

## Paul R. Halmos - Lester R. Ford Awards

### Jonathan M. Borwein and Robert M. Corless

“Gamma and Factorial in the Monthly,” *The American Mathematical Monthly*, 125:5, 400–424, 10.1080/00029890.2018.1420983.

The Bernoulli-Euler-Legendre gamma function is the best known (and most useful!) solution to the following interpolation problem: “Find a smooth curve connecting the points  $(x, y)$  given by  $y = (x - 1)!$  at the positive integer values for  $x$ .” The authors give a survey of the many articles on the gamma function and Stirling’s formula that have appeared in the *Monthly*. They show how the gamma function appears in different areas of mathematics, from geometry to analysis to number theory, and that the gamma function is “transcendentally transcendental.” Part of the survey shines a light on some of the important aspects of the gamma function that haven’t been covered in the *Monthly* (yet), including visualization of the gamma function and the inverse of the gamma function. The authors give some references so that anybody can go and follow their roadmap that they have given to the beauty of the gamma function.

### Response

Jon would have been delighted with this award which, I believe, he never won in his lifetime, although his brother Peter did in 2001. To be sure, Jon was a Chauvenet prize winner: clear and engaging writing was second nature for him. I learned a lot working with Jon. His enthusiasm for this paper was as I described in the afternotes to it; it was hard for me to complete the paper without him, and I am very grateful for this award as a mark that his vision for the paper was not totally lost.

I am also personally grateful. Clear mathematical writing, as exemplified by the *Monthly*, is very important to me, both for research and for teaching. I have been (cumulatively) an MAA member for decades, since being awarded a membership on graduation from UBC in 1980 (thank you Professor George Bluman). The *Monthly* has had a profound effect on my mathematical tastes and standards. Having the chance to dive deep into *Monthly* archives was an intense pleasure, one I recommend to everyone; of course, anyone reading this response doesn’t need a reminder from me about the value of the *Monthly*. My only advice is to read more, and don’t overlook the older papers!

### Biographical Sketches

**Rob Corless** did his BSc in Math and Computer Science at the University of British Columbia in 1980. After an M. Math (Applied Math) at Waterloo in 1982 he returned to UBC to do a PhD in Mechanical Engineering (really classical Applied Math, perturbation series and fluid mechanics, with a little computer algebra and dynamical systems thrown in) in 1987. He joined the Applied Math department at the University of Western Ontario immediately after and has been there ever since. Indeed I believe a major role of applied mathematics is to respond to the greater-than-human challenges of real applications and develop new pure mathematics. He was chair from 2002–2007, and is currently Scientific Director of ORCCA (The Ontario Research Center for Computer Algebra). His best *Monthly* paper (till now) made the cover of the March 1992 issue (Chaos and Continued Fractions) and his most nontraditional publication (that has any citations) is his 2004 poster “The Lambert W Function” ([orcca.on.ca/LambertW](http://orcca.on.ca/LambertW)). His current mathematical interests are computational special functions, computational dynamical systems, computational discovery and epistemology ([www.springer.com/la/book/9781493990504](http://www.springer.com/la/book/9781493990504)), and computational algebra, especially linear algebra with matrix polynomials, and the newly named field “Bohemian Matrices and Applications” (see the website, especially the gallery at [bohemianmatrices.com](http://bohemianmatrices.com), and the Characteristic Polynomial Database and its unsolved conjectures—he says, “come join the fun!”). His non-mathematical interests include scuba diving and Yoshinkan Aikido, in which he was awarded shodan in 2016.

For a bio of **Jon Borwein**, see the CMS obituary or [www.tandfonline.com/doi/full/10.1080/00029890.2018.1420983](http://www.tandfonline.com/doi/full/10.1080/00029890.2018.1420983).