In memory of Dr. Janet Liou-Mark, whose loving dedication to her students and colleagues will never be forgotten.

# **FOREWORD**

Running a Research Experiences for Undergraduates (REU) is a rewarding yet challenging endeavor. REUs are a well-established way to engage undergraduate students in research, build self-confidence and create a sense of belonging for students who might not see themselves entering STEM careers.

We hope that this handbook will provide easily accessible information on the steps involved in creating and running an REU program. It provides a guided walk through designing an REU, recruiting and selecting students, preparing mentors, team-building, diversity, equity and inclusion, and logistics. Other topics such as program evaluation, safety, anti-harassment training, and publishing are covered as well. Examples, templates, and resources are provided throughout.

The content of this handbook comes from years of shared experience, materials, advice, and input from the community of REU sites funded by the National Science Foundation Geosciences (GEO) Directorate. The community of REU site managers engages and collaborates through workshops, an email listsery, conference sessions, and the sharing of materials on a website. In this collaborative and supportive community, site managers feel comfortable asking questions, offering their experience, and sharing materials. Welcome to the REU Community!

This community of practice is truly a remarkable one, and we hope that this handbook adequately shares the collective wisdom of the many people who have generously shared their thoughts and materials over the last decade. We thank all contributors and invite you to contribute to future annual editions of this handbook.

Valerie Sloan Rebecca Haacker

### **CONTRIBUTORS**

#### **List of Authors**

Asher, Pranoti; American Geophysical Union

Atchison, Christopher L.; University of Cincinnati

Barnes, Timothy; University Corporation for Atmospheric Research

Batchelor, Rebecca; University of Colorado Boulder

Blake, Reginald; New York City College of Technology

Bruno, Barbara C.; University of Hawai'i Manoa

Burt, Melissa; Colorado State University

Dalbotten, Diana; University of Minnesota Twin Cities

Gold, Anne U.; CIRES, University of Colorado at Boulder

Haacker, Rebecca; National Center for Atmospheric Research

Hubenthal, Michael; Incorporated Research Institutions for Seismology

LaDue, Daphne; University of Oklahoma

Liou-Mark, Janet; New York City College of Technology

Marín-Spiotta, Erika; University of Wisconsin Madison

Medina Luna, Lorena: National Center for Atmospheric Research

Mogk, David; Montana State University

Morris, Vernon; Arizona State University

Nocerino, Jennifer; Geological Society of America

Noriega, Gabriela: Southern California Earthquake Center

Serrato Marks, Gabriela; Massachusetts Institute of Technology

Sloan, Valerie; National Center for Atmospheric Research

Thatcher, Sean; Rutgers University

White, Lisa D.; University of California Museum of Paleontology

### **Image Contributors**

We thank the GEO REU community for having contributed photos to this handbook. Contributors include:

Bermuda Institute of Ocean Sciences (staff)

Bishop, Janice; SETI Institute REU Campbell, Lisa; Texas A & M University Conlee, Don; Texas A & M University

Dalbotten, Diana; University of Minnesota Twin Cities

Diaz, Andre; Arecibo Observatory, Puerto Rico

Esteban, Sergio; SETI Institute REU

Fitzsimmons, Jessica; Texas A & M University

Garza, Corey; California State University, Monterey Bay

Hubenthal, Michael; Incorporated Research Institutions for Seismology

Konter-Smith, Bridget; University of Hawai'i Manoa

Maranda, Lucie; University of Rhode Island

Medina Luna, Lorena; National Center for Atmospheric Research

Myrbo, Amy; University of Minnesota

Noriega, Gabriela; Southern California Earthquake Center

Pope, Audrey; Bermuda Institute of Ocean Sciences

Sloan, Valerie; National Center for Atmospheric Research

Tiscareno, Matthew; SETI Institute

The SOARS program, University Corporation for Atmospheric Research

**UCAR Center for Science Education** 

#### **Layout & Design**

Zietlow, Daniel; National Center for Atmospheric Research

#### Copy Editing

Vicki Holzhauer; Longmont, Colorado

#### For Citation

Sloan, V. and R. Haacker (Eds). 2020. GEO REU Handbook: A Guide for Running Inclusive and Engaging Geoscience Research Internship Programs (1st ed.). National Center for Atmospheric Research, Boulder, CO, doi: http://dx.doi.org/10.5065/ycba-qw42.

## **SPONSORS**

National Science Foundation. This work is funded under grant #OCE-1619600. National Center for Atmospheric Research University Corporation for Atmospheric Research

This material is based upon work supported by the National Center for Atmospheric Research, a major facility sponsored by the National Science Foundation and managed by the University Corporation for Atmospheric Research with additional support from #GEO-1565950. Any opinions, findings and conclusions or recommendations expressed in this material do not necessarily reflect the views of the National Science Foundation.



