1035-W1-54 **Robert L. Brabenec*** (Robert.L.Brabenec@wheaton.edu), Dr. Robert Brabenec, Department of Mathematics, Wheaton College, Wheaton, IL 60187. *The Euler-Stirling Correspondence*.

The real analysis course is often considered to be the most difficult among undergraduate courses for the mathematics major. It is helpful if occasionally something can lighten the presentation, while still presenting analysis content, albeit from a different perspective. For many years, I have used three letters between Leonhard Euler and James Stirling for this purpose. Written during the early part of Euler's career, they contain glimpses into some of his early interests and results in analysis, as well as some features from his personal and professional life. In particular, material is presented on the Euler-Maclaurin formula, Euler's constant, and values of convergent p-series. The names of Leibniz, Maclaurin, and Nicolas Bernoulli are included in the letters, along with comments about fluxion notation, work requirements at the St. Petersburg Academy, and the Royal Society. Also of interest is the notation used by Euler, which can be compared with our modern version, as well as regular use of 16 decimal places in his calculations. What we call the Bernoulli numbers are present in Euler's formulas, but are not yet identified as such by Euler. (Received June 26, 2007)