



MEPI



**The U.S.- Middle East Partnership Initiative (MEPI)
Tomorrow's Leaders Graduate (TLG) Programs at
AUB, AUC and LAU**

Present the

Second Annual Conference

Titled

**Achieving the UN's Sustainable Development Goals
(SDGs) Through Theoretical and Empirical Studies**

Hosted by

American University of Beirut (AUB)

June 3 and 4, 2022

Munib and Angela Masri Building, AUB

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The American University in Cairo



MEPI-TLG Second Annual Conference SDGs

June 3, 2022
8:30 am–5:30 pm

June 4, 2022
9:00 am–1:30 pm

AUB Campus,
Munib and Angela
Masri Building,
ELH Auditorium



The U.S.-Middle East Partnership Initiative Tomorrow's Leaders Graduate (MEPI-TLG) Program
*Achieving UN's Sustainable Development Goals (SDGs)
Through Theoretical and Empirical Studies*

Day 1: Friday, June 3rd

Session 1: Gender and Equality

- ❖ *Naji AlFateh - [A Narrative Literature Review on Sexual Harassment in Higher Education in the Middle East from a Feminist Framework Perspective](#)*
- ❖ *Mohammad Al Abbas - [The gendered reality of authorship in the Middle East: American policies and patriarchal cultures](#)*
- ❖ *Farah Mohammad Qonaish - [Changing Gender Roles After Refuge: A case study of Syrian Refugees in Jordan](#)*
- ❖ *Rima Wehbe, Layan Moussa, Reinde El Hour El Homs: [Women's Economic Empowerment – Lebanon](#)*

Session 2: Education and Literacy

- ❖ *Sumood Abdulhadi - [E-Learning Strategy to improve Quality Education for Refugees in Jordan: Benefits and Challenges](#)*
- ❖ *Diana Al Farran, Hiba Dirani, Rayan Al Tulyani, Suad Akkad - [Factors affecting girls' lack of interest in STEM subjects at school](#)*
- ❖ *Shaima Adel Abdo Abdllah AlMonefie, Reem Yaseen, Sumood Abdulhadi - [Students Hand in Hand Initiative: Advocating for educating the underprivileged youth.](#)*
- ❖ *Leen Dirani, Rayane El Masri, Nura Habbaba, Nouran Moram - [Computer Illiteracy for Public School Students and its Impact on the Academic Performance "Let's IT!"](#)*

Session 3: Environmental protection and sustainability

- ❖ Amina Sabour - [Teaching for Sustainability in the MENA Region](#)
- ❖ Reem El Chakik - [Heavy Metal Contamination in Agricultural Soils in Lebanon: Comparative Assessment of Pollution Using Atomic Absorption and Hyperspectral Imaging](#)
- ❖ Ghumdan Al Sabahi - [Quantifying Gender Bias in The Lebanese Media](#)
- ❖ Tia Hajar - [Treated Wastewater Reuse for Irrigation in Bekaa, Lebanon: Quality Assessment and Public Reception](#)

Session 4: Social Protection – Health

- ❖ Dalia Mosleh - [Combining Convolutional Neural Network and Graph Convolutional Network for Breast Cancer Detection using 2D and 3D Mammography](#)
- ❖ Maya El Gharib - [Detecting Gender Bias Pattern in Children's Stories and Books](#)
- ❖ Nour Al Bidewe - [People with Disabilities in the Tech Field](#)
- ❖ Aya Bou Fakhreddine - [Risk of Subsequent Preterm Delivery Following C-section Births](#)

Session 5: Social Protection – Technology

- ❖ Reem Yaseen Al-Sulaimani - [Teachers' Awareness of Educational Neuroscience: An Action Research](#)
- ❖ Sana Ammar Gasmi - [Labor reforms in Qatar and its impact on labor migration ahead of the 2022 FIFA World Cup](#)
- ❖ Jawad Haidar - [Optimal Spatial-Spectral Input for Real-Time Hyperspectral Image Classification](#)
- ❖ Hiba Belhadj - [Regional Inequality in Tunisia and International Migration.](#)

Session 6 : Displacement and Gender

- ❖ Adam Eddous - [Gender Migration in Egypt: Bringing Egyptian Female Migrant Experiences into Theory and Practice.](#)
- ❖ Sajeda Khattab - [The contribution of displaced Syrians to the Egyptian Economy](#)
- ❖ Ola Subhi Al Daieh - [The Impact of Exile on the Syrian Women](#)
- ❖ Sarah Al Bouery - [The Impact of Institutions on The Representation of Lebanese Women in Senior Public Administration Positions](#)

Day 2: Saturday, June 4th

Session 1: Environmental protection and sustainability

- ❖ Sara Badran, Oussama Bou, Daoud, Jana Chazbeck, Reem El Chakik - [Environmental Sustainability: E-Waste in Beirut](#)
- ❖ Alice Abou Chacra, Rafic Al Ayyas, Assaad Al Halabi, Maria Mouzannar - [E-Waste Mismanagement in Lebanon](#)
- ❖ Rania Bou Said - Socio-economic and Hydro – [Climatic Assessment of the Water-Energy-Food System in Kherbet Qanafar](#)

- ❖ [Dalia Mohamad Kanaa - Water pollution with fluoroquinolones and the innovative solutions for their removal based on nanotechnology](#)

Session 2: Gender and Equality

- ❖ [Shaima Adel Abdo Abdllah AlMonefie - Achievements and Challenges in Female Education; A comparative study between Yemen and India](#)
- ❖ [Maha Wiss - Automated detection of women dehumanizing depiction in English](#)
- ❖ [Zahraa Berjawi - Benevolent Sexism Detection in Text](#)
- ❖ [Hussein Darwish - Lebanese Sexual Harassment Law: Towards an Effective Implementation at the Workplace](#)

Session 3: Gender and Equality (2)

- ❖ [Maha Abdelmonaem Shaheen - The long-term effect of gender-based violence on women epigenetics](#)
- ❖ [Rita Hajinazarian, Khawla Hamdi - Women on Boards: A Systematic Review & Comparison between Developed vs. Developing Countries](#)
- ❖ [Shaima Bin Othman - Women's Political Participation from Research into Practice in Hadramout pre- and post-Unification](#)
- ❖ [Rahme Hilal - The Effect of Managerial Attitudes on the Efficacy of HR Policies against Sexual Harassment in the Workplace](#)

Session 4: Technology and Automation

- ❖ [Yasmine Abu Adla, Christopher Farah, Hazar Shamas, Nour Osman - Artificial Intelligence for Covid-19 Awareness: Raising Awareness in Syrian Refugee Camps](#)
- ❖ [Mohsen Shamas - Investigating Meta-learning Algorithms for Improving Arabic Conversational Chatbots](#)
- ❖ [Mohamed Sofiane Timtaoucine - Analysis of Algeria's migration policy of 'Reconduite A la Frontiere' and its impact on sub-Saharan migrant women](#)
- ❖ [Nouha Abardazzou, Malek Ben Abdallah - Using Artificial Intelligence to Combat Cyberbullying](#)

A Narrative Literature Review on Sexual Harassment in Higher Education in the Middle East from a Feminist Framework Perspective

Naji Fateh

Olayan S. Suliman School of Business, American University of Beirut, Beirut, Lebanon

In this narrative literature review, I aim to review the existing sexual harassment (SH) in higher education literature to understand the reasons behind its occurrence and determine the relationships between the different interplaying factors that facilitate its prevalence in the Middle East through the lens of the Feminist Framework Theory. This review will further highlight the need for scholars to focus their research interests on topics of SH and other related issues in the Arab world and in higher education, as it is highly prevalent and misunderstood. The review of the literature is important to understand how previous research tackled this topic, which theories they adopted, how people's perceptions differ through the lens of each theory, and how societal factors contribute to such perceptions and manifest itself through policies and its implementation. The literature review conducted included 65 relevant articles, out of which 24 articles were included in this study based on the inclusion and exclusion criteria. These studies have targeted men and women in higher education in the Middle East, and focused on the perceptions of SH, reporting and culture across universities that may or may not have anti-harassment policies. The analysis that was carried out was based on the five core dimensions of the Feminist Framework Plus (FFP), in which the results were linked and correlated to these dimensions. The results yielded recommendations to managers to adopt a feminist perspective in developing policies by using the intersectionality perspective and reduce patriarchal perspectives as suggested by the FFP. This study aims to give a different perspective on the prevalence of SH and what needs to be done to prevent it using the FFP, and the urge for future research to examine the perpetrators' profiles and take gender into consideration and gender minorities' experiences to have a culturally sensitive environment in the Middle East.

Keywords: sexual harassment, higher education, perceptions of SH, prevalence of SH, Feminist Framework Plus

The gendered reality of authorship in the Middle East: American policies and patriarchal cultures

Mohammad Al-Abbas

*Department of Social & Education Sciences at the Lebanese American University, Beirut,
Lebanon*

Academia is rife with injustice and malpractice, with women expressing concerns regarding the fair attribution of credit. There is mounting evidence of bias in hiring, promotion, funding, and recognition of women's contribution to science. These biases are correlated and mutually reinforcing, contributing to the Matilda effect by which women's academic work is more likely to be unrecognized and undervalued. Based on the notion that authorship is an important marker of both credit and responsibility, this work examines the gendered practices of authorship in the Middle East. We source authorship metadata from published works affiliated with premier American-backed universities within the Middle East (LAU, AUB, AUS, and AUC) and their national counterparts (LU, UAEU, and CU) to identify the gender of authors within the byline. This work draws particular importance on the first and last author positions within the byline, as they are believed to be the most contributing and senior positions, respectively. Our results demonstrate that American-backed universities have significantly better representation of female authors in the two positions when compared with their national counterparts. Additionally, the Lebanese culture is found to be the most complementary to American policies having an average representation of 38%, whereas the Emirati culture performs the worst having an average of 12%. Accordingly, we conclude that American policies of equality, title XI, and fair employment prove to be effective within the context of a patriarchal middle east.

Changing Gender Roles After Refuge: A case study of Syrian Refugees in Jordan

Farah Qonaish

Center of Migration and Refugees Studies, The American University in Cairo

Being a refugee is an event that one's life could not be the same after, neither on the individual nor on the collective levels, the sudden change of life circumstances also affects the very core of the relationships between individuals and families, when leaving your land, the only place you know, and moving to a new destination, people vary with their ability to carry with them remains of their past, some of them choose to create a life as similar as possible to the life they had before, others find it as an opportunity to change everything they did not like about their past, in this context, changing the gender roles after refuge could be seen as a consequence or an outcome, women who gain new roles could be seen victimized or empowered women.

Taking a case study of the Syrian refugees in Jordan we will be exploring the root changes in the social structure of the Syrian refugee community that are affecting the core of the Syrian families and the power dynamics within these families. As a patriarchal community, the Syrian community used to perceive women as acting mostly in the private sphere, their roles were mainly associated with the reproductive domain and they did not contribute to the decision making of the families, after the Syrian crisis, women started gaining more economic independence as a result of multiple factors, which affected their roles in their families, this transformation has been studied from different points of view, however, all points of view agreed that women's roles within the family context are changing. Through this research, we will be exploring the changes in gender roles, how they impact family relationships, and what is the influence of female economic empowerment on the overall development of the Syrian refugee community in Jordan.

Women's Economic Empowerment – Lebanon

Rima Wehbe, Layan Moussa, Reinde El Hour El Homs

OSB, MSc. Business Analytics MSFEA, Chemical Engineering

Middle Eastern women have been oppressed economically for long time because of the nature of our patriarchal society and its negative impact on gender equality. Women are not encouraged, allowed, or supported to be financially independent. Instead, they are raised to be reliant on their brothers, husbands, and sons. They are even denied chances to get proper education and training which impedes their professional and self-development, thus restricting them to caregiving roles. As such, proper interventions must be initiated to ensure that women are not only encouraged to grow economically, but also provided the means, funding, training, and opportunities to do so. This is especially important by considering women's historical low participation rates in the work fields. In Lebanon, there is sufficient and reliable data to showcase this lack of participation as well as testimonies from field experts which testify to the challenges and barriers that prevent Lebanese women's financial independency. The latter may be depicted by women's employment, business/craft ownership or freelancing for instance. Those obstacles are aggravated for women residing in rural undeveloped areas. So, in compliance with the UN's SDG of Equality, our aim is to design an initiative that would interfere in relieving the gap between men and women as workforces and possibly empower the latter. In this context, we will focus on issues such as: discrimination in the workplace and informal Lebanese working sectors, lack of female employment in industrial sectors, lack of proper transportation, lack of sufficient opportunities other than women-oriented job titles including education, healthcare and banking.

E-Learning Strategy to improve Quality Education for Refugees in Jordan: Benefits and Challenges

Sumood Abdulhadi

International and Comparative Education Department, American University in Cairo

Education is a fundamental human right for all children, regardless of their circumstances. Unfortunately, many children are forced to leave their homelands for many reasons such as armed conflict, natural disasters, extreme poverty ... etc. In host countries, particularly developing ones, refugee students face the challenge of obtaining a quality education. By 2030, more than 420 million children will not be able to master the basic skills of literacy and numeracy (UNICEF, 2015). One of the proposed solutions for this problem is to integrate an e-learning strategy among refugees' education, as e-learning can improve the quality of education and build the students' skills to be lifelong learners. This paper investigates the main benefits and challenges of integrating technology into refugee education in Jordan by analyzing the literature on three different technological devices (mobile, computer, and tablet) and three different international initiatives (Worldreader, Blended Learning Program, Rumie). The findings proved that technology is merely a tool but not a solution. Many steps should be taken to integrate the E-learning strategy into the refugee context that achieves education and quality education.

Factors Affecting Girls' Lack of Interest in STEM Subjects At School

Diana Al Farran, Hiba Dirani, Rayan Al Tulyani and Suad Akkad

Department of Social and Education Sciences, Lebanese American University

A good education is a form of empowerment for individuals. Addressing the interests of different genders should be a priority in order to reach equity in education. Educators' role is not limited to covering content, but it is broader as it is building the thoughts of students and shaping their future personalities. Students of different ages have great potentials which teachers can support helping them to become creators, inventors, and knowledge constructors, instead of passive learners who study disconnected subjects to pass the school exams. Educators' role is also to find ways to arouse the interests of individuals having different gender identities in STEM subjects. However, most teachers lack the knowledge of how to link STEM disciplines to encourage their students, especially girls, to use the knowledge they are gaining to create and innovate. Based on a comprehensive literature review (which is the focus of this presentation), many schoolgirls do not develop an interest in STEM majors for various reasons. This presentation focuses on a study, still in progress, which will propose a STEM awareness program and study the impact of implementing this program on female students' interest in STEM-related careers. The reason behind this research is to understand the factors affecting females' lack of interest in STEM to develop a STEM awareness program that should be implemented at schools.

This presentation will focus on the literature review that has been conducted so far in which the major factors for females' lack of interest in STEM will be discussed. These factors range from a masculine society, family pressure, and teachers' behavior to school administrations' lack of support.

Students Hand in Hand Initiative: Advocating For Educating the Underprivileged Youth.

Reem AL-Sulaimani, Shaima AL-Monefie, Sumood Al-Bahloli

*International and Comparative Education Department, the Graduate School of Education,
American University in Cairo*

Students hands in hands was a cooperative project between three of TLG students and the Happy Yemen Initiative in Cairo, Egypt. The aim of the project was to motivate underprivileged students and refugees to learn English and to promote the idea of paying it forward, where one student supports a fellow student. During the project, Reem, Sumood, and I volunteered in the initiative to teach the English language to 49 underserved students from Yemen, Sudan, Eritrea, and Egypt. Moreover, the project was based on collecting donations to partially cover the course fees. The students only paid 50 EGP and the rest of the total fees of the course 100 EGP or 200 EGP, depending on the level, was completely covered by the donations of other students we worked on gathering for two months. The initiative enabled us, as TLG students, to give back to several communities. In addition, we were able to practice several skills, such as leadership, management and research. After a month (our winter break), the closing ceremony of the project was a successful event that highlighted the aim of the project, included motivational speeches from the donor students, and involved some comments from the students themselves about their positive experience of the project. The ceremony also presented some of the refugee students' work, such as, their course presentations and projects. It was a fruitful experience of teaching and interacting with students, and it was inspiring to see the project's positive impact through students' feedback videos, their grades, volunteer's feedback, and the initiative administration speeches and reports.

Computer Illiteracy for Public School Students and its Impact on the Academic Performance “Let’s IT!”

Leen Dirani, Rayane El Masri, Nura Habbaba, Nouran Moram

Solid communities are founded on education. Education is the basis upon which a person builds their life and profession. Nonetheless, in our time education is strongly related to technology. As a result, computer literacy is a new addition to the list of learning requirements that a 21st-century student should have. Sadly, in Lebanon, and particularly in our research region Saida, the education provided by public schools does not provide the necessary skills that allow school students to be ready for life after graduation. Precisely, public school students tend to be missing a variety of educational skills that are critical for a well-rounded educational experience. The most significant part of education that public school students are lacking is Computer education. We noticed that many students who have graduated from public schools are struggling to perform computer-related coursework during their first year of university. Since university professors expect all students to be familiar with the fundamental computer skills of Microsoft office, we have decided to come up with the computer literacy project “Let’s IT!”. Our project aims to deliver IT and computer skills to high school students in public schools, especially in Saida region. However, before starting the program at public schools, we are going to analyze the problem and understand the proper need of our public-school community at Saida in order to have the best possible results. The project is scheduled to last approximately one year, with several public schools selected as a sample of our community. In order to discover and examine the problem in our study, we will be conducting interviews with school coordinators and teachers, in addition to conducting surveys that aim to assess the needs of public-school students, their parents, and first-year university students.

Quantifying Gender Bias in The Lebanese Media

Ghumdan Al-Sabahi, Fatima Abu Salem, Shady Elbassuoni

Department of Computer Science, American University of Beirut

Word embeddings are a breakthrough in the world of artificial intelligence. They replaced the one hot encoding that is used in many Natural Language Processing (NLP) systems such as sentiment analysis, recommendation systems...etc. In word embeddings, each word is represented as a vector where similar words are placed close together. In other words, words that are close in vector space should have comparable meanings. However, recent research has revealed that these word embeddings contain biases towards specific groups that are transferred from our culture to machines. Most of the research has been applied to English. Other studies on languages that contain grammatical gender words have modified the bias test to account for gendered words. However, there has not been much research on the Arabic language. In this paper, we focus on quantifying gender bias in three Lebanese newspapers using the modified bias tests by applying them to word embeddings trained using the FASTTEXT algorithm. We discover the association of male and female words with several categories which are career vs family, cheerfulness vs sadness, strength vs weakness, leisure vs domestic work, science vs art, money vs beauty, and positive emotions vs negative emotions. Due to the lack of literature on the Arabic language, we rely on translating and reviewing the set of words manually. Initial results show that some stereotypes are manifested in our embeddings such as the association of females with domestic work and some occupations such as a nurse. Furthermore, we show how some portrayals of gender groups were changed over time. We measure bias over each year, and we then find the correlation between the results. Finally, we show the amount of bias each newspaper has towards each gender group.

Teaching for Sustainability in the MENA Region

Amina Sabour

International and Comparative Education Department, School of Social Sciences and Humanities

The American University in Cairo

The aim of this paper is to analyze basic education in relation to 2030 sustainable development goals in the MENA region. Current teacher standards from different countries in the area are studied and compared in order to examine to what extent teacher standards address sustainability, in other words, what teachers should know and perform regarding sustainability. The focus on teacher standards comes from the belief that it is not enough to have sustainability related content only in the curricular, but teachers need to master the delivery and performance of such a content through a set of standards and skills. Referring to certain international successful models of teacher standards that align with teaching for sustainability, the researcher comes up with a set of recommendations on teacher standards to be applied in the context of Algeria, and she suggests following up structures and methods. The choice of Algeria is based on the existence of two gaps: the lack of a national unified list of teacher standards in basic education schools, and the insufficiency of sustainable development goals related focus in the school curricular. Hence, this paper starts with a comparative literature review on teacher standards in the MENA region. It highlights the focus of these standards on sustainable development goals. Eventually, it presents a modal of implementation in a country from the region. The fundamental assumption of this paper is that children need to be educated on sustainability as part as meeting the 2030 goals.

Heavy Metal Contamination in Agricultural Soils in Lebanon: Comparative Assessment of Pollution Using Atomic Absorption and Hyperspectral Imaging

Reem El Chakik

Department of Civil and Environmental Engineering, American University of Beirut

Heavy metals (HMs) are inorganic toxic chemicals that are naturally present in the soil or are introduced into it through anthropogenic activities. HMs are of important ecological significance, namely due to their different sources of introduction to the environment, their toxicity at low chemical concentrations and their persistence and accumulation into the contaminated environment for being non-biodegradable. The increasing sources of pollution and continuous input of HMs into the environment entail constant monitoring of their occurrence and determination of the contamination levels in agriculture soils. This requires the use of easy, cost-efficient and reliable techniques for HMs detection and contamination assessment in polluted agricultural lands. Besides the presence of traditional laboratory analysis and raster sampling methods, new technological trends have been brought to light, including the Hyperspectral Imaging (HSI) technique which has proved its accuracy in the rapid detection of HMs. In Lebanon, studies on HMs pollution of agricultural soils are few and limited to small geographic areas. A nationwide survey of HMs pollution of agricultural lands is still lacking. In addition, the usage of HSI for the detection of soil pollution has not been applied in Lebanon. Hence, the proposed research aims at assessing HMs contamination in the Lebanese soils at a national level and evaluating the effectiveness of HSI in the detection and quantification of HMs soil contamination. Soil samples will be collected from agricultural lands from different Lebanese governorates and later analyzed for a set of HMs using atomic absorption (AA). HSI will also be applied as an emerging technique for HMs detection in soils and the results will be benchmarked with those acquired using AA. Findings from this study will allow the evaluation of HMs soil pollution in Lebanon and the assessment of HSI as an alternative cost-efficient technique for the detection and quantification of HMs contamination.

Treated Wastewater Reuse for Irrigation in Bekaa, Lebanon: Quality Assessment and Public Perception

Tia Hajjar

Department of Landscape Design and Ecosystem Management, Faculty of Agricultural and Food Sciences, American University of Beirut, Lebanon.

In Lebanon, agriculture consumes 61% of the freshwater resource. In this sector, an estimated water supply-demand gap of 25% is predicted to further increase with the elevated and unmet water demand and the exacerbating pressure on the water supply. Consequently, treated wastewater reuse (TWWR) is among the alternative water sources for irrigation to increase water availability and reduce the pressure on our freshwater resources. Despite the negligible water reuse situation in Lebanon and its numerous challenges, TWW is a sustainable option for water management because of its environmental, health, and economic benefits. Nonetheless, failing to ensure a safe-effluent quality leads to environmental and health risks. The Bekaa region is the primary agricultural area producing most of the country's irrigated crops. The Bekaa also has several functional wastewater treatment plants (WWTPs). However, insufficient studies are available about their treatment efficacy and their water reuse potential in irrigation in terms of the effluent's quality. Furthermore, successful reuse projects significantly depend on farmers and public perception of TWWR. Unfortunately, the level of acceptance is overlooked in Lebanon. Therefore, this study aims to determine the physical, chemical, and microbiological quality of TWW from Ablah and Zahle WWTPs in the Bekaa for reuse in irrigation and evaluate their environmental and public health risks. It further investigates the willingness of (i) farmers in Zahle and Ablah and (ii) consumers from the Lebanese communities towards safe TWWR. The quality of effluent grab samples was analyzed and compared with international guidelines for water reuse and irrigation. Two surveys were conducted targeting (i) the Lebanese population, 18 years and above, through social media and (ii) randomly selected accessible farmers who can benefit from Zahle and Ablah WWTPs through face-to-face and telephone interviews. Data collected will undergo statistical analysis (descriptive and multivariate logistic regression model).

This research is funded by the EU PRIMA under the MAGO project.

Combining Convolutional Neural Network and Graph Convolutional Network for Breast Cancer Detection using 2D and 3D Mammography

Dalia Youssef Mosleh

Maroun Semaan Faculty of Engineering and Architecture, Electrical and Computer Engineering Department, American University of Beirut

Breast cancer is a major public health concern all over the world and is considered as the most often diagnosed cancer in women. Early-stage disease detection and treatment improve patient safety and can increase the survival rate; thus, accurate detection and diagnosis is critical for breast cancer treatment. The two forms of mammography images utilized in clinical practice for breast cancer detection and diagnosis are digital mammograms (DM or 2D mammogram) and digital breast tomosynthesis (DBT or 3D mammogram). Radiologists typically read both imaging modalities simultaneously. Numerous research has looked at machine learning algorithms that use deep learning (DL) methodologies to improve mammographic diagnosis of breast cancer. In this project a machine learning model will be developed and trained using deep convolutional neural network (CNN) together with graph convolutional network (GCN) architecture to predict and diagnosis breast cancer more accurately in 2D and 3D mammographic images combined and evaluate the uncertainty of its predictions. The hypothesis is this combination is expected to yield better performance than any network running alone. To the best of our knowledge, it is the first time CNN followed by GCN architecture is used on 2D and 3D mammographic images together for detection and diagnosis of breast cancer. In this work, the model will be trained and evaluated using a private clinical dataset provided by the AUBMC, in which all 2D mammography and DBT data from patients examined between 2008 and 2022 is gathered. The model performance will be evaluated by calculating accuracy, AUC, F1-score, sensitivity, and specificity.

Detecting Gender Bias Patterns in Children's Stories and Books

Maya El Gharib

Sulaiman Olayan School of Business- MSBA program

Females have always been depicted as marginalized, subordinate, and inferior as compared to men over a long period of time. Gender bias has always been present whether explicitly or implicitly expressed and/or exercised. A very evident and common example of gender bias against women which is still persistent in our world today is the presence of gendered-biased language against females in school textbooks and stories targeted at children. These books contain countless instances that put men in a superior position as compared to women, whether in language, illustrations, characters, and titles. Children and youngsters tend to absorb this stereotypical information at a very young age, and thus they would be more likely to create gender-biased beliefs and practices about men and women in their minds as they grow older. Given the above, our core research focuses on implementing a content analysis approach based on a frequency analysis of up to 100 books targeted at children. We aim to detect the presence of gender bias patterns, including exclusionary terms and gender generics. Our research also highlights the literature that has evolved on gender bias in textbooks and stories for children since the 1970s and the different approaches that have been developed and implemented so far to capture biases in text. We will also highlight the short-term and long-term impact that these biases have on children as they grow up, such as the impact on children's self-esteem and future career aspirations.

People with Disabilities in the Tech Field

Nour AlBidewe, Samah Al Bast, Wanes Tutunjian

Before highlighting on our problem, we will start by defining people with disability (PWD). As such, in our situational assessment, we will consider people who have long term physical disabilities only. With the rise in the field of technology, as it is becoming a major part in every work field, PWD continue to have limited access to labor market in general and in the tech field in specific. For that, in our research, we aim to assess the situation of people with disabilities working in the tech field in Lebanon through having both primary and secondary data sources. In the primary part, we aim to conduct surveys with HR in tech companies as well as PWD to know more about their educational level, goals, and tendencies to work in the tech-oriented jobs. Also, we aim to conduct interviews with NGOs who work with people with disabilities and/or in the tech field to assess the situation of our targeted group i.e, PWD. The third level of interviews will be conducted with companies to know about their plans and tendency to hire people with disabilities. In the secondary part, we aim to review the literature available on the topic of PWD in the tech field. The primarily results from our literature review showed that including PWD in the tech field would fill the mismatch gap between the supply and demand and give these people the chance to be active and independent members in the society.

Risk of Subsequent Preterm Delivery Following C-section Births

Aya Bou Fakhreddine

Department of Epidemiology and Population Health, Faculty of Health Sciences, American University of Beirut

Background: Preterm birth is defined as newborn birth prior to 37 completed weeks of gestation. Preterm birth complications are the leading cause of death among children under 5 years of age. Several risk factors were identified including sociodemographic (socioeconomic status, maternal age, genetic), mother's health status (chronic diseases, BMI), obstetrics (infections, vaginal bleeding), and environmental factors (climate change, air pollution). The association between prior C-section and preterm delivery in subsequent births remains controversial in the published literature. **Aim:** This study has two aims: 1) to examine the association between C-section deliveries and subsequent preterm births, controlling for major predictors (mentioned previously) of preterm birth. 2) to examine the association between increasing numbers of prior C-sections and odds of preterm birth. **Method:** A case control multicenter study was designed to examine these associations. Our population includes women who gave birth between 2009 and 2019 in hospitals enrolled with National Collaborative Perinatal Neonatal Network. 12,000 pregnant mothers who gave birth prior to 37 gestational weeks with para>0 were included as cases. For every preterm case, we assigned 4 controls. Thus, 48,000 mothers who delivered post 37 gestational weeks with para>0 are the controls. Cases and controls were frequency-matched on year of birth, gender of the child, and place of residence. To assess these associations, adjusted odds ratios and their 95% confidence interval were estimated by multinomial logistic regression adjusting for possible confounders. **Result:** Women who have undergone C-sections were more likely to deliver moderate-to-late preterm birth (32-<37 weeks) (OR=1.3) compared to term birth in subsequent delivery. A significant association was shown between number of C-sections and moderate-to-late preterm delivery (p-value<0.05). Moreover, mothers who have undergone four previous C-sections or more were almost three times more likely to deliver moderate-to-late preterm vs term-birth (OR=2.6, p-value<0.05). **Conclusion:** This study emphasizes the importance of restricting elective C-section deliveries, particularly among mothers who are at risk of premature delivery.

Teachers' Awareness of Educational Neuroscience: An Action Research

Reem Yaseen Al-Sulaimani

Graduate School of Education, American University in Cairo

One of the aims of the 4th SDG is to provide a quality education and promote lifelong learning. Accordingly, one of the properties of promoting a high-quality education is to ensure the availability of teachers who are knowledgeable of proper instructional pedagogy, content facilitation, and positive learning environment. Educational neuroscience, also known as mind, brain, and education, is a relatively new interdisciplinary field that aims to research and interprets how the brain works during learning (Thomas et al., 2019). The field also tackles neuromyths; teachers who believe in educational neuromyths would trust and use wrong beliefs about how the brain works throughout the learning process (Hughes et al., 2020). As a result, educators will not use effective pedagogies that would support student-centered learning, aid students with special abilities, and serve war-affected students. Therefore, the aim of this action research is to raise teachers' awareness about educational neuroscience and to contribute to dispel some common educational neuromyths. A mixed method approach will be used to evaluate the level of awareness of teachers about neuroscience. A pre-survey will be provided to teachers to answer about neuroscience in education and neuromyths, and then an intervention will be made where teachers will be introduced to some materials about "what is educational neuroscience, its impact on education, and the common neuromyths." Then, A couple of interviews will be conducted to evaluate the influence of the new knowledge on the teachers' awareness and to acquire deeper insights into the teachers' experience, reflection, and feedback. The E-surveys will be analyzed, and the interviews will be used to create a thematic analysis of the findings.

Labor reforms in Qatar and their impact on labor migration ahead of the 2022 FIFA World Cup

Sana Gasmi

Center for Migration and Refugee Studies, The American University in Cairo

The research paper seeks to investigate the situation of migrant workers in Qatar and the extent to which the adopted reforms by the Qatari government ahead of the 2022 FIFA World Cup have impacted labor migration in Qatar. The paper relied on secondary sources including scholarly work and newspaper articles. The findings of the research indicate that the preparation for the 2022 World Cup in Qatar required the recruitment of more migrant workers, specifically, in the construction industry. However, migrant workers have been subjected to inequalities and injustices. Due to the deteriorating living and working conditions of migrant workers, the international community has exerted pressure on Qatar to amend some of its laws to guarantee more freedom and prevent migrant workers from being exploited. As a result of this, the Qatari authorities started adopting some reforms to improve the situation of migrant workers ahead of the 2022 FIFA World Cup tournament. The reforms include the abolishment of the exit permit and removal of the need for approval of the employers to change jobs. Although these reforms seem promising and show Qatar's commitment to improve the situation of migrant workers, it is still too early to examine the effectiveness of these reforms, especially, these reforms still have some loopholes that could increase the vulnerabilities of migrant workers. The research shows that it is very hard to evaluate the long-term impact of these reforms because there is no guarantee that the adopted reforms by the Qatari authorities come from their real commitment to human rights and improvement of migrant workers' situation.

Optimal Spatial-Spectral Input for Real-Time Hyperspectral Image Classification

Jawad Haidar

Department of Mechanical Engineering, American University of Beirut

Achieving real-time hyperspectral image classification has a great benefit given that numerous applications require immediate action such as surgical, structural monitoring and agricultural applications. The hyperspectral image consists of both spatial and spectral information. Several approaches for real time hyperspectral classification have been done based on the spectral information as an input. Adding the spatial information enhances the model performance because neighboring pixels have a high probability of belonging to the same class but at the same time, they increase the computational burden. The complexity in real-time onboard classification arises because hyperspectral images have a large volume alongside the limited computational power for onboard computers. In our work, we found the optimal spatial-spectral input that enhances the model performance with minimal additional computational cost. The optimal input consisted of three consecutive pixels that encapsulates both the spatial and spectral dimension. Additionally, Principal component analysis was applied to reduce the depth of each pixel. To leverage the value of the optimized input we developed a lightweight deep neural network model with a minimal number of layers. This novel approach achieved an accuracy of 96% on the well-known Pavia University dataset with real time preprocessing and classification speed. Our approach will be implemented on the jetson nano board to perform Realtime soil contamination detection. The onboard computer will be mounted on a UAV to perform autonomous field scanning and classification.

Regional Inequality in Tunisia and International Migration

Hiba Belhadj

Center for Migration and Refugee Studies (CMRS), School of Global Affairs and Public Policy

The American University in Cairo

This thesis explores the relationship between regional inequality in Tunisia and international migration to Europe. It investigates how different migrant profiles and experiences are influenced and shaped by the region they come from. It looks into poverty in Tunisia and examines how this poverty is geographically distributed across regions. Poverty as it manifests not only in terms of monetary capabilities or income but also through access to resources and capital. Inaccessibility to resources and capital translates into a form of social exclusion. This thesis argues that people's access to economic, social, and cultural resources shape their ability to move, their method of migration: regular or irregular; their ability to secure employment and the type of work they are more likely to obtain. Because of regional inequality in Tunisia, poverty levels differ, hence this access is not equally distributed across the different regions. This thesis examines how this inequality impacts and persists in the migration experience. People from more developed regions (mainly coastal areas) with more and easier access to resources are more likely to have better opportunities of migration. These opportunities encompass access to regular migration and higher chances of formal and high-wage-employment. In contrast, those from less developed regions (Western and Southern regions) have limited access to regular channels, hence, they are more likely to pursue irregular migration and end up in informal and low-paying jobs. Regional inequality, therefore, translates into an "inequality of opportunities." These opportunities are not only shaped by the situation at home but also by policies and structures in European destination countries – such as a segmented labor market and a focus on highly skilled migration – which contribute to the marginalization of the already-marginalized segments of the Tunisian society.

Gender Migration in Egypt: Bringing Egyptian Female Migrant Experiences into Theory and Practice.

Adam Eddouss

Migration and Refugee Studies, The Center for Migration and Refugee Studies (CMRS)

Migration is a gendered space. It is shaped, in both theory and practice, by unbalanced relations of power that are reflective of the imbalanced social world and the social differentiation elements that construct it: gender, race, ethnicity, class, etc. These relations of power are especially evident in the male-centric migration mainstream literature, where the migrant subject is essentially male. However, with the increasing participation of women in the process and phenomenon of migration, scholars in the field could no longer neglect the presence of the female migrant, thus the “feminization of migration” and/or the appearance of “gender migration”. In this research, we argue that, while this feminization of migration rendered women more visible, it did not always rid them from the position of weakness, vulnerability, and dependence, that the modern and the post-colonial project ascribed to women and that regarded the woman as a second-degree citizen that belongs to the private sphere of the home and the family. Hence, this research attempts to study the active role those female migrants play in migration with a focus on Egypt as a case study, a country that has a small female migrant population. And, accordingly, this research tries to explain the absence of female Egyptian migrants from migration in both theory and practice and study the conditions and situations of some of these migrants with reliance on both secondary research as well as primary research(interviews). While it does that, this research, however, does not aim to shift a male-centric field into a female-centric one, but rather include female migrant experiences and stories along with those of men. Finally, this research attempts to provide recommendations as to how to push for a more inclusive, engaging, and flexible literature of migration, especially in the context/library of Egypt and provide recommendations concerning female migration and development in Egypt.

The contribution of displaced Syrians to the Egyptian Economy

Sajeda Khattab

Department of Global Affairs and Public Policy, American University in Cairo

2011 Syrian civil conflict had led to a massive wave of forced immigration from Syria seeking safety into other countries like: Jordan, Lebanon, Turkey, Egypt, and Iraq. There is a considerable debate in terms of the impact of Syrian migrants on the economy of host states. Most of the existing discourse has focused more generally on the impact of Syrian refugees into the host country concerning the impact on the labor market compared to natives, as well as socio-economic challenges of Syrians in Egypt. This article, on the other hand, seeks to deeply examine this issue through a purely economic lens, focusing on the formal medium and large business economic impact of displaced Syrians who came to Egypt in the aftermath of 2011. Several variables will be examined in the aim of this study, including the volume of production, production cycle, employment rates, taxes, and wages. As such, interviews will be conducted with medium and large Egyptian and Syrian businesspeople residing in Egypt. Further, a number of workers will be interviewed to investigate if they are, at any point, contributing to the Egyptian economy. The study is useful for policymakers dealing with refugees, such as UNHCR or governments of refugee-hosting countries and local populations of the host countries, and to the greater general readers having an interest in this area to prove academically to what extent displaced Syrian businesspeople impact the economy.

The Impact of Exile on the Syrian Women

Ola Al Dayeh

Center for Migration and Refugee Studies

School of Global Affairs and Public Policy at AUC

The lives of Arab women have become one of the most rapidly changing elements of Arab society, and it is essential to assess the impact that the 'democratic revolutions' have had on the position of Arab women in Middle Eastern societies (Cundiff, 2017). After the Syrian Uprising in 2011, a massive movement of people took place either through internal forced displacement or through seeking safety in other countries. Syrians started fleeing to Egypt and neighboring countries like Jordan. By August 2014, around 2.9 million were displaced beyond the Syrian borders, and nearly four in five of them were women and children (Fisher, 2014). Refugee women and children are considered the most vulnerable group in most refugee and displacement studies. There is disagreement among scholars about the impact of exile on women. Some scholars found that the exile experience shapes women's identity, empowers them, and transform gender roles. Other literature, however, argues that the exile community is an extension of the home community, and as such, it has no impact on gender roles. In addition, during exile, women face additional challenges. For example, the gender problems faced by Syrian women in different host communities affect their experience in the country of refuge. Moreover, the socio-economic factors can either limit or benefit the Syrian women's journey as a migrant or refugees in the host country. However, the exile experience can be positive in many cases, and it could have an emancipatory effect on women (Ayoub, 2017). This thesis aims to understand how the context of the host country shapes how women experience exile after the Arab Spring. This thesis will adopt the qualitative method and comparatively analyze the situation of Syrian refugee women in two Arab MENA countries, namely Egypt and Jordan. The research will investigate to what extent the exile experience impacted their engagement in the public sphere compared to Syria.

The impact of institutions on the representation of Lebanese women in senior public administration positions

Sarah Al Bouery

Department of Political Studies and Public Administration

Faculty of Arts and Sciences

In Lebanon, women remain underrepresented in politics and public administration, in parliament and any decision-making position in the government. Some literature explain that the neutrality of laws works in favor of this underrepresentation in parliaments, cabinets, and public administration. Others pointed out to party religiosity as a factor to bolster underrepresentation and some highlighted the importance of the patriarchal culture in a society. Institutions, both formal and informal, play an important role in this representation, the formal are practices of governance and the public image of politics while the latter are the informal, behind the scenes casual networks. Women happen to be very active in informal settings, taking significant active roles in political parties but remain excluded from the formal political scene run by male elites in Lebanon, placing women in the shadows of the dominating informal networks. Consequently, the study falls under neo-institutionalism and feminist institutionalism because until present, the relationship between institutions and gender has been overlooked by new institutionalist theorists. This thesis aims to answer how women have been embraced by informal networks but not by formal ones in Lebanon. The purpose of this study is to understand this dynamic between formal and informal networks and why have women been absent from the public scene when they are active in party politics and local governments. This is a work in progress and to answer the research question, secondary and primary data collection and analysis through semi-structured interviews with female senior public administrators will be conducted.

Environmental Sustainability: E-Waste in Beirut

Sara Badran, Oussama Bou Daoud, Jana Chazbeck, Reem El Chakik

Department of Civil and Environmental Engineering, Masters in Environmental and Water Resources Engineering, Suliman Olayan School of Business, Masters in Business Analytics, Department of Environmental Health, Masters in Environmental Sciences, Department of Health Sciences, Masters in Epidemiology

We all know that environmental problems and pollution are the major factors that threaten the human's health and spread many dangerous diseases. Therefore, tackling these environmental problems will protect humans and save the globe. The concept of sustainable development was formulated in response to a growing awareness that there are several important relationships between processes such as human and economic development, global and local environmental problems, increase in population and poverty (Nader et al., 2008). As our group is interested in environmental sustainability in Beirut and taking into consideration the solid waste crisis in Lebanon, the community we identified is neighborhoods in Hamra, more precisely ones near Bliss Street. It is noticed that the solid waste problem in Hamra is rising, which is shown from the piles of solid wastes spread on the sidewalks and on the streets (UN Habitat, 2022). In the past two years e-waste, more specifically batteries of solar panels, witnessed an increase due to the electricity crisis we are facing. Those batteries pose major health risks on humans and environmental risks as they may dissipate Lithium and other heavy metals into the ecosystem thus threatening the lives of living organisms. The secondary data we have used is Reports from UN agencies such as Lebanon State of the Environment and Future Outlook: Turning the Crisis into Opportunities - SOER 2020 Report which gave us insights about solid waste in Lebanon. Additionally, we looked at scholarly articles about municipal solid waste in Lebanon, solid waste management in Lebanon and assessments of landfill pollution in residential urban spaces in Lebanon. Therefore, we went and met with the mayor of Beirut, Dr. Dhaini, environmental health and toxicology professor at AUB who is part of the ministry of environment cabinet and Mr. Mouchati, the head of the environmental department at Arcenciel. Based on the research, statistics and meetings we did, we acquired all the needed information that will help us expand our knowledge about our topic. For instance, one of the opportunities we are thinking about is to collect the batteries wastes, specifically those from solar panels and try to leverage them in a way that helps the unemployed youth in Lebanon to recycle them.

E-Waste Mismanagement in Lebanon

Alice Abou Chacra, Rafic Al Ayyas, Assaad Al Halabi, Maria Mouzannar

M.E Chemical Engineering, Faculty of Engineering, AUB– M.E Mechanical Engineering, Faculty of Engineering, AUB– M.S. Computer Science, Faculty of Health Sciences, AUB– M.S. Environmental Sciences, Faculty of Health Sciences, AUB

E-Waste Mismanagement in Lebanon the amount of electronics produced are growing exponentially, day by day. This might be perceived as a blessing to humanity as it brings about huge opportunities for innovation and development. But the other side of the coin tells another story. The great question is: what do people do with obsolete electronic devices? In 2021, the world produced 57.4 million tons of e-waste. Unable to find clear data on the status quo in Lebanon, the global average can help us exemplify the tremendous weight of the issue: although the world's e-waste is only 3% of the total waste generated, it makes up about 70% of overall toxic waste, deeming e-waste one of the most hazardous types of waste. Lebanon's poor governance once again proved to be a direct threat to the population's health and lives. Negligence of national and local authorities are resulting in decentralized initiatives for ewaste management, relying on the NGO sector and civil society initiatives to take on the role of the state. After a thorough literature review and meeting with field experts, our team recognized two major stages that require urgent intervention: e-waste collection (proper collection, handling, dismantlement), and management (safe storage and recycling). Recognizing the urgency of hindering further health and ecological damage of the community, our team decided to take on e-waste management as a civic action plan project, aiming to develop evidence-based proposals for involved stakeholders as to how to carefully extract the precious metals present in e-waste after dismantlement, and convert them into a valuable product, creating a win-win situation both in terms of protecting population and ecosystem health, but also generating income from a material otherwise considered waste. By doing so, we would be tackling numerous interconnected SDG's such as social protection, environmental protection, but also people-centered growth and sustainable finance.

Socio-economic and Hydro – Climatic Assessment of the Water-Energy-Food System in in Kherbet Qanafar

Rania Bou Said

*Department/Program and Faculty affiliation: Rural Community Development Program – FAFS,
Lebanon & INRAE, France*

In Lebanon, the agriculture sector is facing challenges, such as financial unsustainability, lack of adequate legislative protection and aid, and limited access to resources (McKinsey, 2018). According to the International Water Management Institute, half of the farmers in Bekaa suffer from water shortages (2020), while others over irrigate by 300%, (Comair, n.d.), with over 60% of the water used for irrigation pumped from aquifers (FOA, 2015).

This research aims to improve the livelihood of farmers after assessing the biophysical, socio-political, and economic factors from an environmental and participatory multi-scaled lens, i.e., farmers, groundwater sellers, and the water user association, using the environmental security livelihood approach. The main objectives are to (1) determine the impact of (a) climate and (b) poli-economic events on cultivation, water availability and water pricing through the usage of remote sensing data and newspapers, and (2) assess on farm agriculture, water and energy practices and developmental projects, using surveys and interviews. After integrating all the interlinkages affecting the livelihood of small farmers, it is now possible to propose socio-political and economic solutions and develop best water practices to balance between nature conservation and farmers' needs through decreasing water and finite energy consumption to maximize yield, increasing overall yield revenue, and conserving water resources. Moreover, the participatory approach followed will allow farmers to propose developmental solutions and allow us to test these solutions under climate change scenarios, using climatic, hydrological and agriculture models, allowing us to reach our goal of improving farm revenue and preserve water resources by disseminating best water and energy practices while considering future climate change scenarios.

Water Pollution with Fluoroquinolones and the Innovative Solutions for Their Removal Based on Nanotechnology

Dalia Kanaa

Nanotechnology Department

Water is one of the main aspects for a human being life. Nowadays, assuring clean water supplies is a critical issue. Although water treatment methods are applied to remove contaminants that may affect health, the rapid world developing leaves behind a lot of contaminants, some of them cannot be removed by the conventional treatment techniques. The most dangerous contaminants that can remain in water resources and enter the human usage cycle are those which can have negative effects in trace amounts like antibiotics. Most of antibiotics can be degraded in short time after they reach the environment. However, others can resist environmental degradation for several days. Fluoroquinolones antibiotics are a group of widely used antibiotics for the high safety and the broad spectrum. However, they resist environmental degradation beside they have high adsorption affinity which makes their lifetime in the environment last for several days and even for more than a year. This allows FQs antibiotics to be in sub-inhibitory concentrations in the environment practicing their effects on its different components. This research paper sheds the light on fluoroquinolones (FQs) as contaminants of emerging concern (CEC), summarizing the global detecting frequencies of FQs in aqueous environments in different countries. In addition, this paper presents some of what researchers have found about FQs removal methods. The focus in this research will be on adsorption as a promising removal technique of FQs in order to provide healthy water.

Achievements and Challenges in Female Education; A comparative study between Yemen and India

Shaima Adel Abdo

International and Comparative Education Department, the Graduate School of Education

Educated girls are one key to a brighter future in countries (Yousafzai, 2016). According to the World Bank estimates, a country with more educated girls may help lift poverty out (World Bank, 2020). This indicates that when a country has more educated girls, the country becomes more developed. In addition, females have shown a high responsibility towards deteriorated economics and conflicts. They have reduced conflicts and advocated for peace in several cities, such as Mar'ab, Lahj, and Taiz (Heinze & Stevens, 2018). However, some girls are still not allowed or lack the ability to enroll in schools or universities. The major purpose of this study is to dissect the progress that Yemen and India have accomplished regarding the education of females, highlights obstacles that governments have faced trying to solve girls' secondary education issues, and clarifies the joint effort international organizations have done to support girls not to stop their high school education. The electronic search was the main approach in this paper. The AUC library was the main resource. Scholarly articles and some graduate and doctoral students' thesis, which are related to girls' secondary education, were used to analyze the literature view and findings in Yemen and India. In addition to several reports that were released by international organizations, such as the World Bank and UNESCO. The research paper has shown that India and Yemen have made a good progress in female secondary education; however, many girls are still left behind. The paper shows which existed policy/strategy (in both countries) changed the future of girls' secondary education? And which one did not have an impact? Both governments have tried to increase the number of educated girls to gain more productivity in countries. However, the lack of resources and conflicts did not much help.

Automated Detection of Women Dehumanizing

Maha Wiss

Despite of the fact that our thinking affects our words, the opposite is also correct. Language plays an essential role in shaping human cognition and this should be considered when using biased or gendered language as it will influence our thoughts, imagination, and biases.

Sexiest language against women takes many different forms in which reflects the gender discrimination that has already been rooted in the society since ever. Comparing women to non-human items (e.g. animals, food, plants, objects, etc.), whether to praise or slander, is sexist language. For instance, using metaphors and similes to describe women will create new semantic meanings and will formulate our conceptual system. Therefore, the selection of non-human items to depict women in text can reflect speaker's ideology, also, can convey this derogating ideology through generations. To explain, comparing women to soft, weak, sweet, subordinators, etc. items will keep women lower than men in the hierarchical chain of being. Studies also proved that using this sexist language can also affect people actions. Furthermore, experiments showed that the belittling and degrading presentation of women in text can increase men's rape myth acceptance and rape proclivity.

In my study, I aim to build an accurate classification system that has some power to detect women dehumanizing language. This goal to be the first step toward the elimination of using gendered language and to mitigate its dreadful impact on societies

Benevolent Sexism Detection in Text

Zahraa Berjawi

Suliman S. Olayan School of Business, Master's in Business Analytics

Sexism was first introduced to raise awareness on the oppression of women and girls. It is defined as the discrimination and prejudice that are based on gender or sex (Masequesmay, 2021; Drislane & Parkinson, 1999). Even though sexism can be generalized as discrimination against males and females, it is more commonly practiced against females (Masequesmay, 2021). Further, Glick and Fiske (1996) introduced the theory of Ambivalent Sexism which suggests that sexism can be present in both a benevolent and a hostile manner. The hostile sexism form of sexism is expressed in negative, blatant, and aggressive manner while the seemingly benign form of sexism is expressed in a chivalrous tone, as it explains men's dominance through their affection and love for women.

"You act like a lady, but you think like a man" is a statement categorized as a compliment by many and as benevolent sexism by social scientists. In fact, despite its benign expression, research shows that the long-term impact of benevolent sexism is more severe than that of hostile sexism due to its seemingly benign expression (Barreto & Ellemers, 2005). These effects include posing great danger on gender equality, impacting women's self-construal and leading to their cognitive incompetence (Dumont, Sarlet & Dardenne, 2008).

Recently, the field of automatic sexism detection has been directed towards mitigating hostile sexism, and minimal contributions have been done in terms of benevolent sexism mitigation. This allows the spread of benevolent sexism and its possible impact on societies. Thus, we aim at contributing to this field through creating a system using Machine Learning and Natural Language Processing tools. This system can be used by social media platforms, newspapers, and several other communication platforms to detect and mitigate the exposure of people to benevolent sexism and accordingly, mitigate its dreadful impact on societies.

Lebanese Sexual Harassment Law: Towards an Effective Implementation at the Workplace

Hussein Darwish

Suliman S. Olayan School of Business, Master's in Human Resources Management

This research project takes the case of the newly passed Lebanese anti-sexual harassment law (Law No. 205) to investigate the organizational factors that inhibit as well as facilitate its implementation at the workplace. Informed by the contingency management model, the study analyzed data from online secondary sources along with semi-structured interviews with Lebanese HR managers. Data from both sources were integrated and coded manually using short phrases and words that were used by the participants. After that, a thematic analysis was applied. Findings indicate that culture, awareness, top management support, employee character and background, human resources, along with business context are all important factors that can play the role of both barriers as well as enablers. Findings also reveals that Law No. 205 is ineffective on its own and that its needs to be empowered with further organizational and governmental initiatives. This research project provides significant contribution by developing a comprehensive understanding of the factors that shape the workplace implementation of a sexual harassment law in a developing country context. Finally, important implications for HR professionals are discussed, namely developing internal SH policies, training on bystander intervention, adopting a cooperative leadership style, partnering with local stakeholders, along with building the business case for SH.

The Long-Term Effect of Gender-Based Violence on Women Epigenetics
Maha Abdelmonaem Shaheen

The MS in Biological Sciences Program, Department of Natural Sciences, Lebanese American University

Exposure to violence leaves long-term effects on people, some of these effects cause epigenetic modifications (Saadatmand et al., 2021), and the most dangerous situation is when that person is a woman who has the ability of passing these modifications to the next generation of children. This study aims to summarize the long-term biological effects of some gender inequality violations against women. Starting from the different forms of violence and their relationship to epigenetic modifications in women, till their impact on children. With the necessity of emphasizing the speedy issuance and activation of laws that limit these practices against women to protect future generations. The methodology is based primarily on literature review of what was previously mentioned in biological research regarding the effects of violence and difficult environmental conditions on epigenetics (Lawson-Boyd & Meloni, 2021; Palumbo et al., 2018; Radtke et al., 2011; Saadatmand et al., 2021; Serpeloni et al., 2020). The female role in biological systems extends between control and subordination in many ways. Some examples of these systems will be mentioned to explore the possibility of creating sustainable systems similar to it among humans. It is expected to come up with decisive recommendations regarding ending the inequitable practices against women because of their danger on future generations. These recommendations may include enacting new laws or activating inactive laws with mentioning the reasons for inactivating these laws, whether it is customs, traditions or otherwise. Investigating the escalating violence against women from a biological and gender prospective will help in controlling its serious repercussions. This step represents a powerful starting point to fully comprehend its complications. It also will have a powerful impact towards supporting the fifth goal of the SDGs on equality not only for women but also for the entire society and the future generations.

Women on Boards: A Systematic Review & Comparison between Developed vs. Developing Countries

Elias Rida, Hajinazarian Rita, and Hamdi Khawla

We systematically review the literature on Women on Boards (WOBs) in developing and developed countries. We organize this literature into two broad themes namely antecedents or the variables that affect the number of women on the boards of organizations and outcomes or the consequences of having more women on boards. Not surprisingly, of the 212 articles included in our review, more than 65% address solely developed countries, slightly above 18% address solely developing countries, less than 9% talk about developing and developed countries, and about 5% address issues related to women on boards but do not mention the country they are studying. However, surprisingly less than 25% of the articles discuss the antecedents of women on boards and 75% discuss the outcomes of having women on boards. Our review aims at establishing a solid foundation for future research directed at increasing board diversity through increasing the number of women on boards and informs policymakers and practitioners on ways to enhance their practices related to having women on boards

Women's Political Participation from Research into Practice in Hadramout pre- and post-Unification

Shaima Bin Othman

Faculty of Arts and Sciences/ Center for Arab and Middle Eastern Studies

In May of 1990, the People's Democratic Republic of Yemen (PDRY) and Yemen Arab Republic (YAR) unified to form the Republic of Yemen (ROY). With this unification, two very different states with different visions of Yemen joined to form one unified country. The PDRY was governed by the National Liberation Front (NLF) after it gained independence from Britain in 1967. The NLF was established in 1963 as a radical nationalist party. However, by 1968 it had declared itself devoted to Marxist-Leninist goals, including complete women's emancipation. On the other hand, North Yemen's leaders adhered to a more conservative Islamist ideology. The most evident difference is how each state visioned Yemeni women.

This thesis examines women's political participation in Hadramout- South Yemen pre- and post-unification. More precisely, the primary purpose of this thesis is to explore the hindrances for women from participating in politics to facilitate a deeper understanding of the known phenomenon of the under-representation of women in politics. The thesis seeks to understand the contemporary situation in Hadramout and the factors that influenced women's political participation between PDRY independence in 1968 and the final absorption of the PDRY into Yemen in 1994.

The thesis will be carried out with the case-study design of the ' First General Conference for Yemeni Women, taking place in Hadramout-Seiyun 15-17 July 1974 under the theme: Yemeni Women Fight Ignorance'. The thesis material will consist of in-depth interviews with women members of the Women Union who organized the conference with support from the state, representatives from political parties, and gender-issue experts from NGOs. The analysis of this thesis will also be based on the results of previous research. The overarching theoretical framework used in the thesis consists of structures, institutions, actors, and feminist theory.

The Effect of Managerial Attitudes on the Efficacy of HR Policies against Sexual Harassment in the Workplace

Rahme Hilal

Master's in Business Administration, Suliman S. Olayan School of Business

Sexual harassment in the workplace remains a major problem despite the increasing awareness and legal sanctions put in place. HR policies alone, if present, are not sufficient. In parallel, there needs to be a strong managerial stance against the matter. This is to create a safe work environment and an organizational culture that supports its employees' rights to a healthy workspace. This is achieved through managerial attitudes that condone sexual harassment in all its forms and a level of awareness by the managers that gets directly and indirectly transferred to all individuals of that community. In addition, most research on the subject has been conducted in the US, Australia and Europe. For this reason, we will be investigating managerial attitudes towards workplace sexual harassment in Lebanon and the impact of these attitudes on the incidence of and reactions to sexual harassment in Lebanese organizations, through in-person interviews with company personnel. This comes from the notion that any policies/laws set in place to control the phenomenon of workplace sexual harassment would have very little efficacy as long as managers and leaders within an institution are not actively working towards instilling them. This does not only involve making sure the policies are implemented, but also raising the firm community's awareness to workplace sexual harassment issues and clearly showing their attitudes towards them. This, in turn, influences the culture around sexual harassment within that institution, as well as employee attitudes and behavior. We will be investigating how these dynamics manifest within the context of firms located in Lebanon.

Artificial Intelligence for Covid-19 Awareness: Raising Awareness in Syrian Refugee Camps

Yasmine Abu Adla, Christopher Farah, Hazar Shamas and Nour Osman

Electrical and Computer Engineering, Epidemiology and Population Health

Faculty of Engineering and Architecture, Faculty of Health Sciences

Following the Syrian civil war that took place in 2011, more than five million Syrians were forced to flee their homes and relocate in neighboring countries. Therefore, out of the 5 million refugees, more than 1.5 million Syrians evacuated to Lebanon where they were forced to live in closed crowded refugee camps making their living conditions a glowing opportunity for COVID-19 spread. Moreover, a cross-sectional study implemented by the UNHCR in 2017 on 450 Syrian refugee older than 17 years estimated a decline from 65% to 53% on health care expenditure from 2016 till 2017. Unfortunately, we predict a steeper decline after the increase burden from the economic crisis in Lebanon and the COVID-19 pandemic especially in Beirut with the presence of high expenditure. Accordingly, there has been an immense need to address the health and living situation of Syrian refugees after the Covid-19 pandemic. Focusing on equity in promoting health education among citizens in Lebanon and on the technological advancements we are facing every day, our aim is to integrate affordable Artificial Intelligence (AI), namely Machine Learning (ML) algorithms, to help raise awareness about the spread of Covid-19 using methods to combat it, given the preliminary resources available. We believe that primary prevention is better than cure and raising awareness about the COVID-19 mode of transmission and the importance of vaccination provided by the MOPH for refugees along with the non-pharmaceutical interventions will be principal step towards the decline in COVID cases among those clusters. Main phases involve collecting preliminary data about Syrian refugees in Lebanese camps using data from the WHO Lebanon and administered questionnaires for the refugees to pinpoint the vital problems for addressing. Based on the results, we thrive to develop intelligent frameworks to help address these issues by education and raising awareness using Natural Language Processing (NLP) algorithms. Constant monitoring and evaluation of our tactic will be surely executed and persistent improvements towards our project will be sustained.

Investigating Meta-learning Algorithms for Improving Arabic Conversational Chatbots

Mohsen Shamas

Computer Science, Faculty of Arts and Sciences

Dialogue generation is a fundamental component of the conversational chat-bot application. It is essentially the automatic generation of a text response, given a human-generated context. The advancements in deep learning models such as sequence to sequence neural networks and attention-based transformers models have made developing conversational systems not only possible, but also effective and helpful in many applications, including Health Care, Marketing,

Educational, Supporting Systems, Entertainment and many others. The development of chat-bots dates back to 1966 when ELIZA the first chatter bot was created. Since then, research on building artificial conversational agents has taken different trajectories; corpus based, intent based, and

Seq2Seq approaches are the most notable and successful in developing such systems.

Nevertheless, work on Arabic Conversational bots is still limited due to various challenges including the language rich morphology, huge vocabulary, and most importantly the scarcity of data resources. In our work, we propose incorporating meta-learning to develop a human-like

Arabic conversational chatbot. Our aim is to mitigate the issue of the data scarcity by enabling the fast adaptation of the model using little amount of data. We experiment with different meta-learning algorithms, notably model-agnostic meta-learning (MAML) and reptile. We also introduce

Arabic Topical Chat dataset, an Arabic Translation of the English Topical Chat dataset, and we use it to train a BERT2BERT model and produce improvements on BLEU scores compared to the existing state-of-the-art approach. We also use the dataset to meta-learn the initial parameters of the pertained model before finetuning, and we show that our approach improves the learning rate of the model at the finetuning step. We evaluate our models using the bilingual evaluation understudy (BLEU), perplexity (PPL) and Distinct-n words automated metrics. Ongoing research experiments with different sized datasets to study the effectiveness of various meta-learning algorithms on the fast-adaptation of the deep-learning model on low-resourced tasks.

Analysis of Algeria's migration policy of 'Reconduite A la Frontiere' and its impact on sub-Saharan migrant women

Mohamed Sofiane Timtaoucine

Master of Arts in Public Policy and International Affairs (PPIA), Department of Political Studies and Public Administration, Faculty of Arts and Sciences, American University of Beirut

The 2014 bilateral agreement signed between Algeria and Niger, enabled Algiers to repatriate thousands of Nigerien migrants claiming it is at the request of its southern neighbor's request to prevent the growth of further crime networks in the two countries. However, Algeria's actions went beyond the framework of the unjust agreement whereby it started racially profiling, rounding up, and forcibly deporting thousands of people [on the basis of their skin color] to the borders with Niger at a place called Point Zero. When at the borders and after security officials leave, the migrants either cross on foot to the city of Assamaka [Niger] or walk to In Guezzem [Algeria]. The journey back to Algeria from Point Zero remains an unexplored reality filled with risks of theft and robbery along the route. Furthermore, the scarce literature available on migration in Algeria explores the journey to, from, and in some cases within the country but not necessarily the potential cycle of return that results from the policy of migrant escorts to the border. Hence, this paper will seek to fill the gap in the literature by exploring how returned migrants interact and are impacted by the human trafficking and smuggling networks operating in the south of Algeria. This paper will also seek to explore Algeria's policy of migrant escort to the border further and the details surrounding its adoption and implementation. Moreover, the paper will attempt to test the Multiple Streams Framework to analyze this policy and will adapt it to the context of a non-democratic state. Following the analysis, this paper seeks to investigate the impact of Algeria's deportation policy on sub-Saharan migrant women and the possibility of their entrapment in circles of human trafficking and smuggling.

Using Artificial Intelligence to Combat Cyberbullying

Nouha Abardazzou, Malek Ben Abdallah

Suliman S. Olayan School of Business, Master's in Business Analytics

The need to better understand the relationship of young people to the Internet, platforms and social networks have taken on an entirely new dimension during the ongoing global pandemic.

Cyberbullying has increased with the up rise of the digital presence of young people due to lockdown and online schooling; according to a recent study, there is a direct correlation between the pandemic and cyberbullying incidents (Karmakar & Das, n.d.). Cyberbullying poses serious risks, unlike in-person bullying, it can occur 24/7 and has a stronger association with suicidal ideation with some young people being more vulnerable than others. According to Rice et al., cyberbullying disproportionately affects youths who are already vulnerable to mental health and behavioral health disparities, including members of sexual minorities (i.e., gay, lesbian, bisexual), girls, and racial and ethnic minorities (Rice et al., 2015).

Cyberbullying is often defined by expanding the definition of "bullying", which is based on three main criteria: 1) intentional aggressive behavior; 2) repetitive acts; and 3) an interpersonal relationship characterized by a systematic power imbalance (Olweus, 1993). Cyberbullying extends to the use of digital technology, precisely "the use of communication technologies to harm another person through violent behavior such as sending text messages on the internet" (Galán-García et al., 2014). Accordingly, cyberbullying detection had been subject to many researchers, to preserve human rights, and reduce conflicts while maintaining freedom of speech.

The primary objective of our work is to provide an automated process to better detect cyberbullying through the use of machine learning models. Our developed model would help facilitate the detection of cyberbullying in an effort to protect young people.