VISION رؤية
2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

Saudi STEM Education Conference
InterContinental Riyadh, Saudi Arabia
19th - 20th September 2023 | www.saudisummits.com

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Day 1 (GMT+3)

08:40 **Registration**
Registration Counter Opens

09:00-09:30 TBA

Ribbon Cutting Ceremony
Ribbon Cutting Ceremony by VIP Guest
Exhibiting Tour

09:30-09:50 TBA

Holy Quran Recitation
Key Note Presentation

09:50-10:30 **Panel Discussion**
"The Role of STEM Education in Economic Development &
Saudi Vision 2030"

Moderator

Dr. Ali Alhakami

Dr. Hayat Sindi

Fil Randazzo, Ph.D.

Dr. Husam Zaman

David Cobb

10:30-11:00 Kantis Simmons

"STEM IS EVERYWHERE:
Igniting Passion within Your Students, Staff,
and Supporters So We All Can Be Ready for
2030"

- In an era where STEM knowledge drives innovation and advancement, captivating students with science, technology, engineering, and math can be a challenging feat.

- Fear not, former rocket scientist Kantis Simmons is here to guide you on an empowering journey to foster an unshakable love for STEM among your students.

- This keynote will unveil the secrets to transforming STEM education into a vibrant, inspiring endeavor.

- You'll gain invaluable insights into making STEM subjects accessible, captivating, and irresistible, steering students towards fulfilling careers that shape the future.

In this dynamic presentation, attendees learn how to:

- Immerse students in the exciting world of STEM by showing its everyday presence, highlighting its importance.

- Connect the dots between STEM fields, opening doors to various career paths through comprehensive STEM education.

- Make STEM learning engaging with hands-on experiments, realworld applications, and immersive projects.

- Cultivate a vibrant STEM culture in schools through effective teacher training, family engagement, and community involvement.

- Spark critical thinking and creativity in STEM education, empowering students with practical strategies.

- Harness technology's role in enhancing STEM education, amplifying learning, and curiosity.

Join us for an inspiring keynote that equips you to ignite a lifelong passion for STEM in your students and staff, shaping their promising future.

11:00-11:30 Raneem Dahman

"Chiefs of tomorrow"

- T- Rapid Modernization and its clear effects
- Competencies in the 21st century
- From STEM to STREAM
- Positive Impact of Stem on student's outcomes
- Connection to the vision of 2030

11:30-12:00 Dr. Rehaf Madani, PhD

The Cycle of STEM

- Introduction to STEM
- Stages of STEM implementation
- Prioritizing/implementation of STEM education throughout the stages of Life:
- Early Childhood education
- Elementary and secondary education
- High school
- College and higher education
- Work force

12:00-12:30 TBA

VISA Session

12:30-13:30 🍴 Lunch

Day 1 (GMT+3)

13:30-14:10

Panel Discussion

"Empowering Womens in STEM: Strategies for Encouraging Female Participation"

Moderator

Dr. Enja Osman

Dr. Fatmah Baothman

Dr. Reema Al Qaralleh

Abeer Tadmori

Nada Al Tassan

14:10-14:40 Dr. Ali Alhakami

Shifts in assessment thinking and practices

- Requirements for designing effective STEM assessments.
- Authenticity as the cornerstone of STEM teaching and assessment.
- Challenges of Authentic Assessment in STEM.
- Enabling Better Assessment in STEM Education.
- Implications for assessment policies and aligning National and Classroom assessments.

14:40-15:10 Yousef Al-Farraj

STEM Education in Saudi Arabia: Empowering the Future Generation in Light of Saudi Vision 2030

- STEM Concept: What is S, T, E, and M?
- Theoretical and Philosophical Framework for Implementing STEM Education
- Saudi Initiatives in STEM Education
- STEM Competencies
- STEM Impact on the Future Generation

15:10-15:40 Dr. Abdullah Ahmad Alatiah

Preparing STEM Workforce

- STEM Workforce Importance
- Developing STEM workforce
- STEM Careers attitudes
- Classroom Applications

15:40-16:10 Mohamed-Slim Alouini

Delay Tolerant Networking-Enabled Educational Platforms for Rural Areas

- Internet and education (education platforms)
- Connectivity divide
- Potential solutions
- Delay tolerant networks (DTN)

16:10 - 17:00 Break

End of Day 01

Day 2 (GMT+3)

08:40

Registration
Registration Counter Opens
Coffee / Networking

09:20-10:00

Panel Discussion
STEM Curriculum Design & Implementation
Moderator

- Rania Abdel Fattah Obeid
- Turki Alzahrani
- Dr Asaad Abu Hussein
- Dr. Nader Al Muitairi
- Dr. Rehaf Madani, PhD
- Rob Widger

10:00-10:30

David Cobb

Christopher R Tompkins

Inspiring the Next Generation of STEM Leaders: Unleashing Innovation Through Authentic Learning, Student Agency, and Agile Frameworks

Discover how authentic learning experiences are the future of education, breaking down the barriers between classrooms and the real world. Explore how NEOM empowers students with the autonomy to drive their own learning journey, igniting a passion for STEM subjects and nurturing a profound sense of responsibility. Delve into the world of agile frameworks, where flexibility and adaptability are key. Students familiar with the power of agility are ready for the dynamic challenges of the modern world, infusing them with the resilience to navigate complexities and the courage to design and deliver.

10:30-11:00

Kamil A. Jbeily, Ph.D.

Dynamic Partnerships for Excellence in STEM Education: Empowering Teachers to Teach Effectively!

- Award-winning support system that empowers STEM teachers to teach effectively
- A network of PreK-16 partnerships that synergize funding and resources for professional development.
- Research-based professional development to engage, support, and inspire STEM teachers
- Twenty-first century skills, knowledge acquisition AND application, STEM to STEAM, technical and soft skills.
- The Saudi 2030 Vision, the UN SDGs; and a post-COVID 19 teaching and learning culture and skills.

11:00-11:30

Sumanth Prabhu

Co-founder and CEO @ Kidvento,Building Ulipsu, Educator, Public Speaker

- Providing access to a global platform where students can explore and master skills that they wish to.
- Enabling students to create their own skill portfolios that help them throughout life.
- Learning new generation skills while also strengthening foundational skills.
- Standardizing skill learning within schools.
- Implementing interactive-learning and self-learning effectively in schools.

11:30-12:00

Dr. Mattheus Goosen

Enhancing STEM Learning through Annual Research Day Student Poster Competitions and Course Review Paper Projects, Alfaisal University

- Need to emphasize that research is part of undergraduate education and university mission.
- Students gain experience at organizing data and presenting it in a concise format both in written and oral format.
- Learning how to differentiate between refereed scientific papers, book chapters and magazine articles.
- Gain experience at presenting to a general audience.
- The benefits and challenges of working in groups

Day 2 (GMT+3)

12:00-12:30 — Anis Koubaa

From Invasion to Integration: ChatGPT's Dual Role, Opportunity and Challenge in STEM Learning

- **Invasion of AI in Education:** Exploring the rapid rise and adoption of tools like ChatGPT in modern classrooms and their transformative potential.
- **Opportunities Unleashed:** The benefits of integrating ChatGPT in STEM education, such as personalized learning, 24/7 tutoring, and multilingual support.
- **Challenges Ahead:** Addressing concerns like over-reliance, data privacy, and the potential for cheating, ensuring educators are prepared to navigate these hurdles.
- **Striking a Balance:** Strategies for maximizing the benefits of ChatGPT while mitigating risks, ensuring an optimal learning environment for students.
- **Looking Forward:** Envisioning the future of STEM education in Saudi Arabia with the continuous evolution of AI, and the necessary steps to ensure its responsible and effective use.

12:30-13:30 — 🍴 Lunch

13:30-14:10

Panel Discussion

Re- Skilling Youths for Job's

Moderator

Dima Najim

Dr. Husam Zaman

Kamil A. Jbeily

TBA

TBA

14:10-14:40 — Dr. Reema Al Qaralleh

STEM Curriculum Designing and AI Revolution

- Designing STEM curriculum: From where to start?
- Best practices to design STEM curriculums
- Solutions to avoid AI revolution challenges in STEM teaching
- AI applications for STEM curriculums
- AI success stories in STEM curriculums

14:40-15:10 — Daniele Boffi

Academic integration in higher education: an Italian experience and best practices in mathematics

- Mathematics
- Student orientation
- Teacher permanent learning
- Student self-assessment
- Preventing student dropout

15:10-15:40 — Dr. Ali S. Alammary

Technology-based learning models for STEM Education

- Importance of integrating technology in STEM education
- Design challenges
- Four models:

  Blended learning – Weekly attendance

  Blended learning – limited attendance

  Online learning - synchronous lectures

  Online learning - self-paced

15:10 - 16:00 — ☕ Break

End of Day 02

Workshop Leaders

Dr. Saud Bin Mohammad Al Muhaidib
Founder of Robot Academy
Al Khobar, Eastern, Saudi Arabia

Kantis Simmons
School Success Expert
STEM Speaker

Dr. Salman Alfifi
Assistant professor
Aerospace Engineering Department
King Fahd University of Petroleum & Minerals
Saudi Arabia

Dr. Enja Osman
PTC Coordinator at American University of Beirut; Lecturer at Lebanese University; Consultant & Trainer

Basel Al Muree
Project Coordinator at ibtechar

Lama Kashlak
Cambridge-Certified STEM Trainer.
Academic Director at Almutaqadema School for Smart Learning

Workshop Leaders

Day 01

09:00-11:00 **Basel Al Muree**

Basel Al-Muree is an accomplished Project Manager at Ibtechar Digital Solutions with a degree in Mechatronics Engineering. With a passion for cutting-edge technologies, he actively engages in their development. He has extensive experience integrating Technology and Project-based learning in Education curriculums, projects development, and R&D. He has successfully delivered four technology-focused curricula for Qatar Technology and Science School's Fabrication Lab. Basel's instrumental research initiatives within his company have contributed significantly to business development. He exemplifies visionary leadership in the field of EdTech, driving innovation in education and impactful change.

Workshops

Facilitating STEM Learning with 21st Century Tools & Technologies

STEM education brings science and math theory to life through real-world applications in engineering facilitated by technology. But what do effective STEM activities look like, what are the latest technologies, and how are they used to engage students at the highest levels of the Blooms Taxonomy Scale?
We'll answer these questions during this hands-on, interactive workshop where participants will be introduced to best practices in STEM, with a focus on using the engineering design process in concert with cutting edge technologies such as 3D design software and digital printers. This session will include case studies in STEM, and an engineering design challenge to give participants a practical grounding in the ways students are learning through the iterative process of design thinking.

Facilitating STEM Learning with 21st Century Tools & Technologies

After attending this session, participants will be able to:

- Describe the engineering design process.
- List the 10 pillars of effective STEM activities.
- Develop their own design challenges.
- Name and explain digital fabrication technologies that can be integrated into their STEM curriculum.
- Conceptualize their own STEM projects.

Workshop Leaders

Day 01

11:00-13:00 Dr. Enja Osman

Dr. Enja Osman is a lecturer and the outreach and Practice Teaching Coordinator at the Department of Education at AUB, and an Educational Consultant. Her wide experience includes science teaching, and consultation on national and international developmental projects, ranging from curriculum development to STEM education to effective school leadership. She has collaborated with the Lebanese Ministry of Education and Higher Education, towards improving Education standards in Lebanon and building vibrant school learning communities which are better suited to meet summons of a rapidly and continuously changing world. Dr. Osman developed a Pre - college mentoring program which equips secondary school students with the knowledge and skills essential to help them made a well - informed decision in selecting their college and career path in a more subtle way to ensure academic success. Currently, her new interest focuses on increasing teachers' and students' awareness towards SDGs and encouraging them take actions in providing solutions to the critical issues around the world.

Workshops

Start Thinking Effectively About Managing STEAM

Schools adopting STEAM pedagogical approaches are constantly challenged in devising effective means for successfully implementing STEAM in authentic school contexts which involve the collaboration of cross-disciplinary groups of teachers. In this workshop, participants will apply a STEAM activity and reflect on school and teachers' practices associated with its implementation in a classroom setting. They will also be encouraged to discuss challenges and solutions related to STEAM teaching. Through hands-on-minds-on activities, participants will identify characteristics necessary to maintain successful systemic change associated with STEAM teaching. Finally, opportunities will be provided for connecting STEAM Teaching to the 2030 Sustainable Development Goals (SDG) in formal and informal learning environments.

Workshop Leaders

Day 01

14:00-16:00 Dr. Saud Bin Mohammad Al Muhaidib

Dr. Saud Al-Muhaidib is the founder of the Artificial Intelligence Training Center in Saudi Arabia 2017, which is known today as "Robot Academy". He is a researcher in artificial intelligence and obtained a PhD from the University of Leeds in 2002.

Dr. Al-Muhaidib worked in the field of education until he became the assistant-vice-rector of the University of Dammam (Imam Abdul Rahman bin Faisal).

Dr. Al-Muhaidib has authored several books in different fields, mostly in computer science and knowledge representation. He is the author of computer curricula books in Saudi Arabian schools.

He is known for his ability to simplify complex math and programming concepts. His training center is now one of the famous training centers specialized in training youth and children on robot programming and artificial intelligence.

Dr. Saud also presented many courses, lectures and papers to professionals from major companies and in conferences. His academy has also signed many agreements and memorandums of understanding with major companies, institutions and associations in the region to disseminate artificial intelligence science, especially among youth and society.
Many TV channels and newspapers also interviewed him on their programs and the news.

Workshops
"How Artificial Intelligence is built in a Machine?"

- There are many Learning Theories, one of which is the Graph Theory, which is the aim of researchers today in designing the virtual mind. They claim, "If we can make the machine weave a learning network by itself similar to the neural network in the human mind; as well as, if we can make it predict the right decisions navigating through some mathematical representation of knowledge, then we can say that this machine is intelligent".

- To understand how the machine builds the learning network, which represents the Knowledge Tree, this workshop will present a simple example of the learning process. How learning components are presented as nodes and vertexes, and when they interconnected, and when those links are neglected or split, which we call Graph Theory.

- As the workshop presents a simplified model of Graph Theory, it will delve into some of the algorithms that generate knowledge. It'll go deep into scientific concepts such as Liener Regression, Clustering, K-nearest Neighbor, Attention and Generative Nural Network, and finally the latest innovation of Liquid AI, but through very simplified examples. The workshop will show how we can use simple mathematical examples in predicting to mimic the human mind.

- This workshop will form an applied scientific awareness among the attendees of the fundamental differences between conventional programming and artificial intelligence. This awareness will make participants able to describe their requirements for the latest developments in artificial intelligence in the industry they work for.

Workshop Leaders

Day 01

`14:00-16:00` Lama Kashlak

 I am Cambridge-certified STEM trainer and experienced thinking skills instructor, I am committed to empowering learners and advocating for educational excellence. Additionally, I'm a certified trainer for gifted programs and a Certified Thinker Keys Practitioner. Presently, I serve as the Academic director for the first and only internationally accredited STEM school in Saudi Arabia. I have been recognized by the MOE for mentoring female students who have achieved prestigious international awards. My tutelage has helped numerous students attain success locally, regionally, and globally. I have also contributed to scientific research published in peer-reviewed journals. My work includes the development and presentation of innovative educational programs and creative initiatives aimed at fostering creativity and leadership skills in STEM education, with victorious results in Riyadh and across the Kingdom of Saudi Arabia.

Workshops

- **Paper Programming Challenge** Decrypt encrypted messages, understand the encryption technique, and design a decryption algorithm.
  - Materials: Encrypted messages, blank papers, and writing tools.

- **Build a Bridge Challenge** Collaboratively plan and construct a bridge that can support five toy cars. Evaluate and iterate as necessary.
  - Materials Cardboard, paper straws, tape.

- **Boat Construction Challenge:** Design a recyclable boat that can float. Make adjustments post-construction.
  - Materials: Recyclable items.

- **Marble Maze Construction** Design a block-based marble maze. Test, play, and modify the design for functionality.
  - Materials Blocks.

- **Catapult Construction Challenge** Construct a catapult using a spoon, rubber bands, and popsicle sticks. Test its projection, evaluate, and refine the design.
  - Materials Spoon, rubber bands, popsicle sticks.

Workshop Leaders

Day 02

`09:00-11:00` Kantis Simmons

As the nation's leading STEM Motivational Speaker and School Success Strategist, it's his aim to forestall the academic failure epidemic, STEM education challenges, teacher turnover rate, and trillion dollars student loan debt crisis sweeping across America's schools and colleges. That's why he is passionate about inspiring students, parents, and educators to skyrocket their performance in school and life.

Workshops

"'Empowering Tomorrow's Workforce: Unleashing the Potential of STEM Education for Career Success"

- In an ever-evolving job landscape, empowering students with robust skills in science, technology, engineering, and math (STEM) is paramount.
- But how can educators ensure that their STEM programs truly equip students with the prowess needed to excel in their careers?
- Join us for an engaging workshop led by former rocket scientist Kantis Simmons, as we delve into the profound connection between STEM education and career readiness.
- Explore the latest trends in STEM professions, delve into the essential proficiencies and insights vital for excelling in these fields, and uncover the art of crafting a dynamic STEM education initiative primed to launch students into the professions of tomorrow.
- Whether you're an educator, counselor, or career advisor, this transformative workshop equips you with the tools to guide your students to flourish in the dynamic 21st-century economy
- Don't miss out on this enlightening session that promises to shape the trajectory of our future workforce.

Workshop Leaders

Day 02

11:00-13:00 **Basel Al Muree**

Basel Al-Muree is an accomplished Project Manager at Ibtechar Digital Solutions with a degree in Mechatronics Engineering. With a passion for cutting-edge technologies, he actively engages in their development. He has extensive experience integrating Technology and Project-based learning in Education curriculums, projects development, and R&D. He has successfully delivered four technology-focused curricula for Qatar Technology and Science School's Fabrication Lab. Basel's instrumental research initiatives within his company have contributed significantly to business development. He exemplifies visionary leadership in the field of EdTech, driving innovation in education and impactful change.

Workshops

Teaching Coding through Games

We live in a time when all aspects of our lives are undergoing a digital transformation, from education to entertainment as technology continues to become more and more ingrained in daily life, the importance of learning digital literacy skills is becoming increasingly apparent.
Learning coding is the first step towards empowering the next generation with digital literacy skills. But how can we foster a learning environment to teach coding that is engaging and effective? In this interactive workshop, participants will learn about the concept of gamification and how to integrate it into coding classes to help students become skillful, confident, and well-prepared for the digital future. This session will also include a hands-on coding activity.

Workshop Leaders

Day 02

14:00-16:00 Dr. Salman Alfifi

Dr. Salman Alfifi is currently working as an assistant professor in Aerospace Engineering Department at KFUPM.

He holds a bachelor's and master's degree in Aerospace Engineering from King Fahd University of Petroleum and Minerals. And a Ph.D. in Aerospace Engineering and Mechanics from the University of Minnesota, USA.

He has several scientific contributions, such as a number of scientific research papers published in prestigious scientific journals and patents.

Writing a book in the field of specialization in English, and participating in translating some books in the field of aerospace engineering into Arabic.

Consultant and member of several scientific bodies and entities inside and outside the Kingdom in the field of aerospace engineering.

Workshops

- The workshop generally introduces aerospace engineering for beginners, and for those wishing to pursue this field from high school students, as well as early stage of college students.

- This includes the basic physics concepts and principles of how aircraft fly, with emphasis on engineering fundamentals, including process of design, and testing of flying objects.

- The workshop also can be useful for anyone who is passionate and interested in the field, as it may lead to understanding some phenomena and answering several questions in aviation.

Workshop Leaders

Day 02

14:00-15:30 Lama Kashlak

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THANK YOU

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