

## **GLOBAL REPORT ON THE EVALUATION OF THE RESEARCH UNITS ON HEALTH SCIENCES**

This report is relatively short, because it was decided by the coordinator and the members of the evaluation teams to include the majority of their comments and recommendations in the reviews of the individual Units. In comparison with the reviews of four years ago we increased substantially our comments for each Unit. We strongly suggest that the leadership of the Foundation for Science and Technology carefully review those recommendations and comments. We believe that several Units necessitate thorough monitoring by the Foundation's staff and, in certain cases, a written evaluation, or even a site visit, before the completion of the support period.

### **Coordinator and Panels of Evaluation**

Ruy V Lourenço, MD (Coordinator/Chairman)

UMDNJ - New Jersey Medical School, Newark, USA

#### *Panel 1*

Faramarz Ismail-Beigi, MD, PhD, Case Western Reserve University, Cleveland, Ohio

Charles L. Hoppel, MD, Case Western Reserve University, Cleveland, Ohio

Bozena B. Michniak, PhD, Rutgers University, Newark, NJ

George A. Condouris, MD, UMDNJ New Jersey Medical School, Newark, NJ

Marvin Kirschner, MD, UMDNJ New Jersey Medical School, Newark, NJ

#### *Panel 2*

Neil S Cherniack, MD, UMDNJ New Jersey Medical School, Newark, NJ  
Abraham Aviv, MD, UMDNJ New Jersey Medical School, Newark, NJ

Allen Clarkson, PhD, New York University Medical School, New York, NY

Ted Dwyer, MD, UMDNJ New Jersey Medical School, Newark, NJ

Robert Wallis, MD, UMDNJ New Jersey Medical School, Newark, NJ

Murray Altose, MD, Case Western Reserve University, Cleveland, Ohio

*Panel 3*

Pedro Gascon, MD, University of Barcelona, Spain

George Perry, PhD, Case Western Reserve University, Cleveland, Ohio

Thomas Forsthuber, MD, Case Western Reserve University, Cleveland, Ohio

Sara Torres, PhD, UMDNJ School of Nursing, Newark, NJ

Marvin Schwalb, PhD, UMDNJ New Jersey Medical School, Newark, NJ

Joseph Germino, MD, New Jersey Cancer Institute, New Brunswick, NJ

Steven Schleifer, MD, UMDNJ New Jersey Medical School, Newark, NJ

It was the unanimous opinion of the evaluators that the title Coordinator does not correspond to the functions of the individual in charge of the visits. In the United States, a Chairperson carries out such functions and the term coordinator is usually used for an organizer of the visit who does not participate either in the scientific review or in the rankings of the various units. Because Prof. Ruy Lourenço participated actively not only in the organization but also in all aspects of the evaluation we will use frequently in this report the designation of Chairman rather than Coordinator.

In November and December of 2003 and in January 2004, three groups of scientists visited and evaluated Health Science Research Units in Portugal at the request of the Foundation for Science and Technology.

In total, 19 scientists, mainly from the United States, carried out these visits under the chairmanship of Professor Ruy V Lourenço who wrote this report.

The visitors were divided in three panels (I, II & III).

The first panel (I) dealt with Pharmacology, Pharmacy, Metabolism and Endocrinology. It was composed of five scientists and took place in October 2003.

The second panel (II) dealt mainly with Cardiology, Pneumology, Infectious Diseases, Otolaryngology and Nephrology. It included six scientists and visited Portugal in December 2003.

The third and last panel (III) dealt mainly with Oncology, Pathology, Immunology, Genetics, Nursing and Ophthalmology. It consisted of seven scientists and carried out the reviews in January 2004.

The chairman (coordinator) was present all the visits of the three panels, participated in all discussions and voted on the rankings of all units. He also attended all the visits and presentations. This provided for continuity and uniformity of the process of evaluation and it constituted a significant improvement over previous evaluations.

We reviewed both established and new units (centers). All scientists in their respective panel visited all the established centers. For the new centers, presentations were made to all members of the panel but no site visits took place.

In all these activities, we were superbly supported by the very able staff of the Foundation under the direction of Dr. Maria José Abreu. Dr. Abreu and her staff were extremely accommodating and helpful.

The chairman (coordinator) also met with the President of the Foundation, Prof. Ramôa Ribeiro, who provided valuable guidance and advice. Prof. Ribeiro also met with some of the members of the panels. We are appreciative of his kindness and support.

When Professor Lourenço was asked by the President of the Foundation to chair this evaluation, he carefully review his availability during the time proposed by the Foundation. After becoming the Dean Emeritus of UMDNJ - New Jersey Medical School, and therefore spared of everyday rigid schedules, he has been faced with the problem of over-committing himself to extensive consultative tasks in the USA and several other countries. However, he felt, maybe with some immodesty, that he had the ideal background for this undertaking for the following reasons. He had chaired the group of scientists that evaluated the Health Sciences Units four years ago. He has been, for many years, a senior reviewer for research centers and medical schools both in the USA and abroad. Furthermore, first as Chief of Respiratory Diseases and Respiratory Physiology and later as Chairman of Medicine in Chicago, and more recently, as Dean in New Jersey, he has had extensive experience in running large research enterprises. He has been the recipient of many competitive research grants from various entities including the National Institutes of Health, where he has been an adviser and a member of study sections. Maybe more importantly is the fact that he was not only born in Portugal but also received his medical degree in Lisbon; this gives him considerable understanding of the Portuguese culture and the challenges that scientists face in Portugal when trying to carry out first-rate research.

However, his acceptance of this considerable responsibility, created some problems for the Foundation because, due to other obligations, he had to delay the initiation of the visits until late in 2003.

The reviews of the Health Science Units in Portugal constitute an extraordinary challenge for any group of scientists because of the variety and complexity of subjects to be covered. In this evaluation, we were asked to review centers as diverse as Ophthalmology and Cardiac Surgery, Otolaryngology and Molecular Biology, Sports Medicine and Microbiology. Also, we were assigned units that were mainly clinical enterprises and others, which were very basic in their interests. We also evaluated very developed centers and very embryonic units. Therefore, in order to have scientists who were highly specialized in all these diverse areas, both in clinical and basic sciences, it would have been necessary to bring to Portugal nearly one hundred scientists. This obviously was neither economically nor logistically feasible. In fact, we were told by the President of the Foundation to keep the panels relatively small, with between five and seven people

besides the Chairman. To follow this recommendation, compromises were necessary and we had to choose scientists whose interests were broad enough to deal with a large variety of subjects and flexible enough to be able to review critically subjects outside of their specialties.

The chairman also believed strongly that it was necessary to establish a team spirit among the panel members. This meant that they should discuss the visit and the units to be visited before leaving for Portugal. In addition, all participants in a panel should visit, discuss, and rank all the units assigned to that panel

After talking with dozens of prospective site visitors, both in the United States and in Europe, the chairman decided to concentrate his efforts on two university centers in the United States. They were the UMDNJ - New Jersey Medical School, where he was Dean for over ten years, and the Case Western Reserve University Medical School, where Dr. Neil Cherniack, a frequent participant in Foundation reviews, was Dean for five years. In this way, we could have meetings and discussions before and after the visits and establish the team spirit and uniformity so essential for the success of our evaluations.

The coordinator also attempted to have, as much as possible, scientists who had participated either in the previous evaluation of the Health Science Units or in other reviews organized by the FCT in the last few years. He felt that these people had already an understanding of health science research in Portugal and some knowledge of the culture and the customs of the Country. This also could provide for helpful comparisons between the state of health sciences research then and now.

### **Review of the Institute Gulbenkian of Science (Unit 599)**

An evaluation of this Unit was not planned in advance of our visits. The schedule sent to the visitors before arriving in Portugal did not include any reference to Unit 599 and no materials were sent to us for review. As a matter of fact, it was only during the chair's first day in Lisbon that he was asked by the President of the Foundation if we could review this Unit. The President indicated that he would be most appreciative if we could do the evaluation and that a review of unit 599 was very important for both the Foundation and for IGS. The chairman indicated that there was no time to make a visit to the Unit, and that we were not prepared for its review. It was also mentioned that, because of the complexity and specialization of the IGS laboratories, we might not have the ideal panel to review this Unit. The President talked on the phone with Professor Coutinho, Director of the Unit, and indicated that it would be important to have a limited evaluation even under

these circumstances. This meant that there was no visit to the Institute but rather only a two-hour presentation in the hotel in Porto. The coordinator confirmed these conditions with Professor Coutinho who indicated his acceptance and expressed his appreciation and gratitude for our flexibility.

Because the presentations were excellent, and the subjects addressed important, we gave to the Unit the ranking of "Excellent". It must however, be pointed out that no materials were reviewed before our arrival in Lisbon, no site visit to the laboratories took place, no interviews with students or faculty were carried out, and that our present panel was not chosen with IGS in mind. For a question of fairness, in relation to this and the other units reviewed, the members of the panel strongly suggested that IGS have a site visit properly organized and with the appropriate visitors in the next year. We believe that such a visit must take place mainly because all the other established units have been site visited. In addition, there were several important parts of this type of evaluation that did not take place. They include the assessment of the mentoring of students and fellows and of the career development of faculty, and the examination of the laboratories and the equipment. Also the report we received just a few hours before the presentation didn't provide us with the necessary elements for a thorough evaluation.

It should be pointed out that four years ago, we were not able to review IGS during our scheduled visit, because its Director indicated that not enough time for preparation had been given to him and his associates by the Foundation. A special site visit with scientists from the USA was then organized by Professor Lourenço and took place several weeks later. It seems to us that there is a unique problem of communication between IGS and the Foundation concerning the scheduling of the periodical evaluations.

### **Relationships with Associate Laboratories**

We did not evaluate the Associate Laboratories. Visits to these institutions are tentatively planned for later this year or early next year. Some important questions remain in the minds of the evaluators concerning the mechanism of choice of those Laboratories and their scientific and financial relationships with the other research units supported by the Foundation for Science and Technology. These questions were particularly evident at the presentation by the IGS scientists and at the visit to the Center for Investigation in Molecular Pathobiology (Unit 59). Also, it was not clear to the visitors why IGS was not an independent Associate Laboratory. We are confident that these questions can be answered after the visits to the Associate Laboratories take place.

### **Medical Schools and Research**

Another general comment deals specifically with research in the Portuguese Medical Schools. We believe that a major effort needs to be made to improve research in those schools. The function of a medical school, as an integral and important part of a University, is not only to graduate physicians but also to advance science. It is generally accepted that the best training of physicians takes place in centers where there is good research. But there is a tendency in Portugal, already mentioned in the previous report four years ago, to have successful centers of research outside of the medical schools, with a clear and dangerous separation between the educational and investigative functions. The visitors were made aware of the many practical reasons for this separation. However, we believe that a better solution for a country of the size of Portugal is to have a full integration of the health sciences research enterprise in the present medical schools. This should be done without interfering with the quality of the research being presently performed in productive research institutes. For this integration to take place effectively, some major changes need to take place in the medical schools. Because of the essential political independence of the universities, those changes need to be initiated by the medical schools leadership and supported by their faculty and students. An important step would be to have faculty promotions in large part dependent on significant research productivity. Also, tenured professors should be reviewed periodically and encouraged to pursue their own research or at least to stimulate research within their departments. Tenure should apply to professorships and not to chairmanships.

Even more importantly, the seeds of research interest must be planted early in medical students. For this, it is essential that the medical course, and the residency programs, have enough flexibility to permit that extended period of research take place. It is our understanding that at the moment the medical curriculum cannot be interrupted for one or two years for research training. Another important suggestion made by all members of the panels is that MD-PhD programs be established in Portugal in order that a medical student may be able to carry out research in depth and receive both degrees at the end of his/her training.

### **Disparity between Units and Cross-Fertilization among Scientists**

There is a great disparity between the Units reviewed. There are centers of such a level and productivity that they could be successful in any country, including the United States

of America. There are others that clearly need a lot of help even to justify their existence. Many of the visitors asked if it is possible to have a teaching role for the more developed Portuguese research centers in the sense of bringing about improvements in the less developed ones. This can be done in the form of seminars, lectures, periods of training in established centers, visiting professorships by senior investigators, etc. Some of these activities are taking place now but clearly not in a sufficient degree. Portugal has already a cadre of senior investigators that can provide the basis for the establishment of a very successful research enterprise in the health sciences in Portugal. The Country has a population of ten million, which is equivalent to a relatively small state in the USA. If a comparison is made with the productivity of American health sciences researchers, taking into account the difference in the size of the populations and in the amount of funds budgeted for investigation, it can be said that the Portuguese scientists are doing quite well. To become excellent, they need the help not only of foreign scientists but also and more importantly, of the best Portuguese investigators.

Cross-fertilization among Portuguese scientists at different Units must be encouraged by the Foundation and should not be very difficult to implement because of the relative short distances between the various centers of investigation. In certain Units there was very little scientific interchange even among their own scientists.

One of the reasons for a Unit to be formed is to provide improved means of communication among the various researchers of the applying institution. If this is not taking place the Director of the Unit must assure the Foundation and future evaluators that remedies are being implemented to deal with the problem.

### **Special Programmatic Funding**

There was considerable confusion within the Health Science Research Units regarding the application for Special Programmatic Funding. FCT must formulate more explicit instructions to the research centers including a clear statement of the purpose of the special funding, of the type of items that qualify for this funding, and of the money limits to the requests.

### **Final Thoughts**

It should immediately be said that the site visitors witnessed a marked improvement in the quality of research being performed in Portugal. Also, the presentations and the reports



were much more professional and better organized than four years ago. There is clearly a large group of young scientists who are extremely enthusiastic and well trained, either through work abroad or in top Portuguese laboratories.

It is to the credit of the Foundation for Science and Technology that, because of their various programs and evaluation mechanisms, such a profound improvement is present in Health Sciences Research in Portugal.

The site reviewers were confronted with marked variations in the organization of the different research Units and were often surprised by the lack of scientific coordination within certain Units. Also, in many cases, there was no clear scientific relationship among the different groups within a given unit. The applications for support for an Health Sciences Unit should include a clear statement by the applicants that addresses the overall scientific direction of the proposed or established unit, the specific contributions of each group included in the application towards the overall direction of the unit, and the advantage that the Unit designation brings to each group and individual scientists already working in the applicant research or educational center.

This last question is of great importance because it addresses the reason why a Unit should or should not exist. For a Unit to be supported by FCT, it should prove that it is more productive under this organization than if all the programs in the center were independent.

The less developed centers, several of them applying for the first time, had a problem in common. They were not asking any specific questions. Obviously, if one doesn't ask questions, one doesn't obtain answers. Therefore, it was difficult for the visitors to understand what was the goal of the research proposed in some of the Units. There was also a tendency even in the most developed centers to deal with investigations on relatively old ideas rather than to try completely new pathways for science. May be this due to the scarcity of the funds available creating a mindset to play safe rather than to try risky original approaches

In general, because the site visitors were favorably impressed with the intelligence, preparation and enthusiasm of the leaders and members of many of the units, there was possibly a tendency to be slightly generous with our rankings. In many cases, we also considered favorably the potential of the researchers rather than only their published achievements. The members felt that it was probably better in the present state of sciences in Portugal that more units be approved. Obviously, close monitoring by the

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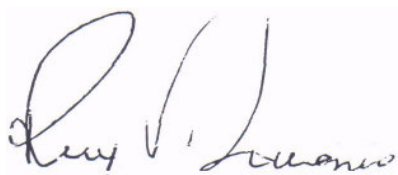
Foundation and periodical reviews are imperative for any unit, especially those not receiving the ranking of "Excellent".

Like in many other countries, science in Portugal is dominated by a few key figures who frequently run large programs and participate in many governmental advisory committees. An effort should be made to enlarge this cadre of leaders to include a broader spectrum of young scientists.

The erratic nature of the funding available to the Foundation for Science and Technology creates problems not only for the Portuguese scientists but also for the evaluators. This is an important subject that should be addressed by the appropriate entities of the Government of Portugal.

Respectfully submitted,

August 2, 2004

A handwritten signature in black ink, appearing to read "Ruy V. Lourenço". The signature is fluid and cursive, with a large initial 'R'.

Ruy V. Lourenço, MD