

New York State 4-H CAREER EXPLORATIONS CONFERENCE

2019 Program Facts

Quick Details

Dates: June 25-27, 2019

Location: Cornell University

Arrival: 10 AM – 12:00 PM on June 25

Departure: 2:30 PM on June 27

Cost: \$260 per youth and \$260 per chaperone

Registration: Opens April 1, closes June 1

Program Tracks:

University U: teens entering 8th – 9th grades

Focus for Teens: teens entering 10th grade & up

Hello everyone!

I'm excited to share information for this year's 4-H Career Explorations! Career Ex is a great opportunity for you to experience life at Cornell, explore how your 4-H projects can lead to careers, and meet new friends!

I'd especially like to thank our great team of Educators, Volunteers, and Focus Assistants helping to plan and make this event happen.

Please read carefully through these Program Facts to decide how you will participate. Registration is online and needs to be completed by your county 4-H Educator.

I hope to see you at Cornell this June!

Alexa Maille

NYS 4-H STEM Specialist

4-H Career Explorations Event Coordinator

What's Inside

Quick Details	1
General Information	2
General 4-H Career Exploration Program Policies	2
Preparing for the Conference	3
While you're on Campus	3
Program Descriptions	5
Focus for Teens	5
A Tour of Human Development Across the Lifespan	5
Blue Jeans: Creation to Reuse	5
Cardiac Engineering: At the Heart of It All	6
Chemical Engineering:	
From Tiny Particles to Giant Explosions	6
Discover Astronomy	6
Fossil Collecting and the Science of Paleontology	7
I've got something to tell you...Podcasting	7
Learning to Program Robots with Roibu	7
Maps, Apps, and Drones: 4-H Geospatial Exploration	7
Media Corps	8
Rockets, Boats, and Robots	8
Science and Animals Grow Here	8
So you want to be a Food Scientist?	9
Women in Science	9
University U	10
Breathing Life into Robots	10
Build Your Own Genetic Circuit	10
Dig It: Art, Archaeology and the Afterlife	10
Nutritional Artist	10
Our Changing Menu: Climate Science & Food	11
Polymer Mechanics	11
Exploring Nanotechnology	11
Overall Event Schedule	12



General Information

The 4-H Career Explorations Conference is made up of two program tracks – **University U** (for those entering 8th & 9th grade) and **Focus for Teens** (those entering 10th grade and up). Teens choose the grade appropriate program and then Focus participants select three Focus programs they are most interested in exploring.

- **University U:** Participants will be introduced to Cornell's campus through campus tours and participating in six different departmental workshops that will expose participants to a wide variety of topics. Youth will be randomly assigned to these UU programs.
- **Focus for Teens:** This is a more intense program where participants spend 3 days with a specific Department. Returning Focus for Teens participants should not apply to the same department program they attended in previous years. See program listings for more details.

General 4-H Career Exploration Program Policies

Behavior: Everyone (youth and adults) is expected to create an inclusive and welcoming environment at Career Explorations and respect the diversity of conference participants (e.g. race, religion, sex, sexual orientation, cultural background, etc.). Everyone will be expected to uphold the NYS 4-H Code of Conduct. All youth and adults are expected to model appropriate behavior and follow guidelines stated on the 4-H Career Exploration registration form. In addition, all Cornell property and Cornell program presenters should be treated respectfully. Delegates acting inappropriately will be sent home at their cost/inconvenience.

Please Note:

- Adult chaperones will have the authority to make decisions in the absence of a County 4-H Educator if necessary. Focus Assistants should be involved in decisions about the group as appropriate.
- Chaperones will be expected to intervene in any situation that violates the rules of the event or the basic rights of others, including with youth from other counties. Any problems with youth from other counties should be dealt with immediately and then reported to the appropriate chaperones, Chrys Nestle, John Bowe and Alexa Maille.

Eligibility: The 4-H Career Explorations Conference is open to all NYS youth in grades 8-12. Registrations are handled through your local county Cornell Cooperative Extension (CCE) 4 H program. CCE County Associations have varying policies about participation in 4-H events, and not all counties participate in 4-H Career Explorations. The NYS 4-H Office encourages CCE Associations to invite all teens involved in their programs to participate in Career Ex.

Program Evaluation: Conference participants will be asked to help us learn about the program effectiveness by completing a survey or sharing their reflections. Participation in program evaluation efforts is completely anonymous, voluntary, and there is no impact on program participation if someone decides not to complete a survey. A participant, parent, or guardian may withdraw consent at any time and a participant may refuse any survey request at any time. Parents and participants give or deny their permission to participate in program evaluation efforts by completing the Permission Slip.

Other policies:

- Most youth will be assigned a double-occupancy room. Youth cannot switch rooms. Roommates requested on registration forms will be assigned when possible. Participants are responsible for damages that occur to the room during their stay.
- Any disturbances or emergencies should be reported to a chaperone.
- Alcohol, tobacco, and other drugs are strictly prohibited.
- Parents of disruptive participants will be notified & participants will be sent home at parents' expense.
- Participants must be in the dormitory by 10:00 p.m. Lights out and strict quiet hours begin at 11:00 p.m.
- Photos taken during the program may be used to promote 4-H Youth Development.

Preparing for the Conference

Registration: Participants must register with the local 4-H Youth Development program through your county Cornell Cooperative Extension Office. Registration opens in March and will close June 1 or when programs are full, whichever happens first. This can occur before June 1. Counties will be billed directly for the registration fee and any additional room and board fees as appropriate.

Cost: \$260 per participant to cover room, board, and program fees. Early Arrival/Late Departure costs: Double Room per night - \$32.00, Single Room per night - \$40.00, Breakfast: \$8.65, Lunch: \$12.60, Dinner: \$16.25. Scholarships are competitive but available. Please note: transportation to and from the event is at the participant's own expense. Some CCE Associations charge additional fees to cover transportation & chaperone expenses.

Scholarships: Scholarship applications are due at the time of registration, or no later than May 1. To apply for a full or partial youth scholarship, please complete the scholarship section of the Registration Form. Scholarships are limited and will be awarded to qualified applicants through a competitive review process. Scholarship applications must be approved by a county 4-H Educator.

Early Arrival: Please indicate your needs on the registration form if your county plans to arrive on campus early. See costs above. Teens arriving early must have a chaperone (we provide chaperones for Focus Assistants). Contact Alexa Maille, ask37@cornell.edu, to make special arrangements.

Chaperones: Counties are expected to provide chaperones in about a 1 to 6 ratio for teens attending. Chaperones may be shared with other counties. Every participant must have a designated chaperone. The state office needs to know about multi-county groups that need to be housed together. The chaperone registration fee is the same as for youth. Chaperones will be expected to supervise youth from other counties during program times and while supervising evening social activities.

Lead Educator: Each Association is expected to have a Lead Educator designated as your group's main contact, for volunteer supervision, and for crisis and incident management. Lead Educators may be from your Association or another Association.

Cancellation Policy: Cancellations prior to June 11 will not be charged. Cancellations after June 11 will be billed a \$100.00 cancellation fee. Same gender, same program replacements are allowed, but need to be registered before arrival at the conference. No-shows will be charged in full.

Chaperone and Participant Orientation: The Delegate Handbook will be available online by early June. All chaperones and participants should review the new handbook prior to coming to Career Explorations. We strongly encourage 4-H Educators to hold an orientation meeting to review this information before coming to campus.

While you're on Campus

Check In: Your delegation needs to arrive between 10:00 a.m. and 12:00 p.m. on Tuesday, June 26. There are lots of great things to do and see on campus should you arrive early. The delegate handbook will include a listing.

Parking: There is NO PARKING on central campus during the event. Association and personal cars must be left at Cornell Conference lot (CC). Vehicles with "official" plates may park on campus in eligible parking spaces without additional fees being assessed. Parking permits will be available for the CC Lot at registration. If you are in need of handicap parking, please notify the state office in advance.

Dormitory Housing

- Chaperones should check rooms upon arrival, noting damages or defective appliances.
- Please use hair dryers in the bathrooms only.
- Linens are provided with rooms including sheets, pillow and pillowcase, one blanket, one towel, one washcloth, and soap. Participants will be asked to make their own beds.
- Participants will have to supply their own towel for the pool.
- Participants may want to bring an alarm clock and a fan.
- If there are problems with the rooms (i.e. light bulbs burnt out), contact staff immediately so that problem can be resolved or noted.
- Youth need to be careful not to lock themselves out of their dorm rooms. Doors close and lock automatically.

Telephones: There are no phones in the dorm rooms. Do not use cell phones during program times unless it is part of the program or an emergency.

Safety: Even though Cornell has a rather tranquil setting, be assured that serious crimes can and do occur along its pleasant footpaths.

- Youth should never walk alone anywhere on campus at any time.
- Dorm doors should be locked at all times.
- Under no circumstances should youth leave the dorm at night.
- The Safety Division's (Cornell police) phone number is 607-255-1111.

Emergencies: Chaperones will receive a list of campus emergency numbers during orientation.

Free Time/Recreation: Some participants may wish to arrive early to meet with Cornell admissions and/or tour the Cornell campus (see handbook for where assistance in arranging tours is available). During evening free time on Tuesday and Wednesday nights, there will be several options for recreation including: a movie, swimming and bowling, billiards, outdoor games, and more. There will also be a quiet lounge open for reading and silent relaxation. During free time activities, chaperones will be assigned to supervise one of the free time activities. If you so choose, you may bring items such as Frisbees, soccer balls, footballs, etc. to use during free time outside, as there is plenty of space for outdoor activities. Evening activities are offered as a time to meet people from around the state. All participants are expected to participate in some form of evening activity with adult supervision and should not be in the dorm before 9:00 pm. If a youth needs to go to the dorm for any reason they need to be accompanied by an adult.

Curfew: It is required that all delegates (youth and adults) follow the following schedule.

- | | |
|------------|--|
| 9:00 p.m. | Dorms open to youth with their chaperones. |
| 10:00 p.m. | 4-H Career Exploration programs end. Everyone inside dorms |
| 11:00 p.m. | Settled in assigned rooms and lights out and phone off. |

To have the best possible experience at Career Explorations, youth should be getting at least 8.5 hours of sleep.

Campus Transportation: A 4-H Focus Assistant will escort participants to their program or bus pickup every morning. Be on time and prepared to walk about 15-20 minutes to your program destinations. Program gathering and departure times will be listed in the Delegate Handbook within the itineraries for each specific program. Please be aware departure times may vary for specific programs. If there are special transportation needs, please be sure to notify Alexa Maille in advance of the 4-H Career Explorations Conference. Walking is a part of the college experience at a large world-class university like Cornell. Enjoy the beautiful campus and get some healthy exercise - so wear sneakers or comfortable walking shoes!

Program Descriptions

Focus for Teens

Title: *A Tour of Human Development Across the Lifespan*

Cornell Department: Bronfenbrenner Center for Translational Research, College of Human Ecology

Maximum Number of Youth Accepted: 20 **Minimum Number of Youth Needed:** 10

Description

Are you interested in understanding how people learn, grow, and thrive? In this program, you'll explore the phases of human development ranging from infancy to older adulthood. You'll meet faculty, students, and professionals in the field and gain first-hand experience with the many techniques they use to study human behavior.

Packing Suggestions None

Title: *Blue Jeans: Creation to Reuse*

Cornell Department: Fiber Science & Apparel Design

Maximum Number of Youth Accepted: 15 **Minimum Number of Youth Needed:** 12

Description

This program will start with pocket loom weaving and indigo dyeing, consider environmental impacts of "wear" methods, and evaluate denim strength using laboratory equipment. It will then move to exploration of old jeans can be reused or upcycled. You will weave, dye, use textile laboratory equipment, and use industrial sewing machines.

Packing Suggestions A pair of discarded blue jeans, their own or anyone else's.

Title: *Cardiac Engineering: At the Heart of It All*

Cornell Department: Department of Biomedical Engineering

Maximum Number of Youth Accepted: 15 **Minimum Number of Youth Needed:** 12

Description

You will learn how engineering principles abound in biology and medicine and learn how these principles can be applied to create new, cutting-edge cardiac therapies. You will rotate through stations led by graduate students where they will get to grow chick embryos, learn about cell behavior and cardiac anatomy, learn how imaging technologies are used in medical research, and learn how three-dimensional printing can lead to custom-built heart valve replacements.

Packing Suggestions Closed-toed shoes; no flip-flops or open shoes in the laboratory

Title: Chemical Engineering
From Tiny Particles to Giant Explosions

Cornell Department: Chemical and Biomolecular Engineering, Alabi Research Group

Maximum Number of Youth Accepted: 15 **Minimum Number of Youth Needed:** 10

Description

Ever wonder how computer chips are made? Or what makes ice cream so good? Or how antibiotics work? Chemical engineers explore these phenomena every day to try to solve problems with modern day medical challenges and the creation of specialized materials. In our laboratory, come explore how nanoparticles and polymers can be used to improve drug development and materials. You will make nanoparticles and polymers and explore their material and biological applications. We will also discuss the diverse set of careers for chemical engineers, ranging from the petroleum industry, to healthcare, to microelectronics, and even the food industry.

Packing Suggestions Since we will be working in a lab, please wear closed-toe shoes

Title: Discover Astronomy

Cornell Department: Astronomy, CCAPS

Maximum Number of Youth Accepted: 15 **Minimum Number of Youth Needed:** 10

Description

Thinking of going into a STEM career? Like space? Come and learn about the wonders of our universe, from distant galaxies to planets near and far. Find out how studying Astronomy paves the way to many STEM careers!

Packing Suggestions Notebook and pencil or pen

Title: Fossil Collecting
and the Science of Paleontology

Cornell Department: Paleontological Research Institution and the Museum of the Earth

Maximum Number of Youth Accepted: 10 **Minimum Number of Youth Needed:** 5

Description

Discover the science of paleontology by learning about NY state fossils and its geology as you explore a research collection, discover museum exhibits, and collect fossils of your own. This program will lead youth through each step from collecting to curating as the youth build their knowledge and their own fossil collection.

Packing Suggestions We recommend clothing to protect 4-Hers from ticks and sun. Long sleeves and pants with closed-toed shoes. This is mostly needed on Wednesday for our field trip.

Title: I've got something to tell you...
Podcasting 'live' from Career Explorations 2019

Cornell Department: CALS Cooperative Extension

Maximum Number of Youth Accepted: 15 **Minimum Number of Youth Needed:** 5

Description

During this session, we will create a new podcast highlighting 4-H and youth at work across New York state. Learn the basics of creating a podcast including tools, and techniques you can use to create unique audio stories. During the course of Career Explorations we will record , produce and post several podcast episodes.

Packing Suggestions None

Title: Learning to Program Robots with Roibu

Cornell Department: Computer Science

Maximum Number of Youth Accepted: 12 **Minimum Number of Youth Needed:** n/a

Description

This program is designed for students with no programming experience. Using a simple drag-and-drop programming environment, students will program our robot, Roibu, to solve puzzles. In the process, students gain computational thinking skills and learn about career paths in computer science and robotics.

Packing Suggestions None

Title: Maps, Apps, and Drones:
4-H Geospatial Exploration

Cornell Department: Soil and Crop Sciences, IRIS, 4-H Geospatial Science and Technology Program

Maximum Number of Youth Accepted: 15 **Minimum Number of Youth Needed:** 10

Description

Global Positioning Systems, Geographic Information Systems and Satellite remote sensing are all ways of exploring your world. Hands-on and feet-on activities will provide you with experiences to understand how technology is used to make maps. Geospatial science and technology, including drones, are exciting new areas for careers.

Packing Suggestions walking shoes, wet weather gear

Title: Media Corps

Cornell Department: University Communications

Maximum Number of Youth Accepted: 18 **Minimum Number of Youth Needed:** n/a

Description

Participants will see what we offer through University Communications on a Studio Tour. We will explore audio work, radio, and video. Time will be provided to work as a team. We will go over editing styles, producing footage, lighting, camera techniques, and then have time for everyone to work on 3-minute videos which can be uploaded to NYS 4-H's YouTube channel. You may be filming in multiple places around campus so be ready to walk around. Participants are encouraged to bring their own devices to learn how to use these skills at home. This is a great training opportunity for youth interested in the State Fair Media Corps.

Packing Suggestions Smartphones, tablets, or iPods if available, and the USB cord that connects with it. If you don't have your own equipment, you will be able to share with someone else. Walking shoes.

Title: Rockets, Boats, and Robots

Cornell Department: Mechanical and Aerospace Engineering, SiGMA

Maximum Number of Youth Accepted: 25 **Minimum Number of Youth Needed:** 10

Description

Expand your knowledge and appreciation for engineering problem solving through hands-on activities. You will learn about pneumatic systems and dynamics by constructing robots, investigate flight dynamics by building and launching rockets, and engage with fluid mechanics by conducting experiments and designing water craft.

Packing Suggestions Bring appropriate clothing for both indoor and outdoor activities. Closed-toed shoes are required.

Title: Science and Animals Grow Here

Cornell Department: Animal Science Department

Maximum Number of Youth Accepted: 25 **Minimum Number of Youth Needed:** 10

Description

You will build personal and professional skills and gain an understanding of the exciting field of animal science. Together we will visit several diverse animal facilities on campus to gain hands-on skills and knowledge in animal health and well-being. You will also interact with experts in the field during workshops.

Packing Suggestions Wear close-toed shoes (no sandals, flip-flops, high heels, etc.) and do not wear shoes or boots that may be soiled from another animal facility. Sneakers are acceptable as long as they are clean. Disposable plastic booties will be provided when needed. Be prepared to be outside regardless of the weather (may need raincoat, etc.) Youth with allergies to animals (fur, dander, etc.), or other environmental allergens commonly found on farms (dust, hay, straw, etc.) should either be prepared (if the allergy is minor) or consider another program (if the allergy is severe). Youth should also wear clothing that they don't mind dirtying. Students with mobility challenges should notify the program leaders as soon as possible in order to facilitate accommodations.

Title: So you want to be a Food Scientist?

Pick your pathway as you build your own ice cream company

Cornell Department: Food Science

Maximum Number of Youth Accepted: 20

Minimum Number of Youth Needed:

10

Description

Work in teams to create your own ice cream brand and develop a flagship ice cream flavor. Creativity is a must in choosing flavors and production strategies for a unique and marketable product. However, along the way you will be challenged with various snafus that food scientists must use technical skills to solve. What engineering principle can be adjusted to improve ice cream texture? How do ingredient interactions impact ice cream flavor, and are consumers accepting of these ingredient combinations? What do you do if your company is implicated in an outbreak of foodborne disease? You will be on your toes coming up with lab-based solutions to these challenges and will give a final pitch to professional food scientists based on your product design.

Packing Suggestions Lab appropriate clothing - pants and closed-toed shoes

Title: Women in Science

Cornell Department: Human Development

Maximum Number of Youth Accepted: 25

Minimum Number of Youth Needed:

15

Description

Do the toys you have as a child shape your future career goals? Do stereotypes affect your academic performance, even without you being aware of it? These are the types of questions we explore in “Why aren’t there more women scientists?” In addition, you will get to meet women scientists and learn about their diverse research areas within the field of psychology and human development including forensic psychology and neuroscience. This program will give you a glimpse of what it’s like to be a social scientist in real life. Participation and activities are the best part! Come learn about the real world of psychology and human development you never hear about in school – and prepare to be entertained.

Packing Suggestions None

Title: Breathing Life into Robots

Cornell Department: Mechanical and Aerospace Engineering

Description

How do robots come to life? Learn about the engineering and computer science challenges of making robots move as if they were alive. You will then use computer animation methods to plan and build the movements of a small robot and then upload your movements to a real robot in the lab.

Title: Build Your Own Genetic Circuit

Cornell Department: Cornell Engineering BME Project Team

Description

Cornell iGEM will introduce our project team and discuss the topic of synthetic biology with a specific focus on genetic circuits. You will build your own genetic circuit to learn more about the process of picking appropriate biological parts to achieve a desired output.

Title: Dig It: Art, Archaeology and the Afterlife

Cornell Department: Johnson Museum of Art

Description

You will explore tomb objects from ancient China and Egypt. We'll examine what was needed for the afterlife and the role and function of the objects from guardian figures to watchtower models then head to the studio to make our own tomb figure.

Title: Nutritional Artist

Cornell Department: Food Lab, Division of Nutritional Sciences

Description

Explore the topic of “easy” nutrition. We will prepare a popular dish, focusing on ways to make it easier to prepare and more nutrient dense. We will talk about food science, the reasons why we cook things a certain way, and careers in cooking, food, or nutrition. Participants will be encouraged to cultivate a sense of individual expression through food while learning how to have fun with it at the same time.

Packing Suggestions Youth are encouraged to wear close-toed shoes, and tie back long hair. Wear clothing you don't mind getting dirty, as cooking can be a bit messy!

Title: Our Changing Menu
Climate Solutions through food

Cornell Department: Cornell Institute for Climate Smart Solutions

Description

Look at the carbon emissions and environmental impact of local foods versus foods that travel long distances. Make a snack while exploring actions we can all take to minimize our impact on the environment. Learn about careers related to cooking and climate change.

Title: Polymer Mechanics:
How Chemistry Makes Our Materials Work

Cornell Department: Mechanical and Aerospace Engineering

Description

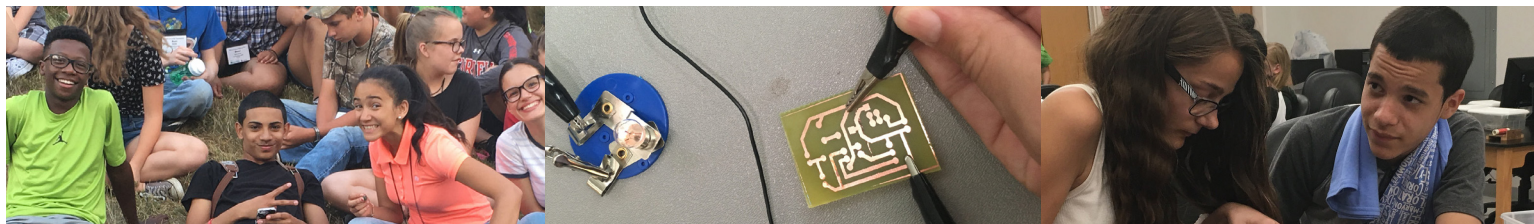
Even wonder why our cotton clothes shrink in the wash? Why can't we recycle all plastics? Why do diapers work so well? Come learn how can we design materials from the molecular scale to serve a certain purpose. Activities include an interactive presentation and a hands-on design challenge in small teams.

Title: The tiniest things are SO COOL!
Exploring nanotechnology

Cornell Department: Cornell NanoScale Facility

Description

The nanoscale world is too small to see, but that doesn't stop us from using all sorts of cool nanotechnologies. Learn how nano-engineers make the tiniest possible machines. Explore some of the unexpected properties of the nano world...like light that is powerful enough to grab and hold a bead!



CAREER EXPLORATIONS CONFERENCE

Schedule at a Glance - Draft

Tuesday

10 AM - 12:00 PM	Check In	RPCC (upper side)
12:30 PM	Youth Orientation	Mews Courtyard - program signs
12:30 PM	Chaperone Orientation	RPCC 2nd Floor Auditorium
1:30 PM	Leave for programs	Mews Courtyard
2 - 4:30 PM	Focus groups: see specific group schedule	Focus groups: see group schedule
2 - 3 PM	UU: Opening Presentation	Call Auditorium, Kennedy Hall
3 - 4:30 PM	UU: Campus Tour	
5 - 6:30 PM	Dinner and County Meetings	RPCC Dining and Dorms
6:30 PM	Walk to Opening Assembly	Meet County outside of RPCC
7 - 8:30 PM	Opening Assembly	Call Auditorium, Kennedy Hall
8:30 - 10 PM	Free Time and Recreation	RPCC, Gym, Pool, and Bowling in Helen Newman Hall, Outside
9 PM	Dorms open for youth with their chaperones	Dorms
10 PM	County Check In - youth must be in dorms!	Dorms
11:00 PM	Lights Out	

Wednesday

7 - 8 AM	Breakfast - arrive no later than 7:30 AM	RPCC Dining
Varies	Leave for programs - check your schedule	Mews Courtyard
9 AM - 4:30 PM	Programs - see specific schedules	See group schedule
12 - 1 PM	Lunch	Physical Sciences Atrium
5 - 6:30 PM	Dinner and County Meetings	RPCC Dining and Dorms
7 PM - 9 PM	Free Time and Recreation	RPCC, Gym, Pool, and Bowling in Helen Newman Hall, Outside
9 PM	Dorms open for youth with their chaperones	Dorms
10 PM	County Check In - youth must be in dorms!	Dorms
11:00 PM	Lights Out	

Thursday

7 - 8 AM	Breakfast and Checkout	RPCC Dining
Varies	Leave for programs - check your schedule	Mews Courtyard
9 AM - 12 PM	Programs - see specific schedules	See group schedule
12:15 - 1 PM	Closing Ceremony and Send Off	Call Auditorium
1:15 - 2:15 PM	Lunch	RPCC Dining

