The Ninth Annual
North American Computational Linguistics Olympiad
2015 Handbook
Version 1.04, September 7, 2014
Check the web site for updates.

2015 Contest Dates
Open Round: January 29, 2015
Invitational Round: March 12, 2015

Regular registration deadline: January 15, 2015 (recommended)
Late registration deadline: January 28, 2015 (noon PST, if space available)
Walk-ins are allowed with advance permission of the local site host
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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.

Web Site

Contact

naclo15org@umich.edu

What’s New in 2015?

The invitational round will also be shortened this year. Whereas in previous years, the invitational round was five to six hours with a lunch break in the middle, this year it will be four hours long with no break. See Frequently Asked Questions for more details.

This year will see the first contest for Francophone Canada. Details regarding this contest are forthcoming.

Two Ways to Participate

University sites

Many universities provide an exam room and volunteers to facilitate NACLO. The list of available locations is on the NACLO web site. Students must enter the name of their high school and the name of a teacher or parent who will be responsible for taking them to the university site.

Each university site will contact registered students with directions and other important information about the day of the contest.

Schools that are sending several students to a university site may want to hire a school bus. If the school is not providing a school bus, students will need to arrange their own transportation with the help of their parents and teachers.
Some universities may use the contest as an opportunity to reach out to local students who are interested in studying linguistics or computer science. Some universities may provide information on careers in linguistics and language technologies and how you can 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. The site facilitator should read this booklet very carefully before accepting to serve in that role.

**Student Eligibility**

*To take the NACLO, you must satisfy all of the following criteria:*

- You have never been enrolled as a full-time college or university student.
- You will be less than 21 years old on the date of the invitational round of the NACLO.
- 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 ILO team, you must:*

- Be eligible for and take the NACLO.
- Renounce your eligibility for every other country's ILO team for the current year.
- Be a citizen of Canada or a student in a Canadian secondary school, and provide proof if asked.

*To be eligible for the US ILO team, you must:*

- Be eligible for and take the NACLO.
- Be a citizen of the US or a student in a US secondary school, and provide proof if asked.

**University Locations**

As of September 7, 2014, the following universities are expected to host NACLO sites in 2015. Additional locations and possible cancellations will be posted on the web site.

**Canada**

- Dalhousie University (Halifax, NS)
- McGill University (Montreal, QC)
- Simon Fraser University (Burnaby, BC)
- University of Alberta (Edmonton, AB)
- University of British Columbia (Vancouver, BC)
- University of Lethbridge (Lethbridge, AB)
- University of Ottawa (Ottawa, ON)
- University of Toronto (Toronto, ON)
- University of Western Ontario (London, ON)

**United States**

- Bemidji State University (Bemidji, MN)
- Brandeis University (Waltham, MA)
- Brigham Young University (Provo, UT)
- Carnegie Mellon University (Pittsburgh, PA)
- Central Connecticut State University (New Britain, CT)
- College of William and Mary (VA)
- Columbia University (New York, NY) – to be confirmed
- Cornell University (Ithaca, NY)
- Dartmouth College (Hanover, NH)
- Georgetown University (Washington, DC)
- Goshen College (Goshen, IN)
- Johns Hopkins University (Baltimore, MD)
- Marquette University (Milwaukee, WI)
- Massachusetts Institute of Technology (Cambridge, MA)
- Middle Tennessee State University (Murfreesboro, TN)
- Minnesota State University (Mankato, MN)
- Northeastern Illinois University (Chicago, IL)
- Ohio State University (Columbus, OH)
- Princeton University (Princeton, NJ)
Stanford University (Stanford, CA)
Stony Brook University (Stony Brook, NY)
Union College (Schenectady, NY)
University of Alabama, Birmingham (Birmingham, AL)
University of Colorado (Boulder, CO)
University of Illinois (Urbana-Champaign, IL)
University of Maine (Orono, ME)
University of Memphis (Memphis, TN)
University of Michigan (Ann Arbor, MI)
University of North Carolina, Charlotte (Charlotte, NC)
University of North Texas (Denton, TX)
University of Notre Dame (South Bend, IN)
University of Pennsylvania (Philadelphia, PA)
University of Rochester (Rochester, NY)
University of Southern California (ISI campus, Marina del Rey, CA)
University of Texas (Austin, TX)
University of Texas at Dallas (Dallas, TX)
University of Washington (Seattle, WA)
University of Wisconsin (Madison, WI)
Western Michigan University (Kalamazoo, MI)
Western Washington University (Bellingham, WA)
Yale University (New Haven, CT)

**High School Locations**

More than 100 high schools held the contest on site in 2014. If your high school wants to participate in 2015, you and your teacher need to register. Instructions are available on the web site.

**Home Schooled Students**

If you are home schooled, you can still register! Parents should go to the NACLO website teacher registration page (The main NACLO 2015 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 2015 website under “Student Registration”).
Training Sessions

Some universities or high schools may provide training sessions for high school students in their area. These are not required for participation in NACLO and not all participating universities provide them. The training sessions may include problem solving practices, an overview of linguistics and computational linguistics, and ideas about careers in linguistics and computational linguistics.

Training sessions may be done in the evening at a university or during the school day at your school. If you are near a university that is hosting NACLO, you can check if it will have a training session by sending email to the contact person for that university listed on the web site.

If you are not near a university that is hosting NACLO, send email to naclo15org@umich.edu. We will try to work something out for you; we may find a computational linguist in your area, send you some materials from other sites, or just make sure that you have a supply of practice problems and readings.

A typical training session lasts from one to two hours. Some of the time is for a presentation and group problem solving. Other activities could include coming up with new problems, etc.

What Happens on Contest Day?

Students participating at a university

If you are coming from your school by school bus or van, your teacher will tell you what time you will be leaving. If you arrange your own transportation, you should arrive at the university site at least 45 minutes before starting time so that you have time to check in, get seated, use the bathroom, etc. Typically, seating will be at 20 minutes before the starting time, and the rules will be read at 15 minutes before the starting time. The contest booklets will be handed out at the designated starting time, and the facilitator at the university will tell you when to start working on the problems.

Students participating at a high school

Your teacher will give you the contest location. Make sure to be there before the starting time. Typically, seating will occur at 20 minutes before the starting time, and the rules will be read at 15 minutes before the starting time. The contest booklets will be handed out at the designated starting time, and your teacher will tell you when to start working on the problems.

Checklist for University and High School Facilitators

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 eight years and the rules have evolved. The web site (The main NACLO 2015 website under “Practice Problems”) has all the relevant information about the contest, including many sample problems.

- Circulate email announcements, flyers and practice problems to students at your school or near your university. Contact us (naclo15org@umich.edu) for advice on how to advertise the contest. Also, share with us any inventive ways of outreach that you have come up with.

- Tell interested students to register online.

- (optional). Arrange for a training/information session. The NACLO web site has instructions for running such sessions.

- Reserve a contest room (starting at least 30 minutes 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.

- Make sure that your room is big enough. Based on the number of students registered so far, estimate how many students will participate. Your room should be big enough for the participants to spread out so that they cannot see each other’s papers.

- Make sure that the room has an Internet connection. You (the facilitator) will use the Internet connection to communicate with the jury during the competition.

- (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.

- Make sure that the room has desks. The students need a writing surface. The room in Pittsburgh has only little wings on the arms of the chairs, but students are spread out so they can use more than one. You may get more winners at your location if the students are more comfortable!

- (university sites only). Send an email to naclo15org@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 web site.
- Monitor the registration page for your site at 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).

- Send reminders to the students about the contest. Plan for two email or paper announcements, 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 what the student should do about lunch and transportation (see below), 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. Let naclo15org@umich.edu know 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? In Pittsburgh this is done during the registration/check-in hour, because several schools need to leave immediately after the competition. The LSA (Linguistics Society of America) web site has several brochures on their FAQ page. You can also give out information on majoring in linguistics at your university, and you can have brochures or 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:

  - **University sites**: Go to the following webpage: The main NACLO 2015 website under “University Site Coordination”
  
  - **High school sites**: Go to the following webpage: The main NACLO 2015 website under “High School Site Coordination”

  - **University sites**: Select your site, and log in with your password.
  
  - **High school sites**: Log in with your username and password.

  - If you do not know your password, please email gm@pangeon.com (Graham Morehead) before the day of the contest.
Complete the certification checklist, and click the “Update checklist (certify)” button.

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 gm@pangeon.com, (Graham Morehead).

The day before the contest

- Obtain the booklets from the jury and print one copy (at 3600 dpi, if possible). Make sure that all diagrams and fonts print properly. If everything looks normal, print all booklets single-sided as the students will be required to write their answers on them and then each problem will be scanned. 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.

- Please make sure that all students follow the rules. The jury reserves the right to disqualify individual participants or entire sites if the rules are not properly followed.

- 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 (at least 30 minutes before start time, more if you have one of the larger sites with 50 or more students). You may get some walk-in students who haven’t preregistered. If this happens, let them use your Internet connection 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 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 naclo15jury@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:
  - University sites: Go to the following webpage: The main NACLO 2015 website under “University Site Coordination”
  - High school sites: Go to the following webpage: The main NACLO 2015 website under “High School Site Coordination”
  - University sites: Select your site, and log in with your password.
  - High school sites: Log in with your username and password.
  - Click the "Test Day Checkoff" button.
  - Check the corresponding box for each student who shows up to the contest.
  - 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. Some time back at a local contest a hint was inadvertently dropped by a facilitator who didn't realize that he was giving something away.

- All questions from the participants should be emailed to the jury (naclo15jury@umich.edu). The jury will be periodically updating a web page with all active clarifications that need to be conveyed by the local organizers to all local participants. If resources are available at your site, you may wish to project this web page for all participants to view.

- Clarifications will be available throughout the contest. Please use this subject line when requesting a clarification: “NACLO CLARIFICATION: PROBLEM X”. Any other emails to the jury should use a different subject line. All clarifications from any site are to be communicated and read at all sites.

- Continuously monitor your e-mail 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.

- 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 2015.

- While collecting the booklets, please ensure that all contestants have written their names and registration numbers on each page; if not, please do it for them.

- (optional, but very much appreciated). Look through all of the booklets and email naclo15jury@umich.edu a list of the names, registration numbers, and email addresses of all of the students who handed in a booklet.

- If you have the capability to do so, please scan all of the test booklets and convert them to PDF format, then email these files to naclo15jury@umich.edu. Please send each individual student’s booklet in a single PDF, with the student’s registration ID as the title (e.g., ‘557.pdf’). Please do not send each page of a student’s booklet as an individual PDF, and please do not send multiple students’ booklets in the same PDF. Please scan only the cover page (on which the student writes his or her name, grade, location, etc.) and the pages which contain the student’s answers; do not scan the credits pages, pages with only problem instructions and no section for answers, students’ scratch paper, etc.

- It is very crucial to name each file properly (as indicated in the previous bullet). The jury reserves the right not to grade any submissions that are not properly named.

- 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 naclo15org@umich.edu and ask for a mailing address. We must receive all booklets by February 3rd 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

#### General
The NACLO competition is for high schools students (as well as middle school students who are looking for this kind of experience). It consists of two rounds, called the Open Round and Invitational Round. The judges expect that about one hundred contestants will advance from the Open to the Invitational Round.

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 (ILO).

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, 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 should write their names and registration numbers on each page of the booklet, and write their solutions in the appropriate spaces provided in the booklet; the judges will grade only legible solutions. 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. 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 should 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.

Contact email address for the jury

During the contest, all student questions have to be forwarded by the local facilitator to the jury. Facilitators will receive the email address of the jury before the contest. Facilitators: please do not attempt to answer questions about problems without contacting the jury. Also, please monitor your e-mail for possible clarifications and corrections. Please remember that even an innocent comment can give a student an advantage over the other participants. It can also confuse the student. Any clarification, regardless of the site, will be shared with all sites. The facilitator must share any such information with the students at his/her site as soon as it is received.

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.

Special needs

If you have special needs, please notify the contest organizers as soon as possible, and they will try to accommodate you. You should discuss all your special needs before the contest.

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 naclo15org@umich.edu directly.

You should register through the NACLO web site (www.nacloweb.org). The registration form is located by clicking on the “student” tab. In the registration form, you must choose one of two 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 section of this handbook.

OR

- If your student is home schooled, you can still register! Parents should go to the NACLO website teacher registration page (the main NACLO 2015 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 2015 website under “Student Registration”).

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.

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.

<table>
<thead>
<tr>
<th>Time for the Open Round</th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific</td>
<td>9:00am</td>
<td>12:00pm</td>
</tr>
<tr>
<td>Mountain</td>
<td>10:00am</td>
<td>1:00pm</td>
</tr>
<tr>
<td>Central</td>
<td>9:00am</td>
<td>12:00pm</td>
</tr>
<tr>
<td>Eastern</td>
<td>10:00am</td>
<td>1:00pm</td>
</tr>
</tbody>
</table>

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 30 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.

<table>
<thead>
<tr>
<th>Time for the Invitational Round</th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific</td>
<td>9:00am</td>
<td>1:00pm</td>
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</tr>
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<td>Central</td>
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</tr>
<tr>
<td>Eastern</td>
<td>9:00am</td>
<td>1:00pm</td>
</tr>
</tbody>
</table>

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

Yes, they can. In fact, we plan to award a special certificate to the top students who participate in the 8th grade or below. Students younger than 13 should see our special registration instructions listed under “Frequently Asked Questions.”

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 in the following archive:

- The main NACLO 2015 website under “Practice Problems”

You may find even more problems by searching the web for "ILO" or "linguistics olympiad," where "ILO" 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 about arithmetic and standard calendars. Since the competition is on a subject not taught in most schools, we have designed it for students with no prior training in 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. 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 2007-2014?**

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, two teams from the United States participated in the International Linguistics Olympiad, which was held in Sunny Beach, Bulgaria. The top US team tied for the first/second place, and the second team tied for the third/fourth place. Furthermore, one of the US contestants, Hanzhi Zhu received one of the three gold medals; two US contestants (Morris Alper and Anand Natarajan) received silver medals; and three contestants (Rebecca Jacobs, Jeffrey Lim, and Guy Tabachnick) received bronze medals. The 2009 team was also very successful, earning two silver medals (Rebecca Jacobs and Alan Huang) and four bronzes plus 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.

You may find more information about the results at the web site of the International Linguistics Olympiad and the NSF press releases included in this booklet.

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

Canada participated in the ILO for the first time in 2011. The team received a bronze medal (Daniel Mitropolsky) and several other awards in 2011 and 2012. In 2013, Daniel Lovsted won a bronze medal and Stella Lau received an honorable mention. In 2014, Daniel Lovsted won an individual gold medal.

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

If you have further questions, please contact naclo15org@umich.edu.

**How You Can Help**

The NACLO organizing committee is looking for dedicated individuals to help with the following:

**Program:** Creating, evaluating, and scoring problems used for publicity, practice and the actual competition for this year.

**Publicity:** Creating flyers, writing and distributing press releases and other publicity materials.

**Development:** Identifying and approaching potential funding sources.

**Follow up:** Obtaining and distributing prizes and certificates, evaluating the program and organizing mentoring programs, summer schools, and summer internships.

**ILO team:** Making travel arrangements, researching legal issues, corresponding with competitors and families, conducting coaching sessions, and traveling with the team to the ILO in the Summer. The 2015 event is scheduled for Bulgaria.

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## Sample Problems

These are real problems from NACLO 2007-2010. Solutions appear on the NACLO web site.

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### Hmong

Hmong Daw (which belongs to the Hmong Mien language family, along with several other Hmong languages) is spoken by approximately 165 thousand people in south-eastern China, Laos, Thailand, Vietnam, and some other countries.

In the 1960s, Shong Lue Yang, a peasant from the Hmong Daw nation (also known as White Miao), invented an original writing system for his native language. This writing system is still in use, alongside a Roman-based alphabet created by Christian missionaries.

Here are several words and phrases in the Hmong Daw language, written in Shong Lue Yang's script and in the missionaries' alphabet, as well as their English translations:

<table>
<thead>
<tr>
<th>Hmong Script</th>
<th>English Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ᱯ ᱫ ᱶ ᱠ</td>
<td>kdev ntsuas no</td>
</tr>
<tr>
<td>2. 걠</td>
<td>hauv</td>
</tr>
<tr>
<td>3. 걡 걢 걤 걣</td>
<td>raug raws cai</td>
</tr>
<tr>
<td>4. 걥 걦</td>
<td>hloov mus</td>
</tr>
<tr>
<td>5. 걧</td>
<td>qhua</td>
</tr>
<tr>
<td>6. 걩 걪 걫 걬</td>
<td>yog los nag</td>
</tr>
<tr>
<td>7. 걭</td>
<td>kwv yees</td>
</tr>
<tr>
<td>8. 걮 걯 거 걱</td>
<td>ris ceg luv</td>
</tr>
</tbody>
</table>

In the missionaries' alphabet the letter w stands for a specific vowel. The letters g, s and v at the ends of the syllables aren't consonants; instead, they denote the so-called tones (specific ways of pronouncing the vowels).

### D1. Write in the missionaries' alphabet (and explain):

9. 걥 | bird
10. 걩 | lobster
11. 걪 걫 | speak
12. 걭 걮 걯 | dizzy

### D2. Write in Shong Lue Yang's script (and explain):

13. hluav | ash
14. 걲 | how?
15. 걳 건 | smart, wise
16. 걵 | yawg | grandfather
Rewrite me badd

You speak a little differently than your parents do. They probably say that you’re speaking “bad English”. Every generation of parents says this, but this is just how language works. In fact, this is where languages come from: enough generations of young people speaking “bad Latin”, and eventually you have Spanish, French, and Italian!

Huishu is a language in the Tangkhulic family that is spoken in the easternmost part of India. Over time, enough changes occurred in this one village that the villagers now speak a different language than any of their neighboring villages. So, where they used to say “-lo” (“buy”), they now say “-lu”, and where they used to say “-muk” (“cattle”), they now say “-mu?” (That symbol at the end represents the sound in the middle of “Uh-oh!”, and the dashes in front just mean that these have to occur as parts of larger words.)

Linguists model historical sound changes as “string-rewrite rules”. These are very much like a “find-and-replace” procedure in a word processor: look for one character or pattern, and replace it with another one. As the old language changed into modern Huishu, the following string-rewrite rules applied:

K-Insertion: When you find an [u] at the end of the word, add a [k] after it.
Vowel-Raising: When you find an [o] at the end of the word, replace it with [u].
K-Deletion: When you find a [k] at the end of a word, replace it with [?].

These changes didn’t all just happen at once, though. They happened one after another—although not necessarily in the order above!—and we can see in which order they happened by comparing the old forms to the new forms. Only one order will work; if these changes had happened in any other order, we would have different modern words.

G1. Here are a few such pairs (the old form is at the top; the new one is at the bottom). From these, can you determine the order in which the above changes must have occurred? Write the names of the rules in the blanks on the left. The blanks in between each pair are for your benefit; if you write how each word changed as each rule applied, you should be able to work out their ordering in time.

<table>
<thead>
<tr>
<th>Proto-Tangkhulic form:</th>
<th>-ru (“bone”)</th>
<th>-khuk (“knee”)</th>
<th>-ko (“nine”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate form 1:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule 2:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate form 2:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rule 3:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huishu form:</td>
<td>-ruk</td>
<td>-khu?</td>
<td>-ku</td>
</tr>
</tbody>
</table>
This problem is pretty // easy

True story: a major wireless company recently started an advertising campaign focusing on its claim that callers who use its phones experience fewer dropped calls.

The billboards for this company feature sentences that are split into two parts. The first one is what the recipient of the call hears, and the second one—what the caller actually said before realizing that the call got dropped. The punch line is that dropped calls can lead to serious misunderstandings. We will use the symbol // to separate the two parts of such sentences.

(1) Don't bother coming // early.
(2) Take the turkey out at five // to four.
(3) I got canned // peaches.

These sentences are representative of a common phenomenon in language, called "garden path sentences". Psychologically, people interpret sentences incrementally, before waiting to hear the full text. When they hear the ambiguous start of a garden path sentence, they assume the most likely interpretation that is consistent with what they have heard so far. They then later backtrack in search of a new parse, should the first one fail.

In the specific examples above, on hearing the first part, one incorrectly assumes that the sentence is over. However, when more words arrive, the original interpretation will need to be abandoned.

(4) All Americans need to buy a house // is a large amount of money.
(5) Melanie is pretty // busy.
(6) Fat people eat // accumulates in their bodies.

H1. Come up with two examples of garden path sentences that are not just modifications of the ones above and of each other. Split each of these two sentences into two parts, and indicate how hearing the second part causes the hearer to revise his or her current parse.

For full credit, your sentences need to be such that the interpretation of the first part should change as much as possible on hearing the second part. For example, in sentence (6) above, the interpretation of the word "fat" changes from an adjective ("fat people") to a noun ("fat [that] people eat...").

Note: Sentences like "You did a great job... // NOT!" don't count.

H2. Rank sentences (4), (5), and (6), as well as the two sentences from your solution to H1 above, based on how surprised the hearer is after hearing the second part. What, in your opinion, makes a garden path sentence harder to process by the hearer?
A Fish Story

Aymara is a South American language spoken by more than 2 million people in the area around Lake Titicaca, which, at 12,507 feet above sea level, is the highest navigable lake in the world. Among the speakers of Aymara are the Úros, a fishing people who live on artificial islands, woven from reeds, that float on the surface of Lake Titicaca.

E1 (practical). Below, seven fishermen describe their catch. Who caught what?

![Fish illustrations]

1. “Mā hach’a chalkwawa chalkwataxa.”
2. “Kimsa hach’a chalkwawa chalkwataxa.”
3. “Mā chalkwa mā hach’a chalkwampiwa chalkwataxa.”
4. “Mā hach’a chalkwa kimsa chalkwallampiwa chalkwataxa.”
5. “Paya chalkwallawa chalkwataxa.”
6. “Mā chalkwalla paya chalkwampiwa chalkwataxa.”
7. “Kimsa chalkwa paya chalkwallampiwa chalkwataxa.”

Also, watch out! One of the fishermen is lying.

E2 (practical). Your daily catch is pictured to the right. Describe it in Aymara, and don’t lie!

E3 (theoretical). Describe your reasoning.
Pooh’s encyclopedia

Once upon a time, a very long time ago, Winnie-the-Pooh and his friends bought an electronic encyclopedia, and tried to find answers to several important questions:

Winnie-the-Pooh:
Where should a bear stock his jars of honey?
How much honey should a bear store for the winter?

Eeyore:
Where should I look for my lost tail?
Which animals sleep during the winter?

Christopher Robin:
What is the shortest way from my place to the house of Winnie-the-Pooh?
Who wrote the books about Pooh Bear?

The encyclopedia’s search engine identified a number of articles related to their questions; for example, it returned the following matches:

Winter food storage (for Winnie-the-Pooh)
Sleep patterns in mammals and other animals (for Eeyore)
Short stories and movies about Winnie-the-Pooh (for Christopher Robin)
Writers of children’s books (for Christopher Robin)

On the other hand, the search engine missed several other relevant articles; in particular, it did not retrieve the following articles:

Planning of food supplies
Lost-and-found agencies
Finding shortest paths on a map
Biography of A.A. Milne, the author of Winnie-the-Pooh

B1. Your task is to determine who received each of the following matches; two of these matches were for Winnie-the-Pooh, two for Eeyore, and two for Christopher Robin. Explain why!

Books about care and feeding of bears
Effects of honey on the sleep quality of humans and animals
Lost tales of “Bulls vs. Bears” stock trading
Ways to look for lost things
Ways to store food in the house
Winter hibernation of bears and rodents
We are all molistic in a way

Imagine that you have heard these sentences:

Jane is molistic and slatty.
Jennifer is cluvious and brastic.
Molly and Kyle are slatty but danty.
The teacher is danty and cloovy.
Mary is blitty but cloovy.
Jeremiah is not only sloshful but also weasy.
Even though frumsy, Jim is sloshful.
Strungy and struffy, Diane was a pleasure to watch.
Even though weasy, John is strungy.
Carla is blitty but struffy.
The salespeople were cluvious and not slatty.

A1. Then which of the following would you be likely to hear?

a. Meredith is blitty and brastic.
b. The singer was not only molistic but also cluvious.
c. May found a dog that was danty but sloshful.

A2. What quality or qualities would you be looking for in a person?

a. blitty
b. weasy
c. sloshful
d. frumsy

A3. Explain all your answers. (Hint: The sounds of the words are not relevant to their meanings)
A donkey in every house

Consider these phrases in Ancient Greek (in a Roman-based transcription) and their unordered English translations:

(A) ho tôn hyiōn dulos  
(B) hoi tôn dalôn cyrioi  
(C) hoi tu emporu adelphi  
(D) hoi tôn onôn emporoi  
(E) ho tu cyriu onos  
(F) ho tu oieu cyrios  
(G) ho tôn adelphôn oieos  
(H) hoi tôn cyriōn hyiōi

1. Place the number of the correct English translation in the space following each Greek sentence. Explain your answers!

2. Translate into Ancient Greek:
   - the houses of the merchants;
   - the donkeys of the slave

Explain your answers!

Note: The letter ō stands for a long o.
Gelda’s House of Gelbelgarg (1/3)

A frequent problem in computational linguistics is that passages often use words that the computer simply doesn’t have in its dictionary. Online slang evolves very fast, people use foreign words in English passages, people make typos and invent new abbreviations, etc. You could add new words to the dictionary as fast as you can find them, and the next day, the program could still be stumped by a new one!

But the program doesn’t have to give up—instead, it can try to work out as much as it can. Various clues can tell a program whether something is a noun or a verb, a person or an inanimate object, etc., and you can even work out more! The following is a webpage where customers have rated their most recent experience at Gelda’s House of Gelbelgarg. Even if you’ve never heard of any of these dishes, you can still figure out some things about them...

A1. Based on the following reviews, attempt to categorize the following items into:

I: Individual, discrete food items
L: Liquids, undifferentiated masses, or masses of uncountably small things
C: Containers or measurements

You won’t be able to categorize them with 100% certainty, but use the category that you think is most probable for each. Choose a single category for each word below.

<table>
<thead>
<tr>
<th></th>
<th>I</th>
<th>L</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>färsel-färsel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gelbelgarg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gorse-weebel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rolse</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flebbta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>göngerplose</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>meembel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sweet-bolger</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Gelda’s House of Gelbelgarg (2/3)

Gelda’s House of Gelbelgarg

1138 Euclid Ave.
Neighborhood: Lower Uptown
Category: Ethnic, Specialty
Price Range: $$
Hours: Mon-Fri. 10:00 a.m. - 9:00 p.m.
Sat. 10:30 a.m. - 11:00 p.m.

mosf3l2
Reviews: 2
A hidden gem in Lower Uptown! Get the färsl-försl with gorse-veebel and you’ll have a happy stomach for a week. And top it off with a flebb of sweet-bolger while you’re at it!

SanDeE*
Reviews: 2
The portions at this place are just too big! I’d rather have half the portions at a lower price – they just bring out too many göngerplose and too much meembel for me.

wndllHohs40
Reviews: 5
I took my nana here and she said it was just like she remembered from the old country. But the service was a bit lacking – nana ordered four gelbelgarg and the waitress only brought two!
### Gelda’s House of Gelbelgarg (3/3)

<table>
<thead>
<tr>
<th>Reviewer</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>xMandieo7x</td>
<td>Food 0</td>
<td>I found the food confusing and disorienting. Where is this from? I randomly ordered the fæsel-fæsel and had to send them back! Three words: weird, weird, and weird.</td>
</tr>
<tr>
<td>wrldTrvl1977</td>
<td>Food 3</td>
<td>I went to Wolsele last year for a holiday, and this is the real thing. If you order the gelbelgarg, though, make sure you also get at least one roise of sweet-bolger – it’s how the locals like it!</td>
</tr>
<tr>
<td>money@home</td>
<td>Food 3</td>
<td>the prices are steep, but i can afford them – i make up to $75/hr working at home! find out how i do it at <a href="http://bit.ly/grhCm">http/bit.ly/grhCm</a></td>
</tr>
<tr>
<td>bu_zhidao</td>
<td>Food 2</td>
<td>not a great date spot! i got a gelbelgarg and a roise of meembel, but my date was so disoriented that she just ended up with some gorse-weebel. :/</td>
</tr>
<tr>
<td>wembley2000</td>
<td>Food 3</td>
<td>The food was pretty good… But I would have liked more gorse-weebel and fewer gomergloose. You really feel like the chef is skimping on the good stuff.</td>
</tr>
</tbody>
</table>
Lost in Yerevan (1/2)

On her visit to Armenia, Millie has gotten lost in Yerevan, the nation’s capital. She is now at the metro station named Shengavit, but her friends are waiting for her at the station named Barekamutyun. Can you help Millie meet up with her friends?
Lost in Yerevan (2/2)

C1. Assuming Millie takes a train in the right direction, which will be the first stop after Shengavit? Note that all names of stations listed below appear on the map.
   a. Gortsaranayin
   b. Zoravar Andranik
   c. Charbaq
   d. Garegin Njdehi Hraparak
   e. none of the above

C2. After boarding at Shengavit, how many stops will it take Millie to get to Barekamutyun (don’t include Shengavit itself in the number of stops)?

C3. What is the name (transcribed into English) of the end station on the short, five-station line that is currently in construction, shown in a different shade on the map?
Texting, Texting, One Two Three (1/2)

The respected espionage-supply company Z Enterprises is about to release a new version of their Z1200 model wristwatch, popular among spies (and also among high-school students) for its ability to discreetly send text messages. Although the Z1200 had only four buttons in total, the user could input characters (letters, numbers, spaces, etc.) by pressing three-button sequences. For example, if we call the buttons 1, 2, 3, and 4, a was 112, A was 113, b was 114, SPACE was 111, the END sequence that finished the message was 444, etc.

The Z1300 has the same button layout, and it was planned that it use the same text-input method. In the design stage, however, a new engineer proposes that he can significantly reduce the number of button presses needed for each message. Unfortunately, the manual had already been printed and the new Z1300 shipped without any information regarding how to use this new input method.

Being a good spy and/or high school student, though, you can figure out how it works just from a few examples, right?

Testing testing
332221432241423411222143224142341331

Does anyone copy
33233322143131423433242211242323243331

be vewy vewy qwiet im hunting wabbits
2341211234221344341234221344343123442344412122141243123124
|4222414234113443123412341412243331

Mission failed Tango not eliminated
332434143434132432142434123221233133223142343132422212123241243414231222123331

my boss Z is a pain in the
24334312341324341332344414131313423141241414212223121331

uh oh no backspace on this thing
2412311322311423212341311242234323423124221132421223141431222314142341331

just kiddin boss
2344324143221234341233233414212341324343331
Texting, Texting, One Two Three (2/2)

E0. What are the input codes for each of the lowercase letters? Not every letter is used in the messages above, but you can still deduce how they are encoded. This table is just for your own use as you answer the questions below.

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E1. What message does the following sequence of button presses encode?

231212322323214143131423432343132233343123241432221424142341331

E2. With what sequences of button presses would you input the following messages?

help
xray
affirmative
Mayday mayday SOS

E3. This scheme only shortens the number of button presses needed on average – most messages are shorter, but there are some that will take more presses than they did on the Z1200\(^1\). Can you find a message (using only characters whose codes you know) that will be longer using the above method than it would have been if it used exactly three button presses per character (including the END sequence)?

---

\(^1\)This is true for every compression scheme, actually – for any method of compressing data into less space, there will always be some example that when "compressed" is larger than it was originally!
Problem Credits

Hmong – Ivan Derzhanski

Rewrite me badd – Patrick Littell

This problem is pretty//easy – Dragomir Radev

A fish story – Patrick Littell

Pooh’s encyclopedia – Eugene Fink

We are all molistic in a way – Dragomir Radev (based on a paper by Vasileios Hatzivassiloglou and Kathleen McKeown)

A donkey in every house – Todor Tchervenkov

Gelda’s House of Gelbelgarg – Patrick Littell

Lost in Yerevan – Dragomir Radev

Texting, Texting, One Two Three – Patrick Littell
NSF Press Release 2007

Press Release 07-103
Team USA Takes the Prize at the International Linguistics Olympiad in St. Petersburg, Russia

First-time competitors show U.S. strength, potential in this important field

The U.S. team at the 2007 International Linguistics Olympiad in St. Petersburg, Russia.

August 17, 2007

Six American high-school students took the top honors in the 2007 International Linguistics Olympiad in St. Petersburg, Russia earlier this month. This year was the first time a delegation represented the United States at the annual competition. Their victory brings a new focus on computational linguistics.

This year's International Olympiad featured 15 teams representing 9 different countries, including the Netherlands, Russia and Spain. Competitors were given problem sets consisting of sentences in languages most people are not familiar with, including: Tatar; Georgian; a language spoken by indigenous people in Bolivia called Movima; the Papua New Guinean language Ndom; Hawaiian; Turkish; and their English translations. With just this information, the competitors then had to translate more sentences from these languages into English. Winners were judged by how accurately and quickly they could figure out the rules and structure of the languages and complete their translations.

Eight high school students from the U.S. competed in the fifth Olympiad from August 1-4, 2007. Adam Hesterberg, of Seattle, Wash., obtained the highest score of all participants in the individual competition. Jeffrey Lim of Arlington, Mass. received top prize for the best solution to
one of the problems. In addition, Rebecca Jacobs of Los Angeles, Calif., Joshua Falk of Pittsburgh, Penn., Michael Gottlieb of Dobbs Ferry, N.Y. and Anna Tchetchetkine, of San Jose, Calif. won the top prize in the team competition in a tie with a Russian team.

Other American team members were U.S. champion Rachel Zax and Ryan Musa, both of Ithaca, N.Y. The U.S. teams were coached by Dragomir Radev, of the University of Michigan. Also providing leadership for the teams were Lori Levin of Carnegie Mellon University, Thomas Payne of University of Oregon and Amy Troyani of Taylor Allderdice High School, Pittsburgh, Penn.

The U.S. teams were selected from finalists of the North American Computational Linguistics Olympiad (NACLO) that took place on March 29, 2007, at four different locations across the country, as well as over the Internet.

Aside from being a fun intellectual challenge, the Olympiad mimics the skills used by researchers and scholars in some areas of the field of computation linguistics, which is increasingly important for the United States and other countries. Using computational linguistics, these experts can develop automated multilingual technologies such as translation software that cut down on the time and training needed to work with other languages, or software that automatically produces informative English summaries of documents in other languages or answer questions about information in these documents. In an increasingly global economy where businesses operate across borders and languages, having a strong pool of computational linguists is an important competitive advantage. With threats emerging from different parts of the world, developing computational linguistics skills has also been identified as a vital component of national defense in the 21st century.

Because of the growing importance of this intriguing field, the National Science Foundation initiated NACLO, funding a planning workshop in September 2006, and, together with the North American chapter of the Association for Computational Linguistics, Google, and others helped fund the NACLO this spring that selected the members of Team USA, as well as the team's trip to the International Olympiad. The participants and their families also made contributions to bring the team to St. Petersburg for the Olympiad.

Organizers are planning to expand the size and number of locations for next year's NACLO competition in order to bring another strong team back to the 2008 Olympiad, which will be held in Bulgaria. Coach Radev says "now that everyone is aware of the strength of the US team, we can no longer count on the surprise factor. For next year, we will need to build an even stronger team."

-NSF-
Team USA Brings Home the (Linguistics) Gold

Young Americans earn medals competing against other high schoolers from around the world in the International Linguistics Olympiad in Bulgaria

The U.S. team shows their awards at the 2008 International Linguistics Olympiad in Bulgaria.

August 15, 2008

The summer games in Beijing may have just gotten underway, but the United States can already claim gold medal bragging rights. The sixth International Linguistics Olympiad ended today in Slanchev Bryag, Bulgaria, and U.S. high school students captured 11 out of 33 awards, including gold medals in individual and team events. This was only the second time the U.S. has ever competed in the event. Their achievement brings a new focus on computational linguistics.

This year’s Olympiad featured 16 teams from around the world, including Bulgaria, Estonia, Germany, Latvia, the Netherlands, Poland, Russia, Sweden, South Korea and Slovenia. Each problem presented clues about the sounds, words or grammar of a language the students had never studied, such as Micmac, a Native American language spoken in Canada, the New Caledonia languages of Drehu and Cemuhi, as well as several historical Chinese dialects. They were then judged by how accurately and quickly they could untangle the clues to figure out the rules and structures of the languages to solve the problem.

Team 1 was composed of Guy Tabachnick of New York City, Jeffrey Lim of Arlington, Mass., Josh Falk of Pittsburgh, Pa, and Anand Natarajan of San Jose, Calif.

Team 1 claimed a silver medal in the team competition and Team 2 captured a gold. Team 2 also won a trophy for the highest combined score on the individual competition. In the individual competition, Jacobs, Lim and Tabachnick were awarded bronze medals, Alper and Natarajan won silver, and Zhu captured a gold.

The National Science Foundation initiated the North American Computational Linguistics Olympiad (NACLO), and together with major contributions from the North American chapter of the Association for Computational Linguistics, Google, Carnegie-Mellon University's Leonard Gelfand Center for Outreach, and the University of Michigan, helped fund NACLO's activities this year, along with other support from Cambridge University Press, Just Systems Evans Research, M*Modal, Powerset and Vivisimo.

Aside from being a fun intellectual challenge, the Olympiad mimics the skills used by researchers and scholars in the field of computational linguistics, which is increasingly important for the United States and other countries. Using computational linguistics, these experts can develop automated technologies such as translation software that cut down on the time and training needed to work with other languages, or software that automatically produces informative English summaries of documents in other languages or answer questions about information in these documents. In an increasingly global economy where businesses operate across borders and languages, having a strong pool of computational linguists is a competitive advantage. With threats emerging from different parts of the world, developing computational linguistics skills has also been identified as vital to national defense in the 21st century.

The participants, their families and many private individuals also made contributions to bring the team to Bulgaria for the Olympiad. The U.S. teams were led by head coach Dragomir Radev, associate professor of computer science, information, and linguistics at the University of Michigan, and associate coach Lori Levin, co-chair of NACLO and associate research professor in the Language Technologies Institute at Carnegie Mellon University. Adam Hesterberg, who achieved the highest individual score in last year's Olympiad and is currently attending Princeton University, was present this year as an assistant coach. The team was also accompanied by National Board Certified Teacher Amy Troyani, who also serves as gifted program coordinator at Taylor Allderdice High School.

Other NACLO organizers who did not go on the trip include Tom Payne, NACLO co-chair, University of Oregon; James Pustejovsky, a professor of computer science at Brandeis University; Pat Littell, graduate student at the University of Pittsburgh; and Mary Jo Bensasi, who helped provide administrative support to the project.

"It has truly been exciting to watch our students prepare for this competition and interact with each other," Troyani said. "They seem to thrive on the opportunity to share their love of
linguistics and learning with other students who have the same passions. This is an incredible and inspiring group of young people."

Levin described this year's delegation as "brilliant young people who live and breathe languages, linguistics, and problem solving. I already feel like they are colleagues."

The U.S. delegation was selected from over 750 high school students who participated in NACLO qualifying events held at 77 sites around the U.S. and Canada this past winter.

-NSF-
U.S. teams competed in the 2009 International Linguistics Olympiad in Wroclaw, Poland.

August 5, 2009

High school students from across the U.S. won individual and team honors last week at the seventh annual International Olympiad in Linguistics held in Wroclaw, Poland. The results reflect U.S. competence in computational linguistics, an emerging field that has applications in computer science, language processing, code breaking and other advanced arenas.

The U.S. fielded two teams at the Olympiad, which featured competitors from 17 different countries, including Australia, Germany, India, South Korea and Russia. Rebecca Jacobs of Los Angeles took the highest individual honor of any U.S. competitor with a silver medal, while John Berman of Wilmington, N.C., Sergei Bernstein of Boston, and Alan Huang of Beverly Hills, Mich., each took home bronze medals. Morris Alper of Palo Alto, Calif., Daryl Hansen of Sammamish, Wash., Anand Natarajan of San Jose, Calif. and Vivaek Shivakumar of Arlington, Va. received honorable mentions for their work. Berman and Huang were also recognized for their solutions to specific problems.

The U.S. Red team, comprised of Alper, Huang, Jacobs, and Natarajan took home the gold cup in team competition.
This year's U.S. teams were chosen from hundreds of students who competed in the third annual North American Computational Linguistics Olympiad (NACLO) that took place this past winter throughout the country. NACLO, and the U.S. teams that competed this summer, are sponsored by the National Science Foundation, Google, Cambridge University Press, Microsoft, Everyzing, M*Modal, JUST. Systems, The North American Chapter of the Association for Computational Linguistics (NAACL), Oxford University Press, Carnegie Mellon University's Language Technologies Institute, the University of Michigan, Brandeis University, and the University of Pittsburgh Linguistics Department.

The competitors faced a variety of challenges that tested their linguistics and problem-solving skills. The first question, for example, gave the teens the names and quantities of several common tropical fruits in Sulka, a language spoken by only 3,500 people in Papua New Guinea, and then asked them to translate other combinations of the words from English to Sulka and vice versa. The competitors then had to work on other problems featuring the West African languages of Bamana and Maninka as well as Burmese and Nahuatl, the language of the ancient Aztec Empire. In addition to providing translations, the teens were required to describe in detail the formulas and systems they developed to tackle each problem.

Aside from being a fun intellectual challenge, the Olympiad mimics the skills used by researchers and scholars in the field of computation linguistics, which is increasingly important for the United States and other countries. Using computational linguistics, these experts can develop automated translation technologies such as translation software that cut down on the time and training needed to work with other languages. In an increasingly global economy where businesses operate across borders and languages, having a strong pool of computational linguists is an important competitive advantage. With threats emerging from different parts of the world, developing computational linguistics skills has also been identified as a vital component of national defense in the 21st century.

While the linguistics competition is fun, it also requires dedication and hard work by many people, all of whom are volunteers. The organizing committee is headed by Dragomir Radev of the University of Michigan and Lori Levin of Carnegie Mellon University, and it also includes Mary Jo Bensasi, Eugene Fink, Adam Hesterberg, Patrick Littell, Ida Mayer, James Pustejovsky and Amy Troyani. Radev, Levin and Hesterberg also coached the U.S. team this year in Poland.

Organizers are already working on next year's NACLO competition and hope to repeat the U.S.'s success in the international competition. More information as well as problem sets and solutions can be found on the organization's Web site http://www.naclo.cs.cmu.edu/.

-NSF-
For eight US high-school students, the most coveted award coming out of Stockholm this year isn't in Physics or Medicine. This week, 26 teams of young linguists from 18 countries descended on the beautiful capital of Sweden to participate in the 8th **International Olympiad in Linguistics**.

This year the US team won a large number of prizes: Ben Sklaroff of Palo Alto, Calif. won one of three gold medals awarded in the Individual Competition. Three other contestants, Martin Camacho of St. Paul, Minn., Allen Yuan of Farmington Hills, Mich., and Damien Jiang of Raleigh, NC won silver medals, and Alan Chang of San Jose, Calif. and Alexander Iriza of New York, NY took home bronze medals. Honorable mentions went to Brian Kong of Milton, Mass. and In-Sung Na of Old Tappan, NJ. In-Sung and Allen had just come from International Mathematics Olympiad in Astana, Kazakhstan, where they earned silver medals for the US team.

One of the two US teams, USA Blue consisting of Alex, Alan, Damien, and Martin, took home the cup awarded to the team with the highest average score in the individual competition. Damien, Martin, and Ben were also awarded Best Solution awards for their elegant explanations of individual problems.

The problems at this year's IOL were in Mongolian, Budukh, Drehu, Romansch, Blissymbolics, and genetic sequence analysis.
This is the 4th time the U.S. has sent teams to the IOL. Team USA members are selected from more than 1,100 contestants in the North American Computational Linguistics Olympiad, held each year in February and March. This year’s team was led by Dr. Lori Levin of Carnegie Mellon University, Dr. Dragomir Radev of the University of Michigan, Ann Arbor, and Patrick Littell of the University of British Columbia.

This year’s team, as well as the NACLO competition, were sponsored by the National Science Foundation, Carnegie Mellon University, the University of Michigan, D. E. Shaw, University of Pittsburgh Intelligent Systems Program, the North American chapter of the Association for Computational Linguistics (NAACL), as well as other generous contributors.

Lori Levin says, "It is an honor to work with such smart and talented young people. We hope to encounter them again as they progress through their careers." Patrick Littell adds, "Even though not all of these young scholars will go on to major in Linguistics, every one will carry with them a more sophisticated understanding of human language, which will go on to inform whatever fields they excel in."

One team member proclaims, "International Olympiad in Linguistics? More like Incredible Opportunity to Learn!"

Contact information:
Dr. Lori Levin, Carnegie Mellon University (lsl@cs.cmu.edu)
Dr. Dragomir Radev, University of Michigan (radev@umich.edu)
Press Release 2011

US and Canadian Teams Collect Medals at International Linguistics Olympiad

One hundred and two high school students from around the world converged on Carnegie Mellon University in Pittsburgh this week for the 9th annual International Olympiad of Linguistics (IOL), the first time the competition has been held in the US. In the Individual round, competitors struggled independently with problems about Faroese orthography, Menominee morphology, Vai syntax, Nahuatl semantics, and the structure of the barcode language EAN-13, while in the team round, groups of up to four students worked out the metrical rules of Sanskrit poetry.

Twenty-seven teams participated, representing nineteen countries, among them Australia, Bulgaria, India, the Netherlands, Poland, Russia, Singapore, South Korea, Sweden, and the United Kingdom. The United States, competing for the fifth year, sent twelve students in three teams. Canada participated for the first time with a single team of four students. Other countries attending for the first time were Brazil, the United Arab Emirates, and Vietnam.

US students did exceptionally well, winning a total of six individual medals, one gold, four silver, and one bronze, as well as five honorable mentions and three awards for the best solution received for a single question. One US team, Team Red, won an additional two team awards, placing first in the team portion of the competition and having the highest combined score of its members on the individual round.

Canadian students won one bronze medal and one honorable mention. Canada received awards for the best new team at the competition and the best performance by an individual student from a new team at the competition.

Students for the US and Canadian teams were chosen from over one thousand students based on their performance on the two rounds of the North American Computational Linguistics Olympiad (NACLO) held in February and March of this year. Dr. Dragomir Radev of the University of Michigan was the coach of the US teams and NACLO program chair and Patrick Littell of the University of British Columbia coached the Canadian team. Dr. Lori Levin of Carnegie Mellon University served as chair of the local organizing committee for the IOL.

The members of the US and Canadian teams were:

- **USA Red**: Aaron Klein, of Brookline, MA; Duligur Ibeling, of Maple Grove, MN; Wesley Jones, of Germantown, TN; and Morris Alper, of Palo Alto, CA
- **USA White**: Erik Andersen, of Sunnyvale, CA; Allen Yuan, of Farmington Hills, MI; Chelsea Voss, of San Jose, CA; and Arjun Srinivasan, of Herndon, VA
“USA Blue”: Alexander Wade, of Reno, NV; Ophir Lifshitz, of Rockville, MD; Caroline Ellison, of Newton, MA, and Rachel McEnroe, of Jackson NJ.

“Team Canada”: Daniel Mitropolsky, of Toronto, ON; Keunjae Go of Vancouver, BC; Jordan Ho, of Toronto, ON; and William Zhang, of Vancouver, BC.

Morris Alper won one of four gold medals awarded to top scorers in the individual round of the competition. Students from Estonia and Russia also earned gold medals, but Alper was awarded the Alfred Zhurinsky memorial prize for achieving the single highest individual round score of the competition. The prize is named for the founder and organizer of the original linguistics competitions, which began in Moscow forty-six years ago.

Four US participants received silver medals: Allen Yuan, Wesley Jones, Alexander Wade, and Duligur Ibeling. One US student, Aaron Klein, took home a bronze medal, as did a Canadian student, Daniel Mitropolsky. Five US students and one Canadian student won honorable mentions: Ophir Lifshitz, Arjun Srinivasan, Caroline Ellison, Erik Andersen, Chelsea Voss, and William Zhang.

Awards were also given for the best solution to individual problems. Alper shared the prize for the best solution to problem 2 (Faroese Orthography) with a student from Slovenia, Ellison won outright the best solution prize to problem 3 (Vai translation), and Wade shared the best solution prize to problem 4 (Nahuatl translation) with a student from Russia.

One US team, “USA Red”, consisting of Alper, Jones, Klein, and Ibeling took home two additional awards: a gold medal for the best performance on the team portion of the competition, and a cup for the team with the highest combined score on the individual portion of the competition.

The Canadian team was honored as the best new team in the competition, and Mitropolsky had the highest score of any member of a new team.

This year’s US and Canadian teams as well as the entire North American Computational Linguistics Olympiad were sponsored by the National Science Foundation, the North American Chapter of the Association for Computation Linguistics (NAACL), Yahoo!, and the University of Michigan.

In January 2011, the Linguistics Society of America awarded NACLO its “Linguistics, Language, and the Public” award for increasing awareness of linguistics in the general public.

The primary purpose of NACLO is to raise public awareness of linguistics and computational linguistics. "Usually, college students don't even hear about computational linguistics until they are well along in their undergraduate studies," says Levin. "Our hope is that competitions such as the Computational Linguistics Olympiad will identify students who have an affinity for
linguistics and computational linguistics before they graduate high school and encourage them to pursue further studies at the university level."

The 10th International Linguistics Olympiad will be held in Slovenia in 2012. The US and Canadian teams will be selected as part of NACLO 2012, to be held across the USA and Canada in Winter 2012.

Contact information, links:
NACLO: http://www.naclo.cs.cmu.edu/ (includes questions from previous national linguistics olympiad)
IOL: http://ioling.org/ (includes links to contest questions and full results for the international linguistics olympiad)

Photographs, and interviews with participants from this year’s international Olympiad may also be found at:


Dr. Lori Levin, Carnegie Mellon University. local organizing chair for the IOL (lsl@cs.cmu.edu)
Dr. Dragomir Radev, University of Michigan, program chair of NACLO, US team leader for the IOL, (radev@umich.edu)
Patrick Littell, University of British Columbia, Canadian team leader for the IOL, (littell@interchange.ubc.ca)

USA Team Red: Morris Alper, Aaron Klein, Duligur Ibeling, and Wesley Jones

Team Canada: Front row: Jordan Ho, Keunjae Go, William Zhang, Daniel Mitropolsky. Back row: Patrick Littell
Press Release 2012

USA and Canada Triumph at International Linguistics Olympiad

2012 International Linguistics Olympiad
Hosted by the Association for Technical Culture of Slovenia
Held at the Faculty of Electrical Engineering of the University of Ljubljana
July 29 - August 4, 2012, Ljubljana, Slovenia

Team USA Red: Allan Sadun (Austin, TX), Anderson Wang (Ambler, PA), Darryl Wu (Bellevue, WA), and Sam Zbarsky (Rockville, MD)

Team USA Blue: Erik Andersen (Sunnyvale, CA), Aidan Kaplan (Montclair, NJ), Aaron Klein (Brookline, MA), and Alexander Wade (Reno, NV)

Team Canada: Pen Long (Toronto, ON), Harry Go (Langley, BC), Simon Huang (Toronto, ON), and David Penco (Burnaby, BC)

Coaches: Dragomir Radev and Lori Levin (USA); Pat Littell (Canada)

On July 29, eight Americans and four Canadians traveled to Ljubljana, Slovenia, to join over 30 teams from around the world at the 2012 International Linguistics Olympiad (IOL). The North Americans, who all trained together, performed extremely well. In the team contest, USA Blue-Erik Andersen, Aidan Kaplan, Aaron Klein, and Alexander Wade-won first place. The Netherlands won second place in the team contest, and Poland Team 2 came in third. In the individual round, the USA won six medals and one honorable mention, and Canada won one honorable mention. Alexander Wade and Anderson Wang of USA won gold medals; Aaron Klein, Allan Sadun, and Darryl Wu of USA won silver medals; Erik Andersen of USA won a bronze medal; and Sam Zbarsky of USA and Harry Go of Canada won honorable mention awards. Second place by medals was Russia with two gold, one silver, and two bronze medals, and the UK and Estonia tied for third place with one silver and three bronze medals each. Bulgaria had two golds and a bronze.

The IOL, one of twelve international science olympiads, consists of two events. The first is the individual contest, a six-hour test, which this year had problems about the languages Dyirbal, Umbu-Ungu, Basque, Teop, and Rotuman. Darryl Wu won a prize for writing the best solution to the Dyirbal problem, Alexander Wade won prizes for the best solutions to the Basque and Rotuman problems, and Anderson Wang won for the best solution of the Teop problem. The second event is the team contest, which this year asked contestants to decipher a list of 57 countries written in Lao. To solve these problems, contestants must apply knowledge about the way languages work as well as logic and reasoning skills to
decipher unfamiliar languages and writing systems.

The teams were selected through the North American Computational Linguistics Olympiad (NACLO). This competition has two rounds, which are held at universities and high schools throughout the USA and Canada. This year over 1,500 students took the open round, a three-hour test. The top students from the open round were invited to the next round, a more difficult, five-hour test. The top four from the invitational round—Allan Sadun, Anderson Wang, Darryl Wu, and Sam Zbarsky—were chosen to be Team USA Red, and the top four Canadians—Pen Long, Harry Go, Simon Huang, and David Penco—were chosen for Team Canada. The next fourteen Americans were all invited to the joint American-Canadian practices, which were conducted via Skype by the USA coaches Dragomir Radev, a professor at the University of Michigan, and Lori Levin, a professor at Carnegie Mellon University, the Canadian coach Pat Littell, a doctoral student at the University of British Columbia, and Adam Hesterberg, an IOL veteran and Fulbright scholar in mathematics. The coaches used the practices and one final playoff to select USA Team Blue, named above.

In addition to competing, the students at the IOL also explored Slovenia and made friends from all over the world. Twenty-seven countries were represented this year—the most ever since the Olympiad began in 2003 when six countries competed in Borovets, Bulgaria. Next year’s IOL will be held in Manchester, England.

More info:

NACLO : www.naclo.cs.cmu.edu
IOL : ioling.org

Contact:

Prof. Dragomir Radev, University of Michigan, program chair of NACLO, US team leader for the IOL, (radev@umich.edu)
Dr. Lori Levin, Carnegie Mellon University. NACLO chair, local organizing chair for the IOL (lsl@cs.cmu.edu)
Patrick Littell, University of British Columbia, Canadian team leader for the IOL, (littell@alumni.ubc.ca)
US Linguistics Olympiad team members, along with their coaches: from L to R: Dragomir Radev (team leader), Lori Levin (team leader), Anderson Wang, Allan Sadun, Darryl Wu, Sam Zbarsky, Aidan Kaplan, Alex Wade, Erik Andersen, Aaron Klein, Matthew Gardner (team management), Sabrina Cromwell (team management)

US and Canada team members. Front row: Lori Levin (US coach), Harry Go (Canada), Allan Sadun (USA), Pat Littell (Canada coach), Aidan Kaplan (USA), Alex Wade (USA), Erik Andersen (USA). Back row: Dragomir Radev (US coach), Qin Long (Canada), Anderson Wang (USA), Sam Zbarsky (USA), Darryl Wu (USA), David Penco (Canada), Aaron Klein (USA), Simon Huang (Canada).
Press Release 2013

USA and Canada win many awards at the 2013 International Linguistics Olympiad

Eight American and four Canadian high school students brought a number of awards at 2013 International Linguistics Olympiad (IOL) held between July 22 and 26 in Manchester, UK.

FOR IMMEDIATE RELEASE

(Press Release) - July 26, 2013 International Linguistics Olympiad (IOL)
Hosted by Manchester Grammar School and the University of Manchester
July 22 – 26, 2013, Manchester, UK

Team Canada (white T-shirts; left to right): Jordan Ho (Toronto, ON), Janis Chang (Toronto, ON), Stella Lau (Toronto, ON), and Daniel Lovsted (Toronto, ON)
Team USA Red (red T-shirts; left to right): Tom McCoy (Pittsburgh, PA), Max Schindler (St. Louis, MO), Alexander Wade (Reno, NV), and Aaron Klein (Brookline, MA)
Team USA Blue (blue T-shirts; left to right): Erik Andersen (Sunnyvale, CA), Simone Stoyen (Herndon, VA), Rebecca Burks (Los Altos, CA), and Jeffrey Ling (Palo Alto, CA)

Coaches: Pat Littell (Canada) and Dragomir Radev (USA), NACLO Chair Lori Levin, and Sponsorship Chair James Pustejovsky.

On July 19, eight Americans and four Canadians traveled to Manchester, UK, to join over 30 teams from around the world at the 2013 International Linguistics Olympiad (IOL). The North Americans, who all trained together, performed extremely well.

The IOL, one of twelve international science olympiads, consists of two events. The first is the individual contest, a six-hour test, which this year had problems about the languages Yidini, Tundra Yukaghir, Pirahã, and Muna, as well as a problem on functional magnetic resonance
imaging (fMRI). The second event is the team contest, which this year involved an ancient variant of Georgian, the language of the Republic of Georgia in the Caucasus region of Eurasia. To solve these problems, contestants must apply knowledge about the way languages work as well as logic and reasoning skills to decipher unfamiliar languages and writing systems.

One of the two USA Teams (USA Red) won both team competitions. In the team problem competition, the US team was followed by Russia, Bulgaria, and Romania.

In the individual contest, the absolute winner among all 137 contestants, with 87 points out of 100, was Alex Wade (USA Red), who received one of seven gold medals; the other six gold medals went to contestants from Russia, the Czech Republic, Brazil, Poland, Bulgaria, and Latvia. Jeffrey Ling and Aaron Klein won silver medals for the US teams. Max Schindler and Tom McCoy won bronze for the USA and Daniel Lovsted won a bronze for Canada.

The three teams were selected through the North American Computational Linguistics Olympiad (NACLO). This annual competition has two rounds, which are held at universities and high schools throughout the USA and Canada. This year over 1,700 students took the open round, a three-hour test. Approximately the top 10% of the students from the open round were invited to the next round, a more difficult, five-hour test. The joint American-Canadian practices, which were conducted via Skype by the USA coaches Dragomir Radev, a professor at the University of Michigan, and Lori Levin, a professor at Carnegie Mellon University, and the Canadian coach Pat Littell, a doctoral student at the University of British Columbia. Professor James Pustejovsky of Brandeis University chaired the fundraising committee for the team. The teams’ sponsors include the Feldberg Foundation, Brandeis University, the North American Chapter of the Association for Computational Linguistics (NAACL), the Linguistics Society of America (LSA), Carnegie Mellon University, the University of Michigan, as well as individual donors and parents.

In addition to competing, the students at the IOL also explored Manchester and made friends from all over the world. Twenty-six countries were represented this year. Next year’s IOL will be held in Beijing, China.

More info:
- NACLO [http://www.naclo.cs.cmu.edu](http://www.naclo.cs.cmu.edu)
- IOL [http://www.ioling.org](http://www.ioling.org)

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Teams USA and Canada win ten medals, including the team gold medal, at the 2014 International Linguistics Olympiad in Beijing

Eight American and four Canadian high school students won a total of 9 individual medals and one team gold at the 2014 International Linguistics Olympiad (IOL) held from July 21 to July 25 in Beijing, China.

FOR IMMEDIATE RELEASE

(Press Release) - July 29, 2014

Hosted by Beijing Language and Culture University (BLCU)
July 21 – 25, 2014, Beijing, China

Team Canada (left to right): Simon Huang (Toronto, ON), Daniel Lovsted (Toronto, ON), Minh-Tam Nguyen (Scarborough, ON), Yan Huang (West Windsor, NJ)

Team USA 1 (Red) (left to right): Alexander Babiak (Ithaca, NY), Jackie Bredenberg (Royal Oak, MI), Deven Lahoti (Houston, TX), Darryl Wu (Bellevue, WA)

Team USA 2 (Blue) (left to right): Catherine Wu (San Diego, CA), Brandon Epstein (Dix Hills, NY), James Bloxham (Marblehead, MA), Kevin Li (San Diego, CA)

Coaches: Heather Newell (Canada) and Dragomir Radev (USA), NACLO Chair Lori Levin, and Sponsorship Chair James Pustejovsky (not pictured).
On July 18, four Canadian and eight US students traveled to Beijing, China, to join 38 other teams from 28 countries around the world at the 2014 International Linguistics Olympiad (IOL). The North Americans, who all trained together, performed excellently.

The IOL, one of twelve international science olympiads, consists of two events. The first is the individual contest, a six-hour test, which this year had problems about Benabena, Kiowa, Tangkin, Engenni, and Gbaya. The second event is the team contest, which this year involved building a grammar for Armenian and translating the Universal Declaration of Human Rights from Armenian to English. To solve these problems, contestants must apply knowledge about the way languages work as well as logic and reasoning skills to decipher unfamiliar languages and writing systems. Of the 152 contestants, 41 received medals (7 gold, 13 silver, and 21 bronze). Five teams received three medals each: USA 1 (1 gold and two silvers), followed by Canada (1 gold, 1 silver, 1 bronze), Russia 2 (1 gold, 2 bronze), China 1 (2 silver, 1 bronze), USA 2 (1 silver, 2 bronze). Seven teams received two individual medals each: Poland 1, Russia 1, China 2, India, Bulgaria 1, the Czech Republic, and Latvia. Thirteen teams received one medal each: the United Kingdom, Romania, Poland 2, Ukraine, Slovenia, Japan 2, Sweden 2, South Korea 1, Estonia, Sweden 1, Australia 1, and Singapore.

**Individual Round:** The three North American teams performed excellently this year, getting two individual gold medals: by Darryl Wu from USA (second place overall) and Daniel Lovsted from Canada (third place overall). Catherine Wu, Deven Lahoti, Yan Huang, and Alexander Babiak earned silver medals; Kevin Li, James Bloxham, and Simon Huang earned bronze medals, while Minh-Tam Nguyen, Brandon Epstein, and Jackie Bredenberg earned honorable mentions. Three North American students earned best solution awards, namely Darryl for Problem 2, Simon for Problem 3, and Catherine for Problem 4. USA Team Red won the prize for the highest combined score in the individual contest with 230 points. Canada finished in second place in this event with 210 points, followed by a three-way tie for third place between Poland 1, China 1, and USA Blue, scoring 192 points each.

**Team Round:** In the team round, USA Red won the first prize (29 points), ahead of the two teams from Russia (24 and 23.5 points, respectively).

The three teams were selected through the *North American Computational Linguistics Olympiad* (NACLO). This annual competition, held since 2007, has two rounds, which are held at universities and high schools throughout the USA and Canada. This year over 1,600 students took the open round, a three-hour test. Approximately the top 10% of the students from the open round were invited to the next round, a more difficult, five-hour test. The joint US-Canadian practices, which were conducted via Skype and in person by the USA coaches Dragomir Radev, a professor at the University of Michigan, and Lori Levin, a professor at Carnegie Mellon University, and the Canadian coach Heather Newell, a professor at Université du Québec à Montréal. Professor James Pustejovsky of Brandeis University chaired the fundraising committee for the team. The teams’ sponsors include Yahoo!, the North American Chapter of the Association for Computational Linguistics (NAACL), the Linguistic Society of America (LSA), The US National Science Foundation, Brandeis University, Carnegie Mellon University, the
University of Michigan, Université du Québec à Montréal, as well as individual donors and parents.

Students at IOL also toured various sites in Beijing in addition to competing, and made many friends from around the world. Brandon Epstein of USA Blue said “It was excellent! I had a lot of fun competing in [the IOL]. We did problems based on languages with particularly interesting, idiosyncratic properties and we had to figure them out. I also got to meet a lot of new people from a lot of countries I have never visited, like Poland and Sweden. I hope I qualify again next year!” Minh-Tam Nguyen added “I had never been to anything like the IOL before, and the experience surpassed my highest expectations. Within just a week I was able to form new friendships with people from all around the world and lasting memories that I will cherish forever. I am so grateful to have been given the opportunity to attend IOL 2014, and I hope whole-heartedly that I will have the honour to represent my country again in the coming years”. Jackie Bredenberg had the following to say “In America, we are surrounded by people who speak English. Even if it's not someone's first language, he/she is expected to learn it. Even businesspeople from other countries all seem to be fluent, because English is the language of business, etc. It's easy to grow up with the idea that learning other languages is not quite as important, because we fortunate Americans will always be able to find people who speak our native tongue. The trip to China really changed my perspective in this matter. I found myself dependent on Chinese-speaking friends, because without them I couldn't get directions, order food, or even locate the bathroom. I realized how great a barrier language can be in communication, and therefore what a powerful tool knowledge of languages is. At a contest of linguistics, this is a valuable lesson! I know that many of my teammates will share their memories of the contest or the sight-seeing, so I hope this adds a slightly different perspective on the value of the IOL. Deven Lahoti concurred “I was really excited that I made the IOL team. The IOL was a great experience since it let me get to know people with similar interests from all over the US and all over the world.”

The next IOL will be held in Bulgaria in 2015.

More info:

NACLO http://www.naclo.cs.cmu.edu (includes practice problems, contest rules, and information about registering for NACLO)
IOL http://www.ioling.org (includes all results from this year’s Olympiad as well as all previous editions)

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