

Winners of the fifth annual North American Computational Linguistics Olympiad announced.

More than a thousand high school students from across the USA and Canada recently competed in the fifth annual North American Computational Linguistics Olympiad (NACLO). The top scorers of NACLO are eligible to represent their countries at the Ninth International Olympiad in Linguistics (IOL), which will be held in Pittsburgh, Pennsylvania in late July.

This will be the first time the United States has hosted the IOL, and it will be the first time Canada will send its own team to the international competition, joining the 23 nations that have participated in previous IOLs. The United States has competed in the IOL since 2007, sending two teams of four students each year. In the past four years, its students have won 17 medals, including 3 gold medals. Its teams have won the team portion of the competition 3 times and have won or tied for highest combined score on individual rounds in two of those years.

The NACLO competition included two rounds. In early February, 1039 students took part in the open round at more than 100 university and high school locations. Approximately 125 students with the highest scores from the US and the top 10 students from Canada then advanced to the invitational round, held on March 10th, which featured significantly harder questions.

Top winners include:

Student	From	Took NACLO at
Daniel Mitropolsky	Oakville, Ontario	Appleby College
Aaron Klein	Brookline, MA	Brandeis University
Duligur Ibeling	Maple Grove, MN	Wayzata High School
Wesley Jones	Germantown, TN	University of Memphis
Morris Alper	Palo Alto, CA	Stanford University
Erik Andersen	Sunnyvale, CA	San Jose State University
Allan Sadun	Austin, TX	The Liberal Arts and Science Academy
Zixiao Wang	Cherry Hill, NJ	University of Pennsylvania
David Jaffe	Chicago, IL	Northeastern Illinois University
Mikayla Bactad	Carmel, CA	San Jose State University
Arjun Srinivasan	Herndon, VA	Thomas Jefferson High School for Science and Technology (VA)
Alexander Wade	Reno, NV	The Davidson Academy of Nevada
Ophir Lifshitz	Rockville, MD	Maret School (DC)
Richard Yu	Fresh Meadows, NY	Columbia University
Chelsea Voss	San Jose, CA	Maret School
Allen Yuan	Farmington Hills, MI	Michigan
Sin Kim	McLean, VA	Thomas Jefferson High School for Science and Technology (VA)

Caroline Ellison	Newton, MA	Brandeis University
Rachel McEnroe	Jackson, NJ	Princeton University
Amanda Wang	London, U.K.	Phillips Academy (MA)

Students compete in the Computational Linguistics Olympiad by solving challenging problems using data from a variety of languages and formal systems. There is no prerequisite knowledge. Students discover facts about languages and formal systems in the course of solving the puzzles. "NACLO is unique because it is a challenge in linguistics and plays with language, which is more genuinely fun and intuitive than the majority of other contests in math or science," says Daniel Mitropolsky, the first-place finisher in this year's contest. "I enjoy the fact that the problems teach some facts about each language first. It makes taking the competition a learning experience in itself," adds Rachel McEnroe, another high scorer in this year's contest.

This year, students solved fourteen problems, including:

- deciphering the Afaka script, which is used for transcribing the Ndyuka language, an English-based creole of Suriname
- finding out how letters are formed in New York Point, an alternative to Braille
- deducing how words and sentences are formed in Nahuatl, the language of the Aztec empire
- analyzing different pronunciations in dialects of Warlpiri, a language of Australia
- figuring out what happened when a fictional experiment with a computer text-replacement program went horribly wrong.

Dragomir Radev of the University of Michigan is the program chair of NACLO and head coach of the US team for the IOL. Among his many responsibilities, Radev gathers ideas from industry and academic researchers around the world. Radev aims to create challenging and stimulating problems that address cutting edge issues in the field of computational linguistics. Though not yet widely known to the general public, computational linguistics is a rapidly emerging field with applications in such areas as search engine technologies, machine translation, and artificial intelligence.

While the linguistics competition is fun, it also requires dedication and hard work by many people, all of whom are volunteers. In addition to Radev, Lori Levin (Carnegie Mellon University) is the NACLO chair and an IOL team coach. Patrick Littell (University of British Columbia) is a member of the organizing committee and team leader for the Canadian IOL team. The organizing committee also includes School

Liaison Amy Troyani (Pittsburgh Allderdice High School), Administrative Chair Mary Jo Bensasi (Carnegie Mellon University) and Sponsorship Chair James Pustejovsky (Brandeis University), as well as problem authors and jury members Eugene Fink (Carnegie Mellon University), David Mortensen (University of Pittsburgh), and 2007 international gold medalist Adam Hesterberg, now studying at Princeton University. Many other college professors, high school teachers, and college students also volunteer their time

NACLO is sponsored by the National Science Foundation, the North American Chapter of the Association for Computational Linguistics (NAACL), The Linguistics Society of America, The National Science Foundation, Yahoo!, Carnegie Mellon University, the Gelfand Center for Community Outreach, the University of Michigan, and the University of Pittsburgh Intelligent Systems Program, as well as donations from many academic departments and individual donors.

Universities and corporations view the program as a way of helping high school students discover their talents and interests in the areas of language, linguistics and natural language processing. 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.

"Usually, college students don't even hear about computational linguistics until they are well along in their undergraduate studies," says Lori Levin of Carnegie Mellon University, NACLO chair. "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." Mitropolsky adds, "I've surely gained much pleasure and experience in problem solving that I can apply in other subjects. The contest has consolidated my interest in studying linguistics formally." Caroline Ellison, a high scorer in this year's NACLO contest, agrees, saying "Instead of having to remember facts and formulas, I could focus entirely on the logic of the problems. I loved being exposed to languages that are so different from English. After taking NACLO, I've become interested in linguistics and now hope to study it further in college."

"High school students are always enthusiastic about logic puzzles, and the Linguistics Olympiad provides lots of them," says Adam Hesterberg, winner of the 2007 International Linguistics Olympiad, and now vice-chair of the NACLO jury and chair of the IOL jury this summer. "It's like a math contest without the requirement of knowing any math, although without the rigor of a math contest. Indeed, mathematicians normally do quite well in the contests."

Radev certainly feels that his hard work pays off. "Many of the participants are extremely bright and have broad interests. In addition to linguistics, they also excel in physics, mathematics, computing, and many other subjects. A number of linguistics clubs have been created at high schools thanks to NACLO."

And, as Fink puts it, "most importantly, it is fun for all participants, both students and organizers."

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