

## Big Data and Undergraduate Research

### INTRODUCTION 3

– *Rebecca M. Jones*

### PRACTICE

#### **Leveraging a Large Database to Increase Access to Undergraduate Research Experiences 4**

– *Laura A. Lukes, Katherine Ryker, Camerian Millsaps, Rowan Lockwood, Mark D. Uhen, Christian George, Callan Bentley, and Peter Berquist*

#### **Big-Data Analysis and Visualization as Research Methods for a Large-Scale Undergraduate Research Program at a Research University 14**

– *Patrick J. Killion, Ian B. Page, and Victoria Yu*

#### **Experiential and Service Learning through Local Data Projects 23**

– *Diego Mendez-Carbajo and Stephanie Davis-Kahl*

#### **Expanding Minds through Research: Juvenile Justice and Big Data 30**

– *Randy B. Nelson, Kideste Mariam Yusef, and Adrienne Cooper*

#### **A Student Research Course on Data Analytics Problems from Industry: PIC Math 37**

– *Michael Dorff and Suzanne Weekes*

### VIGNETTES

#### **Keeping It Real: Teach ACRL Information Literacy Frames with FRED 43**

– *Charissa Jefferson, Diego Mendez-Carbajo, and Katrina Stierholz*

#### **Development of Local GeoStories: Using Data to Improve Community Health and Enhance Student Learning about the Social Determinants of Health 43**

– *Rebecca Smullin Dawson*

#### **The Impact of Data Science as a Liberal Art 44**

– *Ruth Kassel, Ting Liu, Daniel Moriarty, Caleb Ryor, and Graziano Vernizzi*

### OTHER FEATURE ARTICLES

#### **Positive Affective and Behavioral Gains of First-Year Students in Course-Based Research across Disciplines 45**

– *Elizabeth Sandquist, Cinzia Cervato, and Craig Ogilvie*

#### **The Library as Collaborator in Student Publishing: An Index and Review of Undergraduate Research Journals 58**

– *Merinda Kaye Hensley and Heidi R. Johnson*

## DEPARTMENTS

**Undergraduate Research Highlights** 68

### **Book Review**

***Course-Based Undergraduate Research: Educational Equity and High-Impact Practice*** 78

– *Bethany M. Usher*