

## CURRICULUM VITAE

Philippa Marrack, Ph.D.

### Personal Data:

Date Birth: June 28, 1945  
Place of Birth: Ewell, England  
Nationality: British & U.S. Citizen

### Education:

1967 New Hall, Cambridge, England; B.A., Biochemistry, First Class Honors.  
1970 New Hall, Cambridge, England; Ph.D., Biological Sciences.

### Professional Experience:

1970-1971 Research Bye Fellow, Girton College, Cambridge, England  
1970-1971 Postdoctoral Fellow, MRC Laboratory for Molecular Biology, Hill's Road, Cambridge, England.  
1971-1973 Postdoctoral Fellow, Damon Runyon Society for Cancer Research, Department of Biology, University of California at San Diego, La Jolla, CA.  
1973-1974 Postdoctoral Fellow, Department of Microbiology, University of Rochester, Rochester, NY.  
1974-1975 Associate, Department of Microbiology, University of Rochester, Rochester, NY.  
1975-1976 Assistant Professor, Department of Microbiology, University of Rochester, Rochester, NY.  
1976-1981 Established Investigator, American Heart Association.  
1976-1979 Assistant Professor of Oncology in the Department of Microbiology and Cancer Center of the University of Rochester, School of Medicine and Dentistry, Rochester, NY.  
1979-1982 Associate Professor of Oncology in the Department of Microbiology and Cancer Center, University of Rochester.  
1979- Member, Department of Medicine, National Jewish Hospital and Research Center, Denver, CO.  
1980-1985 Associate Professor, Departments of Biophysics, Biochemistry and Genetics and Department of Medicine, University of Colorado Health Sciences Center, Denver, CO.  
1985- Professor, Departments of Biophysics, Biochemistry and Genetics (now Dept. of Biochemistry and Molecular Genetics) and Medicine, University of Colorado Health Sciences Center, Denver, CO.

- 1986- 2017 Investigator, Howard Hughes Medical Institute at Denver, Denver, CO.
- 1988-1994 Professor, Department of Microbiology and Immunology, University of Colorado Health Sciences Center, Denver, CO.
- 1988-1990 Head, Division of Basic Immunology, National Jewish Center for Immunology and Respiratory Medicine, Denver, CO.
- 1994-2014 Professor, Department of Immunology, University of Colorado Health Sciences Center, Denver, CO.
- 1998-1999 Head, Division of Basic Immunology, National Jewish Medical and Research Center, Denver, CO.
- 2004- 2006 Advisory head, Research in allergy/asthma at National Jewish.
- 2014- Chair, Dept. of Biomedical Research, National Jewish Health
- 2014- Professor, Dept Immunology and Microbiology, University of Colorado

Current Memberships in Organizations:

- Member: British Society for Immunology
- American Association of Immunologists
- AAAS
- Royal Society, UK
- National Academy of Sciences USA
- American Academy of Arts and Sciences
- Academy of Medical Sciences UK
- National Academy of Medicine

Other Duties:

- 1977-1979 Member of Program Committee, AAI
- 1980-1984 Member, Immunobiology Study Section
- 1981 & 1983 Vice Chairman then Chairman, Gordon Conference on Immunochemistry and Immunobiology
- 1981-1984 Associate Editor, Journal of Immunology
- 1982-1984 Block Chairman, AAI organization for FASEB meeting

1983 Member, Ad hoc Research Briefing Panel of Immunology National Academy of Sciences

1983- Editorial Board, Cellular Immunology

1984-1987 Section Editor, Journal of Immunology

1984-1986 Member, Editorial Committee, Annual Review of Cell Biology

1985- Advisory Editor, Journal of Experimental Medicine

1985-1987 Block Chairman, AAI organization for FASEB meeting

1986-1991 Editorial Board, The FASEB Journal

1986- Advisory Board, Cancer Research Institute

1987-2009 Associate Editor, Cell

1987-1991 Member, American Cancer Society Council

1989- Sandoz Award-Selection Committee

1988-1989 Reviewing Editor, Science

1991-1995 Member, Council of National Institute for Allergy & Infectious Diseases

1992-1993 Member, Council of the American Society for Cell Biology

1992- Advisory Editor, Therapeutic Immunology

1992- Editor, Current Opinion in Immunology

1993- Lasker Award Selection Committee

1995 Secretary General, International Union of Immunologists 'Tri-Annual Meeting, San Francisco, CA

1995-1998 FASEB Excellence in Science Award Committee

1995- Charter Member, Board of Molecular Medicine Society and Contributing Editor, Molecular Medicine.

1995- Council, American Association of Immunologists.

1996-2003 Member, Scientific Advisory Board, Pew Foundation

1997- Editorial Board, Journal of Autoimmunity

1997-2003 Editorial Board, Proceedings of the National Academy of Science

1997-2004 Scientific Advisory Board, Trudeau Institute.

1998 Member, NIH Panel for review of the Director of NIAID

1998-1999 Member, Panel on Scientific Boundaries for Review

1998-2001 Vice President, International Union of Immunological Societies.

1998-2002 Member, Center for Scientific Review Panel on Scientific Boundaries for Review.

1998- Member, Scientific Advisory Board, Sandler Program for Asthma Research.

1999-2000 Vice President, American Association of Immunologists

2000-2002 Member, External Research Advisory Board, Joslin Diabetes Center

2000-2001 President, American Association of Immunologists

2000-2014 Advisory Board, Genome Biology

2001 Member, Review Committee for Experimental Immunology Branch, NCI

2001-2004 President, International Union of Immunological Societies

2001-2004 Member, Burroughs Wellcome Fund Pathogenesis of Infectious Disease Advisory Committee

2001- Member, Editorial Board, Journal of Biology

2001- Member, Editorial Committee, Annual Review of Immunology

2002- Member, Editorial Board of Immunity

2002- Member, Nominating Committee for the National Academy of Sciences Class IV TNG

2002- Member, Scientific Foundation of Ireland, Scientific Advisory Committee

2003- American Federation for Aging Research Advisory Board

2003- Editorial Board, Public Library of Science

2003 National Academy of Sciences Nominating Committee for the next NAS president.

2004- Non-Trustee Member, Committee on Scientific Affairs, Rockefeller University

2004- Past President, International Union of Immunological Societies

2005- Member, Review Panel for L'Oreal Awards to Women in Science

2005- Member, Royal Society International Network/Special Initiatives Committee:7

2005, 2006 Ad hoc member, CMI-A Study Section

2006- Evaluator, NIH Director's Pioneer Awards

2006- Chair, Graduate student recruiting committee, Immunology program, UC Denver.

2006 Member, search committee for Proc. Natl. Acad. Sci USA editor.

2006 Reviewer, Georgia National Science Foundation

2006 Chair, AAI Nominating Committee

2006 Member, NIAID Blue Ribbon Panel on Influenza Research

2006 Member, Class II, Section 2 Membership Panel for the American Academy of Arts and Sciences

2006 Ad hoc member of NIH Special Emphasis Panel, T cell/B cell mechanisms

2007-8 ACD working group on changes in the grant review system

2007- Member, Scientific Advisory Board, Sandler Asthma Based Research Effort, UCSF

2007- External reviewer, NIH Director's New Innovator Awards

2007- NY Academy of Sciences, Board of Editorial Consultants, Year in Immunology

2007-8 Reviewer, HHMI new investigator competition.

2007- Chiba University, Visiting Professor

2008 Ad hoc member, CMI-A Study Section.

2008- Editorial Board, Proceedings of the National Academy of Science

2008- Member UCHSC CFAR Executive Committee

2008 Reviewer, Department of Immunology, Baylor University

2008-2011 Member, Scientific Review Board, Damon Runyon Fellowships

2011 Member Wellcome Trust Principal Research Fellowship Interview Committee

2009- Member, Paul Ehrlich and Ludwig Darmstädter Prize Committee

2009- Member, American Foundation for Aging Research Advisory Council

2009 Member ZRG1 IMM-H Study Section

2009- Member, European Research Council

2009-2010 Member, Panel for NRC dodecal review of NASA microgravity program

2009 Reviewer NIAID Challenge Grants

2009- Reviewer Gates Foundation Global Challenge Grants

2010 Reviewer, Neurosciences Training Program, UC Denver

2010-14 Member, Scientific Advisory Board, Oklahoma Medical and Research Foundation

2010- Member, PLoS Biology Advisory Board

2010 NAS Section 43 Committee for underrepresented minority election

2010 Chair, NIAID Blue Ribbon Panel on Adjuvant Research.

2011 Member, Review Committee for Immunology at the Karolinska Institute.

2011-14 Member, National Center for Complementary and Alternative Medicine Advisory Council

2012-15 Member, Discovery Expert Group, Gates Foundation.

2014- Member Review Committee, Annual Review of Cell and Developmental Biology

2014 Organiser, Keystone meeting on Mechanisms of Vaccine Adjuvants

2014 Member Selection Committee, Helen Hay Whitney Fellowships

2014 Member ACD LT-IRP Working Group, NIH

2015-16 Chair, Committee to recruit the Director of Basic and Translational Research at the Barbara Davis Center for Childhood Diabetes.

2015- Member, Advisory Board, La Jolla Institute for Allergy and Immunology

2016 Member NIH Vision and Pathways (NVP) Committee

2016 Member, Recruiting Committee for Chair of Pediatrics, National Jewish Health\

2016- Founding Editor, European Research Institute of Intergrated Cellular Pathology Journal, Cell Stress

- 2017 Member, UC Irvine Cluster Reviewing Board
- 2017 Member, NIH DP5 Reviewing Board
- 2017-18 Member, Committee to recruit a Chair of Dept. Immunology and Microbiology, UC Denver
- 2017 Member, Selection Committee, Hanna H. Gray Fellows Selection Committee, HHMI.
- 2018- Memer, Scientific Advisory Board, Human Vaccines Project

## **Honors**

- 1989- Member, National Academy of Sciences, USA
- 1990 Feodor Lynen Medal for Special Achievement and Distinguished Service Award
- 1990 Royal Society Wellcome Foundation Prize Winner and Lecturer
- 1990- Honorary Member, Scandanavian Society for Immunology
- 1990 The Arthur B. Lorber Award for Distinguished Service to National Jewish Center for Immunology and Respiratory Medicine
- 1991 Honorary Doctorate of Sciences, University of Rochester
- 1991- Fellow, American Academy of Arts and Sciences
- 1992 Christopher Columbus Discovery Award for Biomedical Research
- 1992 The Ernst W. Bertner Memorial Award, MD Anderson Cancer Center
- 1993 Cancer Research Institute's 1993 William B. Coley Award for Distinguished Research in Fundamental Immunology.
- 1993 The Paul Ehrlich and Ludwig Darmstädter Prize, Germany
- 1993 University of Colorado Distinguished Professor
- 1995 The Louisa Gross Horwitz Prize-Columbia University
- 1995 FASEB Excellence in Science Award
- 1995 Behring-Heidelberger Lecture Award
- 1995 Dickson Prize in Medicine, University of Pittsburgh
- 1996 Honorary Doctorate of Sciences, Macalester College
- 1997- Fellow of the Royal Society
- 1998 The Rabbi Shai Schacknai Memorial Prize, Hadassah University, Jerusalem
- 1999 University of Chicago, Howard Taylor Ricketts Prize
- 1999 Interscience Conference on Antimicrobial Agents and Chemotherapy Award



- 2000 Member, American Academy of Arts and Sciences
- 2001 Irvington Institute Scientific Leadership Award in Immunology
- 2002 Member, The Academy of Medical Sciences
- 2002 Lifetime Achievement Award, American Association of Immunologists
- 2003 Faculty Ambassador Award, National Jewish Medical and Research Center
- 2004 L'Oreal UNESCO for Women in Science Award
- 2004 University of Colorado Health Sciences Center, School of Medicine, Mentoring Award
- 2004 National Jewish Medical and Research Center Abraham J. Kauvar Presidential Award
- 2005 Bonfils Stanton Award for Science
- 2005 National Jewish Medical and Research Center Lifetime Achievement Award
- 2005 Rockefeller University Pearl Meister Greengard Prize.
- 2006 Avery-Landsteiner Prize of the German Society for Immunology.
- 2007 Denver Business Journal Scientist Award.
- 2008 Member, Institute of Medicine
- 2009 International Member, European Research Institute for Integrated Cellular Pathology
- 2010 Election to Colorado Women's Hall of Fame
- 2011 Election to rank of AAAS Fellow.
- 2012- Visiting Professor, Graduate School of Medicine, Chiba University, Japan
- 2015 Wolf Prize, Israel
- 2015 Elected to National Women's Hall of Fame, USA
- 2016 Novartis Prize for Immunology
- 2019 AAI Distinguished Fellow Award
- 2019 Web of Science Citation Laureate for 2019
- 2020 BioLegend Women in Science Recognition

## Bibliography

1. Pink, R. and Marrack, P. Genes, cells and antibodies. *New Scientist* June 12, 1969.
2. Munro, A.J. and Hunter, P. In vitro reconstitution of the immune response of thymus deprived mice to sheep red blood cells. *Nature* 225:277, 1970.
3. Hunter, P. and Munro, A.J. Induction of an immune response *in vitro* to a protein antigen, rabbit Fab'2. *Immunology* 19:491, 1970.
4. Hunter, P., Munro, A.J. and McConnell, I. Properties of educated T cells for rosette formation and cooperation with B cells. *Nature New Biol.* 236:52, 1972.
5. Hunter, P. and Munro, A.J. Response of mice to rabbit Fab'2 and Fab'. *Immunology* 20:69, 1972.
6. Munro, A.J., Waldmann, H. and Hunter, P. Properties of educated T cells *in vitro*. *Europ. J. Immunol.* 3:167, 1973.
7. Dutton, R.W. and Hunter, P. The effects of mitogen-stimulated T cells on the response of B cells to antigen and the mechanism of T cell stimulation of the B cell response. *In*, Cellular Selection and Regulation In the Immune Response. Edited by Edelman, G.M., Raven Press, New York, p. 199. 1974.
8. Hunter, P.C. and Kettman, J.R. Mode of action of a supernatant activity from T cell cultures that nonspecifically stimulate the humoral response. *Proc. Natl. Acad. Sci. (Wash.)* 71:512, 1974.
9. Kappler, J.W., Hunter, P.C., Jacobs, D. and Lord, E. Functional heterogeneity among the T-derived lymphocytes of the mouse. I. Analysis by adult thymectomy. *J. Immunol.* 113:27, 1974.
10. Marrack (Hunter), P.C., Kappler, J.W. and Kettman, J.R. The frequency and activity of single helper T cells. *J. Immunol.* 113:830, 1974.
11. Kappler, J.W., Marrack (Hunter), P.C., Araneo, B., Jacobs, D. and Lord, E. T cell subpopulations in the mouse. *In*, Interaction of Radiation and Host Immune Defense Mechanisms in Malignancy, (Conference, March, 1974, Greenbrier, W. Va.) Brookhaven National Laboratory Report 50418, pp. 245-254, 1974.
12. Araneo, B.A., Marrack (Hunter), P.C. and Kappler, J.W. Functional heterogeneity among T-derived lymphocytes of the mouse. II. Sensitivity of subpopulations to anti-thymocyte serum. *J. Immunol.* 114:747, 1975.
13. Marrack (Hunter), P.C. and Kappler, J.W. Antigen-specific and non-specific mediators of T cell/B cell cooperation. I. Evidence for their production by different T cells. *J. Immunol.* 114:1116, 1975.
14. Kappler, J.W. and Marrack (Hunter), P.C. Functional heterogeneity among the T-derived lymphocytes of the mouse. III. Helper and suppressor T cells activated by concanavalin A. *Cell. Immunol.* 18:9, 1975.

15. Burns, F.D., Marrack (Hunter), P.C., Kappler, J.W. and Janeway, C.A. Functional heterogeneity among the T-derived lymphocytes of the mouse. IV. Nature of spontaneously induced suppressor cells. *J. Immunol.* 114:1345, 1975.
16. Harwell, L., Kappler, J.W. and Marrack, P. Antigen-specific and non-specific mediators of T cell/B cell cooperation. III. Characterization of the nonspecific mediators from different sources. *J. Immunol.* 116:1379, 1976.
17. Kappler, J.W. and Marrack, P.C. Helper T cells recognize antigen and macrophage surface components simultaneously. *Nature (Lond.)* 262:797, 1976.
18. Araneo, B.A., Marrack, P.C. and Kappler, J.W. Functional heterogeneity among the T-derived lymphocytes of the mouse. V. Response kinetics of peripheral T cell subpopulations. *J. Immunol.* 117:1233, 1976.
19. Araneo, B.A., Marrack, P.C. and Kappler, J.W. Functional heterogeneity among the T-derived lymphocytes of the mouse. VI. Memory T cells stored in the T2 subpopulation. *J. Immunol.* 117:2131, 1976.
20. Hoffeld, J.T., Marrack, P. and Kappler, J.W. Antigen-specific and nonspecific mediators of T cell/B cell cooperation. IV. Development of a model system demonstrating responsiveness of two T cell functions to HGG *in vitro*. *J. Immunol.* 117:1953, 1976.
21. Hoffeld, J.T., Marrack, P. and Kappler, J.W. Antigen-specific and nonspecific mediators of T cell/B cell cooperation. V. Unresponsiveness to HGG *in vitro* of these two T cell subpopulations. *J. Immunol.* 117:1960, 1976.
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26. Araneo, B.A., Marrack, P. and Kappler, J.W. Functional heterogeneity among T-derived lymphocytes of the mouse. VII. Conversions of T1 cells and T2 cells by antigen. *J. Immunol.* 119:765, 1977.
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32. Kappler, J.W. and Marrack, P. The role of H-2 linked genes in helper T-cell function. IV. Importance of T-cell genotype and host environment in I region and Ir gene expression. *J. Exp. Med.* 128:1510, 1978.
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34. Marrack, P., Harwell, L., Kappler, J.W., Kawahara, D., Keller, D. and Swierkosz, J. Helper T cell interactions with B cells and macrophages. In, *Recent Developments in Immunological Tolerance and Macrophage Function*. Edited by Baram, C., Pierce, C.W. and Battisto, J.R., Elsevier North-Holland Inc., New York, 31, 1979.
35. Marrack, P. and Kappler, J.W. The role of H-2 linked genes in helper T-cell function. VI. Expression of Ir genes by helper T cells. *J. Exp. Med.* 149:780, 1979.
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38. Kappler, J.W., Swierkosz, J.E. and Marrack, P. Expression of I-region genes during helper T cell maturation and induction. In, *The Regulatory Role of Macrophages in Immunity*. Edited by Rosenthal, A.R. and Unanue, E.R., Academic Press, New York p. 107, 1979.
39. Marrack, P., Swierkosz, J.E. and Kappler, J.W. The role of antigen-presenting cells in effector helper T cell action. *ibid.* p. 123, 1979.
40. Marrack, P., Swierkosz, J.E. and Kappler, J.W. Functions of two helper T cells distinguished by anti-Ia antisera. In, *Regulatory T Lymphocytes*. Edited by Pernis, B. and Vogel, H.J., Academic Press New York, p. 221, 1979.
41. Swierkosz, J.E., Marrack, P., and Kappler, J.W. Functional analysis of T cells expressing Ia antigens. I. Demonstration of helper T cell heterogeneity. *J. Exp. Med.* 150:1293, 1979.

42. Keller, D.M., Swierkosz, J.E., Marrack, P. and Kappler, J.W. Two types of functionally distinct helper T cells. *J. Immunol.* 124:1350, 1980.
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45. Harwell, L., Skidmore, B., Marrack, P. and Kappler, J. A concanavalin A inducible, interleukin-2 producing T cell hybridoma. *J. Exp. Med.* 152:893,1980.
46. Marrack, P. and Kappler, J.W. The role of H-2 linked genes in helper T cell function. VII. Expression of I region and immune response genes by B cells in bystander help assays. *J. Exp. Med.* 152:1274, 1980.
47. Kappler, J., Skidmore, B., White, J. and Marrack, P. Antigen-inducible, H-2-restricted, interleukin-2 producing T cell hybridomas: Lack of independent antigen and H-2 recognition. *J. Exp. Med.* 153:1198, 1981, PMC2186156.
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51. Leibson, J., Marrack, P. and Kappler, J.W. B cell helper factors. I. Requirement for both interleukin-2 and another 40 KD factor. *J. Exp. Med.* 154:1681, 1981.
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66. Marrack, P. and Kappler, J. Use of somatic cell genetics to study chromosomes contributing to antigen plus I recognition by T cell hybridomas. *J. Exp. Med.* 157:404, 1983.
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- class II MHC antigen-specific proliferation, release of lymphokines, and binding by cloned murine helper T lymphocyte lines. *J. Immunol.* 131:2178, 1983.
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  73. Endres, R.O., Marrack, P. and Kappler, J.W. An IL-2 secreting T cell hybridoma that responds to a self class I histocompatibility antigen in the H-2 D region. *J. Immunol.* 131:1656, 1983.
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