

ACCADEMIA NAZIONALE DEI LINCEI ROME, 7 – 8 OCTOBER 2019 ITALY



## XXI EDOARDO AMALDI CONFERENCE

INTERNATIONAL COOPERATION FOR ENHANCING
NUCLEAR SAFETY, SECURITY, SAFEGUARDS AND NON-PROLIFERATION

ACCADEMIA NAZIONALE DEI LINCEI ROME, 7 – 8 OCTOBER 2019 ITALY



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ACCADEMIA NAZIONALE DEI LINCEI ROME, 7 – 8 OCTOBER 2019 ITALY



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AND EDOARDO VESENTINI



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# **PROGRAM**

# MONDAY, 7 OCTOBER

09.45 - 09.50	TRIBUTE TO H.E. AMB. YUKIYA AMANO FORMER DIRECTOR-GENERAL OF THE INTERNATIONAL ATOMIC ENERGY AGENCY  WOLFANGO PLASTINO – SCIENTIFIC SECRETARY OF THE XXI EDOARDO AMALDI CONFERENCE, ITALY
09.50 - 10.30	OPENING ADDRESSES
	GIORGIO PARISI – PRESIDENT OF THE ACCADEMIA NAZIONALE DEI LINCEI, ITALY  MARCIA MCNUTT – PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES, UNITED
	STATES OF AMERICA
	ELISABETTA BELLONI – SECRETARY-GENERAL OF THE MINISTRY OF FOREIGN AFFAIRS AND INTERNATIONAL COOPERATION, ITALY
	IZUMI NAKAMITSU (BY VIDEO) – UNDER SECRETARY-GENERAL, UNITED NATIONS
	FEDERICA MOGHERINI (BY VIDEO) – HR, EUROPEAN COMMISSION
	RAYMOND JEANLOZ – CHAIR OF THE XXI EDOARDO AMALDI CONFERENCE, UNITED STATES OF AMERICA
	Luciano Maiani – Chair of the XXI Edoardo Amaldi Conference, Italy

#### **KEYNOTE SPEECHES**

CHAIRS

GIORGIO PARISI – PRESIDENT OF THE ACCADEMIA NAZIONALE DEI LINCEI, ITALY

MARCIA MCNUTT – PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES,

UNITED STATES OF AMERICA

10.30 - 10.50	PROMOTING SECURITY AND PROSPERITY: HOW THE NON-PROLIFERATION REGIME AND THE SCIENTIFIC COMMUNITY CAN ADDRESS THE DEMANDS OF A CHANGING WORLD
	Mohamed ElBaradei – Director-General Emeritus of the International Atomic Energy Agency (IAEA)
10.50 - 11.10	SCIENCE FOR PEACE  FABIOLA GIANOTTI – DIRECTOR-GENERAL OF THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH (CERN)

11.10 - 11.30 COFFEE BREAK





11.30 - 13.00	Panel 1
	NEW AND EVOLVING VOICES IN ARMS CONTROL AND DISARMAMENT
	CHAIR: ALBERTO QUADRIO CURZIO
	President Emeritus of the Accademia Nazionale dei Lincei, Italy
	MESSAGE TO THE PARTICIPANTS OF THE XXI EDOARDO AMALDI CONFERENCE PAUL RICHARD GALLAGHER – SECRETARIAT OF STATE, HOLY SEE
11.30 - 11.50	THE RISKS OF NUCLEAR PROLIFERATION: ADDRESSING THE CHALLENGE <b>SEBASTIANO CARDI</b> – <i>MAECI, ITALY</i>
11.50 - 12.10	Preferred Courses of Action for Security as Nuclear arms Control Changes in the 2020s  Tibor Tóth – Executive Secretary Emeritus CTBTO
12.10 - 12.30	Interests and Changing Needs from Arms Control, Disarmament, and Non-Proliferation for International Security <b>Robin Grimes</b> – RS and MoD, United Kingdom
12.30 - 13.00	QUESTIONS AND DISCUSSION
13.00 - 14.15	LUNCH BREAK
14.15 - 15.45	Panel 2
Λ	NUCLEAR WEAPONS, NON-PROLIFERATION, AND THE BROADER SECURITY ENVIRONMENT
	CHAIR: FRANCESCO CALOGERO
	SAPIENZA UNIVERSITY OF ROME, ITALY
14.15 - 14.35	Nuclear Weapons, International Security, and Non-Proliferation in the 2020s C. S. Eliot Kang – State Department, United States of America
14.35 - 14.55	Russia's Vision for Arms Control, Disarmament, and Non-Proliferation ${f Vladimir\ Leontiev}-MFA$ , Russian Federation
14.55 - 15.15	PERSPECTIVES ON NUCLEAR SAFETY, SECURITY, SAFEGUARDS AND NON-PROLIFERATION LI HUA – CAEP, PEOPLE'S REPUBLIC OF CHINA
15.15 - 15.45	QUESTIONS AND DISCUSSION
15.45 - 16.00	Coffee break



20.00

#### THE XXI EDOARDO AMALDI CONFERENCE INTERNATIONAL COOPERATION FOR ENHANCING NUCLEAR SAFETY, SECURITY, SAFEGUARDS AND NON-PROLIFERATION

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16.00 - 17.30	PANEL 3
	REALIZING THE PROMISE OF THE NON-PROLIFERATION REGIME
	THROUGH COOPERATION AND MONITORING
	CHAIR: MARVIN ADAMS
	TEXAS A&M UNIVERSITY, UNITED STATES OF AMERICA
16.00 - 16.20	THE IAEA FOR BUILDING FUTURE SAFEGUARDS CAPABILITIES  MASSIMO APARO – IAEA
16.20 - 16.40	Science and Technology for Putting an End to Nuclear Explosions ${\bf Tammy\ Taylor}-CTBTO$
16.40 - 17.00	CHALLENGES AND OPPORTUNITIES IN SCIENTIFIC AND TECHNOLOGICAL SUPPORT FOR MONITORING IN THE NON-PROLIFERATION REGIME  JILL HRUBY – SNL, UNITED STATES OF AMERICA
17.00 - 17.30	QUESTIONS AND DISCUSSION
17.30 - 19.00	Forum
	MAJOR CHALLENGES, OPPORTUNITIES, AND NEXT STEPS FOR THE PARTIES TO THE NUCLEAR NON-PROLIFERATION TREATY APPROACHING THE 2020 REVIEW CONFERENCE
	Chairs
	LUCIANO MAIANI – ACCADEMIA NAZIONALE DEI LINCEI, ITALY RAYMOND JEANLOZ – NATIONAL ACADEMY OF SCIENCES, UNITED STATES OF AMERICA
17.30 – 18.00	RAFAEL GROSSI – MFA, ARGENTINE REPUBLIC  NPT REVCON
18.00 – 19.00	GENERAL DISCUSSION

WELCOME RECEPTION AT THE ACCADEMIA NAZIONALE DEI LINCEI



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# **TUESDAY, 8 OCTOBER**

9.45 - 11.15	PANEL 4
	PERSPECTIVES ON NUCLEAR NON-PROLIFERATION – PART I
	CHAIR: CARLO SCHAERF
	President of the International School on Disarmament and Research on Conflicts, Italy
9.45 - 10.05	The Iranian National Perspective on Nuclear Non-Proliferation Kazem Gharib Abadi — $MFA$ , $Islamic\ Republic\ of\ Iran$
10.05 - 10.25	THE PAKISTANI NATIONAL PERSPECTIVE ON NUCLEAR NON-PROLIFERATION <b>MUHAMMAD NAEEM</b> – <i>PAEC, Islamic Republic of Pakistan</i>
10.25 - 10.45	Adapting Non-Proliferation Approaches to a Changing World: a European Expert's Viewpoint Caroline Jorant – SDRI, France
10.45 - 11.15	QUESTIONS AND DISCUSSION
11.15 - 11.30	Coffee Break
11.30 - 13.00	PANEL 5
	PERSPECTIVES ON NUCLEAR NON-PROLIFERATION – PART II
	CHAIR: STEVE FETTER
	University of Maryland, United States of America
11.30 - 11.50	THE ISRAELI PERSPECTIVE ON NUCLEAR SECURITY, NUCLEAR SAFETY AND NON-PROLIFERATION <b>DAVID NUSBAUM</b> – <i>IAEC</i> , <i>ISRAEL</i>
11.50 - 12.10	OPTIONS FOR ADDRESSING THE DPRK NUCLEAR PROGRAM YOUNG-HO PARK – KPF, REPUBLIC OF KOREA
12.10 - 12.30	Regional Rivalries and Their Implications for the Security and Nuclear Non-Proliferation Regimes
12.30 - 13.00	QUESTIONS AND DISCUSSION
13.00 - 14.15	LUNCH BREAK





14.15 - 15.45	PANEL 6
	INTERNATIONAL TECHNICAL COOPERATION AND THE ROLE OF SCIENCE DIPLOMACY
	CHAIR: MICAH LOWENTHAL
	DIRECTOR OF CISAC - THE NATIONAL ACADEMY OF SCIENCES, UNITED STATES OF AMERICA
14.15 - 14.35	Engaging Scientists Citizens, and International Youth in Diplomacy to Abolish Nuclear Weapons
14.35 - 14.55	ITER PROJECT: INTERNATIONAL COOPERATION AND ENERGY INVESTMENT SERGIO ORLANDI – $ITER$
14.55 - 15.15	LIGO AND SCIENCE DIPLOMACY BARRY BARISH – LIGO
15.15 - 15.45	QUESTIONS AND DISCUSSION
15.45 - 16.00	Coffee break
16.00 - 17.30	Forum
	PROMOTING INTERNATIONAL SECURITY DURING DIFFICULT TIMES FOR ARMS CONTROL
	Chairs
	Luciano Maiani – Accademia Nazionale dei Lincei, Italy Raymond Jeanloz – National Academy of Sciences, United States of America
16.00 - 16.30	Antonio Missiroli – NATO
16.30 - 17.30	GENERAL DISCUSSION
17.30 - 17.45	CLOSING OF THE CONFERENCE
18.00 - 20.00	GUIDED TOUR OF VILLA FARNESINA AND BIBLIOTECA CORSINIANA





PARTICIPANTS (SPEAKERS AND ORGANIZERS)	AFFILIATIONS
MARVIN ADAMS	HTRI Professor of Nuclear Engineering and Associate Director of the Institute for National Security and Cybersecurity Education & Research at the Texas A&M University System, United States of America
MASSIMO APARO	DEPUTY DIRECTOR-GENERAL AND HEAD OF THE DEPARTMENT OF SAFEGUARDS, INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
BARRY BARISH	FORMER DIRECTOR LASER INTERFEROMETER GRAVITATIONAL-WAVE OBSERVATORY (LIGO). CALIFORNIA INSTITUTE OF TECHNOLOGY, UNITED STATES OF AMERICA
Elisabetta Belloni	SECRETARY-GENERAL OF THE MINISTRY OF FOREIGN AFFAIRS AND INTERNATIONAL COOPERATION, ITALY
FRANCESCO CALOGERO	MEMBER OF THE BOARD OF XXI EDOARDO AMALDI CONFERENCE AND OF INTERNATIONAL SECURITY AND ARMS CONTROL WORKING GROUP AT THE ACCADEMIA NAZIONALE DEI LINCEI. SAPIENZA UNIVERSITY OF ROME, ITALY
SEBASTIANO CARDI	DIRECTOR-GENERAL FOR POLITICAL AFFAIRS AND SECURITY AT THE MINISTRY OF FOREIGN AFFAIRS AND INTERNATIONAL COOPERATION, ITALY
PAOLO COTTA-RAMUSINO	SECRETARY-GENERAL OF THE PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS. MEMBER OF INTERNATIONAL SECURITY AND ARMS CONTROL WORKING GROUP AT THE ACCADEMIA NAZIONALE DEI LINCEI. UNIVERSITY OF MILAN, ITALY
MOHAMED ELBARADEI	DIRECTOR-GENERAL EMERITUS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
STEVE FETTER	ASSOCIATE PROVOST, UNIVERSITY OF MARYLAND. FORMER PRINCIPAL ASSISTANT DIRECTOR FOR NATIONAL SECURITY AND INTERNATIONAL AFFAIRS, OFFICE OF SCIENCE AND TECHNOLOGY POLICY, UNITED STATES OF AMERICA
KAZEM GHARIB ABADI	PERMANENT REPRESENTATIVE OF ISLAMIC REPUBLIC OF IRAN TO THE INTERNATIONAL ATOMIC ENERGY AGENCY AND COMPREHENSIVE NUCLEAR-TEST-BAN TREATY ORGANIZATION. MINISTRY OF FOREIGN AFFAIRS, ISLAMIC REPUBLIC OF IRAN





PAUL RICHARD GALLAGHER	SECRETARY FOR RELATIONS WITH STATES. SECRETARIAT OF STATE, HOLY SEE
Fabiola Gianotti	DIRECTOR-GENERAL OF THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH (CERN), ITALY
ROBIN GRIMES	MINISTRY OF DEFENCE NUCLEAR CHIEF SCIENTIFIC ADVISER. THE ROYAL SOCIETY AND IMPERIAL COLLEGE LONDON, UNITED KINGDOM
RAFAEL GROSSI	President Review Conference 2020, Treaty on the Non-Proliferation of Nuclear Weapons. Ministry of Foreign Affairs, Argentine Republic
JILL HRUBY	SAM NUNN FELLOW, NUCLEAR THREAT INITIATIVE. FORMER DIRECTOR SANDIA NATIONAL LABORATORIES, UNITED STATES OF AMERICA
RAYMOND JEANLOZ	CHAIR OF XXI EDOARDO AMALDI CONFERENCE AND OF THE COMMITTEE ON INTERNATIONAL SECURITY AND ARMS CONTROL AT THE NATIONAL ACADEMY OF SCIENCES. UNIVERSITY OF CALIFORNIA BERKELEY, UNITED STATES OF AMERICA
CAROLINE JORANT	FOUNDER STRATEGIE DE DEVELOPPEMENT ET REGLEMENTATIONS INTERNATIONALES CONSULTING, FRANCE
C. S. ELIOT KANG	PRINCIPAL DEPUTY ASSISTANT SECRETARY OF THE BUREAU OF INTERNATIONAL SECURITY AND NON-PROLIFERATION, U.S. DEPARTMENT OF STATE, UNITED STATES OF AMERICA
VLADIMIR LEONTIEV	DEPUTY-DIRECTOR OF THE DEPARTMENT ON NON-PROLIFERATION AND ARMS CONTROL OF THE MINISTRY OF FOREIGN AFFAIRS, RUSSIAN FEDERATION
Li Hua	DIRECTOR OF THE SCIENCE AND TECHNOLOGY COMMISSION, CHINA ACADEMY OF ENGINEERING PHYSICS (CAEP), PEOPLE'S REPUBLIC OF CHINA
MICAH LOWENTHAL	DIRECTOR OF THE COMMITTEE ON INTERNATIONAL SECURITY AND ARMS CONTROL, THE NATIONAL ACADEMY OF SCIENCES, UNITED STATES OF AMERICA





Luciano Maiani	CHAIR OF XXI EDOARDO AMALDI CONFERENCE AND OF INTERNATIONAL SECURITY AND ARMS CONTROL WORKING GROUP AT THE ACCADEMIA NAZIONALE DEI LINCEI. SAPIENZA UNIVERSITY OF ROME, ITALY
MARCIA MCNUTT	President of the XXI Edoardo Amaldi Conference and President of the National Academy of Sciences. United States of America
Antonio Missiroli	Assistant Secretary General for Emerging Security Challenges, North Atlantic Treaty Organization (NATO)
FEDERICA MOGHERINI	HIGH REPRESENTATIVE OF THE UNION FOR FOREIGN AFFAIRS AND SECURITY POLICY, AND VICE-PRESIDENT OF THE EUROPEAN COMMISSION
MUHAMMAD NAEEM	CHAIRMAN OF THE PAKISTAN ATOMIC ENERGY COMMISSION, ISLAMIC REPUBLIC OF PAKISTAN
IZUMI NAKAMITSU	Under-Secretary-General and High Representative for Disarmament Affairs, United Nations
DAVID NUSBAUM	PERMANENT REPRESENTATIVE OF ISRAEL TO THE INTERNATIONAL ATOMIC ENERGY AGENCY AND COMPREHENSIVE NUCLEAR-TEST-BAN TREATY ORGANIZATION. ISRAEL ATOMIC ENERGY COMMISSION, ISRAEL
SERGIO ORLANDI	HEAD OF THE PLANT ENGINEERING DEPARTMENT. INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR (ITER), ITALY
Giorgio Parisi	President of the XXI Edoardo Amaldi Conference and President of the Accademia Nazionale dei Lincei. Sapienza University of Rome, Italy
YOUNG-HO PARK	DIRECTOR OF THE KOREA PEACE FOUNDATION. KOREA INSTITUTE FOR NATIONAL UNIFICATION (KINU), REPUBLIC OF KOREA
WOLFANGO PLASTINO	SCIENTIFIC SECRETARY OF XXI EDOARDO AMALDI CONFERENCE AND OF INTERNATIONAL SECURITY AND ARMS CONTROL WORKING GROUP AT THE ACCADEMIA NAZIONALE DEI LINCEI. ROMA TRE UNIVERSITY, ITALY
Alberto Quadrio Curzio	MEMBER OF THE BOARD OF XXI EDOARDO AMALDI CONFERENCE AND PRESIDENT EMERITUS OF THE ACCADEMIA NAZIONALE DEI LINCEI. CATHOLIC UNIVERSITY OF MILAN, ITALY



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ALICIA SANDERS-ZAKRE POLICY AND RESEARCH COORDINATOR, INTERNATIONAL CAMPAIGN TO

ABOLISH NUCLEAR WEAPONS (ICAN)

CARLO SCHAERF MEMBER OF THE BOARD OF XXI EDOARDO AMALDI CONFERENCE AND OF

INTERNATIONAL SECURITY AND ARMS CONTROL WORKING GROUP AT THE ACCADEMIA NAZIONALE DEI LINCEI. TOR VERGATA UNIVERSITY, ITALY

TAMMY TAYLOR DIRECTOR OF THE INTERNATIONAL DATA CENTRE DIVISION OF THE

PREPARATORY COMMISSION FOR THE COMPREHENSIVE NUCLEAR-TEST-BAN

TREATY ORGANIZATION (CTBTO)

TIBOR TÓTH EXECUTIVE SECRETARY EMERITUS OF THE COMPREHENSIVE NUCLEAR-TEST-

BAN TREATY ORGANIZATION (CTBTO)

EDOARDO VESENTINI MEMBER OF THE BOARD OF XXI EDOARDO AMALDI CONFERENCE AND OF

INTERNATIONAL SECURITY AND ARMS CONTROL WORKING GROUP AT THE ACCADEMIA NAZIONALE DEI LINCEI. POLYTECHNIC UNIVERSITY OF TURIN,

**ITALY** 

VENUE OF THE CONFERENCE

Accademia Nazionale dei Lincei Palazzo Corsini – Via della Lungara 10

ROME

WWW.LINCEI.IT

SCIENTIFIC SECRETARY

Prof. Wolfango Plastino

WOLFANGO.PLASTINO@UNIROMA3.IT