

## Difference In Pay Leave – Fall 2016 – Report

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During my DIP leave I worked on the following projects:

1. Working on project “Make the Way” – a grant-funded project providing professional development activities for K-8 teachers in Santa Rosa City Schools;
2. Collaborating on projects with IllustrativeMathematics.org (IM), an organization that provides high quality resources for K-12 teachers and teacher educators around the Common Core State Standards in Mathematics;
3. Collaborating on the groundbreaking pedagogy guide published by the Mathematical Association of America.

Out of these three projects, the work with Illustrative Mathematics was the most extensive. The timing of my DIP was excellent. At the time that I applied for the leave, Illustrative Mathematics was selected to create an open source 6-8 grade curriculum. The curriculum was commissioned by a consortium of 11 U.S. states that saw a need for high quality, affordable textbooks at the middle school level that are aligned with the Common Core State Standards in Mathematics. The main work on the materials started in May 2016 when I joined the project. Over the course of the last year, I collaborated with expert curriculum writers and educators to develop teaching materials from the ground up. These materials include student centered teaching activities with solutions and guidance for teachers on how to implement the activities to best support their students’ learning.

While we were developing the materials, they were being piloted in several school districts. Based on the pilot experiences, we revised the materials for full publication later in August 2017. More information and samples of the materials are available at <https://www.illustrativemathematics.org/curriculum>.

Part of my work on the 6-8 curriculum was also informed by maker activities I have written for Project Make the Way, a California Math and Science Partnership project based at SSU. Over the last two years, Ben Ford, Kathy Morris, Carol Keig and I have collaborated to write maker-math activities for K-8 classrooms to connect the excitement of “making” with doing and learning mathematics. The maker mindset that includes tinkering, scouting, experimenting, and revising has a lot in common with doing mathematics, although math is not usually taught this way. We have developed activities where students use and learn mathematics as part of maker activities or by using the objects created during maker activities. One example of an activity that I wrote for Project Make the Way and then adapted for the IM curriculum is a 7<sup>th</sup> grade activity where students build a trundle wheel and use it to create a race course on their school grounds.

Since 2010 I have been a member of the Committee for the Teaching of Undergraduate Mathematics of the Mathematical Association of America. This committee is in charge of creating an Instructional Practices (IP) Guide that would guide the mathematics teaching

in universities and colleges all over the country. I was asked to join the taskforce that produced the guidelines and structure for this publication. During my DIP, I was on one of the writing teams for the IP Guide that focused on collaborative teaching practices. I wrote a draft about effective group work in mathematics classrooms and gave feedback on several other chapters. Our writing group met several times online and in person during the Joint Mathematics Meetings in Atlanta in January 2017.