Climate Action from the UC System to the Nation

Kimberly Duong
Gianna Lum
Carlos Macias
Outline

I. History of Climatepedia
II. Education and Outreach
III. Tyndall Petition
IV. Student Certificate Program
V. Student Spotlight: Carlos Macias
VI. Conclusion
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Our History

- Founded in 2011 as UCLA undergraduate student group
- Becoming 501(c)(3) nonprofit organization in 2017
- $30,000 funding thus far
- Collaboration with environmental non-profits
- **Mission:** to communicate the risks and solutions of a changing climate in a simple and reliable way
Education and Outreach

Professors

University students

K-12

Community

UC Irvine Professor Panels

Chalkboard Project

6th grade presentations

Boothing events
Estimated % of adults who believe most scientists think global warming is happening (2016)
TYNDALL PETITION
Meet experts who agree climate change is an urgent problem

617 experts from 124 institutions agree
Climate change is a real and urgent problem

“There is overwhelming scientific evidence that people are warming the Earth beyond natural variability. This position is held by virtually all climate scientists, NASA, and the Intergovernmental Panel on Climate Change (the world’s most authoritative organization on climate change).

The question today is no longer if man-made climate change is happening, but how its challenges can be solved by human ingenuity. We must rapidly reduce our greenhouse gas emissions in order to minimize the significant risks of climate change, such as more extreme heat waves, prolonged droughts and severe floods. Our actions will have lasting impacts on generations to come.”
Signatory Recruitment Process

- **Step 1:** Seek climate experts from university websites, IPCC reports, national research labs, etc
- **Step 2:** Create database of experts to contact
- **Step 3:** Send personalized email asking Professor X to sign the Tyndall Petition
- **Step 4:** (If Professor X agrees) Create signatory profile and publish on Tyndall Petition website
Goals of Tyndall Petition

- Improve climate literacy and awareness
- Provide a resource for those who are skeptical about the scientific consensus on climate change
- Bridge the gap between the general public and the academic community
- Bring transparency to climate experts who can be messengers in their own communities
Alyssa Atwood
Alyssa Atwood is one of 676 signatories to the Tyndall Petition

Date Signed
Thursday, October 27, 2016

Title
Postdoctoral Researcher

Institution
Georgia Institute of Technology

Degree
PhD, Oceanography

Expertise
Reconciling paleoclimate reconstructions with dynamical theories and numerical simulation of the climate system

Webpage
http://www.cas.gatech.edu/content/stwood-dr-alyssa
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Tyndall Petition in 2016

4000+ email invitations sent to climate experts

Over 500 new signatures on Tyndall Petition

Largest climate petition of relevant experts in USA
Organizational Structure

**Climatepedia Executive Board**
Oversees Climatepedia (operations, staff, funding)

**Kimberly Duong**
Executive Director of Scientific Operations

**UC Irvine Officers**
Manages UC Irvine student chapter events

**Gianna Lum**
UCI Climatepedia Vice President

**Climatepedia Trainees**
Participates in Student Certificate Program

**Carlos Macias**
UCI Climatepedia Secretary and Climatepedia trainee
Student Certificate Program

- **Purpose:** Teach students to become climate literate while gaining hands-on experience in climate communications

- **Goal:** Expand certificate program beyond UC Irvine
  - Attract participation from students nationwide
  - Eventually open certificate program to anyone who wants to become climate literate
Student Certificate Program

- **Student Orientation**: Students receive info packet on climate change basics
- **Hands-on projects**: Students complete bi-weekly Tyndall Petition assignments
- **Deep learning**: Climatepedia mentor sends students weekly email with climate science video and article
- **Discussion**: Mentor hosts weekly 30 minute conference calls
## Student Certificate Program Structure

<table>
<thead>
<tr>
<th>Week</th>
<th>Learning</th>
<th>Doing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 0</td>
<td>Read articles and watch videos from orientation packet</td>
<td></td>
</tr>
<tr>
<td>Week 1</td>
<td>Mentor conference call #1: Discuss orientation packet</td>
<td>Assignment #1 (due Week 3)</td>
</tr>
<tr>
<td></td>
<td>Read articles and watch videos from Weekly Email #1</td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>Mentor conference call #2: Discuss Weekly Email #1 and ask questions (if any) about Assignment #1</td>
<td>Assignment #1</td>
</tr>
<tr>
<td></td>
<td>Read articles and watch videos from Weekly Email #2</td>
<td></td>
</tr>
<tr>
<td>Week 3</td>
<td>Mentor conference call #3: Submit Assignment #1 and discuss, if needed</td>
<td>Assignment #2 (due Week 5)</td>
</tr>
<tr>
<td></td>
<td>Read articles and watch videos from Weekly Email #3</td>
<td></td>
</tr>
</tbody>
</table>
Point-based System

- **Level 1: Beginner**
  - Find emails of climate experts = 1 point per email
  - Find signatory profile pictures = 2 points per picture

- **Level 2: Intermediate**
  - Fill out signatory profile information = 5 points per profile
    - Profiles include signatory’s name, title, institution, and expertise
    - Students must learn how to digest technical jargon and distill into keywords

- Students receive a Climatepedia certificate after earning 500 points
Example: Signatory’s Personal Website

Dr. Charles (Charlie) Zender
Professor of Earth System Science (ESS) and of Computer Science
Research Interests: Atmospheric Physics including climate change, desert dust and fire-emitted soot particulates, snowpack lifecycle and reflectance, wind-dispersal of nutrients and pathogens, wind-drag effects on deserts and oceans, and super-deep and-scale data analysis.

Regular Address (good for FedEx, too):
3200 Croul Hall
University of California, Irvine
Irvine, CA 92697-3100
Directions: Driving, Campus, Parking
Office: 3323 Croul Hall
Office Hours (and by appointment all year): Mondays 10:00–11:00 AM
Email: surname@uci.edu (yes, my surname is zender)
Office/Cell: (949) 891-2429, Fax: (949) 824-3874
Grad Student Office: Croul Hall 3242
Postdoc/Researcher office: Croul Hall 1101F
Public PGP key served by LCI and by pgp.uci.edu
Key ID: 6F635D10
Fingerprint: DBD0 E78E E13C 56A2 6C5D 2C62 CB91 49AD 6F63 5D10

I am the ESS liaison/representative to the Campuswide Honors Program (CHP), Diverse Educational Community and Doctoral Experience (DÉCADE) program, Study Abroad Center (SAC), and to the University Corporation for Atmospheric Research (UCAR).

My spam filter is set to “Terminate with Extreme Prejudice”. If you contact me from an unknown e-mail address and I do not respond within a week, then your mail may be on exhibit in my rarely visited spam collection rather than my inbox—please call instead!
Send me open-format (not proprietary) documents only, so that I may read them with Ubuntu (“oo-BOON-too”), a flavor of Debian GNU/Linux. “Ubuntu” is a Bantu word which means “I am what I am because of who we all are” and “humanity to others”.

Measuring snow reflectance with lasers in LGGE’s −15C coldroom
Tyndall Petition Signatory Profile

Charles Zender
Charles Zender is one of 676 signatories to the Tyndall Petition

Date Signed
Saturday, January 14, 2012

Title
Professor

Institution
University of California, Irvine

Degree
PhD, Atmospheric Science

Expertise
Atmospheric Physics including climate change, desert dust and fire-emitted soot particulates, snowpack lifecycle and reflectance, wind-dispersal of nutrients and pathogens, wind-drag effects on deserts and oceans, data analysis

Webpage
www.ess.uci.edu/~zender/
# Sample Student Timelines

<table>
<thead>
<tr>
<th>Week</th>
<th>Student 1 Assignments</th>
<th>Student 1 Points</th>
<th>Student 2 Assignments</th>
<th>Student 2 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Orientation</td>
<td>0</td>
<td>Orientation</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>Find 25 emails</td>
<td>+25</td>
<td>Find 25 emails</td>
<td>+10 (only found 10 emails)</td>
</tr>
<tr>
<td>3</td>
<td>Find 100 emails</td>
<td>+100</td>
<td>Find 10 emails</td>
<td>+10</td>
</tr>
<tr>
<td></td>
<td>(Student 1 requests more tasks)</td>
<td></td>
<td>(Student 2 requests smaller tasks due to busy schedule)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Find 75 emails and 20 pictures</td>
<td>+115</td>
<td>Find 20 emails</td>
<td>+20</td>
</tr>
<tr>
<td>7</td>
<td>Complete 20 profiles</td>
<td>+100</td>
<td>Find 10 pictures</td>
<td>+20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td><strong>330 points</strong></td>
<td></td>
<td><strong>60 points</strong></td>
</tr>
</tbody>
</table>
Volunteers work on tasks for the Tyndall Petition

Students are eligible for Climatepedia internships

Interns receive training on higher-level tasks

Dedicated interns can eventually become Climatepedia Staff

Volunteers receive Certificate of Completion after earning 500 points

Students are eligible for Climatepedia internships

Interns receive training on higher-level tasks

Dedicated interns can eventually become Climatepedia Staff
Benefits of Climatepedia Certificate

- Students gain skills in Excel, data management, and climate literacy
- Students can add certificate to their resume
- Executive board members can provide letters of recommendation for career development
- Certificate holders are eligible to apply to become interns for higher level responsibilities within Climatepedia
Student Spotlight: Carlos Macias

● About Me
  ○ 2nd year Aerospace Engineering Major
  ○ UCI Climatepedia Secretary
  ○ 2016-2017 Climatepedia Trainee

● Before Climatepedia
  ○ When I joined, I had no technical background in climate science
  ○ Climatepedia offered the opportunity to learn about climate change, which attracted me to the program

Above: Here I'm holding the sign that I made for March For Science L.A.
My Schedule

● Time Commitment
  ○ I work during gaps between classes or after finishing homework
  ○ I do most of my work on weekends

● Timesheet
  ○ Organized in columns
    ■ Date/Time of Day
    ■ Number Hours Worked
    ■ Subject of Task/Description

Above: Google Drive spreadsheet where my Tyndall Petition task is organized

Above: Screenshot of Climatepedia certificate program timesheet
The Program Taught Me

● There is a large diversity of experts working on climate change, such as
  ○ Public Policy
  ○ Technology
  ○ Ecology and Evolutionary Biology

● Climate Literacy
  ○ Joining this program pushed me to learn more about climate change
  ○ Now I can have informed discussions about this topic
  ○ Example: I learned that when polar ice caps shrink, their albedo decreases, allowing more heat to melt the ice caps (thus, a positive feedback loop)
A Look Back

● What I enjoyed
  ○ It was rewarding working for an emerging non-profit
  ○ The experience has influenced me to take a more sustainable path in my career
  ○ I made new friends!

● I can contribute to climate action by
  ○ Influencing people around me to make sustainable lifestyle choices
  ○ Volunteering in local environmental projects
  ○ Recruiting people to join Climatepedia

Above: Climatepedia hike to Peters Canyon in Tustin, CA
Conclusion

- Climatepedia trainees become climate literate and apply their knowledge through education, individual action, career development
- Our program complements the UCOP Carbon Neutrality Initiative: we need environmentally conscious students in order to achieve zero net carbon emissions
- Our program provides a model for improving climate literacy nationwide
- Students play a critical role connecting the public with the academic community
Contact Us

Kimberly
Climatepedia Executive Director, Scientific Operations
kimberly@climatepedia.org

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UCI Climatepedia Vice President
gianna@climatepedia.org

Carlos
UCI Climatepedia Secretary
comacias@uci.edu
Get Connected

www.climatepedia.org

facebook.com/climatepedia

twitter.com/climatepedia

info@climatepedia.org
Thank you!