



International Balzan Foundation

# Sir Michael Marmot

2004 Balzan Prize  
for Epidemiology

Excerpt from

*Premi Balzan 2004. Laudationes, discorsi, saggi*, Milan, 2005

(revised and enlarged edition, 2012)

*This publication has been re-issued  
on the occasion of the Annual Balzan Lecture 2012  
at the University of Zurich, 29 August 2012,  
an initiative derived from the Agreements on Collaboration between  
the International Balzan Foundation “Prize”,  
the Swiss Academies of Arts and Sciences, and  
the Accademia Nazionale dei Lincei.*

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Printed in Italy

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## 2004 Balzan Prize for Epidemiology

### Prize Citation and *Laudatio*

**Sir Michael Marmot has made seminal contributions to epidemiology by establishing hitherto unsuspected links between social status and differences in health and life expectancy. He has initiated the era of social epidemiology and paved the way for the development of a wholly new concept of preventive medicine.**

Sir Michael Marmot has revolutionized epidemiology by establishing hitherto unsuspected links between differences in health and life expectancy on the one hand, and social status on the other.

In comparative studies of Japanese migrants in Hawaii and in California and of migrants from the Indian subcontinent to Great Britain, Sir Michael Marmot discovered the importance of a change in sociocultural environment relative to that of the associated change in habits – dietary, alcohol, smoking – in bringing about biological changes associated with an increase in cardiovascular morbidity and mortality.

In an early study of British civil servants (Whitehall I), Sir Michael discovered an unsuspected gradient of decreasing health and life expectancy from the top to the bottom of professional hierarchies. A new study, twenty years later (Whitehall II), conducted on a different population of civil servants, identified psychosocial factors related to low control at the work place and a deficit in social integration as the principal determinants of the observed disparities in health and of potentially causative biological (metabolic and endocrine) anomalies associated with them.

With large population studies in Eastern Europe before and after the fall of the Iron Curtain, which showed similar though more dramatic health disparities along gradients of decreasing social status and control over one's fate, Sir Michael Marmot confirmed the importance of psychosocial factors related to social status and a minimum of self-determination as determinants of health.

With these observations and the scientific rigour they are based on, Sir Michael Marmot has initiated the era of “social epidemiology”. He has paved the way for the development of a wholly new concept of preventive medicine.

## Prizewinner's Acceptance Speech

Rome, Accademia Nazionale dei Lincei – 18 November 2004

*Mr. President,  
Members of the Balzan Foundation,  
Ladies and Gentlemen,*

It is alleged that the physicist, Richard Feynman, wrote to a student's sceptical mother along the lines of: Your son has asked me to tell you why physics is important. Physics is not important. Love is important. Physics is fun.

He exaggerated to make a point. Research and scholarship are fun. They are also important. There is a third aspect. The particular field in which I have toiled, the social determinants of health, has the ethical purpose of reducing inequalities in society. For all these reasons, it is a particular pleasure to be recipient of the Balzan Prize.

What about straight pleasure? Of course, pleasure for me, my family, co-workers and colleagues. A great deal of pleasure. I work at University College London where the remains of Jeremy Bentham stand guard outside the Provost's office, and utilitarianism is a force to be reckoned with. These prizes certainly add to the total of human happiness. But were only pleasure at issue, our gathering today would lack meaning. The Balzan Prizes celebrate scholarship and learning as important contributors to our civilisation and culture.

Such celebration of scholarship is greatly welcome. It is quite possible in the present climate to feel a little hunted as an academic, when the rhetoric is about practical applications, partnership with industry, efficient processing of large numbers of students in order to give them applicable skills. Commonly, Mammon is a more important god than knowledge. These Balzan Prizes give us the opportunity to reflect on the value of scholarship.

I feel an enormous privilege to be an academic. It is indeed fun, but it is also a noble calling. I remember well my feelings as I set down the first words of my first scientific paper. It was close to a religious experience. I was entering a world where truth and knowledge were the currencies. It was a sacred duty and a privilege to participate in this world. Ask an academic the worst sin that another academic could commit in his line of work. It is lying. Disagreement, debate, relativistic viewpoints are acceptable but, at its best, our world is one in

which there is pursuit of higher knowledge and understanding. This gathering celebrates this higher purpose.

With the Balzan Prizes, we also celebrate today the value of different disciplines. I am trained in medicine and epidemiology, which means that we investigate the causes of disease in populations. I have spent the bulk of my research career investigating the social and cultural determinants of health. This entails collaboration with other branches of medical and biological knowledge, but it also involves psychologists, sociologists, economists, statisticians and anthropologists. All have important contributions to make in furthering understanding of how the nature of society affects the health of members of that society. I am therefore particularly pleased to be here with representatives of such diverse disciplines, each of whom has their own unique contributions to knowledge.

There is a further, related reason that the Balzan brings particular pleasure. It endorses the way I go about my research life: research to accumulate knowledge linked with concern for social justice. My research has been devoted to understanding the reasons for social inequalities in health, why the less privileged in society should have the injury of poor health added to the insult of low status. Thus, my work aims to lay the basis for action to reduce inequalities in health. I am concerned that there are inequalities in health within countries – the 20-year gap in life expectancy between the poorest and the richest in America, for example; and inequalities between countries – why does a baby in Sierra Leone have a 30% chance of dying before the age of five, whereas a baby in Sweden has fewer than 4 chances in 1000 of dying at such an age. My colleagues and I do curiosity-driven research. But we have chosen the topic of social inequalities in health because of the claims of social justice. We want to make a difference. Reducing inequalities in health, too, is an inherently civilising pursuit. It is good for all of us who work in this area that this research endeavour should be honoured.

I am grateful to the Balzan Foundation for celebrating the values of scholarship, grateful for recognising that different disciplines have their own way to the truth, and grateful for the opportunity the prize gives to enjoy supporting the research leaders of the future.

*Michael Marmot*

***Social Determinants of Health: A Panoramic View***

by Michael Marmot

A panoramic synthesis of his career,  
drawn up on the occasion of the 2004 Awards Ceremony

Imagine a parade. Everyone in society is ranked according to his or her social position. The unemployed come first, followed by the unskilled manual labourers, then the semi-skilled, the skilled, the clerks and shop assistants, after them the teachers and middle managers, and then the senior managers, the lawyers, doctors and judges. With few exceptions, this ranking by social position has produced a ranking according to life expectancy. The higher the social position, the longer can people expect to live, and the less disease can they expect to suffer. This is the social gradient in health. I have labelled the linking of social status to health the Status Syndrome and described the research summarised here in a recent book (*Status Syndrome*. Bloomsbury, London 2004).

This simple finding of a social gradient in health has been the stimulus for a research programme on the social determinants of health, and this has been the major focus of my research group at University College London for more than two and a half decades (Marmot M. and Wilkinson R. eds. *Social Determinants of Health*. Oxford University Press, Oxford, 1999). In recent years, I am pleased to report, many others have now recognised the importance of the social gradient and the challenge it provides both for scientific understanding and for policies to reduce social inequalities in health. The data had been there to see – at least since the 19<sup>th</sup> century – but little note was taken. This first came to my attention in the Whitehall study of British Civil Servants. The question we asked ourselves was why a senior executive officer with a university education should have worse health and higher mortality risk than someone above him in the hierarchy, but better health than someone below him. Among all of these people, all in secure white-collar jobs, none of whom was poor by any usual meaning of that word, there was indeed a social gradient in health that ran from the top to the bottom of the hierarchy.

It was not just a phenomenon of class-ridden British society, but the finding of a social gradient has been replicated, time and again, in different societies

across Europe, North America and Australasia. In egalitarian Sweden, a graduate with a PhD has lower mortality than a graduate with a master's degree, who has lower mortality than a graduate with a bachelor's, who has lower mortality than a high school graduate.

To be sure, there had been interest in social inequalities in health; they flowered particularly in the Victorian era in England, and have been kept alive since by a select band. Researchers in this area rightly focused on poverty. Material deprivation means malnutrition, high rates of exposure to infectious organisms and low resistance to their effects, exposure to the elements of heat and cold and toxic chemicals. Inequalities in health, then, meant high rates of disease for the deprived, better health for the rest.

The new problem of social inequalities in health in the rich countries of the world is different: why there should be a gradient in health when these problems of material deprivation have largely been solved? To illustrate, a study in the English town of York revealed the infant mortality rate of the "servant keeping class" to be just under 100 deaths per 1,000 live births. One hundred years later in England and Wales, infant mortality of the most deprived group was 7.8 per 1,000. The poorest people at the start of the new millennium had infant mortality at an order of magnitude lower than the richest people a century before. Yet, there are substantial differences in adult mortality, not only from diseases that we usually associate with deprivation, but also from those we usually associate with affluence, such as coronary heart disease.

In investigating this problem, my colleagues and I have consistently been pursuing two themes. First, the circumstances in which people live and work have profound influence on their health. Hence features of the organisation of society are as crucial to the researcher who wishes to understand reasons for social variation in disease as they are to the sociologist, economist, or political scientist who wishes to understand society. Indeed, the insights of these other disciplines are of vital importance for the student of social determinants of health. One can go further. The economist and philosopher Amartya Sen has taken the view that so close is the relation between social organisation and health, that one can use the health status of a society to assess the degree of well-being that results from its set of social arrangements. We start with studying health and conclude with fundamental observations about the nature of the good society.

Second, bodily biological processes are strongly influenced by events in the mind, which are themselves, of course, biological processes. Hence an understanding of how the social environment influences psychological processes that

in turn have a powerful influence on biological processes is crucial to understanding the causes of the social gradient in health.

As our research has progressed, we have, in addition to our core focus on the social gradient in health, been drawn to ask why some societies have better health than predicted on the basis of their national income, and why some have worse health. There are strong pointers that the social determinants that appear to be important in accounting for the social gradient within countries may be playing an important role in generating inequalities between countries. In both cases attention focuses on the circumstances in which people live and work.

#### THE CAUSES OF CASES AND THE CAUSES OF RATES

I started in clinical medicine. Clinical medicine deals with the individual patient. Interestingly, one rarely asked why the individual patient turned up in hospital. The task at hand was to do the best for him or her in relieving suffering and aiming for cure. As a medical student, however, I visited New Guinea. There, one could not simply treat patients and ignore why the disease occurred. The evidence of the link between environment and disease was plain, but these were the diseases of material deprivation. During one stay in the New Guinea Highlands, I had the good fortune to be in an audience of about 6 when Dennis Burkett, he of Burkett's Lymphoma fame, gave a seminar in a room in a bush hospital. He talked not of the cancer that he had described, but of the fact that, in East Africa where he worked, the frequency of common diseases varied greatly with small variations in the ecological niche in which people lived. The idea that appendicitis, or hydrocoele did not just happen but might have causes in the environment varying greatly among similar people living in subtly different environments seems now so simple, but it was profoundly important at the time. It suggested that the practice of medicine should be linked not only to fundamental insights into biology and subsequent advances in treatment, but also to the environments responsible for the occurrence of disease.

This had resonance in the hospital wards of Sydney where I trained and worked as a junior doctor. We would treat people with chronic lung or heart disease only to have the same patients readmitted to hospital a few months later. Where was prevention?

Prevention in the case of the individual patient is a natural extension of clinical medicine. Anticipate the onset of disease and take steps before it occurs.

There is, of course, another approach to prevention that has a longer history – change the environment. Public health traditionally was applied to the causes of infectious diseases. The new challenge was to apply it to non-communicable diseases. At the University of California, Berkeley, where I went to work with Len Syme, he used to teach his students that there were three questions about the occurrence of disease: why did one population have a higher rate of disease than another; within a population, why did one person become ill and not another; when someone became ill, why did he experience one disease and not another? Syme operated in the tradition of the 19<sup>th</sup> Century French Sociologist, Emile Durkheim. There is a social rate of disease that has social causes. The causes of why one individual remains well and why another succumbs to illness may not be the same. To illustrate, in Great Britain the number of deaths from traffic “accidents” was, among men, 2,535 in 1994, 2,519 in 1995, 2,535 in 1996 – almost no variation. Each year there were almost exactly 2.5 times as many deaths among men as among women. In the USA, the rate of traffic deaths per kilometre travelled is about twice as high as it is in Britain. In Belgium and France, the rate is higher still. We could investigate as to why one person dies in a car crash and most do not. We can also ask why the rate in Britain is constantly lower than it is in France. The answers may be different. An individual may drive recklessly because he has had an argument with his girlfriend, but then again, the rates may be low because of the social rate of drink driving or the design of roads.

At Berkeley, I worked with Syme on the investigation of why, when people of Japanese ancestry migrated across the Pacific to the United States, their rate of heart disease rose and their rate of cerebrovascular disease fell. We used both approaches: studying individuals and groups. The fact that the rates changed pointed strongly to the importance of “environment” in the broadest sense, that is, including the social environment and behaviours. There appeared to be a doseresponse relationship between the degree of Americanisation and the rate of heart disease. The Japanese in Hawaii had higher rates than the Japanese in Japan; the California Japanese had still higher rates. This was observed not only in the migrants but also in the next generation.

We needed to put flesh on what we meant by Americanisation. We developed measures of acculturation. In California, Japanese who were brought up in a more traditional Japanese way and remained within a cohesive Japanese ethnic group had lower rates of heart disease than those who were more assimilated, both in their upbringing and their social patterns. This higher rate of disease with acculturation was independent of patterns of smoking, diet, and levels

of blood pressure or cholesterol. The hypothesis was that traditional Japanese culture, socially cohesive, has devices for reducing stress.

This was my introduction to psychosocial factors: ways that the social environment acting through psychological processes could affect disease rates.

#### SOCIAL DISTRIBUTION OF HEART DISEASE

At the time that I was involved in the Japanese work, during the early 1970s, conventional wisdom had it that coronary heart disease was a disease of the affluent. People dying of tuberculosis and other infectious diseases were not dying of heart attacks. It seemed obvious that heart disease would be more common in men of high status, because of the view – going back to Sir William Osler and indeed to John Hunter in the 18<sup>th</sup> century – that heart attacks were caused by stress. Stress, it was assumed, would be more prevalent in men of high than of low status. Note “men”; it was assumed that heart attacks were rare in women.

When I came back to London to work, first at the London School of Hygiene and Tropical Medicine and then at University College London, I had a fresh look at the question of the social distribution of heart disease. Charting changes in disease over time is made difficult by changing fashions in the way diagnoses are applied. Allowing for these, it appeared that heart disease rates were higher in people of high socioeconomic status than of lower in England and Wales in the 1920s. Between the 1950s and 1960s there was a reversal. By the 1970s, heart disease rates were more common in men and women of lower status than in those of higher. Since then the gap has widened. As coronary heart disease death rates have declined, they have fallen faster in high status people than in lower, thus increasing the social inequalities.

It was at this time, the late 1970s, that data from the first Whitehall study of British civil servants became available. We showed the social gradient in mortality from coronary heart disease. A particularly striking find was that there was a social gradient in mortality from most of the major causes of death: other cardiovascular disease, stroke, chronic lung disease, gastrointestinal disease, renal disease, accidental and violent causes of death. We observed a gradient in diseases related to smoking, and we observed a gradient in non-smokers. In fact, less than a third of the gradient in mortality was explained by differences in smoking, plasma cholesterol, blood pressure, obesity, physical activity levels, or diabetes.

There had to be other factors operating to account for this social gradient in mortality both from “all causes” and from specific causes of death. In my view, the fact that heart disease was less common in people of high status did not negate a stress hypothesis. It seemed inherently unlikely that it was more stressful to be high in status than to be low. The clue to how to think about the stress problem was provided by my colleague Tores Theorell at the Karolinska Institute in Stockholm. The three months I spent there in 1984 gave rise to the Whitehall II study, a second study of civil servants. Theorell, working with Robert Karasek of the USA, had produced evidence that a stressful working environment was not just one that was busy, but one characterised by a combination of high demands and low control. It was not the high demands themselves that were stressful, but demands in the presence of low control.

Returning to London, I set up the Whitehall II study. 10,308 men and women working in the British Civil Service were enrolled in a cohort that continues to the present. The two hypotheses were that nutrition and psychosocial factors would be important in generating the social gradient in cardiovascular and other diseases. A major aim of the research was to study the biological pathways by which social circumstances might act to cause disease.

Whitehall II produced evidence that low control in the work place was related to increased risks: of coronary heart disease, of sickness absence, of back pain, and of mental illness. Further, lack of control at work was an important mediator of the link between low social position, measured in the civil service as low grade of employment, and increased risk of coronary heart disease. As people pass the age of retirement, work becomes a less salient factor. In Whitehall II, we found that women who reported low control at home had increased risk of heart disease. Low control at home was particularly important in predicting mental illness in low status women.

A common response to the report that there is a social gradient in chronic disease is to blame social differences in health behaviours. The assumption is that people of lower status are more likely to smoke, less likely to take physical exercise, to have unhealthy diets and to be obese. There is some truth in this. But Whitehall II confirmed the findings of the original Whitehall study in that these behaviours, and the standard coronary risk factors explained less than a third of the social gradient in coronary heart disease.

Two promising biological pathways are those related to inflammation and metabolism. To take the latter: over the past few years, a metabolic syndrome has been identified in which the body appears to be resistant to the action of

insulin. As a result, people with signs of the metabolic syndrome are at increased risk of diabetes and heart disease. In the Whitehall II study, there was a social gradient in each of the metabolic markers that identify the metabolic syndrome. One way we look at the question of whether the metabolic syndrome is affected by stress pathways is to go from our large scale epidemiological studies to smaller scale intensive studies. These include studies in the psychology laboratory where people are subject to short term stressors and their physiological reactions studied. These lend credibility to the existence of pathways from the brain through the neuroendocrine system to metabolic disturbances.

#### NOT ONLY PEOPLE

Studies of non-human primates give insight into possible mechanisms linking social status to health. This is not to say that humans are just like monkeys or baboons or, going further afield, rats. Nevertheless lessons can be learnt. In rhesus macaques, there is a social gradient in atherosclerosis, the process underlying coronary heart disease. If we are inclined to speculate that smoking, lack of exercise or inadequate medical care leads to the social gradient in health in humans, what accounts for the gradient in the macaques? In these animals, making a formerly dominant female subordinate increases her degree of atherosclerosis. The males react somewhat differently. When formerly dominant animals are taken from a stable troop and mixed up together, there is intense fighting for status. Under these unstable conditions, the dominant animals are more easily prone to disease. That this is a stress effect is demonstrated by blocking one of the stress pathways pharmacologically.

In baboons, the lower status animals have higher levels of cortisol secretion. This stress hormone has been implicated in the development of insulin resistance, the metabolic syndrome and diabetes. The animal studies illuminate the stress concept. Five characteristics of a potentially stressful situation determine whether it will indeed be stressful: predictability, control, whether there is a threat to status, the presence of social supports and the possibility of having outlets. These five are also highly likely to apply in humans.

The non-human primate studies help solve one set of problems relating to causal pathways, but they raise another set. If there are hierarchies, systems of social ranking wherever we look in human societies, and these hierarchical rankings are associated with the health gradient, perhaps inequalities in health

are inevitable. After all, if baboons and macaques have them, is it not difficult to argue that features of the organisation of human society are responsible for the social inequalities that we see, as well as the consequent health inequalities?

Having looked at aspects of this question throughout my research programme, my answer is no to the inevitability of health gradients. All societies have hierarchies. That does appear inevitable. But the consequences of those hierarchies vary. In a hunter-gatherer society, the differences in resources between a high status individual and a low status one are small. In our modern economies the differences are very large, and larger in some countries than in others. The consequences for health will depend on how the resources that affect health are distributed.

#### MORE THAN MONEY

Research on social gradients in health suggests that where you are in the social hierarchy is important for health. One way of measuring position in the hierarchy is income. Indeed, the data show that the higher the family income the lower the individual's risk of dying and the better his health. For example, one American study showed that people with a family income of \$17,000 had about twice the mortality rate of people with a family income of \$34,000. I argue that, once people are above a threshold of material deprivation – i.e. clean water, sufficient non-contaminated food, and appropriate shelter – it is not the absolute amount of money that is important, but relative income. Support for this argument comes from comparing countries. Greece, for example, with a national income of \$17,000 (gross domestic product adjusting for purchasing power), has longer life expectancy than the USA, with a national income of \$34,000.

If relative income is important does this not lead to more pessimism? There will always be differences in relative income. We cannot conceive of a society that totally equalises income, at least not one that has any chance of inhabiting a whole country. My answer comes from Amartya Sen's notion of capabilities. Sen argues that relative inequalities, when income is the measure, may translate into absolute differences in capabilities. What are capabilities? It has been argued that fundamental human needs can be thought of as relating to health, autonomy and social participation. Surveying the research on the social gradient in health, this provides both understanding and grounds for optimism. I suggest that relative position in the social hierarchy is important if it means that people

of low social position have less control over their lives, less opportunities for social participation, and less access to the other important inputs for good health – for example, those factors I have described as linked to material deprivation.

#### SOCIAL DETERMINANTS OF HEALTH AND THE FUTURE

Different degrees of satisfaction of human needs could account not only for the social gradient in health within countries but also for differences among countries. The social arrangements of whole countries may have an impact on the degree to which populations have control over their lives or can participate fully in society. This may apply both to societies where health has been surprisingly bad as well as to societies where it has been surprisingly good.

There has been a health crisis in the countries of Central and Eastern Europe of massive proportions. After World War II, life expectancy improved for countries of both “west” and “east” in Europe. Beginning in about 1970, life expectancy stopped improving in the East while it continued to improve in the West. The gap in life expectancy, particularly in Russia and other countries of the former Soviet Union, opened even wider after the fall of the Berlin wall and the consequent political, economic and social changes. We have speculated that this was a case of a grisly natural experiment that looked at the health effects of depriving whole populations of control over their lives. We have preliminary evidence to support that contention, and have now set up a research programme to search for cause of the health disadvantage in Poland, the Czech Republic, and Russia, with the possible further addition of Lithuania. The three main hypotheses to be tested in these countries concern the role of binge alcohol consumption, nutritional patterns, and psychosocial factors as just described.

Japan stands out as a country that has surprisingly good health statistics – it has the longest life expectancy of any sizeable country. I have speculated that this can, in part, be attributed to high levels of social cohesion in Japan. My evidence for this comes partly from my own early studies of Japanese migrants, but this is still rather circumstantial. We have much to learn from studying societies that have had health success as well as those with unfortunate health records. There has, for example, been longstanding interest in some poorer societies that have good health records: Costa Rica, Cuba, Kerala in southern India. Detailed work to understand the reasons for this phenomenon would again be most important in serving as models to other countries undergoing development.

Much of our research has been on populations of working age. But social inequalities in health extend into the oldest age groups. With the ageing of societies, inequalities in health and the ability to function independently at older ages become of increased importance. A major challenge for research and policy in the future is to understand when in the course of life these inequalities in health have their origin, and hence what can be done about them.

At the moment, we have clues as to the biological processes by which social determinants operate to cause disease. We need much more evidence. The importance of influences on the brain in early childhood is now being appreciated, as is the likely lifetime effects on biological stress pathways of experience early in life.

In recent years, my research on social inequalities on health has brought active involvement with the policy process. We have argued that policies to reduce inequalities in health need to involve the whole of government, not only departments of health. The translation of research into policy and the charting of its effects will continue to be an important role for the future.

The research described above has largely taken place in the richer countries of the world that have put much of the burden of the killer infectious diseases behind them. Many of the world's poorer countries now suffer from what has been described as the double burden: non-communicable diseases increasingly take their toll alongside a continuing burden of infectious disease. There is an urgent need to consider how the insights from studies of social determinants in Europe may apply to these poorer countries. Here, the paramount aim is to use research findings to influence policy.

My research aims to improve understanding of the social and psychosocial determinants of health and disease. An extension of this aim is to reduce inequalities in health within and among countries. It thus has the twin aims of the generation of knowledge and the pursuit of social justice.

## Research Project – Abstract

### UCL Balzan International Fellowship Programme University College London

*Adviser for the General Balzan Prize Committee: Werner Stauffacher*

As initiator of the era of social epidemiology and a pioneer in the development of a wholly new concept of preventive medicine, Michael Marmot is using half of his Balzan Prize for a new programme of international fellowships at University College London's International Institute for Society and Health. The Institute was founded in 2007 to bring together strong individual research programmes on the determinants of health and well-being in society. Multidisciplinary and international in scope, the Institute is unequalled in offering opportunities for research and interdisciplinary research experience for young scholars. The international fellowships have two key objectives in Michael Marmot's field of scientific interest: research experience in the social determinants of health and well-being, and the fostering of international networks of research and policy development. The aim is to develop the next cadre of researchers for the future and to benefit from the clear advantages that international collaboration brings.

- Dr. Kavita Sivaramakrishnan (Public Health Foundation of India) and Dr. Rama Baru (Jawaharlal Nehru University, Delhi, India) have jointly written a paper for "The National Medical Journal of India" entitled *The Commission on Social Determinants of Health: Mainstreaming social inequalities in public health education in India*. They presented a version of this paper at a UCL conference "The World Health Organization and the Social Determinants of Health: Assessing Theory, Policy and Practice" in November 2008.
- Dr. Krisztina László (Semmelweis University, Budapest, Hungary) has successfully published her paper *Job insecurity and health: A study of 16 European countries* in "Social Science and Medicine" (with Hynek Pikhart, Mária S. Kopp, Martin Bobak, Andrzej Pajak, Sofia Malyutina, Gyöngyvér Salavecz, Michael Marmot; Soc Sci Med. 2010 March; 70(6-3): 867-874). She presented results from this study to the American Psychosomatic Society Conference in Chicago in March 2009.

- Dr. Nelly Salgado (National Institute of Public Health, Cuernavaca, Mexico) has developed a short course on the Social Determinants of Health (with Tarani Chandola and Roberto De Vogli) for her Institute. The course took place in August 10-15, 2009 in Cuernavaca, Mexico, with over 40 public health academics and practitioners from all over Latin America.
- Dr. Alex Gaina (University of Toyama, Japan) has submitted several papers on the social determinants of child obesity and development using data from the Toyama Birth Cohort Study. He participated in the International conference on Health and the Changing World in November 2008 in Bangkok, with a presentation on SES and health among Japanese schoolchildren. His work on maternal employment and child obesity in Japan has been published in the "International Journal of Obesity".
- Dr. Sergio Luiz Bassanesi (Universidade Federal do Rio Grande do Sul – UFRGS, Brazil), joined the department in January 2009 for 12 months. He is a medical doctor, with residency medical training in cardiology. Dr. Bassanesi was also trained in public health (Fundacao Oswaldo Cruz, Brazil). He received his Master of Public Health degree from Johns Hopkins University, USA, and received his PhD in Medicine from UFRGS, Brazil. Dr. Bassanesi's research area for the Balzan fellowship is related to socioeconomic urban segregation and its impact on health. He also has been working on the measurements of socioeconomic health disparities, especially in relation to cardiovascular mortality. He has also collaborated on epidemiological and clinical studies on tuberculosis. During his stay at UCL, Dr. Bassanesi was a coapplicant on a successful application to the Economic and Social Research Council on spatial and social inequalities in health in Brazil and India.
- Dr. Adrienne Stauder (Semmelweis University, Budapest, Hungary) joined the department for a period of three months (April 2009-July 2009). A senior researcher, psychiatrist and psychotherapist, her residency was proposed to explore opportunities for increased data analysis of extant Central and Eastern European data on inequalities, the potential to develop collaborative database analysis and collaborative data collection, and the opportunities for new research questions on protective factors.
- Dr. Eleonor Fransson (Jönköping University, Sweden) resided at UCL for

five months (September 2009-February 2010). A Postdoctoral Fellow, Dr. Fransson earned her PhD from the Karolinska Institute and an MSc in Statistics from Stockholm University. Her period at UCL allowed her to work on Whitehall II data, and more specifically, on the relationship between BMI/WHR and inflammatory markers, thereby developing her skills and increasing her international contacts.

- Ms. Gyöngyvér Salavecz (Semmelweis University, Budapest, Hungary) spent September 2009, February 2010 and May 2010 in the department. Working on the cross cultural consistency of associations between positive affect and cortisol and heart rate variability, her periodic residency has both provided a training opportunity for her as well as supported increased collaboration between UCL, Princeton and Semmelweis University. She also completed a paper *Work Stress and Health in Western European and in Post-communist Countries: an East-West Comparison Study* (coauthored by Chandola T, Pikhart H, Dragano N, Siegrist J, Jockel KH, Erbel R, Malyutina S, Pajak A, Kubinova R, Marmot M, Bobak M, Kopp M; “Journal of Epidemiology and Community Health” 2010; 64:57-62.) during her stay at UCL.
- Professor Philippa Howden-Chapman (University of Otago, Wellington, New Zealand) joined the department in January 2010 for a period of five months. Her expertise on the effect of housing conditions on health has resulted in discussions of housing as a neglected but crucial social determinant of healthy ageing and possibilities of housing conditions data collection in the ageing cohort studies at UCL.

### **Researchers:**

Dr. Rama Baru (Jawaharlal Nehru University, Delhi, India)

Dr. Sergio Luiz Bassanesi (Universidade Federal do Rio Grande do Sul – UFRGS, Brazil)

Dr. Eleonor Fransson (Jönköping University, Sweden)

Dr. Alex Gaina (University of Toyama, Japan)

Professor Philippa Howden-Chapman (University of Otago, Wellington, New Zealand)

Dr. Krisztina László (Semmelweis University, Budapest, Hungary)

Ms. Gyöngyvér Salavecz (Semmelweis University, Budapest, Hungary)  
Dr. Nelly Salgado (National Institute of Public Health, Cuernavaca, Mexico)  
Dr. Kavita Sivaramakrishnan (Public Health Foundation of India)  
Dr. Adrienne Stauder (Semmelweis University, Budapest, Hungary)

**Publications:**

- László, K.D., Pikhart, H., Kopp M.S., Bobak, M., Pajak, A., Malyutina, S., Salavecz, G. and Marmot, M., *Job insecurity and health: A study of 16 European countries*, Soc Sci Med. 2010 Mar; 70(6): 867-74.
- Salavecz, G., Chandola, T., Pikhart, H., Dragano, N., Siegrist, J., Jockel, K.H., Erbel, R., Malyutina, S., Pajak, A., Kubinova, R., Marmot, M., Bobak, M. and Kopp, M., *Work Stress and Health in Western European and in Post-communist countries: an East-West Comparison Study*, "Journal of Epidemiology and Community Health" 2010; 64:57-62.
- Gaina, A., Sekine, M., Chandola, T., Marmot, M. and Kagamimori, S., *Mother employment status and nutritional patterns in Japanese junior high school-children*, "International Journal of Obesity" 2009; 33(7): 753-7.
- Baru, R. V. and Sivaramakrishnan, K., *The Commission on Social Determinants of Health: Mainstreaming social inequalities in public health education in India*, "The National Medical Journal of India", 2007; 22 (1): 33-4.

**Website:** <http://www.ucl.ac.uk/iish/fellowships>

### **Biographical and bibliographical data**

Professor Sir Michael Gideon Marmot MBBS, MPH, PhD, FRCP, FFPHM, FMedSci, born on 26 January 1945, is a British citizen.

He is MRC Research Professor of Epidemiology and Public Health, Director of the International Institute for Society and Health and Director of the Institute of Health Equity, University College London. He also holds the position of Adjunct Professor in the Department of Society, Human Development and Health at Harvard University.

Graduating in Medicine from the University of Sydney, Australia, in 1968, he earned an MPH in 1972 and a PhD in 1975 from the University of California, Berkeley. Lecturer, then Senior Lecturer in Epidemiology at the London School of Hygiene and Tropical Medicine (1976-1985), he was appointed Professor of Epidemiology and Public Health at the University College London (UCL) in 1985 and took a joint Chair, held at UCL and the London School of Hygiene and Tropical Medicine in 1990. He became Director of the International Centre for Health and Society established at UCL in 1994 (now the International Institute for Society and Health).

Professor Michael Marmot has led a research group on health inequalities for 35 years. He is Principal Investigator on the Whitehall II Studies on British Civil Servants, investigating explanations for the striking inverse social gradient in morbidity and mortality. He leads the English Longitudinal Study of Ageing (ELSA) and is engaged in several international research efforts on the social determinants of health. He was a member of the Royal Commission on Environmental Pollution for six years, and served as President of the British Medical Association (BMA) in 2010-2011. He is a Founding Fellow of the Academy of Medical Sciences, an Honorary Fellow of the British Academy, and an Honorary Fellow of the Faculty of Public Health of the Royal College of Physicians. In 2000 he was knighted by Her Majesty The Queen, for services to epidemiology and the understanding of health inequalities. Internationally acclaimed, Sir Michael Marmot is a Foreign Associate Member of the Institute of Medicine (IOM) of the National Academies (USA), and a former Vice President of the Academia Europaea. He gave the Harveian Oration in 2006. He was Chair of the Commission on Social Determinants of Health (CSDH), which was set up by the World Health Organization (WHO) in 2005, and produced the report

entitled: *Closing the Gap in a Generation* in August 2008. At the request of the British Government, he conducted the “Strategic Review of Health Inequalities in England post 2010”, which published its report *Fair Society, Healthy Lives* in February 2010. He has now been invited by the Regional Director of WHO Euro to conduct the “European Review of Social Determinants of Health and the Health Divide”, which will report in September 2012. He has agreed to chair the “Breast Screening Review” for the NHS National Cancer Action Team. He is a member of The Lancet-University of Oslo Commission on Global Governance for Health.

Professor Marmot has given a great number of lectures and keynote addresses at international conferences over the last several years. He has published substantially, with a number of monographs and co-edited volumes to his name as well as innumerable scientific papers. For a full list of his publications see: <http://www.ucl.ac.uk/slms/people/show.php?personid=11901>.