

Centro de Matemática e Aplicações da Universidade Nova de Lisboa

Review of CMA-UNL by the external advising committee

Background

Each panel member has some historical familiarity with mathematics at UNL and the CMA. There was a very positive view of the progress that has been made. A recent shift toward external hiring, some more senior, has been very successful, and the completion of the PhD by most pre-degree hires has helped in multiple ways, as well.

The enthusiasm displayed and the clarity of presentations was refreshing. All of this has led to tangible results: a publication rate approaching that of historically stronger Centers (about 3/4 of a paper/year in impact factor journals and at least 1 paper/year among reviewed vehicles) and a deserved recent improvement in the national rating of the Center.

Further improvement will likely be limited by the remarkably heavy teaching obligations of Center members and by the relatively small number of consistently and highly active research leaders.

Teaching

Teaching is an important and valuable part of academic life and active research enhances the vibrancy of teaching. However, the value of reducing teaching obligations to enhance research productivity of potentially active researchers cannot be overstated and is understood world-wide. The standard at research-oriented institutions is not more than two 3-hour courses per semester. We understand the difficulties of reducing these obligations in the current financial environment, but UNL must find ways to do this, both obvious and creative, in order to maintain what has developed and provide a foundation for further progress.

We have not thought of all possibilities, but here are several ways that occurred to us.

1. Hire additional faculty sufficient to materially reduce the average Departmental load. Hiring in the recent past has not kept up with replacement needs plus growing student demands, and student credit hours generated in Mathematics seem well above those of other FCT units, so that hiring is warranted by several measures. In addition, in the current soft market for scholars, especially in Portugal, stronger

than usual hiring could be carried out. A number of sub-disciplinary directions could be justified, but actual directions should be left to the Department as a whole as long as research active individuals have sufficient voice.

2. Encourage the Mathematics Department to adopt differential teaching obligations based upon research activity. This is common elsewhere, even to the extent of increased obligation for the less active.
3. Well-executed hiring of “up and coming” external researchers at the associate and full professor level, even more than general hiring, will enhance research productivity, especially if there is encouragement to join CMA. The research leadership need is acute.
4. Give consideration in specific teaching assignments to active, and developing young, researchers, to mitigate unusually burdensome assignments to those people.
5. Though it is not the best solution, allocate more “hourly” and other low-cost, short-term teaching power to Mathematics with the expressed goal of lower loads for active researchers. Such resources could be justified as recognizing the contributions to university finances of Center (and other) projects. Such allocations are common elsewhere.
6. The Department in conjunction with the University should re-evaluate its several degree programs with regard to the impact on overall teaching obligations and overall/individual loads. The teaching requirements of the programs themselves are one issue (some programs work better than others). But another is the potential for deriving teaching power from advanced degree students or even advanced undergraduate students.
7. The Center has reached a size and activity justifying a more permanent secretarial support. We are well aware of the financial restrictions Portugal is facing, but it should be possible to arrange some convenient agreement to use the existing secretarial support on the Department of Mathematics.

Other Questions

With regard to two questions that were posed.

1. We feel that the categorization of research papers by journal type commonly accepted in the mathematical community is appropriate and consistent with FCT’s requirements. It should continue. The visual presentation of report information might usefully be improved in future reports.

2. Impact factors have been quite common these last few years. This is not so well accepted as a measure of quality in the mathematical community as it is in other areas. We suggest that you pay some attention to other metrics that have been introduced more recently: “eigenfactor score”, which uses the pagerank algorithm to rank journals, or the “article influence score”, both available from the ISI web page). These, being of more recent use are not yet subject to the distortions that are well known on the impact factor.
3. For the time being, the new organization of statistical areas as one sub-unit, should best continue. A change so soon after the evaluation recommendation was implemented might not be politic. However, once information on the workability of this arrangement has accumulated, a change might be considered. The impression left from the discussions is that there is a potential for production improvement, in applied work but also in a more theoretical direction, if some real effort is put into the cooperation between the different subgroups.

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