Princeton Environmental Institute (PEI) is pleased to welcome you to the 11th annual Summer of Learning Symposium – the culminating event for students who have participated in PEI's Internship Program during summer 2018. PEI's Internship Program offers a unique opportunity for students to complement their academic interests, and is designed to enrich students' perspectives and prepare them as leaders through hands-on experiences.

At the Summer of Learning Symposium, we celebrate the work and research of 88 undergraduate students from 15 academic departments who were based in lab and field locations throughout the United States and in 14 foreign nations. Our 2018 interns contributed to faculty-led research and worked alongside experts from NGOs, government agencies, industries, community-service enterprises and other academic institutions worldwide. Through these placements, students sought solutions to scientific, technical, policy, and human dimensions of global environmental challenges.

The Summer of Learning Symposium is an opportunity to celebrate students' contributions, exchange perspectives, develop a shared mission, and consider practical, achievable solutions.

We extend our congratulations to the students and our heartfelt appreciation to those faculty, colleagues, friends and community partners who made this year's internship program, and the Summer of Learning Symposium, possible.
Schedule of Presentations

MORNING SESSIONS: 9 AM - NOON
Participant registration will begin at 8:45 am
Light breakfast will be served

WATER AND AGRICULTURE (pp. 4-6)
9 AM – NOON
Prospect Room (first floor)

ALTERNATIVE ENERGY (pp. 7-8)
9:30 AM – 11:50 AM
Library (second floor)

CLIMATE CHANGE AND ENVIRONMENTAL SCIENCE (pp. 9-10)
9:45 AM – 11:55 AM
Den (second floor)

GROUP LUNCH: NOON – 1PM
Dining Room (first floor)
All participants and attendees welcome

AFTERNOON SESSIONS: 1PM – 3:45 PM
Participant registration will begin at 11:45 am

BIODIVERSITY AND CONSERVATION (pp. 11-13)
1 PM – 3:45 PM
Prospect Room (first floor)

URBAN ADAPTATION AND RESILIENCY (pp. 14-15)
1 PM – 3:05 PM
Library (second floor)

For a complete list of student participants, please see the student index on pages 17-19
Water and Agriculture (9 am - noon)

**Moderator:** Paul Gauthier, Associate Research Scholar, Geosciences

1. **Potable Water for Pusunchás, Engineers Without Borders (Peru)**
   Sofia Bisogno '20, Civil and Environmental Engineering
   Camille Heubner '20, Civil and Environmental Engineering
   Sydney Hsu '21, Mechanical and Aerospace Engineering
   Sneha Iyer '20, Mechanical and Aerospace Engineering
   Nicholas Kick '20, Civil and Environmental Engineering
   Scott Overbey '21, Woodrow Wilson School of Public and Int'l Affairs
   Riley Stevens '20, Chemical and Biological Engineering
   **Mentors:** Peter Jaffe, Professor of Civil and Environmental Engineering; Don Moris, Technical Mentor, Engineers Without Borders; Russell Turner, Responsible Engineer in Charge, Engineers Without Borders

2. **Potable Water System for Kiburanga and Kubweye, Engineers Without Borders (Kenya)**
   Clare Cook '20, Electrical Engineering
   Kalil Shaw '21, Electrical Engineering
   Melissa Yuan '20, Chemistry
   Matthew Yun '21, Electrical Engineering
   **Mentors:** Peter Jaffe, Professor of Civil and Environmental Engineering; Mahiri Mwita, Lecturer in Princeton Institute for International and Regional Studies; Larry Martin, Responsible Engineer in Charge, Engineers Without Borders

3. **Research in Sustainable Development: Agricultural Economics in India and China (Israel)**
   Gabriel Swagel '20, Economics
   **Mentor:** Ram Fishman, Assistant Professor of Public Policy, Tel Aviv University

4. **Abiotic Hydrogen-Gas Production from Butyl Rubber Stoppers**
   Olivia Guan '21, Molecular Biology
   **Mentors:** Tullis Onstott, Professor of Geosciences; Rachel Harris, Ph.D. candidate, Geosciences

5. **Electrokinetics for Separation of Particles and Potential Water Purification**
   Ethan Thai '21, Electrical Engineering
   **Mentors:** Howard Stone, Professor of Mechanical and Aerospace Engineering; Suin Shim, Postdoctoral Research Associate, and Lecturer in Mechanical and Aerospace Engineering
6. **Jacob's Creek and Assunpink Watershed Studies**  
Krystal Delnoce '21, Civil and Environmental Engineering  
**Mentors:** Steve Tuorto, Director of Science and Stewardship, The Watershed Institute; Erin Stretz, Assistant Director of Science and Stewardship, The Watershed Institute

7. **Sensitivity of Nitrogen Fixation to Ammonium**  
Rei Zhang '21, Civil and Environmental Engineering  
**Mentors:** Xinning Zhang, Assistant Professor of Geosciences and the Princeton Environmental Institute; Romain Darnajoux, Postdoctoral Research Fellow, Geosciences; Katja Luxem, Ph.D. candidate, Geosciences

8. **NJ Environmental Policy: Municipal Stormwater Management**  
Matthew Ramirez '19, Ecology and Evolutionary Biology  
**Mentor:** Michael Pisauro, Policy Director, The Watershed Institute

Elizabeth Wright '19, English  
**Mentors:** Ann Hayden, Senior Director of California Habitat Exchange and Western Water, Environmental Defense Fund; Christina Babbitt, Senior Manager, California Groundwater Program, Environmental Defense Fund

10. **Expanding Princeton's Vertical Farm**  
Beimnet Shitaye '20, Mechanical and Aerospace Engineering  
**Mentor:** Paul Gauthier, Associate Research Scholar, Geosciences

11. **Improving the Yield of Edible Flowers in Vertical Farming Systems**  
Heather Waters '20, Ecology and Evolutionary Biology  
**Mentor:** Paul Gauthier, Associate Research Scholar, Geosciences

12. **Impact of Microbiome Bacteria on Plant Yield and Iron Acquisition**  
Luqman Issah '20, Chemical and Biological Engineering  
**Mentor:** Paul Gauthier, Associate Research Scholar, Geosciences

13. **Research on Mining Histories (Australia; Kiribati; Nauru)**  
Jack Lohmann '19, English  
**Mentor:** Rob Nixon, Professor of English and the Princeton Environmental Institute
14. *The Impact of Campaign Mode Vaccination on Routine Immunization* (India)
Samantha Chai '19, Woodrow Wilson School of Public and Int'l Affairs
**Mentor:** Ramanan Laxminarayan, Senior Research Scholar, Princeton Environmental Institute

15. *Potable-Water System Implementation for El Cajuil, Engineers Without Borders* (Dominican Republic)
Alexander Bechtold '20, Chemical and Biological Engineering
Nicholas Callegari '20, Mechanical and Aerospace Engineering
Dale Lee '20, Computer Science
Madison Manning '20, Chemical and Biological Engineering
Dominic Saunders '20, Mechanical and Aerospace Engineering
Jocelyn Wang '20, Mechanical and Aerospace Engineering
**Mentors:** Peter Jaffe, Professor of Civil and Environmental Engineering; Nolan Perreira, Responsible Engineer in Charge, Engineers Without Borders

**GROUP LUNCH**
Alternative Energy (9:30 am – 11:50 am)

**Moderator:** Robert Socolow, Professor of Mechanical and Aerospace Engineering, Emeritus

1. **Quality Control in Mg-Ion Battery Fabrication**  
   Anushka Dasgupta ’19, Chemical and Biological Engineering  
   **Mentors:** Craig Arnold, Professor of Mechanical and Aerospace Engineering; Kai Filsinger, Postdoctoral Research Associate, Princeton Institute for the Science and Technology of Materials

2. **Safer Lithium Batteries Through Control of Lithium Plating**  
   Rebecca Mays ’21, Chemical and Biological Engineering  
   **Mentors:** Craig Arnold, Professor of Mechanical and Aerospace Engineering; Minnie Liu, Ph.D. candidate, Mechanical and Aerospace Engineering

3. **Pedestal Predictions Using Neural Networks**  
   Jinjin Zhao ’19, Computer Science  
   **Mentor:** Samuel Cohen, Director of Program in Plasma Science and Technology, Princeton Plasma Physics Laboratory

4. **Analysis of μ Behaviors in Fusion Reactors**  
   Matthew Penza ’19, Computer Science  
   **Mentor:** Samuel Cohen, Director of Program in Plasma Science and Technology, Princeton Plasma Physics Laboratory

5. **Using PFRC Reactor Scrape-off Layer Using UEDGE**  
   Benjamin Taylor ’19, Physics  
   **Mentor:** Samuel Cohen, Director of Program in Plasma Science and Technology, Princeton Plasma Physics Laboratory

6. **Binary Transition-Metal Oxide Electrocatalysts for the Oxygen Evolution Reaction**  
   Edward Zhang ’19, Chemistry  
   **Mentors:** Bruce Koel, Professor of Chemical and Biological Engineering; Rachel Selinsky, Associate Research Scholar, Chemical and Biological Engineering; Xiaofang Yang, Visiting Research Collaborator, Chemical and Biological Engineering

7. **Understanding Contributions of Bioenergy to Mid-Century Decarbonization in the U.S.**  
   Charles Copeland ’19, Geosciences  
   **Mentor:** Eric Larson, Senior Research Engineer, Andlinger Center for Energy and the Environment
8. **Interdisciplinary Design and Analysis for High-Rate Vehicular Batteries**
   Caleb Owens ’19, Mechanical and Aerospace Engineering
   Michael Rodriguez ’20, Mechanical and Aerospace Engineering
   Hari Santhanam ’20, Electrical Engineering
   Harjot Sidhu ’19, Electrical Engineering
   Ashley Willingham ’20, Operations Research and Financial Engineering
   Fred Zheng ’19, Mechanical and Aerospace Engineering
   **Mentor:** Eric Materniak ’13, Program Manager and Engineer, Lightening Energy

9. **Functional Top Geometries of Helmholtz Resonators**
   Nick Chen ’20, Mechanical and Aerospace Engineering
   **Mentors:** Alexander Smits, Professor of Mechanical and Aerospace Engineering, Emeritus; Daniel Floryan, Ph.D. candidate, Mechanical and Aerospace Engineering; Tyler Van Buren, Lab Manager, Mechanical and Aerospace Engineering

10. **Helmholtz Resonators for Energy Harvesting**
    Alex Preston ’21, Mechanical and Aerospace Engineering
    **Mentors:** Alexander Smits, Professor of Mechanical and Aerospace Engineering, Emeritus; Daniel Floryan, Ph.D. candidate, Mechanical and Aerospace Engineering; Tyler Van Buren, Lab Manager, Mechanical and Aerospace Engineering

11. **Ensuring the Sustainability of Perovskites, a Potentially Transformative Solar Material**
    Hee Joo Choi ’21, Chemical and Biological Engineering
    Sean Gai ’20, Computer Science
    **Mentors:** Satish Myneni, Professor of Geosciences; Clay Hamill, Ph.D. candidate, Chemical and Biological Engineering; Sara Thomas, Postdoctoral Research Associate, Geosciences

12. **Energy Access Modeling (Kenya)**
    Joyce Kimojino ’19, Civil and Environmental Engineering
    **Mentors:** Mahiri Mwita, Lecturer in Princeton Institute for International and Regional Studies; Gabriel Davis, Head of Energy Access, Crossboundary; Michael Bailman, Associate Principle, Dalberg Global Advisory

GROUP LUNCH
Climate Change and Environmental Science
(9:45 am - 11:55 am)

Moderator: Ian Bourg, Assistant Professor of Civil and Environmental Engineering and the Princeton Environmental Institute

1. History of Earth Climate in the Sedimentary Rock Record (Italy; Spain)
   Celia Aranda Reina '21, Civil and Environmental Engineering
   Ona Underwood '21, Geosciences
   Mentors: Adam Maloof, Associate Professor of Geosciences; Blair Schoene, Associate Professor of Geosciences

2. Using µCT to Characterize Desiccation of Clay-Quartz Slurries
   Alexandra Cavazos '19, Chemical and Biological Engineering
   Mentor: Ian Bourg, Assistant Professor of Civil and Environmental Engineering and the Princeton Environmental Institute

3. Investigating the Effects of Cations and Salinity on Adsorption of Perfluorobutanesulfonic Acid onto Montmorillonite Clay
   Soon Il Higashino '20, Civil and Environmental Engineering
   Mentor: Ian Bourg, Assistant Professor of Civil and Environmental Engineering and the Princeton Environmental Institute

   Nye Underwood '20, Civil and Environmental Engineering
   Mentors: Ian Bourg, Assistant Professor of Civil and Environmental Engineering and the Princeton Environmental Institute; Thomas Underwood, Postdoctoral Research Associate, Civil and Environmental Engineering

5. Hurricane Storm-Surge and Wave Modeling Visualization
   Kimberly Peterson '19, Geosciences
   Mentors: Ning Lin, Associate Professor of Civil and Environmental Engineering; Reza Marsooli, Associate Research Scholar, Civil and Environmental Engineering

6. Investigation of the Dominant Seasonal Effects on the Flux of pCO₂ in the Southern Ocean
   Lilly Quach '19, Ecology and Evolutionary Biology
   Mentors: Jorge Sarmiento, Professor of Geosciences; Lionel Arteaga, Postdoctoral Research Associate, Atmospheric and Oceanic Sciences
7. **Understanding Gas Exchange Through Sea Ice Using Biogeochemical Profiling Floats**
   Udit Basu '20, Geosciences
   **Mentors:** Jorge Sarmiento, Professor of Geosciences; Seth Bushinsky, Postdoctoral Research Associate, Atmospheric and Oceanic Sciences

8. **Analyzing the 2016/2017 Southern Ocean Heat Wave**
   Sam Bartusek '20, Geosciences
   **Mentors:** Jorge Sarmiento, Professor of Geosciences; Alexander Haumann, Postdoctoral Research Fellow, Atmospheric and Oceanic Sciences

9. **Phytoplankton Growth Rate Measured by DNA Sequence Analysis**
   Elisabeth Juechser '20, Chemical and Biological Engineering
   **Mentor:** Bess Ward, Professor of Geosciences and the Princeton Environmental Institute

10. **Protein Nano-Compartments in Anammox Bacteria**
    Wesley Wiggins '21, Geosciences
    **Mentor:** Bess Ward, Professor of Geosciences and the Princeton Environmental Institute; John Tracey, Ph.D. candidate, Geosciences

11. **Communicating Solutions to Climate Change**
    Chris Chu '19, Civil and Environmental Engineering
    **Mentor:** Eric Larson, Senior Research Engineer, Andlinger Center for Energy and the Environment

12. **Understanding China’s Sustainability Efforts in New Development Plans, Natural Resources Defense Council (China)**
    Teresa Irigoyen-Lopez '19, Mechanical and Aerospace Engineering
    **Mentors:** Alvin Lin, Climate and Energy Policy Director, China Program, Natural Resources Defense Council; Hua Ning, Policy Analyst, Land and Wildlife Team, Natural Resources Defense Council

**GROUP LUNCH**
Biodiversity and Conservation (1 pm – 3:45 pm)

**Moderator:** Theresa Ong, Postdoctoral Research Fellow, Ecology and Evolutionary Biology

1. **Impact of Grazing Regimes on Rangeland Quality and Wildlife-Livestock Use (Kenya)**
   Maggie McCallister ’19, Civil and Environmental Engineering
   **Mentor:** Daniel Rubenstein, Professor of Ecology and Evolutionary Biology

2. **Buffel Grass Seed Preferences, Predation and Dispersal in Kenya Home Range by Messor Harvester Ants (Kenya)**
   Kristie Falconer ’20, Ecology and Evolutionary Biology
   **Mentors:** Dino Martins, Lecturer and Visiting Research Scholar, Ecology and Evolutionary Biology; Robert Plowes, Research Scientist, Department of Integrative Biology, University of Texas at Austin; Kennedy Saitoti, Research Assistant, Mpala Research Centre

3. **Understanding Ant-Acacia Mutualism on a Molecular Level (Kenya)**
   Maria Stahl ’20, Ecology and Evolutionary Biology
   **Mentors:** Robert Pringle, Associate Professor of Ecology and Evolutionary Biology; Rebecca Kartzinel, Assistant Professor of Ecology and Evolutionary Biology, Brown University

4. **Zebra Foraging Behavior in the Presence of Dung (Kenya)**
   Mckenna Brownell ’20, Ecology and Evolutionary Biology
   **Mentor:** Daniel Rubenstein, Professor of Ecology and Evolutionary Biology

5. **Plant Traits and Animal Diet on the African Savanna (Mozambique)**
   Madeleine Dietrich ’20, Ecology and Evolutionary Biology
   Bozhidar (Bobo) Stankovikj ’20, Woodrow Wilson School of Public and Int’l Affairs
   **Mentors:** Robert Pringle, Associate Professor of Ecology and Evolutionary Biology; Arjun Potter, Ph.D. candidate, Ecology and Evolutionary Biology

6. **Ecological Dynamics of African Herbivores During the Reintroduction of Leopards (Mozambique)**
   Isabelle Kuziel ’21, Ecology and Evolutionary Biology
   **Mentors:** Robert Pringle, Associate Professor of Ecology and Evolutionary Biology; Matthew Hutchinson, Ph.D. candidate, Ecology and Evolutionary Biology; Arjun Potter, Ph.D. candidate, Ecology and Evolutionary Biology
7. **Linking Biodiversity and Ecosystem Function in the Legume-Rhizobia Symbiosis (Panama)**
Elaine Zhou ’20, Ecology and Evolutionary Biology
**Mentors:** Lars Hedin, Professor of Ecology and Evolutionary Biology and the Princeton Environmental Institute; Trish Brandt, Ph.D. candidate, Ecology and Evolutionary Biology

8. **Teaching Assistants for Conservation Clubs (Kenya)**
Madison Eller ’20, Woodrow Wilson School of Public and Int'l Affairs
Nourhan Ibrahim ’20, Ecology and Evolutionary Biology
**Mentor:** Daniel Rubenstein, Professor of Ecology and Evolutionary Biology

9. **Site Fidelity, Residency, and Dispersal Patterns of Eastern North Pacific Blue Whales at Coastal Tagging Sites**
Taylor Machette ’20, Ecology and Evolutionary Biology
**Mentor:** Daniel Palacios, Assistant Professor of Fisheries and Wildlife, Oregon State University

10. **Drivers of Variability in Exploited Marine Fish Populations: The Case of Atlantic Cod in the Gulf of Maine**
**Mentors:** Jorge Sarmiento, Professor of Geosciences; Fernando González Taboad, Associate Research Scholar, Atmospheric and Oceanic Sciences

11. **Automation of Annotation of Baited Remote Underwater Video Surveys (Bermuda)**
Emma O’Donnell ’21, Ecology and Evolutionary Biology
**Mentor:** Tim Noyes, Research Specialist, Bermuda Institute of Ocean Sciences

12. **A Single Bird: Studying the Behavior and Life of the Greater Ani (Panama)**
Oliver Whang ’21, Undecided
**Mentors:** Christina Riehl, Assistant Professor of Ecology and Evolutionary Biology; Amanda Savagian, Ph.D. candidate, Ecology and Evolutionary Biology; Meghan Strong, Research Specialist, Ecology and Evolutionary Biology

13. **Climate Change and Plant-Pollinator Interactions in the Rocky Mountains**
Cole Morokhovich ’20, Ecology and Evolutionary Biology
**Mentor:** Cassie Stoddard, Assistant Professor of Ecology and Evolutionary Biology
14. *Acclimation Dynamics of a Tropical Coral to a Temperature-induced Disturbance Event* (Bermuda)
Amy Amatya '21, Geosciences

**Mentors:** Samantha de Putron, Associate Scientist, Bermuda Institute of Ocean Sciences; Gretchen Goodbody-Gringley, Assistant Scientist, Bermuda Institute of Ocean Sciences
Urban Adaptation and Resiliency (1 pm – 3:05 pm)

**Moderator:** Mark Zondlo, Associate Professor of Civil and Environmental Engineering

1. **Measuring and Mapping Philadelphia’s Air Quality**
   Sofia Bisogno ’20, Civil and Environmental Engineering
   **Mentors:** Mark Zondlo, Associate Professor of Civil and Environmental Engineering; Dana Caulton, Assistant Professor of Atmospheric Science, University of Wyoming; Levi Golston, Ph.D. candidate, Civil and Environmental Engineering

2. **Environmental Exposure and Child Development: Evidence from the Krogman Growth Study**
   Morgan Lucey ’19, Neuroscience
   **Mentors:** Carolyn Rouse, Professor of Anthropology; Jeffrey Himpele, Lecturer in Anthropology

3. **Visualizing Air Quality in Augmented Reality**
   Traci Mathieu ’20, Computer Science
   **Mentors:** Elie Bou-Zeid, Professor of Civil and Environmental Engineering; Maider Llaguno Municha, Postdoctoral Research Associate, Civil and Environmental Engineering

4. **Developing a Vision for a Clean-Energy Future at the Environmental Defense Fund**
   Annie Cory ’20, Woodrow Wilson School of Public and Int'l Affairs
   **Mentors:** Timothy O'Connor, Director of California Oil and Gas Program, Environmental Defense Fund; Irene Burga, Manager, California Climate and Energy, Environmental Defense Fund

5. **The Present and Future of Sport Fishing in China**
   Ellen Scott-Young ’20, English
   **Mentor:** Jake Kritzer, Director of the Fishery Solutions Center’s Diagnostics and Design Team, Environmental Defense Fund

6. **Breaking Waves on Coastal Structures**
   Anna Qin ’21, Computer Science
   **Mentor:** Luc Deike, Assistant Professor of Mechanical and Aerospace Engineering and the Princeton Environmental Institute
7. **Oil Spill by Rain Drop Fall**  
   Francis Ogoke '19, Chemical and Biological Engineering  
   **Mentor:** Luc Deike, Assistant Professor of Mechanical and Aerospace Engineering and the Princeton Environmental Institute

8. **Coastal Resiliency in Jamaica Bay, New York, NY**  
   Yolanda Jin '20, Civil and Environmental Engineering  
   Reuben Zeiset '19, Architecture  
   **Mentors:** Guy Nordenson, Professor of Architecture; Paul Lewis, Professor of Architecture; Rennie Jones, Research Specialist, Architecture

9. **NYC Pier 52/Day's End Ecological History Research**  
   Carmen Chen '21, Civil and Environmental Engineering  
   Anna Marsh '20, Architecture  
   **Mentors:** Guy Nordenson, Professor of Architecture; Gina Morrow, Guy Nordenson and Associates

10. **Urban Waste-Management with Metropolitan Waterway Network (Brazil)**  
    Yunzi Shi '20, Architecture  
    **Mentors:** Mario Gandelsonas, Professor of Architecture; Alexandre Delijaicov, Professor of Architecture and Urbanism, University of São Paulo

11. **Surf Park Sustainability Standard**  
    Nicholas Callegari '20, Mechanical and Aerospace Engineering  
    **Mentors:** Jess Ponting, Assistant Professor of Hospitality and Tourism Management, San Diego State University; Carl Kish, Program Coordinator of Center for Surf Research, San Diego State University
Founded in 1994, Princeton Environmental Institute (PEI) is the interdisciplinary center for environmental research, education and outreach at Princeton University.

PEI advances understanding of the Earth as a complex system influenced by human behavior, and informs solutions to local and global challenges by conducting groundbreaking research across disciplines and by preparing future leaders in diverse fields to impact a world increasingly shaped by climate change.

PEI draws its strength from more than 120 members of the Princeton faculty representing 26 academic disciplines, whose research and teaching focuses on the scientific, technical, policy and human dimensions of environmental issues. PEI functions as a central resource for faculty, postdocs, students, alumni and others with an interest in environmental topics.

Acknowledgements

Funding for the 2018 PEI Internship Program has been generously provided by the following supporters:

- The Barron Family Fund for Innovations in Environmental Studies
- Chan's Alternative Risk Transfer and The Lightening Energy Family of Innovative Electro Chemical Powering, Battery Ultra-Rapid Recharging and Mobility
- The Martha Ehmann Conte '85 Fund
- The Edens Family Fund for Climate Change Research
- Wesley R. Edens Fund in PEI
- Ellis '46 Fund in PEI
- Luke Evnin '85 and Deann Wright PEI Internship Fund
- Gatto Family Undergraduate Research Fund
- Carolyn and Jeffrey Leonard PEI Research Fund
- Newton Family PEI Scholars Fund
- The Ogden and Hannah Carter Fund
- Michael P.M. Spies '79 Fund
- Smith-Newton Undergraduate Research Fund in PEI
- John H. T. Wilson '56 and Sandra W. Wilson '56 Fund in PEI

Cover photo submitted by Sneha Iyer '20
STUDENT INDEX

Amy Amatya '21 .............................................................. p.13
Celia Aranda Reina '21 .................................................. p.9
Sam Bartusek '20 .......................................................... p.10
Udit Basu '20 ................................................................. p.10
Alexander Bechtold '20 ............................................... p.6
Sofia Bisogno '20 ......................................................... pp.4,14
Mckenna Brownell '20 ............................................... pp.11
Nicholas Callegari '20 ................................................ pp.6,15
Alexandra Cavazos '19 ............................................... p.9
Samantha Chai '19 ........................................................ p.6
Carmen Chen '21 .......................................................... p.15
Nick Chen '20 ............................................................... p.8
Hee Joo Choi '21 ............................................................ p.8
Chris Chu '19 ............................................................... p.10
Clare Cook '20 .............................................................. p.4
Charles Copeland '19 .................................................. p.7
Annie Cory '20 .............................................................. p.14
Anushka Dasgupta '19 ................................................ p.7
Krystal Delnoce '21 ........................................................ p.5
Madeleine Dietrich '20 ................................................. p.11
Madison Eller '20 .......................................................... p.12
Kristie Falconer '20 ...................................................... p.11
Sean Gai '20 ................................................................. p.8
Olivia Guan '21 ............................................................. p.4
Camille Heubner '20 ................................................... p.4
Soon Il Higashino '21 ................................................... p.9
Sydney Hsu '21 ............................................................. p.4
Nourhan Ibrahim '20 .................................................... p.12
Teresa Irigoyen-Lopez '19 ........................................... p.10
Luqman Issah '20 .......................................................... p.5
Sneha Iyer '20 .............................................................. p.4
Yolanda Jin '20 .............................................................. p.15
Elisabeth Juechser '20 ............................................... p.10
Nicholas Kick '20 .......................................................... p.4
Joyce Kimojino '19 ........................................................ p.8
Isabelle Kuziel '21 ........................................................ p.11
<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heather Waters '20</td>
<td>p.5</td>
</tr>
<tr>
<td>Oliver Whang '21</td>
<td>p.12</td>
</tr>
<tr>
<td>Wesley Wiggins '21</td>
<td>p.10</td>
</tr>
<tr>
<td>Ashley Willingham '20</td>
<td>p.8</td>
</tr>
<tr>
<td>Elizabeth Wright '19</td>
<td>p.5</td>
</tr>
<tr>
<td>Melissa Yuan '20</td>
<td>p.4</td>
</tr>
<tr>
<td>Matthew Yun '21</td>
<td>p.4</td>
</tr>
<tr>
<td>Reuben Zeiset '19</td>
<td>p.15</td>
</tr>
<tr>
<td>Edward Zhang '19</td>
<td>p.7</td>
</tr>
<tr>
<td>Rei Zhang '21</td>
<td>p.5</td>
</tr>
<tr>
<td>Jinjin Zhao '19</td>
<td>p.7</td>
</tr>
<tr>
<td>Fred Zheng '19</td>
<td>p.8</td>
</tr>
<tr>
<td>Elaine Zhou '20</td>
<td>p.12</td>
</tr>
</tbody>
</table>