

The Culture of Research and Scholarship in Mathematics: Rates of Publication

Mathematics is often considered as part of the physical and natural sciences, but its publication practices differ from these other disciplines in several fundamental ways.

Mathematicians tend to publish at rates that are modest compared to some other sciences. The majority of mathematical research is published in refereed research journals, rather than conference proceedings or books. Articles typically represent considerable advances on a mathematical question. In addition, since mathematics research is usually not considered time-sensitive, time to publication is typically much longer than in other STEM fields.

Even some of the best young mathematicians publish relatively few papers. A study of the 40 mathematicians winning Sloan Fellowships in 2005-2006 shows that 70% published an average of two or fewer articles per year in the five years preceding their award [1]. Even more senior mathematicians have modest publication rates. Of the 22 mathematicians receiving Guggenheim Fellowships from 2002-2006, half published an average of two or fewer articles per year in the five years preceding their award. These two groups represent an exceptional group of highly recognized mathematicians.

Of the 274 publications by these Guggenheim Fellows, 75% were in refereed journals. Only three publications were books. In fact, of all items covered by Mathematical Reviews in the years 2001-2005, fully 80% were from refereed journals [2].

The information above about those who have won prestigious awards strongly supports the view that, when judging the work of mathematicians, the key measure of value for a research program is the quality of publications rather than the rate. While these facts are familiar to mathematicians, they are often unfamiliar to scholars from different professional cultures.

[1] Analysis by AMS Committee on the Profession, 2014.

[2] Analysis of MathSciNet data by AMS staff, 2014.

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