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# Welconne to the 2012 ACM-ICPC World Finals

sponsored by IBM

hosted by the University of Warsaw



### **2012 ACM ICPC World Finals**

## Honorary Patronage

**Bronisław Komorowski**The President of the Republic of Poland



### **2012 ACM ICPC World Finals**

### Honorai Committee





Hanna Gronkiewicz-Waltz The Mayor of Warsaw







Krystyna Szumilas The Minister of National Education





Barbara Kudrycka



The Minister of Science and Higher Education



Radosław Sikorski The Minister of Foreign Affairs



Adam Struzik The Marshal of the Mazowieckie Voivodship



Michał Kleiber The President of the Polish Academy of Sciences



Maciej Żylicz The President of the Foundation for Polish Science



### Ladies and Gentlemen,

I was very happy to learn that Warsaw will be hosting the 36th ACM ICPC World Finals 2012.

Warsaw is one of the most important hubs of science, culture and business, not only in Poland, but in Central and Eastern Europe as well. It is a city of innovations, with a significant potential based on knowledge. We wish our future to be shaped by science, and its development un-

doubtedly entails using increasingly-complex software engineering solutions. Warsaw has the potential to become the leading centre of science and knowledge in the region; hence our aim is to build space for dialogue and facilitate the exchange of experience between science institutions at the local, national and international levels.

I am convinced that it was for a good reason that Warsaw was picked as the host of the 36th World Finals of the ACM International Collegiate Programming Contest—I see it as a sign of recognition of the quality of IT education in Warsaw, and the outstanding performance of the University of Warsaw teams, which, within the last 17 years, have always managed to qualify for ACM ICPC and have twice become World Champions, as well as last year's European Champions.

I hope that, having finished competing in this intellectual bout, you will find some time to experience the unique atmosphere of Warsaw. It is a city of many faces - multicultural, with an incredible history, and always changing. A city where historic palaces and parks stand next to modern art and architecture, where small, quiet cafes rival fashionable music clubs and street festivals. As far as the number and quality of cultural events is concerned, Warsaw is definitely capable of keeping up with other European capitals. Here you will find everything, ranging from epic ceremonies to closed-circle parties.

It is my utmost pleasure to invite all ACM ICPC 2012 participants to visit the Copernicus Science Centre, one of the most advanced entertainment facilities in the world designed to provide an overview of the scientific output of our civilisation and to explain the phenomena of the world around us. I am confident that this opportunity to carry out various experiments and to make your own observations in the Centre will arouse your interest in science, while keeping you entertained.

I'm keeping my fingers crossed!

Hanna Gronkiewicz-Waltz Mayor of Warsaw



### Welcome from the University of Warsaw

I would like to sincerely welcome all the participants, coaches, volunteers and friends of the 36<sup>th</sup> Annual ACM International Collegiate Programming Contest World Finals at the University of Warsaw.

I am very proud that such prestigious competition is taking place at our University. This is largely thanks to our students, very talented young people, who have been

performing very well during the past years' championship finals, which they won twice—in 2003 in Beverly Hills and in 2007 in Tokyo.

I hope that our students will succeed in this year's competition as well. But above all, I am counting on this to be an unforgettable adventure for them, as well as for all of our guests—the best of the best. You will have the chance to not only test your skills, but also meet people from all around the globe, make new friends and simply have fun. Maybe one day you will decide to visit us again?

The University of Warsaw is the best university in Poland. We actively participate in international student exchange programmes and offer many programmes of studies conducted in English. These also include Ph.D studies. Think about it. This might be a great opportunity to meet in Warsaw again in the future.

Best Wishes! Wszystkiego najlepszego!

up culion

Rector of the University of Warsaw



### Welcome from ICPC Director Professor Bill Poucher

Welcome to Warsaw!

Welcome to the 36<sup>th</sup> Annual ACM International Collegiate Programming Contest World Finals sponsored by IBM and hosted by the University of Warsaw. We have partnered with the UPE Honor Society and ACM to provide you with the finest possible setting here in Warsaw, Poland.

The ACM-ICPC World Finals culminates the efforts of faculty and students from 2,219 universities in 85 countries

that placed 25,016 students in teams of three at over 300 regional sites worldwide. The top 112 teams have advanced to the World Finals. Congratulations to the 2012 World Finalists and all who have made this possible!

You have earned the right to compete for further recognition for a simple reason. You bested 24,680 of your peers from six continents who challenged you to do your best. So here you are, champions all, with the opportunity to earn medals—bronze, silver, and gold—while vying to make the "2012 World Champions" prove their worth beyond measure.

There are so many stars visible in the ICPC Community. UPE has served for 42 years, ACM has served for 36 years, and Baylor University has served for 29 years. Over the 15 years of IBM sponsorship, the ICPC has expanded participation by over 1000%!

Consider the crews of KATTIS and ICPC Live, led by Fredrik Niemelä and Mats Erixson of KTH. These DeBlasi Award recipients have brought outstanding contest control that supports live play-by-play video coverage to World Finals spectators worldwide.

Consider the Measures Award recipients, Bozena (Boba) Mannova of Czech Technical University Prague and Jan Madey of the University of Warsaw. Boba and Jan have spent lifetimes opening doors of opportunity and encouraging gifted problem solvers. Their efforts have transformed and enriched their communities—at home, in Europe, and across the globe.

Here we are in Warsaw, in May, in the heart of Poland, in the midst of springtime's bloom. Here we are in the land that gave birth to Chopin and Copernicus, where Music lifts the Spirit and Science enlightens the Mind. Let us draw from these strengths and their purpose as we celebrate the opportunities before us.

Led by Jan Madey, Krzysztof Diks, and Rafal Sikorski, the University of Warsaw volunteers have made ready an extraordinary experience for all. Let's join them as we look forward to the 2012 World Finals whose medals are forged in the crucible of judges' problems and the energy of the finest 112 teams ever!

Best Wishes!

William B. Poucher,

Ph.D., ACM Fellow, ICPC Executive Director



### Welcome from ACM ICPC 2012 World Finals Director Professor Jan Madey

Dear Participants of the 36<sup>th</sup> ACM International Collegiate Programming Contest World Finals!

For 17 years—from Nashville in 1995 till Orlando in 2011—I have enjoyed attending the ACM ICPC World Finals as a guest, coaching teams from the University of Warsaw. It is now time to pay back:). Together with a large team of

coworkers, students, friends and partners, we did our best to prepare for you an unforget-table visit to Poland—a beautiful, modern and fast growing country with a rich tradition.

We all know the main purpose of your visit—112 teams want once more to test their abilities in problem solving, competing against their colleagues from 85 countries who are the best programmers in the world. But besides the technical part of the visit to Warsaw—the capital of Poland—you will also have a chance to see some of the most famous places in the city. I am sure you will enjoy visiting Copernicus Science Centre with its thousands of interactive exhibits and that you will be captivated by the beauty of historic spaces of the hall of Warsaw University of Technology or the modern hall of the University of Warsaw Library.

Please consider also the possibility of taking part in some of the excursions offered before and after the Finals. They would give you an opportunity to visit very interesting and unique places in the country. One of them is Cracow—the former capital of Poland with Wieliczka Salt Mine, Wadowice—where the Polish Pope was born and Auschwitz — the largest of the Nazi concentration camps. You can also visit beautiful Gdańsk at the sea-shore—the cradle of Polish freedom movement "Solidarity" or explore green areas of Białowieża—one of the oldest national parks in Europe, where you can meet huge bisons.

It is also my great wish that you will learn more about the University of Warsaw—the largest university in Poland, which history dates back to the year 1816. I am very happy that the contest itself will take place at the Faculty of Management. This entity takes pride in having one of the most modern buildings at our University, surrounded by a beautiful, green campus. You will also have a chance to visit the main campus of the University, situated at the Royal Route.

For the forthcoming Finals let me wish you a lot of strength and good ideas for solving problems. I hope you will feel welcomed in the city of Warsaw, that the hospitality of our hotels will let you rest and appear relaxed for the competition. Have fun in Warsaw and in Poland!

Jan Madey,

Director of ACM ICPC 2012 World Finals



### Welcome from IBM

On behalf of IBM, it is my pleasure to welcome you to the 36<sup>th</sup> Annual ACM International Collegiate Programming Contest World Finals! The ICPC is the world's largest and most prestigious programming competition. This year marks IBM's fifteenth year as sponsor of the World Finals, and we are thrilled to be here with you in beautiful Warsaw, Poland.

For the members of the teams that have qualified for the World Finals, you represent the very best and brightest young programmers from the world's best universities and colleges and are to be heartily congratulated. It has taken a lot of hard work and dedication to get here, and you should all be very proud. There are many others who also give a lot of time and effort in support of the ICPC including the coaches, regional and site contest directors and volunteer's and I commend all of them for their dedication to this event. I also want to thank the ICPC leadership and volunteers, our hosts, the team from the University of Warsaw and their supporters, and the IBM teams for their outstanding commitment and tireless efforts to make this week a memorable one for all.

I hope that you will make the most of your attendance at this event and take full advantage of meeting and networking with the other participants here from all over the world as well as the many academic and business professionals attending the finals. Many long-lasting friendships began at an ICPC World Final's and we hope you will continue this tradition.

We look forward to spending time with you throughout the week. During TechTrek on Tuesday, you will have the opportunity to see some of the cool and innovative technologies IBM is working on and enjoy an excursion to the Copernicus Science Centre, a fascinating interactive science museum. Of course the highlight of the week for me, and for all of my IBM colleagues, will be the main event and watching you compete on the international stage on Thursday.

After months of preparation, the 2012 ACM-ICPC World Finals is finally here! Be proud of what you have already accomplished. Try to get as much as you can out of this extraordinary life experience. Try to relax and have lots of fun this week. The memories that you will make during this exciting and momentous time will remain with you forever!

Doug Heintzman

ACM-ICPC Sponsoring Executive

Director of Strategy, IBM Collaboration Solutions

IBM Software Group



### Welcome from ACM

Welcome to the 36<sup>th</sup> annual ACM International Collegiate Programming Contest World Finals. ACM is extremely proud to participate in the life of the ICPC community. I am personally excited to be here in Warsaw, Poland with you and experience the vitality of the final round of this global event.

We also welcome you to ACM. We are pleased to continue free student memberships to all student participants in the ICPC, with the highest privileges given to you, the 2012 World Finalists.

I would like to express ACM gratitude to the Baylor University team for providing ICPC headquarters. Also, UPE, the international honor society for the computing and information disciplines, deserves thanks for being an ICPC partner since the beginning.

A special thanks to IBM for its long-term commitment to the ICPC and the global community. The growth of the ICPC has been fueled by IBM's commitment to global opportunity for students.

I wish you all good fortune in the days ahead, both here at the World Finals and as your career unfolds. Join the computer scientists, engineers, innovators, and inventors who have made ACM part of their career since the industry first emerged. You will be glad you did.

Best wishes!

Alain Chesnais, ACM President

Alain Charmais



### Welcome from UPE

Message from UPSILON PI EPSILON:

On behalf of UPE, I would like to welcome each of you to Warsaw and the 2012 ACM International Collegiate Programming Contest World Finals sponsored by IBM and hosted by the University of Warsaw. This event is always an exciting time for me since it gives me the opportunity to meet and interact with the most talented and creative students in the computing and information disciplines.

Indeed, we are in a city that is truly a great venue for the ICPC World Finals. It is our hope that beyond the competitive nature of the ICPC you will make as many friends as you can and appreciate the global nature of this competition.

We are very fortunate to have Warsaw as our host city. Amid the many contest activities that lie ahead, I hope you will make an effort to see and learn the cultural and historical aspects of Warsaw. Again, welcome, and we wish you will take with you many positive experiences that will last you a lifetime.

Sincerely yours,

Orlando Madrigal, Ph.D. Executive Director of UPE

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## Welcome to Warsaw



This year the ACM International Collegiate
Programming Contest World Finals, sponsored
by IBM, takes place in Warsaw—the capital of
Poland—which has everything that a modern
European capital has to offer. With it's dynamic
and stable business environment, historic and
modern meeting facilities, vibrant cultural
life and green space covering a quarter of
the city, Warsaw will definitely exceed your
expectations!

### **Eclectic**

It is a city of many faces: a contrasting blend of past and present with the architectural landscape composed of historical and socrealist buildings neighbouring post-modern skyscrapers. The past is magnificently represented by the post-war reconstruction of the Old Town, which was completely destroyed in WWII. The Palace of Culture and Science, a long-standing symbol of communism, is an epitome of socrealism style. Post-modern architectural landscape was shaped by such designers as Abraham Epstein, Norman Foster and Daniel Libeskind.

### Open & Hospitable

Historically at the crossroads between the Western and Eastern Europe, Warsaw grew to become a platform for new dialogue that inspired changes and promoted better understanding between different cultures. This openness is what distinguishes Warsaw and creates the city's unique yet modern European style supported by high standard of services.

### **Progressive**

Being a seat to many important scholarly institutions such as the University of Warsaw or the Centre of Adam Smith, Warsaw offers an excellent capacity to influence the young generation of future business leaders. Furthermore, new business initiatives and investments together with a growing number of international fairs, conferences and meetings held each year confirm Warsaw's claim as a business hub of Central and Eastern Europe as well as an interesting spot on the map of the global meetings industry.

### Inspiring

Be inspired by Warsaw citizens' commitment to rebuild their city after WWII destructions. The reconstruction effort, unprecedented on a European scale, gained the appreciation of UNESCO that in 1980 included it on the World Cultural and Natural Heritage List. We invite you to come and admire the historical soul of the city.

### **Thriving**

Warsaw is a perfect embodiment of changes that have taken place in Poland in the past 20 years. The huge business and population growth is constantly reshaping the city's skyline. Add to that the vibrant night life with a musical scene responding to all tastes - from swanky clubs and pubs to more alternative places, and you get a new fascinating destination to explore.

# Welcome to the University of Warsaw

University of Warsaw is the biggest and one of the best Polish universities. Its core mission is unity of research and teaching. It also does not forget about its social and cultural mission, contributing to education of elites and popularizing knowledge in the surrounding world among members of society.

University of Warsaw, together with Jagiellonian University, has for many years been the unquestionable leader among Polish universities. High qualifications of the university staff, wide educational offerings as well as unique faculties attract young people not only from Poland, but also from other countries. UW offers almost 120 Bachelor's and Master's degree faculties and majors, including 13 curricula in foreign languages, as well as doctoral programmes in 35 faculties, including 6 international programmes. Moreover, it offers almost 200 postgraduate and MBA programmes as well as schools of foreign law and Open University courses available for adults regardless of their education. Each year, around 65 thousand people are students of UW.



University of Warsaw is also a flourishing research centre. More than 3 thousand people are employed in its 19 faculties and 30 research and education units. The scope of their research is extremely wide—the UW researchers are involved in studies on more than 2 thousand research areas. They develop new diagnostic and treatment methods, carry out archaeological excavations, and analyse social and cultural processes that occur in the world. Each year, they sum up their research results by publishing about 7 thousand works. They also act as experts and advisors in parliamentary works on Polish legislation and are authors of reports and works commissioned by public institutions. UW researchers are winners of numerous awards granted in Poland and abroad, the most important of which are grants from the European Research Council.

Another feature that distinguishes University of Warsaw among Polish universities is its international character. UW cooperates with approximately 1200 foreign institutions, including almost 200 foreign partners from 52 countries, as part of university agreements on direct cooperation. Activities, such as exchange of researchers and Ph.D. students as well as cooperation as part of common research projects, are also undergoing intensive development. The University is a member of numerous organizations and associations, such as EUA—European University Association and UNICA—Network of Universities from the Capitals of Europe, as well as research consortia and networks, e.g., IMISCOE Research Network or ERCIM — European Research Consortium for Informatics and Mathematics.

It is hard to overestimate the role of the university as a centre that has a significant influence on Polish science and culture as well as the country's future. Names of eminent graduates of UW, who have studied at the university since its foundation in 1816, have gone down in world history. It was attended by Frederic Chopin, five future Nobel prize winners were also among our University's students: Henryk Sienkiewicz, a writer, Czesław Miłosz, a poet, two winners of the Noble Peace Prize—Józef Rotblat, a physicist and founder of the international movement of scientists for elimination of weapons of mass destruction, and Menachem Begin, a president of Israel, as well as Leonid Hurwicz, who was granted an award in the area of economy.

Today, the image of University of Warsaw is a combination of tradition and modernity, which is symbolized by three University campuses. The monumental premises of the university, including arts and social sciences facilities, are located in the heart of the city. Carefully restored buildings and beautiful decorated interiors as well as a unique atmosphere make it one of the most often visited tourist sites in Warsaw. The other face of the university is represented by campuses in Służewiec district, where the Faculty of Management is located, as well as in Ochota district, where buildings of scientific research faculties are situated.

Ochota district is also a home of The Faculty of Mathematics, Informatics and Mechanics (MIM). MIM, with 192 faculty members and researchers, is engaged in a wide spectrum of research areas, ranging from basic research in pure mathematics and theoretical computer science, to applied research in applied mathematics and applied areas of informatics. The Faculty consists of three Institutes: Mathematics (90 faculty members), Informatics (72 faculty members), and Applied Mathematics and Mechanics (with 30 faculty members). Traditionally the faculty has its strengths in selected areas of Mathematics and Informatics. In addition it expands the scope of research by focusing on some truly multidisciplinary areas such as Financial Mathematics or Computational Biology.

Almost 100 Ph.D. students are involved in various research areas under supervision of the faculty members and researchers of MIM.

As a sign of recognition of research strength of MIM, it was invited to join in 2007 the European Research Consortium for Informatics and Mathematics (ERCIM) as a full member.

There are close to 1500 undergraduate students at the Faculty, following a wide variety of courses (some 250 each year) that are offered at the undergraduate (i.e., first cycle, 3 years), advanced undergraduate (i.e., second cycle, 2 years) and graduate (Ph.D.) level, and cover numerous topics in computer science - both theoretically and practically oriented - and in pure, applied and financial mathematics. Besides that, the Faculty offers basic courses in mathematics and informatics for around 2000 undergraduates studying at the Faculties of Economy, Management, Chemistry, Physics, Biology, Geography, Geology and Pedagogical Sciences.



Quality of education matters a lot for us. We are proud of our best students and their international achievements in the TopCoder tournament, ACM International Collegiate Programming Contest, Imagine Cup finals, International Mathematics Competitions for University Students (IMC), etc. Students of MIM won twice the World Finals of the ACM International Collegiate Programming Contest, in 2003 and 2007. Each year, more than 20% of first year undergraduates at the Faculty are former finalists and laureates of Polish olympiads in mathematics or informatics. Others can follow their studies in the company of the best and brightest; this is a stimulating and rewarding experience.

Our courses and diploma programmes are designed to satisfy the needs and interests of students who have different aims, plans and aspirations but common passion for mathematics or computer science.

The participants of the ACM ICPC World Finals will also have chance to visit the Faculty of Management where the competition itself is going to take place. The Faculty is the pride of the University of Warsaw—not only because of the modern, representative buildings, but before all, because of the level of education it provides.

It was established in 1972 as part of the University of Warsaw. It is the oldest management school in Central and Eastern Europe. Nowadays, it is one of the most respected management educational and research centres in Poland. Faculty of Management is ranked in the first research category by the Polish Ministry of Science and Higher Education, being a leading research institution in the field of management. From its beginning, Faculty of Management has aimed to deliver highly-qualified managers for Polish business as well as local and central government. High standard of education is ensured by the academic staff of the Faculty of Management. The research they carry out fulfills the highest standards of contemporary work in the fields of economics, law, management theory, quantitative methods, marketing finance, sociology, psychology and others. Over many years of working together, the academic staff has acquired unique insights into integrating this multidisciplinary expertise of contemporary management studies.

The Faculty offers various programmes of studies on four levels of education—bachelor, master, doctoral and postgraduate and several study programmes, delivered entirely in English language. Faculty of Management has partnership agreements with leading universities and business schools worldwide *inter alia* with over 60 European partners in the frame of Erasmus-Programme. We are also member of international organizations such as the Association of MBAs (AMBA) and the Central and the East European Management Development Association (CEEMAN).

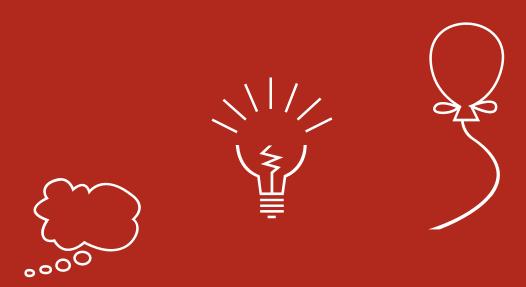






## About the Contest

The ACM International Collegiate
Programming Contest (ICPC) traces its
roots to a competition held at Texas A&M
in 1970 hosted by the Alpha Chapter of the
UPE Computer Science Honor Society. The
idea quickly gained popularity within the
United States and Canada as an innovative
initiative to raise the aspirations, performance,
and opportunity of the top students in the
emerging field of computer science.



The contest evolved into a multi-tier competition with the first Finals held at the ACM Computer Science Conference in 1977. Operating under the auspices of ACM and headquartered at Baylor University since 1989, the contest has expanded into a global network of universities hosting regional competitions that advance teams to the ACM-ICPC World Finals.

Since IBM became sponsor in 1997, ICPC participation has increased by more than 1000%. This year, ICPC participation included over 30,000 of the finest students and faculty in computing disciplines from over 2,200 universities from 85 countries on six continents. The contest fosters creativity, teamwork, and innovation in building new software programs, and enables students to test their ability to perform under pressure. Quite simply, it is the oldest, largest, and most prestigious programming contest in the world.

### The annual event is comprised of several levels of competition:

- ▶ Local Contests—Universities choose teams or hold local contests to select one or more teams to represent them at the next level of competition. Selection takes place from a field of over 300,000 students in computing disciplines worldwide.
- ▶ Regional Contests (September to December 2011)—This year 25,016 contestants from 2,219 universities from 85 countries on six continents competed at over 300 sites. In total, 28,015 students competed in the ICPC and ICPC assisted contests combined.
- ▶ World Finals (May 14–18, 2012, Warsaw, Poland)—Hosted by the University of Warsaw, one hundred and twelve (112) world finalist teams will compete for awards, prizes and bragging rights. These teams represent the best of the great universities on six continents the cream of the crop.

### **Battle of the Brains**

The contest pits teams of three university students against eight or more complex, real-world problems, with a grueling five-hour deadline. Huddled around a single computer, competitors race against the clock in a battle of logic, strategy and mental endurance. Teammates collaborate to rank the difficulty of the problems, deduce the requirements, design test beds, and build software systems that solve the problems under the intense scrutiny of expert judges. For a well-versed computer science student, some of the problems require precision only. Others require a knowledge and understanding of advanced algorithms. Still others are simply too hard to solve—except, of course, for the world's brightest problem-solvers.

Judging is relentlessly strict. The students are given a problem statement—not a requirements document. They are given an example of test data, but they do not have access to the judges' test data and acceptance criteria. Each incorrect solution submitted is assessed a time penalty. You don't want to waste your customer's time when you are dealing with the supreme court of computing. The team that solves the most problems in the fewest attempts in the least cumulative time is declared the winner.

To learn more about the ICPC, please visit <a href="http://icpc.baylor.edu/">http://icpc.baylor.edu/</a>. Visit the ICPC podcast series at <a href="http://battleofthebrains.podbean.com">http://battleofthebrains.podbean.com</a> for insights from past contestants and current IBM executives.

### World Finals 2012 hosted by the University of Warsaw —the final round for the 2011 Regionals

One hundred and twelve teams from regional contests servicing universities worldwide have advanced to the World Finals to be held in Warsaw, Poland, May 14—18, 2012. The World Finals is hosted by the University of Warsaw. UW has two World Championships and regularly advances teams to the World Finals under coaches Jan Madey and Krzysztof Diks, the 2012 World Finals Director and Co-Director. The President of Poland, Bronislaw Komorowski, is Honorary Chair of the 2012 ACM-ICPC World Finals Patrons, which includes Poland's Ministries of Economy, Science and Higher Education, Administration and Digitization, Foreign Affairs, and Education; the Mayor of Warsaw; and the Governor of the Mazowieckie Province.

### Recent gold medal winners in order of finish are:

### 2011

- ► Zhejiang University (China)
- ► University of Michigan at Ann Arbor (U.S.A.)
- ► Tsinghua University (China)
- ► St. Petersburg State University (Russia)

### 2010

- ► Shanghai Jiaotong University (China)
- ► Moscow State University (Russia)
- ► National Taiwan University (Taiwan)
- ► Taras Shevchenko Kiev National University (Ukraine)

### 2009

- ▶ St. Petersburg State University of Information Technology, Mechanics & Optics (Russia)
- ► Tsinghua University (China)
- ► St. Petersburg State University (Russia)
- ► Saratov State University (Russia)

### 2008

- ▶ St. Petersburg State University of Information Technology, Mechanics & Optics (Russia)
- ► Massachusetts Institute of Technology (U.S.A.)
- ► Izhevsk State Technical University (Russia)
- ► Lviv National University (Ukraine)

### 2007

- ► Warsaw University (Poland)
- ► Tsinghua University (China)
- ▶ St. Petersburg State University of Information Technology, Mechanics & Optics (Russia)
- ► Massachusetts Institute of Technology (U.S.A.)

### **About ACM**

ACM, the Association for Computing Machinery, with more than 100,000 members, is the world's largest educational and scientific computing society, uniting computing educators, researchers, professionals, and students to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for lifelong learning, career development, and professional networking. For more information, see <a href="http://www.acm.org">http://www.acm.org</a>.

### **About IBM**

With the Smarter Planet initiative, IBM believes intelligence allows for the growth and innovation of human life, including the way people live, work, and govern themselves; the way services are ordered and delivered; and the way the environment is protected.

The world is already connected economically, technologically and socially. However, being connected alone is not sufficient. The world needs new generations of talent, leaders and problem solvers to infuse intelligence into our daily lives.

IBM is the world's largest information technology and service provider. Over the last decade, IBM has driven a significant transformation of its business model as the company shifts to higher value areas and improve efficiency of the business. IBM has been building these capabilities to round out the portfolio to address the needs of clients and the society.

IBM has 35,000 software engineers in more than 90 research and development laboratories around the globe, who focus on solving real-world business issues for clients in more than 170 countries. IBM invests in high business values and strategic markets such as Business Analytics and Optimization; Cloud Computing; Smarter Commerce; Business Services; Enterprise Operations; Risk Management; Mobile Computing; and Collaboration. IBM's Watson computer is an example of data analytics. IBM provides industry solutions in areas such as smarter cities, energy, utility, financial markets, chemicals, petroleum, electronics, public service, health care, retail, telecommunications, transportation, manufacturing, media and entertainment. For more information, visit http://www.ibm.com/software.

### IBM's Commitment

IBM's sponsorship commitment to the ACM International Collegiate Programming Contest is part of a company-wide effort to advance the next generation of technology leaders and problem solvers who have combined skills of computing science and business management. For more information, visit <a href="http://www.ibm.com/university/acmcontest">http://www.ibm.com/university/acmcontest</a>.

### The University of Warsaw's Commitment

The University of Warsaw has a historical commitment to excellence in problem solving. Having hosted regional contests, having regularly advanced teams to the World Finals, and winning World Championships in 2003 and 2007, UW is pleased to host the 2012 World Finals in Warsaw. The President of Poland, Bronislaw Komorowski, will take Honorary Patronage over the event with institutional support from the Ministries of Economy, Science and Higher Education, Administration and Digitization, Foreign Affairs, and Education together with the Mayor of Warsaw and the Governor of the Mazowieckie Province. For more information, visit <a href="http://www.uw.edu.pl/en">http://www.uw.edu.pl/en</a>.

### **Baylor University's Commitment**

Baylor University has been the home of ICPC since the late 1980s, where it has been managed under the direction of Executive Director and Professor Dr. William B. Poucher with global enterprise technology development headed by Dr. Jeff Donahoo, Deputy Executive Director. The ICPC contributes to Baylor's global mission to encourage the next generation to develop and apply their problem-solving talents to the challenges that face the world today and the world to come. Chartered by the Republic of Texas, Baylor is the oldest institution of higher learning in the State of Texas. You may find more about Baylor at <a href="http://www.baylor.edu">http://www.baylor.edu</a>.

### **Upsilon Pi Epsilon's Commitment**

The Upsilon Pi Epsilon International Computer Science Honor Society recognizes the best students of computer science and engineering in the world. Since its earliest participation, the UPE has provided support and scholarships to the World Finals teams. The UPE boasts the longest continuous relationship to the ICPC, dating back to 1970 with the first event held at Texas A&M by members of the Alpha Chapter of the UPE. For more information about other UPE activities, its chapters, and its membership click on: <a href="http://www.acm.org/upe">http://www.acm.org/upe</a>.





## World Finals Rules For 2012

### Mission

The ACM International Collegiate Programming Contest (ICPC) provides college students with opportunities to interact with students from other universities and to sharpen and demonstrate their problem-solving, programming, and teamwork skills. The contest provides a platform for ACM, industry, and academia to encourage and focus public attention on the next generation of computing professionals as they pursue excellence. (from the ICPC Policies and Procedures).

### Introduction

The contest is a two-tiered competition among teams of students representing institutions of higher education. Teams first compete in Regional Contests, held around the world from September to December each year. The winning team from each Regional Contest advances to the ACM International Collegiate Programming Contest World Finals that is typically held in March or April. Additional high-ranking teams may be invited to the World Finals as Wild Card teams. These rules are subject to change.

### Organization

The ICPC is organized according to the ICPC Policies and Procedures. The Executive Committee, chaired by the Executive Director, sets the policy and general rules for the conduct of the contest. The Executive Director is solely responsible for interpreting the rules and for ruling on unforeseen situations.

### **World Finals Site and Dates**

The 2012 World Finals will be held in Warsaw, Poland on May 17, 2012. Events will be conducted with arrival for teams Monday, May 14, 2012, and departure Friday, May 18, 2012. The tentative schedule of events has been posted with updates as necessary.

### **Team Requirements**

Teams qualify to advance to the World Finals through Regional Contests. Only one team from a given institution may advance to the World Finals. Contestants and registered student Team members will be provided free one-year memberships in ACM. No team member on the qualifying team may have competed as a contestant in two previous World Finals.

The coach of a qualifying team is the point-of-contact prior to and during World Finals activities. The coach must complete certification at the Team Certification Web Site within five (5) business days of notification. Qualifying teams will be issued an invitation by email and postal mail (if requested) soon after completing certification.

Qualifying teams requiring visas must initiate the process of applying for visas within 10 business days of being issued an invitation. Teams failing to comply with any of these requirements will be ruled ineligible to compete in the World Finals. Upon completion of these requirements, a qualifying team will be advanced to the World Finals.

A team advancing to the World Finals will be comprised of the same three members as when it qualified. (Reserves are not allowed at the Finals.) In the event that a team member is unwilling, unable or unfit to compete in the World Finals, the coach must notify the manager in a timely manner. A team member who is unwilling or unfit to compete in the World Finals will be disqualified from further ICPC competitions. The team member may appeal disqualification to the Appeals Committee.

At on-site registration, participants must provide picture ID (passport, driver's license, etc.). Contestants must show proof of enrollment at the university during the term of the regional contest at which they qualified and a letter on university stationary with the signature of a university official accompanied by an English translation is sufficient.

### Attendance

Finalists must attend all required events from On-Site Registration to Celebration as indicated in the Schedule of Events. Failure to attend any required event will result in disqualification and forfeiture of scholarships and prizes. Coaches must be accessible during On-Site Registration, Orientation, Dress Rehearsal, the World Finals, and the Awards Ceremony.

### **Support and Prizes**

Each finalist team will be provided with hotel accommodations for the coach and three contestants for four nights, arriving three days before the World Finals and departing the day after. The hotel accommodations will provide gender privacy. The teams and coaches will be treated to a full schedule of activities including a full course of complimentary food functions.

Transportation to the World Finals is the responsibility of the finalists. The ICPC encourages teams to raise funds for transportation and extracurricular activities from local sources to better strengthen community ties among academia, industry, and government.



Teams finishing in the top four positions will be awarded Gold Medals. Those teams finishing fifth through eighth place will be awarded Silver Medals. Those teams finishing ninth through twelfth place will receive Bronze Medals. Additional Bronze Medals may be awarded.

The highest scoring team is the World Champion and will receive the World Champion Cup and plaques. The other top twelve teams, the North American Champions, the Latin American Champions, the European Champions, the South Pacific Champions, the Asian Champions, and the Africa & Middle East Champions will also receive plaques.

The World Champion team will be awarded \$12,000. Each of the other three Gold Medal teams will be awarded \$6,000. Each Silver Medal team will be awarded \$3,000. Each Bronze Medal team will be awarded \$1,500.

Courtesy of the UPE Computer Science Honor Society, First Solution Award will be \$1,500 and First to Solve Problem "X" will be \$1,050 (for all but first problem solved).

### **Conduct of the Finals**

Eight or more problems have been posed in recent World Finals.

Problems will be posed in English. During the contest, all communications from contest officials to contestants will be in English. Each team may identify an interpreter for translating questions posed by contestants to contest officials. Contestants may bring electronic natural language translators provided that they do not support math operations.

Solutions to problems submitted for judging are called runs. Each run is judged as accepted or rejected, and the team is notified of the results. Rejected runs will be marked as follows:

run-time error time-limit exceeded wrong answer

Notification of accepted runs may be suspended at the appropriate time to keep the final results secret. A general announcement to that effect will be made during the contest. Notification of rejected runs will continue until the end of the contest.

A contestant may submit a claim of ambiguity or error in a problem statement by submitting a clarification request. If the Judges agree that an ambiguity or error exists, a clarification will be issued to all contestants.

While the contest is scheduled to last five hours, the Finals Director has the authority to lengthen the contest in the event of unforeseen difficulties. Should the Contest duration be altered, every attempt will be made to notify contestants in a timely and uniform manner.

### Scoring of the Finals

The World Finals Judges are solely responsible for determining the correctness of submitted runs. In consultation with the World Finals Judges, the Director of Judging is responsible for determining the winners of the World Finals. They are empowered to adjust for or adjudicate unforeseen events and conditions. Their decisions are final.

Teams are ranked according to the most problems solved. Teams placing in the first twelve places who solve the same number of problems are ranked first by least total time and, if need be, by the earliest time of submittal of the last accepted run.

The total time is the sum of the time consumed for each problem solved. The time consumed for a solved problem is the time elapsed from the beginning of the contest to the submittal of the first accepted run plus 20 penalty minutes for every previously rejected run for that problem. There is no time consumed for a problem that is not solved.

### **Computing Environment**

The World Finals programming language tools include Java, and C/C++. See the Programming Environment Web Site, for detailed configuration information. Prior to the World Finals, the judges will have solved all problems in Java and C/C++.

Each team will be provided with a single computer and a calculator. All teams will have equivalent computing equipment.

Contestants may not bring any printed materials or machine-readable versions of software or data to the Contest Area. Contestants may not bring their own computers, computer terminals, calculators, or other electronic devices to the Contest Area.

Each team member may bring an unannotated natural language printed dictionary. On-line reference materials will be made available as described in the Reference Materials section of the Programming Environment Web Site. Each team will be permitted three copies of the Team Reference Document described in the On-Site Registration Instructions.

### **Contestant Conduct**

DO NOT TOUCH ANYTHING at the team workstations until so directed by the Finals Director.

Contestants are not to converse with anyone except members of their team and personnel designated by the Finals Director. Systems support staff may advise contestants on system-related problems such as explaining system error messages.

A team may be disqualified by the Finals Director for any activity that jeopardizes the World Finals such as dislodging extension cords, unauthorized modification of contest materials, or distracting behavior.





# 2012 World Finals Judges

#### Per Austrin, University of Toronto

World Finals Judge since 2008



Ten years ago I had never even heard of programming contests. My first contact was in 2002 when I participated in the Nordic Championship and the Northwestern Europe Regional Contest. In 2004 and 2005 I participated in the ICPC World Finals as a contestant. Since then, I have served many times as judge and head judge in the Nordic Championships and the Northwestern Europe Regionals. I was a general hang-around at the Finals until I became a Finals judge in 2008.

# **Osman Ay, Computer Science Editor, Surat Publishing & Lecturer, Marmara University** World Finals Judge since 2002



My ACM-ICPC adventure started with a forwarded email message, 'Contest Finals Call for Problems', from Dick Rinewalt. I sent candidate problems and was very surprised and pleased to learn that one of my problems qualified for the 2002 Finals. I have attended as a judge every year since then except 2009. I can say that being a member of this organization has become a delightful part of my life, and I am very happy and honored with this membership.

### John Bonomo, Westminster College

World Finals Chief Judge since 2010; World Finals Judge since 2002



Actually, my first exposure to the contest was when I was in grad school at Purdue. They were hosting the East Central Regional Contest that year and I was asked to create a problem set to be used to select Purdue's team for the competition. Since then, I have served as a judge for the East Central Regional Contest and had problems accepted in the East Central and North Central Regional Contests.

## Don Chamberlin, Retired IBM Fellow, UC Santa Cruz

World Finals Judge since 1998



became interested in ICPC when the Finals were held in my home town (San Jose, CA, 1997.) Being an ICPC judge is a year-round activity. It involves making up problems, solutions, and test suites, and cross-checking them with the other judges. It's my favorite hobby.

## Walter Guttmann, Universität Ulm

World Finals Judge since 2011



I have been a contestant/organizer/co-organizer of Ulm's local contest 1999–2009, a reserve/contestant/coach/judge/head judge in regionals 1997–2009, and a supporter/reserve/contestant/coach in Finals 1998–2004.

#### Andy Harrington, Loyola University

World Finals Judge since 2008



66 I became a World Finals judge while serving as Chief Judge for the Mid-Central Regional Contest. I generally made up the hardest problems and the regional director suggested I contribute problems to the Finals.

## Martin Kacer, Czech Technical University

World Finals Judge since 2006



As a former contestant, I participated in regionals in 1996–1999. Then I was an assistant RCD and chief judge for Central Europe, university coach, World Finals volunteer, and World Finals judge. I became more closely involved since 2003 due to the 2004 World Finals being held in Prague (World Finals Associate Director) and 2005 in Shanghai (Director of Operations).

### Derek Kisman, Google

World Finals Judge since 2004



Vive been competing in intellectual contests of all sorts since I was young. I participated for two years as a contestant: 1996/1997 (San Jose, 5<sup>th</sup> place) and 1997/1998 (Atlanta, 3<sup>rd</sup> place). When I had the lucky opportunity to get involved behind the scenes with the World Finals, I took it eagerly!

## Peter Kluit, Retired, Delft University of Technology

World Finals Judge since 1999



As of 1992, I judged local (Delft and Dutch National) contests. These contests were not part of ACM-ICPC then, but were selection rounds for the regionals. In 1996 (and later, several times) I judged the Northwestern European Regional Contest. Tom Verhoef got me involved in my first Finals in Eindhoven in 1999. I knew Tom from judging the International Olympiad in Informatics in Eindhoven (1995).

#### Shahriar Manzoor, Southeast University

World Finals Judge since 2003



at UVa Online Judge since 2000, creating around 275 problems for different contests. I have set problems for regional/national contests of Bangladesh, China, Thailand and Malaysia since 2001. Dr. Kaykobad (coach of BUET teams) led me to the World Finals in mid 2002. I submitted a problem and became a Finals Judge in 2003.

### Jo Perry, NC State University

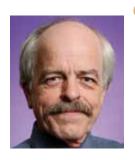
Director of Judging since 2010; World Finals judge since 1987



66A colleague asked me to submit problems to the 1987 Finals. I did, they were accepted, and I've been working as a Finals Judge ever since.

# Dick Rinewalt, Texas Christian University

World Finals Judge since 1982; Director of Judging (many years)



66 I had been the chief judge for the South Central Regional Contest for a couple of years. I went to the Computer Science Conference in 1981 (I think it was 1981) and was drafted to do some clerical work for the Finals. I submitted problems and became a World Finals judge the next year and later served as Director of Judging for many years.

In 2010 Dick retired as Director of Judging, but continues working with the World Finals judges.

# Bob Roos, Allegheny College

World Finals Judge since 1996



In 1995 I responded to a call for contest problems that I read in one of the USENET newsgroups. I had no idea at the time, that if my problem was chosen I would be invited to be a judge. So, I was quite surprised when Dick Rinewalt wrote to ask me to come to Philadelphia for the 1996 Finals. It was such a great experience that I've submitted something every year since, and have also gotten involved as a judge in the East Central North America Regional Contest.

#### Matthias Ruhl, Google

World Finals Judge since 1997



and in college, so when I saw an announcement for the 1994–95 regional contest in Zurich, I gave it a try. After being contestant, I continued as a judge, since it's as much fun, but with much less stress.:)

## Stan Wileman, University of Nebraska - Omaha

World Finals Judge since 1979



66 My first involvement with the contest was as a contestant. I was part of the team that won an early variant of the national/international contest at Texas A&M University. I don't remember the exact year, but it was before I got my MS, so it was in or before 1972. I recall that the prize for winning was \$100 cash! After joining the faculty at UNO in 1976, I coached the UNO teams (I remember packing numerous kids in a state of NE station wagon). I also served as codirector of the regional contest.

My first involvement with the Finals was through John Metzner. He indicated to me that there was a plan to bring on new Finals judges, first as "apprentice" judges, so their prowess could be assessed. He asked me if I would be interested. I believe he did this when he was also serving as director of the regional contest, when it was held at the John Deere headquarters in Moline, IL. I don't remember exactly the first contest in which I participated as a judge, but I do recall the contest in Dayton (in 1979), because my baggage was lost.

#### Jakub Onufry Wojtaszczyk, Google, Poland

World Finals Judge since 2011



I realized I enjoy and have a good hand for preparing problems after preparing problems for the Polish Informatics Olympiad. I prepared and submitted a few for the 2011 World Finals, was pleased when one was selected, and am pleased to be back this year.

# 

# Contestants



# **World Finals**

# and Coaches



# **Africa and the Middle East**

# Alexandria University—Faculty of Engineering

http://www.alexeng.edu.eg
Team name: AlexCSE
Ahmed Abdelkader, Coach
Mohammad Kotb, Contestant
Ahmad Mamdouh, Contestant
Ahmed Salama, Contestant

#### American University of Sharjah

http://www.aus.edu
Team name: AUS Lions
Khaled El-Fakih, Coach
Ahmed El Sayed, Contestant
Abdul Rahim Haddad, Contestant
Omar Harib, Contestant

# Cairo University—Faculty of Computers and Information

Team name: s2++ Mohamed Abd El-Wahab, Coach Ahmed Abdou, Contestant Hussein El-Mahallawy, Contestant Karim Nosseir, Contestant

http://www.fci.cu.edu.eg

### German University in Cairo

http://met.guc.edu.eg Team name: Neutrinos Abdallah Elguindy, Coach Muhammad Atef, Contestant Omar ElAzazy, Contestant Mostafa Mahmoud, Contestant

# **University of Cape Town**

http://www.uct.ac.za

Team name: InsaneCodersPesteringComputers
Bruce Merry, Coach
Gwylim Aidan Ashley, Contestant
Graham Manuell, Contestant
Jacobus Petrus Van der Merwe, Contestant





# Bangladesh University of Engineering and Technology

http://www.buet.ac.bd Team name: BUET .oO Mohammad Kaykobad, Coach Md. Enzam Hossain, Contestant

F. A. Rezaur Rahman Chowdhury, Contestant

Mir Wasi Ahmed, Contestant

# **Beijing University of Posts and Telecommunications**

http://www.bupt.edu.cn
Team name: kerokero
Ming Fang, Coach
Zhenyang Dai, Contestant
Chuan He, Contestant
Mingxing Zhang, Contestant

#### **Chennai Mathematical Institute**

http://www.cmi.ac.in Team name: AlephNull

Narayan Kumar Krishnan, Coach

Arjun Arul, Contestant Anudhyan Boral, Contestant Ronno Das, Contestant

#### **Fudan University**

http://www.fudan.edu.cn Team name: BGM

Weiwei Sun, Coach

Guodong Feng, Contestant Ji Hong, Contestant Lei Huang, Contestant

#### **Fuzhou University**

http://www.fzu.edu.cn

Team name: FZU\_Golextuclid

Yingjie Wu, Coach

Hong Chen, Contestant

Qing Lu, Contestant

Wenbin Tang, Contestant

# **Graduate University of the Chinese Academy of Sciences**

http://www.gucas.ac.cn Team name: RX78\_Beyond Weiqiang Wang, Coach Zilong Feng, Contestant Taihua He, Contestant Zhihao Wang, Contestant

# Hong Kong University of Science and Technology

http://www.ust.hk

Team name: HKUST\_Optimus Prime

Hao Hu, Coach

Qifeng Chen, Contestant Yuliang Li, Contestant Lu Wang, Contestant

# Indian Institute of Technology—Delhi

http://www.iitd.ernet.in

Team name: Proof

Naveen Garg, Coach

Rudradev Basak, Contestant

Nikhil Garg, Contestant

Pradeep George Mathias, Contestant

#### Indian Institute of Technology—Kanpur

http://www.iitk.ac.in

Team name: Pandora's Box

Manindra Aggarwal, Coach

Abhimanyu Mongandh Ambalath, Contestant

Pratik Moona, Contestant

Raziman Thottungal Valapu, Contestant

## Indian Institute of Technology—Madras

http://www.iitm.ac.in

Team name: TheUsualSuspects Shankar Balachandran, Coach Chetan Bademi, Contestant Srivatsan Balakrishnan, Contestant

Arijit Banerjee, Contestant

## Institut Teknologi Bandung

http://www.itb.ac.id

Team name: Dongskar Pedongi

Fajar Ekaputra, Coach

Christianto Handojo, Contestant

Irvan Jahja, Contestant

Gregorius Ronny Kaluge, Contestant

# International Institute of Information Technology—Hyderabad

http://www.iiit.ac.in

Team name: TuringMachine

Vikram Pudi, Coach

Kunal Jain, Contestant

Nadeem Moidu, Contestant

Anish Shankar, Contestant

#### International Islamic University Malaysia

http://www.iium.edu.my

Team name: IIUM Tribute-> Ritchie

Teddy Mantoro, Coach

Rusydi Hasan Makarim, Contestant Igram Mahmud, Contestant

Fatma Betul Varol, Contestant

#### **Korea University**

http://www.korea.ac.kr

Team name:

The\_Longest\_TeamNameOn\_ACMICPC

Jin-Young Choi, Coach JaeHeon Jeong, Contestant Sang Eel Kim, Contestant Dong-ho Lee, Contestant

#### **Kyoto University**

http://www.kyoto-u.ac.jp

Team name: Flat35

Yasuharu Hirasawa, Coach

Kentaro Imajo, Contestant

Mitsuru Kusumoto, Contestant

Shingo Mori, Contestant

#### **Nanyang Technological University**

http://www.ntu.edu.sg

Team name: NTU StarLights

Kevin Jones, Coach

Thanh Trung Nguyen, Contestant

Quang Vu Pham, Contestant

Risan, Contestant

#### **National Taiwan University**

http://www.ntu.edu.tw

Team name: m(\_ \_)m

Pu-Jen Cheng, Coach

Ting-Wei Chen, Contestant

I-Wen Huang, Contestant

Shang-En Huang, Contestant

# National University of Defense Technology

http://www.nudt.edu.cn

Team name: Time\_Bomb

Yuxing Peng, Coach

Ding Shuai, Contestant

Yuan Yifan, Contestant

Lujia Yin, Contestant

#### **National University of Singapore**

http://www.nus.edu.sq

Team name: Eternia

Steven Halim, Coach

Zi Chun Koh, Contestant

Trinh Tuan Phuong, Contestant

Harta Wijaya, Contestant

#### **Peking University**

http://www.pku.edu.cn

Team name: PKU\_(NULL)

Wei Guo, Coach

Yechen Li, Contestant

Liumingjing Xiao, Contestant

Wentai Zhang, Contestant

#### **Seoul National University**

http://www.snu.ac.kr

Team name: SUNG...

Heon Young Yeom, Coach

Taekwon Lee, Contestant

Jong hyuk Lee, Contestant

Jaesung Park, Contestant

# Shahjalal University of Science and Technology

http://www.sust.edu

Team name: SUST\_PALINDROME

Shahidul Islam, Coach

Forhad Ahmed, Contestant

Baker Anas, Contestant

Md. Maksud Hossain, Contestant

#### **Shanghai Jiao Tong University**

http://www.sjtu.edu.cn

Team name: Epic

Yong Yu, Coach

Guangda Huzhang, Contestant

Qi Liu, Contestant

Yan Liu, Contestant

#### **Sharif University of Technology**

http://www.sharif.edu

Team name: Reincarnation of PMP

Kamran Bavar, Coach

Pouria Alimirzaei, Contestant

Mohammadjavad Rezayei Seraji, Contestant

Pooya Zafar Asadollahpoor, Contestant

#### **Sichuan University**

http://cs.scu.edu.cn/acm

Team name: SCU\_Hlgirl

Jie Zuo, Coach

Qianchuang Wang, Contestant

Xianming Wang, Contestant

Xiaoyuan Wang, Contestant

# Software Engineering Institute of East China Normal University

http://www.sei.ecnu.edu.cn

Team name: freshman

Yugen Du, Coach

Cheng Chen, Contestant

Daxuan Yang, Contestant

Yinbo Yao, Contestant

#### The Chinese University of Hong Kong

http://www.cse.cuhk.edu.hk

Team name: IsolatE Lap Chi Lau, Coach Jeffrey Hon, Contestant Wai Hon Law, Contestant Chak Fai Yuen, Contestant

# The University of Electro-Communications

http://www.uec.ac.jp
Team name: -Dint=char
Tomoharu Ugawa, Coach
Ryota Fujii, Contestant
Ryo Matsumiya, Contestant
Masafumi Yabu, Contestant

## **Tianjin University**

http://www.tju.edu.cn
Team name: TJU\_IUV
Ruiguo Yu, Coach
Yuchen Cai, Contestant
Lin Jin, Contestant
Fu Zhengshuai, Contestant

#### **Tsinghua University**

http://www.tsinghua.edu.cn

Team name: Y.E.S Xiaojun Wu, Coach Yuchao Pan, Contestant Sen Wu, Contestant Erjin Zhou, Contestant

# University of Electronic Science and Technology of China

http://www.uestc.edu.cn Team name: UESTC-Athena Peng Yang, Coach Li Chunqi, Contestant Yuanhong Xu, Contestant Tao Zhao, Contestant

#### **University of Tehran**

http://www.fos.ut.ac.ir Team name: Runtime error Abdolhadi Asiaiefard, Coach

Behrooz Ostadmohammadi arani, Contestant

Mohammad reza Sabouri Karkhane,

Contestant

Amir Saboury, Contestant

#### **University of Tokyo**

http://www.u-tokyo.ac.jp
Team name: \_\_\_\_\_
Tomoyuki Kaneko, Coach
Takuya Akiba, Contestant
Masaki Watanabe, Contestant
Kota Yoshizato, Contestant

#### University of the Philippines—Diliman

http://www.upd.edu.ph Team name: Quiwarriors 1 Fidel Nemenzo, Coach Kevin Charles Atienza, Contestant

Kevin Charles Atienza, Contestant John Eddie Ayson, Contestant John Ruperto Celis, Contestant

### **Wuhan University**

http://www.whu.edu.cn Team name: FreeJourney Wenyong Dong, Coach Yi Jin, Contestant Jiaqi Li, Contestant Yan Li, Contestant

# **Zhejiang University**

http://acm.zju.edu.cn
Team name: FutureGazer
Can Wang, Coach
Yuzhe Fan, Contestant
Kai Jiang, Contestant
Junyuan Zhuang, Contestant

#### **Zhejiang University of Technology**

http://www.zjut.edu.cn Team name: ZJUT-Zzz Yingzi Wang, Coach Chaoshuai Lv, Contestant Junqiao Wang, Contestant Chengchao Yu, Contestant

#### Zhongshan (Sun Yat-sen) University

http://www.sysu.edu.cn

Team name: SYSU\_Metalgarurumon

SongShan Guo, Coach Kafai Lao, Contestant Chenheng Liu, Contestant Ruiyang Tan, Contestant

# **Europe**

#### **Aalto University**

http://www.aalto.fi

Team name: Wave of Technology

Ari Korhonen, Coach Otto Ebeling, Contestant Janne Kokkala, Contestant Ville Pettersson, Contestant

#### Altai State Technical University

http://www.altstu.ru
Team name: Altai STU
Elena Kryuchkova, Coach
Sergey Esipenko, Contestant
Dmitrii Silin, Contestant
Dmitry Uvarov, Contestant

# Belarus State University of Informatics and Radioelectronics

http://www.bsuir.by

Team name: Belarusian SUIR #1 Serge Aktanorovich, Coach Daniil Berezhnov, Contestant Ihar Brukau, Contestant Aliaksei Ropan, Contestant

#### **Belarusian State University**

http://www.bsu.by

Team name: Belarusian SU #1

Vladimir Kotov, Coach

Dzmitry Bahdanau, Contestant Yury Pisarchyk, Contestant Sergei Sobol, Contestant

## **Charles University in Prague**

http://www.cuni.cz Team name: MFF UK 1 Pavel Töpfer, Coach Michal Danilák, Contestant Filip Hlásek, Contestant Jakub Zíka, Contestant

#### **Delft University of Technology**

http://www.tudelft.nl
Team name: geen.opdracht5
Thomas Verwoerd, Coach
Maurice Bos, Contestant
Jan Elffers , Contestant
Harmjan Treep, Contestant

#### **Eindhoven University of Technology**

http://www.tue.nl/english
Team name: Joy
Kevin Verbeek, Coach
Pieter Bootsma, Contestant
Bauke Conijn, Contestant

Thijs Marinussen, Contestant

#### Jagiellonian University in Krakow

http://www.uj.edu.pl

Team name: Jagiellonian Infinity

Paweł Idziak, Coach Robert Obryk, Contestant Adam Polak, Contestant Maciej Wawro, Contestant

#### **Kazakh-British Technical University**

http://www.kbtu.kz

Team name: Kazakh-British TU 2 Damir Yeliussizov, Coach Madiyar Aitbayev, Contestant Azizkhan Almakhan, Contestant Kanat Satylkhanov, Contestant

## Moscow Institute of Physics & Technology

http://www.mipt.ru
Team name: Waterogers
Evgeny Barskiy, Coach
Iakov Dlugach, Contestant
Renat Gimadeev, Contestant
Pavel Shishkin. Contestant

## **Moscow State University**

http://msu.ru

Team name: Moscow SU ST Anton Pankratiev, Coach Sergey Fedorov, Contestant Alexander Kaluzhin, Contestant Sergey Rogulenko, Contestant

# National Technical University "Kharkiv Polytechnic Institute"

http://www.kpi.kharkov.ua
Team name: iddqd
Leonid Lyubchik, Coach
Igor Bichurin, Contestant
Dmytro Dzhulgakov, Contestant
Vlad Lysychkin, Contestant

#### **Nizhny Novgorod State University**

http://www.unn.ac.ru
Team name: NNSU
Vladimir Lelyukh, Coach
Alexander Lyulkov, Contestant
Alexey Shmelev, Contestant
Vasiliy Vadimov, Contestant

## Poznan University of Technology

http://www.put.poznan.pl
Team name: Garbage Collectors
Szymon Wasik, Coach
Konrad Baumgart, Contestant
Tomasz Żurkowski, Contestant
Piotr Żurkowski, Contestant

#### **Saratov State University**

http://sgu.ru

Team name: Saratov SU #2 Michael Mirzayanov, Coach Maxim Ivanov, Contestant Nikolay Kuznetsov, Contestant Artem Rakhov, Contestant

### St. Petersburg State University

http://www.spbu.ru

Team name: SPb SU 1: SteelFrames

Andrey Lopatin, Coach Roman Andreev, Contestant Roman Boykiy, Contestant Valentin Fondaratov, Contestant

## St. Petersburg State University of IT, Mechanics and Optics

http://www.ifmo.ru

Team name: SPbSU ITMO 1 Andrey Stankevich, Coach Eugeniy Kapun, Contestant Mikhail Kever, Contestant Niyaz Nigmatullin, Contestant

#### Taurida V.I. Vernadsky National University

http://www.tnu.crimea.ua/eng/index.html

Team name: Akai Oleksandr Kozlov, Coach Oleksandr Mangylov, Contestant Oleksandr Milanin, Contestant Oleksandr Vints, Contestant

#### **Tomsk State University**

http://www.tsu.ru

Team name: Tomsk SU 1 Roman Chadnov, Coach Anton Afanasev, Contestant Pavel Chadnov, Contestant Michael Kolupaev, Contestant

#### **Udmurt State University**

http://www.udsu.ru

Team name: Udmurt SU 1

Yuri Kogan, Coach

Pavel Abizyaev, Contestant Aleksey Kibardin, Contestant Dmitry Urbanovich, Contestant

#### **Ufa State Aviation Technical University**

http://www.ugatu.ac.ru

Team name: TurtleCommander Alexander Fridlyand, Coach Petr Lezhankin, Contestant Artur Mazgarov, Contestant Artem Ripatti, Contestant

#### Universitat Politècnica de Catalunya

http://www.upc.edu
Team name: UPC-1
Salvador Roura, Coach
Pol Mauri, Contestant
Félix Miravé, Contestant
Marc Vinyals, Contestant

#### **University of Bucharest**

http://www.unibuc.ro
Team name: Unibuc Orion
Dumitran Adrian Marius, Coach
Paul Baltescu, Contestant
Andrei Grigorean, Contestant
Marina Horlescu, Contestant

#### **University of Latvia**

http://www.lu.lv
Team name: unusual
Guntis Arnicans, Coach
Eduards Kalinicenko, Contestant
Jevgenijs Vihrovs, Contestant
Normunds Vilcins, Contestant

#### **University of Warsaw**

http://www.uw.edu.pl

Team name: Warsaw Eagles 2012

Jan Madey, Coach

Tomasz Kulczyński, Contestant Jakub Pachocki, Contestant Wojciech Śmietanka, Contestant

#### University of Wroclaw

http://www.uni.wroc.pl
Team name: UWr2
Krzysztof Lorys, Coach
Marcin Dublański, Contestant
Jaroslaw Gomulka, Contestant
Karol Pokorski, Contestant

#### **Ural Federal University**

http://www.ustu.ru

Team name: Ural FU: Orange Denis Dublennykh, Coach Oleg Dolgorukov, Contestant Egor Schelkonogov, Contestant Olga Soboleva, Contestant

#### **Volgograd State Technical University**

http://www.vstu.ru

Team name: Volgograd STU #1 (team3K)

Dmitry Kryzhanovskiy, Coach Vladislav Agafonov, Contestant Vladimir Chalyshev, Contestant Stanislav Zhorin, Contestant

# **Latin America**

## **ITESM Campus Puebla**

http://www.pue.itesm.mx

Team name: C\_mita David Sol, Coach

Jesus Flores Galindo, Contestant Manuel Moreno Urcid, Contestant

Jose Rodrigo Perez Rodriguez, Contestant

#### Instituto Tecnológico de Aeronautica

http://www.ita.br

Team name: Comp-Ele Error Armando Gouveia, Coach Gabriel Dalalio, Contestant Fernando Fonseca, Contestant Diogo Holanda, Contestant

## Instituto Tecnológico de Santo Domingo

http://www.intec.edu.do

Team name: Tortugas del Caribe

Carlos Joa, Coach

Dennis Federico Castillo Sosa, Contestant

Ronald Rey Lovera, Contestant Carlos Toribio, Contestant

#### Pontificia Universidad Católica del Perú

http://www.pucp.edu.pe

Team name: FOR(ac+=Polya;Peru;Varsovia)

Eric Alejandro Destefanis, Coach Walter Erquínigo, Contestant Jesús Peña, Contestant Daniel Soncco, Contestant

# Universidad Nacional de Colombia—Bogotá

http://www.unal.edu.co

Team name: UN01 David Becerra, Coach

David Mauricio Arcila Pardo, Contestant

Iván Darío Arias Niño, Contestant

Rafael Alberto Niguefa Velásquez, Contestant

# Universidad Nacional de Córdoba—FaMAF

http://www.famaf.unc.edu.ar

Team name: aWARush

Eric Alejandro Destefanis, Coach Gastón Ingaramo, Contestant

Raul Monti, Contestant Matías Tealdi, Contestant

## Universidad Nacional de Ingeniería

http://www.uni.edu.pe

Team name: Los Desempleados FIIS

Francisco Fernandez, Coach

Jonathan Durand Espinoza, Contestant Roy David Palacios Rezza, Contestant Mario Ynocente Castro, Contestant

## Universidad Tecnológica de la Mixteca

http://www.utm.mx

Team name: Justice League

Moisés Emmanuel Ramírez Guzmán, Coach Pedro Alberto Antonio Soto, Contestant Manuel Morales Vásquez, Contestant Ulises Méndez Martínez, Contestant

#### Universidad de Buenos Aires-FCEN

http://exactas.uba.ar
Team name: GLP
Vivas Quimey, Coach
Pablo Gauna, Contestant
German Stefanich, Contestant
Leopoldo Taravilse, Contestant

#### Universidad de Guanajuato—CIMAT

http://www.cimat.mx

Team name: Manowar

Miguel Ángel Covarrubias Sánchez, Coach Alejandro Jimenez Martinez, Contestant Alberto Jose Ramirez Valadez, Contestant Marcel Stockli Contreras, Contestant

#### Universidad de La Habana

http://www.uh.cu

Team name: (++UH)++

Alfredo Somoza Moreno, Coach Alfonso Alfonso Peterssen, Contestant Leandro Castillo Valdés, Contestant

Ramón Alejandro Reyes Fajardo, Contestant

#### Universidad de los Andes

http://www.uniandes.edu.co

Team name: Terminators Mario Sánchez, Coach Diego Cifuentes, Contestant Carlos Cotrini, Contestant German Sotelo, Contestant

## Universidade Federal de Campina Grande Universidade Federal do Rio de Janeiro

http://www.dsc.ufcg.edu.br

Team name: Modus Ponens Malditos

Rohit Gheyi, Coach

Felipe Abella Cavalcante Mendonça de Souza,

Contestant

Phyllipe Cesar Ramos de Almeida Medeiros,

Contestant

Diogo Silva, Contestant

## Universidade Federal de Pernambuco

http://www.cin.ufpe.br

Team name: Challenge Accepted!

Liliane Salgado, Coach Filipe Melo, Contestant Davi Pinheiro, Contestant Luiz Silva, Contestant

# Universidade Federal do Paraná

http://www.inf.ufpr.br

Team name: \* da Trypanossoma

Bruno Ribas, Coach

Flávio Henrique de Bittencourt Zavan,

Contestant

Vinicius Kwiecien Ruoso. Contestant

Ricardo Oliveira, Contestant

# Universidade Federal do Rio de Janeiro (DCC-UFRJ)

http://www.dcc.ufrj.br

Team name: double cheeseburger;

Douglas Cardoso, Coach

Leonardo Inácio Lima de Oliveira, Contestant Pedro Veras Bezerra da Silva, Contestant Mauricio de Lemos Rodrigues Collares Neto,

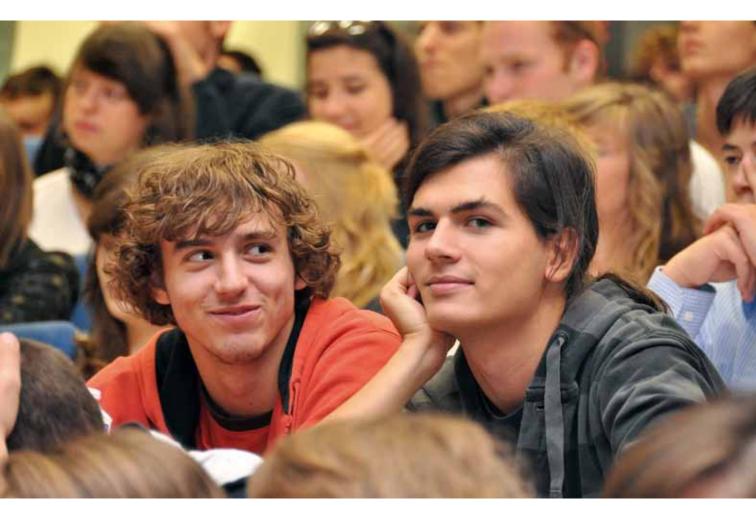
Contestant

# University of São Paulo—Institute of Mathematics and Statistics

http://www.ime.usp.br

Team name: Up Marcio Oshiro, Coach

Lucas Piva Rocha Correa, Contestant Cesar Gamboa Machado, Contestant Leonardo Marchetti, Contestant



# **North America**

## Carnegie Mellon University

http://www.cmu.edu
Team name: JimmyJons
Danny Sleator, Coach
Jonathan Adams, Contestant
James Koppel, Contestant
Jonathan Paulson, Contestant

#### College of William and Mary

http://www.wm.edu Team name: William and Mary Gold Debbie Noonan, Coach

Michael Christensen, Contestant

Brett Cooley, Contestant Aaron Dufour, Contestant

### **Duke University**

http://www.cs.duke.edu Team name: Duke Lilike Michael Hewner, Coach Joe Keefer, Contestant Yuqian Li, Contestant Jie Li, Contestant

#### **Georgia Institute of Technology**

http://www.gatech.edu
Team name: GTAuto
Topraj Gurung, Coach
Zhongtian Jiang, Contestant
Artur Satayev, Contestant
Abhishek Shroff, Contestant

#### **Harvard University**

http://www.harvard.edu
Team name: Harvard
Robert L Walton, Coach
Spencer Liang, Contestant
Neal Wu, Contestant
Lin (Alex) Zhai, Contestant

#### Illinois Institute of Technology

http://www.iit.edu
Team name: IIT-A
Gruia Calinescu, Coach
Kan Qiao, Contestant
Timothy Smith, Contestant
Ke Wang, Contestant

#### **Iowa State University**

http://www.iastate.edu
Team name: cy5
Simanta Mitra, Coach
Devon Eilers, Contestant
Bryce Sandlund, Contestant
Kerrick Staley, Contestant

## Massachusetts Institute of Technology

http://web.mit.edu
Team name: MIT Beavers
Aleksandar Zlateski, Coach
Pasin Manurangsi, Contestant
Christos Tzamos, Contestant
Szu-Po Wang, Contestant

#### Messiah College

http://www.messiah.edu
Team name: Falcons Blue
D. Scott Weaver, Coach
Mike Adams, Contestant
Zachary Felix, Contestant
Anthony Spargo, Contestant

#### **Princeton University**

http://www.princeton.edu
Team name: Princeton
Jarett Schwartz, Coach
Wesley Cao, Contestant
Eddy Ferreira, Contestant
Momchil Tomov, Contestant

#### **Stanford University**

http://www.stanford.edu
Team name: Stanford Cardinal
Jerry Cain, Coach
John Pardon, Contestant
Huaiyu Wu, Contestant
Chenguang Zhu, Contestant

#### **University of Alberta**

http://www.ualberta.ca
Team name: Alberta Black
Martin Mueller, Coach
Saber Khakpash, Contestant
Amir Malekzadeh, Contestant
Navid Zolghadr, Contestant

#### **University of British Columbia**

http://www.ubc.ca Team name: UBC!

Simon Aloysius Suyadi, Coach Xing Chen, Contestant

Aram Ebtekar, Contestant Martin Lau, Contestant

#### **University of Central Florida**

http://www.ucf.edu

Team name: UCF Knights

Ali Orooji, Coach

Matt Fontaine, Contestant Travis Meade, Contestant Antony Stabile, Contestant

**University of Chicago** 

http://www.cs.uchicago.edu

Team name: Whiteboard Erasers

Borja Sotomayor, Coach

Joseph DiCapua, Contestant

Naren Hazareesingh, Contestant

Kevin Wang, Contestant

# University of Illinois at Urbana-Champaign

http://illinois.edu

Team name: ILLIAC

Marsha Woodbury, Coach

Krishan Chockalingam, Contestant

Hassan Eslami, Contestant Justin Kopinsky, Contestant

#### University of Minnesota—Twin Cities

http://www.umn.edu

Team name: 0b00101010

Carl Sturtivant, Coach

Jonathan Hsiao, Contestant

Sang Nguyen, Contestant

Lu Ye, Contestant

#### **University of Southern California**

http://www.usc.edu

Team name: USC Trojans

Jing Huang, Coach

Yu Cheng, Contestant

Rongqi Qiu, Contestant

Siyu Yue, Contestant

#### **University of Toronto**

http://www.toronto.edu

Team name: University of Toronto A

Carolyn MacLeod, Coach

Wesley May, Contestant

Jacob Plachta, Contestant

Qiyu Zhu, Contestant

#### **University of Tulsa**

http://www.utulsa.edu

Team name: Aleph One

Sandip Sen, Coach

Logan Brooks, Contestant

Stephen Macke, Contestant

Alex Ruff, Contestant

#### **University of Waterloo**

http://www.uwaterloo.ca

Team name: Waterloo Black

Ondrej Lhotak, Coach

Tyson Andre, Contestant

Benoit Maurin, Contestant

Anton Raichuk, Contestant

## University of Wisconsin-Madison

http://www.wisc.edu

Team name: The Antisocial Network

Dieter van Melkebeek, Coach

Nathaniel Sullivan, Contestant

Igor Canadi, Contestant

Justin Starry, Contestant

# **South Pacific**

## **University of Canterbury**

http://www.canterbury.ac.nz

Team name: Funrolled Loops

Richard Lobb, Coach

Brendan Bycroft, Contestant

Jamie McCloskey, Contestant

Michael McGee, Contestant

# **University of New South Wales**

http://www.cse.unsw.edu.au

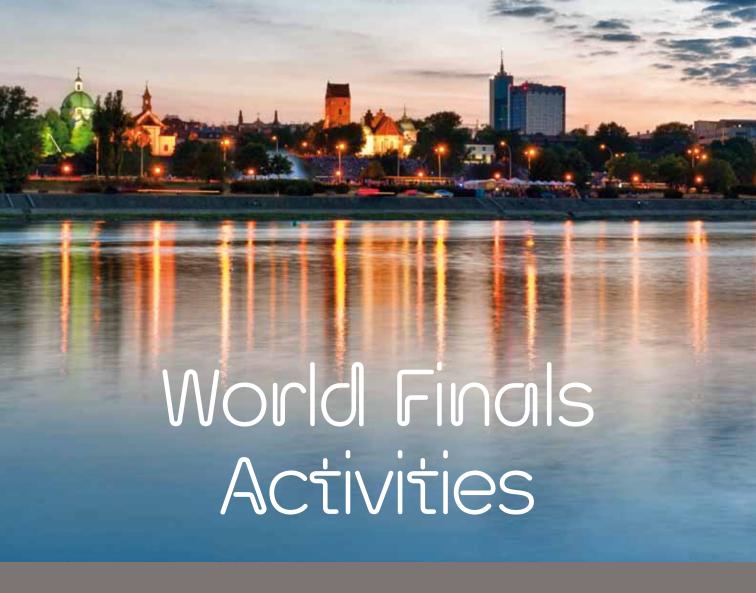
Team name: 13337 ViSu4L B451c PWN3RZ!11!

Tim Lambert, Coach

Christopher Chen, Contestant

Jarrah Lacko, Contestant

Kitten Tofu, Contestant



## **Team Registration**

All teams and coaches must present themselves for registration at the time assigned by appointment. Representatives certify that team paperwork and notebooks comply with ICPC rules.

# IBM Welcome Dinner-Reception

Get to know the other ACM ICPC World Finals participants dinner reception in both Marriott and Radisson Blu Sobieski Hotels.

# IBM TechTrek

TechTrek will be held in Auditorium Maximum - one of the most beautiful buildings at the University of Warsaw. After the presentation, participants are invited for an excursion to the Copernicus Science Centre where you can see interactive exhibitions, shows and workshops on scientific themes, enjoy watching robotic theatre or visit planetarium.



## **Opening Ceremony**

Official opening of ACM ICPC 2012 World Finals will be held in the most famous place in Warsaw—Palace of Culture and Science. After being welcomed by ICPC and University of Warsaw, community participants will take part in the most innovative, exciting interactive show in Poland!

## **UPE Dinner**

This event will be held in a historical building of Warsaw University of Technology—one of the symbols of the city of Warsaw. The social, political, cultural and scientific elite meets here every year; therefore it could not be missed when choosing meeting spaces for ICPC guests!

## The World Finals Competition

The competition will take place in one of the most modern venues at the University of Warsaw—building of the Faculty of Management. We hope the beautiful and green spaces around you will foster your creativity during competition.

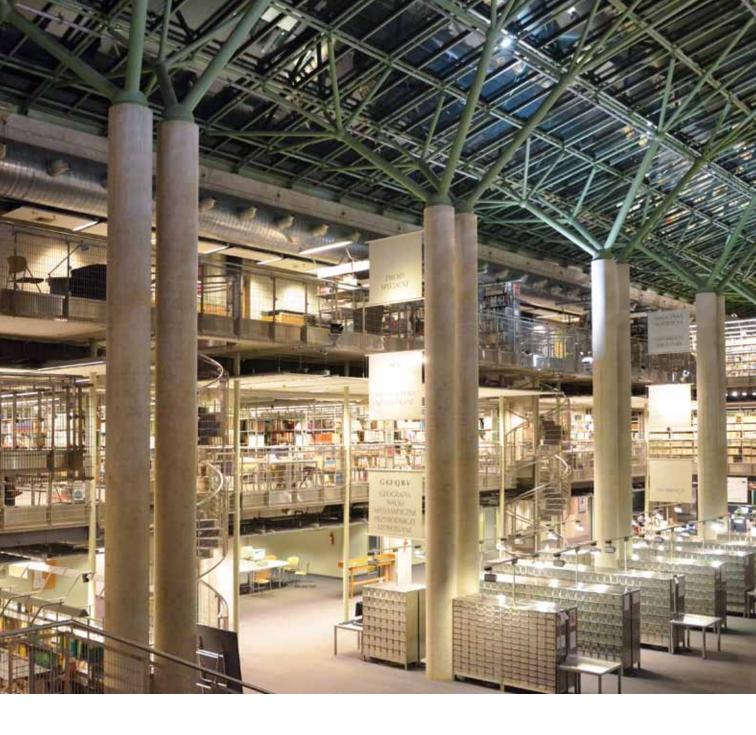


#### **Award Ceremony**

Relaxing entertainment after a long competition will be provided during the Award Ceremony, hosted at the modern edifice of the University of Warsaw Library, designed by architects Marek Budzyński and Zbigniew Badowski. Enjoy the beautiful spaces of the library and a great show prepared by the well-known Folk Song and Dance Ensemble of Warsaw University.

## 2012 ICPC Challenge

The ICPC Challenge gives programming teams and their coaches a chance to work on a different kind of problem. Working with their coach, teams implemented a player and competed against other teams' players in a new game called Bumper Boat Rally. Preliminary matches during the two-week coding phase let teams know how well their players did. A final double-elimination competition among all the submitted players will decide whose player is best. World finals teams have already developed their players, submitted preliminary player versions, competed in matches against other teams' players and seen how their strategy compared. A tournament among the latest versions of all teams' players will be presented as part of the 2012 ICPC World Finals events in Warsaw.



# Queue and past challenges

Working together, the ICPC and ACM Queue Magazine have offered a challenge problem for interested queue readers. We are anticipating a similar offering in January of 2012. Even if you've never competed in the ICPC, you can join us for the Queue ICPC Challenge and show what your programs can do. Visit the Queue ICPC Challenge site to find out more about this contest and how you can get involved.

#### 2011 ICPC Challenge

The 2011 ICPC Challenge problem was a game called Coercion. Because of the change of venue of the contest, two preliminary match series were held, and the Leiden University team emerged victorious.

#### 2010 ICPC Challenge

The 2010 ICPC finals featured an ICPC Challenge problem appropriate to the February weather in Harbin, China: The Icy Projectile Challenge. Teams developed a program to control a group of children in a snow-covered field. Children made snowmen and made and threw snowballs to try to score the most hits against the other player. The University of Canterbury team won in 2010.

## 2009 ICPC Challenge

The 2009 ICPC finals featured Capture, a challenge problem in which players participated in the game by controlling three pieces, two bumpers and a sled. The bumpers were used to move pucks around the field, and the sled is used to change puck colors by drawing a closed loop around them. Strategic use of these elements let a player capture pucks to hopefully turn them his own color. The University of Tokyo won in 2009.

For Challenge updates, follow us on Facebook: <a href="http://on.fb.me/z5vFnj">http://on.fb.me/z5vFnj</a>.





# Schedule

when?	what?	where?	who?
SUNDAY MAY	13 <sup>th</sup>		
	Transportation from the Airport to Marriott & Sobieski Hotels / Courtesy of University of Warsaw	Warsaw Chopin Airport	ICPC Guests
18:00-22:00	RCD & CLI Registration	Marriott Hotel 2 <sup>nd</sup> Floor	Symposia attendees
19:00-21:00	Volunteer Appreciation Reception / Courtesy of IBM	Marriott Hotel Champions Restaurant	By invitation
MONDAY MAY 14 <sup>th</sup>	14th		
	Transportation from the Airport to Marriott & Sobieski Warsaw Chopin Airport Hotels / Courtesy of University of Warsaw	Warsaw Chopin Airport	ICPC Guests
06:30-08:15	Breakfast / Courtesy of University of Warsaw	Marriott & Sobieski Hotels	Included with room
07:30	Transportation to University of Warsaw—New RCDs	Sobieski Hotel	New RCDs/Speakers
07:40	Transportation to University of Warsaw—New RCDs	Marriott Hotel	New RCDs/Speakers
08:15-09:15	New RCDs Orientation	University of Warsaw / Old Library 107	New RCDs
08:15-09:15	ISC Meeting / by invitation only	Marriott Hotel Wisla Boardroom	ISC Members
09:15	Transportation to RCD Symposia	Sobieski Hotel	Symposia attendees
09:25	Transportation to RCD Symposia	Marriott Hotel	Symposia attendees
10:00-16:30	RCD Symposia / Lunch included	University of Warsaw / Old Library 1100	Symposia attendees
16:30	Transportation to Marriott & Sobieski Hotels	University of Warsaw Old Library	Symposia attendees
16:30–17:30	Optional Walking Tour of Old Town / Hosted by University of Warsaw	Old Town	Symposia attendees
17:30	Transportation to Marriott & Sobieski Hotels	Old Town	Symposia attendees
18:00-22:00*	Team Registration / By appointment	Sobieski Hotel	Team++
18:00-22:00*	IBM Welcome	Marriott & Sobieski Hotels	All registered participants
20:00-22:00	CLI Symposium	Sobieski Wilanów I & II	All registered participants
TUESDAY MAY 15 <sup>th</sup>	15 <sup>th</sup>		
06:30-08:00	Breakfast / Courtesy of University of Warsaw	Marriott & Sobieski Hotels	Included with room
08:15-08:45	Transportation to University of Warsaw / Last bus departs at 08:45	Marriott & Sobieski Hotels	All with badges
09:30-16:00*	IBM TechTrek, Excursion and Lunch / 11:30–16:00—Excursion to Copernicus Centre	University of Warsaw Auditorium Maximum	All with badges

# of Events

who?	All with badges	All with badges	All with badges	All with badges	All with badges		Included with room	All with badges	All with badges	Teams and on-site coaches	Teams and on-site coaches	All with badges	All with badges	Coaches and others	Teams	Teams	Teams		All with badges	All with badges
where?	Copernicus Science Centre	Marriott & Sobieski Hotels	Palace of Culture and Science	Palace of Culture and Science / Kongresowa Hall	Palace of Culture and Science		Marriott & Sobieski Hotels	Marriott & Sobieski Hotels	Faculty of Management	Faculty of Management	Faculty of Management	Faculty of Management Tent	Faculty of Management A207	Faculty of Management	Faculty of Management	Faculty of Management	Faculty of Management	Faculty of Management	Faculty of Management	Sobieski Hotel
what?	Transportation available to Marriott & Sobieski Hotels / Last bus departs at 16:00	Transportation to the Palace of Culture & Science / Last bus departs at 17:30	Opening Dinner / Courtesy of Univerity of Warsaw	Opening Ceremony / Hosted by Mayor of Warsaw and University of Warsaw / Teams and coaches to wear ICPC t-shirts.	Transportation to Marriott & Sobieski Hotels	1AY 16 <sup>th</sup>	Breakfast / Courtesy of University of Warsaw	Transportation to Faculty of Management / Last bus departs at 08:30	Spectators enter	Contestants enter Contest Area with the primary on-site coach	2012 ACM-ICPC Contest Orientation / Teams must leave notebooks at their workstations at the conclusion of orientation / Teams wear ICPC t-shirts / No food or drinks please	ICPC Challenge & Lunch	CLI Symposium	Spectators enter	Contestants enter Contest Area	2012 ACM-ICPC World Finals Dress Rehearsal / Teams wear ICPC t-shirts / No food or drinks please	Answers to Questions	Transportation shuttle to Marriott & Sobieski Hotels / For spectators wishing to go back to the hotel during Dress Rehearsal / Last bus departs at 15:30	Transportation to the Warsaw University of Technology / Last bus departs at 17:00	Transportation to the Warsaw University of Technology
when?	14:00-16:00	17:00–17:30	18:15-20:00*	20:15-22:00*	22:15	WEDNESDAY MAY 16 <sup>th</sup>	06:30-07:45	08:00-08:30	09:30-09:45	09:45-10:00*	10:00-11:30*	11:30-14:00*	12:00-14:00	14:00-14:15	14:15-14:30*	14:30–16:30*	14:30-14:45*	14:30–15:30	16:30–17:00	17:15

# **The 2012 ACM-ICPC World Finals**

when?	what?	where?	who?
17:50	Iransportation to the Warsaw University of Technology	Marriott Hotel Warsaw University of Technology	All with badges
20:00-20:30		Warsaw University of Technology	All with badges
THURSDAY MAY 17 <sup>th</sup>	4Y 17 <sup>th</sup>		
06:30-07:45	Breakfast / Courtesy of University of Warsaw	Marriott & Sobieski Hotels	Included with room
08:00-08:30	Transportation to Faculty of Management / Last bus departs at 08:30	Marriott & Sobieski Hotels	All with badges
09:00-16:00	ICPCLive—Have fun and watch the World Finals	Faculty of Management A222	ICPC guests and attendees
09:30-09:45	Spectators enter	Faculty of Management	ICPC guests and attendees
09:45-10:00 *	Contestants enter Contest Area	Faculty of Management	Teams
10:00-15:00 *	2012 ACM-ICPC World Finals / Teams wear ICPC t-shirts / Notebooks at team workstations	Faculty of Management	Teams
11:30-12:30	Executive Director meets coaches	Faculty of Management A207	Coaches
12:30–14:00	Coaches Appreciation Luncheon / Courtesy of University of Warsaw	Faculty of Management Tent	All with badges
15:00-16:00 *	2012 ACM ICPC World Finals Wrap-up	Faculty of Management	ICPC guests and attendees
16:00-16:30	Transportation to Marriott & Sobieski Hotels / Last bus departs at 16:30	Faculty of Management	All with badges
17:45–18:15	Transportation to University of Warsaw / Last bus departs at 18:15	Marriott & Sobieski Hotels	All with badges
19:00-20:30 *	2012 ACM-ICPC Awards Ceremony	University of Warsaw / New Library	All with badges
20:30-23:30 *	2012 ACM-ICPC World Finals Celebration / Hosted by IBM	Announced at conclusion of Awards Ceremony	All with badges
22:00–24:00	Transportation Shuttles to Marriott & Sobieski Hotels / Last bus departs at 24:00	Celebration	All with badges
FRIDAY MAY 1	18 <sup>th</sup>		
	Transportation from Marriott & Sobieski Hotels to Warsaw Chopin Airport	Marriott & Sobieski Hotels	ICPC Guests
06:30-10:00	Breakfast / Courtesy of University of Warsaw	Marriott & Sobieski Hotels	Included with room
-by 12:00	Teams checkout from hotels	Marriott & Sobieski Hotels	All with badges









## **ICPC 2012 Hotels**

Located in the heart of Poland's capital city, Warsaw **Marriott Hotel** offers not only easy access to all major sightseeing attractions and financial district with elegant and comfortable interiors.

The hotel offers 518 beautifully appointed, renovated guest rooms, including 95 suites, 3 concierge levels; on-site parking and shopping area. In each room, guests will find new beds from Marriott with down comforters, designer duvets, fluffy pillows, and amenities like a tea and coffee maker, spacious work area, and Wi-Fi.

The hotel is also a home to Casino, chic shopping gallery, and tempting dining options, including the enchanting Parmizzano's Restaurant, famous for its fine Italian cuisine and the  $40^{th}$  floor Panorama Bar & Lounge with magnificent views of Warsaw.

The World Class Health Academy provides state of the art equipment for a thorough workout, swimming pool, sauna, steam bath and newly opened Euphoria Spa.

For business and social events, the Warsaw Marriott Hotel offers over 2,600 m<sup>2</sup> of flexible meeting and exhibition venue, including 19 meeting rooms.



The **Radisson Blu Sobieski Hotel**, famous for its individual style and excellent cuisine, is perfectly located for business travelers with convenient access to all relevant business districts. It is only 1 km away from the famous Palace of Culture and Science, Main Railway Station and famous shopping mall, Golden Terrace. The greatest Warsaw tourist attractions - the Old City, Lazienkowski Park, and the Warsaw Uprising Museum—may be reached in barely ten minutes. The hotel is a historical landmark of the city and is a recognized element of Warsaw architecture.

All rooms and apartments are equipped with air conditioning, full noise protection, satellite television and radio channels, pay-TV, direct telephone connections, triple security lock systems, and hairdryers.

Additionally, the hotel has a floor designated for non-smokers and rooms adapted to the requirements of handicapped people.

#### **Auditorium Maximum**

The building of the lecture halls called Auditorium Maximum is one of the University's most important investments of the interwar period. Its architectural design was made in 1934 by Franciszek Eychorn, and the Ministry of the Interior approved it after some corrections on the 25<sup>th</sup> of November 1935. Erected north of the wing which formerly housed the Government Commission for Religious Affairs and Public Enlightenment, it was constructed in the spirit of strongly modernized classicism, which again, harmonized with the symmetry of the campus.

After the Nazis took over Warsaw, the University of Warsaw campus instantly became one of the occupier's strongholds. Auditorium Maximum's hall turned into stables and other rooms served as an armory. Withdrawing from the campus, the Nazis did not, in fact, blow up the Auditorium, as it was already in the state of ruin.

The new Auditorium Maximum was constructed in the same place in the years 1951–55, following the project of Wojciech Onitsch, Marian Sulikowski, and Andrzej Uniejewski. Till today this classicistic building charms the visitors with the exceptionally beautiful Ionic capitals.

# The Old Library Building

The Old Library Building was erected in 1894. Two architects, Stefan Szyller and Antoni Jabłoński-Jasieńczyk designed it six years prior to its actual construction and it was instantly acclaimed as very modern. Its spacious storeroom is unique, as it was shaped like a huge iron grille. The architects created space for 750,000 volumes while the library collection then amounted to 450,000 books.

When in 1999 a new ultra-modern building of the University of Warsaw Library was constructed in Powiśle in Warsaw, the old one became vacant.

In 2001 the University jointly with the Union of Polish Architects (SARP) announced a competition for the remodeling of the former Library. The construction works started in 2003 and took one and a half years. The renovated building links tradition with modernity. In the part which previously housed the reading room, the architects recreated destroyed pilasters, friezes and wrought iron bars on the basis of old photographs. Particular attention was paid to the restoration of hardwood floors built from eight different kinds of wood. Now there are several lecture halls there, the biggest of which can seat four hundred people. All the interiors are decorated with light colored wood and steel. In the old storage area, we can still admire fragments of its steel construction, an amazing piece of late 19<sup>th</sup> century engineering. The remaining part of the iron grille, colored fuchsia, stands now in Dobra Street, right in front of the new University Library.







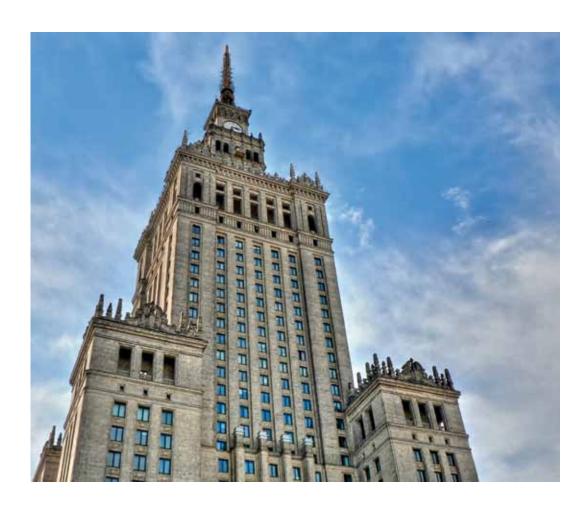
#### The University of Warsaw Library

The University of Warsaw Library is the main library of the University of Warsaw. Holdings at the end of 2010 were 3,013,041 volumes. The Library offers also one of the richest collections of electronic journals in Poland.

The Library has vast collections of historical items in seven Special Collection Departments: Early Imprints Department, Manuscripts Department, Print Room, Music Collection, the 19<sup>th</sup> Century, Map Collection and Ephemera Collection.

UWL provides a wide range of library, social and cultural services addressed to the general public. Each year it hosts numerous artistic, cultural and social events (summer concerts, presentations delivered during the Festival of Science, Night of Museums and the University of Warsaw Days).

The University of Warsaw Library is situated in 56/66 Dobra Street and since 1999 the collection has been placed in a modern edifice designed by architects Marek Budzyński and Zbigniew Badowski. The Library has become a model for several newly-built libraries in Poland because of the open stacks system used in a vast area of the library.



#### The Palace of Culture and Science

The Palace of Culture and Science was built between 1952 and 1955; it was a "gift of the Soviet people to the Polish nation", offered by Joseph Stalin himself. The architect was Lew Rudniew. The Palace is the highest building in Poland, standing at 230.5 m (which is 42 floors) with an area of 817,000 m² and has over 3,000 rooms, including offices, institution headquarters and the Polish Academy of Sciences. Moreover, the Palace has a post office, cinema, swimming pool, museums, libraries and theatres. The palace is one of the largest conference facilities in Warsaw, comfortably accommodating more than 4,500 participants at a time, at dozens of meetings and training conferences annually.

The Congress Hall (Sala Kongresowa) and Concert Hall (Sala Koncertowa) are without a doubt among the most important concert halls in Poland. The former is by far the bigger of the two: it can accommodate up to 2,880 persons, while the second holds only 550 people, but is now one of the best-equipped in the country in terms of modern technology. The Congress Hall has seen numerous prestigious acts of guest artists over the years, such as Marlene Dietrich, Procol Harum, Bruce Springsteen, Cesaria Evora, The Rolling Stones, Woody Allen with his band, and many other international artists. It has been known for many years now as the home of jazz in Poland.

The big attraction for tourists and residents is the 'trzydziestka', a large terrace on the 30<sup>th</sup> floor of the Palace (at a height of 114 m), where you can admire the gorgeous panorama of Warsaw. On New Year's Eve, 2000, the Palace of Culture and Science unveiled the second-largest clock in Europe: its four discs are each 6 m in diameter, and it is the highest clock tower in the world.



#### **Copernicus Science Centre**

We do not only look here, we experiment. On 22,000 m² one can carry out experiments, which make complicated natural phenomena understandable—and have great fun at the same time. The experiments are so exciting that several hours should be planned for them. There is no prescribed visiting route, the visitors themselves decide, what they want to see and when. In the exhibition "The World on the Move", for example, one can experience for oneself, how the astronaut Neil Armstrong must have felt, when he was standing on the moon. The exhibition "Re:Generation" makes us aware, what we are afraid of and why. The exhibition "Lightzone" is a perfect place for people who like crime mysteries and in the exhibition "Humans and the Environment" the visitor himself becomes the most important exhibit. Here we get to know the limits of our possibilities, the secrets of our senses and our body. One of the greatest attractions is also the planetarium "The Sky of Copernicus", where projections onto a dome screen surrounding the auditorium and modern multimedia technology give the participants the impression that they are travelling to the remotest corners of the cosmos, into the depths of an ocean or inside a volcano. A special show even allows us to return to the beginnings of life on earth.

Another curiosity of the Copernicus Science Centre is the "Electrobard", an electronic poet, who writes poems on request and then recites them. The prototype for the manlike machine was a figure invented by Stanisław Lem in his series of short stories "The Cyberiad". Experiments can be conducted also in the open air, in the "Park of the Discoverers", right on the banks of the Vistula. By means of the sound installations "Echo", "Conference" and "Acoustic Mirror" we can communicate with each other from a distance. In the summer, popular science film projections and concerts are organized in the "Park of the Discoverers".





The roof garden is scheduled to be opened in spring 2012. Its developers took their inspiration from the phenomenon of erosion. From a bird's eye view, one can see, how the garden paths imitate the typical channels eroded by the water. The green roof is not only for decoration, it also absorbs noise, has a cooling effect in the summer and protects the building against heat loss in the winter.

From the roof of the Copernicus Science Centre, one has a view on the Vistula and the Praga bank, the Świętokrzyski bridge, the national stadium and the neighbouring roof garden of the university library.

### **Heaven of Copernicus**

The planetarium, covered by a dome with 16 metres' diameter, allows visitors to travel to the most distant places in outer space, down the volcano or to go back to the origins of life on Earth. Using modern multimedia technologies, spectators have the impression of getting immersed in the worlds which they observe, and which are normally unavailable to them. Animals from the depths of the ocean, microorganisms not visible to the naked eye, creatures from millions of years ago are at arm's reach. Together with film heroes, visitors may conquest space, go for a cruise to the Galapagos with Darwin, see the bottom of the ocean or visit the Mayan pyramids and get to know the Mayan mythology. The films, each lasting about an hour, are prepared with the use of land and satellite telescopes, and projected on a spherical screen, which surrounds the audience from all sides. Owing to a special optical projector, 20 million stars, including the Milky Way, appear in the sky.



### Faculty of Management, University of Warsaw

All of the buildings that belong to the Faculty of Management are situated in Szturmowa 1/3 Street in Warsaw.

Building A (Sports Hall, Lecture Halls)

Building B (Students' club, Lecture Halls)

Building C (Library, Computer Room, Lecture Halls)

### **University of Technology**

Warsaw's University of Technology is one of the oldest and largest technical universities in Poland. It was founded in 1915 and was the first university in the country to educate in the Polish language. The Main Building was built between 1899–1901, and was designed by Stefan Szyller, as one of six buildings which are part of a large complex. Built in the style of academic renaissance, a four-cloistered courtyard was covered with a glass roof. At that time, in the Warsaw University of Technology, Russian was the official language of instruction, but it was boycotted by Polish students.

In 1944, in the Main Building was the site of permanent struggle, which resulted in the destruction of the building and the library collection. After the war, there was a convention held here, which supported the Polish United Workers' Party. In front of the building is a stone terrace with benches, designed by university professor Konrad Kucz-Kuczyński.





### The Thirty-sixth Annual

# ACM ICPC Awards



## The 2012 Mark Measures Distinguished Service Award Presented to



### **Bozena Mannova**

### **Czech Technical University in Prague**

for outstanding service to the ICPC as coach since 1994, Director of the Central Europe Regional Contest 1998–2000,

Director of the Europe Contests 2004 to present, and Director of the 2004 World Finals.

The Mark Measures Distinguished Service Award is presented annually to a volunteer who has played an instrumental role in the success of the ACM International Collegiate Programming Contest for fifteen or more years.

# The 2012 Mark Measures Distinguished Service Award Presented to



Jan Madey
University of Warsaw

for outstanding service to the ICPC
as World Finals coach since 1994,
Director of the Poland Collegiate
Programming Contest (AMPPZ) 1998–2000,
Director of the Central Europe Regional Contest
2001–2003,
and Director of the 2012 World Finals.

The Mark Measures Distinguished Service Award is presented annually to a volunteer who has played an instrumental role in the success of the ACM International Collegiate Programming Contest for fifteen or more years.

# The 2012 Joseph S. DeBlasi Outstanding Contribution Award Presented to

### **Kattis**















Fredrik Niemelä, Director
Gunnar Kreitz, Lead Developer
Per Austrin
Pehr Söderman
Mikael Goldmann
Emma Enström
Mikael Lagerkvist

for developing the Programming Contest Control System used to support the ACM-ICPC World Finals since 2010 and the Nordic Collegiate Programming Contest since 2007.

The Joseph S. DeBlasi Outstanding Contribution Award is presented annually to a person or group who has played an instrumental role in the success of the ICPC for five or more years.

# The 2012 Joseph S. DeBlasi Outstanding Contribution Award Presented to

### **ICPC** Live













Fredrik Niemelä, Executive Producer
Mats Erixon, Technical Director
Niklas Lind
Mattias de Zalenski
Aase Knudsen
Roger Sandholm

for establishing a live production, allowing people world-wide to watch the ACM International Collegiate Programming Contest World Finals live via the Internet

The Joseph S. DeBlasi Outstanding Contribution Award is presented annually to a person or group who has played an instrumental role in the success of the ICPC for five or more years.

## The 2012 UPE Distinguished International Service Award Presented to

### **University of Warsaw**

in honor of the university's accomplishments by her teams, for hosting local, national and regional contests, and culminating as

> University Host of the 2012 ACM-ICPC World Finals

The UPE Distinguished International Service Award Is presented annually to an institution that has played an instrumental role in the success of international educational programmes for ten or more years.

# 2012 Coach Awards (15 or more years bringing teams to the World Finals)



**Krzysztof Diks**University of Warsaw



**Jan Madey** University of Warsaw



**Glenn Martin**University of Central Florida



**Ali Orooji** University of Central Florida



**Yong Yu**Shanghai Jiao Tong University

## (5 or more years bringing teams to the World Finals)



Mohamed Abd El-Wahab
Cairo University—Faculty of Computers and Information



**Kamran Bavar** Sharif University of Technology



**Jerry Cain** Stanford University



**Pu-Jen Cheng** National Taiwan University



**Chris Gouge**University of Central Florida



**Armando Ramos Gouveia** Instituto Tecnológico de Aeronautica



**Wei Guo**Peking University



**Paweł Idziak** Jagiellonian University



**Kevin Anthony Jones**Nanyang Technological University



**Lap Chi Lau**The Chinese University of Hong Kong



**Mike Mirzayanov**Saratov State University



**Martin Mueller** University of Alberta



**Salvador Roura** Universitat Politècnica de Catalunya



**Can Wang** Zhejiang University

### **2012 World Finals**

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Andru Anderson, ICPC Digital—Producer

Daniel Andersson, ICPC Live

Roy Andersson, ICPC Subcontest Manager

Grzegorz Andrzejewski, ICPC Live

Samir Ashoo, SysOps Team Mikael Auno, ICPC Live

Per Austrin, World Finals Judge

Osman Ay, World Finals Judge

John Bonomo, World Finals Chief Judge

Bill Booth, CLIS - Chief Editor

Przemyslaw Borucinski, ICPC Live

Troy Boudreau, SysOps Team

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ICPC On-line Judging

Tomasz Cedro, ICPC Live

Tomáš Černý, ICPC HQ Global Services—

Lead Developer

Don Chamberlin, World Finals Judge

Alain Chesnais, ACM - President John Clevenger, SysOps Team Lead

James Comer, ICPC Associate Director

Marjene Comer, ICPC Contest Manager Assistant

Gabriella David, ICPC Live

Mattias de Zalenski, ICPC Live—Graphics Lead

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Tommy Färnqvist, ICPC Live

Zach First, ICPC HQ Global Services Anders Flodström, DeBlasi VIP Guest Marcus Forsell Stahre, ICPC Live Mohamed Fouad, ICPC Deputy Director of **Operations** 

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The organization of the ACM ICPC 2012 World Finals in Warsaw was possible thanks to the kind support of

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### **Texts and Editing:**

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Design: Emilka Bojańczyk / Podpunkt

Print: Lotos Poligrafia SA

#### Photograps:

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