A Word from the Editor

The editorial board of the *Mathematics Exchange* is pleased to present this latest issue. The four groups of authors have written a collection of papers of interest to all undergraduate students of mathematics, and we hope you enjoy the fruits of their labor. We appreciate how they inspire and motivate our readership to follow their example in sharing their love of mathematics. We believe that getting students involved in publishing mathematics is a true milestone in helping them find their (permanent) place in the mathematical community, and we are honored and proud to be a part of that endeavor.

The first article explores the Frobenius number of a set $G = \{a, b, c\}$ of three natural numbers such that $\gcd(a, b, c) = 1$. The Frobenius number of G is the largest integer that cannot be written as a non-negative integer linear combination of elements of G. In this article, upper and lower bounds are presented along with experimental results that show the relationship of the Frobenius number to these bounds.

The second article presents an analysis of costs of reusable diapers to consumers. It shows that the total cost associated with reusable diapers, the sum of the upfront cost of purchasing the diapers and the reoccurring cost of cleaning the diapers, has a minimum of twice the geometric mean of the upfront and cleaning costs plus the cost of a single reusable diaper. This is done via an application of the arithmetic mean - geometric mean inequality. Also, included is a comparison with the costs of using disposable diapers.

Article three explores a set-valued coarse invariant of pointed metric spaces. This invariant had two previously known approaches to its construction and understanding. This paper provides a new formulation, which has the benefit of giving more immediate proofs of certain known theorems.

The final article presents an equivalence between the standard basis vectors in the space of polytabloids and the basis vectors of Specht polynomials for irreducible representations of the symmetric group.

We hope that you will enjoy reading this issue of the *Mathematics Exchange*. As always, we welcome and encourage ideas on how we can better serve our readers.

Rich Stankewitz