

SCHOOLNOVA OUTREACH

SchoolNova at Stony Brook is a 501(c)(3) organization

www.schoolnova.org

JTA PROGRAM



ADVANCED CLUBS



COMPETITIONS



CAFÉNOVA



PROGRAMS FOR HIGH SCHOOL STUDENTS

Among its educational goals, SchoolNova is deeply committed to providing an immersive experience to high-school aged youth, ranging from strengthening their academic portfolio to exploring career choices.

SchoolNova recognizes the value of a meaningful pre-college experience and has developed a series of programs designed to engage high-school students in advanced academic and work activities, offering opportunities to learn and work side-by-side with scientists, researchers and university-level educators.

Throughout the years our staff have demonstrated the dedication to our goal, fostering the love of learning and offering an academic support to our community youth.

SchoolNova at Stony Brook is a 501(c)(3) organization. While its main mission of an academic enrichment education for pre-K – 10 students is supported by the tuition, the sustainability of our outreach programs is contingent on the support of the community and donors. These programs are offered free of charge to all participants and with the support have a potential to grow.

We are grateful to the faculty, graduate students and postdoctoral fellows from Brookhaven National Lab, Stony Brook University and the Simons Center for Geometry and Physics for their interest in SchoolNova programs, generously contributing their time and participating as instructors, academic mentors and guests.

Like no other, last year demonstrated the importance of community. We welcome the return of our in-person programs with optimism, but we will always rely on the generosity of donors to remain one of the leading educational enrichment providers in the area.

We are happy to acknowledge the collaborative support by SBU Department of Mathematics and SBU Department of Physics and Astronomy in hosting academic competitions and generously offering us a comfortable space for CafeNova meetings.

Our deepest gratitude goes to our donors, who share our dream of providing learning opportunities to all children and contribute so generously to SchoolNova.

Our heartfelt thanks to The Simons Center for Geometry and Physics and to The Marilyn and James Simons Foundation for supporting our programs throughout the years.



*Photos by Natalia Iliina, Green Ray Studio

TEACHING ASSISTANTS PROGRAM:



INTRODUCTION

The Junior Teaching Assistants program was initiated in 2014 to give our SchoolNova graduates a meaningful opportunity to get an inside look at our teaching methods and philosophy. The idea behind it was to give these young people a first-hand experience working side-by-side with SchoolNova instructors.

It came from our belief that teaching is a challenge unlike any other, as it requires a deeper understanding of the subject and the ability to explain a concept in multiple ways.

Since then, the program has expanded beyond high school students and SchoolNova graduates. SchoolNova now offers employment to SBU undergraduate students as a part of the JTA program.

PROGRAM PARTICIPANTS

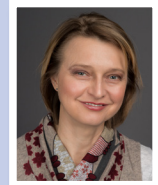
In 2021-2022:

- 20 active TAs
- Among them 7 are volunteers
- 13 are paid employees
- 5 of the 20 are undergraduate students
- 5 TAs continue their own education at SchoolNova
- TAs assist in 51 classes and clubs

GOALS

- A real employment experience, teaching students job responsibility and work ethics;
- An opportunity to work side-by-side with scientists and educators, gaining first-hand educational experience;
- An opportunity for high school students to deliver a meaningful community service by volunteering their time and skills;
- Build a community of like-minded youth, an opportunity to connect with peers and work as a team;
- Broaden exposure to the subjects which interest them;
- Provide assistance to SchoolNova instructors to enable a richer educational environment;
- Younger students benefit from engaging with high school and university students as their role models.

OKSANA IVASHKEVYCH
JTA Program Director
SchoolNova Math Teacher
Controls Engineer, BNL



ADVANCED CLUBS:

INTRODUCTION

We launched the Advanced Math Problem-Solving Club and The Advanced Physics Club program in 2016 with the idea to expand our students' curiosity in math and physics beyond our academic program. The goal was to provide additional challenges and new skills in problem solving on all levels.

Since 2016, the program has grown in popularity, increased in participation and has proven to be an invaluable addition to our youth's educational enrichment.

GOALS

- Provide additional challenges and new skills in problem solving on advanced levels;
- Learn directly from former members of the International Physics Olympiad teams;
- Build a community of like-minded youth;
- Broaden exposure to the subjects which interest them;
- Help prepare for the American Invitational Mathematics Exam (AIME) and other Olympiads.

PROGRAM PARTICIPANTS/ KEY PERSONNEL

- The Advanced Math Problem-Solving and Advanced Physics Clubs are open to all interested students free of charge.



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- Clubs are taught by the instructors with advanced degrees in Math or Physics.
- All instructors for the Advanced Physics club are former members of the International Physics Olympiad teams from their countries.



ACADEMIC COMPETITIONS:



INTRODUCTION

Participation in academic tournaments has become a SchoolNova tradition, for our students - it's a measure of achievement on the scale of individual scholastic ambition and a meaningful way to challenge their mind and increasingly push it's limits.

Each event is a fascinating gathering of students of like interests, abilities and kindred spirits, eagerly embracing the challenge every time.

SchoolNova recognizes the value of this rewarding pursuit and offers an opportunity to take part in various yearly competitions to anyone who is interested in the community.

GOALS

- Provide an opportunity to all of the high school students community to take part in prestigious academic competitions - without limits, conditions or selection;
- Facilitate an environment that presents students the academic challenge;
- A chance for participants to gain substantial experience, showcase skills and strengthen their academic portfolio;
- Build a community of like-minded youth, an opportunity to connect with peers;
- Offer academic support and practice in preparation for competitions.

PARTICIPANTS

Everyone is welcome to participate, free of charge. Participants of Math and Physics competitions are not required to be SchoolNova students. SchoolNova covers registration fees.



Mathematics



The Harvard-MIT Mathematics Tournament (HMMT) is an annual math tournament for high school students, held at MIT and at Harvard in alternating years. Participation is determined through an acceptance lottery.

SchoolNova applies for participation every year since 2016 and has been selected through the lottery twice.

Left: SchoolNova Team, 2016



- **AMC 10/12** - high school level competitions
- **AIME** - American Invitational Mathematics Examination - AMC's invitational competition for high scoring AMC 10/12 participants.

SchoolNova participates since 2005. For 5 years in a row we are on the list of U.S. School Merit Roll (top 2% - 5% in USA). We always have students who are on the U.S. Distinguished Honor Roll List (top 1%) and on the USA Honor Roll List. SchoolNova offers a few sessions of preparation for the exam during the weekly Advanced Math Problem-Solving Club meetings.

Computer Science



Carnegie Mellon Informatics and Mathematics Competition (CMIMC) - annual computer science competition for high school

students, held at Carnegie Mellon University. Three teams of 2-3 students each represent SchoolNova in the competition. SchoolNova at Stony Brook participates since 2020.

Physics



F=ma is a high school level US Physics Competition coordinated by American Association of Physics Teachers and American Institute of Physics to select the team to represent United States at the International Physics Olympiad (IPhO). SchoolNova at Stony Brook participates since 2019.

PHYSICSBOWL

PhysicsBowl competition is for middle and high school students. The competition is organized by American Association of Physics Teachers. SchoolNova participates since 2016.

Our Team of Competition Organizers



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SchoolNova Math Teacher
Chair of Mathematics Dept.,
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SchoolNova Physics Teacher
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SchoolNova CS Teacher
Associate Professor,
Dept. of Political Science
SBU

CAFÉNOVA:

CaféNova
AT STONY BROOK

INTRODUCTION

CaféNova initiative was launched in 2018, aiming to bring together students from local high schools with graduate students, postdoctoral fellows, and faculty of prestigious institutions such as SBU, BNL, and the Simons Center for Geometry and Physics - all in an informal setting.

Rather than giving formal presentations, researchers in various fields are there to answer students' burning questions about research, education, life in academia, and to give advice about colleges and graduate schools. They bond over coffee, tea and board games, which stimulates spontaneous and casual conversation.

This is a truly meaningful program thanks to the mutual enthusiasm of our hosts and our guests, and their shared passion for science

GOALS

- Give high school students an opportunity to meet real-life scientists and researchers from various fields;
- Facilitate an informal environment in which researchers can share their insights, answer questions about their work and education;
- Build a community of like-minded youth, an opportunity to connect with peers, graduate students, postdoctoral fellows, and faculty;
- Broaden students' exposure to the subjects which interest them and learn about life in academia.

GUESTS AND PARTICIPANTS

CaféNova is open to all of high school youth community free of charge. Anyone interested is welcome. Since its start CaféNova was visited by over 25 scientists and many graduate researchers and postdoctoral fellows from SBU as guests. Among them:



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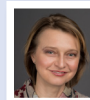
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CaféNova Director
SchoolNova at Stony Brook
Principal and
Executive Director

