Science education researchers have long advocated the central role of the nature of science (NOS) for our understanding of scientific literacy. NOS is often interpreted narrowly to refer to a host of epistemological issues associated with the process of science and the limitations of scientific knowledge. Despite its importance, practitioners and researchers alike acknowledge that students have difficulty learning NOS and that this in part reflects how difficult it is to teach. Many teachers are uncomfortable with taking time away from traditional science content instruction. One promising method for teaching NOS and science content involves an explicit and reflective approach using historical stories. The purpose of this study is to compare a traditionally taught genetics unit in a non-major introductory biology course, to the same genetics unit taught using a historical story based on Gregor Mendel. A mixed method approach was used to determine
whether and how the use of historical stories influences undergraduates’ understanding of NOS and genetics content. Particular attention was paid to the explanations students used for their understandings. Intervention and control groups completed the SUSSI instrument and a two-tier genetics instrument pre- and post-instruction. A subset of both groups was also interviewed regarding their responses to both instruments and their experiences in the course.

The SUSSI Likert results showed that students in the intervention group made statistically significant gains in their understanding of the role of imagination and creativity in science. These results indicate that the introduction of historical stories helped participants gain a better understanding of this aspect of NOS. The interviews provided additional support in that participants mentioned historical stories in their explanations for why they changed towards more informed views on SUSSI items related to imagination and creativity. Additionally, students recognized that stories were used in the intervention group without prompting and felt they were helpful for learning about science. The genetics two-tier instrument results showed that participants made more statistically significant gains in their genetics content understanding in the intervention group than the control group. The current study adds to a growing body of literature regarding the use of stories in the science classroom. The results provide support for using historical stories to improve student understanding of NOS as well as more traditional science content. This study suggests further research into the role of stories in science instruction.