

Europe must grant crucial funds for biological research

Sir — The impact of genetics on our lives is now obvious to any reader of a daily newspaper. The prospect that Europe may refuse to fund the infrastructure that underpins all biological research is simply extraordinary (see pages 3–4 in this issue). Such research is essential for the exploitation of genetic and genomic research for the benefit of humankind. Aside from far-reaching benefits in medicine and health care, this science will bring advances to fields as diverse as agriculture, manufacturing and the environment.

Human health and welfare have the potential of great benefit from genetics research, largely because developments in large-scale DNA sequencing now make it possible to determine the complete genome sequence of any living organism. The complete genome sequences of more than 20 prokaryotes and several 'model' organisms are now public, or will be so within a year — two yeasts, a nematode worm, the fruitfly *Drosophila* and the plant *Arabidopsis*. The sequencing of the mouse genome has begun and, most dramatically, a draft of the human sequence will be finished within six months — a singular event in human history.

This information is revolutionizing biological research. Its analysis, both computational and experimental, will give an extraordinarily deep understanding of living organisms. The use of this knowledge will have an impact on all our lives.

Much of this work has been done in European laboratories — traditionally strong in biology and genetics research. European researchers are poised to make major contributions in the future, many through collaborations between researchers in different European countries. A decade or so ago, biological research was small in scale and required relatively little in the way of infrastructure. Today, particularly in genomics, it is quite different, requiring large-scale, often collaborative, research underpinned by robust infrastructure.

Infrastructure is defined by the European Commission (EC) as "facilities and resources that provide essential services to the research community in the life sciences"¹. The paradox is that, although the essential nature of such infrastructure is recognized by the EC, particularly for bioinformatics and stock centres for model organisms, it is ineligible for funding under the commission's fifth Framework programme of research: "[it] will not

provide for support for tasks that involve the construction and routine operation of research infrastructures, nor for the collection of data..."¹. This decision does not reflect the needs of the scientific community.

Although recognizing the importance of this infrastructure, the EC appears to be of the view that it should be funded by some other agency, or by individual countries. There is no other pan-European agency that currently has the ability to fund these "essential services". It is clearly inappropriate for infrastructure needed by all European scientists, in academic institutions and in industry, to be funded at national level.

A failure of funding now is particularly ironic given that we are on the verge of elucidating the entire human genome sequence. This prospect is a stark contrast with the commitment and vision shown by biology funding agencies in the United States and Japan. Because the decision not to make EC funding available for sustained infrastructure appears to be a political one, a political resolution must be found, and found soon. If not, then European research in the biological sciences, and all that flows from it, will suffer.

Michael Ashburner*

*Department of Genetics, University of Cambridge, Cambridge CB2 3EH, UK
e-mail: infrastructure@gen.cam.ac.uk*

*Readers can add their support to this letter by sending their name, title and affiliation by e-mail to M. A., the coordinating author. Full affiliations and addresses of the signatories below are in Supplementary Information on *Nature's* World-Wide Web site (<http://www.nature.com>) or can be obtained from M. A.

Paolo Amati, University of Rome; **Mike Bevan**, John Innes Centre, Norwich; **Anton Berns**, The Netherlands Cancer Institute; **Tom Blundell**, University of Cambridge; **Piet Borst**, The Netherlands Cancer Institute; **Graham Cameron**, EMBL — EBI; **Luca Cavalli-Sforza**, Stanford University; **Julio E. Celis**, Danish Centre for Human Genome Research; **Pierre Chambon**, IGBMC Strasbourg; **Antonio Coutinho**, Gulbenkian Foundation for Science, Portugal; **Antoine Danchin**, Institut Pasteur, Paris; **Bertil Daneholt**, Karolinska Institutet, Stockholm; **Jacques Demaille**, Human Genetics Institute, Montpellier; **Maria De Sousa**, Oporto University, Portugal; **T. Michael Dexter**, Wellcome Trust, London; **Denis Duboule**, University of Geneva; **Marvin Edelman**, Weizmann Institute of Science, Israel; **Arturo Falaschi**, International Center for Genetic Engineering and Biotechnology, Trieste; **Frank Gannon**, EMBO; **Antonio García-Bellido**, Universidad Autónoma de Madrid; **F. García-Olmedo**, Universidad Politécnica de Madrid; **Walter Gehring**, University of Basel; **Peter N. Goodfellow**, SmithKline Beecham; **Frank Grosveld**, Erasmus University, Rotterdam; **Peter Gruss**, Max-Planck-Institut für Biophysikalische Chemie, Göttingen; **Bernhard Hirt**, Swiss Institute for Experimental Cancer Research, Epalinges; **Louise Johnson**, University of Oxford; **Alwyn Jones**, Uppsala University; **Bertrand R. Jordan**, CIML Luminy, Marseille; **Fotis Kafatos**, EMBL; **Kari I. Kivirikko**, Academy of Finland; **Jonathan Knowles**, Hoffman LaRoche; **Nicole le Douarin**, College de France, Paris;

Mark Lathrop, Centre National de Genotypage, Evry; **Chris Leaver**, University of Oxford; **Marja Makarow**, Universities of Kuopio and Helsinki; **Bernard Malissen**, Marseille Immunology Centre; **Matthias Mann**, University of Southern Denmark; **David McConnell**, Trinity College Dublin; **Juan Modolell**, Centro de Biología Molecular Severo Ochoa, Madrid; **Christian Nuesslein-Volhard**, Max-Planck-Institut für Entwicklungsbiologie, Tübingen; **Mary Osborn**, Max-Planck Institut für Biophysikalische Chemie, Göttingen; **Lennart Philipson**, Karolinska Institute; **Ronald Plasterk**, Hubrecht Laboratory, Utrecht; **Hans Prydz**, University of Oslo; **Francis Quetier**, Genoscope, Evry; **Klaus Rajewsky**, Institute of Genetics, Cologne; **Peter W. J. Rigby**, Institute of Cancer Research, London; **Cecilia Saccone**, CNR Research Area, Bari, Italy; **Gottfried Schatz**, Biozentrum, University of Basel; **Piotr Slonimski**, CNRS, Gif-sur-Yvette; **Ed Osborn**, University of Oxford; **John Sulston**, Sanger Centre, UK; **Joel L. Sussman**, Weizmann Institute of Science, Israel; **George Thireos**, IMBB, Crete; **Glauco Tocchini-Valentini**, IBC-CNR, Monterotondo Scalo, Italy; **Peter van der Vliet**, Centre for Biomedical Genetics, The Netherlands; **Marc Van Montagu**, University of Gent; **Erhard Wintersberger**, University of Vienna; **Moshe Yaniv**, Institut Pasteur, Paris; **Rolf Zinkernagel**, University of Zurich; **Harald zur Hausen**, Deutsche Krebsforschungszentrum, Heidelberg.

1. Quality of Life Programme Management, European Commission Support for Research Infrastructures (EC, Brussels, 11 October 1999).

University becomes political football

Sir — Alejandro Cuevas-Sosa distorts the picture of what is happening at the National Autonomous University of Mexico (UNAM) (*Nature* 401, 524; 1999). UNAM has been closed for almost six months owing to a strike by students against new regulations for fees that were virtually non-existent. The academic staff have not been on strike, contrary to what Cuevas-Sosa says. Moreover, research in institutes is continuing, given that we have limited access to our laboratories in the main campus in Mexico City. Undergraduate teaching has in many cases stopped and is happening only partially in other places.

The academic arguments that started this lengthy conflict are no longer valid. The dispute has become a political argument over the most important cultural and academic project this country has ever supported. The opinions of those of us who carry out full-time academic activities in this university have been ignored or dismissed.

I raise a plea for support by scientists around the world to fight against using universities as political arenas. Governments should be alerted to the importance that research and teaching has had worldwide and to the beneficial influence these activities have on society.

Georges Dreyfus

*Instituto de Fisiología Celular,
Universidad Nacional Autónoma de México,
Ap Postal 70-243, 04510 México DF, México*