



2nd Annual International Symposium on the Future of STEAM (Sciences, Technology, Engineering, Arts and Mathematics) Education, 23-26 July 2018, Athens, Greece

Organized by the [Natural & Formal Sciences](#) and the [Engineering & Architecture](#) Divisions

Sponsored by the by the [Athens Journal of Sciences](#) and the [Athens Journal of Technology & Engineering](#)

Conference Venue: Titania Hotel, 52 Panepistimiou Avenue, Athens, Greece (close to metro station *Panepistimio*)

Monday 23 July 2018

08:00-09:00 Registration and Refreshments

09:00-09:30 [Welcome and Opening Address](#) (Room A)

Gregory T. Papanikos, President, ATINER.

09:30-11:30 Session I (Room A): Education: Global Perspective of Teaching and Learning

Chair: Bala Maheswaran, Head, Electrical Engineering Unit, ATINER & Professor, Northeastern University, USA.

1. [Marie Bukowski](#), Director, School of Art, Kent State University, USA & [Chester Wilson](#), Associate Professor, Louisiana Tech University, USA. Visualization of Science and Technology through Art.
2. Christine Condaris, Professor, Massachusetts College of Liberal Arts, USA. Teaching Creativity: The Value of the A in STEAM.
3. Vladimir Tzvetkov, Assistant Professor, Sofia University "St. Kliment Ohridski", Bulgaria. The Great Science Teachers of Tomorrow: A Study on Pre-Service Teacher Training from Skills Perspective.
4. [Vesela Todorova](#), PhD Student, University of Sofia "St. Kliment Ohridski", Bulgaria & Milena Kirova, Associate Professor, University of Sofia "St. Kliment Ohridski", Bulgaria. Adaptation of the Questionnaire that Measures Students' Motivation toward Science Learning (SMTSL) into Bulgarian version of Students' Motivation toward Chemistry Learning Questionnaire (BG SMTCLQ).
5. Enzo Bonacci, Secondary School Teacher, Scientific High School "G.B. Grassi" of Latina, Italy. Proposals for an Effective Teaching of Quantum Physics at Secondary School.
6. [Elitsa Peltekova](#), PhD Student, Sofia University "St. Kliment Ohridski", Bulgaria & Eliza Stefanova, Associate Professor, Sofia University "St. Kliment Ohridski", Bulgaria. Stem Teaching and Learning – A Journey from Virtual to Real World.

11:30-13:00 Session II (Room A): Energy Production & Alternative Fuel

Chair: Alexandre De Bernardinis, Research Scientist, IFSTTAR, France.

1. Franz Haas, Professor and Head of Institute of Production Engineering, Graz University of Technology, Austria & Andres Suarez Gonzalez, Research Assistant, Graz University of Technology, Austria. Energy Consumption Factor (ECF) as a New Classification Figure to Compare Machining Processes.
2. Ekin Kipcak, Research Assistant, Yildiz Technical University, Turkey & Mesut Akgun, Professor, Yildiz Technical University, Turkey. Supercritical Water Gasification of Isopropanol and Isobutanol: An Alternative Approach for Energy Production.
3. Ziad Khalifa, Assistant Professor, The British University in Egypt, Egypt. Biofuel Cells based on Glucose Electrooxidation at Conducting Polymer Modified Electrodes with Palladium and Platinum Nanoparticles.
4. Ilker Ors, Teaching Staff, Selcuk University, Turkey, Murat Ciniviz, Teaching Staff, Selcuk University, Turkey, Ali Kahraman, Teaching Staff, Necmettin Erbakan University, Turkey & Bahar Sayin Kul, Lecturer, Selcuk University, Turkey. Using Biofuels in a CI Engine as Alternative Fuel.

13:00-14:00 Lunch**14:00-16:00 Session III (Room A): Analysis, Materials and Characterizations**

Chair: Haiduke Sarafian, Professor, The Pennsylvania State University, USA.

1. Alexandre De Bernardinis, Research Scientist, IFSTTAR, France, Wiem Benatia, MSc Student, Toulouse Paul Sabatier University, France & Richard Lallemand, Research Engineer, IFSTTAR, France. Electro-Thermal Analysis for Lithium Carbon (LiC) Hybrid Supercapacitors.
2. Hongyan Zhang, Professor, The University of Toledo, USA & Jacek Senkara, Professor, Warsaw University of Technology, Poland. Joining Aluminum Sheets.
3. Francisco Delgado, Researcher and Professor, Tecnológico de Monterrey, Mexico. Assembling Large Entangled States in the Ingarden-Urbaniak Entropy Measure under the SU(2)-Dynamics Decomposition for Systems Built from two-Level Subsystems.
4. Viorel-Laurentiu Cartas, Assistant Professor, The Low Danube State University of Galati, Romania. The Viscoelastic Feature of the Spacetime.
5. Florian Nguyen, PhD Student, University of Lille, France, Jean-Philippe Laval, Researcher, CNRS, France, Bérengère Dubrulle, Research Director, CNRS, France & Pierre Kestener, Researcher, CEA, France. Local and Global Anisotropic Multifractal Analysis of Turbulent Flow.

16:00-17:30 Session IV (Room A): Natural Products Chemistry	16:00-17:30 Session V (Room B): Physics of Gravity, Plasma, and Oscillators
Chair: Ellene Tratras Contis, Head, Chemistry Unit, ATINER & Professor of Chemistry, Eastern Michigan University, USA.	Chair: Ionel Tifrea, Professor, California State University, Fullerton, USA.
<ol style="list-style-type: none"> 1. Dimitris Argyropoulos, Distinguished Professor, North Carolina State University / University of Helsinki, USA / Finland. New Insights on the Structure of Kraft Lignin and its Fractions with Tangible Practical Implications. 2. <u>Ramiro Quintanilla-Licea</u>, Professor, Universidad Autónoma de Nuevo León (UANL), Mexico, Isvar Kavim Ángeles-Hernández, PhD Student, Universidad Autónoma de Nuevo León (UANL), Mexico & Javier Vargas-Villarreal, Researcher, Centro de Investigación Biomédica del Noreste (CIBIN), Mexico. Bioguided Isolation from <i>Lippia Graveolens</i> Kunth of Compounds with Antiprotozoal Activity against <i>Entamoeba Histolytica</i>. 3. <u>Azmi Seyhun Kipcak</u>, Associate Professor, Yildiz Technical University, Turkey, Osman Ismail, Assistant Professor, Yildiz Technical University, Turkey & Ibrahim Doymaz, Associate Professor, Yildiz Technical University, Turkey. Drying of Okra by Different Drying Methods: Comparison of Drying time, Product Color Quality, Energy Consumption and Rehydration. 	<ol style="list-style-type: none"> 1. Haiduke Sarafian, Professor, The Pennsylvania State University, USA. Two-Dimensional Nonlinear Oscillations in an Electrically Charged Rectangular Frame. 2. <u>Liudmyla Kozak</u>, Associate Professor, Taras Shevchenko National University of Kyiv, Ukraine, Bogdan Petrenko, Student, Taras Shevchenko National University of Kyiv, Ukraine, Elena Kronberg, Scientist, Max Planck Institute for Solar System Research, Germany, Andrew Prokhorenkov, PhD Student, Taras Shevchenko National University of Kyiv, Ukraine, Elena Grigorenko, Scientist, Space Research Institute, RAS, Russia & Antony Lui, Principal Professional Staff, Johns Hopkins University Applied Physics Laboratory, USA. Investigation of Turbulent Processes in Magnetosphere Plasma. 3. Piret Kuusk, Head of the Laboratory of Theoretical Physics, University of Tartu, Estonia. Theories of Gravity and Contemporary Observations. 4. Mazen Qaisi, Faculty Member, University of Jordan, Jordan. Power Series Solution to Strongly Nonlinear Oscillators.

17:30-19:30 Session VI (Room A): ATINER's 2018 Series of Academic Dialogues A Symposium on The Future Developments and Prospects of Engineering and Science Education & Research in a Global World	
Chairs: Ethel Petrou, Academic Member, ATINER & Professor and Chair, Department of Physics, Erie Community College-South, State University of New York, USA & Lampros Pyrgiotis, Chemical Engineer, Delegate of the Assembly Presidium, Technical Chamber of Greece.	
<ol style="list-style-type: none"> 1. Bala Maheswaran, Head, Electrical Engineering Unit, ATINER & Professor, Northeastern University, USA. Experiential and Interactive Learning on Innovation, Prototyping, and Entrepreneurship. 2. Nikos Mourtos, Head, Mechanical Engineering Unit, ATINER & Professor, San Jose State University, USA. Engineering & Science Education & Research in the 21st Century: Are We Dancing to the Music? 3. Marie Bukowski, Director of the School of Art, Kent State University, USA. Designing for the Future. 4. Dimitris Argyropoulos, Distinguished Professor, North Carolina State University & University of Helsinki, USA & Finland. The Dangers of Making Corporations out of Our Universities & the Apparent Rift between Faculty, Administrators and Funding Agencies. 5. Franz Haas, Professor and Head, Graz University of Technology, Austria. The Role of Additive Design and 3D-Printing for the next Product Generation. 6. Francisco Delgado, Professor, Tecnológico de Monterrey, Mexico. STEM Initiatives in Mexico for 2030: Challenges and Achievements. 7. Haiduke Sarafian, Professor, The Pennsylvania State University, USA. Implicit Challenges Facing Native Local Students to the Influx of Visiting Foreign Students in Engineering and Science. 8. Ellene Tratras Contis, Head, Chemistry Unit, ATINER & Professor of Chemistry, Eastern Michigan University, USA. STEM-it! Increasing Success Rates for Our Students. 9. Peter Yannopoulos, Vice President of Global Communications, ATINER, Co-editor, Athens Journal of Business and Economics & Professor, Brock University, Canada. Marketing a STEAM Program. 	

21:00-23:00 Greek Night and Dinner

Tuesday 24 July 2018

07:45-11:00 Session VII: An Educational Urban Walk in Modern and Ancient Athens

Chair: Gregory A. Katsas, Vice President of Academic Affairs, ATINER & Associate Professor, The American College of Greece-Deree College, Greece.

Group Discussion on Ancient and Modern Athens.
Visit to the Most Important Historical and Cultural Monuments of the City (be prepared to walk and talk as in the ancient peripatetic school of Aristotle)

11:15-13:00 Session VIII (Room A): STEAM: The Current Trend

Chair: Christine Condaris, Professor, Massachusetts College of Liberal Arts, USA.

1. Adrienne Coleman, Director of Equity and Inclusion, Illinois Mathematics and Science Academy, USA. Diversifying the STEM (Science, Technology, Engineering, Mathematics) Education to Career Pipeline.
2. Abe Zeid, Professor, Northeastern University, USA. Engineering-Based Learning: A New Methodology for High School Students STEM Learning.
3. Francis Stonier, Associate Professor, University of West Georgia, USA & Jill Drake, Professor and Department Chair, University of West Georgia, USA. Chinese Pre-Service Teachers STEAM Engagement through Legos.
4. Lorraine Howard, President, Women and Mathematics Education, Wilkes University, USA. Girls' Mathematics Identity: The Gateway to STEAM Success.
5. Gladys Ong, Graduate Student / Senior Education Officer, University College London / Ministry of Education, UK / Singapore. Exploring Authentic Assessment in the Learning of Mathematics.
6. Ronnie Bryan, Teacher, Sequoyah High School, USA. Math Foundations at Sequoyah High School.

13:00-14:00 Lunch

14:00-15:30 Session IX (Room B): Special Topics

Chair: Marcos Rodrigues, Professor, Sheffield Hallam University, UK.

1. Scott Grenquist, Associate Professor, Wentworth Institute of Technology, USA. Ancient Dimensions and Units: Ancient Greek Unitary Systems and Their Evolution from Earlier Systems of Measurement.
2. Yung-Cheng Ma, Assistant Professor, Chang-Gung University, Taiwan. Power-Gated Processor Architecture for Dark Silicon.
3. Richard Wainwright, PhD Student, Sheffield Hallam University, UK & Alex Shenfield, Senior Lecturer, Sheffield Hallam University, UK. Human Activity Recognition on Smartphones Making Use of Long Short Term Memory Techniques.

20:00- 21:30 Dinner

Wednesday 25 July 2018
Mycenae and Island of Poros Visit
Educational Island Tour

Thursday 26 July 2018
Delphi Visit

Friday 27 July 2018
Ancient Corinth and Cape Sounion

All ATINER's conferences are small events which serve the mission of the association (<https://www.atiner.gr/mission>) under the guidance of its Academic Committee (<https://www.atiner.gr/academic-committee>) which sets the policies (<http://www.atiner.gr/acceptance>). In addition, each conference has its own academic committee. Members of the committee include all those who have evaluated the abstract-paper submissions and have chaired the sessions of the conference. The members of the academic committee of the 2nd Annual International Symposium on the Future of STEAM (Sciences, Technology, Engineering, Arts and Mathematics) Education, 23-26 July 2018, Athens, Greece, were the following:

1. Gregory T. Papanikos, President, ATINER.
2. Nicholas N. Patricios, Vice President of Strategic Planning & Analysis, ATINER and Professor & Dean Emeritus, School of Architecture, University of Miami, USA.
3. Peter Yannopoulos, Vice President of Global Communications, ATINER, Co-editor, Athens Journal of Business and Economics & Professor, Brock University, Canada.
4. Bala Maheswaran, Head, Electrical Engineering Unit, ATINER & Professor, Northeastern University, USA.
5. Christine Condaris, Professor, Massachusetts College of Liberal Arts, USA.
6. Codruta Simona Stoica, Head, Mathematics & Statistics Unit, ATINER & Professor and Vice-Rector, Aurel Vlaicu University of Arad, Romania.
7. Ethel Petrou, Academic Member, ATINER & Professor and Chair, Department of Physics, Erie Community College-South, State University of New York, USA.
8. Nikos Mourtos, Head, Mechanical Engineering Unit, ATINER & Professor, San Jose State University, USA.
9. Ellene Tratras Contis, Head, Chemistry Unit, ATINER & Professor of Chemistry, Eastern Michigan University, USA.
10. Haiduke Sarafian, Professor, The Pennsylvania State University, USA.
11. Marcos Rodrigues, Professor, Sheffield Hallam University, UK.
12. Ionel Tifrea, Professor, California State University, Fullerton, USA.
13. Alexandre De Bernardinis, Research Scientist, IFSTTAR, France.
14. Lampros Pyrgiotis, Chemical Engineer, Delegate of the Assembly Presidium, Technical Chamber of Greece.

The Organizing Committee of the conference was:

1. Olga Gkounta, Researcher, ATINER.
2. Konstantinos Manolidis, Administrator, ATINER.
3. Kostas Spyropoulos, Administrator, ATINER.