



# CADENIC ARATHON

### An Adventurous Academic Learning and Contest Experience

**Senior Division** 





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The Academic Marathon International Final for the year of 2020 was concluded on January 31st, 2021 online.

Competitors won both individual and team awards at the AM 2020.

Gold, silver and bronze medals will be given to each subject according to students' online competition results in the AM 2020 International Final Round.

The names of the global TOP 20 individual scorers of the subjects with more than 50 participants, and the globle TOP 10 individual scorers of the subjects with less than 50 participants on AM 2020 International Final Round were announced.

The names of the global TOP 3 teams on AM 2020 International Final Round were announced as well and the winning teams will receive special certificates on this module.

In addition, all the competitors will get certificates of participation from AM. The certificates and the awards will be mailed to the team leaders after the competition.

## AM International Final 2020 by the Numbers



## AM International Final 2020 Online Experience

The whole competition was conducted online.

The competitors took the material-based objective test for the final round in two hours (specially formatted for online) on January 31st to answer the 100 multiple-choice questions, which test their abilities to learn and understand new knowledge of advanced academic theories.

Through the tests, students showed their comprehending and learning abilities as well as harvest new knowledge through the event itself.



## **Problem Design Advisors**

AM International Final 2020 got support from professors worldwide. All of AM advisors come from world top universities and most of them are leading experts within their specific professional fields. Our problem design advisers volunteered their time and expertise choosing competing topics, giving suggestions for test design and reviewing the test paper for AM International Final Round.

The AM International Final 2020 would not have been possible without the support and outstanding work of our advisors.

To all our honorable advisors, it is with sincere appreciation that we say "thank you."

Here are some advisors in alphabetical order of their first name (selected):

#### Professor Arri Eisen, Department of **Biology, Emory University**

Arri Eisen and his team promote a better understanding of the impact of science on society, and work with the Sciences, Social Sciences and Humanities to convey the message that science is vital across disciplinesthat science is not merely a collection of facts but is, at its core, a way of thinking and of approaching problems.

#### Professor David S.G. Thomas, School of Geography and Environment, University of Oxford

David Thomas is a geomorphologist and physical geographer specialising in contemporary drylands and the Quaternary Period. In 2011 David was awarded the Geological Society of America Farouk El-Baz Award, for a body of work that has significantly enhanced desert science.

#### Professor Jeffry B. Stock, Department of Molecular Biology, **Princeton University**

Jeffry B. Stock is a leading expert in signal transduction and global cellular regulation with over 150 original scientific articles in this and related areas. He is best known for his seminal work on membrane receptor function and signal transduction in micro-organisms.

#### Professor Jessica Rett, Department of Linguistics, University of California, Los Angeles

Jessica Rett is a Professor of Linguistics at UCLA. Her research interests are in formal semantics, pragmatics and philosophy of language. This means that she use logic to model what it is people know when they know the meaning of language.

#### Professor Jill Miller, Department of Art Practice, University of California, Berkeley

Jill Miller is a visual artist whose research is centered on socially engaged art and public practices. She works with individuals and local communities in the form of public interventions, workshops, and participatory community projects.

#### Professor Karen L Thornber, Department of Comparative Literature, Harvard University

Professor Thornber earned her Ph.D. from Harvard's Department of East Asian Languages and Civilizations in 2006. She is author of several (co)edited volumes and more than 70 articles/book chapters on a range of fields in literature and cultural history globally; she is in addition a prize–winning translator of Japanese litera– ture.

#### Professor Mark Wrathall, Faculty of Philosophy, University of Oxford

Mark Wrathall specializes in 19th and 20th century European philosophy, with a particular focus on the existential and phenomenological traditions of thought. Current areas of research involve the philosophy of agency, philosophy of art, and philosophy of religion.

#### Professor Michael Sobe, Department of Statistics, Columbia University

Michael Sobe earned his Ph.D. of Sociology from University of Wisconsin, Madison, 1980. His research Interests are Causal Inference, Functional Magnetic Resonance Imaging (fMRI) and Social Statistics.

#### Professor Naira Hovakimyan, Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign

Naira Hovakimyan got her Ph.D. in Physics and Mathematics in 1992 from the Institute of Applied Mathematics of Russian Academy of Sciences in Moscow. She is currently a W. Grafton and Lillian B. Wilkins Professor of Mechanical Science and Engineering at UIUC.

#### Professor Paolo Cascini, Department of Mathematics, Imperial College London

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Paolo Cascini is Professor of Mathematics at Department of Mathematics, University of Oxford. He is the author of New direc– tions in the Minimal Model Program (2020), Relative semi–ampleness in posi– tive characteristic (2020), Polarized endo– morphisms of normal projective threefolds in arbitrary characteristic (2019) and so on.

#### Professor Peter Bershatsky, Haas School of Business, University of California, Berkeley

Peter Bershatsky received his MBA degree in Haas School of Business, UC Berkeley. At present, he is a vice President of Strategy and Corporate Development and teaching the Tech M&A: Strategy, Valua– tion, and Execution at Haas School of Business, University of California, Berkeley.

## Professor Timothy Williamson, Faculty of Philosophy, University of Oxford

Timothy Williamson has been the Wykeham Professor of Logic at Oxford since 2000. He is the author of many books and more than two hundred articles. His work has been translated into Arabic, Azerbaijani, Bulgarian, Chinese, Croatian, German, Hungarian, Italian, Japanese, Korean, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Spanish, Turkish, and Ukrainian.

## International Final 2020 Winners

#### **Team Awards**

The average score of the team is calculated according to the team with more than 3 competitors.

Subject	Rank	Country	School	Score
Artithon	1st	UAE	International School of Creative Science	109
	2nd	Iran	Tehran International School	108
	3rd	Nepal	Lyceum Model School	90
Biothon	1st	Pakistan	Karachi Grammar School high school	142
	2nd	Poland	British International School in Warsaw	140
	3rd	Russia	Letovo School Moscow	138
Chemithon	1st	Turkey	The Koç School	156
	2nd	UK	Sevenoaks School	146
	3rd	Pakistan	Karachi Grammar School high school	138
Econthon	1st	the United States	University High School	129
	2nd	UK	Tunbridge Wells Girls' Grammar School	125
	3rd	Pakistan	Karachi Grammar School high school	122
Engineerathon	1st	Pakistan	Karachi Grammar School high school	138
	2nd	Pakistan	Lahore Grammar School Johar Town for Boys	126
Finanthon	1st	Pakistan	Lahore Grammar School Johar Town for Boys	108
	2nd	Pakistan	Karachi Grammar School high school	96
Geothon	1st	Indonesia	Sekolah Lentera Indonesia	158
	2nd	UAE	The Westminster School, Dubai	134
Historithon	1st	Pakistan	Karachi Grammar School high school	139
	2nd	Mexico	COLEGIO CELTA INTERNACIONAL SCHOOL	129
Inforthon	1st	Singapore	Dulwich College (Singapore)	155
	2nd	Pakistan	Karachi Grammar School high school	151
	3rd	Turkey	Yeni Yol Schools	140

Lingothon	1st	Russia	Letovo School Moscow	174
	2nd	Pakistan	Lahore Grammar School Johar Town for Boys	168
Literathon	1st	Russia	Letovo School Moscow	110
	2nd	UAE	Sharjah American International School – Sharjah Campus	104
	3rd	Nepal	Lyceum Model School	84
Mathethon	1st	Pakistan	Karachi Grammar School high school	150
	2nd	Malaysia	Australian International School Malaysia	142
	3rd	Indonesia	Sekolah Lentera Indonesia	125
Physithon	1st	Indonesia	Cita Hati Christian Senior School - West	130
	2nd	South Korea	Dulwich College Seoul	126
	3rd	India	Calcutta International School	124
Psychothon	1st	Turkey	The Koç School	140
	2nd	Turkey	Yeni Yol Schools	132
	3rd	Romania	International School of Bucharest	128
Statsthon	1st	Pakistan	Lahore Grammar School Johar Town for Boys	159
	2nd	Pakistan	Karachi Grammar School high school	110

#### **Individual Awards**

Subject	Rank	Country	Name	School	Score
Artithon	1	UAE	Rabisa Hussain	International School of Creative Science	120
	1	UAE	Sameeha Irshad	International School of Creative Science	120
	3	Iran	Saha Olama	Tehran International School	114
	4	Iran	Ava Saberi	Tehran International School	112
	4	Iran	Rojin Omidi	Tehran International School	112
	6	Nepal	Sewika Pokharel	Lyceum Model School	106
	6	UAE	Yi Zhou	Sharjah American International School – Sharjah Campus	106
	8	Iran	Asal Jannati	Tehran International School	94

9	Nepal	Jonisha K.C	Lyceum Model School	90
10	UAE	Zahra Sameer Saeed	International School of Creative Science	86

Geothon	1	Indonesia	Carmel Joan Suwito	Sekolah Lentera Indonesia	162
	1	Indonesia	Ella Vania Asihin	Sekolah Lentera Indonesia	162
	3	Indonesia	Katrina Aurelia Lambey	Sekolah Lentera Indonesia	160
	4	UAE	Arooba Amir	The Westminster School, Dubai	156
	5	Indonesia	Isaac Lim	Sekolah Lentera Indonesia	154
	6	UAE	Afreen Chowdhury	The Westminster School, Dubai	150
	6	Indonesia	Sean Axel Sutyadi	Sekolah Lentera Indonesia	150
	8	China	Ziyao Ye	Guangdong Country Garden School	144
	9	UAE	Ahmed Eihab Tawfig Mohamed	The Westminster School, Dubai	140
	10	UAE	Venuz Franchezka Manzon	The Westminster School, Dubai	140

Engineerathon	1	Pakistan	Zakee Imam Butt	Karachi Grammar School high school	158
	2	China	Zhaobo li	Chongqing Nankai Secondary School	156
	3	Pakistan	Ahmad Savaiz Nazir	Lahore Grammar School Johar Town for Boys	152
	4	Russia	Dmitry Sharshakov	Letovo School Moscow	146
	4	Pakistan	Muhammad Faseeh Jawed	Karachi Grammar School high school	146
	6	Pakistan	Muhammad Tahoor Zafar	Karachi Grammar School high school	140
	7	Pakistan	Muhammad Ibraheem Raheel	Lahore Grammar School Johar Town for Boys	138
	8	Pakistan	Suleman Bashir Baloch	Karachi Grammar School high school	134
	9	Pakistan	Muhammad Subhan	Lahore Grammar School Johar Town for Boys	126
	10	Pakistan	Vijeta Lalwani	Karachi Grammar School high school	108
Chemithon	1	China	CHUJIAN YU	Shenzhen Middle School	180

Chemithon	1	China	CHUJIAN YU	Shenzhen Middle School	180
	2	Turkey	Yalçın Tür	The Koç School	176
	3	UK	Denise Kanagalingham	Sevenoaks School	168

4	UK	Henry Hollingworth	Sevenoaks School	166
4	Turkey	Kerem Dilmen	The Koç School	166
6	Turkey	Cansu Özdemir	The Koç School	160
7	UK	Faryal Khan	Sevenoaks School	158
7	Turkey	Azra Naz Akıncı	The Koç School	158
9	UK	Lilli Ganzer	Sevenoaks School	156
10	Romania	Dara Simona Neagu	"Vasile Alecsandri"High School Galati	152
10	Turkey	Elis Aksu	The Koç School	152
10	Turkey	Emir Bay	The Koç School	152
10	Iran	Hannah Lim Xu En	Tehran International School	152
10	Romania	Robert Andrei Asavei	"Vasile Alecsandri"High School Galati	152
15	Brazil	Lucas Furtado	COREE INTERNATIONAL SCHOOL	150
15	Pakistan	Muhammad Abdullah Saghir	Lahore Grammar School Johar Town for Boys	150
15	Romania	Teodora Iulia Valeanu	"Vasile Alecsandri"High School Galati	150
15	Turkey	Yağmur Yetkin	The Koç School	150
19	Romania	Denisa–Teodora Şmil	"Vasile Alecsandri"High School Galati	148
20	Panama	Yichien Dung	The Oxford School	148

Biothon	1	Pakistan	Syed Ashal Ali	Karachi Grammar School high school	164
	2	Panama	Daniel Alejandro Linares	The Oxford School	160
	2	Pakistan	Nuriyah Poonawala	Karachi Grammar School high school	160
	3	Turkey	Mine Metin	The Koç School	158
	5	Pakistan	Mahnoor Shakeel	Lahore Grammar School Opf Senior Girls	156
	6	Malaysia	Alice Fang Yi Tan	Australian International School Malaysia	154
	6	Turkey	Aslı Tavaslı	The Koç School	154
	6	Russia	Ekaterina Blinkova	Letovo School Moscow	154
	6	Pakistan	Khadija Shafique	Karachi Grammar School high school	154
	10	Pakistan	Zehra Zonash	Karachi Grammar School high school	152
	11	Panama	Shiven Mayani	The Oxford School	150



12	Pakistan	Syed Muhammad Umer	Karachi Grammar School high school	148
13	Panama	Ana Lucia Rodriguez Bethancourt	The Oxford School	146
13	Malaysia	Cheryl Lim	Australian International School Malaysia	146
13	Pakistan	Muhammad Ibrahim	Karachi Grammar School high school	146
13	China	Zeyi Tong	Hangzhou Foreign Languages School, Cambridge A-Level Centre	146
17	South Korea	Daniel Cho	Dulwich College Seoul	144
17	Pakistan	Sadia Billoo	Karachi Grammar School high school	144
17	Russia	Yaroslava Zarapina	Letovo School Moscow	144
20	Russia	lana Mitina	Letovo School Moscow	142

Historithon	1	China	Yifan wu	No.2 Secondary School Attached to East China Normal University	170
	2	China	Yipu Liu	No.2 Secondary School Attached to East China Normal University	166
	3	Pakistan	Maarij Ali	Lahore Grammar School Johar Town for Boys	158
	4	Pakistan	Zoya Fasihuddin	Karachi Grammar School high school	154
	5	Pakistan	Shamin Amir Ahmed	Karachi Grammar School high school	152
	6	Pakistan	Shahbano Haroon	Karachi Grammar School high school	150
	6	Mexico	LUCIA LOYOLA NUÑEZ	COLEGIO CELTA INTERNACIONAL SCHOOL	150
	6	Mexico	SANTIAGO HERNANDEZ GONZALEZ	COLEGIO CELTA INTERNACIONAL SCHOOL	150
	9	Pakistan	Tehreem Badshah	Karachi Grammar School high school	140
	10	Pakistan	Manaal Ahmed	Karachi Grammar School high school	138
Mathethon	1	Pakistan	Hamza Hasan Ellahie	Karachi Grammar School high school	184
	2	Iran	Jino Osmani	Tehran International School	180
	3	China	Yunzhi Liu	Ulink College of Shanghai	174
	4	Pakistan	Ashir Sharjeel	Karachi Grammar School high school	172

Bilal Afzal Shafi

Lahore Grammar School Johar Town for Boys 170

5

Pakistan

6	Malaysia	YEU JOE CHEUN	Australian International School Malaysia	164
7	UAE	Hajira Mohamed Khalid Karim	Sharjah American International School – Sharjah Campus	160
8	Pakistan	Danyaal Humayun Khan	Karachi Grammar School high school	158
9	Indonesia	Erin Wijaya	Sekolah Lentera Indonesia	156
9	Malaysia	KAH YIN IP	Australian International School Malaysia	156
11	Pakistan	Muhammad Zulfiqar Ali	Karachi Grammar School high school	152
12	Pakistan	Umer Amir	Karachi Grammar School high school	150
13	UAE	Joudi Alzaim	Sharjah American International School – Sharjah Campus	148
14	Pakistan	Mohammad Mujtaba Abdullah	Karachi Grammar School high school	144
15	Indonesia	Candice Gunawan	Sekolah Lentera Indonesia	142
15	Pakistan	Muhammad Saram Hassan	Lahore Grammar School Johar Town for Boys	142
17	Pakistan	Ryan Junejo	Karachi Grammar School high school	140
18	Austria	Navid Owji	Amadeus International School Vienna	136
19	Indonesia	Felicia Satyadharma	Sekolah Lentera Indonesia	132
19	Malaysia	Yuin Yie Wong	Australian International School Malaysia	132

Econthon	1	the United States	Stefan Stealy–Euchner	University High School	146
	2	Malaysia	Yong Whye Ng	Nexus International School	144
	2	the United States	Yiru Ma	University High School	144
	4	Pakistan	Raiaan Feerasta	Karachi Grammar School high school	140
	4	China	Yuan Bian	Hangzhou Foreign Languages School, Cambridge A–Level Centre	140
	6	China	Kuo Wang	Beijing New Talent Academy	138
	6	UK	Carla Beeney	Tunbridge Wells Girls' Grammar School	136
	7	UK	Hana Hashiguchi	Tunbridge Wells Girls' Grammar School	136
	7	the United States	Sai Konkinella	University High School	136

1	0 the United States	Maya Rezende Tsao	University High School	134
1	1 Pakistan	Ahmad Bin Tahir	Lahore Grammar School Johar Town for Boys	132
1	1 Russia	Alexandra Laputina	Letovo School Moscow	132
1	3 UK	Arabella Smalley	Tunbridge Wells Girls' Grammar School	130
1	3 Egypt	Jana Bazeed	Cairo English School	130
1	3 States	Lily Wood	University High School	130
1	6 Pakistan	Affan Ali	Foundation Public School	128
1	6 the United States	Christina Chen	University High School	128
1	6 Pakistan	Daniyal Waqas	Karachi Grammar School high school	128
1	6 UK	Kasia Rycroft	Tunbridge Wells Girls' Grammar School	128
1	6 Pakistan	Khan Abdullah Bin Azim	Karachi Grammar School high school	128
1	6 Egypt	Marwan Badawi	Cairo English School	128

Physithon	1	China	Qiyuan Guo	Shanghai World Foreign Language Middle School	166
	2	Indonesia	Joveline Fevrier Sheto	Cita Hati Christian Senior School – West	160
	3	Pakistan	Aleema Faisal	Lahore Grammar School Opf Senior Girls	150
	3	Turkey	Ülger Asya	The Koç School	150
	3	Poland	Jan Śliwiński	Melchior Wańkowicz High School, Katowice	150
	6	India	Rohan Banerjee	Calcutta International School	146
	7	Turkey	Karahasan Zeynep	The Koç School	144
	8	South Korea	Jaehoon Jung	Dulwich College Seoul	142
	8	India	Vikhyat Agarwal	Calcutta International School	142
	10	Turkey	Cihangir Aslı	The Koç School	138
	10	Indonesia	Steve Aaron	Cita Hati Christian Senior School – West	138
	12	Russia	Dmitry Ivanitsky	Letovo School Moscow	136
	12	South Korea	Erland A. Syafiq	Dulwich College Seoul	136
	12	Turkey	Mehmet Efe Çığ	The Koç School	136

	12	Turkey	Şeniz Ayça Fırtına	The Koç School	136
	16	South Korea	Jack Lee	Dulwich College Seoul	134
	17	India	Komal Kataruka	Calcutta International School	132
	17	China	Xinyi Le	No.2 Secondary School Attached to East China Normal University	132
	19	Pakistan	Fatima Azhar	Lahore Grammar School Opf Senior Girls	128
	20	Turkey	Beste Baban	The Koç School	126
	20	Nigeria	Chiamaka Orjiakor	Premiere Academy Abuja	126
Psychothon	1	Turkey	Defne Ece Yavuz	The Koç School	148
	1	Turkey	Mina Bengi Aral	The Koç School	148
	1	China	Xiaonan Li	Beijing Luhe International Academy	148
	4	Turkey	Duru Kaya	The Koç School	144
	5	Romania	Anuka MATEI	International School of Bucharest	142
	5	China	Haoxuan Si	No.2 Secondary School Attached to East China Normal University	142
	7	Turkey	Elif Ceren Erdoğan	Yeni Yol Schools	136
	8	Turkey	Ezgi Sönmez	Yeni Yol Schools	134
	8	Romania	Isabelle Jiaying ZHANG	International School of Bucharest	134
	8	Turkey	Sinem Yılmaz	Yeni Yol Schools	134
	11	Turkey	Engin Ege Gürel	Yeni Yol Schools	132
	11	Turkey	Su Yeşildere	The Koç School	132
	13	Romania	Ilinca Sandu	International School of Bucharest	130
	13	Colombia	Michelle Lobo	British International School	130
	13	Turkey	Sila Sozeri	The Koç School	130
	13	Romania	Melis Sevginova Zekisheva	a International School of Bucharest	130
	17	Turkey	Selin Cukul	Yeni Yol Schools	126
	17	Romania	Nur Yilmaz	International School of Bucharest	126
	19	Romania	Arsh Fatima Gilal	International School of Bucharest	124

19	UAE	Ghaya Ahmed	Sharjah American International School – Sharjah Campus	124

Inforthon	1	Singapore	Lucia Tara Stockmann	Dulwich College (Singapore)	172
	2	Pakistan	Aanya Afridi	Karachi Grammar School high school	166
	3	Pakistan	Danyal Faisal Khan	Karachi Grammar School highschool	162
	4	Singapore	Monique Therese Cheng	Dulwich College (Singapore)	152
	4	Pakistan	Muhammad Zaid	Lahore Grammar School Johar Town for Boys	152
	6	China	Jiaxin Li	Beijing Huijia Private School	146
	7	Pakistan	Mahnoor Kashif	Lahore Grammar School 1–A/1	144
	7	Turkey	Melih Kanatlar	Yeni Yol Schools	144
	9	Singapore	James Pearman	Dulwich College (Singapore)	142
	10	Turkey	Cemre Tomruk	Yeni Yol Schools	140
	10	Turkey	Defne Çukul	Yeni Yol Schools	140

Literathon	1	Pakistan	Hajra Raheel	Karachi Grammar School high school	164
	2	Pakistan	Abraheem Sabir	Karachi Grammar School high school	162
	3	China	Kehan du	Guangdong Experimental High School AP Program	158
	4	Pakistan	Alizeh Arshad	Karachi Grammar School high school	140
	5	Russia	Lucy Kapilevich	Letovo School Moscow	132
	5	Russia	Uliana Makoveeva	Letovo School Moscow	132
	7	UAE	Salma Hesham Mohammed Elsayed Mekdad	Sharjah American International School – Sharjah Campus	120
	8	China	Feilin Chen	Guangdong Experimental High School AP Program	118
	8	UAE	Malak Hamad	Sharjah American International School – Sharjah Campus	118
	9	UAE	Menna Mohammed Adeeb Albarqi	Sharjah American International School – Sharjah Campus	108

#### **Special Subjects**

To all our competitors of the special subjects (Philosothon, Statsthon and Musicothon), it is with sincere appreciation that we say "thank you." for pursuing these special subjects.

Philosothon	1	China	Xuejun Gan	Huafu International Department, The Affiliated High School of SCNU	130
	2	China	Ruyi Shi	Jinan Foreign Language School International Center	126
Statsthon	1	Pakistan	Shahnoor Ahmed Arain	Karachi Grammar School high school	168
	2	Pakistan	Falak Parvez	Karachi Grammar School high school	150
	3	Pakistan	Narmeen Humayon	Lahore Grammar School 1-A/1	132
	4	Pakistan	Nimra Hanif	Lahore Grammar School 1–A/1	88
Musicothon	1	China	Nike Mo	The Affiliated High School to Hangzhou Normal University	100
Finanthon	1	Pakistan	Taimour Shuja	Lahore Grammar School Johar Town for Boys	108
	2	Pakistan	Vania Amad	Karachi Grammar School high school	104
	3	Pakistan	Farheen Kazi	Karachi Grammar School high school	88
Lingothon	1	Russia	Amelia Chukhnova	Letovo School Moscow	176
	1	Russia	Vasilisa Tsareva	Letovo School Moscow	176
	3	Russia	Anna Rebrova	Letovo School Moscow	174
	3	Russia	Vasily Belousov	Letovo School Moscow	174
	5	Russia	Victoria Zubkova	Letovo School Moscow	170
	6	Pakistan	Eman Naveed	Lahore Grammar Schoopf Senior Girls	168

