Session 1 (Amend)  
Research Overview  
Session 2 (Amend)  
Education, Outreach, Diversity  
Session 3 (Huber)  
Knowledge Transfer, Data Management  
Session 4 (Huber)  
Synthesis, Phase 3
Session 2 (Amend)

Stephanie Schroeder, Education Director

Gwen Noda, Diversity Director
Education, Outreach, Diversity

Undergraduates at 2 and 4 year institutions

Major focus on research opportunities, especially for community college students
Education, Outreach, Diversity

Undergraduates at 2 and 4 year institutions

GEM
GGURE
CC-RISE
C4 REU

Graduate students, post-docs, and early career scientists

Training and mentoring the next generation of interdisciplinary researchers
Education, Outreach, Diversity

Undergraduates at 2 and 4 year institutions

- GEM
- GGURE
- CC-RISE
- C4 REU

Graduate students, post-docs, and early career scientists

- Networked Speakers
- Professional Develop.
- Bioinformatics Training
- Annual Meeting
- Travel/Research Grants
Education, Outreach, Diversity

Undergraduates at 2 and 4 year institutions
- GEM
- GGURE
- CC-RISE
- C4 REU

Graduate students, post-docs, and early career scientists
- Networked Speakers
- Professional Development
- Bioinformatics Training
- Annual Meeting
- Travel/Research Grants

K-12 and the general public
- An appreciation for exploring an unknown world, including the use of new technologies
Education, Outreach, Diversity

Undergraduates at 2 and 4 year institutions
- GEM
- GGURE
- CC-RISE
- C4 REU

Graduate students, post-docs, and early career scientists
- Networked Speakers
- Professional Develop.
- Bioinformatics Training
- Annual Meeting
- Travel/Research Grants

K-12 and the general public
- Sea Grant Marine Biology Camp
- Seafloor Science Camp
- Young Researchers Program
Focus on Community College Students

Undergraduates at 2 and 4 year institutions

<table>
<thead>
<tr>
<th>Program</th>
<th>Location</th>
<th>Recruitment</th>
<th>Target</th>
<th>Start</th>
<th>#/Yr</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEM</td>
<td>USC</td>
<td>National</td>
<td>2 &amp; 4-yr</td>
<td>2011</td>
<td>16</td>
<td>111</td>
</tr>
<tr>
<td>GGURE</td>
<td>USC</td>
<td>USC</td>
<td>4-yr</td>
<td>2014</td>
<td>28</td>
<td>155</td>
</tr>
<tr>
<td>CC-RISE</td>
<td>USC, UCSC, WHOI (MBL)</td>
<td>Local</td>
<td>2-yr</td>
<td>2013</td>
<td>8-14</td>
<td>45</td>
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<tr>
<td>C4 REU</td>
<td>USC</td>
<td>National</td>
<td>2-yr</td>
<td>2016</td>
<td>8</td>
<td>24</td>
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</tbody>
</table>

5.8 million students
Highly diverse population
Limited research opportunities

Publications > Journal Article

MARINE TECHNOLOGY SOCIETY JOURNAL

Effective Strategies for Engaging Community College Students in Research via Cutting-Edge Technology

Authors: Stephanie Schroeder, Jan P. Amend
Published: March 26, 2018
C-DEBI Contribution Number: 421
Demographics: CC-RISE and C4 REU

Undergraduates at 2 and 4 year institutions

GEM
GGURE
CC-RISE
C4 REU

CC-RISE
- Caucasian 54%
- Hispanic/Latinx 19%
- African American 4%
- Asian 13%
- Other 6%
- Multiracial 4%

C4
- Caucasian 25%
- Hispanic/Latinx 50%
- Asian 17%
- African American 4%
- Other 4%

100%

<table>
<thead>
<tr>
<th></th>
<th>CC-RISE</th>
<th>C4 REU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students in STEM</td>
<td>94%</td>
<td>100%</td>
</tr>
<tr>
<td>Transferred to 4-yr school</td>
<td>88%</td>
<td>83%</td>
</tr>
<tr>
<td>Graduated from 4-yr school</td>
<td>27%</td>
<td>13%</td>
</tr>
<tr>
<td>Attending graduate school</td>
<td>6%</td>
<td>13%</td>
</tr>
</tbody>
</table>
CC-RISE (post program)

Currently attending community college: 6
University of California System: 28
University of Massachusetts System: 6
California State University System: 3
Rochester University: 1
Boston College: 1
Amherst College: 1
Santa Clara University: 1
Bridgewater State University: 1
Western University of Health Sciences: 1
University College Dublin: 1
USC: 2

Universities and Systems Attending:
- University of California System
- University of Massachusetts System
- California State University System
- Rochester University
- Boston College
- Amherst College
- Western University of Health Sciences
- University College Dublin
- USC
- Currently attending community college
CC-RISE Success Stories

Ellie Hara (USC)
- Transferred to USC
- Interned at JPL
- BS from USC in 2016
- PhD program at CU

Nick O’Sadcia (MBL)
- Transferred to UMass
- BS in Engineering
- Alvin summer job
- Co-piloted Alvin in 2018

Lourdes Gomez (UCSC)
- Transferred to UCSC
- Interned at Genomics Institute
- Graduating in 2019
- Applying for GRFP
C4 REU (post program)

- Currently attending community college: 4
- University of Washington: 1
- University of Buffalo: 1
- UH Manoa: 1
- Ramapo University: 1
- Oregon State University: 1
- Delaware State University: 1
- Binghamton University: 1
- University of California System: 8
- California State University System: 2
- USC: 3

Amend: Education, Outreach, Diversity
C4 Success Stories

Madeline Tyler (2016)
Transferred to OSU
Summer research MIT
Undergrad research with Rick Colwell

Jason Tremblay (2016)
Transferred to UH
Interned at NASA
Presented at AGU
PhD program at UH

Karla Abuyen (2016)
Transferred to USC
C4 research mentor
Graduated USC
2018
PhD program at USC
in Biophysics lab

Hillary Smith (2017)
Transferred to UW
Did STEM SEAS
Alvin summer job
Accepted into several PhD programs
Genome Sequence of *Geothermobacter* sp. Strain EPR-M, a Deep-Sea Hydrothermal Vent Iron Reducer

Benjamin Tully, Pratixaben Savalia, Karla Abuyen, Christina Baughan, Eric Romero, Cynthia Ronkowski, Brandon Torres, Jason Tremblay, Anthony Trujillo, Madeline Tyler, Ileana Pérez-Rodriguez, Jan Amend

Genome Sequence of *Hydrogenovibrio* sp. Strain SC-1, a Chemolithoautotrophic Sulfur and Iron Oxidizer

Christopher Neely, Charbel Bou Khalil, Alex Cervantes, Raquel Diaz, Angelica Escobar, Karen Ho, Stephen Hoefler, Hillary H. Smith, Karla Abuyen, Pratixaben Savalia, Kenneth H. Nealson, David Emerson, Benjamin Tully, Roman A. Barco, Jan Amend

Genome Sequence of *Geothermobacter* sp. Strain HR-1, an Iron Reducer from the Lō‘ihi Seamount, Hawai‘i

Hillary Smith, Karla Abuyen, Jason Tremblay, Pratixaben Savalia, Ileana Pérez-Rodriguez, David Emerson, Benjamin Tully, Jan Amend

Amend: Education, Outreach, Diversity
C-DEBI Demographics

U.S. Census, 2017

Native American or Native Alaskan
Black or African American
Asian
Native Hawaiian or other Pacific Islanders
More than 1

White

C-DEBI, 2018

50.8% Female 55%
18.1% Hispanic/Latinx 18.3%
GEM and C4 Diversity & Inclusion Workshop

GEM and C4 students (2018)

Gerid Ollison, GEM TA and USC graduate students (2018)

Kimberly Freeman, USC’s Chief Diversity Officer speaking with GEM and C4 students (2018)
Longitudinal Survey

UG participants (215 invited): GEM, C4, CC-RISE, GGURE

In School

Non-STEM

STEM

Employed

Non-STEM

STEM

From 2-yr Schools

Advanced Degrees

At 2-yr

Transferred to 4-yr

From 4-yr Schools

Advanced Degrees

At 4-yr

Graduated from 4-yr
**GP-IMPACT**: Geobioinformatics Training for Community College Students

**REU Site**: Community College Cultivation Cohort (C4)