

***The Fifteenth  
Annual***

**North  
American  
Computational  
Linguistics  
Open  
Competition**

**2021**

**[www.nacloweb.org](http://www.nacloweb.org)**

# **2021 Organizer Handbook**

**September 15, 2020**

**Please check the website for updates and announcements**

**2021 Contest Dates (USA and Anglophone Canada)\***

Open Round: January 28, 2021 / Invitational Round: March 11, 2021

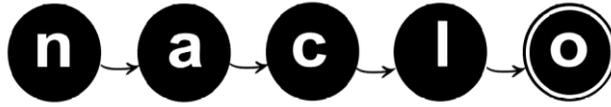
Site registration deadline: January 10, 2021

Student registration deadline: January 15, 2021

Contact [naclo21org@umich.edu](mailto:naclo21org@umich.edu) if you miss the deadline.

Walk-ins allowed with advance permission of the local site host.

\* The dates for the 2021 Francophone contest in Canada will be announced later. Check the [OLC-CLO](#) site.



## **ABOUT**

### **Introduction**

NACLO is a fun (and educational!) contest for U.S. and Canadian high school students in which contestants compete by solving compelling and creative puzzles in linguistics and computational linguistics. Requiring no previous knowledge of linguistics, languages, or computing, these puzzles can be solved by analytic reasoning alone, and serve as a fun introduction to a field to which many high school students have never been introduced. Winners of NACLO are eligible to compete in the International Linguistics Olympiad, one of twelve international high school science Olympiads.

### **Contact**

[naclo21org@umich.edu](mailto:naclo21org@umich.edu)

### **What's New in 2021?**

We have released [an addendum](#) detailing our COVID-19 contingency plans. It will continue to be updated throughout the year. If you are a host who is **NOT** able to host this year due to gathering restrictions, **PLEASE inform the NACLO organizing committee as soon as possible.**

### **Contest in Canada**

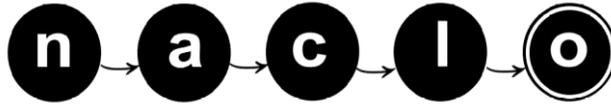
The Anglophone contest in Canada takes place jointly with the contest in the United States. As of the writing of this version of the handbook, the dates for the 2021 Francophone contest in Canada have not been announced. Check the [OLC-CLO](#) site for later announcements.

## **HOW TO BECOME A HOST**

### **University sites**

The list of available locations as of publication of this document is on Page 4, and an up-to-date list is available on the [NACLO web site](#). If your site is already listed, please contact [naclo21org@umich.edu](mailto:naclo21org@umich.edu) to confirm that you will be hosting again this year. They will create your host account on the NACLO website. Then students can register to participate in NACLO at your site.

Each university site is responsible for contacting registered students with directions and other important information about the day of the contest. We strongly suggest creating a webpage with all of the relevant information.



NACLO is a great opportunity to reach out to students who are interested in studying linguistics or computer science. You may provide information on careers in linguistics and language technologies and how to study linguistics and language technologies in college.

## High School sites

Students who cannot or choose not to participate at a university site can participate at their own school.

In order to participate at school, students should ensure that a teacher at their school will serve as a site facilitator, is aware of the rules of the contest and will supervise them on contest day.

If your high school is already listed on the NACLO website, the NACLO organizing committee will confirm with the previous host that you will be hosting again this year. If it is not listed, you can register your high school on the NACLO website [here](#). Then, register yourself as a high school host [here](#). Then, interested students can register to participate in NACLO at your site [here](#).

## Home School Sites

If your student is home schooled (according to the official rules of your state or province), you can still register for NACLO. Parents should go to the NACLO website teacher registration page (the main NACLO website under “High School Site Coordination”) and register themselves as a teacher. Once you get to the “school” option you can select “home school” from the drop down menu. Once you have registered as a teacher you will be able to register your student on the student registration page (The main NACLO website under “Student Registration”).

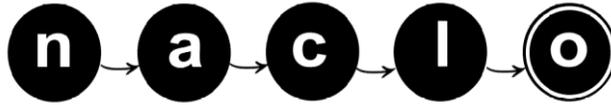
## Non-site Hosts

If you are unable to host the competition, your students can still participate through other high school and university sites. In this case, however, do not register as a site host. Instead, the coordinator at the testing site your students will be attending will carry site host responsibilities. **If your student wishes to sign up for another high school site, they must contact the host for that site prior to registration.** Many high school site hosts are teachers who only have enough space for their own students, so **be prepared with the knowledge that this may not be an option.**

## Student Eligibility

*To participate in NACLO, students must satisfy all of the following criteria:*

- You have never been enrolled as a full-time college or university student.
- You must be less than 20 years old on the first day of the IOL, whose dates are on [ioling.org](http://ioling.org)
- You are a citizen of the US or Canada or a student in a secondary school in the US or Canada.
- You are available to take the test at one of the times it's offered.



- You can either take the test at a registered university site or find a teacher or librarian who can run a high school site as specified elsewhere.

*To be eligible for the Canadian IOL team, students must:*

- Be eligible for and participate in NACLO.
- Renounce your eligibility for every other country's IOL team for the current year.
- Be a citizen of Canada or a student in a Canadian secondary school, and provide proof if asked.
- Meet any IOL eligibility rules in <http://ioling.org/rules/rules.pdf>

*To be eligible for the US IOL team, students must:*

- Be eligible for and participate in NACLO.
- Be a citizen of the US or a student in a US secondary school, and provide proof if asked.
- Meet any IOL eligibility rules in <http://ioling.org/rules/rules.pdf>

## University Locations

The following universities are currently expected to host NACLO sites in 2021. Additional locations and possible cancellations will be posted on the [web site](#). Sites that have a strikethrough are not expected to be open in 2021 due to COVID-19 restrictions on their campuses.

[This addendum to the handbook](#) details COVID-19 contingency plans. **HOSTS MUST UPDATE THEIR NACLO WEBSITE TO REFLECT THEIR STATUS and contact the NACLO organizing committee ASAP if they are unable to host NACLO 2021.**

### Canada

#### AB

University of Alberta (Edmonton)  
University of Calgary (Calgary)

#### BC

~~Simon Fraser University (Burnaby)~~  
~~University of British Columbia (Vancouver)~~

#### NS

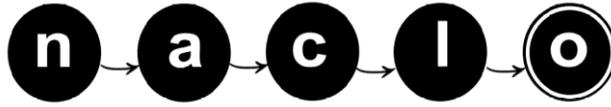
Dalhousie University (Halifax)

#### ON

University of Ottawa (Ottawa)  
University of Toronto (Toronto)  
University of Western Ontario (London)

#### QC

McGill University (Montreal)



## United States

### CA

California State University (Long Beach)  
SpringLight Education Institute (San Jose)  
San Diego State University (San Diego)  
~~Stanford University (Stanford)~~  
University of California, Irvine (Irvine)  
University of California, Los Angeles (LA)  
University of Southern California, ISI  
Campus (Marina del Rey)

### CO

University of Colorado (Boulder)

### CT

Yale University (New Haven)

### DC

Georgetown University (Washington, DC)

### DE

~~University of Delaware (Newark)~~

### FL

Keiser University (Jacksonville)

### GA

~~Emory University (Atlanta)~~

### IL

Northeastern Illinois University (Chicago)  
Northwestern University Chicago (Evanston)  
~~Southern Illinois University (Carbondale)~~  
University of Illinois at Urbana-Champaign  
(Urbana-Champaign)

### IN

Indiana University (Bloomington)  
University of Notre Dame (South Bend)

### KY

University of Kentucky (Lexington)

### MA

Brandeis University (Waltham)  
Massachusetts Institute of Technology  
(Cambridge)  
University of Massachusetts, Lowell (Lowell)

### MD

Johns Hopkins University (Baltimore)  
University of Maryland (College Park)

### MI

University of Michigan (Ann Arbor)

### MN

Minnesota State University, Mankato  
(Mankato)

### NC

University of North Carolina, Charlotte  
(Charlotte)

### NE

University of Nebraska, Omaha (Omaha)

### NJ

Montclair State University (Montclair)  
Princeton University (Princeton)

### NY

Columbia University (New York)  
~~Cornell University (Ithaca)~~  
Stony Brook University (Stony Brook)  
Union College (Schenectady)  
~~Long Island University Post (Brookville)~~

### OH

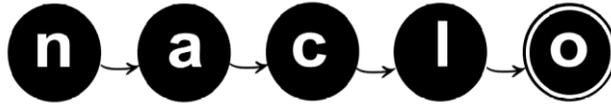
~~Ohio State University (Columbus)~~

### OR

Oregon Mathletics (Beaverton)  
Oregon State University (Corvallis)

### PA

~~Carnegie Mellon University (Pittsburgh)~~  
~~University of Pennsylvania (Philadelphia)~~



## TN

Middle Tennessee State University  
(Murfreesboro)  
University of Memphis (Memphis)

## UT

Brigham Young University (Provo)  
University of Utah (Salt Lake City)

## TX

Austin Math Circle (Austin)  
University of Houston (Houston)  
University of North Texas (Denton)  
~~University of Texas at Dallas (Richardson)~~  
University of Texas, Austin (Austin)  
~~University of Texas at San Antonio (San Antonio)~~

## WA

~~University of Washington (Seattle)~~  
Western Washington University  
(Bellingham)

## WI

University of Wisconsin, Milwaukee  
(Milwaukee)

## High School Locations

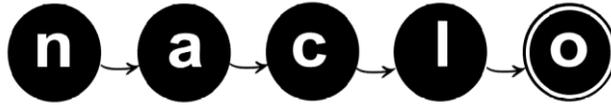
More than 100 high schools held the contest on site in 2020. If you are a high school teacher and your school wants to participate in 2021, you need to register it as a host site. If your school is not a host site already, register it as one [here](#). Then, you should register as a High School Host [here](#). If your teacher has questions about what is involved with serving as a coordinator, please consult this handbook. For a list of high school site locations, visit the webpage [here](#).

## COVID-19 Contingency Plans

If you are coordinator at a High School site which is unable to host due to COVID-19 restrictions, please advise your students to register for the AT-HOME registration option (top choice under University Sites on the registration page), and the NACLO organizing committee will communicate directly with them with participation instructions. All students competing **must** have internet access to participate (to receive the booklet and to enter their answers online), and the capability to print the booklet if they want to work with a hard copy of the puzzles. Please contact [naclo21org@umich.edu](mailto:naclo21org@umich.edu) if you have questions or concerns or need our assistance ensuring that all interested students can participate in NACLO 2021.

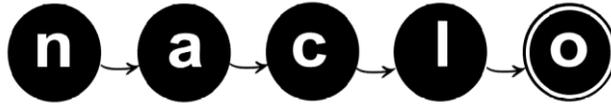
## RESPONSIBILITIES

This is the list of responsibilities for university and high school facilitators.



### As soon as possible

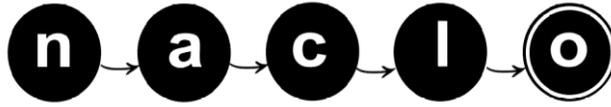
- Read this booklet and familiarize yourself with the contest. NACLO has been active for fourteen years and the rules have evolved. The [website](#) also has all the relevant information about the contest, including many [resources](#) and [sample problems](#).
- Circulate email announcements, flyers and practice problems to students at your school or near your university. You can find examples on the resources page, or contact us at [nacl021org@umich.edu](mailto:nacl021org@umich.edu) for advice on how to advertise the contest. Also, share with us any inventive ways of outreach that you come up with. Tell interested students to register online.
- (optional) Arrange for a training/information session. These are not required for participation in NACLO and not all participating sites provide them, however they are encouraged. The training sessions may include problem solving practice, an overview of linguistics and computational linguistics, and ideas about careers in linguistics and computational linguistics; they typically last from one to two hours. The NACLO web site has instructions for running such sessions under the “Resources” tab.
- Reserve a contest room. The contest room should be large enough so that the number of students who have registered (plus any more walk-ins/late registrants you are willing to take) will each have a desk/writing surface and can spread out so they cannot see each other’s papers. The room must also have an internet connection so you can communication with the jury during the competition.
- You should reserve the contest room starting at least 1 hour before the contest start time. This will allow you time to welcome the students, thank the sponsors and local volunteers, read the rules, etc. as well as distribute the contest booklets. The students should start working on the problem set at the designated time (so you need to finish with all preparations, reading the rules, etc. before then) and have exactly three hours (in round one) to actually work on the booklets.
- (optional) Schedule additional facilitators if needed. Use your judgment about how many facilitators you will need. There should be at least one person in the room with the participants at all times to take questions and make sure that no one is breaking any rules.
- (university sites only) Send an email to [nacl021org@umich.edu](mailto:nacl021org@umich.edu) once you have set up a local web page with information for contestants (e.g., building and room number, driving directions, schedule, etc.). We will then list your page on the NACLO [website](#).
- Monitor the registration page for your site at [www.nacloweb.org](http://www.nacloweb.org) to keep track of the number of students registered for your site. In the past, we have had anywhere from 1 to 250 students with a mean of 15 students per site (1,500 students at 100+ sites). You should set a limit for your site based on the size of the room and number of facilitators.



- Send reminders to the students about the contest. Plan for two emails: two weeks before the competition and one week before the competition. The first one can be a reminder of the dates and times. The second one should include directions to your location, a schedule for the day including transportation information, and a list of rules.
- (optional) Plan to print a NACLO poster listing the sponsors. We will send you a poster by email. If you don't have a large poster printer, we will mail it to you on paper. [Contact us](#) ASAP if you would like us to send you one.
- (university sites only) Do you have any souvenirs for the students? T-shirts, keychains, pens, etc. We do not have funding to help out with these, but see if you can get something from your department, school, university, or from local businesses.
- (optional) Do you want to give the students any food before or after the competition (not during)? Again, we do not have funding to help out with this, but if you can get someone to donate some food, go ahead.
- (optional) Do you want to give out college or career information? This is often done during the registration/check-in hour, because students may need to leave immediately after the competition. The LSA (Linguistics Society of America) has several brochures on their [website](#). You can also give out information on majoring in linguistics/language technologies at your university or have brochures/representatives from language technologies companies.

### Two days before the contest

- First and foremost, you will need to certify your site. In order to do so, you will need to:
  - o [Go to your Site Coordination page \(different for universities and high schools\) on the NACLO website](#).
  - o University sites: Select your site, and log in with your password.  
High school sites: Log in with your username and password.
  - o If you do not know your password, please email [nacl020org@umich.edu](mailto:nacl020org@umich.edu) before the day of the contest.
  - o Click on "Edit Self" and complete the certification checklist. Make sure you've done all 10 items on the checklist, and click the "Update checklist (certify)" button when complete.
  - o Sites that don't certify (and thereby indicate that they are familiar with the rules, etc.) will not be allowed to participate. If you have any questions or are having a problem certifying your site, or if you do not know your password, please email [nacl020org@umich.edu](mailto:nacl020org@umich.edu).



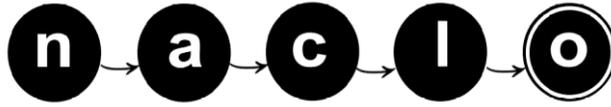
- Note that you should not register as a site host if you are dropping your students off at a testing site.

### The day before the contest

- Obtain the booklets from the jury (they will email you the problem booklet in PDF format) and print one copy (at 3600 dpi, if possible). Make sure that all diagrams and fonts print properly. If everything looks normal, print booklets **single-sided** as the students will be required to write their answers on them and then each problem will be scanned. Make sure to print enough copies for all participants, and print extras if you plan to accept walk-ins. It is ok to print multiple copies of the blank page that appears near the end of the booklet and use it as an extra page.
- You will receive an email that will ask you to confirm that you are ready for the contest. Please reply to it ASAP. You will be asked if your site will allow walk-ins on the day of the contest.
- You will also receive an email with a link to the Piazza site. Please log in to the site to ensure you are able to access to the forum. It will be important to keep this site open throughout the contest as the jury may post announcements and clarifications which will need to be shared with the contestants.
- Make sure that no student has access to the booklets before the contest starts. Make sure that they are informed not to discuss the problems *even after the contest is over* (to prevent cross time zone cheating). We will post the problem booklets on the web site by the end of April.

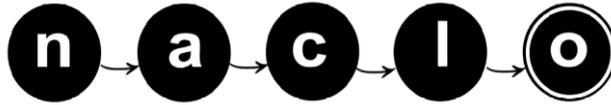
### The day of the contest and beyond

- (optional) Set up a registration table 30-45 minutes before start time. You may get some walk-in students who haven't preregistered. If this happens, let them use your computer to [register on the NACLO site](#) before the actual contest starts and get a registration number. If that is not possible, let them register as soon as the contest is over. Each participant needs to get a registration number.
- When students arrive, ask them to complete the registration page completely including the "Site ID" part. Your site ID is available on the NACLO website on your Site Coordination page. If you are still unable to find your ID, please use the site name.
- Log in to the Piazza site at least 15 minutes prior to the start of the contest. You must keep this site open throughout the contest.
- When the contest starts: email us the exact starting time on the day of the contest so that we can keep track. For example, if the designated starting time for the contest in your time zone is 10 AM, please make sure to have all students ready (after you have handed them the problem sets) before 10 AM. All sites must start simultaneously within their time zone. If for some reason you start a

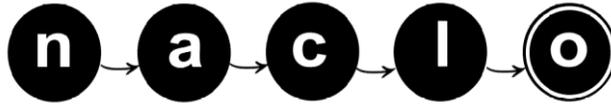


few minutes late (but not more than 15 minutes late), please make sure to give the full three hours of contest time to the students. So, in your email to [nacllo21jury@umich.edu](mailto:nacllo21jury@umich.edu) (note the different email address), as soon as the students have started working on the problem set, please say something like this: "Kevin Smith - PS 45, Milwaukee, WI - start time 09:04, end time 12:04 - participating: 5 students".

- It is absolutely crucial that you keep track of which registered students did and did not show up for the contest on your NACLO page. In order to do this, you will need to:
  - o Go to your Site Coordination page (different for universities and high schools) on the NACLO website).
  - o University sites: Select your site, and log in with your password.  
High school sites: Log in with your username and password.
  - o Click the "Test Day Checkoff" button.
  - o Check the corresponding box for each student who shows up to the contest.
  - o Also, make sure to enter the exact time your contest started in the box at the top of the page.
- When students raise their hands for questions, go to them in order to make sure that they don't blurt out a clue or an answer. Tell the student that you will convey the question to the jury. Do not answer the question even if you think it is simple or obvious.
- All questions from the participants should be posted on the NACLO 2020 Piazza site. Please post your question as a private question just to the jury. The jury will be periodically updating a web page with all active clarifications that need to be conveyed to all participants. If resources are available at your site, you may wish to project this web page for all participants to view, or write these clarifications on the board.
- Continuously monitor your e-mail and the Piazza site for possible announcements and clarifications by the judges. Make sure that you convey all jury clarifications to all contestants in a timely manner.
- Ask the students to complete a short online student evaluation form. Each student will be emailed a link to the evaluation once the contest has ended.
- Fill out the short online facilitator evaluation form.
- **Note on booklet collection and submission:** the 2021 NACLO Open Round may require participants to enter their answers online rather than into a written booklet. This has not been finalized; we will contact you with more information when it is available.



- Collect the booklets from your students. Students are **not allowed to take copies of the booklets with them**; this rule is essential for preventing possible “cross-timezone” cheating. The booklets will be posted on the NACLO site near the end of March 2020.
- While collecting the booklets, please ensure that all contestants have written their names and registration numbers **on each Answer Sheet**.
- Please begin by scanning all of the test booklets (only cover page with identification information and answer pages) and converting them to PDF format. Name each booklet with the student's ID number (e.g. '557.pdf').
- Please do not scan each page of a student’s booklet as an individual PDF, and please do not send multiple students’ booklets in the same PDF. It is very crucial to name each file properly. The jury reserves the right not to grade any submissions that are not properly named. Note that scans must be legible and complete. That is, **all answer pages must be submitted**, even if blank or incomplete.
- Once you have scanned all the booklets, the procedure for the Open and Invitational Rounds differs. **For the Open Round:** upload each student’s submission to the NACLO website in the Site Coordinator portal – you will see an “Upload” button next to each student’s name on the list of registrants. Once you have done this, your responsibilities for the Open Round are over; however, please keep the booklets until results become available in case an error should arise (e.g. a page's scanning is faulty and the jury asks you to scan it again).
- If you do not have the capability to scan and upload students' booklets, you will need to make photocopies of your students’ booklets and send the originals to us by USPS Priority Mail, or another service that guarantees delivery at least as quickly (you will need to keep the originals until scores are published). Please contact [naclo21org@umich.edu](mailto:naclo21org@umich.edu) and ask for a mailing address. We must receive all booklets by February 6, 2020 in order to ensure timely grading.
- **For the Invitational Round:** Look through all of the booklets and email [naclo21jury@umich.edu](mailto:naclo21jury@umich.edu) a list of the names, registration numbers, and email addresses of all of the students who handed in a booklet. Attach all students' PDF booklets to this email. **It is crucial to send a list of all students whose booklets are attached** in order to ensure that all students' booklets are graded.
- As for the Open Round, booklets may be mailed; they must be received by March 30 in order to ensure timely grading.
- For both rounds, once you have scanned and uploaded/emailed the booklets, your responsibilities are done! As you wait for the results, keep in mind that it may take 4-6 weeks for these to become available.
- (optional) You may follow up with the students about their results, e.g., for college admissions guidance, etc.



- Note that scans must be legible and complete. That is, **all answer pages must be submitted, even if blank or incomplete.**
- Then, upload each student's submission to the NACLO website in the Site Coordinator portal – you will see an “Upload” button next to each student's name on the list of registrants. Note that you must both scan and upload the booklets to the website and email all booklets to [naclo21jury@umich.edu](mailto:naclo21jury@umich.edu) for submissions to count.
- While we strongly prefer that you scan and email us the booklets, if you do not have the capability to do this, you will need to make photocopies of your students' booklets and send the originals to us by USPS Priority Mail, or another service that guarantees delivery at least as quickly (you will need to keep the originals until scores are published). Please contact [naclo21org@umich.edu](mailto:naclo21org@umich.edu) and ask for a mailing address. We must receive all booklets by February 6, 2020 in order to ensure timely grading.
- Wait for the results. It may take 4-6 weeks for these to become available.
- (optional). Follow up with the students, e.g., for college admissions guidance, etc.

## **OTHER CONTEST RULES**

### **Open Round**

The open round is open to all interested middle school and high school students; its purpose is to identify strong contestants who will advance to the Invitational Round.

### **Invitational Round**

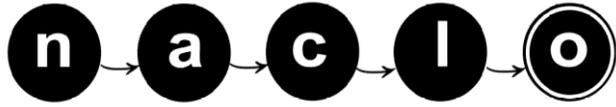
The problems in this round are harder than the Open Round problems. The purpose is to select national winners, who will be eligible to participate in the international competition, the International Linguistics Olympiad (IOL).

### **Problems and solutions**

The Open Round is typically three hours long, whereas the Invitational Round is typically four hours long. The judges have the authority to lengthen either competition in the event of unforeseen circumstances.

Students should submit all their solutions in writing, using a *black pen*, only in the space provided and ensure that their handwriting is legible. The use of a black pen is essential to ensure legible photocopying or scanning of the solutions, which may be done to streamline the grading process.

Students are allowed to use extra blank paper; however, there should never be answers to more than one question on a single sheet of paper. Extra paper should be scanned together with the booklet. The answers



will be split by problem number and shipped to graders around the world. Students should write only on one side of the papers so that these pages can be scanned if needed. Furthermore, students may not take any booklets or scratch paper with them when they leave the site.

Students may solve the given problems in any order, and should try to solve as many problems as possible. You are not penalized for incorrect answers. Some problems (mostly on the Invitational round) **may** include "practice" (explanations) and "theory" questions; the practice sections are worth approximately 60% of the score, and the theory sections are worth approximately 40%. Students may receive partial credit for providing an incomplete solution to a problem, and/or partial credit for specific ideas for solving it. Thus, if they have ideas for solving a problem, they should write them even if they have not been able to develop a complete solution. In other words, students should be encouraged to show their work and/or thought process when solving these problem.

Given the large number of expected participants in the first round, most or all of the problems in that round will not require a "theory" part. Instead, the answers will be automatically gradeable. "Blue," "17", "1A, 2D, 3D, 4E, 5C", "nihuetzi," and "A>C>G>F>B>E>D" are fine answers. The problem booklets will be designed to include an answer sheet.

### **Allowed and disallowed materials**

Students should bring their own pens and pencils. Students are **not** allowed to bring their own paper. The facilitators will provide all paper needed.

Participants must write their solutions in black ink, and may use pencils only for scratch work. They may use blank paper for scratch work; however, they should copy their final solutions into the spaces provided in the problem booklet, and they may enclose additional sheets only if the space in the booklet is insufficient. Scratch paper is to be handed in with the answer booklet, but kept separate from it.

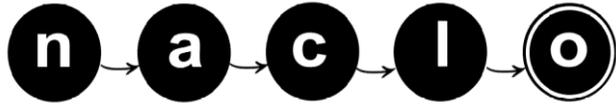
Students may not use any electronic devices except basic wristwatches. In particular, they may not use calculators, computers, tablets, cell phones, pagers, or wristwatches with built-in calculators. Attempts to use electronic devices will normally lead to disqualification. If a student has any medical electronic devices, required for health reasons, he or she should let the facilitators know before the contest.

Participants may not use any written or printed materials such as books or their own notes produced before the contest.

### **Conduct during the contest**

Students should follow all instructions of the facilitators; if they have questions about the rules or acceptable conduct during the contest, they should raise their hand and ask a facilitator.

Students may not talk with anyone except facilitators, and may not collaborate with other contestants. Attempts to communicate with other contestants will normally lead to disqualification.



Bags should be placed under the seats before the contest, and may not be used during the contest. If students have brought snacks, these should be placed on the desk before the contest begins.

If a student has a cell phone, pager, or any other sound-emitting device in his or her bag, he or she should turn it off before the contest. Just switching it to vibrate or silent mode is not sufficient.

Participants may take bathroom breaks during the contest; however, they may not take their bags, any electronic devices, problem booklets, or their notes with them when temporarily leaving the room. Also, two contestants may not take a bathroom break at the same time.

Unless the local facilitator overrides this rule (e.g., due to university or high school regulations), students may bring a snack into the contest site and eat during the contest, but they should be considerate of others. In particular, they should avoid "noisy" foods, such as foil-wrapped chocolates, and foods with a strong odor. The facilitators have the authority to remove any types of food from the contest site if they feel that these types of food may distract other contestants. Noisy wrappers should be opened before the contest begins.

If students arrive late, they may still participate in the contest; however they may not ask facilitators to repeat any instructions or announcements that have been missed. Also, they may not ask for time extensions in the end of the contest, which means that they will have less time than the other contestants.

### **Questions during the contest**

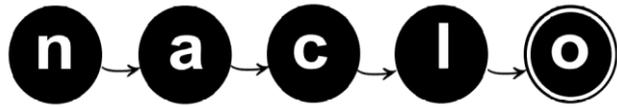
If a student has a question, he or she needs to raise a hand, and one of the facilitators will talk with him/her. When talking with a facilitator, students should keep their voices low, to make sure that they do not distract other contestants and do not accidentally provide a hint for solving the problem.

If a student needs a clarification for a specific problem, the facilitator will need to contact the judges via email, which means that an immediate answer may not be available. Please note that local facilitators are unable to answer student questions without contacting the judges. If the judges agree that the problem requires a clarification or correction, they will normally announce it to all site facilitators via email.

If the judges feel that an answer is already contained in the booklet, or that attempting to give a student an answer may give someone an unwanted hint, they may refuse to answer the question by telling the student that they are unable to answer the question.

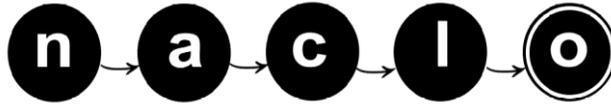
### **Scoring**

Every problem will be worth a specified number of points; harder problems are generally worth more points.



The judges will score each solution based on its correctness, quality, and clarity, and determine the overall score as the sum of solution scores. The judges will complete the scoring and announce the results (ideally, within three to six weeks after the competition).

*The judges are solely responsible for scoring the solutions, ruling on unforeseen situations, and selecting the winners; their decisions are final.*



## FREQUENTLY ASKED QUESTIONS

### How does a student register for the competition?

The competition is intended for students in the 13-18 age group. If you are younger than 13, with parental permission, you can also participate. In this case, please **do not register online**. Instead, ask your parents to contact [nacl21org@umich.edu](mailto:nacl21org@umich.edu) directly.

You should register through the NACLO web site ([www.nacloweb.org](http://www.nacloweb.org)). The registration form is located by clicking on the “student” tab. In the registration form, you must choose one of three options regarding where you will be participating:

- Choose **High School Site** if you plan to participate at your high school. This involves having a teacher or administrator supervise the contest at your school. This person should carefully review the facilitator responsibilities listed in the relevant handbook. **Do not** register for a high school you do not attend without asking that school's site host beforehand.

OR

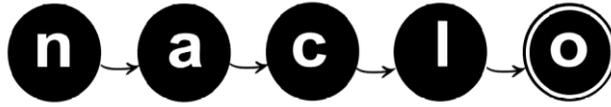
- Choose **University Site** if you plan to participate at a NACLO university site. This involves going to the university to take the test. If your city has a university site, we encourage you to participate at this site. An up to date list of university sites is available at on the NACLO web site. You do not have to contact the site host prior to registering at a university site.

OR

- If you are home schooled, you can still register! Parents should go to the NACLO website teacher registration page (the main NACLO website under “High School Site Coordination”) and register themselves as a teacher. Once you get to the “school” option you can select “home school” from the drop down menu. Once you have registered as a teacher you will be able to register your student on the student registration page (The main NACLO website under “Student Registration”).

### How long is the competition?

The Open Round will be three hours long; however, note that the judges have the authority to lengthen it in the event of unforeseen circumstances. The start time of the Open Round depends on the time zone. Time zones not listed below should make special arrangements with the organizers in advance. Due to limited jury availability, we do not have much flexibility on these start times: students who have a direct conflict with the time the contest is running (e.g. a Californian student with an exam from 10 am to noon) will not be able to write the contest.



<i>Time for the <b>Open Round</b></i>	<i>Start</i>	<i>End</i>
Pacific	9:00am	12:00noon
Mountain	10:00am	1:00pm
Central	9:00am	12:00noon
Eastern	10:00am	1:00pm
Atlantic	11:00am	2:00pm

The start times shown here are when students can work on the problems. Registration and other administrative activities happen earlier. Try to be at your site 45 minutes prior to the designated start time.

The Invitational Round will be four hours long. The contest will start at 9 AM in all time zones except the Atlantic Time Zone.

<i>Time for the <b>Invitational Round</b></i>	<i>Start</i>	<i>End</i>
Pacific	9:00am	1:00pm
Mountain	9:00am	1:00pm
Central	9:00am	1:00pm
Eastern	9:00am	1:00pm
Atlantic	10:00am	2:00pm

### **Can younger students (e.g., middle school students) participate?**

Yes, they can. In fact, we will award a special certificate to the top students who participate in the 8<sup>th</sup> grade or below. Students younger than 13 should see our special registration instructions above.

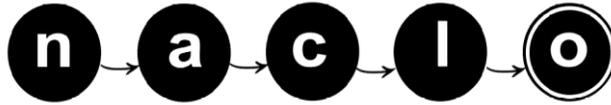
### **How many problems should I expect?**

You should expect 5-8 problems during the Open Round and 6-10 (generally harder) problems in the Invitational Round.

### **What problem types should I expect?**

You may encounter the following problem types; however, this list is not exhaustive, and you may also get problems of other types. The problems will contain all information required for solving them, and you do not need any specialized linguistic knowledge.

- *Translation problems:* A problem includes a set of sentences in a foreign language and their translations into English, which may be in order or out of order. Your task is to learn as much as possible from these translations and then translate other given sentences to or from English. Note that the foreign language may have "tricky" structure and grammar. For example, German sentences often end in verbs. Japanese people talk differently about their family and about someone else's family. Some languages do not use articles or any equivalent of "to be." Others



treat animate and inanimate objects differently. Be prepared to figure out these unfamiliar features from the text.

- *Number problems:* A problem includes foreign sentences that describe basic arithmetic facts, such as "six times four is twenty-four," and your task is to figure out how to translate different numbers and expressions. Some languages use bases other than ten; others use different words for the same number depending on the objects being counted, etc.
- *Writing systems:* Your task is to figure out how a particular writing system works and then use it to write out a given text, such as an ancient inscription. Some languages are written right to left or top to bottom, others do not use vowels, etc.
- *Calendar systems:* Your task is to figure out what calendar was used by a particular civilization based on sentences that refer to it.
- *Formal problems:* In this context, "formal" means that you have to build a logical model of a language phenomenon. For example, a transformation rule may say "to convert an active voice sentence to passive voice, make the object of the former sentence the subject of the latter one, convert the verb to passive by using an appropriate form of the verb "to be" with the past participle of the verb, and add "by" before the word that was the subject of the former sentence." If we apply this rule to "Maya ate an apple," we get "An apple was eaten by Maya."
- *Phonological problems:* Your task is to figure out the relationship between the sounds of a language and its writing system.
- *Computational problems:* Your task is to develop a procedure to perform a particular linguistic task in a way that can be carried out by a computer.
- *Other types:* Deciphering kinship systems, transcribing spoken dialogue, associating sentences with images, translating unknown languages from scratch, and many other types of problems.

### **Where can I find example problems and related reading materials?**

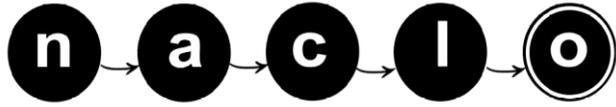
You may find some [reading materials](#) on the NACLO website; note that these readings are not required for participation. You may also find more than 200+ past problems on the main website under "[Practice Problems](#)."

You may find even more problems by searching the web for "IOL" where "IOL" stands for "International Linguistics Olympiad."

### **What knowledge and skills do I need?**

You mostly need logical thinking as well as basic general knowledge, such as arithmetic and standard calendars. You do not need prior knowledge of linguistics, computer science, programming, or foreign languages.

### **How many people participate in NACLO?**



Recently, 1,700+ students have been participating yearly at 100+ high school sites and about 50 university sites.

### **What happens if I do well?**

If you earn a high score at the Open Round, you will advance to the Invitational Round. You will be notified if you are invited to participate in the Invitational Round. The top scorers in the Invitational Round will be invited to an online practice program. The top-scoring four US students and the top-scoring four Canadian students in the Invitational Round will be chosen to represent the United States and Canada at the International Linguistics Olympiad. Additionally, four more top-scoring US students on an as-yet undetermined combination of the Open Round and Invitational Round may be invited as a second team to represent the United States at the International Linguistics Olympiad.

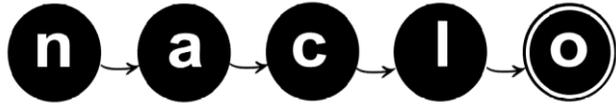
### **If I advance to the International Linguistics Olympiad, will I have to pay for my trip?**

We are working on the funding for participating in the international competition, and we will probably be able to provide funding for all teams; at the very least, the top team of the United States will have full funding. If you are a member of a team that does not have full funding from NACLO, you would need to pay for your trip.

### **How well did the United States teams do at the IOL in 2007-2019?**

In 2007, the United States participated in the International Linguistics Olympiad for the first time. The top US team tied for first place; furthermore, one of the US contestants, Adam Hesterberg, earned the highest score in the individual contest and won one of two "first diplomas." In 2008, the top US team tied for the first/second place, and the second team tied for the third/fourth place. Furthermore, US contestant Hanzhi Zhu received a gold medal. The 2009 team earned a team gold. In 2010, the team earned the most awards ever – a gold medal (Ben Sklaroff), two silvers, three bronzes in the individual contest + the team first place for the highest team score at the individual contest. In 2011, even more awards came the US team's way, including a gold medal for Morris Alper.

2012 was another very successful year with two US students (Alex Wade and Anderson Wang) getting gold medals, four others getting silver or bronze, and one of the two US teams winning the team contest. In 2013, Alex Wade won a gold medal with the highest score among all participants whereas one of the US teams (Team Red) won the team contest. In 2014, Darryl Wu won an individual gold medal, and USA Red won a team gold medal. In 2015, James Wedgwood, James Bloxham, and Kevin Yang won individual gold medals. USA Red finished in first place among all teams based on the average score in the individual contest and also finished in second place in the team event. In 2016, US contestant James Wedgwood won a gold medal in the individual round for the second year running and US contestants also scooped three silver medals and two bronze medals. Additionally, USA Red earned the team trophy for the highest combined score on the individual event. Continuing the trend, the teams also won six medals at the 2017 IOL. Brian Xiao of USA Red won a gold medal while silver medals went to three other US contestants and bronze to two other US contestants. In 2018, perhaps the USA's best-ever year, USA Blue won gold in the team contest and USA Red won silver; four members won individual gold medals, three won silver, and one won



bronze. USA Blue came first for combined individual scores. In 2019, two members won gold and five won silver, and USA Red earned the team trophy for combined individual scores.

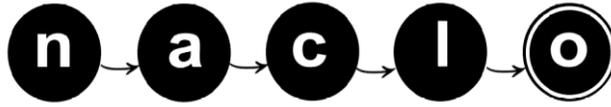
You may find more information about the results at the International Linguistics Olympiad website and the NSF press releases on the NACLO website.

### **How well did Canada do at the IOL?**

Canada participated in the IOL for the first time in 2011. The team received a bronze medal (Daniel Mitropolsky) in 2011. In 2013, Daniel Lovsted won a bronze medal. In 2014, Daniel Lovsted won an individual gold medal, Yan Huang received a silver medal, Simon Huang got a bronze medal, while the Canadian team finished in second place overall based on the average score in the individual contest. In 2015, Emma McLean received a bronze medal. In 2018, Ken Jiang and Kevin Liang received bronze medals, and Shuli Jones received an honorable mention. In 2019, Ken Jiang won a gold medal, and Tianqi Jiang and Nathan Kim received silver medals. Furthermore, the Canadian Anglophone team finished in third place by combined score in the individual contest.

### **What if my question was not answered above?**

If you have further questions, please contact [nacl021org@umich.edu](mailto:nacl021org@umich.edu).



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