcomes. **J Pharmacol Exp Ther** 2019; 369:428–442. DOI: <https://doi.org/10.1124/jpet.118.254128>.
54. Mueller A, Hoefling HA, Muaremi A, Praestgaard JT, Walsh LC, Bunte O, Huber RM, Fürmetz J, Keppler AM, Schieker M, Böcker W, Roubenoff R, Brachat S, Rooks DS, Clay I. Continuous digital monitoring of walking speed in

Principal Investigator/Program Director (Last, First, Middle):

frail elderly patients: noninterventional validation study and longitudinal clinical trial. **JMIR Mhealth Uhealth** 2019 Nov 27;7(11):e15191. doi: 10.2196/15191.

55. Rooks D, Swan T, Goswami B, Filosa LA, Bunte O, Panchaud N, Coleman L, Miller R, Garayoa ES, Praestgaard J, Perry R, Recknor C, Fogarty C, Arai H, Chen L-K, Hashimoto J, Chung Y-S, Laurent D, Petricoul O, Triffieff E, Papanicolaou D, Roubenoff R. Bimagrumab vs. optimized standard of care for treatment of sarcopenia in community-dwelling older adults: a randomized clinical trial. **JAMA Network Open**, 2020;3(10):e2020836. doi:10.1001/jamanetworkopen.2020.20836.
56. Rooks D, Petricoul O, Praestgaard J, Bartlett M, Laurent D, Roubenoff R. Safety and pharmacokinetics of bimagrumab in healthy older and obese adults with body composition changes in the older cohort. **J Cachexia, Sarcopenia, and Muscle** 2020; DOI: 10.1002/jcsm.12639.
57. Schieker M, Conaghan PG, Mindeholm L, Praestgaard J, Solomon DH, Scotti S, Gram H, Thuren T, Roubenoff R, Schieker M. Effects of interleukin-1 β inhibition on incident hip and knee replacement: Exploratory analyses from a randomized, double-blind, placebo-controlled trial. **Ann Intern Med** 2020 Oct 6;173(7): 509-515. doi: 10.7326/M20-0527. Epub 2020 Aug 4.
58. Heymsfield SB, Coleman LA, Miller R, Rooks DS, Laurent D, Petricoul O, Praestgaard J, Swan T, Wade T, Perry R, Goodpaster BH, Roubenoff R. Bimabgrumab, an activin type II receptor antagonist, for treatment of obesity and type 2 diabetes: a randomized controlled trial. **JAMA Network Open**, 2021;4(1)e2033457. DOI:10.1001/jamanetworkopen.2020.33457.

C. Research Support.

Employee, Novartis Institutes for Biomedical Research, Inc.

Background: Ronenn Roubenoff, MD, MHS



Short Version:

Ronenn Roubenoff trained in internal medicine, epidemiology, and rheumatology at Johns Hopkins, and did postdoctoral training in inflammation and nutrition at Tufts University. He is currently Global Head of Translational Medicine Discovery and Profiling at Novartis Institutes for Biomedical Research, based in Basel, Switzerland. He is also Adjunct Professor of Medicine and Nutrition at Tufts. He is an internationally recognized authority on sarcopenia, translational medicine, and the use of biomarkers in drug development. He has published over 270 papers in the medical literature (h-index 100), as well as writing for lay audiences. He has won multiple awards, including membership in the Alpha Omega Alpha and Delta Omega honor societies; Fellow of the American College of Physicians and the American College of Rheumatology; and the Robert H. Herman Memorial Award of the American Society for Nutrition.

Very Short Version:

Ronenn Roubenoff is Global Head of Translational Medicine Discovery & Profiling at Novartis, Basel, CH, and Adjunct Professor of Medicine and Nutrition at Tufts University. An international authority on sarcopenia, translational medicine, and the use of biomarkers in drug development, he has published >270 papers (h-index 100). Awards include AOA and DO honor societies; Fellow of the American Colleges of Physicians and of Rheumatology; and the Robert H. Herman Award, American Society for Nutrition.

Long Version:

Dr. Roubenoff received his MD from Northwestern University and trained in Internal Medicine and Rheumatology at the Johns Hopkins Hospital, where he was Chief Resident in Medicine. He completed concurrent fellowships in Rheumatology and in Clinical Epidemiology at Johns Hopkins, receiving a Master of Health Science degree. He then trained in Nutrition at Tufts University with Irwin Rosenberg, MD, and in Immunology with Charles Dinarello, MD. He was Chief of the Nutrition, Exercise Physiology, and Sarcopenia (NEPS) Laboratory, and Director of Human Studies at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, where he is currently Adjunct Professor of Medicine and Nutrition. Subsequently, Dr. Roubenoff became Sr. Director of Molecular Medicine at Millennium Pharmaceuticals and then Sr. Director, Immunology Research and Development, at Biogen Idec, where he led the Translational Medicine and Early Development efforts for the Immunology group. In 2009, Dr. Roubenoff was appointed Global Head of Musculoskeletal Translational Medicine at Novartis Institutes for Biomedical Research (NIBR), heading early clinical development for musculoskeletal and mobility disorders. In 2019 he was appointed Global Head of Translational Medicine Discovery & Profiling at NIBR.

Principal Investigator/Program Director (Last, First, Middle):

Dr. Roubenoff has done pioneering work on the interactions of nutrition, exercise and hormonal and immune regulators of metabolism in aging and chronic disease, including rheumatoid arthritis, osteoarthritis, and HIV infection. He is an internationally recognized authority on sarcopenia, aging, translational medicine, and the use of biomarkers in drug development. He has published over 270 papers in the medical literature as well as writing for lay audiences. He is co-author of a New York Times Bestselling book on exercise and nutrition treatment of arthritis. Dr. Roubenoff has served on many NIH study sections, WHO committees, American Society for Nutrition Committees, Animal Care and Use and Institutional Review Committees, and as a reviewer for journals, foundations, and charities. He has won multiple awards, including membership in the Alpha Omega Alpha and Delta Omega honor societies; Fellow of the American College of Physicians and the American College of Rheumatology; the Robert H. Herman Memorial Award of the American Society for Nutrition; the American College of Rheumatology Senior Scholar Award; Tufts University Distinguished Faculty Award; Teacher of the Year at Johns Hopkins Medical School; and the Oliver Smith Award for Extraordinary Service and Caring at Tufts Medical Center.