



# Cary Institute of Ecosystem Studies

## 2020 Cary vREU PROGRAM STUDENT HANDBOOK

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## **Chapter 1 – Students, Mentors, Directors, and Staff**

### **2020 Cary REU Students**

**Victoria Martinez Mercado** - Junior - Barry University, Home:  
Mentors: Drs. Audrey Thellman and Emma Rosi

**Carissa Moore** - Junior - Rider University  
Mentors: Drs. Michelle Wong and Sarah Batterman

**John Nguyen** - Freshman - Columbia University  
Mentors: Drs. Michelle Wong and Sarah Batterman

**MyKenna Zettle** - Junior - University of Pittsburgh  
Mentor: Dr. Shannon LaDeau

**Julianna Adler-Colvin** - Junior - Marist College  
Mentors: Drs. Chris Solomon and Zion Klus

**Cassandra Roberts** - Junior - Elizabethtown College  
Mentors: Drs. David Richardson and Kathy Weathers

**Michael Moubarak** - Junior - Hamilton College  
Mentors: Drs. Barbara Han, Ilya Fischhoff, and Adrian Castellanos

**Emma Castiblanco** - Haverford College  
Mentor: Dr. Peter Groffman

**Abigail Williams** - Junior - Salem College  
Mentors: Dr. Kevin Burgio and Vicky Kelly

**Sara Herrejon Chavez** - Junior - Portland State University  
Mentors: Drs. Timon McPhearson, Elizabeth Cook, Steward Pickett, and Bianca Lopez

**Elizabeth Jurado** - Junior - University of Georgia  
Mentors: Drs. Alan Berkowitz and Kevin Burgio

**Annabelle McCarthy** - Junior - College of the Sequoias  
Mentor: Dr. Stuart Findlay

### **2020 Cary REU Mentors**

Audrey Thellman

**Victoria Martinez Mercado** (with Emma Rosi)

Emma Rosi

**Victoria Martinez Mercado** (with Audrey Thellman)

Michelle Wong  
**Carissa Moore** (with Sarah Batterman)  
**John Nguyen** (with Sarah Batterman)

Sarah Batterman  
**Carissa Moore** (with Michelle Wong)  
**John Nguyen** (with Michelle Wong)

Shannon LaDeau  
**MyKenna Zettle**

Chris Solomon  
**Julianna Adler-Colvin** - (with Zion Klus)

Zion Klos  
**Julianna Adler-Colvin** - (with Chris Solomon)

David Richardson  
**Cassandra Roberts** (with Kathy Weathers)

Kathy Weathers  
**Cassandra Roberts** (with David Richardson)

Barbara Han  
**Michael Moubarak** (w/ Ilya Fischhoff and Adrian Castellanos)

Ilya Fischhoff  
**Michael Moubarak** (w/ Barbara Han and Adrian Castellanos)

Adrian Castellanos  
**Michael Moubarak** (w/ Barbara Han and Ilya Fischhoff)

Peter Groffman  
**Emma Castiblanco**

Kevin Burgio  
**Abigail Williams** (with Vicky Kelly)  
**Elizabeth Jurado** (with Alan Berkowitz)

Vicky Kelly  
**Abigail Williams** (with Kevin Burgio)

Timon McPhearson  
**Sara Herrejon Chavez** (with Elizabeth Cook, Steward Pickett, and Bianca Lopez)

Elizabeth Cook  
**Sara Herrejon Chavez** (with Timon McPhearson, Steward Pickett, and Bianca Lopez)

Steward Pickett

**Sara Herrejon Chavez** (with Timon PcPhearson, Elizabeth Cook, and Bianca Lopez)

Bianca Lopez

**Sara Herrejon Chavez** (with Timon PcPhearson, Elizabeth Cook, and Steward Pickett)

Alan Berkowitz

**Elizabeth Jurado** (with Kevin Burgio)

Stuart Findlay

**Annabelle McCarthy**

## **2020 Cary REU Others**

### **Post Docs**

- Dr. Megan Fork
- Dr. Elsa Anderson
- Dr. Chelsey Neiman
- Dr. Isabella Oleksy
- Dr. Amanda Phillips de Lucas

### **REU Alumni**

- TBD

## **2020 Cary REU Project Directors and Staff**

- Kevin Burgio, Project Coordinator
  - (860) 230-7856
  - [burgio@ Caryinstitute.org](mailto:burgio@ Caryinstitute.org)
- Alan Berkowitz, Project Director
  - (845) 797-1590
  - [berkowitz@ Caryinstitute.org](mailto:berkowitz@ Caryinstitute.org)
- Shannon LaDeau
  - (845)677-7600 ext. 204
  - [ladeaus@ Caryinstitute.org](mailto:ladeaus@ Caryinstitute.org)
- Stuart Findlay
  - (845) 677-7600 ext. 138
  - [findlays@ Caryinstitute.org](mailto:findlays@ Caryinstitute.org)
- Felicia Keesing
  - [keesing@ bard.edu](mailto:keesing@ bard.edu)

## Chapter 2 – Program Goals and Desired Outcomes

### Student Goals

Dimension	Explanation	Specific Outcomes
• <b>Cognitive</b>	<i>Things that you know</i>	<ul style="list-style-type: none"> <li>• Core concepts, themes in ecology</li> <li>• Ecology career path options</li> </ul>
• <b>Skills</b>	<i>Skills or practices you are proficient at</i>	<ul style="list-style-type: none"> <li>• Ecology practices – core research methods - especially data inquiry</li> <li>• Translational ecology practices</li> <li>• Collaboration &amp; teamwork</li> <li>• Virtual learning and networking</li> </ul>
• <b>Social</b>	<i>Relationships they can build on</i>	<ul style="list-style-type: none"> <li>• Being a good mentee &amp; team member</li> <li>• Connections to peers, advisors, advocates</li> </ul>
• <b>Affective</b>	<i>Attitudes and feelings you have</i>	<ul style="list-style-type: none"> <li>• Interest in academic ecology (confidence, motivation)</li> <li>• Interest in translational ecology &amp; collaboration</li> </ul>
• <b>Identity</b>	<i>Your self-image and sense of belonging as a scientist</i>	<ul style="list-style-type: none"> <li>• I am a [Cary brand of] scientist/ecologist</li> <li>• I translate and apply ecology</li> </ul>
• <b>Performance</b>	<i>Tangible things you produce or do</i>	<ul style="list-style-type: none"> <li>• Cary paper, presentation, [publication]</li> <li>• Complete undergraduate degree in science</li> <li>• Pursue graduate study &amp;/or job in science</li> </ul>

### Mentor Goals

1. Contribute to mentor's research program by developing and testing new methods, collecting useful data and/or conducting valuable analyses that help advance the field.
2. Build the mentor's interest in and ability to mentor students in research and professional development.
3. Build positive relationships with young students that could continue into the future as employees, students and/or colleagues.
4. Experience the satisfaction of making a positive difference in students' lives.
5. Sustain student engagement in research networks beyond the summer program, and continue mentoring their development as scholars, researchers, and professionals.
6. Contribute to education research and our understanding of the undergraduate research experience.

### Programmatic Goals

1. Engage a diverse group of students – by race, background, type of school, career interest, and perspective - in the field.
2. Generate new knowledge on a wide array of ecological questions with a view to topics that impact a broader audience.
3. Provide innovative and effective training for a new generation of translational ecologists, prepared for the new challenges and opportunities they will encounter.

4. Contribute to our understanding of the roles that research experience and reflection play in undergraduate learning and vocational development.
5. Instill a sense of connection to Cary Institute and our approach to ecological inquiry and translational ecology.

### **Chapter 3 – Program Overview and Schedule**

## **Translational Ecology for Undergraduates**

The Cary REU program gives students the chance to design and carry out an independent research project in ecology, with the support of mentors, fellow students and the rich Institute community scientists and educators. Cary REU students contribute to the mission of the Institute through their research, with most writing papers for the Cary REU Program Scientific on-line publications, and many co-authoring peer-reviewed articles based on their work.

The Cary REU program engages students in Translational Ecology. We hope to train a new generation of environmental scientists who are both prepared and motivated to translate ecological science to the public.

The Cary Translational Ecology REU program weaves together activities in 3 strands:

### **Cutting Edge Independent Research Projects**

Working closely with a mentor scientist, students delineate a research question and hypotheses, develop and implement a project, analyze data, give an oral presentation in a formal symposium and write a paper. Skill building workshops support student learning. The bulk of students' time is spent in this facet of the program.

### **Reflective Practice and Training Activities**

Students participate in scientific writing workshops, statistics/R workshops, responsible conduct of research trainings, and sessions in different aspects of the research process. They also explore options for future work and study in ecology through workshops and the Translational Ecology in Action series of panel discussions with a diversity of professionals.

### **Translational Ecology Activities**

Students explore the translation of ecology for broad audiences through communication, education and application in a diversity of contexts. They participate in a series of Science Communication workshop, develop a small lesson for K-12 classrooms and a session about going to college for high school students in the Institute's Mid-Hudson Young Environmental Scientist (MH-YES) program, and participate in case study showcasing translational ecology in application in a real-world setting. Through the Translational Ecology in Action series they learn about how ecology is used or translates in careers from teacher and science writer to environmental activist and lawyer.

#### **Included in this Chapter are:**

- 03-1 Cary vREU 2020 Program Schedule at a Glance
- 03-2 Detailed schedule for Week 1

## **Chapter 4 – Expectations of the 2020 Cary vREU Students**

We are delighted that you will be joining the Cary Institute's community of scientists and educators as participants in the 33rd summer of our Research Experiences for Undergraduates program, this year running virtually for the first time!

The expectations for each student participating in the Institute's vREU program are as follows:

- 1) **Attendance.** The Cary vREU program is a full-time commitment, 8 hours/day, Monday to Friday, unless alternative work times are agreed upon with your mentor(s). You are expected to attend and participate actively in all required workshops, seminars, and other on-line session activities sponsored by the program. You are encouraged to participate in the 'optional' activities as well.

In case you need to miss a few workdays, it is your responsibility to get permission from your mentor(s) and inform the program coordinator as early as possible. Permission will be granted for family emergency, sudden illness, or other excused absence. Unexcused absences are not tolerated and may result in the withholding of your stipend.

- 2) **Professional Conduct.** While working on your project, you are representing the Cary Institute. As such, you are expected to behave in a professional manner at all times, regardless of whether you are here at Cary or working from home. Our standards for professional conduct of all members of the Cary community include: *i*) maintaining a positive attitude, *ii*) meeting deadlines and other commitment, exercising good time management and applying one's best efforts, and *iii*) communicating with your mentors, fellow participants, the program coordinator and all other people respectfully. The Institute does not tolerate offensive or insulting remarks or actions based on people's age, disability, sexual orientation, race, religion and belief, or political opinion.
- 3) **Program Evaluation.** Each year we strive to improve the program and to learn about the diverse outcomes from our efforts. Your help in this regard is essential. You will be asked to complete pre-program, mid-summer and three post-program surveys (including the URSSA SALG required of all Biology REU program participants, and an anonymous Cary REU survey). These will be completed on-line. You also might be asked to participate in an interview. You also will be contacted each year after your participation for updates about your activities, and asked to complete an alumni survey periodically. In addition, we are participating in an evaluation effort in 2020 along with other virtual REU sites to assess the special circumstances of at-home engagement. All students are expected to participate fully in these assessment efforts in a thoughtful, frank and timely manner.
- 4) **Mentor-mentee contract.** By the end of your first week at Cary, you and your mentor(s) will fill out and sign a mentor-mentee contract to facilitate communications and align your expectations. You and your mentor(s) should keep a copy of the contract and submit one to the program coordinator.

A few weeks into the program, but no later than June 19, you and your mentor(s) will revisit the contract and reflect on the quality of your mentor-mentee relationships so far. You will edit the contract as appropriate and send an updated version of the contract to the program coordinator.

Activities and products for the 2020 Cary vREU program are organized into four components: I. Research Projects, II. Professional Development and Training, III. Translational Ecology and IV. Social Activities. Specific expectations of REU students are described for each of these components in the following sections.

## **I. Research Project Expectations**

- 5) **Research Proposal and Presentation.** A short research proposal (5 pages maximum) will be submitted to your mentor and the program directors by June 5. You also will receive feedback from another Cary REU student and a Cary scientist, different than your mentor(s). In your proposal, you will present the general ecological context and specific questions or hypotheses addressed by your research. Important references will be included. The planned methods will be described and expected results discussed briefly, using graphs where appropriate. The purposes of the proposal are to help you formalize your ideas, to facilitate feedback, and to give you a head start on writing your final paper. Guidelines for preparing your proposal, and for peer review of one of your fellow student's proposal, are included in Chapter 7 of the Student Handbook. Each student will give an informal presentation about their research plans to their Research Group (2 other students and their mentors) to get feedback before submitting the written proposal. Guidelines for this session are included in Chapter 7 of the Student Handbook.
- 6) **Research Symposium.** Each student will present a 12-minute formal talk about her/his research at the final virtual Undergraduate Research Symposium, tentatively scheduled for Wednesday and Thursday, August 5 and 6. Guidelines are provided in Chapter 7 of the Student Handbook.
- 7) **Final Research Paper, Data and Metadata.** Each student will submit a paper based on her/his summer research by the end of the summer program. Guidelines for the paper are included in the Student Handbook. Additional support for writing the paper will be provided over the course of the summer from your mentor(s), the Research Group you will participate in, and in a series of writing workshops. Papers of suitable quality might be posted on the [Cary REU program scientific publications](#) website. You are encouraged to seek independent study credit for your work in the program; the research paper should be helpful in this regard. Your mentor and/or the program directors can assist you in setting this up by explaining the rigor and nature of the papers to the appropriate professor at your college. In addition to submitting your completed paper before at the end of the summer (August 7, 2020), you will be expected to provide all your data and appropriate metadata to your mentor(s) as well. Instructions for meeting the data and metadata expectations are included in the Student Handbook, and support will be provided during the program.

## **II. Professional Development and Training Expectations**

- 8) **Research Methods Training.** Workshops will be offered periodically during the summer to support your development of research skills. In addition, the 2020 Cary REU students will conduct a cross-site Field Study of their own design over the course of the summer, coordinated by Alan Berkowitz. This will allow them to develop skills in study design, data collection, field work and data analysis. You will share a profile your home environment (My Place Profile) with the group to help plan the Field Study, and then work together to design an investigation that can be completed with a modest amount of time and effort during the summer. A report summarizing the results of the Field Study will be submitted near the end of the program. All students are expected to participate in the study and contribute to the report. More details about this project are included elsewhere in the Student Handbook.

- 9) **Data Inquiry.** Kevin Burgio will coordinate a series of workshop and small group meetings offered by Cary Institute Post Docs and others to support students in developing strong skills in working with data. Students will complete an auto-tutorial Data Carpentry training and receive a certificate upon completion.
- 10) **Writing Workshop.** Shannon LaDeau will coordinate a workshop to develop your skills in scientific writing and communicating to science audiences. Your proposals, papers and presentations are the fruits of these activities.
- 11) **Other Training.** The following additional trainings will be provided during the summer.
  - a. Exploring graduate school and careers in ecology. There will be at least one workshop where graduate students and ecologists at different career stages share insights and discuss options and strategies with the REU students. The Translational Ecology in Action series of panel discussions provides additional insights into a diversity of careers in the field.
  - b. Ethics and Responsible Conduct of Research (RCR). Students complete an auto-tutorial training in RCR, tailored to working in ecology, and receive a certificate upon completion.
  - c. Safety Training. Students are required to complete a handful of short on-line trainings in safe work practices. Each results in a certificate of completion.
  - d. **Scientific Seminars.** There will be occasional seminars and public lectures over the course of the summer that are optional. While not primarily an REU program, your attendance is highly recommended. More information will be provided when it is available.

### III. Translational Ecology.

- 12) **Translational Ecology Sessions.** All students are expected to participate in a series of activities designed to explore the opportunities and challenges of translational ecology. These fall into the following strands. More information about each is available elsewhere in the Student Handbook.
  - a. **Science Communication (SciComm)** workshops. Lori Quillen and Erin Frick from the Cary Public Information office will offer a series of workshops to help you develop skills in translating ecology for public audiences. You will produce Elevator Pitches and either a blog or press release about your research as part of this series.
  - b. **Ecology Education.** Cary Education Staff and teachers from the Mid-Hudson Young Environmental Scientists (MH-YES) program will provide a brief introduction to K-12 education, and then support for REU students working in pairs to develop a Data Nugget based on data from their mentors' research for use by K-12 students and teachers. The first draft will be due July 17 and the final version on July 31.
  - c. **Application.** Students will participate in a Case Study and a four-part series of Translational Ecology in Action panels to explore how ecology is translated through application to environmental challenges and management in a range of professions and contexts. Students will respond to reflective writing prompts following each session, and will write a Personal Statement Forum on Translational Ecology at the end of the summer to summarize and synthesize their understanding and expertise in this arena.

### IV. Social Activities

- 13) **Tea Time with Kevin, Alan and Invited Guests.** Kevin Burgio and Alan Berkowitz will be available for a late afternoon (east coast time) informal gathering every Thursday. Each week will focus on a different theme identified by the group, while also providing an opportunity for open discussion on any topic. A guest from the Cary community will be invited to join us each week, and students in the UWIN Undergraduate Research Program (URP) might join us as well.
- 14) **Flavor of the Week.** We invite you to organize seminars during the summer in the spirit of the

Flavor of the Week program held in previous years on campus. This has been an evening program (usually 7 PM, and ideally on the same evening each week) with formal or informal science seminars and/or natural history or travel talks. REU students invite speakers and since we are virtual this year, can draw on presenters from anywhere in the world. While we won't be able to offer the speaker's choice of ice cream (hence, the name of the program), we can provide the speaker a small honorarium if appropriate.

- 15) **Informal social time.** Cary REU students are welcome to use the program Zoom and/or Slack for informal get-togethers and networking .

**Schedule of Deadlines:**

May 20	Program begins Complete pre-program survey
May 22	Mentor/Mentee Contract
May 26	My Place Profile shared with group
May 29	Safety, RCR Training completed
June 1	Field Study Plan due
June 1-3	Informal sharing of research plans with other REU students in their Research Groups
June 5	Written research proposals due
June 12	Peer review of another student's proposal completed
June 19	Revised Mentor/Mentee Contract
July 1???	Introduction and M&M sections due to mentors
July 17	Data Nugget draft 1
July 19 (approx.)???	Results section due to mentors
July 24	Research paper draft 1
July 31	Data Nugget final Translational Ecology – Personal Statement Field Study report
August 4	Draft of Symposium presentation due to mentors
August 5-6	<b>Final presentation in Undergraduate Research Symposium</b>
August 7	Last day of REU summer program Complete post program surveys (3) Submit final paper, data and metadata to mentor(s)

## **Chapter 5 – Supporting the Cary vREU Students**

Here are details for financial and other forms of support for students in the 2020 Cary vREU program.

- 1) **Stipends.** Students in the 2020 vREU program receive stipends in three categories:
  - a. Participation stipend - \$6,600 (\$550/week of participation),
  - b. Food stipend of \$900 (\$75/week)
  - c. Housing stipend of \$900 (\$75/week).

Students will receive six checks of \$1,400 issued to coincide with the regular bi-weekly pay periods of the Cary Institute. Students receive no worker's compensation, have no medical insurance, and have no withholding for taxes or social security. Students (and the IRS) will receive a 1099 form reporting the stipend payments made to you. Students are responsible for paying any taxes they might owe on the stipend, and for their own health insurance coverage. Students will receive their final stipend check only after they submit their research paper, data, metadata, other final assignments, and post-program surveys.

- 2) **Research support.** You now are part of the Cary Institute research community. Mentor scientists and staff are available to support you in performing your research. You are encouraged to communicate with them!
- 3) **Monies for research.** We have a pool of funds averaging \$100 per student for research-associated expenses. You will have an opportunity to request the funds you need from this pool in your research proposal. Mentors sometimes can provide additional research funds if needed and available, but check with them before planning your research expenses.
- 4) **Work station set-up support.** Your success in the program depends on having a suitable work station, computer, software and internet connection, Please let us know if you need anything in this regard and we'll do our best to help.
- 5) **Personal and Mental Health support.** We understand that we find ourselves in a very stressful time and we value your health and safety above all else. If you find that you are struggling with your mental health, we encourage you to reach out to us – your mentor(s), Kevin Burgio or Alan Berkowitz - in addition to seeking professional help. Below, we provide contact information and some free mental health counseling services.

If circumstances, such as personal issues, new responsibilities at home, or your physical health are affecting your ability to work, we encourage you to let us know.

***Any information you share with us is confidential and will only be shared with other administrators on a need-to-know basis.***

### **Contact information:**

- If you are experiencing a medical or mental health emergency, please call 911.
- Kevin Burgio - (860)-230-7856
- Alan Berkowitz – (845) 797-1590
- Crisis Text Line: Text “CONNECT” to 741741 to text with a live crisis counselor
- National Suicide Prevention Lifeline: 1-800-273-8255
- Cary Employee Assistance Program (TBD)

RESEARCH EXPERIENCE FOR UNDERGRADUATES  
SCIENCE MENTORING CONTRACT

**Mentee's name:**

**Mentors' name:**

This contract is intended to serve as a guide to facilitate communications between a trainee (mentee) and his/her mentors. Please review this document, **first individually then jointly**, paying particular attention to concerns and challenges for interacting virtually over the course of the summer program. Discuss each person's answers to reach an agreement. The mentee should re-write the agreed upon answers before the contract is signed and dated by him/her and each mentor. **Mentee and mentor(s) should each keep a copy of the contract. A copy should be sent to the program coordinator ([burgio@caryinstitute.org](mailto:burgio@caryinstitute.org)) by Friday May 22.**

A few weeks into the program, but no later than June 29, the mentee and mentor(s) will revisit the contract and submit an updated version of the contract to Kevin.

1. What specific learning goals does the mentee have for her/himself this summer? Complete the right hand column in the table of learning goals at the end of this form.
2. What type of assistance does the mentee want from the mentor in achieving their career goals over the next 1-3 years? Where does the mentee hope their career will have taken them in five years?
3. What expectations do the mentor(s) have of the mentee?
4. What expectations does the mentee have of the mentors?
5. How often will you meet?
6. How and where will you meet?
7. For how long?

8. Who will be responsible for scheduling the meetings?
  
9. What will the meeting topics include?
  
10. What will be the ground rules for discussions? (e.g., confidentiality, openness, candor, truthfulness, etc.)
  
11. If problems arise, how will they be resolved?
  
12. Any concerns the mentee wants discussed and resolved?
  
13. Any concerns the mentors want discussed and resolved?
  
14. How will you know when the mentoring relationship has served its purpose and needs to be brought to a close?
  
15. We have agreed that our initial meetings will focus on these three topics:
  
16. Any additional areas/issues you want to discuss and agree to?

Mentee Signature \_\_\_\_\_ Date \_\_\_\_\_

Mentor Signature \_\_\_\_\_ Date \_\_\_\_\_

Mentor Signature \_\_\_\_\_ Date \_\_\_\_\_

Cary REU 2020 – Student Learning Goals

<i>Dimension</i>	<i>Explanation</i>	<i>Specific Outcomes</i>
● <i>Cognitive</i>	<i>Things that you know</i>	
● <i>Skills</i>	<i>Skills or practices you are proficient at</i>	
● <i>Social</i>	<i>Relationships you can build on</i>	
● <i>Affective</i>	<i>Attitudes and feelings you have</i>	
● <i>Identity</i>	<i>Your self-image and sense of belonging as a scientist</i>	
● <i>Performance</i>	<i>Tangible things you produce or do</i>	

## **Chapter 7 – Student Research Projects**

**Overview.** Under the guidance of one or two scientific mentors, each Cary REU student performs an independent research project of her or his own design. From discussions with other REU Site Directors it is clear that the independence we give our students in formulating their own research questions is unusual among REU programs in biology. Students do not work in a vacuum, but rather receive a great deal of support and guidance from their mentors and other scientists, post docs, graduate students and research staff. The length of our program (12 weeks versus the more typical 10), our philosophical convictions concerning teamwork and mentor-student relationships, and the proven success we've had in the past all support this approach.

Once students delineate a research question and associated hypotheses, they select appropriate methods and develop a research plan that is presented informally to fellow students and mentors at the end of the second week to receive constructive feedback. A written proposal is completed by the end of the third week that is reviewed by their mentor(s), a non-mentor scientist and a fellow REU student. Students implement and complete the project on their own, ending with analysis and report writing.

Students write abstracts and give a 15 minute presentation in a formal Undergraduate Research Symposium in the final week. Plans are underway to assure a large and diverse audience for the virtual final symposium. Students complete a draft of their research papers at the end of the 10<sup>th</sup> week, receive feedback from their mentor(s) and peers and produce a final paper by the end of the program. Students will have the option to submit their paper to the online Cary REU Program scientific publications edited by the Project Directors. This publication not only gives our students experience in seeing their work carried to completion, but also is useful in promotion and recruitment. Many students present their research at local or national conferences, and some go on to submit their work for peer reviewed publication.

### **Supporting Documents**

- 7-1 – Guidelines for Presentation of Research Plans
- 7-2 – Guidelines for Research Proposals
- 7-3 – Peer Review Guidelines (*coming soon*)
- 7-4 – Guidelines for Research Paper
- 7-5 – Cary style for paper format
- 7-6 – Guidelines for submission to Cary on-line publication
- 7-7 - Guidelines for Metadata (*coming soon*)

## **Chapter 9 – Translational Ecology**

### **Overview**

Students explore the translation of ecology for broad audiences through communication, education and application in a diversity of contexts. They participate in a series of Science Communication workshops, develop a small lesson for K-12 classrooms and a session about going to college for high school students in the Institute’s Mid-Hudson Young Environmental Scientist (MH-YES) program, and participate in case study showcasing translational ecology in application in a real-world setting. Through the Translational Ecology in Action series they learn about how ecology is used or translates in careers from teacher and science writer to environmental activist and lawyer.

#### Schedule:

<b>Week</b>	<b>starting</b>	<b>Application/ Synthesis</b>	<b>Communication (SciComm)</b>	<b>Education</b>	<b>Assignments</b>
1	May 20	22: Discussion: Translational Ecology (Berkowitz)			Readings
2	May 25		26: Workshop 1: Intro to science communication for public audiences (Quillen, Frick)		Complete SciComm survey.
3	June 1			Workshop 1: Ecology learning, standards, college panel planning (Alred, Berkowitz)	
4	June 8	Panel 1			TE Reflections
5	June 15	Case Study 1			
6	June 22	Panel 2	Workshop 2: Science storytelling		Plan SciComm Project TE Reflections
7	June 29	Case Study 2		Workshop 2: Classroom Realities and Data Nugget planning; college panel planning (Forster, Berkowitz, RETs)	TE Reflections Draft Elevator Pitch for SciComm session 3 (7/14).
8	July 6	Panel 3			TE Reflections
9	July 13		Workshop 3: Elevator pitches (Quillen, Frick)		Plan for Going to College Panel
10	July 20	Panel 4		Panel for MH-YES students: Going to College! (REU students)	Data Nugget draft 1 TE Reflections
11	July 27	Discussion: TE wrap up (Berkowitz)		Pilot test Data Nuggets with MH-YES students	
12	August 3				

Products:	1. Reflective Essays/journal entries 2. Personal TE Statement	Elevator Pitch Science Stories (written) SciComm Project (blog, op-ed, etc.)	Data Nugget	
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**2020 Cary REU Program****GUIDELINES FOR PERSONAL TRANSLATIONAL ECOLOGY STATEMENT**

As a way of synthesizing what you've learned and accomplished as a translational ecologist and researcher over the summer, we would like you to produce a short (about one page) Translational Ecologist Statement. The statement should be written for prospective employers and/or graduate school mentors, and hopefully will be useful to you in your future pursuits as a way of highlighting your strengths in this cutting-edge approach. The statement should summarize and explain your knowledge and skills in translational ecology. It should explain your actual experience in doing translational ecology and your interest in continuing translational ecology in your career. You might consider including things you've learned about yourself as a mentee, collaborator, and team member from your Cary REU experience, including your research project, the workshops in science communication and education, and TE panels. Feel free to refer to the Student Handbook chapter on translational ecology.

The timeline for producing your statement is quite simple:

- July 20th – we will dedicate time to share preliminary ideas about your statements.
- July 24th – the first draft of your statement is due
- July 29th – you will share your draft Statement and receive feedback from other students. We also hope to arrange for feedback from a senior Cary scientist for each statement.
- Aug 7th – the final draft of your statement is due.