# Aknazar Kazhymurat

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Born: August 14, 2001—Almaty, Kazakhstan
Nationality: Kazakhstan

## Education

2018-19 12th grade of high school in NIS PM Almaty, GPA 5.0/5.0. Standardized test scores: ACT composite 36, TOEFL 118

## Awards and honours

2016 Ranked among the top 5 astrophysicists in Kazakhstan at the national selection camp and represented Kazakhstan at the International Astronomy & Astrophysics olympiad 2016
2017 Golden medal, International Physics Olympiad
2017 Golden medal, S.-T. Yau Science Competition (Mathematics)
2017 Research presentation ranked $1^{st}$ at 'Geometry and topology' section of ISSC (international scientific conference for undergraduate students)
2017 Ranked $3^{rd}$ in Saint-Petersburg Olympiad in topology (international olympiad in topology for undergraduate students)
2018 Golden medal, Asian Physics Olympiad
2017–18 Student of the year, NIS PM Almaty
2018 Silver medal, International Earth Science Olympiad

## Extracurricular activities

•Participant of Research Science Institute 2018 (MIT)
•The sole organizer of mathematics seminar at NIS Almaty ($9^{th}$–$12^{th}$ grades). Seminar is devoted to the study of college-level mathematics (calculus, linear algebra, finite group theory). Responsible for choice of topics and preparation of talks. Level of involvement: 5 hours per week, 32 weeks per year
•One of the 5 principal founders of the NISOLYMP ($11^{th}$–$12^{th}$ grades), an online science olympiad preparation system (the first one in Kazakhstan). The system targets students of Nazarbayev Intellectual School around Kazakhstan focusing on explanation of advanced topics in natural science. Involvement: 3 hours per week. Impact: 2,500+ unique visitors monthly
•A blog on mathematics 'In Riemann's footsteps' ($9^{th}$–$12^{th}$ grades), involvement 4 hours per week. Impact: 5,000+ unique visitors monthly
•An active user of MathOverflow ($11^{th}$–$12^{th}$ grades) — question&answer site for professional mathematicians. The questions and answers asked at the site are typically at the level of graduate students in mathematics or above. Involvement: 2 hours per week. Impact: 21,000 mathematicians reached through questions and answers

•An author of a report analyzing the efficiency of calculus teaching methods at NIS PM Almaty. Impact: the suggestions in the report were subsequently incorporated into the teaching process affecting 200+ students.
•The sole developer of an online Kazakh grammar learning tool relying on context-free grammar techniques. Impact: 800+ students have used the tool

## Research publications

•*On a lower bound for the energy functional on a family of Hamiltonian minimal Lagrangian tori in* $\mathbb{C}P^2$, Volume 59, Issue 4, Sib. Math. Journal
•*Topological uniqueness results for Lefschetz fibrations over the disc*, preprint arXiv:1808.06656

## Research presentations

•54th International scientific students conference, Novosibirsk State University, April 2016, "On the number of reducible elements in a general linear system"
•7th European congress of Mathematicians, 'Complex and algebraic geometry' section, July 2016, "Noncommutative geometry: an introduction"
•4th school students conference "Young Al-Farabi", Kazakh National University, February 2017, "Indices of commuting differential operators with meromorphic coefficients"
•55th International scientific students conference, Novosibirsk State University, April 2017, "Lower energy estimates for Lagrangian tori in $\mathbb{C}P^2$"
•Contemporary Problems of Pure and Applied Mathematics, Institute of mathematics and mathematical modelling (Almaty), August 2017, "Lower estimates for the energy functional on a family of Hamiltonian-minimal Lagrangian tori in $\mathbb{C}P^2$"
•Geometry Days in Novosibirsk, Novosibirsk State University, September 2017, "Energy estimates for a family of Lagrangian tori in $\mathbb{C}P^2$"
•Workshop 'Young Researchers in String Mathematics', MPIM Bonn, November 2017, "Lower energy estimates for Lagrangian tori in $\mathbb{C}P^2$" (on organizers' financial aid)

## Attended conferences

•Geometry Days in Novosibirsk, Novosibirsk State University, September 2016
•Dynamics in Siberia, Novosibirsk State University, February 2017 (on organizers' financial aid)
•Arbeitstagung on "Physical Mathematics", MPIM Bonn, June 2017
•The International Winter School 'Partition functions and Automorphic Forms, JINR Dubna, January 2018 (on organizers' financial aid)
•Dynamics in Siberia, Novosibirsk State University, February 2018 (on organizers' financial aid)
•Current developments in geometry, Novosibirsk State University, August 2018 (on organizers' financial aid)