Session Description: Middle and high school teachers in the NSF’s Robert Noyce Teacher Scholarship Program developed and used scales of practice based on the National Council of Teachers of Mathematics Eight Mathematics Teaching Practices* to reflect on their teaching. Learn how the experience impacted them, what they learned, and how they grew.

Project Description: The Fullerton Mathematics Teacher and Master Teacher Fellows (MT2) Project at California State University, Fullerton aims to recruit and prepare talented STEM majors and professionals to become middle or high school teachers of foundational level mathematics in high-need schools. Funded for six years in 2010 by the National Science Foundation, and in partnership with Santa Ana College, Anaheim Union High School District, Norwalk-La Mirada School District and the National Board for Professional Teaching Standards, this Noyce Project is currently engaging 29 experienced teacher “Master Teaching Fellows” and new teacher or teacher candidate “Teaching Fellows” in numerous professional learning and leadership development experiences. Master Teaching Fellows work toward National Board Certification (NBC) or provide NBC support to peers if already certified, and Teaching Fellows earn a foundational-level mathematics credential and a Master's Degree in Secondary Education with an emphasis in Teaching Foundational Mathematics while receiving mentoring from and co-teaching with Master Teaching Fellows. Each Fellow receives up to five years of financial support, participates in Summer Institutes and other professional learning experiences, engages in leadership activities, and commits to teaching in high-need districts. Together, the Fellows constructed scales of mathematics teaching practices based on the Eight Mathematics Teaching Practices developed by NCTM and use them to reflect on their teaching. Based on their experiences with the scales, Fellows will revise them in an iterative process to ensure their relevance, clarity, and usefulness.

NCTM’s Eight Mathematics Teaching Practices
1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Use and connect mathematical representations.
4. Facilitate meaningful mathematical discourse.
5. Pose purposeful questions.
6. Build procedural fluency from conceptual understanding.
7. Support productive struggle in learning mathematics.
8. Elicit and use evidence of student thinking.

For more information about the MT2 project, visit our website at http://mt2math.weebly.com/fellows.html.

Fellows read sections of Principles to Actions: Ensuring Mathematical Success for All (NCTM, 2014). In small groups, they examine one of the eight standards in depth. (Summer Institute, 2014)

Small groups draft a continuum, or scale, of practice for their standard, using NCTM’s descriptions of accomplished practice to inform their continuum. (Summer Institute, 2014)

Fellows share their draft scales with the large group. The scales are discussed, and the Fellows make decisions on format, focus, scale range, labels, and other features of the scales. (Summer Institute, 2014)

Small groups revised their individual scales based on the agreements reached. Groups submit their scales to a small leadership team that reviews and merges the scales into a single document and distribute to all Fellows. (Summer Institute, 2014)

Project staff review the scales for consistency of format, completeness, and clarity. They make suggestions to a leadership team consisting of Nationally Board Certified Fellows, who revise the scales. (Fall 2014 – Spring 2015)

Revised scales are distributed to all Fellows with the request that they select one to conduct a self-assessment. (Spring 2015)

Fellows bring their self-assessments to the Summer Institute and meet with peers who conducted a self-assessment on the same standard. They discuss the scale and make recommendations for revision. (Summer Institute, 2015)

All Fellows participate in a gallery walk of poster-size scales of the eight standards. Individually or in small teams, they provide comments in writing using sticky notes or recording suggestions directly on the scales. (Summer Institute, 2015)

The scale development team revises the scales based on the Fellows’ comments. (Summer, 2015)

Fellows conduct a self-assessment on all standards using the revised scales. (Fall 2015)

Scales are continuously refined, as needed, by the Fellows. (ongoing)