2021

Sharing Contributions to Euler Scholarship

Erik R. Tou
University of Washington – Tacoma, etou@uw.edu

Christopher Goff
University of the Pacific, cgoff@pacific.edu

Sharing Contributions to Euler Scholarship

Christopher Goff   Erik R. Tou
cgoff@pacific.edu   etou@uw.edu

August 2021

The history of mathematics has always been a human endeavor. Today, many scholars from many different backgrounds are making valuable contributions to our understanding of the past. In the field of Eulerian scholarship, C. Edward Sandifer has served an indispensable role. His work has been public-facing, especially including his *How Euler Did It* column, and also behind-the-scenes, serving as a catalyst for the creation of the Euler Archive. In the Articles and Notes section, we highlight several of Dr. Sandifer's contributions to our understanding of Euler's life and work. Robert Bradley brings us an overview of his work in the history of mathematics, while Cynthia Huffman details those works currently available via the Euler Archive. Both illuminate the unique imprint that Dr. Sandifer has made on Eulerian scholarship.

Also included in the Articles and Notes section are William Dunham's insights into Euler's work in infinite series. In "Euler's Miracle," Dr. Dunham explores how Euler applied his unique talents to an alternating harmonic series, with the infinite series leading to an infinite product and—at least a little surprisingly—to the number π.

In the Reviews section, Lawrence D'Antonio gives his reflections on volume 1 of *A History of Mathematics in the United States and Canada (1492-1900)*, published by the Mathematical Association of America. This important work was written by math historian David Zitarelli just before his passing in 2018.

This issue highlights three of Euler's publications in the Translations & Commentary section. First, Sylvio R. Bistafa describes Euler's work on the three body problem, including finding three of the so-called "Lagrange points." Bistafa also includes a translation of the original article. Next, Alexander Aycock describes some of Euler's results around evaluating a certain integral, and

demonstrates their equivalence to the so called multiplication formula for the gamma function. Aycock also includes a translation of Euler's little-known article on the subject. The third translation is provided by Sam Gallagher and covers the Lambert W function, a special function that can be used to solve certain transcendental equations. Gallagher translates the original article and includes helpful explanatory notes as well.

We hope that you enjoy reading our second issue. If you have ideas or articles to submit for subsequent issues, please let us know; we are always accepting submissions. The next issue is scheduled to appear in winter 2022!