

Research and Scientific Production Activities of CNPq Research Productivity Grant Recipients in the Area of Genetics

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Abstract

A study of the research and scientific production activities of Brazilian researchers in the area of genetics, based on the following variables: gender, category of grant from the National Council of Technological and Scientific Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq), home institution, state and region of Brazil, academic training, area of scientific activity and production. Two electronic sources were used: the CNPq site and the Curriculum Lattes. The results confirm previous studies, showing a predominance of articles published in foreign periodicals, with fewer published in Brazilian periodicals.

Introduction

The analysis of scientific productivity in all of its aspects makes possible the generation of indicators which are of use in the promotion, advancement and development of the Brazilian science, technology and innovation sector. This aim of this study is to create a profile of those researchers who receive level PQ-1 and level PQ-SR research productivity grants from the CNPq in the area of genetics, and also to describe the scientific communication activity within this group.

The CNPq is a foundation connected to the Ministry of Science and Technology (MCT)¹. Its purpose is the promotion and advancement of scientific and technological development in Brazil, as well as to contribute to the formulation of national science and technology policies.

The advancement of science is the CNPq's most traditional activity and the one most identified with its mission. For this purpose, it offers both basic and special programs, which offer various modalities of grants, support for research and funding for specific projects. The grants are divided into two main categories: individual, either in Brazil or abroad, and those which are offered by quota to teaching, research and graduate institutions. Applications for individual grants are made directly to the CNPq by the researcher. Amongst these grants, under the rubric of individual grants for scientific advancement, of most relevance to this study is that of Research Productivity. According to CNPq, the aim of this type of grant is to "honor the researcher, valuing his

scientific production within the general criteria established by the CNPq and specified by its Assessment Committees" (Comitês de Assessoramento - CAs do CNPq²). Thus, for the purposes of this study, it would appear reasonable to assume that recipients of this type of grant are qualified to represent researchers in this area.

Methodology

Data was gathered from the CNPq site, following the link for "Consulta PQ - Bolsas em Curso". The Research Productivity Grants already awarded can be found by searching under the name of the applicant, knowledge area and home institution. Following the identification of the researchers by knowledge area, individual searches on each grant recipient were undertaken in the *Curriculum Lattes* (CV Lattes) site in order to identify the areas of activity, academic training, degrees received and publication in periodicals during the last three years (2006 to 2008) of those researchers with active grants.

Results

Data gathering in the CNPq site in February 2009 led to the identification of 195 genetics researchers who had been awarded research productivity grants, of which 193 were active, two having been suspended. This group was composed of 89 men (46%) and 104 women (54%). The group of researchers falling into the Research Productivity categories PQ-1A and PQ-SR was made up of 16 men and 8 women. With regard to the level of the grants, most fell within the category PQ-2, with 84 grant recipients, followed by PQ-1D with 43, PQ-1C with 23, PQ-1A with 22, PQ-1B with 19 and only two senior researchers in this area at the time. The group as a whole represents connections with a total of 39 educational or research institutions, with one institution (USP) being the base of the largest percentage (24%) of the researchers. The researchers in the PQ-1A category were distributed as follows, in terms of their home institutions: 6 at the USP, 3 at the UFRGS, 2 each at the UFSCAR and UNESP, and 1 each at the FAMERP, IBMP, UFPA, UFPE, UFRJ, UFV, ULBRA, UNICAMP and UNIFESP. The researchers in the PQ-SR were connected to the USP and the UFRJ.

These institutions represent Brazil's five different geographic regions and are distributed across twelve states. Most are in the Southeast and South, which account for 75% of the institutions, followed by the North (10%) and the Central-West and Northeast, each with 8%. Location of these institutions in terms of state showed that São Paulo is home to the largest percentage (26%), with both Paraná and Rio Grande do Sul containing 15 %, Rio de Janeiro with 13 %, Amazonas, Minas Gerais, Pará and the Federal District with 5% each, and Bahia, Goiás, Pernambuco and Rio Grande do Norte being home to 3% each. These results are not surprising, as they reflect the well-known Brazilian pattern in which some regions house a significant share of the country's teaching and research institutions, with a high productivity index.

In terms of their academic training and degrees earned, of the researchers who were awarded grants in the PQ-1A and PQ-SR categories, 13 had majored in the Biological Sciences, while 6 had studied Natural History, and one each had studied Biology, Engineering, Food Technology, Medicine and Chemistry. One researcher had not indicated his undergraduate area in the CV Lattes. The majority (25%) of these researchers had completed Master's degrees in Brazil in the area of the Biological Sciences (Genetic Biology) and 17% in Genetics and Molecular Biology. Seven had failed to indicate the relevant details of their MAs in the CV Lattes. Results were similar for PhDs, with the majority of degrees granted in the Biological Sciences (Genetic Biology), followed by Genetics and Molecular Biology. Most of these were earned in Brazil, mainly in São Paulo at the USP.

Turning to the areas in which this group of researchers is active, the results show that 38% are concentrated in Human and Medical Genetics, 33% in Animal Genetics, 13% in Molecular and Micro-organism Genetics, 8% in Molecular Biology, and 1% in Genetics of Cancer and Vegetable Genetics. The area of activity of each researcher was defined in terms of the first sub-area mentioned in the CV Lattes, as several grant recipients mention more than one area of activity.

The scientific production of this group of researchers is reflected in the publication of 524 articlesⁱⁱⁱ, in the period from 2006 to 2008, of which 117 (22%) appeared in Brazilian periodicals and 407 (78%) in foreign periodicals. The works published in Brazil were distributed amongst 28 (11%) periodicals, while those published outside the country appeared in 231 (89%) separate periodicals. These results confirm the previous study (OLIVEIRA, 2005) which revealed the predominant publication of articles in foreign periodicals, mainly in English, with a smaller share of research results being published in Brazil.

References

Oliveira, E. da C. P. de. (2005). Grau de adesão à comunicação científica de base eletrônica: estudo de caso na área da genética. Doctoral thesis, UFRJ/ECO – MCT/IBICT, Rio de Janeiro.

ⁱ The CNPq was founded in 1951, and was initially called the Conselho Nacional de Pesquisas. In 1974, its mandate was revised and its name changed. In 1985 it was integrated into the structure of the recently-formed Ministry.

ⁱⁱ Available at

<http://www.cnpq.br/normas/rn_06_016_anexo1.htm>. Accessed on: March 2, 2009.

ⁱⁱⁱ This total was calculated taking into account possible duplication of articles.