



YALE NATIONAL INITIATIVE

to strengthen teaching in public schools®

Curriculum Units by Fellows of the National Initiative
2020 Volume IV: Solving Environmental Problems through Engineering

Preface

In April 2020 the Yale National Initiative to strengthen teaching in public schools® accepted teachers from seventeen public school districts in ten states and the District of Columbia to participate in five national seminars led by Yale University faculty members. The Initiative is a long-term endeavor to influence public policy on teacher professional development, in part by establishing exemplary Teachers Institutes for high-need schools in states around the country.

Teachers Institutes are educational partnerships between universities and school districts designed to strengthen teaching and learning in a community's high-poverty, high-minority public schools. Evaluations have shown that the Institute approach exemplifies the characteristics of high-quality teacher professional development, enhances teacher quality in the ways known to improve student achievement, and encourages participants to remain in teaching in their schools.

Thirty-six of the teachers, named Yale National Fellows, were from school districts that are planning or exploring the establishment of a new Teachers Institute for Chicago, IL; the District of Columbia; Pittsburgh, PA; Richmond, VA; San José, CA; Tulsa, OK; and Texas. Other National Fellows come from existing Teachers Institutes located on the Diné Nation, AZ and NM; and in New Castle County, DE; New Haven, CT; and Philadelphia, PA. Overall, more than half of the National Fellows are participating in national seminars for the first time.

The National Fellows attended an Organizational Session of the seminars held online on May 1-2. The seminars reconvened during a ten-day Intensive Session online from July 6-17 and concluded in mid-August when the Fellows submitted their completed curriculum units. The five seminars were:

- “American History through American Lives,” led by David C. Engerman, Leitner International Interdisciplinary Professor of History;
- “Teaching about Race and Racism Across the Disciplines,” led by Daniel Martinez HoSang, Associate Professor of Ethnicity, Race, and Migration, and of American Studies;
- “Solving Environmental Problems through Engineering,” led by Jordan Peccia, Thomas E. Golden, Jr. Professor of Environmental Engineering;
- “Politics and Public Policy in the United States,” led by Ian Shapiro, Sterling Professor of Political Science; and
- “Caretakers versus Exploiters: Impacting Biodiversity in the Age of Humans,” led by Paul E. Turner, Rachel Carson Professor of Ecology and Evolutionary Biology.

The purposes of the program are to provide public school teachers deeper knowledge of the subjects they

teach and first-hand experience with the Teachers Institute approach to high-quality professional development. This reinforces their leadership in an existing Teachers Institute or prepares them to lead the development of a new Teachers Institute. Each teacher writes a curriculum unit to teach their students about the seminar subject and to share with other teachers in their school district and, through the website at teachers.yale.edu, with teachers anywhere. The curriculum units contain five elements: content objectives, teaching strategies, examples of classroom activities, lists of resources for teachers and students, and an appendix on the district academic standards the unit implements. In these ways the curriculum units assist teachers in engaging and educating the students in their school courses.

The curriculum units National Fellows wrote are their own; they are presented in five collections, one for each seminar. We encourage teachers who use the units to submit comments online.

The Yale-New Haven Teachers Institute® is a permanently endowed academic unit of Yale University, which undertook the National Initiative in 2004.

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New Haven

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