

Patricia Cassano

Web Bio

Information

Biography

Biographical Statement

Patricia A. Cassano, MPH, Ph.D., is Associate Professor in the Division of Nutritional Sciences, Associate Professor of Healthcare Policy and Research at the Weill Cornell Medical College, and Director of Graduate Studies for the Minor Field of Epidemiology in the Cornell University Graduate School.

Dr. Cassano is an epidemiologist with interests in nutrition and genetics; she has specialized expertise in the etiology of respiratory diseases. Dr. Cassano has methodological expertise in the design, conduct and analysis of analytical epidemiological studies, in particular long-term prospective cohort studies including studies incorporating biological markers of nutrition and metabolism and molecular markers of genetic variation.

Dr. Cassano leads the EnHANCE Pilot Study, a study investigating the transition from home to college environment and effects on body habitus, metabolism, and pre-disease biological markers.

Dr. Cassano leads the Respiratory Ancillary Study to the Selenium and Vitamin E Cancer Prevention Trial (SELECT). This randomized trial was designed to address whether supplementation with vitamin E and/or selenium attenuates decline in lung function and/or reduces the risk of COPD.

Dr. Cassano is participating in a consortium of genome-wide association studies (GWAS) to investigate the relation of genetic variation to pulmonary phenotypes, including a newly funded GWAS of gene x nutrient interactions in relation to pulmonary function phenotypes (with Dr Dana Hancock, RTI). GWAS of longitudinal trajectory phenotypes.

Dr. Cassano's research program is currently funded by NIH. Much of the research is conducted in the context of PhD graduate student training and in collaboration with post-doctoral fellows in the group; Dr. Cassano teaches the foundation course in Epidemiology for graduate students on both campuses, including the Graduate School of Cornell University and the Weill Cornell Medical College Translational Science program in Clinical Investigation.

Department Website Summary

Patricia A. Cassano, MPH, Ph.D., is Associate Professor, Division of Nutritional Sciences, Associate Professor of Healthcare Policy and Research, Weill Cornell Medical College, and Director of Graduate Studies for the Minor Field of Epidemiology, Cornell University Graduate School.

Teaching

Teaching and Advising Statement

Dr. Cassano teaches a graduate course in Epidemiology, and was a faculty member in the 2014 launch of the WHO/Cochrane Collaboration/Cornell University Summer Institute for Systematic Reviews in Nutrition for Global Policy Making. Dr. Cassano advises PhD students as well as undergraduates majoring in Global and Public Health Sciences, Human Biology Health and Society, and Nutritional Sciences, including students in the College of Human Ecology and students in the College of Agriculture and Life Sciences.

Professional

Current Professional Activities

Cornell University Graduate Field Membership: Nutrition; Epidemiology

Dr. Cassano is a member of:

Society for Epidemiologic Research, since 1981

American Public Health Association, since 1988

American Thoracic Society, since 2000

American Society for Nutritional Sciences, since 2002

Research

Current Research Activities

The following ongoing studies investigate the role of nutrition and genetic variation in lung health:

- Large, randomized trial of nutrition interventions (supplemental vitamin E [400 mg daily] and/or selenium [200 ug daily]) in relation to pulmonary function decline (3000 men) and in relation to risk of COPD and/or asthma (~35,000 men); [Collaborators SELECT study, Fred Hutchinson Cancer Research Center]
- CHARGE consortium Pulmonary Function Working Group GWAS projects investigating the relation of genomic variation to COPD, and in particular a current ongoing study of the nutritional genomics of lung function
- Pilot Study of Cornell Freshmen investigating the transition to college in relation to changes in body habitus, metabolism, and biological markers of disease risk.
- Studies of the role of vitamin D in relation to lung outcomes.

Extension

Education

Education

- Ph.D. 1987 - University of Washington, Epidemiology
- M.P.H. 1980 - Columbia University, Epidemiology
- A.B. 1976 - Mt. Holyoke College, Biological Sciences

Courses

Courses Taught

NS 6520 Epidemiology Foundations

NS6200 Translational Research and Evidence-based Policy and Practice in Nutrition (team taught with Drs. Stover and Brannon)

Websites

Related Websites

<http://www.human.cornell.edu/dns/cassanogroup>

<http://www.enhance.nutrition.cornell.edu>

http://www.ncbi.nlm.nih.gov/sites/myncbi/collections/public/1tIRevePOmljxK29u_8mni7/?sort=date&direction=descending

Administration

Administrative Responsibilities

Director of Graduate Studies, Minor Field of Epidemiology

Publications

Selected Publications

Lim U and **PA Cassano** (2002). Folate, homocysteine and blood pressure in NHANES III. *American J Epidemiology*, 156:1105-1113.

Rubin, R N, Navon L and **PA Cassano** (2004). Relationship of Serum Antioxidants to Asthma Prevalence in Youth. *American Journal of Respiratory and Critical Care Medicine*, 169: 393-398.

McKeever TM, SA Lewis, HA Smit, P Burney, JR Britton, **PA Cassano** (2004). Serum nutrient markers and skin prick testing using data from the Third National Health and Nutrition Examination Survey. *Journal of Allergy and Clinical Immunology*, 114(6): 1398-402.

Zhang D, Wells, MT, Turnbull BW, Sparrow D and **PA Cassano** (2005). Hierarchical Graphical Models: An Application to Pulmonary Function and Cholesterol Levels in the Normative Aging Study. *Journal of the American Statistical Association*, 2005, 100(471):719-27.

McKeever TM, SA Lewis, HA Smit, P Burney, JR Britton, **PA Cassano** (2005). The association of acetaminophen, aspirin, and ibuprofen with respiratory disease and lung function. *American Journal of Respiratory and Critical Care Medicine* 2005, 171(9): 966-71 .

Lim U, Peng K, Shane B, Stover PJ, Litonjua AA, Weiss ST, Gaziano JM, Strawderman RL F Raiszadeh, J Selhub, K Tucker and **PA Cassano** (2005). Polymorphisms in cytoplasmic serinehydroxymethyltransferase and methylenetetrahydrofolate reductase affect the risk of cardiovascular disease in Men. *Journal of Nutrition*, 135:1989-94.

McKeever TM, SA Lewis, **PA Cassano**, M Ocké, P Burney, J Britton, HA Smit (2008). The relation between dietary individual fatty acids, FEV1 and respiratory disease in Dutch adults. *Thorax* 63(3):208-14. [Epub 2007 Sep 27].

Bentley A, Emrani P, and **PA Cassano**. Genetic Variation and Gene Expression in Antioxidant-Related Enzymes and Risk of Chronic Obstructive Pulmonary Disease: A Systematic Review. (2008). *Thorax*;63(11):956-61. [Epub 2008 Jun 19].

Baccarelli A, **PA Cassano**, A Litonjua, SK Park, H Suh, D Sparrow, P Vokonas, J Schwartz. Cardiac Autonomic Dysfunction: Effects from Particulate Air Pollution and Protection by Dietary Methyl Nutrients and Metabolic Polymorphisms. (2008) *Circulation*, 117(14):1802-9. [Epub 2008 Mar 31.]

McKeever TM, SA Lewis, HA Smit, P Burney, **PA Cassano**, JR Britton (2008). A multivariate analysis of serum nutrient levels and lung function. *Respir Res*. Sep 29;9(1):67.

Cassano, PA. (2009). Nutritional Effects on Asthma Aetiology and Progression: Editorial. *Thorax*, 64(7):560.

Carolan BJ, Harvey B-G, Hackett NR, O'Connor TP, **Cassano PA**, and Crystal RG (2009). Disparate oxidant gene expression of airway epithelium compared to alveolar macrophages in smokers. *Respiratory Research*, 10:111-28.

Bentley A, Raiszadeh F, Hunter D, Stover P and **PA Cassano** (2010). Polymorphisms in cytoplasmic serine hydroxymethyltransferase (cSHMT) and the risk of breast cancer in the Nurses' Health Study. *European Journal of Clinical Nutrition*, 64(1):108-10. [Aug 26 epub ahead of print].

TM McKeever, SA Lewis, **PA Cassano**, M Ocké, P Burney, J Britton HA Smit (2010). Patterns of dietary intake and the relation to respiratory disease, FEV1 and 5-year FEV1 decline. *American Journal of Clinical Nutrition*, 92(2):408-15.1.

SM Wernimont, F Raiszadeh, PJ Stover, EB Rimm, DJ Hunter, W Tang, and **PA Cassano** (2011). Polymorphisms in Serine Hydroxymethyltransferase 1 and Methylenetetrahydrofolate Reductase Interact to Increase Cardiovascular Disease Risk in Humans. *Journal of Nutrition*, 141(2):255-60. [Epub ahead of print 12 22 2010

AH Agler, T Kurth, JM Gaziano, JE Buring and **PA Cassano** (2011) Randomized Vitamin E Supplementation and Risk of Chronic Lung Disease (CLD) in the

Women's Health Study. *Thorax*, 66(4):320-5. [Epub ahead of print 1 21 2011]

AR Bentley, SB Kritchevsky, TB Harris, P Holvoet, RL Jensen, RO Crapo, AB Newman, JS Lee, EA Tolley, S Yende, and **PA Cassano** (2011). Dietary Antioxidants and Lung Function Decline: the Health Aging and Body Composition Study. *European Respiratory Journal*. 2011 Oct 27. [Epub ahead of print]

MS Artigas, DW Loth, LV Wain, SA Gharib, M Obeidat, W Tang of 170 authors (2011). Genome-wide association and large scale follow-up identifies 16 new loci influencing lung function. *Nature Genetics*. 2011 Sep 25;43(11):1082-90. doi: 10.1038/ng.941.

SM Wernimont, AG Clark, PJ Stover, MT Wells, AA Litonjua, ST Weiss, JM Gaziano, KL Tucker, A Baccarelli, J Schwartz, V Bolati, and **PA Cassano** (2011). Folate Network Genetic Variation, Plasma Homocysteine, and Global Genomic Methylation Content. *BMC Medical Genetics*. 2011 Nov 21;12(1):150. [Epub ahead of print]

AR Bentley, S Kritchevsky, T Harris, A Newman, D Bauer, B Meibohm, A Clark and **PA Cassano** (2012). Genetic Variation in Antioxidant Enzymes and Lung Function in the Health, Aging, and Body Composition Study. (*Free Radical Biology and Medicine*, in press)

AR Bentley, S Kritchevsky, T Harris, A Newman, D Bauer, B Meibohm, A Clark and **PA Cassano** (2012). Genetic Variation in Antioxidant Enzymes and Lung Function. *Free Radical Biology and Medicine*, May 1; 52(9): 1577-1583. [Epub ahead of print Feb 2012] PMID: 22005919, PMCID:PMC3390784

S M Wernimont, A G Clark, P J Stover, M T Wells, A A Litonjua, S T Weiss, J M Gaziano, K L Tucker and **P A Cassano** (2012). Folate network genetic variation and cardiovascular disease risk: a network association study. *BMC Medical Genetics*, 142: 1–8, 2012. PMID 22103690, PMCID: PMC3266217

Wilk JB, et al; 79 co-authors including **PA Cassano** (2012). Genome wide association studies identify *CHRNA5/3* and *HTR4* in the development of airflow obstruction. *American Journal of Respiratory and Critical Care Medicine*. Epub ahead of print on July 26, 2012 as doi:10.1164/rccm.201202-0366OC. PMID 22837378; PMCID:PMC3480517

Hancock DB*, Soler Artigas M*, Gharib SA*, Henry A*, Manichaikul A*, Ramasamy A*, Loth DW*, Imboden M, Koch B, McArdle WL, Smith AV, Smolonska J, Sood A, Tang W, Wilk JB, Zhai G, Zhao JH, Aschard H, Burkart KM, Curjuric I, Eijgelsheim M, Elliott P, Gu X, Harris TB, Janson C, Homuth G, Hysi PG, Liu JZ, Loehr LR, Lohman K, Loos RJF, Manning AK, Marcianti KD, Obeidat M, Postma DS, Aldrich MC, Brusselle GG, Chen T-H, Eiriksdottir G, Franceschini N, Heinrich J, Rotter JI, Wijmenga C, Williams OD, Bentley AR, Hofman A, Laurie CC, Lumley T, Morrison AC, Joubert BR, Rivadeneira F, Couper DJ, Kritchevsky SB, Liu Y, Wjst M, Wain LV, Vonk JM, Uitterlinden AG, Rochat T, Rich SS, Psaty BM, O'Connor GT, North KE, Mirel DB, Meibohm B, Launer LJ, Khaw K-T, Hartikainen A-L, Hammond CJ, Gläser S, Marchini J, Kraft P, Wareham NJ, Völzke H, Stricker BHC, Spector TD, Probst-Hensch NM, Jarvis D, Jarvelin M-R, Heckbert SR, Gudnason V, Boezen HM, Barr RG, **Cassano PA**†, Strachan DP†, Fornage M†, Hall IP†, Dupuis J†, Tobin MD†, and London SJ† (2012). Genome-wide joint meta-analysis of SNP and SNP-by-smoking interaction identifies novel loci for pulmonary function. *PLoS Genetics*, 8(12): e1003098. *These authors contributed equally to this work. †These authors jointly directed the work. **PA Cassano** is one of 7 equally responsible for directing research. PMID: 23284291, PMCID: PMC3527213

AH Agler, RG Crystal, J Mezey and **PA Cassano**. Differential Expression of Vitamin E and Selenium-Responsive Genes by Disease Severity in Chronic Obstructive Pulmonary Disease (2013). *COPD: Journal of Chronic Obstructive Pulmonary Disease* 10(4):450-8 (doi: 10.3109/15412555.2012.761958). PMCID pending.

W Tang, AR Bentley, SB Kritchevsky, TB Harris, AB Newman, DC Bauer, B Meibohm and **PA Cassano** for the Health ABC Study (2013). Genetic Variation in Antioxidant Enzymes, Cigarette Smoking and Longitudinal Change in Lung Function. *Free Radical Biology and Medicine* 63:304-12 (doi: 10.1016/j.freeradbiomed.2013.05.016. Epub 2013 May 17).

BJ Reardon* and JF Hansen* (*both first authors contributed equally to this work), RG Crystal, DK Houston, SB Kritchevsky, TB Harris, K Lohman, Y Liu, GT O'Connor, JB Wilk, J Mezey, C Gao and **PA Cassano**. Vitamin D-Responsive Gene SGP2 Associated with Pulmonary Function and Expression in Lung Tissue (2013). *BMC Medical Genetics*.2013, 14:122. DOI: 10.1186/1471-2350-14-122

J Flory, Small D, **Cassano PA**, Brillon D, Mushlin A, Hennessy S (2014). Comparative Effectiveness of Oral Diabetes drug combinations in Reducing Glycosylated Hemoglobin. *Journal of Comparative Effectiveness Research* 2014 Jan;3(1):29-39.

DW Loth*, MS Artigas*, SA Gharib*, LV Wain*, N Franceschini*, B Koch*, T Pottinger*, AV Smith*, C Oldmeadow, DP Strachan, AL James, JE Huffman, V Vitart, A Ramasamy, NJ Wareham, J Kaprio, M Kähönen, C Flexeder, E Albrecht, LM Lopez, K de Jong, B Thyagarajan, AC Alves, S Enroth, E Omenaas, PK Joshi, T Fall, A Viñuela, LJ Launer, LR Loehr, M Fornage, G Li, J Wilk, W Tang, A Manichaikul, L Lahousse, TB Harris, KE North, AR Rudnicka, J Hui, X Gu, T Lumley, AF Wright, ND Hastie, S Campbell, R Kumar, I Pin, R Scott, KH Pietiläinen, I Surakka, Y Liu, EG Holliday, H Schulz, J Heinrich, G Davies, JM Vonk, M Wojczynski, A Pouta, Å Johansson, SH Wild, E Ingelsson, F Rivadeneira, H Völzke, PG Hysi, G Eiriksdottir, AC Morrison, JI Rotter, W Gao, DS Postma, WB White, SS Rich, A Hofman, T Aspelund, D Couper, LJ Smith, BM Psaty, K Lohman, EG Burchard, AG Uitterlinden, M Garcia, BR Joubert, WL McArdle, AW Musk, N Hansel, SR Heckbert, L Zgaga, JBJ van Meurs, P Navarro, I Rudan, S Redline, D Jarvis, JH Zhao, T Rantanen, GT O'Connor, S Ripatti, RJ Scott, S Karrasch, H Grallert, JM Starr, C Wijmenga, RL Minster, DJ Lederer, J Pekkanen, U Gyllenstein, H Campbell, AP Morris, S Gläser, CJ Hammond, KM Burkart, J Beilby, SB Kritchevsky, V Gudnason, DB Hancock, OD Williams, O Polasek, T Zemunik, I Kolcic, MF Petrini, M Wjst, A Viljanen, M Heliövaara, JR Attia, R Hampel, C Gieger, IJ Deary, HM Boezen, A Newman, M-R Jarvelin, JF Wilson, L Lind, BH Stricker, A Teumer, TD Spector, MJ Peters, RG Barr, KR Bracke, FM Verhamme, PS Hiemstra, **PA Cassano**, A Sood*, C Hayward*, J Dupuis*, I Hall*, GG Brusselle*, MD Tobin*, SJ London* (2014). Genetics of forced vital capacity: genome-wide association study meta-analysis and follow-up identifies six new loci. *These authors contributed equally to this work. **PA Cassano** is the senior author for the Health ABC cohort study, and she managed Health ABC data and results for this study and participated in reviewing/interpreting data analysis during bi-weekly phone calls, and in editing the manuscript. *Nature Genetics* 2014 Jul;46(7):669-77. doi: 10.1038/ng.3011. Epub 2014 Jun 15.

W Tang*, M Kowgier*, DW Loth*, M Soler Artigas*, BR Joubert*, E Hodge*, SA Gharib*, AV Smith, I Ruczinski, V Gudnason, RA Mathias, TB Harris, NN Hansel, LJ Launer, KC Barnes, JG Hansen, E Albrecht, MC Aldrich, M Allerhand, RG Barr, GG Brusselle, DJ Couper, I Curjuric, G Davies, IJ Deary, J Dupuis, T Fall, M Foy, N Franceschini, W Gao, S Gläser, X Gu, DB Hancock, J Heinrich, A Hofman, M Imboden, E Ingelsson, A James, S Karrasch, B Koch, SB Kritchevsky, A Kumar, L Lahousse, G Li, L Lind, C Lindgren, Y Liu, K Lohman, T Lumley, WL McArdle, B Meibohm, AP Morris, AC Morrison, B Musk, KE North, LJ Palmer, NM Probst-Hensch, BM Psaty, F Rivadeneira, JI Rotter, H Schulz, LJ Smith, A Sood, JM Starr, DP Strachan, A Teumer, AG Uitterlinden, H Völzke, A Voorman, LV Wain, MT Wells, JB Wilk, OD Williams, SR Heckbert, BH Stricker, SJ London, M Fornage**, MD Tobin**, GT O'Connor**, IP Hall**, **PA Cassano**** (2014). Large-Scale Genome-Wide Association Studies and Meta-Analyses of Longitudinal Change in Adult Lung Function. *These authors contributed equally to this work. **These authors jointly directed the work. *PLoS One*. 2014 Jul 1;9(7):e100776. doi:10.1371/journal.pone.0100776. eCollection 2014.

K Danielsen, T Wilsgaard, AO Olsen, AE Eggen, K Olsen, **PA Cassano** and A-S Furberg (2014) Psoriasis and metabolic syndrome- a population-based study of age and gender differences. *British J Dermatology*, doi: 10.1111/bjd.13288.